

# NEWS TODAY

## Prime Minister released 109 high yielding, climate resilient and biofortified varieties of crops

These crops have been developed by the **Indian Council of Agricultural Research (ICAR)** and release of new varieties of crops is the example of a "lab to land" programme.

- ICAR has been running **crop-improvement programme** to develop new crop varieties and hybrids with wider adaptability and higher yield.
- **Crop-improvement process uses** different strategies such as
  - ⊕ Genomics-assisted selection
  - ⊕ **Phenomics** (systematic measurement and analysis of qualitative and quantitative traits)
  - ⊕ **Conventional breeding** or **Biotechnology-based approaches** like **genetic engineering** and **genome editing**.

### Need of Crop Improvement

- **Managing Impact of Climate Change:** Climate resilient seeds can yield good crop even in **adverse weather** (heat waves, droughts, etc.). E.g. Bt cotton
  - ⊕ Climate resilient crops will reduce crop losses due to diseases and pests attacks.
- **Food Security:** Agricultural yields are projected to drop by 16% by 2030 (World Economic Forum).
- **Nutritional Security:** Government seeks to promote biofortified crops by linking them with the programmes like **Mid-Day Meal (PM Poshan Scheme)**, etc., to make India free from malnutrition.
  - ⊕ Also, these are affordable as biofortified varieties crop does not involve any additional cost on preparing the **enriched food grains**. E.g. vitamin-A rich maize grains.
- **Raising Farmers Income:** **High-yielding and adaptable crop varieties** contribute to higher incomes.

#### About Biofortification

- It is the process of improving **the nutritional quality** of food crops. For example, iron and zinc rich wheat grains
- It differs from **conventional fortification** as it aims to **increase nutrient levels** in crops during **plant growth** rather than through **manual means** during **processing**.

#### About Lab to Land programme

- It promotes transfer of improved technology developed by agricultural universities and research institutions to farmers.

## Union Cabinet approves changes in PM JI-VAN Yojana

Changes aim to enhance efforts for meeting **ethanol blending targets** and emphasize on **innovative technologies and novel feedstocks**.

- The amount of ethanol blended with petrol has surged to **over 500 crore liters in 2022-23**, with a current blending rate exceeding 15%.
- The government aims to reach a **20% blending target by the end of the 2025-26**.

### Pradhan Mantri JI-VAN (Jaiv Indhan- Vatavaran Anukool fasal awashesh Nivaran) Yojana

- **Background:** Launched in 2019 to provide financial assistance for development of **2<sup>nd</sup> Generation (2G) ethanol** from **surplus biomass and agricultural waste**.
- It has supported the establishment of **India's first 2G ethanol plant by Indian Oil Corporation at Panipat**.

### Key Changes approved

- **Extension of implementation period:** by 5 years till 2028-29.
- **Broadening scope:** Include biofuels from **lignocellulosic feedstocks** such as **agricultural residues, forestry waste, industrial by-products, and algae**.
- **Eligibility:** "**Bolt on**" plants and "**brownfield projects**" also became eligible.

#### Generation of Biofuels

- **1<sup>st</sup> generation:** Derived from edible materials creating food security issues.
- **2<sup>nd</sup> generation:** From **non-edible materials** like agricultural, forest residues and crops grown for biofuel purposes.
- **3<sup>rd</sup> generation:** From aquatic biomass such as algae.
- **4<sup>th</sup> generation:** From Engineered plants and microorganisms.

### Significance of the change

- **Financial support** to multiple sectors; stable income for farmers through the sale of agricultural residues, mitigates environmental pollution, and strengthens India's energy security and self-reliance.
- **Aligns with net-zero greenhouse gas emissions by 2070** and supports the **Make in India initiative**.

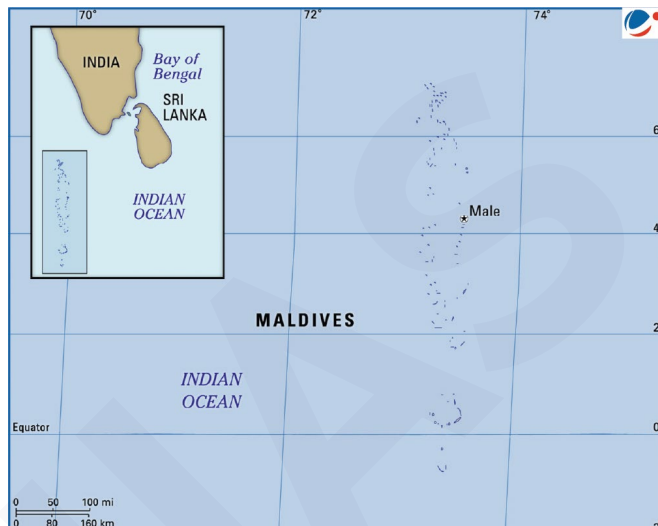
## Indian External Affairs Minister visited Maldives

### Outcomes of the visit

- MoU on introduction of **Unified Payments Interface (UPI)** in Maldives were exchanged.
- Inaugurated the **Addu Reclamation and Shore Protection Project** and **Addu Detour Link Bridge Project**.
- Reviewed progress on the **India-assisted Greater Male Connectivity Project (GMCP)** development project that connects **Male** with the adjoining islands of **Villingili, Gulhifalhu** and **Thilafushi**.

### Significance of Maldives for India

- **Geo-economics:** It is located along the major commercial **Sea lines of communication (SLOC)**.
  - ⊕ About 50% India's external trade and 80% energy imports transit through SLOC in the Arabian Sea.
- **Geopolitical:** It is important in maintaining peace, stability and prosperity in the **Indian Ocean Region** and enhancing India's Vision 'SAGAR' i.e. **Security and Growth for All in the Region**.
  - ⊕ It is a key partner in the '**Neighbourhood First**' policy.
- **Defence cooperation:** It extends to Joint Exercises (**Ex Ekuverin**), Maritime Domain Awareness, etc.
- **Historical ties:** Both countries share ethnic, linguistic, cultural, and religious links.



### Key Challenges in Bilateral relations

- **Rising Chinese footprints:** E.g. construction of the **Sinamale bridge**, pact for military assistance to Maldives, etc.
- **Rising Anti- India sentiments under current regime:** demanding withdrawal of Indian troops from Maldives, India-out campaign, etc.
- **Rise of Religious Radicalism in Maldives:** including Pakistan backed-terror groups

## India and Nepal signed MoU to provide grant assistance for the launch of Nepal's Munal Satellite

The collaboration highlights the **growing role of space technology in diplomacy**.

- Munal Satellite is an **indigenous satellite developed in Nepal** that aims to build a vegetation density database of the Earth's surface.
- The satellite will use **NewSpace India Limited's (NSIL) Polar Satellite Launch Vehicle**.

### About Space Diplomacy

- It involves leveraging space science and technology to achieve foreign policy goals and strengthen national space capabilities.

#### ➤ Significance for space diplomacy for India

- ⊕ **Global south cooperation:** India is investing in building resources and building consensus on common space tech for space exploration. E.g., South Asia Satellite Project.
- ⊕ **National Security:** E.g., The India-US space situational awareness agreement can provide access to the U.S. radar and sensor network to mitigate risk to India's space assets.
- ⊕ **International cooperation and Capacity building:** to utilise space resources for the expanding population.
  - ◆ E.g., **UNISpace Nanosatellite Assembly & Training by ISRO' (UNNATI)** makes an effort to educate Foreign Engineers/Scientists in space sciences.
- ⊕ **Conflict free space:** India is committed to using outer space for peaceful purposes and keeping it conflict-free.

#### India's International Cooperation in space

##### ➤ India-US:

- ⊕ India joined the **Artemis Accord**, an initiative led by the US to commence space exploration and cooperation.
- ⊕ NASA-ISRO Synthetic Aperture Radar (**NISAR**) satellite

##### ➤ India-EU:

- ⊕ Cooperation **agreement to share earth observation data** from each other's satellite

##### ➤ India-Russia:

- ⊕ Cooperation for the **human spaceflight programme**.

- **Challenges:** lack of private participation, few missions for deep space exploration, lack of multilateral space partnerships, etc.

## UN Member States have finalised treaty targeting cybercrime

It is the UN's first treaty that aims to "prevent and combat cybercrime more efficiently and effectively," notably regarding child sexual abuse imagery and money laundering.

- The treaty would enter into force once 40 member nations will ratify it.
- Presently, the Budapest Convention (2001) serves as the guideline or reference for cybercrime legislation worldwide.

### Significance of Treaty

- Establishes for the first time a global-level cybercrime and data access-enabling legal framework.
- Establishes "a global criminal justice policy," to protect society against cybercrime.

### Key Provisions

- **Domestic legislation:** Calls states to put in place legislation that will make it illegal to breach an information and communications system people don't have access to.
- **Protect children from sexual abuse:** Call states to make it illegal to produce, offer, sell, distribute, etc. child sexual content online.
- **Human Rights:** States shall ensure that implementation of their obligations under this treaty is consistent with their obligations under international human rights law.
- **Gives states permission to "collect or record"** relevant data for a conviction and "compel" service providers to hand over incriminating information or documents.

## Guidelines issued for Implementing Component 'Model Solar Village' under PM-Surya Ghar: Muft Bijli Yojana

Guidelines have been issued by the Ministry of New & Renewable Energy (MNRE) which is a nodal ministry of PM-Surya Ghar: Muft Bijli Yojana.

- Earlier guidelines had been issued for other sub-components such as Capacity Building etc.

### About Model Solar Village

- It aims to create one Model Solar Village in each District of the country.
  - ⊕ It will empower village communities to become more self-reliant in meeting their energy needs.
- **Eligibility:** Village with a population size of more than 5,000 as per the Census.
- **Central Financial Assistance (CFA):** Each Model Village will get grant of Rs 1 crore.
- **Implementation Agency:** State Renewable Energy Development Agency of the concerned state or any other entity nominated agency by the State/UT Government.

### About PM-Surya Ghar: Muft Bijli Yojana (2024)

- **Aim:** To install rooftop solar (RTS) and provide free electricity for up to 300 monthly units for 1 crore households.
- **Subsidy structure:**
  - ⊕ Provides 60% of the solar unit cost for systems up to 2 kW capacity and 40 % of additional system cost for systems between 2 to 3 kW capacity.
- **Potential Benefits:** 1 crore families are expected to save Rs 15,000 crore annually and will be able to earn income by selling the surplus power to the electricity distribution companies (DISCOM).

## Also in News



### Arecanut

Central Plantation Crops Research Institute (CPCRI), issued an advisory to control 'kole roga' (fruit rot disease) in arecanut plantations.

### About Arecanut

- **Major Producers:** Parts of Karnataka (largest producer), Kerala, Assam, Meghalaya, West Bengal and Andaman and Nicobar Islands.
- **Significance:** Commercial crop, called betelnut or supari, essential ingredient of tobacco.
- **Altitude:** 1000 m from mean sea level.
- **Temperature:** between 4°C and 40°C.
- **Rainfall:** Abundant and well distributed. Can grow in as low as 750 mm rainfall to as high as 4500 mm.
- **Soil:** Laterite, red loam and alluvial soils are most suitable with pH range from 5.2 to 7.0.



### Mount Kilimanjaro

Expedition team under the aegis of the Ministry of Defence unfurled the Indian national flag atop Uhuru Summit of Kilimanjaro.

### About Mount Kilimanjaro

- It is the highest peak (5,895 meters) of Africa (Located in Tanzania).
- It is the largest free-standing mountain rise in the world, meaning it is not part of a mountain range.
- It is a stratovolcano (a term for a very large volcano made of ash, lava and rock).
  - ⊕ It is made up of 3 cones: Kibo (tallest), Mawenzi, & Shira.
  - ⊕ The highest point on Kibo's crater rim is called Uhuru.
- It is a part of UNESCO's World Heritage Site 'Kilimanjaro National Park'.



### Exercise Udara Shakti

It is a joint air exercise of **India and Malaysia**.



### Neelakurinji

It has been included on the **IUCN (International Union for Conservation of Nature) official Red List of threatened species** under the **Vulnerable category**.

**Neelakurinji (Strobilanthes kunthiana)**

- **About:** Shrub known for massive blooming every 12 years. **Semelparous**, i.e., single reproductive episode before death.
- **Location:** **Shola grasslands** of Western Ghats - the **Nilgiri hills, Palani hills** and the **Eravikulam hills** of Munnar, also **Shevaroy hills** in the Eastern Ghats.
  - ⊕ The name **Nilgiris (blue mountains)** was derived from the colors of these flowers.
- **Major Threats:** tea and softwood plantations, urbanization, invasion of exotic species like eucalyptus, black wattle, etc.



### Subduction Zone

Japan issues its **first-ever megaquake advisory** on the **Nankai Trough** in Japan's Southwest Pacific Coast.

- Megaquakes are Earthquakes with a **magnitude greater than 8**.
- **The Nankai Trough is an underwater subduction zone** where the **Eurasian Plate collides** with the **Philippine Sea Plate**.

**Subduction (or Benioff) Zone**

- When two plates converge towards each other along the convergent margin, the plate which is **heavier/denser subducts below the lighter plate** and is **consumed in the mantle**.
- Location where **sinking of the heavier plate** occurs is called **subduction or Benioff Zone**.



### Saint Martin's Island

Reports have claimed that the US wanted to establish a military base in St. Martin's Island of Bangladesh.

**About St. Martin's Island**

- A small **coral island**, located in the **northeastern part of the Bay of Bengal**.
  - ⊕ It is also referred as 'Narikel Jinjira' or **Coconut Island**, 'Daruchini Dwip' or **Cinnamon Island**, etc.
- Island was once an extension of the **Teknaf peninsula** but was separated due to the submergence of a portion of the peninsula.
- In 1974, Bangladesh and Myanmar reached an agreement that the island would be a part of Bangladeshi territory.
- **Geopolitical significance:** Located near to Bangladesh and Myanmar.



### Dysbiosis

**Irrational use of antibiotics is associated with dysbiosis.**

**About Dysbiosis**

- Dysbiosis refers to an **imbalance of microbial species and a reduction in microbial diversity** within certain bodily microbiomes.
- As a result, **beneficial bacteria are usually minimized**, whereas other bacteria that may be **harmful increase** in number.
- It disturbs the immune function leading to **inflammation and sensitization of the immune system** and causing autoimmune diseases



### Meteorite Shower

The **Perseid meteor shower** started in July and peaked recently.

- Perseid meteors are debris left behind by the **comet Swift-Tuttle**.

**About Meteorite Shower**

- It is a **celestial event in which several meteors hit Earth's atmosphere over a short period**.
  - ⊕ **Meteors are space rocks** that enter Earth's atmosphere.
  - ⊕ The **bright streak** seen with **meteor showers** is not **actually rock** but **glowing hot air**.
- Meteor showers are **usually named after a star or constellation** that is close to where the meteors appear in the sky.

## Places in News



### Timor Leste (Capital: Dili)

Indian President has been conferred with the highest civilian award of Timor-Leste.

**Political features**

- **Island country of South-East Asia**.
- **Occupies the eastern half of the island of Timor**, the small nearby islands.
  - ⊕ Due to its location it is also referred as **East Timor**.
- Bounded by **Timor Sea** (southeast), **Wetar Strait** (north), **Ombai Strait** (northwest) and **western Timor** (part of Indonesian province of East Nusa Tenggara) **to southwest**.

**Geographical features**

- **Highest Point:** Mount Tatamailau

