

## MNRE Issued Revised Guidelines on National Bioenergy Programme

The Ministry of New and Renewable Energy (MNRE) has updated the guidelines on ‘Waste to Energy’ and ‘Biomass’ components of the **National Bioenergy Programme**.

➤ **Bioenergy:** It is a form of renewable energy generated when we burn biomass fuel which comes from organic material such as harvest residues, crops and organic waste from our homes, etc.

**What is the National Bioenergy Programme?**

➤ **Launched:** In 2022

➤ **Implementation:** Two phases with a total budget of Rs. 1715 Crore; **Phase-1 (2021-22 to 2025-26)**.

➤ **Objective:** Utilize **surplus biomass** (primarily from rural areas) for **power generation**, while providing **additional income for rural households**.

➤ **Central Financial Assistance (CFA):** To be provided to project developers based on various aspects of projects.

⊕ For **special categories** like the North East Region, hilly states, SC/ST beneficiaries, etc., **20% more CFA** will be provided.

➤ **There are 3 components of the programme**

⊕ **Waste to Energy Programme:** Support projects for **generating Biogas, BioCNG, Power, or Syngas** from urban, industrial, and agricultural waste/residues.

⊕ **Biomass Programme:** Support Biomass Briquette/Pellet manufacturing plants and Biomass (non-bagasse) based cogeneration projects.

⊕ **Biogas Programme:** Support biogas plants for clean cooking fuel, small power needs, improved sanitation, women empowerment, etc.

◆ **Biogas is 95% methane (CH<sub>4</sub>) and CO<sub>2</sub>, with traces of N<sub>2</sub>, H<sub>2</sub>, H<sub>2</sub>S, and O<sub>2</sub>**

### Key Features of Revised Guidelines



#### Waste to Energy Programme

- **Simplified Processes:** E.g., easier approvals for MSMEs and industry.
- **Improved CFA Disbursal:** Two-Stage Release:
  - 50% CFA after consent from the **State Pollution Control Board**, with bank guarantee.
  - Remaining CFA **after 80% capacity achievement** or maximum limit. (lower of two).
- **Other:** Streamlined inspections, flexible & performance-based funding, etc.



#### Biomass Programme

- **Simplified Processes:** E.g., no clearance documents needed for briquette/pellet plants.
- **Tech Integration:** E.g., enabling the use of IoT-based monitoring solutions.
- **Stubble Burning Support:** Pellet producers in NCR and nearby states can choose MNRE or Central Pollution Control Board (CPCB) scheme.
- **Other:** Flexible market access, performance-based subsidy, etc.

## Delhi Prepares For Its First-Ever Artificial Rain

The Delhi government is all set to conduct its first-ever artificial rain through **cloud seeding** to combat air pollution. The initiative, led by **IIT Kanpur**, involves cloud seeding using modified aircraft.

**What is Artificial Rain?**

➤ Artificial rain, also known as cloud seeding, is a **weather modification technique** aimed at enhancing precipitation (generate artificial rain) from clouds.

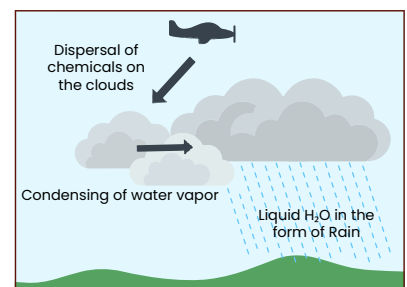
➤ **Method:** Uses chemicals like **silver iodide, potassium iodide, and dry ice**, which are dispersed into the sky via airplanes and helicopters.

⊕ These chemicals attract water vapour (acting as nuclei), helping form rain clouds.

➤ **Types:** **Hygroscopic Cloud Seeding** (accelerates the merging of droplets in liquid clouds) and **Glaciogenic Cloud Seeding** (induces ice formation in super cooled clouds).

**Way Forward**

Cloud seeding offers potential as a supplementary solution for **water scarcity** and agricultural support. However, its use must be guided by **scientific research, environmental safeguards, and clear regulations**.



#### Benefits

- **Enhances Rainfall in Drought-Prone Areas:** E.g. Dubai cloud seeding project.
- **Supports Agriculture:** Rain during dry spells, improving crop yields and farmer incomes.
- **Helps Regulate Weather Conditions:** Controls water vapor to reduce damage from hail, storms, or heavy snowfall in winter.
- **Reduces Air Pollution:** Can help clear pollutants and dust from the atmosphere.
- **Other:** Wildfire mitigation, enhancing winter snowfall etc.



#### Concerns

- **Floods and Landslides:** Excessive rain from cloud seeding can lead to flash floods & landslides.
- **Disturb Natural Weather Patterns:** It may disrupt natural weather cycles, causing droughts in other regions.
- **Environmental Damage:** Contaminated lakes & rivers affect aquatic life, & overall biodiversity.
- **Health Risks:** Chemical buildup in soil & water harms plants, animals, & disrupts ecosystems

## Model Rules for "Felling of Trees in Agricultural Land" to Promote Agroforestry

The rules aim to **simplify agroforestry processes** and encourage farmers to integrate trees into farming without procedural hurdles.

### Key Highlights

- **State Level Committee (SLC):** The existing SLC Constituted under the 'Wood-Based Industries (Establishment & Regulation) Guidelines, 2016' will oversee these rules.
  - ⊕ It will **advise the state on promoting agroforestry & boosting timber production** by easing tree felling and transit rules.
- **Registration of Plantation Area:** Applicants (owning agricultural lands) shall register in the **National Timber Management System** with land ownership details.
- **Felling Permission:** A **Felling Permit** is issued for agricultural lands with more than 10 trees, while a **No Objection Certificate** is issued for lands with 10 or fewer trees.

### What is Agro-forestry?

- **Definition:** Agroforestry involves **growing trees & agricultural crops** together on the same land.
- **Types:** **Agrisilviculture** (Crops + Trees); **Silvopasture** (Trees + Livestock); **Agrosilvopastoral** (trees + crops+ pasture/animals) etc.
- **Agroforestry in India:** It covers **8.65% (28.42 million hectares)** of India's **total geographical area**.
  - ⊕ The government defines agroforestry, for calculation purposes, as having over **10% tree cover on agricultural land**.

### Benefits

- **Environment Benefits:** It supports increasing tree cover outside forests & promotes **sustainable land use**, aligning with India's **Nationally Determined Contributions (NDCs)** under the Paris Agreement.
- **Economic Benefits:** It helps **double farmers' incomes** by boosting productivity, improving soil health, and conserving water.
- **Social Benefits:** Improvement in **rural living standards** from sustained **employment** and higher incomes.

### Initiatives to promote agroforestry

- **National Agroforestry Policy, 2014:** To promote agroforestry and to create a framework for research, development, and scaling up agroforestry practices.
- **Sub-Mission on Agroforestry (SMAF):** It is under the **National Mission for Sustainable Agriculture (NMSA)**.
- **GROW initiative:** Launched by **NITI Aayog**, aiming to transform India's wastelands through agroforestry.
- **The amendment to the Forest Act 1927 in 2017:** Redefined **bamboo** as **grass** instead of a tree, simplifying its harvesting and transit.

## UN Reports Highlighted India's Achievements in Child and Maternal Health

Recently, 'Trends in maternal mortality 2000 to 2023' and 'Levels & Trends in Child Mortality 2024' reports released by UN Inter-agency groups highlighted the global trends in maternal and child mortality rates.

### Key Achievements of India

- **Decline in Zero-Dose Children:** Zero-dose children are those who did not receive their first dose of DTP (diphtheria-tetanus-pertussis) vaccine.
  - ⊕ Reduced from **0.11% (2023)** to **0.06% (2024)** of the total population.
- **Reduction in Maternal & Child Mortality:**
  - ⊕ **Maternal Mortality Ratio (MMR): 86% decline** (vs. global 48% reduction since 1990).
    - ◆ **MMR:** Number of maternal deaths during a given time period per 100 000 live births during the same time period.
  - ⊕ **Under-Five Mortality Rate (U5MR): 78% decline** (vs. global 61%).
    - ◆ **U5MR:** Number of deaths of children under 5 years of age per 1,000 live births.
  - ⊕ **Neonatal Mortality Rate (NMR): 70% decline** (vs. global 54%).
    - ◆ **NMR:** Number of neonatal deaths that from birth to 29 days per 1,000 live births.
  - ⊕ **Polio-Free Status:** Maintained since **2014** through **National Immunization Days (NIDs)**.

### Universal Immunization Programme (UIP) Achievements

- **Reach:** Provides free vaccination services annually to **2.9 crore pregnant women** and **2.6 crore infants (0-1 year)**.
- **Coverage:** Now includes **12 vaccine-preventable diseases** (up from 6 in 2013).
- **New Vaccines Introduced (2014 onwards):** Inactivated Polio Vaccine, Rotavirus Vaccine, Pneumococcal Conjugate Vaccine, Measles-Rubella Vaccine, Adult Japanese Encephalitis Vaccine, Tetanus-Diphtheria Vaccine.

### India's Vaccination Success

#### Major Public Health Achievements



**Zero Dose Implementation Plan 2024:**  
Rolled out across 143 districts in 11 states with a high burden of unvaccinated children.



**Mission Indradhanush (Since 2014):**  
Intensified in 2017, vaccinated 5.46 crore children and 1.32 crore pregnant women.



**Village Health and Nutrition Days (VHNDs):**  
Regular community-level immunization and outreach.



**Other:**  
U-WIN Platform for digital tracking of immunization status; Regular IEC (Information, Education, Communication) Campaigns to combat vaccine hesitancy, Network of healthcare workers like ASHAs, and ANMs.

## ECI Initiates Delisting of 345 Registered Unrecognized Political Parties (RUPPs)

RUPPs have failed to fulfil the essential condition of contesting even a single election for **the last six years since 2019** and also their **offices could not be physically located anywhere**.

- The ECI will take **the final decision on delisting**, which would end **all benefits enjoyed by RUPPs**.

### Registration Of Political Parties

- **Section 29A of the Representation of the People Act, 1951 (RPA, 51)**: Lays down the requirements for registration of a political party with the ECI.
- **However, the ECI does not have power to de-register (different from de-listing) any political party** under the RPA, 51 [**case law: Indian National Congress versus Institute of Social Welfare (2002)**]

### Concerns Posed by RUPPs

- **Compliance-Related Concern**: Non-submission of Mandatory Contribution Reports under Section 29C of the RPA, 1951.
- **Financial Irregularities and Tax Abuse**
  - ⊕ **Improper Claims of Income Tax Exemptions**: In FY 2019–20, **219 RUPPs** claimed ₹608 crore.
  - ⊕ **Alleged Serious Financial Impropriety**: Fake donation receipts; Use of shell companies; Bogus transactions and purchases, etc.
- **No Electoral Participation**: In General Elections 2019, around **70% did not contest**, despite being registered.

### Ways to Deal with Errant RUPPs?

- **Law Commission's 255th report (2015)**: Automatic de-registration of **parties failing to contest elections for 10 consecutive years**.
- **ECI's 2016 memorandum**: Suggested amending law to **empower ECI to de-register** political parties.

Political Parties Classification Understanding RUPPs vs. Recognised Parties in India	
Registered Unrecognised Political Parties (RUPPs)	Recognised Parties
<b>Legal Basis</b> Registered under <b>Section 29A of the Representation of the People Act, 1951</b>	<b>Recognition Criteria</b> Recognition as <b>national/state party</b> under the <b>Election Symbols Order, 1968</b> <ul style="list-style-type: none"> <li>Based on <b>seat wins/vote share</b> in Lok Sabha/ State elections</li> </ul>
<b>Benefits &amp; Privileges</b> <ul style="list-style-type: none"> <li>Tax exemptions</li> <li>Common election symbol for general/state elections</li> <li>Permission for <b>20-star campaigners</b></li> </ul>	<b>Enhanced Benefits</b> <ul style="list-style-type: none"> <li>Reserved election symbol</li> <li><b>40-star campaigners</b> (double that of RUPPs)</li> <li>Additional privileges and recognition</li> </ul>

## National Turmeric Board Headquarters Inaugurated in Nizamabad, Telangana

Notified in October 2023, the National Turmeric Board was inaugurated in January 2025.

### About the National Turmeric Board

- **Aim**: To provide leadership on turmeric related matters, augment the efforts, and facilitate greater coordination with Spices Board and other Government agencies in development and growth of the turmeric sector.
- **Ministry**: Ministry of Commerce & Industry
- **Composition**:
  - ⊕ **Chairperson** to be appointed by the Central Government
  - ⊕ Members from the Ministry of AYUSH, Departments of Pharmaceuticals, Agriculture & Farmers Welfare etc.
  - ⊕ Senior State Government representatives from three states (on rotation basis),
  - ⊕ Select national/state institutions involved in research & representatives of turmeric farmers & exporters
  - ⊕ A Secretary to be appointed by the Department of Commerce.
- **Role**: Promotes **R&D, value addition** for exports, **awareness** of turmeric's benefits, yield improvement, and **supply chain enhancement** to expand markets.

### Turmeric production in India

- India is the **largest producer, consumer, & exporter** of turmeric.
- About **30 varieties** of Turmeric are grown in **over 20 states** in the country.
- **Production**: 70% of global turmeric production.
  - ⊕ **Telangana, Maharashtra, Tamil Nadu, & Andhra Pradesh** together contribute **63.4%** of domestic production.
- **Export**: More than **62% share** of world trade.
  - ⊕ The **leading export markets** for India are **Bangladesh, UAE, USA & Malaysia**.
- **Turmeric in India with GI Tag**: **Sangli Turmeric & Waigaon Turmeric** (Maharashtra); **Erode Manjal/Turmeric** (Tamil Nadu); **Lakadong Turmeric** (Meghalaya).

### About Turmeric

- A rhizome (underground stem) often referred to as the **"Golden Spice"**.
- **Climatic Condition**: Grown in diverse tropical conditions
  - ⊕ **Temperature range**: 20-30 degree Celsius.
  - ⊕ **Annual rainfall**: 1500 mm or more.
- **Soil**: Thrives best in **well-drained sandy or clay loam soils**
- **Health Benefits**: **antioxidant and anti-inflammatory** properties etc.

## Also In News



### Remittances

As per a recent RBI report, **remittances to India reached \$135.46 billion in 2024-25** jumping 14% from the previous year.

- Remittances have more than doubled from \$61 billion in 2016-17.

### Significance of Remittances for India

- **Contribution to Economy**: Remittances accounted for **over 10% of India's \$1 trillion gross current account inflows** in FY25.
- **Trade Deficit Support**: Represented 47% of India's \$287 billion merchandise trade deficit.
- **Stable Source of Financing**: Remittances surpass gross inward foreign direct investment (FDI), serving as a stable source of external financing.



### Kolhapuri Chappals

Following controversy, a global fashion brand acknowledged drawing design inspiration from 'Kolhapuri chappals'.

### About Kolhapuri Chappals

- It is a **traditional handcrafted leather sandal** that has been awarded **Geographical Indication (GI) status** in 2019.
- Kolhapuri chappals trace their origins to the **12th century** in Maharashtra.
- They are made **entirely by hand using vegetable-tanned leather**.





## Botrytis fungi

Researchers have found that botrytis fungi cannot be cloned as no single nucleus contains a complete set of chromosomes in these fungi.

- Instead, the chromosome set is distributed across two or more nuclei.

### About botrytis fungi (Noble rot)

- Botrytis are ascomycetes fungi.
- Ascomycetes is a type of fungi that produces sexual spores known as ascospores inside small sacs known as asci.
- **It infects grapes:** Causes the berries to lose water by evaporation and shrivel up.

### About Fungi

- Fungi are **eukaryotic organisms** that lack **chlorophyll and vascular tissue**, living by decomposing and absorbing organic matter.
- **Fungi's cell wall contains chitin**, which is similar to the exoskeleton of insects and arachnids



## Exoplanet

The **James Webb Space Telescope** has discovered its first new exoplanet named **TWA 7b**.

### About TWA 7b

- It was discovered in the debris rings that surround the **low-mass star CE Antilae, also known as TWA 7**.
- **It is ten times lighter** than any exoplanet previously directly imaged.

### About Exoplanet

- Exoplanets are planets that orbit stars other **than the sun and thus exist outside the solar system**.
- Exoplanets that orbit in the **habitable zone** around their star where it's not too hot or too cold are targets for the search for life outside the solar system.
- **Currently, the closest exoplanet to Earth is Proxima Centauri b, 4 light-years away.**



## Synthetic Human Genome (SynHG) Project

Researchers are working on the Synthetic Human Genome (SynHG) project to construct human genetic material from scratch to learn more about how DNA works.

### About SynHG Project

- It is the **five-year multi-centre** (Universities of Cambridge, Oxford etc) research project.
- **Aim:** To develop the foundational and scalable tools, technology and methods needed to synthesise human genomes.

### What is Synthetic Genome?

- A **synthetic genome** is a **man-made DNA sequence** that is either completely designed in the lab or heavily modified from natural DNA.
- It could enable **targeted cell therapies**, virus-resistant transplants, and **climate-resilient engineered plants**.



## Secondary pollutants

A study by the Centre for Research on Energy and Clean Air (CREA) found that secondary pollutants, **account for nearly one-third of India's PM2.5 pollution.**

### Secondary Pollutants

- **Genesis:** It is formed in the atmosphere as a result of the chemical or the **physical interactions between the primary pollutants themselves or between the primary pollutants and other atmospheric components.**
- **Sources:** Primary pollutants, sunlight, and atmospheric conditions.
- **Examples:** Ozone (O3), sulfuric acid (H2SO4), nitric acid (HNO3), etc.



## Dhole (Asiatic wild dog)

The dhole, or Asiatic wild dog, once thought to be extinct in the region, has made a confirmed comeback in **Assam's Kaziranga-Karbi Anglong Landscape (KKAL).**

### About Dhole (Cuon alpinus)

- **Distribution:** India, Cambodia, Nepal, Bhutan, Thailand, Central Asia, etc.
  - ⊕ **In India**, it inhabits Eastern and Western Ghats, Assam, Meghalaya, West Bengal, Ladakh etc.
- **Characteristics:**
  - ⊕ Carnivores that resemble a small wolf or domestic dog in size.
  - ⊕ Hunt mainly in early morning or late evening.
- **Threat:** Habitat loss, disease, etc.
- **Conservation status:**
  - ⊕ **IUCN:** Endangered
  - ⊕ **Wildlife Protection Act 1972:** Schedule II
  - ⊕ **CITES:** Appendix II



## India Energy Stack (IES)

The Ministry of Power has announced the launch of a task force to **conceive the India Energy Stack.**

### About India Energy Stack

- It is a Digital Public Infrastructure (DPI) **that will provide a standardised, secure, and open platform to manage, monitor, and innovate across the electricity value chain.**
- **Aim:** To create a **unified, secure, and interoperable digital infrastructure** for India's energy sector.
- **Key Features of India Energy Stack (IES)**
  - ⊕ Unique IDs for consumers, assets, and transactions.
  - ⊕ Real-time, consent-based data sharing.
  - ⊕ Open APIs for seamless system integration.
  - ⊕ Tools for consumer empowerment, market access, and innovation.

## Place in News



## Madagascar (Capital: Antananarivo)

- Minister of State of Defence represented India at the 65th anniversary celebrations of Independence Day of Madagascar
- **Political Features**
  - ⊕ **Location:** Situated in the Indian Ocean 250 miles off the southeast coast of Africa.
  - ⊕ **Maritime borders:** Comoros, France (Mayotte and Réunion), Mauritius, Mozambique and Seychelles.
- **Geographical Features**
  - ⊕ **Fourth largest island** in the world.
  - ⊕ Home to about 5% of the world's plant and animal species, about 80% of which are endemic.
- **Madagascar and Indian Monsoon:**
  - ⊕ The south-west monsoon originates near Madagascar due to the **Mascarene High**, pushing moisture-laden **south-easterly winds** toward Somalia.
  - ⊕ After crossing the equator, these winds deflect to become **south-westerlies**, heading toward India.
  - ⊕ The monsoon retreats via Tibet in September and finally **dissipates over Madagascar**, completing its cycle.



AHMEDABAD



BENGALURU



BHOPAL



CHANDIGARH



DELHI



GUWAHATI



HYDERABAD



JAIPUR



JODHPUR



LUCKNOW



PRAYAGRAJ



PUNE



RANCHI