

# NEXT IAS

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## 350TH ANNIVERSARY OF THE GRAND CORONATION OF CHHATRAPATI SHIVAJI

### Context

- An exhibition titled **Chhatrapati Shivaji Maharaj: Celebration of the 350th Anniversary of the Great Coronation** is being presented at National Gallery of Modern Art, (NGMA).

### Chhatrapati Shivaji Maharaj

- He was the **founder of Maratha empire** and is known for his bravery as well as for his **good governance**.
- Over the course of his life, Shivaji engaged in both alliances and hostilities with the Mughal Empire, the Sultanate of Golkonda, the Sultanate of Bijapur and the European colonial powers.
- Shivaji's administration was characterized by a **centralized system** with the king as the head, assisted by the **Ashtapradhan council**.
- He reformed the revenue system, **abolishing the Jagirdari system** in favor of the Ryotwari system, and implemented measures to monitor land rights.

### Raigad Fort

- Located about 25 km from Mahad in the Raigad district, Raigad is a hill fort that was earlier known as Rairi.
- Shivaji Maharaj had captured the fort from **Chandrarao More in 1656** of Javli who came under the dominion of the Adilshahi Sultanate.
- The fort not only helped Shivaji challenge the **supremacy of the Adilshahi dynasty** but also opened up the routes towards Konkan for the extension of his power.
- Shivaji renamed the Fort as **Raigad in 1662**. Two years later, the fort became the **Maratha warrior's seat of government**.
- His coronation took place here in 1674** when he assumed the title of Chhatrapati.
- It was at this fort that Shivaji, who is the most revered icon in Maharashtra today, passed away in 1680.

### Legacy

- The Indian Navy's **INS Shivaji**, the UNESCO World Heritage Site, Chhatrapati Shivaji Terminus (formerly known as Victoria Terminus) are named after him.

- In 1890's **Bal Gangadhar Tilak started the Shivaji festival** to stimulate nationalism among young Maharashtrians by holding up the example of Shivaji for emulation.
- The **Indian Navy's new Ensign** and new design for Admirals' shoulder piece are inspired by the legendary Maratha king Chhatrapati Shivaji.

Source: PIB

## FARMERS VOLUNTARILY GIVING UP THEIR PM-KISAN BENEFITS

### Context

- According to data available with the Ministry of Agriculture & Farmers Welfare, Farmers across the country have voluntarily given up the benefits of the annual Rs 6,000 Pradhan Mantri Kisan Samman Nidhi (PM-Kisan) Scheme from June 2023 to May 2024.

### About the Pradhan Mantri Kisan Samman Nidhi (PM-Kisan) Scheme

- It is a **Central Sector** scheme with **100% funding from the Central Government**.
- It aims to provide **income support** to landholding farmers by easing their liquidity needs and facilitating timely access to agricultural inputs across the country.

### Eligibility and Beneficiaries

- All landholding farmer families** are eligible, subject to certain exclusion criteria.
- The definition of family for the scheme includes the husband, wife, and minor children.
- State governments and UT administrations identify eligible farmer families based on scheme guidelines.
- eKYC is mandatory** for PM-Kisan registered farmers. OTP based eKYC is available on **PM-Kisan Portal or nearest CSC centres** may be contacted for Biometric based eKYC.

### Financial Assistance

- Under PM-Kisan, eligible farmers receive **₹6,000 per year**. The amount is provided in **three equal instalments** of 2,000 each.
- The **funds are directly transferred** to the bank accounts of beneficiaries.

- Of the 9.09 crore farmers who received the **16th instalment** of PM-Kisan, a **maximum of 2.03 crore were in Uttar Pradesh**, and the state was followed by Maharashtra (89.66 lakh), Madhya Pradesh (79.93 lakh), Bihar (75.79 lakh) and Rajasthan (62.66 lakh).

### Exclusion Categories

- Certain categories of beneficiaries are **excluded** like Institutional landholders; Former and present holders of constitutional posts, ministers, and members of legislative bodies; Serving or retired government officers and employees; and Regular employees of local bodies.

### Voluntary Surrender

- **Farmers can voluntarily exit** the scheme using the PM-Kisan mobile app or website.
- **Reasons** for surrender include **absentee landlords, ineligible descendants, or changes in land ownership status**.
- **Surrender (State Breakup):** Maximum in Bihar (29,176); followed by Uttar Pradesh (26,593) and Rajasthan (10,343).

### Equity Grants to FPOs

- PM-Kisan supports Farmer Producer Organizations (FPOs) by providing equity grants.
- FPOs help reduce input costs and empower farmers with better bargaining power.

#### Agriculture in India: An Overview

- India is an agrarian economy where agriculture plays a crucial role in providing livelihoods to millions of farmers.

#### Constitutional Provisions

- **Schedule VII of Indian Constitution (List II, Entry 14):** Agriculture, including agricultural education and research, protection against pests and prevention of plant diseases.
- **Directive Principles of State Policy:** It outlines the **state's responsibility** towards organising agriculture and animal husbandry on modern and scientific lines.

#### Agricultural Statistics at a Glance

- The Department of Agriculture and Farmers Welfare publishes the 'Agricultural Statistics at a Glance' report annually.
- **Crop Production:** India is a major producer of rice, wheat, sugarcane, cotton, and pulses.

- **Land Use:** The total cultivable area in India is around 140 million hectares.
- **Irrigation:** Around 50% of the cropped area is irrigated.
- **Food Security:** The country has made significant strides in food production and self-sufficiency.

### Other Related Initiatives

- **Pradhan Mantri Kisan Maan Dhan Yojana (PM-KMY):** It provides pension benefits to small and marginal farmers.
  - ♦ It aims to offer ₹3,000 monthly pension to eligible farmers once they reach 60 years of age.
- **Pradhan Mantri Fasal Bima Yojana (PMFBY):** It provides crop insurance against non-preventable natural risks from pre-sowing to post-harvest, by ensuring comprehensive risk cover for crops and has benefited millions of farmers.
- **Interest Subvention Scheme (ISS) & Kisan Credit Card (KCC) Saturation Drive:** It offers concessional short-term agri-loans to farmers, while KCC provides credit facilities.
  - ♦ As part of the KCC saturation drive, over 482.73 lakh new KCC applications have been sanctioned with a total credit limit of ₹5,47,819 crore.
- **Formation and Promotion of 10,000 Farmer Producer Organizations (FPOs):** It was launched to empower and promote FPOs, enhancing farmers' collective strength.
- Additionally, other initiatives include the Soil Health Card Scheme, Neem Coated Urea, Paramparagat Krishi Vikas Yojana (PKVY), Pradhan Mantri Krishi Sinchayee Yojana (PMKSY), National Agriculture Market (e-NAM), and more.
- These efforts aim to support agricultural growth, increase farmers' incomes, and ensure food security in India.

### Challenges Faced by Farmers

- **Small Landholdings:** Most Indian farmers have small landholdings, leading to challenges in adopting modern techniques.
  - ♦ Small-scale farmers face economic challenges and struggle to compete in the market.

- **Climate Change:** Erratic weather patterns affect crop yields.
- **Market Access:** Farmers struggle with market access and fair prices.
- **Debt Burden:** High input costs and debt burden impact farmers' well-being.

### Conclusion

- PM-Kisan aims to alleviate financial stress for farmers and enhance their livelihoods by providing direct income support. The scheme continues to evolve, benefiting millions of farming families across India.
- Policymakers, researchers, and farmers must work together to ensure sustainable growth and improved livelihoods for those who feed the nation.

Source: IE

## DEMAND FOR SPECIAL CATEGORY STATUS

### In News

- The talks over special category status for Bihar and Andhra Pradesh have once again gained momentum after Lok Sabha elections.

### About Special Category Status

- It is a classification granted by the Centre to assist the development of States that face geographical or socio-economic disadvantages.
- It was introduced in 1969 on the recommendation of the fifth Finance Commission (FC).
- It was aimed at providing certain states with additional support to overcome geographical and infrastructural handicaps.
- **Factors are considered before granting SCS** includes
  - ♦ Hilly and difficult terrain
  - ♦ Low population density and/or sizeable share of tribal population
  - ♦ Strategic location along international borders
  - ♦ Economic and infrastructural backwardness and
  - ♦ Non-viable nature of state finances.
- **States Covered :** In 1969, three States — **Jammu & Kashmir, Assam and Nagaland** — were granted the SCS.

- ♦ Subsequently, eight more States including Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Sikkim, Tripura, Himachal Pradesh, and Uttarakhand were given the SCS by the erstwhile National Development Council.

### Benefits Attached

- The SCS States used to receive grants based on the **Gadgil-Mukherjee formula**, which earmarked **nearly 30% of the total central assistance** for States to the SCS States.
- ♦ However, after the abolition of the Planning Commission and the recommendations of the 14th and 15th FC, this assistance to SCS States has been subsumed in an increased devolution of the divisible pool funds for all States (**increased to 41% in the 15th FC from 32%**).
- ♦ Additionally, in the SCS States, the **Centre-State funding of centrally sponsored schemes** is divided in the ratio of **90:10**, far more favourable than the 60:40 or 80:20 splits for the general category States.
- **Other benefits :** SCS states enjoy special industrial incentives such as Income-tax exemptions, custom duty waivers, reduced excise duty, corporate tax exemption for a certain period, concessions and exemptions relating to GST, and lower state and central taxes.

### Controversy and Clamour for SCS

- In the intricate tapestry of India's federal structure, the concept of Special Category Status (SCS) has been a subject of much debate and discussion
- The demand for SCS has been particularly vocal in states like Andhra Pradesh and Bihar.
- Post-bifurcation, Andhra Pradesh's quest for SCS has been intertwined with its efforts to overcome the loss of revenue and to foster development in the absence of a metropolis like Hyderabad.
- Bihar's demand hinges on its quest to address endemic poverty and spur industrial growth

### Conclusion and Way Forward

- India strides towards becoming a \$5 trillion economy, the debate around SCS underscores the need for a nuanced approach to development.
- The lessons learned from the SCS experience could inform future strategies aimed at reducing disparities and promoting a more harmonious development pattern across the nation.

- It is imperative that the spirit of cooperative federalism guides the dialogue on SCS, ensuring that all regions of India can share in the fruits of economic progress.

Source:IE

## ONDC RECORDS 8.9 MILLION TRANSACTIONS

### Context

- The Open Network for Digital Commerce (ONDC) has recorded an all-time high of **8.9 million** transactions across retail and ride-hailing segments in May 2024.

### About

- ONDC now has 5,35,000 sellers across over **1,200 cities**, with **84 percent** being small sellers.
- These small sellers contribute **56 percent** of the total orders, aligning with the ONDC's goal of benefiting small businesses.

### What is ONDC ?

- Open Network for Digital Commerce (ONDC) is an initiative aiming at promoting open networks for all aspects of exchange of goods and services over digital or electronic networks.
- ONDC is to be based on **open-sourced methodology**, using open specifications and open network protocols independent of any specific platform.
- It is an initiative of the Department for Promotion of Industry and Internal Trade (DPIIT) under the **Ministry of Commerce and Industry**.

### Need of the ONDC

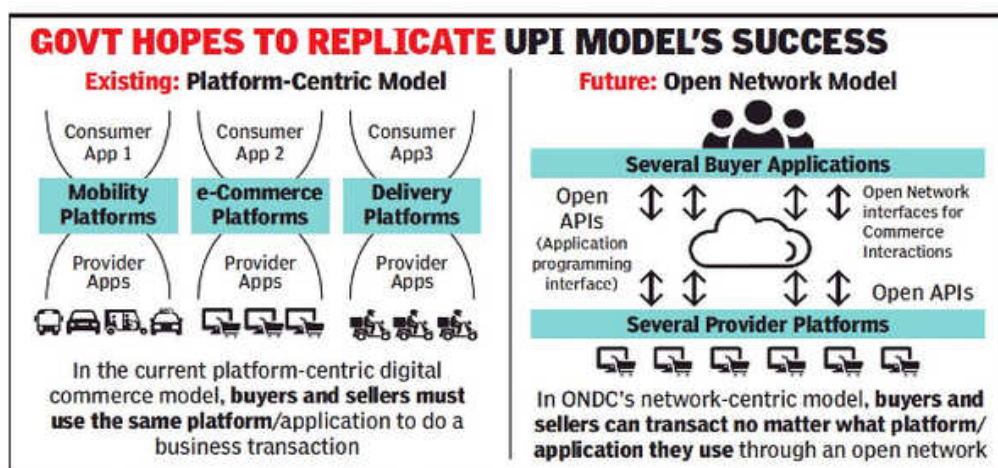
- India's e-commerce landscape:** India has the 3rd-largest online shoppers base only behind

China and the USA. Yet e-retail penetration in India is only 4.3% as compared to 25% in China and 26% in South Korea.

- Platform-centric challenges:** A single entity has full control over managing all operations in the e-commerce value chain.
  - Sellers face challenges including high margin costs and a need to maintain presence at various platforms.
  - Buyers and sellers can only transact only if they are part of the same platform.
  - The rise of monopolies creates barriers to the entry for the population scale adoption of e-commerce.

### Features of ONDC

- Independent Transactions:** ONDC allows consumers and merchants to conduct transactions for goods and services without being limited to a specific platform or application.
- Enhancing Efficiency:** ONDC aims to improve efficiency by implementing a dynamic pricing model, digitized inventory management, and optimizing delivery costs. This helps reduce the overall cost of doing business for all participants on the platform.
- Hyper-Local Search Engine:** ONDC introduces a hyper-local search engine that uses GPS proximity data as the default setting. This allows buyers to independently choose sellers and logistics partners to fulfill their orders.
- The platform will also be compliant with the **Information Technology Act, 2000** and designed for compliance with the emerging **Personal Data Protection Bill**.



### Significance of ONDC

- **Suitable Platform for small businesses:** Small businesses would be able to use any ONDC compatible applications instead of being governed by specific platform centric policies.
- **Inclusivity for e-Commerce:** ONDC is expected to make e-Commerce more inclusive and accessible for consumers. Consumers can potentially discover any seller, product or service by using any compatible application or platform, thus increasing freedom of choice for consumers.
- **Growth of startups:** By facilitating scalable and cost-effective e-commerce through the open protocol, ONDC will empower startups to grow collaboratively.

#### Indian e-commerce Industry

- **Growth projections:** The Indian e-commerce industry is projected to reach **US\$ 300 billion by 2030**.
  - ◆ The e-retail market in India is projected to surpass **US\$ 160 billion by 2028**.
- **Policy Support:** 100% FDI under the automatic route is permitted in the marketplace model of E-commerce.
  - ◆ 100% FDI is allowed in B2B e-commerce.

Source: [BL](#)

## ROLE OF NUCLEAR TECHNIQUES IN SETTING GLOBAL FOOD STANDARDS

### Context

- Director-General of the Food and Agriculture Organization of the United Nations (FAO), stressed the crucial role that **nuclear technologies can play in setting science-based food standards**.

### Role of Nuclear techniques in setting global food standards

- **Pathogen Detection:** Methods such as **polymerase chain reaction (PCR)** and radiolabeled probes are employed to detect and characterize pathogens in food.
- **Antimicrobial Resistance (AMR):** Stable isotope and molecular/genomic techniques offer approaches to detect potential antimicrobial resistance in farm animal environment samples.
- **Maintaining Food Quality and Safety:** Nuclear techniques using gamma rays, electron beams, and X-rays help in reducing pathogens and extending shelf life.

- **Phytosanitary Applications:** Irradiation meets pest quarantine requirements, setting standards for international trade by ensuring agricultural products are pest-free without chemical treatments.
- **Verification of Origin and Authenticity:** Techniques like **Stable Isotope Ratio Analysis (SIRA)** and trace element analysis help verify the geographic origin and production methods of food.
- **Screening Tests and Traceability:** Nuclear techniques provide rapid, field-deployable screening tests for contaminants and methods to trace the origin of contaminated products.

### What are the Advantages?

- **Certification and Labeling Programs:** Encourage transparency and consumer trust by certifying and labeling authentic food products.
- **Phytosanitary Applications:** Helps meet international pest quarantine requirements by sterilizing pests in agricultural products without chemical treatments.
- **Laboratory Capability:** Nuclear techniques enhance laboratory capabilities to identify and respond to changing contamination patterns due to climate change, setting standards for resilient food safety practices.

### Radiation technologies used in India

- Two technology demonstration plants were set up based on R&D carried out at Bhabha Atomic Research Centre (BARC);
  - ◆ **First is KRUSHAK at Lasalgaon, Nashik, Maharashtra** for low dose radiation treatment to take care of **sprout inhibition** and quarantine treatment of fresh produce (such as mango).
  - ◆ **Second is at Vashi, Navi Mumbai, Maharashtra** (Radiation Processing Plant, RPP) for high dose irradiation with the purpose of **microbial decontamination** of products (such as spices, herbal products and pet food).

### Way Ahead

- Nuclear technologies offer competitive and often unique solutions to combat hunger, reduce malnutrition, enhance environmental sustainability and ensure food safety and authenticity.

- The **Food and Agriculture Organization (FAO)** and the **International Atomic Energy Agency (IAEA)** have a strategic partnership to help member countries use these technologies safely and effectively.
- Nuclear techniques are also used to develop procedures and engage with **Codex Alimentarius**, the international body responsible for setting food standards.

Source: **FAO**

## NEWS IN SHORT

### NOTA CREATES NEW RECORD IN MADHYA PRADESH

#### Context

- Recently, the 'None of the Above (NOTA)' has created a new record in Indore, Madhya Pradesh in the Lok Sabha election results.

#### About the None of the Above (NOTA)

- It allows voters to express their dissatisfaction with the available candidates during elections.
- It enables the voter to **officially register a vote of rejection for all candidates** who are contesting an election.
  - ♦ If a voter chooses to **press NOTA on the EVM, it indicates that the voter has not chosen to vote for any party.**
- The voter must be eligible to register a vote of rejection if they feel that the contesting candidates do not deserve to be voted for.
- The Right to vote granted to all citizens must allow the vote of disapproval.

#### Legal Recognition

- In 2013, the **Supreme Court** ruled that the NOTA option should be provided in Electronic Voting Machines (EVMs).
  - ♦ It allows voters to exercise their right not to vote while maintaining secrecy.
- **Rule 41(1) of the Conduct of Election Rules 1961** recognises the right not to vote, both under the **Representation of the People Act (RPA)** and the Rules.

#### Working

- When the number of contesting candidates exceeds the number of seats to be filled, a poll is conducted.

- If the number of candidates equals the number of seats, all candidates are declared duly elected.
- However, NOTA does not impact the election outcome; the candidate with the most votes still wins.

Source: **AIR**

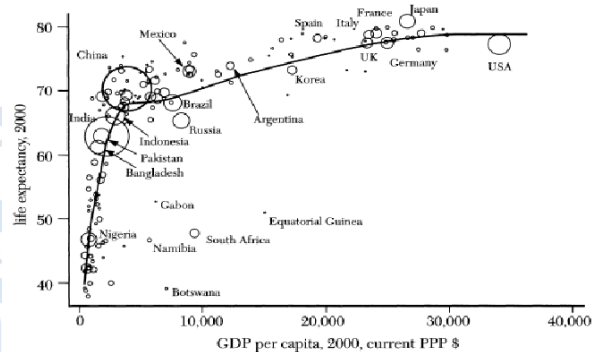
### PRESTON CURVE

#### In News

- Preston curve postulate recently seen in the news.

#### About Preston curve

- It was first proposed by **American sociologist Samuel H. Preston** in his 1975 paper "The changing relation between mortality and level of economic development".



- It refers to a certain empirical relationship that is witnessed **between life expectancy and per capita income in a country.**
- The curve shows that **people in wealthier countries** generally **have longer life spans compared** to those in poorer countries.
  - ♦ This is likely because people in wealthier countries have better access to healthcare, are better educated, live in cleaner surroundings, enjoy better nutrition etc.
- When a poor country experiences economic growth, there's an initial significant increase in life expectancy as people's per capita income rises, allowing them to afford more than just subsistence calories and better healthcare.
  - ♦ The positive relationship between per capita income and life expectancy begins to flatten out after a certain point.

Source: **TH**

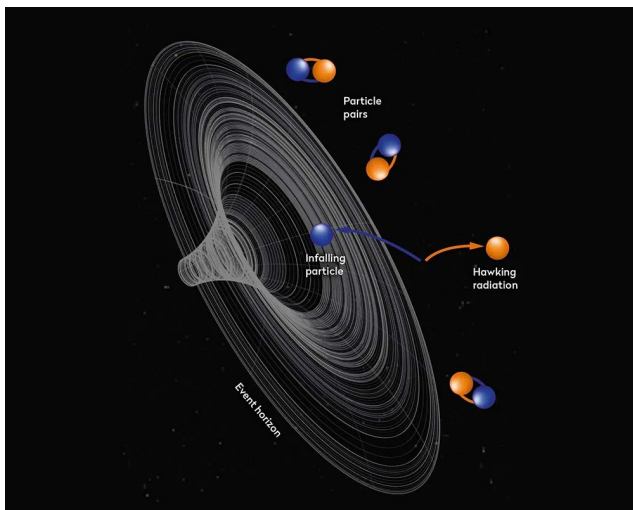
## HAWKING RADIATION

### Context

- **Hawking radiation** has never been directly observed, but a research group suggests that it may be observable by **existing telescopes**.

### About Hawking Radiation

- The theory proposed by **Stephen Hawking in 1974** describes a phenomenon where black holes emit radiation due to quantum effects near their event horizons.
- In the Universe, pairs of particles constantly appear and disappear. When this happens near a black hole's event horizon, one particle might get trapped inside while the other escapes.
- The particles that escape the **black hole's gravitational pull** are called Hawking radiation.



### Significance

- This phenomenon is important because it provides insights into the behavior of black holes and the nature of space-time. If Hawking radiation is confirmed, it would be a significant breakthrough in theoretical physics.

#### What is a Black Hole?

- A black hole is an extremely dense object whose gravity is so strong that nothing, not even light, can escape it.
- A black hole does not have a surface, like a planet or star. Instead, it is a region of space where **matter has collapsed in on itself**.
  - ◆ This catastrophic collapse results in a **huge amount of mass being concentrated in an incredibly small area**.

- **Formation:** A black hole is formed when a **really massive star runs out of fuel** to fuse, blows up, leaving its core to implode under its weight to form a black hole.
  - ◆ The centre of a black hole is a **gravitational singularity**, a point where the general theory of relativity breaks down, i.e. where its predictions don't apply.
  - ◆ A black hole's great gravitational pull emerges as if from the **singularity**.

Source: Physics

## HYDROXYUREA

### Context

- The Indian Council of Medical Research (ICMR) has invited Expressions of Interest (EoI) for the "joint development and commercialisation" of pediatric oral formulation of hydroxyurea to treat sickle cell disease in India.

### About

- **Hydroxyurea**, a myelosuppressive agent, is an effective drug for treating patients of sickle cell disease, and thalassemia.
- There is a need for pediatric formulation of HU (hydroxyurea), in view of the launch of the **National Mission to eliminate Sickle Cell Anaemia/SCD (by 2047)**.

### Sickle Cell disease

- Sickle cell disease is an **inherited blood disorder** that affects hemoglobin, the protein that carries oxygen through the body.
- The genetic error in sickle cell disease leads to red blood cells assuming a **crenate shape**.
  - ◆ Unlike the disc-shaped normal cells, the sickle-like cells **cannot move around easily** in the vessels, resulting in blocked blood flow.
- **India has the highest prevalence** of sickle cell disease in South Asia, and over **20 million** sickle cell affected individuals reside in the country.

Source: TH

## INDIA TO JOIN FIRST 'HIGH-ALTITUDE PLATFORM'

### Context

- India is on course to join a **very select club of countries that have their own long-flight, High-Altitude Platforms (HAP)**.



### What is HAP?

- HAP is an **unmanned aerial vehicle**. The HAP typically **operates at a height of 18-20 km above earth**, clearing all air traffic and weather, and is equipped to stay up there for longer periods than drones.
- The HAP that NAL is developing is being **designed to stay airborne for 90 days**.
- **Application: Surveillance, imaging the earth below, for both civilian and strategic purposes.**
- **Satellite vs HAPs:** A satellite can be packed with **far more capabilities** and can stay up there for years — so **HAPs won't replace satellites** but will complement them.
  - ♦ A satellite does not need to be powered for its orbital flight — it does this by gravity. But a **HAP needs some propulsion system**, with on-board energy generation capability.

### Significance

- HAPs are the most effective communication and Surveillance tools due to the **longest possible mission in the atmosphere** and the **highest available altitude** after the satellites.
- Beside being the **lower cost alternatives** to the last ones HAPs can offer several other important advantages, like **multiple use, possibility to maintain or upgrade the mission payload**.
- HAPs use similar to space vehicles approaches such as **solar energy use and state of the art technologies** and materials capable to withstand challenges of the near space.

Source: [BL](#)

## UN'S WSIS 2024 PRIZE 'CHAMPION' AWARD

### Context

- Recently, the Centre for Development of Telematics (C-DOT) won the **UN's WSIS 2024 'Champion' Award for Mobile-Enabled Disaster Resilience** through Cell Broadcast Emergency Alerting.

### Recognition and Impact

- The **World Summit on the Information Society (WSIS)+20 Forum 2024**, conducted by the **International Telecommunication Union (ITU)** in Geneva, Switzerland, and **co-organised with UNESCO, UNDP and UNCTAD**.
- It underscores C-DOT's commitment to leveraging technology for societal impact.

- **C-DOT** showcased cutting-edge telecom solutions, including an ITU-CAP-based early warning alert system and AI-powered fraud detection.

### Centre for Development of Telematics (C-DOT)

- It was established in 1984 as an **autonomous Telecom R&D centre** of the **Department of Telecommunication**.
- It is a registered society under the **Societies Registration Act, 1860**, and a registered '**public funded research institution**' with the Department of Scientific and Industrial Research (DSIR), Ministry of Science & Technology.

### Cell Broadcast Emergency Alerting Platform of C-DOT

- **Near Real-Time Alerts:** The platform delivers life-saving emergency information to mobile phones via cellular networks.
- **Geo-Targeted Multi-Hazard Alerts:** The system provides alerts based on location, ensuring timely responses during disasters.
- **Multi-Language Support:** Alerts are available in multiple languages.
- **Cost-Effective and Automated:** An indigenous solution that optimises disaster risk management.

### Alignment with Global Initiatives

- **Early Warnings for All (EW4All):** Contributing to global early warning efforts.
- **ITU's Common Alerting Protocol (CAP):** Standardising alert formats.
- **Sustainable Development Goals (SDGs):** Promoting disaster resilience.

Source: [PIB](#)

## MEXICO

### In News

- Mexico elects Claudia Sheinbaum as first-ever woman President

### About Mexico



- It is located in the southern part of North America.
- It borders the United States to the north, Guatemala and Belize to the southeast, the Pacific Ocean to the west, and the Gulf of Mexico and the Caribbean Sea to the east.
- Mexico shares its maritime borders with Cuba and Honduras.
- Mexico is located in one of the Earth's most dynamic tectonic areas.
  - ◆ It is a part of the circum-Pacific "Ring of Fire"—a region of active volcanism and frequent seismic activity.

**Source: AIR**

