

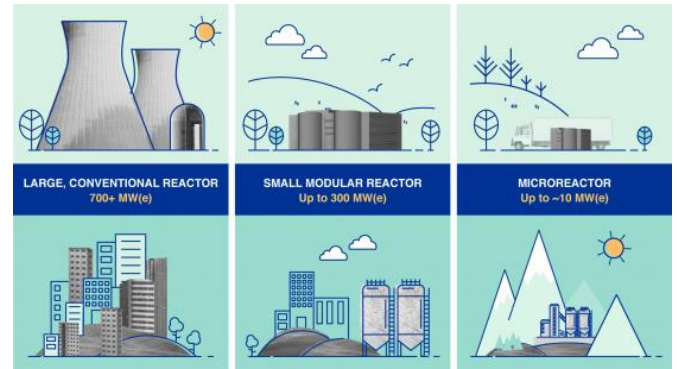
3 August, 2023

Small Modular Reactors (SMRs)

Context: The government is considering the possibility of partnering with other nations and pursuing domestic efforts to develop Small Modular Reactors (SMRs).

- Small Modular Reactors (SMRs) are innovative nuclear reactors with a per-unit power capacity of up to 300 MW(e), approximately one-third of the output of conventional nuclear reactors. These SMRs offer the following features for generating substantial amounts of eco-friendly electricity:

- **Small** - They are significantly smaller than traditional nuclear power reactors in terms of physical size.
- **Modular** - Components and systems can be prefabricated and transported as a single unit to the installation site.
- **Reactors** - They utilize nuclear fission to generate heat for energy production.



Advantages

- Small Modular Reactors (SMRs) have compact, modular designs for flexible placement.
- Prefabricated units reduce costs and installation time compared to custom designs.
- SMRs address energy access issues, suitable for remote or off-grid areas.
- Passive safety systems in SMRs minimize radiation risks during accidents.
- Extended refuelling cycles of up to 30 years in some SMRs offer efficiency gains.

Difference between Nuclear Fission and Fusion

Aspect	Nuclear Fission	Nuclear Fusion
Energy Source	Splitting of heavy atomic nuclei	Combining light atomic nuclei
Fuel	Uranium-235, Plutonium-239, etc.	Hydrogen isotopes (Deuterium, Tritium)
Byproducts	Radioactive waste, plutonium	Helium, minimal long-term waste
Reaction Control	Requires precise control and cooling	Challenging to achieve and sustain
Energy Release	High energy release per reaction	Extremely high energy release
Environmental Impact	Produces radioactive waste	Minimal greenhouse gases, low waste
Reaction Status	Commercially used in nuclear power	Experimental, not yet practical

Justice G. Rohini Commission

Context: The Rohini Commission's report, established to assess the sub-categorization of OBCs, has been presented to the President.

Need for the Commission

- OBCs receive 27% reservation in central government jobs and education.
- Central List of OBCs contains 2,600+ entries, but only a few affluent groups seem to benefit.
- Calls for "sub-categorization" within OBC quota for fair distribution of reservation benefits.
- A Parliamentary Committee noted OBC representation at 21.57% in central ministries (2016).
- Rohini Commission formed by the Government to address this issue.

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About the Commission

- Formed in 2017 under Article 340 of the Constitution.
- Headed by Justice G. Rohini, ex-Chief Justice of Delhi High Court.
- Aims to rectify uneven distribution of reservation benefits among OBC groups.
- Identifies OBC sub-categories, ensures equitable 27% quota distribution.
- Corrects errors, repetitions, and inconsistencies in the Central List of OBCs.
- After 13 extensions, report submitted to President, not yet public.
- **Challenges:** COVID-19 disruptions, missing population data for fair representation comparisons.

Other Commissions for Backward Classes

Commission	Year	Recommendations
Kaka Kalelkar Commission	1953	Classified backward classes into "Backward" and "More Backward," suggested 70% reservation for Backward and 30% for More Backward classes in education and employment.
Mandal Commission	1980	Recommended 27% reservation for OBCs in central government jobs and educational institutions based on social, economic, and educational backwardness.
Ranganath Misra Commission	2004	Proposed 15% reservation for religious and linguistic minorities, including OBCs, in central government jobs and higher educational institutions.
Sachar Committee	2006	Focused on socio-economic and educational backwardness of Muslims in India, suggested measures to address underrepresentation and disparities.

WorldCoin Project

Context: WorldCoin, the cryptocurrency venture led by OpenAI CEO Sam Altman, has attracted over 2 million registrations worldwide within a week of its official launch on July 24.

- **Aim of WorldCoin**
 - To establish a distinct, verified identity for every individual.
 - Create a digital network enabling people to claim a stake and participate in the digital economy.
- **Three Aspects of WorldCoin**
 - **World ID:** Provides a unique personal identity.
 - **Worldcoin Token (WLD):** An Ethereum blockchain-based token.
 - **World App:** Facilitates global payments, purchases, and transfers using digital assets and traditional currencies.
- **Working**
 - Volunteers called "Orb operators" use the "Orb" device to scan iris patterns for biometric data.
 - This data helps individuals acquire a World ID through the World app.
 - The app allows users to receive Worldcoin [WLD] at intervals or make transactions using their World ID.
 - Ensures "proof of personhood" to prevent multiple sign-ups for crypto.
 - Aims to create a vast identity and financial public network open to all, regardless of background.
- **Uses**
 - Biometric data distinguishes humans from AI systems and prevents ID duplication.
 - Functions as an ID for various applications like cryptocurrency wallets without revealing identity.
 - Higher sign-up rates observed in countries like France, Germany, Kenya, India, and the U.S.

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➤ Concerns

- WLD's price is susceptible to fluctuations.
- Higher risk of scams or hacking due to the nature of the system.

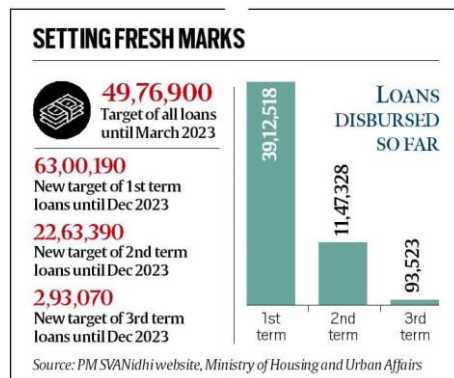
PM Street Vendor's AtmaNirbhar Nidhi (PM SVANidhi) Scheme

Context: The government aims to provide 6.3 million loans to street vendors by the end of the year.

- Unveiled on June 01, 2020, by the Ministry of Housing and Urban Affairs.
- Aims to aid street vendors in resuming livelihoods impacted by Covid-19 lockdown.
- Offers micro-credit facility with collateral-free loans up to Rs 10,000 at interest rates below 12% for one year.
- Originally scheduled until March 2022, the scheme's duration extended to December 2024.
- Focuses on expanding collateral-free affordable loans, encouraging digital transactions, and ensuring holistic socio-economic advancement for street vendors and their families.

Features and advantages

- Street vendors can access working capital loans up to Rs. 10,000, repayable over a one-year term through monthly instalments.
- Timely or early loan repayment entitles vendors to a 7% per annum interest subsidy, transferred quarterly via Direct Benefit Transfer to their bank accounts.
- No penalties are imposed for repaying the loan before the designated timeframe.
- The scheme encourages digital transactions by offering cash back incentives, with potential rewards of up to Rs. 100 per month.
- Successful repayment allows vendors the option to increase their credit limit.
- Implementation of the initiative is overseen by the Small Industries Development Bank of India (SIDBI).



WHO Report on Tobacco Control

Context: A World Health Organisation (WHO) report on tobacco control measures, released on Monday, specifically highlights Bengaluru.

- Bengaluru witnessed a 27% drop in public smoking due to enforcement, awareness, and 'No Smoking' signs.
- Globally, smoking prevalence reduced from 22.8% (2007) to 17% (2021), leading to 300 million fewer smokers.
- Over 15 years, MPOWER measures protected 71% of the population, up from 5% in 2008.
- The report emphasizes second-hand smoking, noting that around 40% of countries have achieved smoke-free indoor public spaces.
- The report warns that the tobacco industry's aggressive E-cigarette promotion targets young non-smokers as a "safer" alternative, undermining progress.

India-specific findings

- In India, the report highlights notable accomplishments in tobacco control among the top 10 countries.
- Health warning labels (85%) and tobacco dependence treatment have been effectively implemented.
- Cigarette packets feature a quit-line toll-free number, and e-cigarette sales are prohibited.
- Smoking is banned in healthcare facilities and educational institutions within the country.

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MPOWER

- **Monitor** tobacco use and prevention policies.
- **Protect** people from tobacco smoke.
- **Offer** assistance to quit tobacco.
- **Warn** about the dangers of tobacco.
- **Enforce** bans on tobacco advertising.
- **Raise** taxes on tobacco products.

Second-hand Smoking

- Second-hand smoke, also known as passive smoke, results from non-smokers inhaling fumes emitted by tobacco products.
- It's linked to direct smoking and has comparable negative health impacts.
- Terms include **side-stream smoke** and **environmental smoke**.

NEWS IN BETWEEN THE LINES

White Pumpkin in Manipur



In the wake of the ongoing ethnic violence in Manipur, the bodies of the deceased, including three women, have been preserved using an unconventional and traditional method involving white pumpkins.

Preservation Process: Deceased bodies are covered with white pumpkin slices, known for their high water content, creating a cool and moist environment.

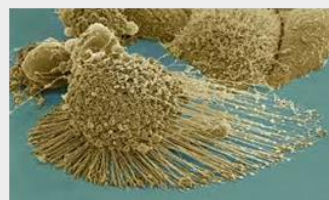
Ice Slabs for Enhancement: To further slow down decomposition, ice slabs are placed around and on top of the white pumpkin-covered body.

Extended Preservation: This method allows the body to remain preserved for an extended period, providing more time for funeral arrangements and religious rites.

Limited Facilities and Climate Considerations: The practice is prevalent in regions with limited cold-storage facilities or unfavorable climates that hasten decay.

Cultural Significance: Despite modern alternatives, white pumpkin preservation reflects the cultural heritage and local customs of Manipur.

HeLa Cells



What are HeLa Cells?

HeLa cells are a type of human cell line that was derived from the cervical tumor of Henrietta Lacks, an African-American woman, without her knowledge or consent in 1951.

Immortal Cell Line: HeLa cells can continuously grow and reproduce in lab cultures.

Scientific Impact: Instrumental in polio vaccine development, genetic mapping, and cancer research.

Global Use: Widely used in labs worldwide for medical and research purposes.

Ethics Concerns: Raises questions about using human tissues without proper consent.

Public Awareness: Gained attention through "The Immortal Life of Henrietta Lacks" book.

Legacy: Henrietta Lacks' contributions not recognized during her lifetime.

Intellectual Property: HeLa cell patents raised debates on bioethics and ownership.

Old Jellyfish Fossils



Fossils of 505-million-year-old jellyfish found in the Burgess Shale, Canadian Rockies.

Preservation: Remarkably preserved with tentacles, stomach contents, and gonads intact.

Species: Named "Burgessomedusa phasmiformis," belongs to medusozoans.

Significance: Strong evidence of Cambrian jellyfish, providing valuable insights into early life forms.

Cambrian Explosion: Burgess Shale showcases complex animals during Earth's Cambrian explosion.

Medusozoans: Gelatinous animals like jellyfish, thought to have originated 600 million years ago.

Debate: Scientists argue whether similar fossils from Utah and China represent comb jellies or jellyfish.

E-clearance Portal



The Health Ministry launched an e-clearance portal for quick and efficient transportation of transferring human remains across international borders.

Nodal Centre: Delhi airport is the central hub for all international airports in India, streamlining human remains transfer approvals.

48-Hours Approval: The e-clearance portal ensures quick 48-hour approval for human remains transportation, reducing delays.

Public and Family Benefit: The initiative aims to facilitate easy and efficient transportation for the public and bereaved families, simplifying the process.

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Vivad Se Vishwash



The Ministry of Finance's Department of Expenditure launched "Vivad se Vishwas 2" scheme to resolve contractual disputes with the government and government undertakings.

What is Vivad Se Vishwash?

"Vivad se Vishwas" is a tax dispute resolution scheme. It allows taxpayers to settle their pending direct tax disputes by paying the disputed tax amount without any penalty or interest.

Period Covered: Covers disputes up to 30 September 2022.

Guidelines Issued: Detailed guidelines issued on 29 May 2023 by the Department of Expenditure.

Submission Deadline: Claims can be submitted until 31 October 2023.

Applicability: Applies to domestic contractual disputes involving the Government of India or its organizations.

Implementation Platform: Government e-marketplace (GeM) has a dedicated web-page for seamless implementation.

Places in News

Sicily

Sicily (Capital: Palermo)

Political Boundaries:

Sicily is the largest island in the Mediterranean Sea, situated to the south of Italy.

Geographical Features:

Mount Etna: Europe's tallest active volcano, dominating the eastern part of the island.

Rivers: Several short rivers, including Simeto, Belice, and Salso.

Lakes: Few small lakes like Lake Pergusa and Lake Pozzillo scattered across the region.

Islands: Surrounded by smaller islands, such as Aeolian Islands (north) and Egadi Islands (west).

Caves and Gorges: Abundance of caves and gorges enhancing natural beauty and attracting adventurers.

Volcanic Landscapes: Various volcanic features, like lava fields and craters, due to Mount Etna and volcanic activity.



POINTS TO PONDER

- ❖ Which state has announced to establish a 'Mangrove Cell'? - West Bengal
- ❖ What are the base metals on which the LK-99 super conductor is based? - Lead and Copper
- ❖ What was set up under the Department of Atomic Energy in 1963 and later became ISRO in 1972? - Thumba Equatorial Rocket Launching Station (TERLS)
- ❖ What was the name of the rocket program by ISRO, with only one successful launch in 1994, designed to carry satellites up to 150 kg to low-earth orbit? - Augmented Satellite Launch Vehicle (ASLV)
- ❖ What sweet dessert, unique to the Thanjavur delta region, is prepared using moong dal, wheat flour, ghee, cardamom powder, cashews and sugar? - Thanjavur Thirattupal

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DELHI MUKHERJEE NAGAR: 9205274741, 42 | **LAXMI NAGAR :** 9205212500, 9205962002 | **RAJENDRA NAGAR:** 9205274743 | **UTTAR PRADESH PRAYAGRAJ:** 0532-2260189, 8853467068 | **LUCKNOW (ALIGANJ):** 0522-4025825, 9506256789 | **LUCKNOW (GOMTI NAGAR):** 7234000501, 7234000502 | **GREATER NOIDA:** 9205336037, 38 | **KANPUR:** 7887003962, 7897003962 | **GORAKHPUR :** 7080847474, 9161947474 | **ODISHA BHUBANESWAR:** 9818244644/7656949029



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