

DAILY CURRENT AFFAIRS (DCA)

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GENETIC HERITAGE OF THE NICOBARESE

Context

- A recent genetic study has revealed that the 25,000-strong **Nicobarese population** has significant ancestral connections with Austroasiatic populations of South and Southeast Asia.

Key Findings of the Study

- **Austroasiatic Connection:** The study revealed that the Nicobarese population shares genetic affinity with the '**Htin Mal**' population in mainland Southeast Asia, who speak an Austroasiatic language.
 - ♦ The Htin Mal community has remained **ethnically distinct** while exhibiting a pronounced genetic drift from the Nicobarese.
- **Timeframe of Migration:** Earlier theories placed the migration of the Nicobarese linguistic ancestors to the early **Holocene period** (about 11,700 years ago).
 - ♦ The new study dates the Nicobarese migration to approximately **4,500–5,000 years** ago.
- **Genetic Drift and Isolation:** The Nicobarese show distinct genetic signatures, which reflect long-term isolation on the islands.

Major Ethnic and Linguistic Groups in the World

- **Austroasiatic Group:** One of the oldest linguistic families in Asia, believed to have originated in southern China.
 - ♦ **Examples:** Khmer in Cambodia, Vietnamese in Vietnam, **Htin Mal** in Thailand and **Santhal, Ho, and Munda** tribes in eastern India.
- **Indo-European Group:** The largest linguistic family globally, originating from the Pontic-Caspian Steppe (Eurasia) about 6,000–8,000 years ago.
 - ♦ **Indo-Aryan:** Hindi, Bengali, and Punjabi speakers in South Asia.
 - ♦ **Iranian:** Persians in Iran and Pashtuns in Afghanistan.
 - ♦ **European:** English, German, Spanish, French and Dutch.
- **Sino-Tibetan Group:** The second-largest language family, originating in China around 5,000 years ago.
 - ♦ **Chinese:** Mandarin, Cantonese, and other dialects spoken across China.
 - ♦ **Tibeto-Burman:** Tibetan (Tibet), Burmese (Myanmar), and Naga tribes in Northeast India.

- **Niger-Congo Group:** The largest language family in Africa, covering a significant part of the continent.
 - ♦ **Bantu Subgroup:** Swahili, Zulu, and Xhosa speakers across Central, Eastern, and Southern Africa.
 - ♦ **Other Groups:** Yoruba and Igbo in Nigeria, Wolof in Senegal.
- **Dravidian Group:** An ancient linguistic family in the Indian subcontinent.
 - ♦ **Examples:** Tamil (Tamil Nadu, Sri Lanka), Telugu (Andhra Pradesh), Kannada (Karnataka), and Malayalam (Kerala).
- **Austronesian Group:** They are spread across Southeast Asia, Pacific Islands, and Madagascar.
 - ♦ **Malay-Polynesian:** Tagalog (Philippines), Malay (Malaysia), Javanese (Indonesia).
 - ♦ **Pacific:** Hawaiian, Maori (New Zealand), and Samoan (Samoa).
 - ♦ **Malagasy:** Madagascar (Indian Ocean).

Significance of the study

- The research provides new insights into the timeline of **Nicobarese population** settlement, revising previous assumptions.
- It also highlights the **interplay between migration, isolation, and cultural evolution** that has shaped the unique identity of the Nicobarese tribe in the Nicobar archipelago.

Nicobar Islands

- The Nicobar Islands, part of the **Andaman and Nicobar Islands Union Territory**, are situated in the **eastern Indian Ocean**, south of the **Andaman Islands**.
- The Nicobar archipelago comprises seven large islands and numerous smaller ones. These islands are categorized into **three major sub-groups**:
 - ♦ **Northern Group:** Includes **Car Nicobar**, the administrative capital of the Nicobar Islands.
 - ♦ **Central Group:** Consists of islands like Nancowry, Kamorta, Katchal, and Teressa.
 - ♦ **Southern Group:** Includes Great Nicobar, the largest and southernmost island of the Nicobar archipelago.

Source: TH

INDIA-BHUTAN DISCUSSED KEY AREAS OF COOPERATION

In News

- The recent visit of **King Jigme Khesar Namgyel Wangchuck of Bhutan** to India marked a significant step in reinforcing the **close bilateral ties between the two nations**.

Key Outcomes of the Visit

- Hydropower Collaboration:** Both sides emphasized the completion of the timely **Punatsangchhu Hydropower Project (Phase I & II)**.
 - Discussions were held on **new reservoir hydropower projects** showcasing the shared commitment to advancing energy cooperation.
- Gelephu Mindfulness City project:** India reiterated its support to transform **Gelephu** (a town in **southern Bhutan near the Indian border**) into a hub of sustainable development and urban planning.
 - Gelephu's strategic location near Assam** makes it a critical point for regional connectivity and trade.
- Cross-Border Connectivity:** Both sides discussed advancing connectivity initiatives, including:
 - Rail Projects:** Enhancing cross-border movement of goods and people.
 - Digital Networks:** Strengthening digital infrastructure for greater integration.
 - The inauguration of the **Integrated Check Post (ICP) at Darranga, Assam**, marks a significant advancement in enhancing connectivity.
- Private Sector Involvement:** Bhutan emphasized its partnership with Indian conglomerates, including the Adani Group.
 - Discussions were focused on renewable energy sources like solar, hydropower, and infrastructure projects in Gelephu.

Significance of Hydropower in India-Bhutan Relations

- Economic Impact on Bhutan:** Hydropower projects account for a major share of Bhutan's revenue through electricity exports to India.
- Mutual Benefits:** These projects not only enhance Bhutan's economy but also bolster India's energy security and renewable energy goals.
- Future Expansion:** Both nations committed to exploring new hydropower opportunities, ensuring the sustainability of this mutually beneficial partnership.

Challenges and Opportunities For India

- Challenges:**
 - Delays in Projects:** Prolonged delays in projects like Punatsangchhu-I remain a concern.
 - Geopolitical Pressure:** Increased Chinese investments in the region pose challenges to India's influence.
- Opportunities:**
 - Diversification:** Exploring non-traditional sectors like urban planning and digital infrastructure can broaden bilateral ties.
 - Private Sector Engagement:** Involvement of companies like the Adani Group can bring new investments and technologies to Bhutan while helping India counter the growing influence of external powers in the region.

India and Bhutan Relations

- Historical Context:** India and Bhutan share a unique and strong relationship, rooted in mutual trust and respect, **formalized by the 1949 Treaty of Friendship, revised in 2007** to reflect modern dynamics.
- Trade and Economy Ties:** Free Trade Regime facilitated by the India-Bhutan Trade Agreement (1972, revised in 2016).
 - In 2022-23, bilateral trade reached USD 1.6 billion, with India as Bhutan's top trade partner.
- Energy Cooperation:** Bhutan exports surplus electricity to India, generating revenue.
 - Key Projects:** Mangdechhu and Punatsangchhu-II (nearing completion).
- Defence and Security:** India supports Bhutan's territorial claims over the Doklam plateau.



- Recent Developments:** Bhutan became the second country to adopt the BHIM app, achieving full interoperability with India's RuPay digital payment system.

- ◆ Collaboration on the 'Digital Drukyl' initiative aims to transform Bhutan into a smart, connected, and inclusive society

Major Challenges

- **Project Delays:** Prolonged delays in hydropower projects like Punatsangchhu-I affect revenues.
- **Chinese Influence:** Growing Chinese engagement in Bhutan poses strategic concerns.
- **Economic Dependency:** Over-reliance on India limits economic diversification.
- **Environmental Impact:** Large projects raise ecological sustainability concerns between the nations.

Source: TH

DIGITAL PUBLIC INFRASTRUCTURE (DPI) FOR AGRICULTURE

Context

- Under the Digital Agriculture Mission, Gujarat became the first state in the country to generate "Farmer IDs" for 25 percent of the targeted number of farmers in the state.

Digital Agriculture Mission

- The Digital Agriculture Mission was approved with an outlay of **Rs. 2817 Crore**, including the central share of **Rs. 1940 Crore**.
- It is conceived as an umbrella scheme to support digital agriculture initiatives, such as creating **Digital Public Infrastructure**, implementing the **Digital General Crop Estimation Survey (DGCES)**, and taking up other IT initiatives by the Central Government, State Governments, and Academic and Research Institutions.

Digital Public Infrastructure (DPI) for Agriculture

- DPI for Agriculture aims to provide comprehensive and useful data on farmers consisting of **authenticated demographic details, land holdings and crops sown**.
 - ◆ It will include **cultivators & tenant farmers**, as per the policy of the State Government.
- It is a transformative approach to digital governance, underpinned by the following principles:
 - ◆ **Interoperability:** Seamless integration with central and state government platforms.
 - ◆ **Open Standards:** Ensuring widespread adoption and accessibility.

- ◆ **Scalability:** Designed to serve farmers across the country.
- ◆ **Robust Governance:** Data security and privacy frameworks ensure trust and transparency.

Three Pillars DPIs

- **Agristack:** The farmer's digital toolbox. It's a federated structure, collaboratively built by various agencies of both central and state governments. Agristack houses three foundational registries:
 - ◆ **Farmers' Registry:** A virtual farmer directory.
 - ◆ **Geo-referenced Village Maps:** For every village, with crop details overlaid.
 - ◆ **Crop Sown Registry:** A digital ledger of what's sprouting where.
- **Krishi Decision Support System:** It provides timely and reliable information to farmers, helping them make informed decisions.
 - ◆ It aims to create a comprehensive geospatial system to unify remote sensing-based information on crops, Soil, Weather, water resources, etc.
- **Soil Profile Mapping:** It maps soil properties, moisture levels, and nutrient content, empowering precision agriculture.

A Farmer ID (Kisan Pehchaan Patra)

- It is a **unique digital identity of farmers** based on Aadhaar, linked dynamically to the State's land records system.
- The Farmer ID gets **automatically updated with the changes in the land record details** of an individual farmer.
- The Farmer ID, is intended to provide the following farmer-centric benefits:
 - ◆ Simplified and seamless access to Government schemes,
 - ◆ Streamlined paperless and contactless crop loans and credit that can be processed within an hour,
 - ◆ Personalised agricultural extension services tailored to the farmer's needs.

Challenges

- **Digital Divide:** Farmers in remote areas face difficulties due to limited internet access and digital literacy.
- **Data Privacy:** Robust safeguards are needed to protect sensitive farmer data.
- **Inter-State Coordination:** Uniform implementation across states requires cooperation and resource-sharing mechanisms.

Way Ahead

- Strengthen **digital infrastructure** in rural areas.
- Launch capacity-building programs to improve **digital literacy** among farmers.
- Implement **strong governance frameworks** to ensure data security and privacy.

Concluding remarks

- The Digital Public Infrastructure for Agriculture aligns with India's vision of **Viksit Bharat@2047**, aiming to create a sustainable and inclusive agricultural ecosystem.
- By leveraging advanced technologies and farmer-centric approaches, DPI will enhance agricultural productivity, improve farmers' incomes, and ensure food security.

Source: PIB

INDIA'S 100-DAY TB ELIMINATION CAMPAIGN

Context

- In a decisive step towards eliminating TB in India, the Ministry of Health and Family Welfare, is all set to launch the **100 Day TB elimination campaign**.

About

- The initiative, set to be implemented in 33 States and Union Territories, has been designed to **enhance TB case detection, reduce diagnostic delays, and improve treatment outcomes**.
- India's goal is to **eliminate tuberculosis (TB) by 2025**, five years ahead of the **global target of 2030**.
- **Global TB Cases:** TB remains the leading infectious killer, surpassing COVID-19, with 8.2 million new cases in 2023.
- **India's TB Burden:** India, with the highest TB burden globally, recorded 2.8 million cases in 2023.
 - ♦ India alone accounted for **26% of global cases and 29% of global TB deaths** (315,000 deaths).
 - ♦ India is followed by Indonesia (10%), China (6.8%), the Philippines (6.8%), and Pakistan (6.3%).
- **Multidrug-Resistant TB:** India represents 27% of the world's multi-drug-resistant TB cases, underscoring the need for specialized treatment approaches.

What is Tuberculosis?

- Tuberculosis (TB) is an **infectious disease** that most often affects the lungs and is caused by the **bacteria Mycobacterium tuberculosis**.

- It spreads through the air when infected people **cough, sneeze or spit**.
- **Symptoms:** prolonged cough (sometimes with blood), chest pain, weakness, fatigue, weight loss, fever, night sweats.
 - ♦ While TB usually affects the lungs, it also affects the kidneys, brain, spine and skin.
- **Treatment:** It is **preventable and curable** with antibiotics.
 - ♦ **TB Vaccine: The Bacillus Calmette-Guérin (BCG) vaccine** remains the only licensed vaccine against TB; it provides moderate protection against severe forms of TB (TB meningitis) in infants and young children.

Challenges Faced by India in Eliminating TB

- **Drug-resistant TB cases:** India has a significant burden of drug-resistant TB, including multidrug-resistant TB (MDR-TB).
 - ♦ This type of TB is much harder to treat and requires more expensive, specialised drugs and a longer duration of treatment.
- **Diagnostics and Case Detection:** The accurate and timely diagnosis of TB remains a challenge.
 - ♦ Some areas lack access to modern diagnostic tools, leading to reliance on older methods with limitations.
- **Poor primary health-care and infrastructure:** In many parts of India, especially in rural and remote areas, there is limited access to healthcare facilities.
 - ♦ This can result in delayed diagnosis and treatment, allowing TB to spread within communities.
- **Stigma and Awareness:** Stigma associated with TB lead to delays in seeking healthcare, and lack of awareness about the disease may contribute to its persistence.
- **Private Sector Engagement:** A significant portion of healthcare services in India is provided by the private sector.
 - ♦ Coordinating efforts between the public and private sectors and ensuring standardized treatment protocols are crucial for effective TB control.
- **Treatment Adherence:** TB treatment requires a prolonged course of antibiotics, and ensuring patient adherence to the full course is challenging.
- **Vulnerable Populations:** Certain populations, such as migrant workers, urban slum dwellers, and those living in crowded conditions, are at higher risk of TB.

Steps Taken by Government of India to Eliminate TB

- **Revised National Tuberculosis Control Program (RNTCP):** The RNTCP, launched in 1997, was the flagship program to control TB in India.
 - ♦ The program has been continuously revised and strengthened over the years.
- **National Tuberculosis Elimination Program (NTEP):** The Government of India has developed a National Strategic Plan (2017-25) for Ending TB in the country by 2025.
- **Pradhan Mantri TB Mukh Bharat Abhiyan (PMTBMBA):** Launched in 2022 for community support to TB patients with the objective to provide people with TB with additional nutritional, diagnostic and vocational support.
- **Universal Drug Susceptibility Testing (DST):** The government has scaled up efforts to provide universal access to drug susceptibility testing, helping to identify drug-resistant strains of TB early and tailor treatment accordingly.
 - ♦ Earlier, the patients were started on first line treatment and were tested for drug resistance only if the therapy did not work.
- **Ni-kshay portal:** An online Ni-kshay portal has been set up to track the notified TB cases.
- **New Drugs:** Newer drugs such as Bedaquiline and Delamanid for the treatment of drug-resistant TB have been included in the government's basket of drugs provided free TB patients.
- **R&D for Treatment:** Researchers have been studying shorter three- and four-month courses of anti-tubercular drugs, instead of the existing six-month therapy.
- **Vaccine Development:** Trials are underway to test the effectiveness of a vaccine called Immuvac, which was initially developed to prevent leprosy, in preventing TB.
 - ♦ Researchers are also testing VPM1002, which is a recombinant form of the BCG vaccine modified to express the TB antigens better.

Suggestions

- Setting norms and standards on TB prevention and care and promoting and facilitating their implementation.
- Developing and promoting evidence-based policy options for TB prevention and care.
- Monitoring and reporting on the status of the TB epidemic and progress in financing and implementation of the response at global, regional and country levels.

Source: PIB

DOMESTIC MANUFACTURING IN PHARMACEUTICAL SECTOR

In News

- The Union government has approved a financial outlay of Rs 15,000 crore for the **Production Linked Incentive (PLI) scheme for Pharmaceuticals**, aimed at boosting domestic manufacturing.

India's Global Role in Pharmaceuticals

- **India is** known as the “**Pharmacy of the World**,” particularly for supplying vaccines, essential medicines, and medical supplies during the COVID-19 pandemic.
- The Pharma sector currently contributes to **around 1.72% of the country's GDP**.
- **Pharmaceutical Exports:** Increased by 8.36% from \$2.13 billion (July 2023) to \$2.31 billion (July 2024).
 - ♦ Exported pharmaceuticals worth \$27.85 billion in FY 2023-24, up from \$15.07 billion in FY 2013-14.
 - ♦ India **ranks 3rd globally in drug and pharmaceutical production by volume**, exporting to 200+ countries.
 - ♦ **Top Export Destinations:** USA, Belgium, South Africa, UK, and Brazil.
- **Growth Projections:** Expected to reach \$100 billion by 2025 with a growth rate of 10-12%.
- **India's Biotechnology Sector Growth** Increased 13-fold from \$10 billion in 2014 to over \$130 billion in 2024.
 - ♦ Future Projections: Expected to reach \$300 billion by 2030.
- Pharmaceutical Market Growth is driven by metropolitan cities, Tier I cities, and rural markets, each accounting for about 30% of market share.

Challenges

- **Quality Concerns:** Ensuring consistent quality standards is crucial, particularly for exports to regulated markets.
- **Price Regulation:** Government policies on drug pricing can impact profitability and investment in R&D.
- **Dependency on Imports:** Despite efforts to boost domestic production, India remains dependent on imports for certain APIs and intermediates.

Related Initiatives

- The **Production Linked Incentive (PLI) Schemes** in India focus on boosting domestic manufacturing in key sectors: **bulk drugs, pharmaceuticals, and medical devices**.

- PLI Scheme for Bulk Drugs : Financial Outlay:** Rs. 6,940 crores
 - Tenure:** FY 2022-2023 to FY 2028-29
 - Objective:** Promote manufacturing of critical Key Starting Materials (KSMs), Drug Intermediates (DIs), and Active Pharmaceutical Ingredients (APIs).
- PLI Scheme for Pharmaceuticals : Financial Outlay:** Rs. 15,000 crores
 - Tenure:** FY 2022-2023 to FY 2027-2028
 - Objective:** Incentivize manufacturing of high-value pharmaceutical products like patented drugs, biopharmaceuticals, complex generics, anti-cancer drugs, and orphan drugs.
- PLI Scheme for Medical Devices : Financial Outlay:** Rs. 3,420 crores
 - Tenure:** FY 2022-2023 to FY 2026-2027
 - Objective:** Support domestic production of high-value medical devices, such as MRI machines, CT scans, and linear accelerators, reducing dependence on imports.

For more information refer to India's Pharma Sector

Source :PIB

PM SURYA GHAR: MUFT BIJLI YOJANA

Context

- The **PM Surya Ghar: Muft Bijli Yojana** has a vision to supply solar power to one crore households by March 2027.

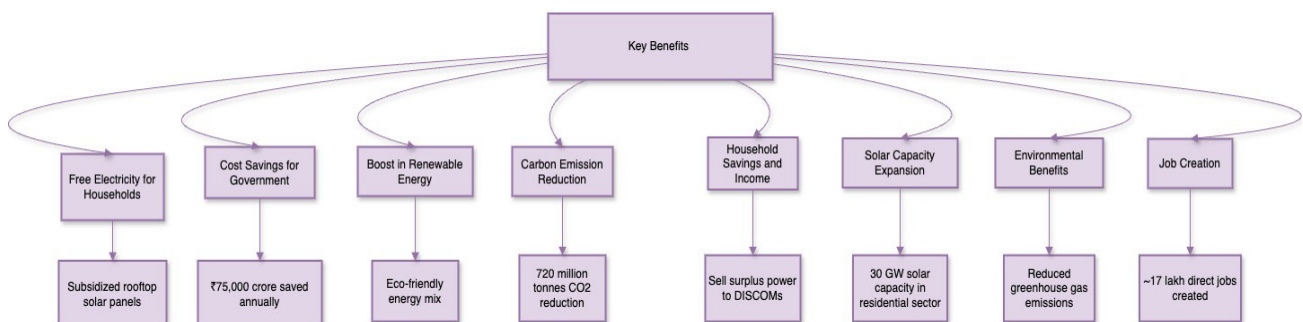
PM Surya Ghar: Muft Bijli Yojana

- It was launched in **2024** and aims to provide free electricity to households by facilitating the installation of rooftop solar panels.
- Installation Targets:**
 - By March 2025:** To exceed 10 lakh,
 - By October 2025:** Doubling reaching 40 lakh,
 - March 2027:** 1 crore households.
- The scheme offers a **subsidy of up to 40%** to households, making renewable energy more affordable and accessible.
- Model Solar Village:**
 - An allocation of 800 crore has been designated for this component, with 1 crore provided to each selected Model Solar Village.
 - To qualify as a candidate village, it must be a revenue village with a population of over 5,000 (or 2,000 in special category states).
 - This initiative aims to promote solar energy adoption and empower village communities to achieve energy self-reliance.

Conclusion and Way Forward

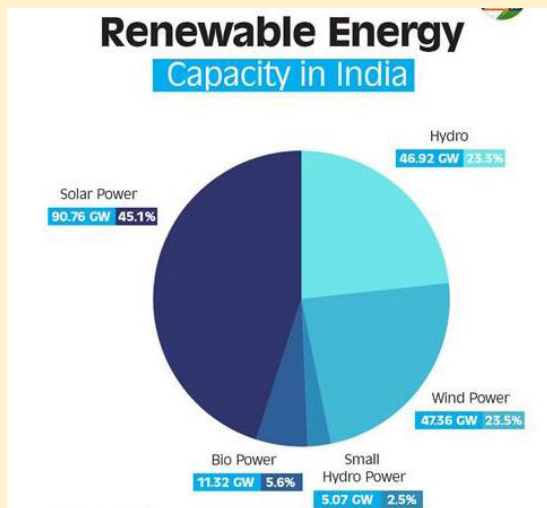
- India's **pharmaceutical** sector stands as a testament to the country's capabilities in innovation, manufacturing, and global healthcare leadership.
- With continued support from the government and investments in R&D, the sector is poised to achieve new heights, contributing significantly to both national and global health outcomes.

Average Monthly Electricity Consumption (units)	Suitable Rooftop Solar Plant Capacity	Subsidy Support
0-150	1-2 kW	₹ 30,000/- to ₹ 60,000/-
150-300	2-3 kW	₹ 60,000/- to ₹ 78,000/-
> 300	Above 3 kW	₹ 78,000/-



India's Renewable Energy Capacity

- India's total electricity generation capacity has reached **452.69 GW**.
- Having the **8,180 MW (megawatt) of nuclear capacity**, the **total non-fossil fuel-based power** now accounts for **almost half** of the country's installed electricity generation capacity.
- As of 2024, **renewable energy-based electricity generation capacity** stands at **201.45 GW**, accounting for **46.3 percent** of the country's total installed capacity.
 - ♦ **Solar power** contributes towards **90.76 GW**, **wind power** follows closely with 47.36 GW, **hydroelectric power** generating 46.92 GW and small hydro power adding 5.07 GW, and **biopower**, including biomass and biogas energy, adds another **11.32 GW**.



India's Targets

- India has a vision to achieve **Net Zero Emissions by 2070**, in addition to attaining the short-term targets which include:
 - ♦ Increasing renewables capacity to **500 GW by 2030**,
 - ♦ Meeting **50% of energy requirements** from renewables,
 - ♦ Reducing cumulative emissions by **one billion tonnes by 2030**, and
 - ♦ Reducing emissions intensity of India's gross domestic product (GDP) by **45% by 2030 from 2005 levels**.

Conclusion

- The PM Surya Ghar: Muft Bijli Yojana is set to significantly reshape India's energy landscape by empowering millions of households with solar power.

- The Model Solar Village initiative further supports rural areas in becoming energy self-reliant, underscoring the government's commitment to sustainable development.
- This ambitious programme sets India on a path toward a greener, more energy-efficient future, reinforcing its leadership in renewable energy.

Source: PIB

NEWS IN SHORT

SRI GURU TEG BAHADUR MARTYRDOM DAY

In News

- Prime Minister Narendra Modi has paid heartfelt tributes to Sri Guru Teg Bahadur Ji on his martyrdom day.

Guru Tegh Bahadur: The Ninth Sikh Guru

- **Early Life:**
 - ♦ **Born in 1621**, at Guru Ke Mahal (now a Gurudwara) in Amritsar.
 - ♦ **Learned classical music and military skills** such as horsemanship, swordsmanship, and archery.
 - ♦ Witnessed and participated in battles like Amritsar and Kartarpur, earning the **title "Teg Bahadur" for his valor**.
 - ♦ **Fifth and youngest son of Guru Hargobind Sahib**.
- **Role as the Ninth Sikh Guru:**
 - ♦ Became the ninth Sikh Guru after Guru Har Krishan in 1664.
 - ♦ Succeeded by Guru Gobind Singh, the tenth Guru.
- **Religious and Social Reform:**
 - ♦ Opposed forced religious conversions under Mughal Emperor Aurangzeb.
 - ♦ Preached Sikh teachings and set up community kitchens and wells for locals.
- **Literary Contributions:**
 - ♦ Added hymns to the Guru Granth Sahib, including Saloks (couplets).
 - ♦ Urban Development:
 - ♦ Founded Chak-Nanki, later part of Anandpur Sahib, a key Sikh holy city.
- **Martyrdom and Legacy:**
 - ♦ Executed in 1675 in Delhi for opposing Aurangzeb's religious persecution.

- **Sites of Martyrdom:**

- ♦ Gurudwara Sis Ganj Sahib: Execution site.
- ♦ Gurdwara Rakab Ganj Sahib: Cremation site.

- **Impact**

- Galvanized Sikh resistance, paving the way for the creation of the Khalsa.
- Highlighted tyranny, inspiring widespread opposition to Aurangzeb's regime.

- **Recognition and Honors**

- The All India Guru Tegh Bahadur Gold Cup hockey tournament is named in his honor.
- His legacy continues as a symbol of sacrifice, justice, and religious freedom.

Source: IE

NEW NAVODAYA VIDYALAYAS UNDER NAVODAYA VIDYALAYA SCHEME

- **In News**

- The **Cabinet Committee on Economic Affairs**, chaired by the Prime Minister, has approved the establishment of **28 new Navodaya Vidyalayas (NVs)** in uncovered districts across the country under the **Navodaya Vidyalaya Scheme (Central Sector Scheme)**.

- **Navodaya Vidyalayas Navodaya Vidyalaya Scheme**

- **Navodaya Vidyalayas** are residential, co-educational schools that provide quality education from Class VI to XII, primarily to talented rural children, regardless of their socio-economic background.
 - ♦ Admissions are based on a Selection Test, with around 49,640 students admitted annually to Class VI.
- **Present Status:** Currently, there are 661 sanctioned NVs, with 653 operational. As part of the National Education Policy 2020, many NVs have been designated as PM Shri schools, serving as models for other schools.
 - ♦ The scheme is increasingly popular, with rising enrollment of girls (42%) and students from SC (24%), ST (20%), and OBC (39%) backgrounds.
- **Relevance:** The establishment of these schools will also create 1,316 permanent jobs and generate employment for skilled and unskilled workers during construction. Local vendors and service providers will benefit from supplying food, consumables, furniture, and other essentials.

Source :IE

PM E-VIDYA CHANNEL 31

- **Context**

- Union Minister of Education launched **PM e-VIDYA Channel 31**, a DTH channel dedicated to **sign language**.

- **About**

- This initiative aligns with the **National Education Policy (NEP) 2020**, which calls for promoting and standardising Indian Sign Language (ISL) across India to create a more inclusive educational environment.
- **According to the Census 2011**, a total of 2.68 crore persons in India were reported as having disabilities out of which 19% have hearing disabilities.
- In 2023, WHO estimates that in India, approximately 63 million people suffer from significant auditory impairment.
- **PM e-Vidya** was launched as part of the Atmanirbhar Bharat Abhiyaan by the Ministry of Education in 2020.
 - ♦ The initiative aims to provide **multi-mode access to education** through digital, online, and on-air platforms to minimise learning losses, especially in the wake of the COVID-19 pandemic.

- **Indian Sign Language (ISL)**

- Indian Sign Language (ISL) is a well-structured language that serves as the primary means of communication for hearing-impaired individuals.
- In 2020, the Indian Sign Language Research and Training Centre (ISLRTC) signed an MoU with the National Council of Educational Research and Training (NCERT) to translate textbooks for classes I–XII into ISL.
- This process is expected to be completed by 2026.

Source: IE

POLAVARAM MULTIPURPOSE PROJECT

- **In News**

- The **Polavaram Multipurpose Project** has become a point of contention among states, particularly **Odisha, Chhattisgarh, and Telangana**.

- **About The Polavaram Irrigation Project**

- **Location:** Godavari River, Andhra Pradesh.
- **Objective:** Address irrigation, drinking water supply, hydroelectric power, and flood control.

- **Inception:** Conceived in 1980 following the recommendations of the **Godavari Water Disputes Tribunal (GWDT)**.
- **National Project Status:** Declared a national project under the **Andhra Pradesh Reorganization Act, 2014**, making the Union Government responsible for executing it and obtaining requisite clearances.

Major Concerns Raised By States

- **Odisha:** Potential submergence of 162 villages in Malkangiri district, affecting tribal populations.
 - ♦ Odisha alleges that the revised design warrants a fresh backwater study, which the Central Water Commission (CWC) has refused.
- **Chhattisgarh:** Raised concerns about submergence and environmental impact in downstream regions.
- **Telangana:** Questioned the project's feasibility and its effect on local ecology and water resources.

Source: IE

EUROPEAN SPACE AGENCY TO SUPPORT GAGANYAAN MISSION

In News

- Indian Space Research Organisation (ISRO) and European Space Agency (ESA) signed a **Technical Implementing Plan (TIP)** for ground tracking support for **India's Gaganyaan missions**.

About Technical Implementing Plan (TIP)

- The TIP enables ESA to provide ground station support, ensuring continuous data flow and communication with the Orbital Module for monitoring and orbital operations during the Gaganyaan missions.

Gaganyaan Mission Overview

- **Key Objectives:** Demonstrate human spaceflight capability to a 400 km orbit for a 3-day mission and safely return them to Earth.
 - ♦ Conduct scientific experiments in microgravity.
- **Timeline:**
 - ♦ Uncrewed Flights: 2024-2025.
 - ♦ Crewed Mission: Targeted for 2025.
- **Components:**
 - ♦ **GSLV Mk III (LVM3):** Modified as a Human-Rated Launch Vehicle.
 - ♦ **Crew Module (CM):** Houses astronauts with life-support systems.

- ♦ **Service Module (SM):** Provides propulsion and power.
- ♦ **Crew Escape System (CES):** Ensures astronaut safety during emergencies.
- **Technological Innovations:**
 - ♦ Life-support systems.
 - ♦ Radiation protection.
 - ♦ Parachute-assisted sea recovery.

Source: TH

GAIT ANALYSIS

Context

- Kolkata Police recently utilized gait analysis to apprehend a suspect in a heinous crime, identifying him through CCTV footage that revealed a distinct limp.

What is Gait Analysis?

- Gait analysis is the **study of human motion patterns**, particularly walking or running, to assess body movements, mechanics, and muscle activity.
- It involves **visual observation, sensors, and advanced technologies** like optical marker-based frameworks to evaluate gait abnormalities.

Applications of Gait Analysis

- **Clinical settings:** To diagnose and treat movement abnormalities in people with conditions like Parkinson's disease, cerebral palsy, or stroke.
- **Sports biomechanics:** To help athletes run more efficiently and identify movement problems.
- **Forensic science:** To compare a suspect's gait to evidence at a crime scene, such as footprints or CCTV footage.

Source: TOI

COCONUT PLANTATIONS

Context

- Coconut plantations have led to deforestation on over 80 per cent of Pacific atolls, such as Tokelau, the Solomon Islands, the Cook Islands, Tuvalu, and Fiji.

Key Requirements for Coconut Plantation

- **Location:** It thrives in a tropical climate, between 20°N and 20°S latitude.
- **Climate:** It requires **high humidity (above 60%)** and average annual temperatures of **27°C**.
- **Annual rainfall** should range between **1,500 to 2,500 mm**.
- **Soil:** Prefers **sandy loam or well-drained soils** with high organic matter.

- However it can **tolerate saline soils**, making it suitable for coastal areas and islands.
- **Water Requirements:** Although coconut palms are drought-resistant, they consume significant groundwater for optimal growth, which can lead to groundwater depletion in sensitive ecosystems.
- **Propagation:** Primarily propagated through seed nuts or saplings.

What is an Atoll?

- An atoll is a **ring-shaped coral reef** that surrounds a lagoon, often with small islands (islets) formed on the coral rim.
- Atolls are fragile ecosystems that provide habitat to diverse marine and terrestrial life.

Source: DTE

RANGEEN MACHHLI APP

Context

- ICAR-Central Institute of Freshwater Aquaculture (ICAR-CIFA), under Pradhan Mantri Matsya Sampada Yojana (PMMSY) has developed the “Rangeen Machhli” app.

About

- It aims to support hobbyists, farmers, and professionals in the ornamental fish industry by providing multilingual, reliable, and comprehensive information on ornamental fish care, breeding, and maintenance.
- The app caters to a broad audience by offering **content in eight Indian languages**.
- **The objectives of the Rangeen Machhli App are as below:**
 - ♦ To provide information on popular ornamental fish species and their care.
 - ♦ To promote local businesses through dynamic directories of aquarium shops.
 - ♦ To enhance knowledge of ornamental aquaculture techniques, thereby empowering fish farmers and shop owners.
 - ♦ To serve as an educational tool for newcomers and professionals in the ornamental fish industry.

Pradhan Mantri Matsya Sampada Yojana (PMMSY)

- It is the flagship scheme of the Department of Fisheries, Ministry of Fisheries, Animal Husbandry & Dairying, and **was launched in 2020**.
- **Aim:** To give momentum to the ‘sunrise’ fisheries sector through **consolidated efforts from various schemes and initiatives**.

- The PMMSY is an umbrella scheme with **two separate Components** namely **Central Sector Scheme (CS)** and **Centrally Sponsored Scheme (CSS)**.
- The Centrally Sponsored Scheme (CSS) Component is further segregated into **Non-beneficiary oriented and beneficiary orientated subcomponents/activities:**
 - ♦ Enhancement of Production and Productivity;
 - ♦ Infrastructure and Post-harvest Management;
 - ♦ Fisheries Management and Regulatory Framework.

Source: PIB

SILICOSIS

Context

- Mine workers exposed to silica dust for many years have a heightened risk of developing silicosis.

Silicosis

- **Silicosis is a lung disease** caused by inhaling fine silica dust, often found in industries such as mining, construction, and stone cutting.
- It leads to **inflammation and scarring of the lungs**, making it difficult to breathe.
- **Symptoms** can include coughing, shortness of breath, and chest pain, which may develop years after exposure.
 - ♦ **Chronic Silicosis:** Develops after long-term exposure to low levels of silica dust.
 - ♦ **Accelerated Silicosis:** Occurs with higher levels of exposure over a shorter period.
 - ♦ **Acute Silicosis:** Results from extremely high exposures over a brief period, leading to severe lung damage.
- **Silicosis isn’t contagious** as it is not caused by a virus or bacteria.
- There’s **no cure for silicosis** because the lung damage can’t be reversed.

Source: TH

RESEARCH AND TECHNOLOGY HUB IN DEFENCE SECTOR

In Context

- The Ministry of Defence has implemented various initiatives to position India as a global research and technology hub.

About Key programs

- **Technology Development Fund (TDF) Scheme:**
 - ♦ **Objective:** To encourage industries,

particularly MSMEs and startups, to design and manufacture defense technologies.

- ◆ **Scope:** Funded by the Ministry of Defence (MoD) and executed by DRDO under the Make in India and Aatmanirbhar Bharat initiatives.
- ◆ **Features:** Funding of up to 50 crore per project as Grant-in-Aid. Aimed at integrating new industries into defense R&D and production.
- **DRDO Industry Academia Centre of Excellence (DIA-CoE):**
 - ◆ **Objective:** To foster research collaboration between DRDO, academia, and industry for cutting-edge defense technologies.
 - ◆ **Structure:** Centers established at premier institutions like IISc Bangalore, IITs, and Central/State Universities. State-of-the-art infrastructure for research and innovation.
- **Innovations for Defence Excellence (iDEX):**
 - ◆ **Purpose:** To promote innovation and self-reliance in the Defense and Aerospace sectors by engaging MSMEs, startups, individual innovators, R&D institutions, and academia.
- **Dare to Dream Innovation Contest:**
 - ◆ **Launched:** Annually since 2019 by DRDO.
 - ◆ **Aim:** To bring together innovators, startups, and entrepreneurs to propose ideas for defense and aerospace advancements.
 - ◆ **Key Features:** Winners are awarded cash prizes (543 lakh distributed over four editions). Supported projects are developed into prototypes under the TDF scheme.
 - Dare to Dream 5.0 was launched in October 2024 by Raksha Mantri.

Impact

- Promotion of indigenous research and development, aligning with Aatmanirbhar Bharat.
- Increased collaboration between DRDO, industry, and academia, accelerating innovation in defense technologies.
- Encouragement for MSMEs and startups to contribute to the Defense and Aerospace sectors.

Source: PIB

INDIRA GANDHI PEACE PRIZE

Context

- Former President of Chile, **Veronica Michelle Bachelet Jeria** was awarded the Indira Gandhi Prize for Peace, Disarmament and Development 2024.
 - ◆ The prize honours her work to improve gender equality, human rights, democracy and development in difficult circumstances.

Indira Gandhi Peace Prize

- **Instituted in 1986**, the award is given annually by the Indira Gandhi Memorial Trust and consists of a monetary award of **Rs 25 lakh** along with a citation.
- The award is named after **Indira Gandhi**, the first and **only woman Prime Minister** of independent India.
- It aims to **honor women, men and institutions** that have done exemplary work in the service of humanity and the planet Earth.
- Recipients are chosen from a pool of national and international nominees.
 - ◆ **In 2023** it was presented to **Daniel Barenboim and Ali Abu Awwad**.

Source: TH

