



THE KNOWLEDGE AND LEARNING ENTERPRISE

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WELCOME TO THE WORLD OF

- Latest policies, programs, schemes of the government;
- Developments in the field of science;
- Topical analysis of constitutional issues;
- Interesting facts from the pages of history;
- Miscellany covering a host of general interest areas;
- And our quiz and inspiring quotes

"Real knowledge is to know the extent of one's ignorance." – Confucius

The Knowledge and Learning Enterprise

Pages & Perspectives

“To know, is to know that you know nothing. That is the meaning of true knowledge.” — Socrates

*At **The Knowledge and Learning Enterprise**, we are driven by a deep passion for continuous learning and personal growth. The K&L digest is curated to keep you informed and intellectually engaged, offering a quick and easy way to broaden your horizons. Whether you’re looking to enhance your professional expertise or gearing up for competitive exams, our digest provides a blend of essential facts, insightful content, and engaging trivia. Dive in and discover a treasure trove of knowledge, designed to empower and inspire you!*

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1

India's Updated National Biodiversity Strategy Unveiled at COP 16: A Roadmap to 2030 and Beyond

Union Minister of State for Environment, Forest and Climate Change released India's updated National Biodiversity Strategy and Action Plan (NBSAP) at the 16th meeting of the Conference of Parties (COP 16) to the Convention on Biological Diversity (CBD). The document was released during a special event called **'Roadmap for achieving the Kunming-Montreal Global Biodiversity Framework (KMGBF) targets and release of India's updated NBSAP'** on 30th October 2024, in Cali, Colombia.

It was stated that the updated NBSAP, aligned with the KMGBF, is a vital roadmap to address the strategies to halt and reverse biodiversity loss by 2030, with a longer-term vision of living in harmony with nature by 2050. He highlighted that India had adopted the 'Whole-of-Government' and 'Whole-of-Society' approach in updating its NBSAP. The Minister further highlighted that the updated NBSAP acknowledges environmental challenges and outlines strategies to address them through ecosystem restoration, species recovery programs, and community-driven conservation efforts focusing on the restoration of degraded ecosystems, the protection of wetlands, and the sustainable management of marine and coastal areas.

India's governance framework for biodiversity conservation was emphasized and exemplified by the Biological Diversity Act of 2002 and its amendments of 2023. This framework includes a three-tier institutional structure comprising the National Biodiversity Authority, State Biodiversity Boards, and local Biodiversity Management Committees, ensuring effective implementation at all levels.

The MoEFCC is the central agency responsible for coordinating biodiversity conservation efforts across India. The NBSAP update was driven by an extensive consultative process led by MoEFCC and involved 23 central ministries, multiple departments, state-level organizations, communities, and other stakeholders. The updated NBSAP aligns with the Kunming-Montreal Global Biodiversity Framework, setting 23 national biodiversity targets through an extensive consultative process involving diverse stakeholders.

The updated NBSAP emphasizes adopting a transformative approach and focuses on an ecosystem-based management approach, a bottom-up approach for implementation, mainstreaming biodiversity, sectoral integration, and inter-agency cooperation. It also provides insight into the current status of biodiversity across India and trends therein, existing policy and institutional framework, biodiversity expenditure, and potential biodiversity finance solutions.

“Inspiration is a guest that does not willingly visit the lazy”

Pyotr Ilyich Tchaikovsky

Empowering Rural India: The Digital India Common Service Center (DICSC) Project for Inclusive Growth

In a significant move to bridge the digital divide in rural India and ensure that digital services reach every citizen, the Ministry of Electronics and Information Technology (MeitY) is launching the **Digital India Common Service Center (DICSC)** project, starting with **Pilibhit** and **Gorakhpur**. This initiative will establish **one model DICSC center** in nearly all gram panchayats across ten districts, totaling **4,740 centers** nationwide.

DICSC across India

Specifically, Pilibhit will see the establishment of 720 DICSC centers, while Gorakhpur (Uttar Pradesh) will have 1,273 centers. Additional locations include Chhatrapati Sambhajnagar (old Aurangabad, Maharashtra) with 870 centers, Chamba (Himachal Pradesh) with 309, Khammam (Telangana) with 589, Gandhinagar (Gujarat) with 288, Mamit (Mizoram) with 100, Jodhpur (Rajasthan) with 415, Leh (Ladakh) with 95, and Puducherry state with 81 DICSC centers. CSC e-Governance Services India Limited will manage these centers' implementation and centralized technical monitoring.

The project is set to run initially for six months, with a budget of **₹ thirty-one crore, sixty lakh eighty-eight thousand (31.6088 crore)**, possibly extending to nine months. The primary goal is to create an integrated platform that provides essential e-governance and financial as well as commercial services to rural citizens. The CSC centers in Pilibhit will offer various services, including Aadhaar registration, banking, financial planning, tele-law, telemedicine, education, and e-commerce support.

High-speed internet to drive growth

Each CSC will have high-speed broadband connectivity and modern infrastructure to function as a multi-functional service center. This project aims to empower village-level entrepreneurs (VLEs), fostering local economic growth and creating job opportunities. The initiative will also ensure transparent and sustainable service delivery through centralized technical monitoring.

GPS-enabled mobile vans will also be deployed to promote government schemes and deliver essential services directly to remote areas. This comprehensive approach is expected to significantly enhance digital literacy and improve access to services in both Pilibhit and Gorakhpur.

The DICSC project will transform these regions by providing critical digital services that empower local entrepreneurs and promote inclusive growth. By addressing the digital divide and enhancing access to essential services, this initiative aims to uplift the economic conditions of Pilibhit and Gorakhpur, integrating them into the broader digital economy.

“Luck is what happens when preparation meets opportunity”

Seneca (4 BC- 65 AD)

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India's Positive Experience in Poverty Eradication, Employment and Social Protection



The 352nd Governing Body meeting of the International Labour Organisation (ILO) was held in Geneva (Switzerland) from 28 October to 7 November 2024. The national efforts to create decent work opportunities for all segments of society, particularly women and youth, which align closely with the ILO's call for a renewed social contract, were reiterated.

India's positive experience in this regard was highlighted in the following:

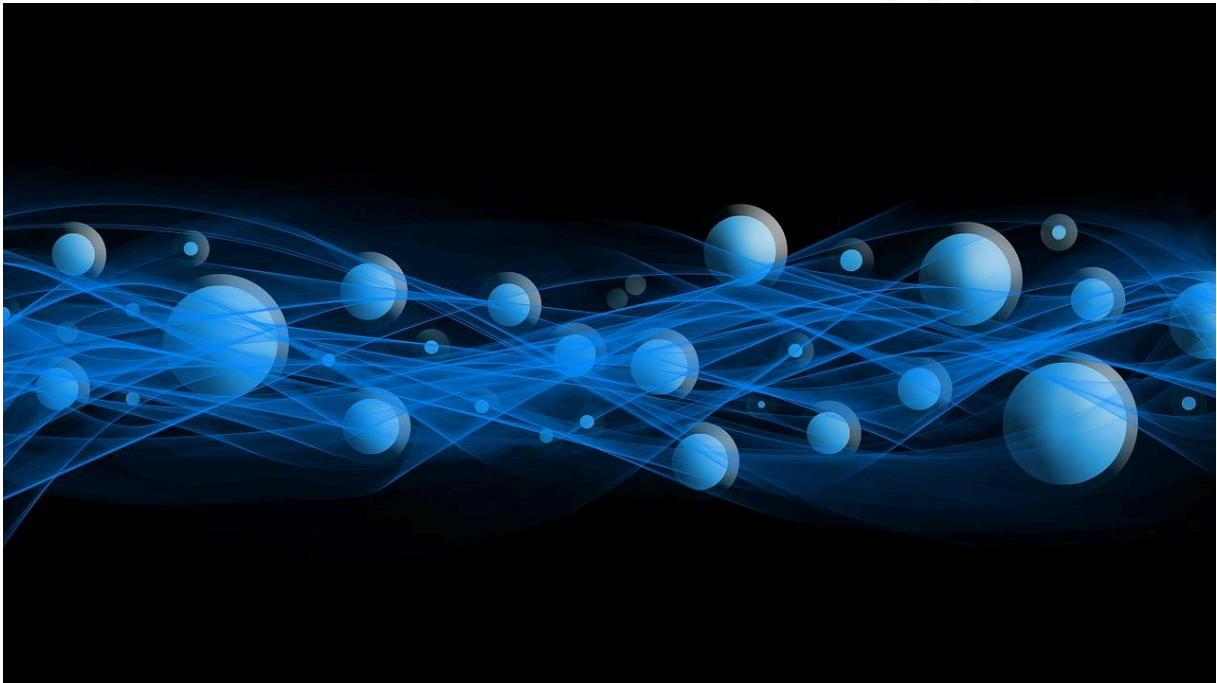
- India's commitment to improving living standards is reflected in significant initiatives covering all dimensions of poverty, which have led to 248 million individuals escaping multidimensional poverty in the last nine years, as measured by the multidimensional poverty index.

- Significant employment growth over recent years was showcased, with government policies, skilling programs, and economic growth adding around 170 million persons in economic activity during 2016-17 and 2022-23, as per provisional estimates. India's economic trajectory demonstrates sustained job creation across key sectors, it was underlined.
- Besides, India has significantly expanded its social protection coverage. This is recognized by the recent ILO's flagship World Social Protection Report 2024–26, which shows the doubling of social protection coverage in India. Besides, our largest in-kind Social Protection scheme, the Targeted Public Distribution System, is well captured as a part of special coverage in the report, as one of the world's largest legally binding social assistance schemes providing in-kind food security to about 800 million people.
- Further, India's remarkable transformation over the past decade was highlighted in terms of financial inclusion and prioritizing access to financial services for vulnerable populations. The Government has empowered millions of individuals and families, fostering a more inclusive and secure society.
- The Governing Body was informed that government initiatives like PM Jan Dhan Yojana bridge the financial gap for the unbanked, while PM Jeevan Jyoti Yojana and PM Suraksha Bima Yojana offer affordable life and accident insurance.

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Exploring Quantum Limits: Novel Experiment to Test Quantum Theory on Massive Objects



Scientists have devised an experiment to test the validity of quantum theory for objects much more massive than the usual microphysical objects (atoms, molecules, etc.), beyond which the classical theory has to be used. This study can also help develop high-precision quantum sensors, which are important tools in cutting-edge quantum technologies.

Quantum Mechanics' principles replacing Newtonian classical mechanics were developed nearly 100 years ago. Yet, several quantum foundational issues still need to be solved. For example, the boundary between the quantum mechanical microworld and the large-scale macroscopic classical world of everyday objects

obeying Newtonian Laws remains unspecified. The question—up to what level the quantum mechanical principles are valid for macroscopic objects—continues to be one of the most fundamental open questions in contemporary physics.

This question is also intimately related to another hotly pursued fundamental issue—testing whether gravity is quantum mechanical.

All the proposed laboratory-based schemes seeking to demonstrate the quantum mechanical nature of gravity crucially rest on assuming the applicability of fundamental quantum principles for sufficiently massive objects.

However, the state-of-the-art demonstrations of quantum features have so far reached only up to macromolecules of masses ten thousand times the hydrogen atom. Hence, breakthrough ideas that are feasible to be implemented experimentally shortly are the need of the hour to scale up the tests of macroscopic quantum-ness to ever more massive objects.

Bose Institute, Kolkata, an autonomous institute of the Department of Science and Technology (DST), has addressed this challenge by formulating a novel procedure for demonstrating an observable signature of quantum behavior for an oscillating object like a pendulum with any large mass. In collaboration with D. Das, S. Bose (University College London), and H. Ulbricht (University of Southampton, UK), the institute has developed a method for demonstrating an observable signature of quantum behavior for an oscillating object like a pendulum.

These scientists have found a novel way to detect measurement-induced disturbance for an arbitrarily massive quantum mechanical pendulum. They have formulated an implementable scheme based on using lasers to suspend a single nanocrystal of silica (a microscopic glass bead) as it oscillates around the focal point of a small parabolic mirror carved out of a block of aluminum housed in a vacuum chamber.

In a typical classical pendulum, the bead would move regularly from point A to point B and back again, unaffected by any observation. However, a quantum pendulum should behave very differently. Its position will change depending on whether or not someone is watching.

If we were to detect at any instant where the pendulum bob was, there would be an immediate change in its future behavior. Such a disturbance is an unavoidable consequence of any quantum mechanical system measurement process. The scheme proposed by these scientists would enable the detection of such measurement-induced quantum disturbance for objects much more massive than usual microphysical objects.

Given the present state-of-the-art technology, this envisaged experiment could be realizable in the coming years for systems ranging from oscillating nano-objects (like that of a grain of dust, about trillion times heavier than hydrogen atom) to oscillating mirrors having an effective mass of about 10 kg used for gravitational wave detection.

Thus, this work would pave the way for experiments providing the most emphatic demonstration of large-scale quantum-ness and would open up the possibility of leveraging such macroscopic quantum-ness for practical applications, such as by developing high-precision quantum sensors, which are key ingredients in emerging quantum technologies.

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The Antarctic Treaty: Safeguarding a Continent for Peaceful and Scientific Exploration



The Antarctic Treaty was signed in Washington on 1 December 1959 by the twelve countries whose scientists had been active in and around Antarctica during the International Geophysical Year (IGY) of 1957-58. It entered into force in 1961 and has since been acceded to by many other nations. The total number of Parties to the Treaty is now 57.

Some important provisions of the Treaty:

- Antarctica shall be used for peaceful purposes only. Art. I

- Freedom of scientific investigation in Antarctica and cooperation toward that end... shall continue Art. II
- Scientific observations and results from Antarctica shall be exchanged and made freely available. Art. III

Among the signatories of the Treaty were seven countries - **Argentina, Australia, Chile, France, New Zealand, Norway, and the United Kingdom** - with territorial claims, sometimes overlapping. Other countries do not recognize any claims. The US and Russia maintain a "basis of claim." All positions are explicitly protected in Article IV, which preserves the status quo:

- No acts or activities taking place while the present Treaty is in force shall constitute a basis for asserting, supporting, or denying a claim to territorial sovereignty in Antarctica or creating any rights of sovereignty in Antarctica. No new claim or enlargement of an existing claim to territorial sovereignty in Antarctica shall be asserted while the present Treaty is in force.

To promote the objectives and ensure the observance of the provisions of the Treaty, "All areas of Antarctica, including all stations, installations, and equipment within those areas ... shall be open at all times to inspection" (Art. VII).

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The Artemis Accords: Building a Global Framework for Peaceful and Sustainable Space Exploration

The Artemis Accords are a set of non-binding principles that guide international cooperation on space exploration and use.



- **Purpose:** The Accords establish a framework for peaceful, transparent, and sustainable space exploration. They also aim to preserve cultural heritage in space, such as spacecraft and landing sites.
- **Background:** The Accords were launched in 2020 by the United States, along with seven other countries. They are based on the Outer Space Treaty of 1967 and other relevant UN conventions.

- **Signatories:** As of October 2024, 47 countries have signed the Accords, including the U.S., the U.K., Japan, Italy, Canada, and Brazil. India recently announced its decision to join the Accords.
- **Commitments:** Signatories commit to registering space objects, and to cooperating with non-parties to determine how to register their objects. They also commit to preserving cultural heritage in space, such as spacecraft and landing sites.
- **Collaboration:** The Accords facilitate collaboration between nations and private companies. For example, NASA and ISRO are collaborating to send Indian astronauts to the International Space Station in 2024.

“The meaning of life is to find your gift the purpose of life is to give it away”

Pablo Picasso

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India's Bold Energy Transition: How Cutting Fossil Fuel Subsidies Fuels a Cleaner Future

ADB Highlights an 85% Cut in Fossil Fuel Subsidies in Latest Report

India has embarked on a different path in a world bound to the grip of fossil fuels. With a bold net-zero target set for 2070, the nation is reimagining its approach to energy. As noted by the Asian Development Bank in its recent Asia-Pacific Climate Report, India is shifting its focus from an unsustainable dependence on fossil fuel subsidies to fostering clean energy. Guided by a 'remove, target, and shift' strategy, India has steadily reduced its fossil fuel support, opening doors to new investments in solar power, electric vehicles, and a more robust energy grid. However, the most transformative aspect of India's energy transition has been its resolve to reform fuel subsidies, slashing them by a striking margin between 2014 and 2018.

This transition was no small achievement. It was a carefully orchestrated process, including the gradual phasing out of petrol and diesel subsidies from 2010 to 2014, followed by measured tax increases on these fuels up to 2017. These bold moves were made to create fiscal space for renewable projects, enabling the government to funnel funds into clean energy initiatives on an unprecedented scale.

With subsidies for solar parks, distributed energy solutions, and state-owned enterprises steadily increasing, India's path forward reflects its determination and dedication to clean power, setting a formidable example for others aiming for a more sustainable energy future.

Asia-Pacific Climate Report

The Asia-Pacific Climate Report is a new knowledge initiative from the Asian Development Bank (ADB). It aims to assist the Asia and Pacific regions combat climate change through targeted policy reforms. The inaugural issue offers a

comprehensive overview of the region's evolving climate landscape, addressing critical dimensions of the climate crisis, including the increasing frequency and severity of heat waves and the rising economic and social costs. The report highlights the urgent need for adaptation measures. It emphasizes the importance of mobilizing resources to support the region's most vulnerable populations, ensuring that they are better prepared to face the challenges climate change brings. This report serves as a vital resource for understanding the pressing issues and guiding effective climate action in the region.

Key Findings of the Report

The report underscores the effectiveness of India's "remove, target, and shift" approach in reducing fiscal subsidies in the oil and gas sector by 85%. The findings also reveal how strategic tax measures, including the cess on coal production, have funded renewable energy projects and infrastructure improvements. Overall, these insights illustrate India's commitment to transitioning toward a more sustainable energy future while addressing the challenges of climate change.

India's Fossil Fuel Subsidy Reform

Since 2010, India has been steadily reforming its fossil fuel subsidies, adopting a 'remove, target, and shift' approach. This structured approach involved carefully adjusting retail prices, tax rates, and subsidies on select petroleum products, resulting in a remarkable 85% reduction in fiscal subsidies in the oil and gas sector, from a peak of \$25 billion in 2013 to \$3.5 billion by 2023.

This decisive shift marks a significant milestone, channeling resources towards sustainable energy and laying the foundation for cleaner energy alternatives, instilling optimism about India's energy future.

A significant step in this journey was gradually phasing out petrol and diesel subsidies and incremental tax hikes. These reforms created fiscal space for more

outstanding government support in renewable energy initiatives, electric vehicles, and critical electricity infrastructure. From 2014 to 2017, tax revenues were further boosted by rising excise duties on petrol and diesel, implemented strategically during low global oil prices. The additional revenues were then redirected toward targeted subsidies that expanded access to liquefied petroleum gas (LPG) for rural communities, addressing both environmental goals and social welfare.

India's fossil fuel subsidy reforms mark a decisive shift, channeling resources toward sustainable energy and laying the foundation for cleaner energy alternatives.

Role of Taxation in Supporting Clean Energy

From 2010 to 2017, the Government of India implemented a cess on coal production and imports, which was crucial in financing clean energy initiatives. Approximately 30% of the collections from this cess were allocated to a national clean energy and environment fund, supporting various clean energy projects and research. This tax significantly bolstered the budget of the Ministry of New and Renewable Energy, providing essential funding for initiatives such as the Green Energy Corridor scheme and the National Solar Mission. These programs were instrumental in reducing the cost of utility-scale solar energy and funding numerous off-grid renewable energy solutions.

However, the landscape changed after 2017, when the Goods and Services Tax (GST) was introduced in India. The cess on coal production and imports was subsumed into the GST compensation cess, redirecting the flows of these funds to compensate states for revenue losses associated with the new tax regime. This shift highlights the ongoing challenges and adjustments in India's taxation framework as it strives to support clean energy goals while navigating the complexities of its fiscal landscape.

Major Government Schemes and Programmes

India is advancing toward a sustainable energy future with initiatives like the National Green Hydrogen Mission, PM-KUSUM scheme, and PM Surya Ghar: Muft

Bijli Yojana. These programs aim to boost renewable energy production, enhance energy access, and empower farmers while reducing dependency on fossil fuels. Together, they signify India's commitment to a cleaner energy landscape.

Conclusion

In conclusion, India's commitment to transitioning toward a sustainable energy future is reinforced by the insights presented in the Asia–Pacific Climate Report by the Asian Development Bank. The report highlights the effectiveness of India's "remove, target, and shift" approach in reducing fossil fuel dependence and facilitating clean energy investments. Through critical initiatives such as the National Green Hydrogen Mission, PM-KUSUM, and various production-linked incentive schemes, India is not only striving to meet its ambitious net-zero target by 2070 but also fostering a resilient and inclusive energy landscape. Significant reductions in fossil fuel subsidies and innovative taxation measures supporting clean energy projects exemplify the nation's proactive strategy. These sustained efforts in promoting renewable energy are crucial in addressing climate change challenges, stimulating economic growth, and creating job opportunities.

As India advances on this transformative journey, it sets a powerful example for other nations, demonstrating that a robust commitment to sustainability can drive environmental and economic progress, as the Asia–Pacific Climate Report underscores.

References: Press Information Bureau Releases.

International Solar Alliance's 7th Assembly: Advancing Global Solar Solutions

The International Solar Alliance (ISA) is hosting its seventh Assembly session here in the Indian capital with ministers from 29 countries.

As a coalition of 120 Member and Signatory countries, ISA has been at the forefront of mobilizing resources and facilitating the deployment of solar projects worldwide, particularly in Least Developed Countries (LDCs) and Small Island Developing States (SIDS). ISA's completion of 21 out of 27 demonstration projects is a testament to our collective ability to make significant strides in solar energy deployment and support sustainable development across the globe, a feat that we can all take pride in.

Highlights of the critical interventions of ISA, which are globally pushing the solar agenda:

The Solar Data Portal, a platform that delivers real-time data on solar resources, project performance, and investment opportunities across countries, transforms how governments, investors, and developers engage with solar projects by providing transparent and actionable insights.

The **Global Solar Facility** aims to unlock commercial capital for solar projects in underserved regions, especially Africa. A pilot project is underway in the Democratic Republic of Congo, and commitments of USD 39 million from India, ISA, Bloomberg, and the Children's Investment Fund Foundation are on track to be operationalized by COP29.

In addition, the **SolarX Startup Challenge** has successfully identified and supported innovative, scalable solutions for the solar sector. The 2024 edition announced 30 winners from the Asia and Pacific region, including India, a testament to the promising future of solar innovation. Preparations are underway to host the Third Edition of the challenge for the Latin America and Caribbean region, further fueling our optimism for the sector's growth.

The monthly **ISA Knowledge Series** and the **Green Hydrogen Innovation Centre**, launched at the G20 Ministerial, are advancing solar energy research and development. These initiatives are expanding knowledge-sharing and advocacy, paving the way for a brighter and more sustainable future in the solar energy sector.

Global events like the **International Solar Festival**, **CEO Caucus**, and the ISA pavilion '**Solar Hub**' at the Conference of Parties since COP27 have encouraged global participation and advocacy for solar as a preferred energy source. These events have been instrumental in raising awareness about the benefits of solar energy, fostering collaboration among stakeholders, and promoting the adoption of solar technologies worldwide.

The Assembly will also consider the budgets and work plans for the coming year and include updates on ISA's priority areas of work, programs, and projects. An important topic of discussion will be the guidelines for the **Viability Gap Funding (VGF) Scheme**, which provides for 10% to 35 % of the total solar project cost to be given as a grant for developing solar projects in LDCs and SIDS identified by the countries themselves, provided 90% of the project cost is locked in. Proposals from countries will be considered on a first-come, first-served basis until the annual budget provisions of ISA USD 1.5 million per year are available. The VGF can be availed for solar projects set up by government/government institutions or independent developers/beneficiaries selected through a process per the respective country policies.

The Assembly will be followed by a day-long **High-Level Technology Conference on Clean Technologies**, which will witness the launch of the **third edition of ISA's flagship report series on technology, investment, and market—the World Solar Reports**. The Assembly proceedings will culminate on 6 November 2024 with delegates marking a visit to a farm site in NCT of Delhi to witness first-hand the practical implementation of the agrivoltaic system, which entails using the same land for solar energy production and agriculture.

About the ISA Assembly:

The Assembly is ISA's yearly apex decision-making body, representing each Member Country. This body makes decisions concerning the implementation of the ISA's Framework Agreement and coordinated actions to be taken to achieve its objective. The Assembly meets annually at the ministerial level at the ISA's seat. It assesses the aggregate effect of the programs and other activities in terms of deployment of solar energy, performance, reliability, cost, and scale of finance. The Sixth Assembly of the ISA is deliberating on the key initiatives of ISA on three critical issues: energy access, energy security, and energy transition.

About the Demonstration Projects:

In May 2020, ISA initiated **Demonstration Projects** to meet the needs of Least Developed Countries (LDCs) and Small Island Development States (SIDS). The aim was to exhibit solar technology applications that can be scaled up and build the capacity of Member Countries to replicate these solar-powered solutions.

1. **Bhutan:** Solar cold storage at the National Post Harvest Centre in Paro
2. **Burkina Faso:** Solarisation of two primary healthcare centers in the rural communes of Louda and Korsimoro in the north center region
3. **Cambodia:** Solarisation of primary and secondary schools in Koh Rong city
4. **Cuba:** Solar water pumping system at the Hatuey Indian Experimental Station (EEIH) in Perico, Matanzas

5. **Djibouti:** Installation of two off-grid solar-powered cold storage units in Omar Jaga'a in the Arta region and Dougoum village in the Tadjourah region
6. **Ethiopia:** Solar-powered water pumps in Gedeo Zone, Irgachefe Woreda community
7. **Mauritius:** Solarisation of the Jawaharlal Nehru Hospital in Rose Belle
8. **Samoa:** Solar street lights implemented across 46 locations
9. **Senegal:** Solar cold storage in the Borough of Ndande, within the Municipality of Theippe in the Kebemer Department
10. **The Gambia:** Solar water pumping systems in Wassadou and Julangel
11. **Tonga:** Solar water pumping project in four villages on Tongatapu

About the STAR-Centre Initiative:

Solar Technology Application Resource-Centre (STAR-C) has specialized training facilities, tools, and structured learning modules to cultivate a highly skilled solar workforce. To date, ISA has successfully established and operationalized STAR Centers in seven countries: **Ethiopia, Somalia, Cuba, Côte d'Ivoire, Kiribati, Ghana, and Bangladesh.** Since their launch, these centers have trained professionals in various aspects of solar energy, preparing them to contribute effectively to the sector's rapid expansion.

About the International Solar Alliance:

The International Solar Alliance is an international organization with 120 Member and Signatory countries. It works with governments to improve energy access and security worldwide and promote solar power as a sustainable transition to a carbon-neutral future. ISA's mission is to unlock US\$1 trillion of investments in solar by 2030 while reducing the cost of the technology and its financing. It promotes the use of solar energy in the agriculture, health, transport, and power generation sectors.

ISA Member Countries are driving change by enacting policies and regulations, sharing best practices, agreeing on common standards, and mobilizing investments. Through this work, ISA has identified, designed, and tested new business models for solar projects; supported governments to make their energy legislation and policies solar-friendly through Ease of Doing Solar analytics and advisory; pooled demand for solar technology from different countries; and drove down costs; improved access to finance by reducing the risks and making the sector more attractive to private investment; increased access to solar training, data and insights for solar engineers and energy policymakers. With advocacy for solar-powered solutions, ISA aims to transform lives, bring clean, reliable, and affordable energy to communities worldwide, fuel sustainable growth, and improve quality of life.

With the signing and ratification of the ISA Framework Agreement by 15 countries on 6 December 2017, ISA became the first international intergovernmental organization to be headquartered in India. ISA is partnering with multilateral development banks (MDBs), development financial institutions (DFIs), private and public sector organizations, civil society, and other international institutions to deploy cost-effective and transformational solutions through solar energy, especially in the least Developed Countries (LDCs) and the Small Island Developing States (SIDS).

Reference: Press Information Bureau

Be honest when in trouble and simple when in wealth be polite when in authority and be silent when in anger

This is called "The Life Management"

Key Treaties Governing the Arctic: A Guide to Agreements Shaping the Future of the Polar Region

There is no single Arctic treaty, but there are several international agreements and treaties that govern the Arctic region:

- **The High Seas Treaty:** This treaty will help Arctic states address the challenges of increased fishing, shipping, and industrial development in the Arctic Ocean.
- **The Svalbard Treaty:** This 1920 treaty established Norway's sovereignty over Svalbard.
- **The Arctic Cooperation Agreement:** This 1988 agreement between the United States and Canada regulates cooperation on the Northwest Passage.
- **The Arctic Search and Rescue Agreement:** This 2011 agreement coordinates search and rescue in the Arctic.
- **The Agreement on the Conservation of Polar Bears:** This 1973 agreement protects polar bears.
- **The ILO C169 Indigenous and Tribal Peoples Convention:** This 1989 agreement protects indigenous and tribal peoples.
- **The (UN) Convention on Biological Diversity:** This 1992 agreement protects biological diversity.
- **The Arctic Council:** This high-level forum promotes cooperation among Arctic states. It has negotiated three legally binding agreements.

10

Role of Climate in Shaping Indian History

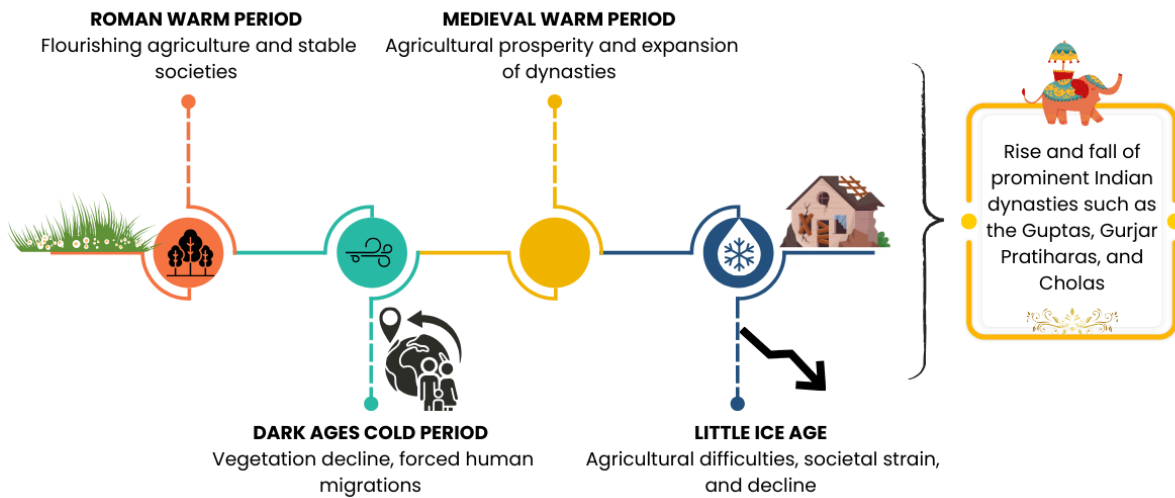
A new study claims climate-driven vegetation changes played a crucial role in shaping human history in the Indian subcontinent over the last 2000 years. The study traced vegetation patterns in the Ganga plain from palaeoclimate records using pollen and multiproxy studies. The research underscores the importance of understanding historical climate patterns to predict future impacts better.

There is a notable scarcity of paleoclimate records for the late Holocene (approximately 2,500 years) in the Central Ganga Plain (CGP), highlighting a significant research gap in understanding past climate patterns in this region.

Scientists from *BSIP*, an autonomous institute of DST, explored paleoclimatic clues to better understand historical climate dynamics, particularly about the Indian Summer Monsoon (ISM).

Using pollen (a microfossil that survives in soil and sediments) from sediment core extracted from Sarsapukhra Lake in Varanasi district, Uttar Pradesh, and other multiproxy analysis, complemented by the Earth System Paleoclimate Simulation (ESPS) model, the researchers reconstructed the historical Indian Summer Monsoon (ISM) patterns for the past 2000 years, correlating climate changes with significant events in Indian history.

They found that alternating warm and cold episodes (Roman Warm Period, Dark Ages Cold Period, Medieval Warm Period, and Little Ice Age) significantly impacted vegetation patterns, forcing human migrations and potentially contributing to the rise and fall of prominent Indian dynasties such as the Guptas, Gurjar Pratiharas, and Cholas. The study was published in the journal *Catena*.



CLIMATE EPISODES AND THEIR IMPACT ON INDIAN DYNASTIES

Study published in *Catena*

By identifying crops more suited to the changing climate, agricultural practices can be adapted to maintain productivity and ensure the stability of the GDP. This proactive approach could mitigate the adverse effects of climate change on agriculture, ensuring future food security and economic resilience.

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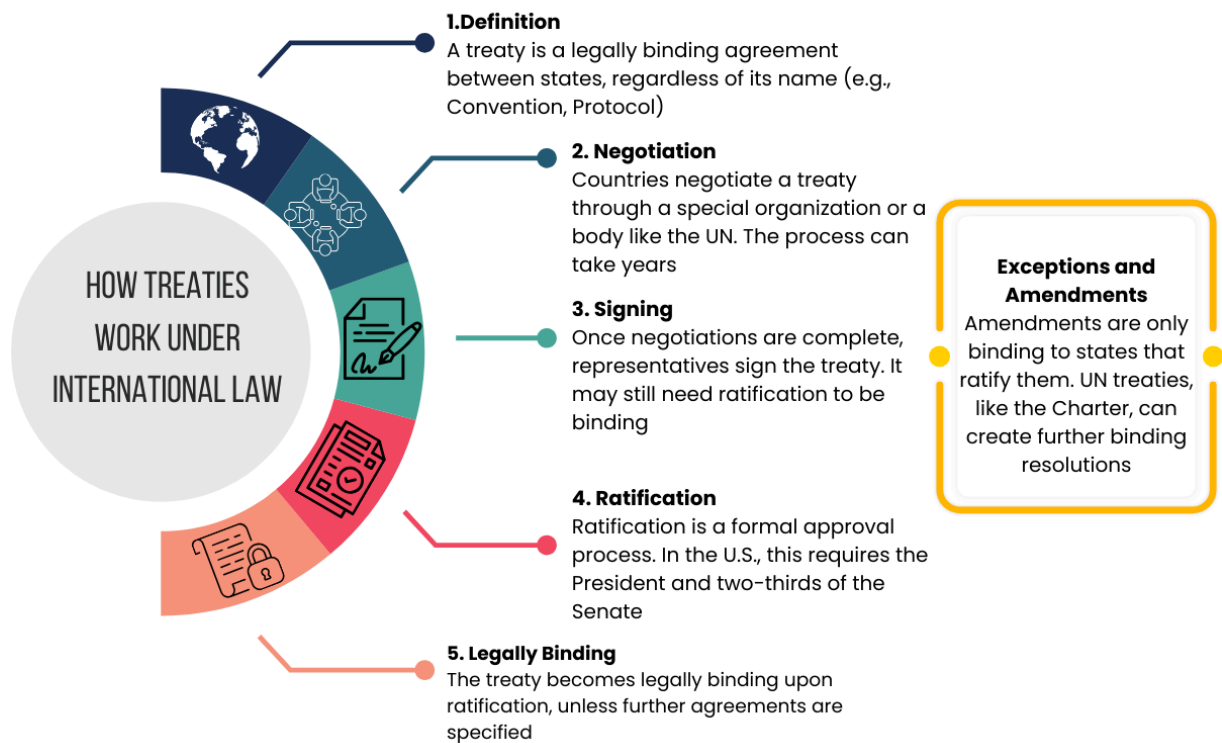
Understanding International Agreements: A Guide to Global Commitments and Their Impact

International agreements are formal understandings or commitments between two or more countries. An agreement between two countries is called "bilateral," while an agreement between several countries is "multilateral." The countries bound by an international agreement are called "States Parties."

Under international law, a treaty is any legally binding agreement between states (countries). A treaty can be called a Convention, a Protocol, a Pact, an Accord, etc.; the content of the agreement, not its name, makes it a treaty. Thus, the Geneva Protocol and the Biological Weapons Convention are both treaties, even though neither has the word "treaty" in its name.

A group of countries negotiates a treaty through an organization set up for that specific purpose or an existing body such as the United Nations (UN) Council for Disarmament. The negotiation process may take several years, depending on the topic of the treaty and the number of countries participating. After negotiations are finished, the treaty is signed by government representatives. The terms may require the treaty to be ratified and signed before it becomes legally binding. A government ratifies a treaty by depositing an instrument of ratification at a location specified in the treaty; the instrument of ratification is a document containing a formal confirmation that the government consents to the treaty's terms. The ratification process varies according to the laws and Constitutions of each country. In the U.S., the President can ratify a treaty only after getting the "advice and consent" of two-thirds of the Senate.

Unless a treaty contains provisions for further agreements or actions, only the treaty text is legally binding. Generally, an amendment to a treaty is only binding to the states that have ratified the amendment, and agreements reached at review conferences, summits, or meetings of the states' parties are politically but not legally binding. The UN Charter is an example of a treaty with provisions for further binding agreements. By signing and ratifying the Charter, countries agreed to be legally bound by resolutions passed by UN bodies such as the General Assembly and the Security Council. Thus, UN resolutions are legally binding on UN Member States; no signature or ratification is necessary.



In addition to treaties, there are other less formal international agreements. These include efforts like the [Proliferation Security Initiative](#) (PSI) and the [G7 Global Partnership Against the Spread of Weapons of Mass Destruction](#). Although the PSI has a "Statement of Interdiction Principles" and the G7 Global Partnership has several

statements by G7 leaders, neither has a legally binding document that lays out specific obligations and is signed or ratified by member countries.

[Geneva Protocol](#)

The Geneva Protocol bans the use of biological weapons and toxic gasses in war and formed the basis for both the Biological and Chemical Weapons Conventions.

[Biological and Toxin Weapons Convention \(BWC\)](#)

The BWC prohibits the development, stockpiling, acquisition, retention, and production of biological agents and toxins "of types and in quantities that have no justification for prophylactic, protective or other peaceful purposes," and weapons, equipment, and delivery vehicles "designed to use such agents or toxins for hostile purposes or in armed conflict."

[United Nations Security Council Resolution 1540 \(UNSCR 1540\)](#)

UNSCR 1540 outlines obligations on all United Nations Member States to enforce effective measures against or acquisition of chemical, nuclear, or biological weapons, their means of delivery, or related materials by non-state actors. It also includes measures intended to prevent the proliferation of chemical, nuclear, or biological weapons.

[Chemical Weapons Convention \(CWC\)](#)

The Chemical Weapons Convention prohibits the development, production, acquisition, stockpiling, and transfer of chemical weapons, including some biological toxins.

[International Health Regulations \(2005\) \(IHR \(2005\)\)](#)

The IHR (2005) is an international agreement between 194 States Parties and the World Health Organization to monitor, report on, and respond to any events that could threaten global public health. The IHR (2005) aims to prevent, protect against,

control, and provide a public health response to the international spread of disease in ways that are appropriate for and restricted to public health risks and which avoid unnecessary interference with international traffic and trade. (International Health Regulations, Article 2). For more information, see the [IHR Fact Sheets](#).

[International Plant Protection Convention \(IPPC\)](#)

The IPPC is a treaty concerned with preventing the introduction and spread of pests to plants and plant products and currently has 177 government consignees. The IPPC has developed phytosanitary guidelines and serves as a reporting center as well as an information source. Seven regional phytosanitary organizations have been established under the umbrella of IPPC. For example, the North American Plant Protection Organization (NAPPO) consists of the US, Canada, and Mexico, participating through APHIS, the Canadian Food Inspection Agency (CFIA), and the Plant Health Directorate. The European and Mediterranean Plant Protection Organization (EPPO) is an intergovernmental organization under the IPPC, which is responsible for cooperation in plant protection among 50 countries in the European and Mediterranean region.

[Proliferation Security Initiative \(PSI\)](#)

The PSI is a global effort that aims to stop the trafficking of weapons of mass destruction, their delivery systems, and related materials to and from States and non-state actors of proliferation concern. Launched on May 31, 2003, U.S. involvement in the PSI stems from the U.S. National Strategy to Combat Weapons of Mass Destruction issued in December 2002. (DOS website)

[Global Partnership Against the Spread of Weapons and Materials of Mass Destruction \(GP\)](#)

Since its launch by G-8 Leaders at the June 2002 Kananaskis G-8 Summit, the Global Partnership has worked to address nonproliferation, disarmament, counterterrorism, and nuclear safety issues through cooperative projects in such areas as the

destruction of chemical weapons; the dismantlement of decommissioned nuclear submarines; the security and disposition of fissile materials; and rechanneling employment of former weapons scientists to peaceful civilian endeavors.

Australia Group (AG)

The Australia Group (AG) is an informal forum of countries that, through the harmonization of export controls, aims to ensure that exports do not contribute to the development of chemical or biological weapons. Through their coordination on export controls, Australia Group participants assist the countries to fulfill their obligations under the Chemical Weapons Convention and the Biological and Toxin Weapons Convention to the fullest extent possible.

All of the participants in the Australia Group are States Parties to the Biological and Toxin Weapons Convention (BWC). The AG controls biological agents, plant and animal pathogens, dual-use biological and chemical equipment, related technology and software, and chemical precursors. The Commerce Control List (CCL) mirrors the AG Control List.

“To create one’s own world takes courage”

Georgia O’Keeffe

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ISA Releases World Solar Report series

The 3rd edition of the World Solar Report series was released at the 7th Assembly of the International Solar Alliance, focusing on global solar growth, investment trends, technological advancements, and Africa's green hydrogen potential. The newly launched four reports, namely **World Solar Market Report**, **World Investment Report**, **World Technology Report**, and **Green Hydrogen Readiness Assessment for African Countries**, highlight a crucial area in the global shift towards sustainable energy.

The **World Solar Market Report** reveals exceptional solar growth, with global capacity soaring from 1.22 GW in 2000 to 1,418.97 GW in 2023. Manufacturing is set to exceed demand, making solar more affordable. Solar jobs have surged to 7.1 million, and global capacity may reach 7,203 GW by 2030.

The latest **World Investment Report** highlights a global shift toward sustainable energy, with energy investments rising from \$2.4 trillion in 2018 to \$3.1 trillion by 2024. Solar leads renewable energy investments, accounting for 59% of the total, driven by lower costs, with APAC emerging as the top investing region.

The **World Technology Report** showcases advancements in solar technology, emphasizing efficiency, sustainability, and affordability breakthroughs. Highlights include record-setting 24.9% efficiency in solar PV modules, an 88% reduction in silicon usage since 2004, and a 90% drop in utility-scale solar PV costs, fostering resilient, cost-effective energy solutions.

Readiness Assessment of Green Hydrogen African Countries highlights green hydrogen's potential to decarbonize industries heavily reliant on fossil fuels, such as

steel and fertilizer production. Produced via renewable-powered electrolysis, green hydrogen offers a viable alternative to coal, oil, and gas, supporting Africa's transition to cleaner energy.

Here are more details of each report:

The World Solar Market Report highlights a remarkable growth trajectory in the solar power sector.

- **Rise in Solar Capacity:** In just two decades, global solar capacity has exploded from 1.22 GW in 2000 to an astounding 1,418.97 GW in 2023—a staggering 40% annual growth rate. In 2023 alone, 345.83 GW of solar power was added, accounting for three-quarters of all new renewable capacity worldwide. Solar generation has surged similarly, rocketing from 1.03 TWh in 2000 to 1,628.27 TWh in 2023.
- **Solar Manufacturing to Exceed Demand with Over 1,100 GW by 2024:** By the close of 2024, the capacity for global solar manufacturing is projected to exceed 1,100 GW, which is more than twice the anticipated demand for PV panels. Solar cell prices have reached \$0.037/watt, while advanced mono TOPCon and mono PERC module prices have fallen below \$0.10/watt, indicating a trend towards greater affordability in solar technology.
- **Solar Industry Employment Boom:** The clean energy industry now fuels 16.2 million jobs, with solar leading the charge at 7.1 million—up 44% from 2022's 4.9 million. And 86% of these jobs are concentrated in just ten countries.
- **Future Forecasts:** Driven by Paris Agreement commitments, global solar capacity is set to skyrocket to between 5457 and 7203 GW by 2030. This surge underscores the massive infrastructure push needed to meet climate goals.

World Investment Report Unveils a Dynamic Shift in Global Energy Investments

The latest World Investment Report has significantly transformed global energy investments, highlighting a steadfast march towards sustainable energy solutions. Here are the key findings:

- **Exponential Growth in Energy Investments:** Global energy investments are set to soar from \$2.4 trillion in 2018 to a projected \$3.1 trillion in 2024—a steady climb at nearly 5% annually. Global clean energy investment now nearly doubles that of fossil fuels, set to leap from \$1.2 trillion in 2018 to \$2 trillion by 2024—marking a bold pivot toward renewables.
- **The Solar Investment Surge:** Investments in solar represented ~ 59% (USD 393 billion) of all RE investments (USD 673 billion), mainly driven by a drop in solar panel costs
- **APAC leads global solar investments:** Region-wise, APAC is at the forefront of solar investments, pouring USD 223 billion into solar in 2023. EMEA has experienced modest solar investment growth, with USD 91 billion in 2023, followed by AMER region with solar investments of USD 78 billion

World Technology Report Highlights Breakthroughs in Solar PV Efficiency and Material Innovation

The World Technology Report highlights the rapid progress being made in the field of solar technology. These innovations are not only enhancing the efficiency and accessibility of solar power but are also paving the way for a more resilient and cost-effective power infrastructure. Key highlights from the report include:

- **Record-Breaking Solar PV Panel Efficiency:** Solar PV monocrystalline modules have hit a new high with record-breaking 24.9% efficiency—a significant leap in maximizing solar energy potential. Multijunction perovskite cells are set to disrupt the solar panel industry, promising higher efficiency, lower production costs, and seamless integration with diverse surfaces—leaving traditional silicon panels in the dust.
- **Solar Manufacturing Now Uses 88% Less Silicon per Watt Peak than in 2004**—The manufacturing process has undergone significant improvements, resulting in a drastic reduction in silicon usage—from 16 gm/Wp in 2004 to 2 gm/Wp in 2023. This 88% decrease in silicon consumption reflects the strides

made in optimizing material efficiency and underscores the potential for further cost reductions and environmental benefits.

- **Utility-Scale PV Costs Hitting New Low**—The global weighted average LCOE for utility-scale Solar PV dropped by 90%, falling from USD 0.460/kWh in 2010 to USD 0.044/kWh in 2023. At the country level, the drop ranges from 76% to 93% over the same period.

Readiness Assessment of Green Hydrogen in African Countries' Report by ISA and Denmark

Direct electrification cannot solve the decarbonization requirements of industries that still rely on fossil fuels like coal, oil, or natural gas as feedstocks to produce commodities like steel, fertilizers, refined gasoline, and diesel fuel. Hence, green hydrogen, produced through the electrolysis of water powered by renewable electricity sources like wind, solar, and geothermal, emerges as a suitable replacement for fossil fuel-based energy sources.

High-level Conference on New Technologies for Clean Energy Transition

The International Solar Alliance, in global collaboration with the Ministry of New & Renewable Energy, the Government of India, the Asian Development Bank, and the International Solar Energy Society, also organized the third edition of the High-level Conference on New Technologies for Clean Energy Transition. This event, which united stakeholders worldwide, took place on the sidelines of the Seventh Session of the ISA Assembly in New Delhi today.

The conference's overarching goal is to translate dialogue into action. Deep-dive sessions focusing on new-age solar technologies, emerging storage technologies, and unleashing solar's role in accelerating equitable economic, social, and environmental development formed the crux of the discussions.

About the International Solar Alliance. The International Solar Alliance is an international organization with 120 Member and Signatory countries. It works with

governments to improve energy access and security worldwide and promote solar power as a sustainable transition to a carbon-neutral future. ISA's mission is to unlock US\$1 trillion of investments in solar by 2030 while reducing the cost of the technology and its financing. It promotes the use of solar energy in the agriculture, health, transport, and power generation sectors.

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‘Kaveri Meets Ganga’ - A Vibrant Celebration of Indian Cultural Heritage

The Kaveri Meets Ganga festival, a hallmark of cultural celebration under the Ministry of Culture’s Amrit Parampara series, concluded its final day with a vibrant array of performances at Kartavya Path and CCRT Dwarka. This enchanting festival, held from 2nd to 5th November 2024, was a vibrant showcase of India’s traditional and folk arts, embodying the spirit of Ek Bharat Shreshtha Bharat and promoting these art forms to a wider audience.

The Kaveri Meets Ganga festival series, a unique collaboration between the Ministry of Culture’s autonomous institutions—Sangeet Natak Akademi, Kalakshetra, and CCRT—brought an extraordinary blend of South Indian music and dance to North India, while also celebrating northern artistic traditions. This program, inspired by Chennai’s celebrated Margazhi Festival, showcased India’s diverse cultural heritage through a tribute to its traditional and folk arts, creating a cultural bridge between the North and the South.

The Kaveri Meets Ganga festival, a testament to the richness of India’s cultural landscape, was a platform for audiences to witness some of the finest performances from across the country. The Ministry of Culture, through initiatives like Amrit Parampara, plays a pivotal role in upholding and celebrating India’s cultural diversity. By ensuring that traditional and folk arts thrive, the Ministry is fostering the spirit of Ek Bharat Shreshtha Bharat.

Boosting India's Fisheries: New Tuna Cluster Development in Andaman & Nicobar Islands Under PMMSY

The Department of Fisheries, under the Ministry of Fisheries, Animal Husbandry and Dairying, has notified the **Development of Tuna Clusters in the Andaman and Nicobar Islands** under the Pradhan Mantri Matsya Sampada Yojana (PMMSY).

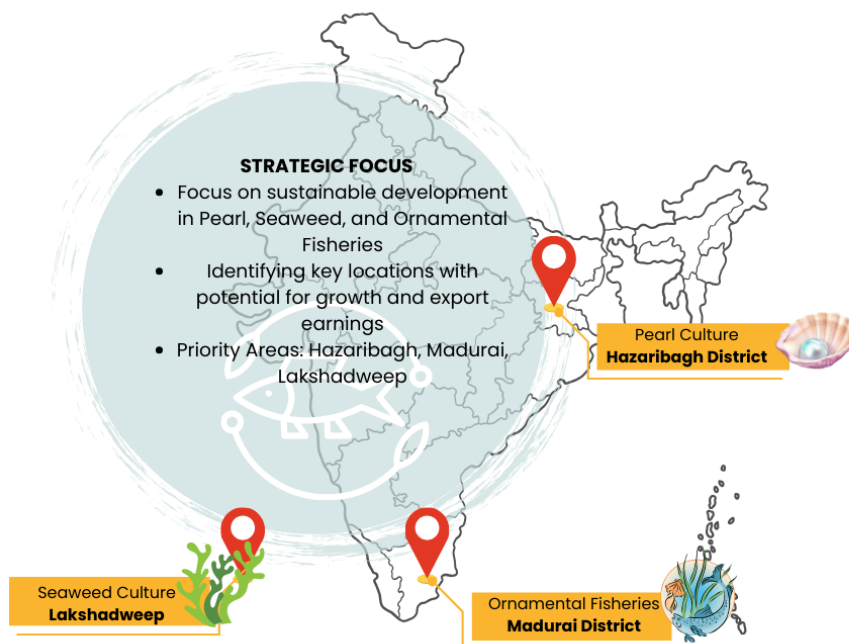
The Andaman and Nicobar Islands offer a prime opportunity for fisheries development, with around 6.0 lakh square km of Exclusive Economic Zone (EEZ) **rich in under-exploited sea resources, particularly Tuna and Tuna like high-valued species**, estimated at 60,000 metric tons. Their proximity to Southeast Asian countries enables efficient sea and air trade, while the pristine waters support sustainable fishing practices. Coupled with effective administrative measures, the region is well-positioned to leverage its marine resources for economic growth. The notification of the Andaman and Nicobar Islands as a tuna cluster is expected to generate **economies of scale, increase incomes, and accelerate organized fishery growth** across the country. The initiative will help focus on critical investments such as **organizing investor meetings to foster partnerships with tuna-fishing nations, implementing training and capacity-building programs**, and exposure visits for the stakeholders. Additionally, it will help develop **infrastructure for fish landing, processing, and export connectivity** that is essential for streamlining operations and enhancing India's global competitiveness in the sector.

Background

The fisheries sector, a key growth driver in India's economy, is essential in enhancing national income, exports, and food security, particularly benefiting rural areas. Over the past decade, the Government of India has led the sector's transformation through

flagship initiatives like Pradhan Mantri Matsya Sampada Yojana (PMMSY), Fisheries and Aquaculture Infrastructure Development Fund (FIDF), and the Blue Revolution with an unprecedented investment of ₹38,572 crores since 2015. To continue the sectoral growth momentum, the Department of Fisheries is further increasing its efforts to adopt a cluster-based approach for **production and processing fisheries** with an **end-to-end value chain in fishing and aquaculture**.

The cluster-based approach boosts competitiveness by linking enterprises of all sizes within a geographic area across the value chain, from production to exports. This model strengthens linkages, fills value chain gaps, creates business opportunities, reduces costs, fosters innovation, and promotes sustainability.



DEPARTMENT OF FISHERIES—A **STRATEGIC FOCUS ON CLUSTER DEVELOPMENT** ACROSS CRITICAL AREAS

The Department of Fisheries has envisaged a strategic focus on cluster development across critical areas, including Pearl, Seaweed, and Ornamental Fisheries; Reservoir

Fisheries; Fishing Harbors; Saline Water Aquaculture; Cold Water Fisheries; Sea Cage Culture; Freshwater and Brackish-Water Fisheries; Deep Sea and Oceanic Fisheries; Organic Fisheries; Wetland Fisheries, and other areas tailored to specific sectoral and regional needs. Potential cluster locations are being identified with State Governments and Union Territories based on parameters like **Fish culture, production trends, export earnings, number of fishing boats, engagement in fisheries activities, and existing fisheries infrastructure facilities**. The Department of Fisheries has identified three locations as priority areas for development: **Hazaribagh** District in Jharkhand for pearl culture, **Madurai** District in Tamilnadu for ornamental fisheries, and UT of **Lakshadweep** for seaweed.

Source: Press Information Bureau

“Age is an issue of mind over matter. If you don’t mind. It doesn’t matter”

Mark Twain

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Cairn Becomes India's First Oil & Gas Company to Join UNEP's OGMP 2.0

Cairn Oil & Gas, part of Vedanta Group and India's leading private oil and gas exploration and production company, has made a significant stride in its commitment to environmental sustainability. The company has signed a Memorandum of Understanding (MoU) with United Nations Environment Programme's (UNEP) flagship methane reporting and mitigation initiative – Oil & Gas Methane Partnership (OGMP) 2.0. This partnership, a first of its kind in India's oil and gas industry, signifies Cairn's dedication to effective reduction of methane emissions, further accelerating its efforts to decarbonize its operations.

OGMP 2.0, a comprehensive framework established to combat methane emissions, includes best practices for emissions management and a robust reporting system. It places a strong emphasis on accurate measurement, reporting, and verification (MRV) of methane emissions to drive reductions effectively. Under this MoU, Cairn will establish a 5-year methane reduction target and transparently report its progress to OGMP. This would enable Cairn to analyze its emission profiles and utilize the data to mitigate emissions cost-effectively. With this partnership, Cairn reaffirms its commitment to accelerate its efforts towards becoming Net Zero Carbon by 2030. OGMP 2.0 covers over 40% of global oil and gas production, empowering companies to improve the quality and accuracy of emissions data for effective methane reduction.

OGMP 2.0 provides companies with credible means and a science-backed framework to establish that they are progressing towards methane reduction targets, supporting the goals of the Paris Agreement and the Global Methane Pledge—a commitment by

over 150 countries to reduce global methane emissions by 30% by 2030. By joining OGMP 2.0, Cairn has set a new benchmark in India's oil and gas industry for methane transparency and actively contributes to the nation's environmental objectives. This membership brings India's first upstream oil and gas company into the initiative, doubling OGMP 2.0 coverage close to one-fourth of Indian oil and gas production. Cairn's commitment has a global impact, inspiring hope and optimism for a sustainable future.

Earlier this year, Cairn announced the fast-tracking of its net zero commitments to 2030. This is a significant step in the company's long-term strategy to become Net Zero Carbon by 2030, a commitment that is backed by a meticulous plan to explore new opportunities. Cairn's unwavering commitment to this goal reinforces its dedication to environmental sustainability and its role as a leader in the oil and gas industry.

"A bird doesn't sing because it has an answer; it sings because it has a song"

Maya Angelou

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COP 29 at Baku: Key Discussions on Climate Finance, Emission Reductions, and Global Cooperation

The climate summit, a crucial event in the face of the urgent climate crisis, begins on November 11 in Baku, Azerbaijan, a city with a significant historical connection to the fossil fuel industry. Climate leaders from around the world will gather at COP29 in Baku to set global financial targets and address the escalating ecological impact of the Nobel brothers' pioneering technological advancements.

A complex agenda awaits delegations at the upcoming climate summit. It is structured around two main pillars: first, enhancing ambition with an emphasis on deep, rapid, and sustained emission reductions to keep the global temperature rise below 1.5 degrees Celsius; second, enabling action by mobilizing the finances necessary for reducing climate emissions, adaptation, and addressing loss and damage.

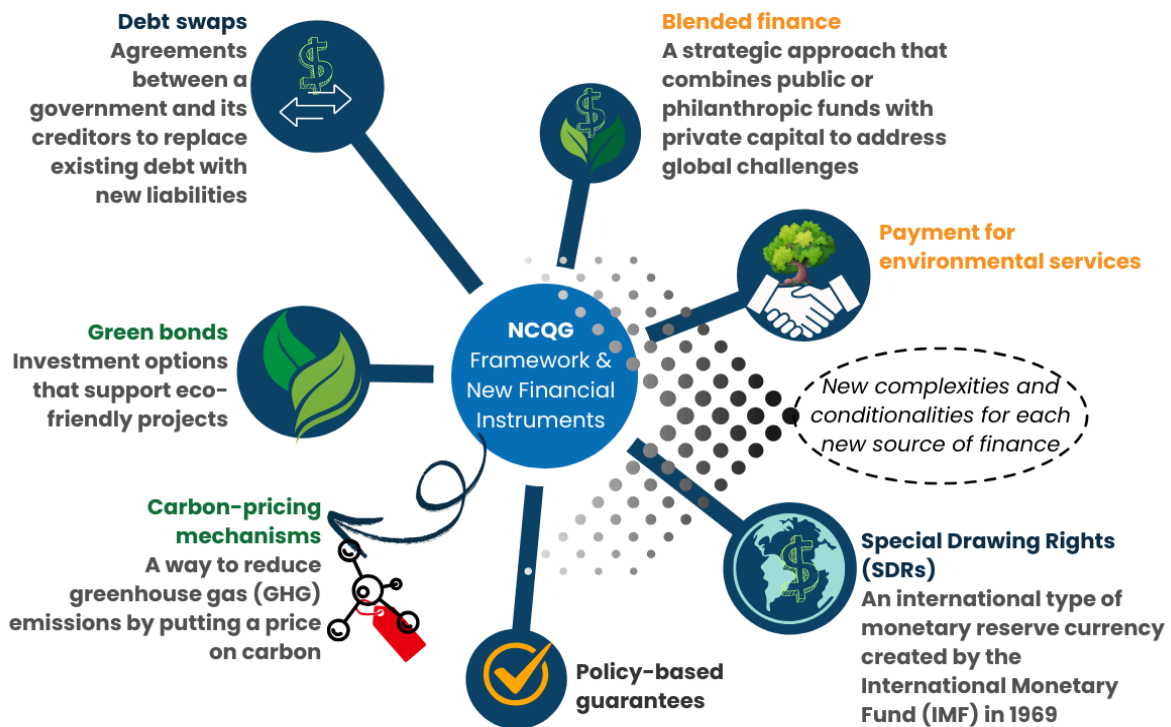
Both pillars are mutually reinforcing, and progress in one supports advancements in the other. The main components of how COP29 plans to tackle climate finance include:

1. The establishment of a New Collective Quantified Goal (NCQG) for climate finance.
2. Enhanced commitments from countries through updated Nationally Determined Contributions (NDCs).
3. The operationalization of effective mechanisms for the Loss & Damage Fund (LDF).

The NCQG will help create a new financial goal for evolving global financial needs. Some studies have projected even higher estimates, at \$5.8tr to \$13.6tr by 2030. Developed countries are not inclined to commit to obligatory, predictable, and

accessible financial contributions, let alone such large sums. Nor have they agreed to link the NCQG with the LDF.

The question from developing countries is desperate: at least 50 percent of climate finance should shift from loans to grants to alleviate debt burdens. And for this, they seek balanced funding for adaptation, mitigation, and loss and damage. The biggest challenge for the Baku summit is to finalize the NCQG for the post-2025 period. With this building block, the targets of NDCs can be enhanced, and LDF can be scaled up. The submission of the revised NDCs is due in February 2025.



The NCQG framework has expanded to include nontraditional donor countries. Additional challenging financial instruments are also being discussed, including debt swaps, blended finance, green bonds, payment for environmental services, special

drawing rights, policy-based guarantees, and carbon-pricing mechanisms. Each new source of financing will entail new complexities and conditionalities. Most importantly, this menu underlines the need for institutional readiness, legal reforms, and engagement with the private sector.

Pakistan, a proactive participant in the NCQG during COP28 and subsequent UNFCCC meetings, has consistently advocated for a comprehensive approach that integrates social concerns. Its emphasis on the responsibility of developed nations to provide financial support for adaptation efforts and its pivotal role in operationalizing the LDF, which secured pledges amounting to \$792 million, demonstrate Pakistan's significant commitment to climate action.

Pakistan's significant role in shaping the Global Stocktake of the Paris Agreement's implementation and in the Mitigation Work Programme has significantly influenced its approach to the NCQG. Through its integrative approach, Pakistan seeks funding mechanisms responsive to immediate resilience needs, emphasizes grant-based resources, and integrates long-term considerations for loss and damage. Pakistan sees the LDF's operationalization as a crucial step towards achieving equitable climate finance that aligns with the objectives of the NCQG.

Postscript :

The history of the fossil fuel industry has come full circle. Nobel Prize founder Alfred Nobel and his brothers made their money by establishing Branobel, one of Baku's largest oil producers. Branobel introduced several technological innovations, including the first oil pipeline in Russia and railway and commercial shipping lines to facilitate oil transportation.

Libertarianism: Championing Individual Freedom and Economic Autonomy in Political Philosophy

Libertarianism, a diverse set of views in political philosophy, places utmost importance on individual freedom. It views coercion as the direct opposite of this freedom. While there are instances where individuals can be compelled to act in certain ways, such as refraining from infringing on the liberty of others, they cannot be coerced to serve the collective good. This respect for individual freedom is a cornerstone of libertarian thought, empowering individuals to make their own choices.

Within philosophical debates over justice, libertarian positions are most controversial in distributive justice. In this context, libertarians typically endorse a free-market economy—an economic order based on private property rights, freedom of contract, and voluntary cooperation. Libertarians usually regard contemporary democratic states' redistribution of wealth as an unjustified use of coercion that violates the rights of individuals. The same is true of many forms of economic regulation. Just as people have substantial rights to individual freedom in their personal and social affairs, libertarians argue, they also have strong rights to freedom in their economic affairs. Thus, the rights of freedom of contract and exchange, freedom of occupation, and private property are taken as seriously as the rights to choose who to be friends with, what kind of clothes to wear, which religion to follow, and so forth. Concerning justice, libertarian theory inherits a political morality from the classical (or proto-) liberal tradition, embodied by John Locke, David Hume, Adam Smith, and Immanuel Kant. These authors regard the state's moral function as enforcing a system of rights that facilitates socio economic cooperation and little else. Moreover, it inherits political sociology from the radical—individualist anarchist—side of the liberal

tradition associated with Benjamin Tucker, Thomas Hodgskin, and Lysander Spooner.

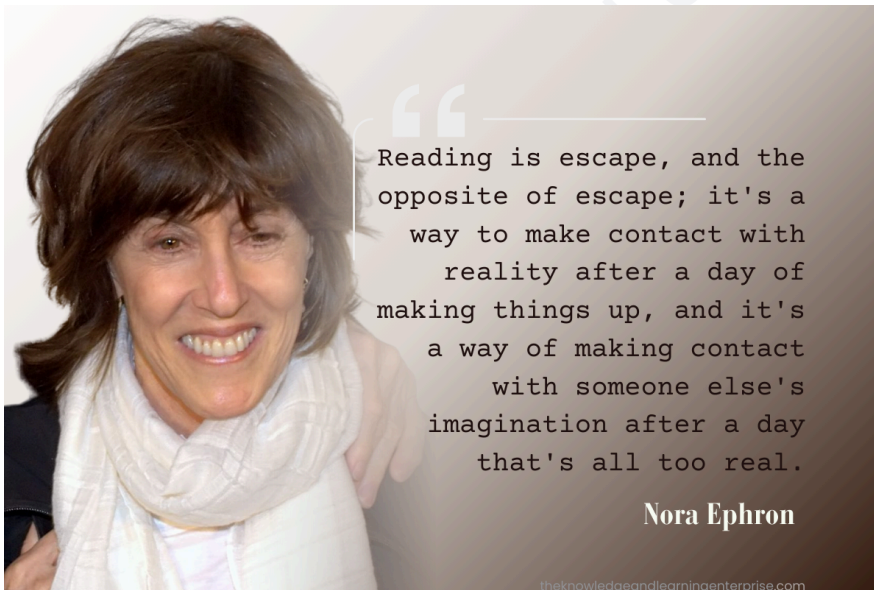


Image: Bing AI

In their view, state action, even when seemingly well-intentioned, is essentially an outcome of, or heavily conditioned by, **class dynamics**, which refers to the power struggles and conflicts between different social classes. In its most potent form, this view takes the state as the vehicle by which a dominant class uses coercion to plunder the rest of society.

Nora Ephron: A Legacy of Romantic Comedy and Storytelling Genius in Film and Literature

Nora Ephron (May 19, 1941 – June 26, 2012) was an American journalist, writer, and filmmaker. She is best known for writing and directing romantic comedy films and received numerous accolades including a British Academy Film Award as well as nominations for three Academy Awards, a Golden Globe Award, a Tony Award and three Writers Guild of America Awards.



Ephron started her career writing the screenplays for *Silkwood* (1983), *Heartburn*(1986), and *When Harry Met Sally...* (1989). She made her directorial film debut with

comedy-drama—*This Is My Life* (1992) followed by the romantic comedies *Sleepless in Seattle* (1993), *Michael*(1996), *You've Got Mail* (1998), *Bewitched*(2005), and the biographical film *Julie & Julia*(2009).

Image: David Shankbone, CC BY 3.0 <<https://creativecommons.org/licenses/by/3.0/>>, via Wikimedia Commons

Eminent Personalities: Sharda Sinha and Bibek Debroy

Sharda Sinha: Remembering the Iconic 'Bihar Kokila' and Her Contribution to Indian Folk Music



Sharda Sinha (1 October 1952 – 5 November 2024) was an Indian folk and classical singer. Hailing from Bihar, she predominantly sang in Maithili and Bhojpuri language and is called Bihar Kokila, the cuckoo of Bihar.

Sinha has sung many folk songs including "Vivah Geet", "Chhath Geet". In 1991, she received the Padma Shri award for her contribution to music. In 2000, she received the Sangeet Natak Akademi Award for her contribution to the field of music. She was awarded Padma Bhushan, India's third highest civilian award, on the eve of Republic Day in 2018.

Bibek Debroy

Bibek Debroy (25 January 1955 – 1 November 2024) was an Indian economist, who served as the chairman of the Economic Advisory Council to the Prime Minister of India. He was also the Chairman of the Finance Ministry's 'Expert Committee for Infrastructure Classification and Financing Framework for Amrit Kaal'. Sh Debroy has made significant contributions to game theory, economic theory, income and



social inequalities, poverty, law reforms, railway reforms and Indology among others.

From its inception in January 2015 until June 2019, Mr. Debroy was a member of the NITI Aayog, the think tank of the Indian Government. He was awarded the Padma Shri in 2015. Sh. Debroy has translated the unabridged version of the Mahabharata into English, in a series of 10 volumes. He has also translated the Bhagavad Gita, the Harivamsa, the Vedas and Valmiki's Ramayana (in three volumes). He has translated the Bhagavata Purana (in three volumes), the Markandeya Purana (one volume), the Brahma Purana (two volumes), the Vishnu Purana (one volume), the Shiva Purana (three volumes) and the Brahmanda Purana (two volumes). Along with Manmatha Nath Dutt, he is only the second person to have translated both the Mahabharata and the Ramayana, in unabridged form into English.

Images:

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- (ii) Anirudh Bhati, CC BY-SA 2.0 <<https://creativecommons.org/licenses/by-sa/2.0/>>, via Wikimedia Commons

Mysuru Sangeetha Sugandha: Celebrating Karnataka's Musical Legacy and Rich Cultural Heritage



Mysuru, known for its rich cultural tapestry and historical significance, is all set to host the unique Mysuru Sangeetha Sugandha festival from 8 to 10 November 2024 at the Karnataka State Open University Convocation Hall. This three-day musical and cultural festival, unlike any other, promises to showcase Karnataka's artistic legacy and celebrate the revered Daasa traditions of Carnatic music.

This festival, a testament to the unity and collective pride in Karnataka's cultural heritage, is organized by the Ministry of Tourism in association with the Ministry of Culture and Sangeet Natak Akademi, with support from the Karnataka Tourism Department and the Ministry of Textiles, Government of India.

Musical Tribute to Daasa Traditions

This festival is a tribute to the Daasa traditions, showcasing performances by 21 renowned artists who will present an array of Kannada compositions that pay homage to Karnataka's vibrant musical roots. The event aims to highlight saint poets'

legacy and contributions to Carnatic music, fostering a deep cultural connection with the audience.

Cultural and Artistic Highlights

Showcasing Geographical Indication (GI) Products and Artisanal Crafts: Visitors will have the opportunity to explore Karnataka's celebrated Geographical Indication (GI) products through exclusive stalls featuring the works of artisans and weavers. These artisans have been specially nominated by the Development Commissioners of Handicrafts and Handlooms, offering attendees a firsthand look at the intricate craftsmanship that defines the state's rich heritage.

A Platform for Cultural Exchange

The Mysuru Sangeetha Sugandha festival is more than just a musical event; it is a celebration of Karnataka's rich culture, a platform that brings together music, crafts, and cuisine under one roof. This initiative underscores the importance of preserving and promoting the state's rich artistic heritage and fostering collaboration and cultural exchange, creating a sense of belonging and connection among the audience.

Image: Dattatreya N R, CC BY-SA 4.0 <<https://creativecommons.org/licenses/by-sa/4.0/>>, via Wikimedia Commons

Being happy doesn't mean everything is perfect. It means you've decided to see beyond the imperfections

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CBIC Introduces Key Relaxations for Customs Cargo Service Providers to Boost Efficiency and Cut Costs

CBIC introduces relaxations for Customs Cargo Service Providers (CCSPs) by reducing the number of days for insurance of storage goods and withdrawal of licence renewal process for AEO-compliant CCSPs.

In line with the PM Gati Shakti National Master Plan's goals of improving logistics infrastructure, efficiency, and promoting sustainable development, the Central Board of Indirect Taxes and Customs (CBIC) has introduced key relaxations for Customs Cargo Service Providers (CCSPs).

Key relaxations provided under Notification No.75/2024-Customs (N.T.) dated November 7, 2024 and Circular No. 22/2024-Customs dated November 8, 2024 are:

1. Number of days for insurance of storage goods eased: Customs Cargo Service Providers (CCSPs) were required to insure goods stored in Customs areas for a period of 10 days in terms of Handling of Cargo in Customs Areas Regulations, 2009. It has been decided to reduce it to 5 days as a trade facilitation measure. This will enhance the cash flow for the entities by reducing the cost.
2. Licence Renewal Process withdrawn: In a move to acknowledge well-established and compliant business entities, Customs Cargo Service Providers (CCSPs) that meet international operational standards (AEO) will no longer be required to undergo the renewal process of their licenses for handling goods under the Handling of Cargo in Customs Areas Regulations, 2009. Their licenses have been made synchronous to their AEO authorisation. This will result in Ease of Doing Business for logistics operators working as CCSPs.

These measures aim to reduce operational costs and compliance burdens for CCSPs, which play a crucial role in handling imported and exported goods. The changes are part of the Government's ongoing efforts to reduce the cost and compliance burden, improve the efficiency of EXIM operations, and facilitate global trade.

The CBIC's efforts are expected to reduce logistics costs, improve operational efficiency, and enhance India's position as a competitive player in global trade.

Source : Press Information Bureau

"Fame is something which must be won honour is something which must not be lost"

Arthur Schopenhauer

Government Seeks Public Feedback on Draft Commercial Courts (Amendment) Bill, 2024 to Expedite Dispute Resolution

The Government in its endeavor to ensure the resolution of commercial cases expeditiously, efficaciously, and at reasonable cost, had enacted the Commercial Courts Act, of 2015, and the said Act was further amended in the year 2018. The Government of India has thereafter also taken several steps, both legislatively and on the policy front, to strengthen the dispute resolution ecosystem in the country. The Department of Legal Affairs is presently in the process of considering further amendments in the Commercial Courts Act, 2015.

The aim and purpose of the proposed amendments is to provide further impetus to quicker and specialized adjudication of commercial disputes and simplification of the applicable procedure related to commercial dispute resolution in courts.

In view thereof, the Commercial Courts (Amendment) Bill, 2024, and a tabular statement depicting existing provisions and proposed amendment have been prepared.

The Department invites comments/feedback from the public as a part of the public consultation exercise on the draft amendments. The draft Bill and tabular statement can be accessed at <https://legalaffairs.gov.in/>. Comments on the draft Bill may be sent by email to avnit.singh@gov.in and ndiac-dla@gov.in by 22.11.2024.

Source: Press Information Bureau

NICDC and UPSIDA Partner to Boost Industrial Growth in Agra and Prayagraj Through Key Manufacturing Clusters

National Industrial Corridor Development Corporation (NICDC) & Uttar Pradesh State Industrial Development Authority (UPSIDA) partner to develop key clusters in Agra and Prayagraj.

The Amritsar-Kolkata Industrial Corridor (AKIC) initiative took a significant step forward today with the signing of the State Support Agreement (SSA) and Shareholder Agreement (SHA) between the National Industrial Corridor Development Corporation (NICDC), the Government of Uttar Pradesh, and the Uttar Pradesh State Industrial Development Authority (UPSIDA). These agreements underscore the Government of India's commitment to fostering industrial growth and developing world-class infrastructure, starting with the Integrated Manufacturing Clusters (IMC) in Agra and Prayagraj. By bolstering local manufacturing capabilities and attracting both domestic and international investments, the AKIC will strengthen the Make in India initiative, paving the way for a more self-reliant and globally competitive India.

A Catalyst for Industrial Growth and Investment

These Integrated Manufacturing Clusters in Agra and Prayagraj are designed to become engines of industrial and economic growth under the Amritsar-Kolkata Industrial Corridor. The development of these clusters will provide an enabling environment for businesses, boost employment opportunities, and enhance Uttar Pradesh's competitiveness as an industrial destination. Both clusters are set to attract local and global investors, further strengthening India's position as a global manufacturing hub.

Key Highlights of the Projects

IMC Agra

The Integrated Manufacturing Cluster (IMC) in Agra is strategically located across 1,058 acres along the city's Inner Ring Road. This prime location ensures seamless connectivity to significant junctions, including Delhi NCR and the Agra-Lucknow Expressway, making it an ideal industrial hub. With exceptional road connectivity, the cluster is expected to attract a wide range of industries, drawing interest from both local and international businesses. The project is anticipated to bring in over INR 3,400 crore in investments, boosting the region's industrial growth and economic development.

IMC Prayagraj

The Integrated Manufacturing Cluster (IMC) Prayagraj , spanning 352 acres, is set to emerge as a major industrial hub in the region. With projected investments of approximately INR 1,600 crore, the cluster is designed to focus on industries such as e-mobility, food processing, leather, garments, cycle manufacturing, and packaging. By fostering growth across diverse sectors, IMC Prayagraj aims to drive economic expansion and promote sectoral diversification in Uttar Pradesh.

Source : Press Information Bureau

Study Finds Cats Better at Word Association Than Human Babies



A new study finds which animal is better at word association than human babies. Is it dogs? Cats? Crows? Or rats?

Well, it's cats. A cat performs better than toddlers on a simple measure of language comprehension. The research, published 4 Oct 2024, in the Journal, Scientific Reports, revealed that cats form associations between pictures and words around four times faster than human toddlers do.

Image: Bing AI

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Why Retired Supreme Court Judges Can't Practice Law: Understanding Article 124(7) of the Indian Constitution

Know your Constitution



Can a retired Justice of the Supreme Court plead or act in any court or before any authority of India?

No. Article 124(7) of the Constitution of India states that a former Supreme Court judge cannot plead or act in any court or before any authority in India. This article prohibits former Supreme

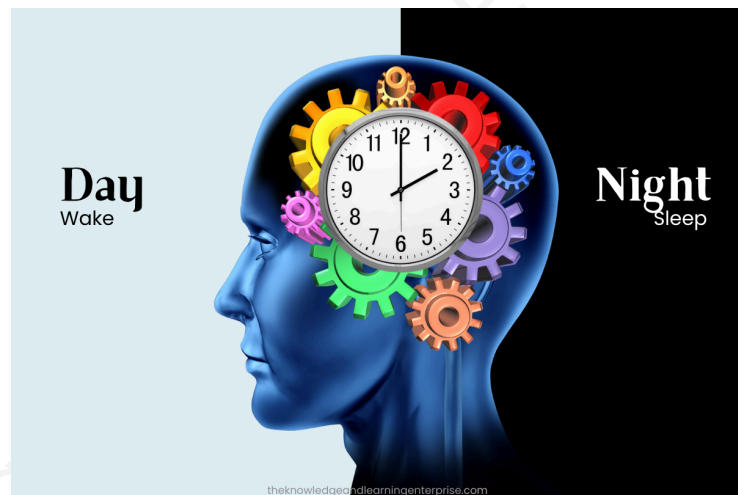
Court judges from practicing law.

Image: Pinakpani, CC BY-SA 4.0 <<https://creativecommons.org/licenses/by-sa/4.0/>>, via Wikimedia Commons

Understanding Circadian Rhythms: The Body's Natural 24-Hour Cycle and Its Impact on Health

What are Circadian rhythms?

Circadian rhythms are the natural 24-hour cycles of physical, mental, and behavioral changes that occur in the body. They are controlled by a biological clock in the brain that responds to light and darkness. Circadian



rhythms regulate many important functions in the body, including: Sleep, Body temperature, Hormone release, as well as appetite and digestion. Circadian rhythms help humans adapt to changes in the environment, such as temperature, radiation, and food availability.

The Role of a Data Translator: Bridging Business and Data Science for Strategic Success

Who is a data translator?

A person who facilitates collaboration between business operations and data teams, aligning data science with organizational goals.

They act as a bridge, ensuring seamless communication and synergy. By translating complex data insights into actionable strategies, they guide decision-making, enhance efficiency, and drive innovation. Their role is vital in integrating analytics to achieve business success and foster a data-driven culture within the organization, promoting cross-functional teamwork and aligning diverse objectives for optimal outcomes.



Image: [Pixabay](#)

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Fun Fact



At Santa Fe town in the State of New Mexico (USA), a 50 foot effigy called ZOZOBRA is lighted every year, why?

It's a ritual meant to purge anxiety and promote a reset.

"The way I see it, if you want the rainbow, you gotta put up with the rain"

Dolly Parton

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How National Education Day 2024 Highlights India's Path to Quality Education for All

Introduction

National Education Day, a significant occasion celebrated on 11th November every year, is a tribute to Maulana Abul Kalam Azad, the first Education Minister of independent India and a prominent educationist. This day serves as a powerful reminder of the pivotal role education plays in shaping India's future. With 65% of the nation's population under 35, the provision of quality education and skills development opportunities is a critical mission. The Government of India is steadfast in its commitment to building a robust education infrastructure that nurtures the holistic development of students and empowers the youth to steer the nation towards progress.

Transforming India Through Education

The Government of India has taken significant strides to promote access to education through various initiatives and constitutional provisions. The introduction of free primary education, reinforced by the 86th Amendment of the Constitution through Article 21-A, guarantees free and compulsory education for children aged six to fourteen as a Fundamental Right. The Rights to Education (RTE) Act, 2009, which came into effect on 1st April 2010, further supports this by ensuring that every child receives quality elementary education in a formal school that meets prescribed norms. These legal frameworks, backed by government schemes and initiatives, reflect India's commitment to building an inclusive and equitable educational system for all.



NEP 2020: Under the visionary leadership of Prime Minister Narendra Modi, the Union Cabinet of India approved the National Education Policy (NEP) 2020 on 29th July 2020. The NEP, a transformative policy, aims to revolutionize India's education system, aligning it with the demands of the 21st century and fostering a more inclusive and forward-thinking approach.

PM SHRI: Prime Minister Shri Narendra Modi approved the PM

SHRI Schools (PM Schools for Rising India) scheme on 7th September 2022. This ambitious initiative is set to fortify over 14,500 schools across India, showcasing the key components of the National Education Policy 2020. The scheme, with a substantial project cost of ₹27,360 crore, will be implemented over five years (2022-2027), with a central share of ₹18,128 crore. It is designed to foster quality education, cognitive development, and 21st-century skills in students, thereby making a significant impact on the education landscape.

Samagra Shiksha: Aligned with the NEP 2020 recommendations, Samagra Shiksha is a comprehensive scheme that aims to provide quality education in an inclusive and equitable classroom environment for all children, addressing their diverse backgrounds and needs. Launched on 1st April 2021, this scheme is a testament to the government's commitment to catering to the diverse educational needs of all students, fostering active participation and enhancing academic abilities across various student groups.

PRERNA: Launched its pilot phase from 15th January 2024 to 17th February 2024 at a vernacular school in Vadnagar, Gujarat. The initiative is a week-long residential

program for selected students from classes IX to XII. It aims to offer an experiential and inspirational learning experience, blending heritage with innovation through state-of-the-art technology. Each week, 20 students (10 boys and ten girls) from across the country will participate in the program.

ULLAS: Also known as Nav Bharat Saaksharta Karyakram (New India Literacy Programme - NILP), ULLAS was launched by the Government of India for FY 2022-2027. This centrally sponsored initiative aligns with the National Education Policy (NEP) 2020 and aims to empower adults aged 15 and above, especially those who missed formal schooling. The program seeks to enhance their literacy, enabling them to better integrate into society and actively contribute to the nation's development.

NIPUN Bharat: The National Initiative for Proficiency in Reading with Understanding and Numeracy (NIPUN Bharat) was launched by the Department of School Education & Literacy on 5th July 2021. The mission aims to ensure that every child in the country achieves foundational literacy and numeracy by the end of Grade 3, with a target completion by 2026-27.

Vidya Pravesh: The VIDYA PRAVESH guidelines for the Three-month Play-based School Preparation Module for Grade I children were released on 29th July 2021. The initiative aims to provide a warm and welcoming environment for children entering Grade I, ensuring a smooth transition and fostering a positive learning experience.

Vidyanjali: The School Volunteer Management Program, launched by Prime Minister Shri Narendra Modi on 7th September 2021, aims to enhance the quality of education in schools by fostering community involvement and encouraging contributions from corporate social responsibility (CSR) initiatives and the private sector across the country.

DIKSHA: Launched on 5th September 2017 by the Hon'ble Vice President of India, Shri M. Venkaiah Naidu, DIKSHA is an innovative platform that aims to enhance teacher training and professional development. By accelerating the adoption of

innovative educational solutions and experiments, DIKSHA empowers states and Teacher Education Institutes (TEIs) with the flexibility to customize the platform to meet their specific needs. This platform is a testament to the exciting potential of technology in transforming education in India.

SWAYAM Plus: SWAYAM Plus was officially launched on 27th February 2024 by Shri Dharmendra Pradhan, Hon'ble Minister of Education. The initiative seeks to revolutionize higher education and improve employability by implementing an innovative credit recognition system for industry-relevant courses, emphasizing skill development and employability, and forging stronger industry partnerships.

NISHTHA: The NISHTHA (National Initiative for School Heads' and Teachers' Holistic Advancement), launched by the Ministry of Education on 21st August 2019, aims to enhance the professional development of 42 lakh elementary teachers and school heads. In response to the COVID-19 pandemic, the program was transitioned to NISHTHA-Online on 6th October 2020, delivered through the DIKSHA platform. Building on this success, in 2021-22, NISHTHA 2.0 was launched for secondary school teachers, while NISHTHA 3.0, focusing on Foundational Literacy and Numeracy, was introduced on 7th September 2021.

NIRF Ranking: The National Institutional Ranking Framework (NIRF), launched by the Ministry of Education on 29th September 2015, marked a pivotal step toward enhancing the quality and accessibility of higher education in India. NIRF introduced a structured and transparent system for assessing and ranking universities, colleges, and other institutions, fostering healthy competition and encouraging improvements in education and infrastructure.

PM-Vidyalaxmi scheme: The Union Cabinet, led by Hon'ble PM Shri Narendra Modi, has approved the PM-Vidyalaxmi scheme to support meritorious students by providing financial assistance for quality higher education. This scheme offers education loans for students admitted to the top 860 institutions across India, benefiting over 22 lakh students annually. With a budget allocation of Rs. 3,600 crore

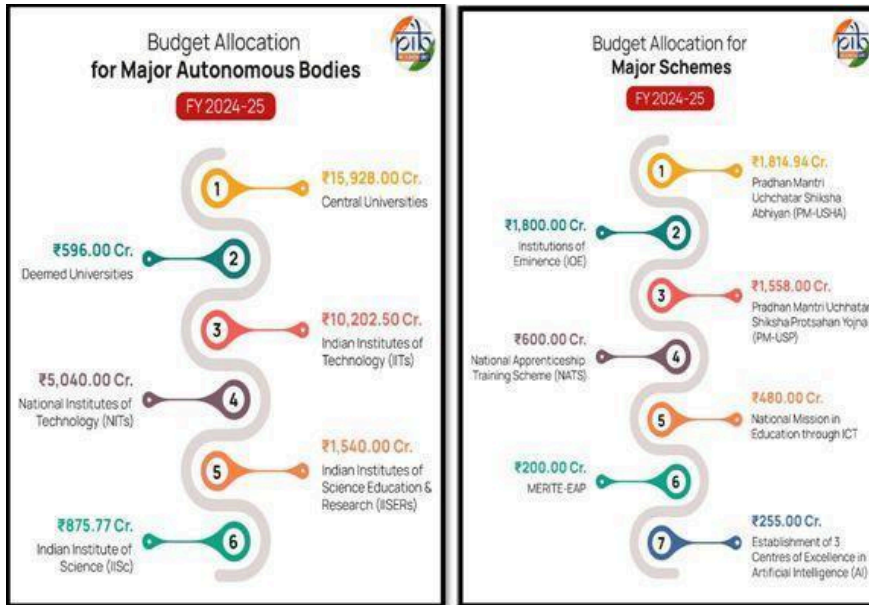
from 2024-25 to 2030-31, the scheme aims to assist an additional 7 lakh students. Implemented through a fully digital, transparent, and student-centric platform, PM-Vidyalaxmi ensures easy access and smooth student interoperability nationwide.

Investing in Education for a Brighter Future

India's path to global leadership is closely linked to the strength of its education system. To expand access to quality education and build a resilient learning environment, the Department of School Education & Literacy has been allocated a record ₹73,498 crore in the FY 2024-25 budget. This represents a substantial increase of ₹12,024 crore (19.56%) over the Revised Estimate for FY 2023-24, highlighting the government's commitment to bolstering the education sector.

Notably, the highest-ever allocations have been made to vital autonomous bodies, with ₹ 9,302 crore allocated to Kendriya Vidyalayas (KVS) and ₹ 5,800 crore to Navodaya Vidyalayas (NVS). This substantial investment intends to elevate India's education system further.

For FY 2024-25, the Department of Higher Education's budget allocation is set at Rs. 47,619.77 crore, with Rs. 7,487.87 crore dedicated to schemes and Rs. 40,131.90 crore for non-scheme expenses. This reflects a significant Rs. 3,525.15 crore increase, or 7.99%, over the previous fiscal year. Notably, the allocation for specific schemes has risen by Rs. 1,139.99 crore, underscoring a strengthened focus on targeted initiatives within higher education.



Increase in Enrolment in Higher Education Institutions: AISHE Report 2021-22

The **Ministry of Education**, Government of India, released the **All India Survey on Higher Education (AISHE) 2021-2022** in **January 2024**. Since its inception in 2011, AISHE has collected comprehensive data from all registered Higher Educational Institutions (HEIs) nationwide, covering key parameters such as student enrolment, faculty, and infrastructure. The survey highlights significant improvements over the years, reflecting the positive advancements in India's education sector, with increased enrolment, enhanced inclusivity, and more vital infrastructure, contributing to a more robust and dynamic higher education system.

Female enrolment has also shown remarkable growth, rising from 1.57 crore in 2014-15 to 2.07 crore in 2021-22, an increase of 32%. The enrolment of students from disadvantaged groups, including SC, ST, OBC, and minorities, has grown significantly, with notable increases in female enrolment across all categories. In 2021-22, the Gender Parity Index (GPI) reached 1.01, reflecting a consistent trend of more female students enrolling in higher education than males.



In terms of fields of study, enrolment in STEM disciplines has steadily risen, with 98.5 lakh students enrolled in UG, PG, and Ph.D. levels in 2021-22. Despite challenges, women are leading in the Medical Science, Social Science, and Arts disciplines. **The dropout rate at the secondary level has also decreased significantly from 21% in 2013-14 to 13% in 2021-22.**

In FY 2024-25, the Department of Higher Education saw a budget increase of ₹3,525.15 crore (7.99%) compared to FY 2023-24, underlining the government's commitment to further strengthening the higher education sector and supporting inclusive growth.

Conclusion

Education can break barriers, open doors of opportunity, and empower individuals to contribute meaningfully to society. India's educational landscape has evolved significantly, building a robust system through continuous innovation and comprehensive reforms. By embracing a holistic, 360-degree approach that integrates new ideas, technologies, and teaching methods, India is not only creating an environment where youth can thrive but also



demonstrating its adaptability and progressiveness. This approach is transforming students into critical assets for the nation's growth. As we honor the legacy of Maulana Abul Kalam Azad, let us reaffirm our commitment to education as the cornerstone of a brighter, more inclusive future for all.

Image: Bing AI

What is a VPN?



Image: Bing AI

A VPN, or Virtual Private Network, is a service that encrypts your internet traffic and masks your IP address to create a secure connection between your device and a remote server. This makes it harder for third parties to track your online activity and steal your data.

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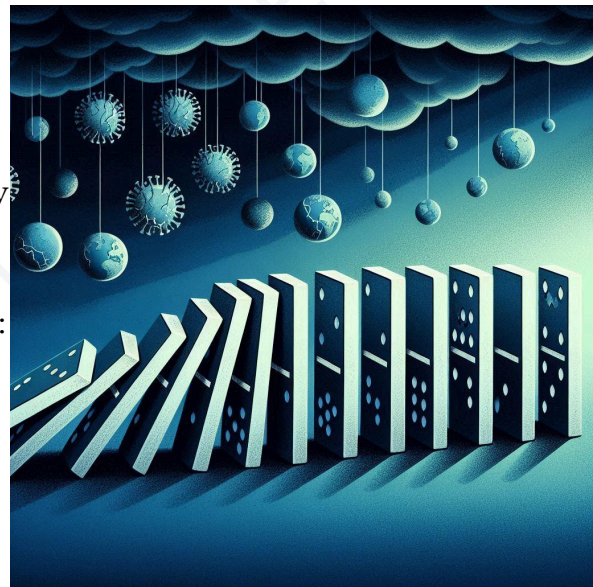
What is Permacrisis?

A permacrisis is an extended period of instability and insecurity, especially one resulting from a series of catastrophic events.

Example: The Global Permacrisis of the 2020s

The 2020s have been marked by an extended period of instability and insecurity driven by overlapping crises:

1. COVID-19 Pandemic (2020 onwards):
 - A global health emergency that disrupted economies, overwhelmed healthcare systems, and caused widespread social and psychological impacts.
2. Economic Instability:
 - The pandemic-induced recession, followed by inflation, supply chain disruptions, and rising costs of living worldwide.
3. Geopolitical Conflicts:
 - Events like the Russian invasion of Ukraine (2022) led to energy crises, global food shortages, and heightened political tensions.
4. Climate Change Catastrophes:
 - Frequent and severe natural disasters, including wildfires, floods, and droughts, have further strained resources and infrastructure.
5. Social and Political Polarization:



- Increasing political divides, misinformation, and social unrest in many countries have deepened instability.

The convergence of these events has created a sense of prolonged crisis, with no clear resolution in sight, making the term "permacrisis" an apt description.

World Immunization Day 2024



Image: [Pixabay](#)

World Immunization Day, observed annually on November 10, aims to raise awareness about vaccines' vital role in preventing infectious diseases and protecting public health. Immunization is one of the most effective and cost-efficient interventions for controlling and eradicating diseases, saving millions of lives globally each year. Vaccines help protect individuals from diseases like measles, polio, tuberculosis, and COVID-19. By reducing the incidence of infectious diseases, immunization safeguards individuals and strengthens community health by building herd immunity. This day encourages governments, healthcare providers, and

communities worldwide to emphasize the importance of vaccines and extend immunization coverage, especially to underserved populations.

World Immunization Day in India is particularly significant due to the country's unique challenges in reaching remote areas. Further, children, in particular, remain at considerable risk because they are either unimmunized or partially immunized against vaccine-preventable diseases. Partially immunized and unimmunized children are most susceptible to childhood diseases and are at a much higher risk of dying as compared to fully immunized children.

Immunization has been a central focus in India's public health strategy for decades, leading to remarkable progress in reducing disease prevalence and child mortality rates. World Immunization Day thus serves as an opportunity to reaffirm India's commitment to achieving universal immunization and to reflect on the progress made through landmark initiatives, including the Universal Immunization Programme and Mission Indradhanush. This day also highlights the need for continued efforts to ensure everyone can access life-saving vaccines.

Universal Immunization Programme (UIP)

The Universal Immunization Programme (UIP) is one of India's most comprehensive public health initiatives, aiming to provide life-saving vaccines to millions of newborns and pregnant women annually. Initially launched in 1978 as the Expanded Programme on Immunization, it was rebranded as the UIP in 1985 when its coverage was extended beyond urban centers to rural areas, addressing disparities in healthcare access. In 1992, the UIP was incorporated into the Child Survival and Safe Motherhood Programme and, in 1997, into the National Reproductive and Child Health Programme. Since 2005, under the National Rural Health Mission, the UIP has become a central component of India's public health efforts, ensuring that vaccines reach every child, even in the most remote parts of the country.

With a targeted annual reach of around 2.67 crore newborns and 2.9 crore pregnant women, the UIP has become one of the most cost-effective health interventions in the

country, significantly reducing the under-5 mortality rate from 45 per 1000 live births in 2014 to 32 per 1000 live births (SRS 2020). With consistent efforts to reach and vaccinate all eligible children against vaccine-preventable diseases, the country's Full Immunization Coverage for FY 2023-24 stands at 93.23% nationally. ([state-wise Full Immunization Coverage for FY 2023-24](#))

Currently, the program provides free immunization against 12 diseases, including nine nationwide, such as Diphtheria, Tetanus, Polio, Measles, and Hepatitis B. Additionally, it offers vaccines against Rotavirus diarrhea, Pneumococcal Pneumonia, and Japanese Encephalitis in specific regions. Under this initiative, a child is considered fully immunized after receiving all vaccinations per the national schedule within the first year of life. Notable milestones include India's elimination of polio in 2014 and maternal and neonatal tetanus in 2015, achievements that underscore the impact of the UIP in protecting public health.

Mission Indradhanush

Mission Indradhanush (MI), launched in December 2014, is a strategic initiative by the Indian government to increase the full immunization coverage for children nationwide to 90%. Mission Indradhanush focuses explicitly on areas with low immunization rates, including hard-to-reach regions and communities where children are either unvaccinated or partially vaccinated. This mission adopts a targeted approach, prioritizing districts and pockets where immunization levels remain low, thereby striving to bridge critical gaps in vaccine coverage and ensuring that no child is left unprotected. Since its inception, twelve phases of Mission Indradhanush have been completed, covering 554 districts nationwide.

Mission Indradhanush has been integrated into other significant national programs, such as the Gram Swaraj Abhiyan and the Extended Gram Swaraj Abhiyan, further enhancing its outreach. Under these programs, immunization efforts extended to 16,850 villages across 541 districts and 48,929 villages across 117 aspirational districts.

The first two phases of Mission Indradhanush alone led to a 6.7% increase in full immunization coverage in just one year, reflecting its early success.

Progress so far

U-Win

The U-WIN Portal represents a significant leap forward in India's immunization efforts, providing a fully digitized vaccination record for pregnant women and children from birth to 17 years under the Universal Immunization Programme.

This digital platform aims to streamline vaccine delivery and record-keeping, ensuring everyone can easily access and manage their immunization records. Designed with user-friendly, citizen-centric services, U-WIN allows for 'Anytime Access' and 'Anywhere' vaccination, offering flexible scheduling options for recipients. Citizens can self-register through the U-WIN web portal or the mobile app, which makes it easier for families to keep track of vaccination schedules and receive automated SMS alerts for upcoming doses. The platform also generates a universal QR-based eVaccination Certificate. It allows them to create an Ayushman Bharat Health Account (ABHA) ID for themselves and a Child ABHA ID for their children, enabling comprehensive digital health management.

With accessibility in mind, the U-WIN portal is available in 11 regional languages, including Hindi, to ensure widespread usability across diverse linguistic communities. As of September 16, 2024, the platform has registered 6.46 crore beneficiaries, conducted over 1.04 crore vaccination sessions, and recorded 23.06 crore administered vaccine doses. This scale of registration and record-keeping highlights U-WIN's impact in making immunization data readily accessible and securely stored for millions of families across the country. The platform's broad capabilities and the use of technology demonstrate India's commitment to leveraging innovation to enhance healthcare accessibility, streamline immunization tracking, and strengthen public health infrastructure at the grassroots level, instilling a sense of reassurance and confidence in the audience.

India's journey in public health showcases remarkable achievements in eliminating several deadly diseases. From being officially certified polio-free to eradicating maternal and neonatal tetanus, the country has made significant strides in improving the health and well-being of its citizens. The country's proactive disease control and vaccination efforts, backed by solid infrastructure and international collaboration, have set global benchmarks. India's successes in immunization programs highlight its growing capacity to tackle vaccine-preventable diseases and contribute to global health security, making the audience feel connected and a part of a larger cause.



India's Public Health Milestones

India's public health journey is marked by significant achievements, including the world's largest COVID-19 vaccination drive. From becoming polio-free to eradicating maternal and neonatal tetanus, the country has made great strides in improving

health outcomes. Robust infrastructure, proactive disease control efforts, and international collaboration have helped India set global benchmarks in tackling vaccine-preventable diseases.

India's Covid Vaccination Drive

India's COVID-19 Vaccination Programme, launched on January 16, 2021, stands as a global success story in public health. By January 6, 2023, the program had administered over 220 crore doses, covering 97% of eligible citizens with at least one dose and 90% with both doses. Initially focused on the adult population, the program expanded to include younger age groups, with vaccinations for those aged 12-14 beginning on March 16, 2022, and preventive doses for individuals aged 18-59 starting April 10, 2022.

Overcoming significant challenges, the program required rapid vaccine research, training 2.6 lakh vaccinators and 4.8 lakh support members, and establishing an IT platform for tracking and delivery. This proactive approach enabled India to meet domestic needs and support global vaccination efforts through initiatives like Vaccine Maitri, which supplied vaccines to other nations.

Polio-Free India

On March 27, 2014, India and ten other countries in the WHO South-East Asia Region officially certified as polio-free—a significant public health achievement. India's last reported case of polio was on January 13, 2011, in Howrah, West Bengal. However, despite this certification, the country remains vigilant due to the persistent risk of poliovirus importation from the two countries where polio remains endemic: Afghanistan and Pakistan.

India's successful fight against polio has strengthened its broader immunization infrastructure, which is now being leveraged to protect against a range of Vaccine-Preventable Diseases (VPDs). Under the Universal Immunization Programme (UIP), the country continues introducing additional vaccines, aiming to ensure no child is left unprotected.

The systems developed during the National Polio Program have greatly enhanced routine immunization efforts, setting a goal of over 90% full immunization coverage. This progress is a collaborative effort supported by state governments, WHO, UNICEF, Rotary International, and other partners, who have been instrumental in eradicating polio and advancing India's immunization initiatives for broader public health security.

Elimination of Maternal and Neonatal Tetanus (MNTE)

India's success in eliminating maternal and neonatal tetanus (MNTE) is a significant public health accomplishment. Achieved in April 2015, well ahead of the global target of December 2015, MNTE validation was completed across all of India's 36 states and union territories. This milestone signifies that the incidence of maternal and neonatal tetanus has fallen to less than 1 case per 1,000 live births, effectively eliminating it as a public health problem. This achievement reflects India's commitment to safe maternal and newborn health practices through health system strengthening, high routine immunization coverage, clean delivery protocols, and intense surveillance. It is a testament to the dedication of health workers, policymakers, and stakeholders.

India declared Yaws-Free

In another historic milestone, India became the first country to be officially recognized as yaws-free by the World Health Organization (WHO), achieving this well before the global target year of 2020. This recognition highlights India's proactive and sustained efforts to eradicate the disease, primarily affecting rural and marginalized communities. The elimination of yaws reflects comprehensive public health efforts focused on early treatment, health education, and targeted interventions for vulnerable populations. WHO and UNICEF lauded India's achievements, noting the broader impact on community health, socio-economic improvement, and India's continued leadership in global public health.

Conclusion

In conclusion, India's commitment to immunization reflects a holistic approach to safeguarding public health, focusing on reaching every individual, especially those in underserved and remote areas. Through initiatives like the Universal Immunization Programme, Mission Indradhanush, and the U-WIN portal, the country has made remarkable strides in increasing immunization coverage, combating vaccine-preventable diseases, and reducing child mortality. India's successful elimination of polio, its resilient response to the COVID-19 pandemic, and its dedication to leveraging technology for healthcare access underscore the nation's capacity to meet complex health challenges. As World Immunization Day reminds us of vaccines' vital role in public health, India stands as an example of what can be achieved with comprehensive planning, community engagement, and a commitment to universal access. Continued efforts will be essential to maintaining and expanding these achievements, ensuring that no child is unprotected and everyone has access to life-saving vaccines for a healthier future.

Banabhatta and His Royal Biography: Exploring the Legacy of the Harshacharita

Banabhatta's Harshacharita is the oldest surviving biography in India. Apart from painting a glowing picture of his patron Harsha of the Pushyabhuti dynasty, the writer also speaks about himself. The early part of Bana's pedigree is mythical and narrates the origins of the Vatsyayana branch of the Bhargava Brahmanas, to which he belonged, while the later part is historical.

Bana was born in Pritikuta, a Brahmana village in the Kanyakubja area, famed for the learning and stature of its residents. His mother, Rajadevi, died when he was a small child, and he was brought up by his father, who died when he was fourteen. Bana was taught by an illustrious teacher named Bharchu. In his youth, he set out on a series of travels, accompanied by his half-brothers and a colorful entourage, including poets, philosophers, artists, actors, monks, ascetics, a gambler, a singer, a goldsmith, and a dancing girl. It is no wonder that he acquired a bit of a reputation.



One day, Bana received a letter summoning him to present himself in Harsha's court. The meeting started badly. The king had believed the gossip about Bana's wayward ways and treated him with scant regard. Bana was quick to defend himself, arguing that although he may have been a bit wild in his youth, he came from a respectable Brahmana family and lived a blameless married life. Within a few days, he became a court favorite, and many lavish presents and honors were

showered on him. Bana went on to write the Harshacharita, a eulogistic biography of his patron, as well as a prose romance called the Kadambari.

Bana describes the Harshacharita as an *akhyayika*, a genre of texts related to the *itihasa* tradition. The episodes in the biography are selected and narrated from a literary and aesthetic perspective, adding a unique charm to the narrative. Its descriptions are vivid and literary and sometimes show a touch of humor. The work displays Bana's skills as a master of Sanskrit prose. Typical of the genre of royal biographies are long, elegant passages eulogizing the king. Consider, for example, the following sentence:

He (i.e., Harsha) was embraced by the goddess of Royal Prosperity, who took him in her arms and, seizing him by all the royal marks on all his limbs, forced him, however, reluctant, to mount the throne-and this though he had taken a vow of austerity and did not swerve from his vow, hard like grasping the edge of a sword; clinging closely to duty through fear of stumbling in the uneven path of kings, and attended with all her heart by truth who had been abandoned by all other kings, but had obtained his promise of protection, and waited on reverentially by the reflected images of a fair handmaid standing near, which fell on his toe-nails, as if they were the ten directions of space impersonate.

According to some scholars, the Harshacharita is incomplete because it ends after Harsha rescues his sister Rajyashri from the flames of the pyre on which she sought to end her life and his accession to the thrones of Thanesar and Kanauj. However, V. S. Pathak argues that the work is complete as it has all five well-defined thematic stages: a beginning, effort, the hope of achieving the end, certainty of success, and a conclusion. This debate on the completeness of the Harshacharita invites us to ponder over its interpretation and significance. Rajyashri was Harsha's sister, but her name also means royal glory, and Harsha rescuing her symbolically represents his successful acquisition of royal glory.

Source Cowell and Thomas, 1993: 57; Pathak, 1966: 30-32

Reference: A History of Ancient and Early Medieval India by Upinder Singh

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Celebrating Cinematic Diversity

The **International Film Festival of India (IFFI)** stands as a beacon of cinematic excellence, showcasing a harmonious blend of regional and global films that reflect various cultures, narratives, and artistic pursuits. IFFI has been an example of attaining global acclaim and prowess without parting with the local roots. It has become a melting pot where films, artists, and visitors worldwide come together to celebrate art and craft. It is also a joyous celebration of the power of cinema as a universal language that transcends boundaries and brings together filmmakers and audiences worldwide.



It is fascinating how the entire structure of IFFI allows it to become a bridge that connects the **local with the global**. IFFI takes place in Goa, known for its deep-rooted Portuguese heritage, with beautifully preserved 17th-century churches and the surrounding tropical spice plantations. The multi-cultural fabric of Goa's society shines brightly, advocating equal respect for all cultures.

The statistics reflect that IFFI is a platform where diversity is cherished. This year's 55th IFFI festival, to be held from November 20 to 28 in Goa, has attracted significant global participation, with **1,676 submissions from 101 countries** and more than **180 films from 81 nations** set to be presented. Such numbers highlight IFFI's expanding global footprint and role as a conduit between cinematic traditions. At the same time,

multiple vernacular language movies rule the screens, providing a culture-fluid ecosystem for art to thrive!



One of the critical aspects that underscores IFFI's unique position as the champion of regional cinema is the Indian Panorama section. The diversity is reflected in the multiple vernacular language movies that are selected. This year's selection includes **25 feature films** in total, out of which **five are Hindi films, two Kannada films, one Tamil film, 3 Marathi films, two Telugu films, one Gujarati film, three Assamese, four Malayalam, three Bengali and one Galo film**. Similarly, in the Non-Feature category, there are 20 selections, including **seven Hindi films, 2 Tamil films, one Bengali film, one Haryanvi film, one Garo film, one Punjabi film, one Ladakhi film, one Marathi film, one Oriya film, one Tamil, one English, one Rajasthani film and one Konkani film**. This selection is a testament to the myriad storytelling traditions present within India, offering a microcosm of its diverse culture.

The Co-Production Market plays a pivotal role in fostering a collaborative and culturally inclusive cinematic environment. It further reinforces this blend of local and international as it showcases the seamless integration of local and global film industries. The official selection for the Co-Production Market features **21 feature films and eight web series** from seven countries, including Hindi, English, Assamese, Tamil, Marwari, Bengali, Malayalam, Punjabi, Nepali, Marathi, Pahadi, and Cantonese. This selection exemplifies IFFI's dedication and the Co-Production Market's significant contribution to this environment, blending regional and global storytelling.



Similarly, the Film Bazaar's **Work-in-Progress (WIP) Lab** at IFFI 2024 exemplifies the festival's commitment to nurturing new voices in cinema. The selected films include **Shape of Momos** by Tribeny Rai (Nepali), **Gaangshalik (Gaangshalik – River Bird)** by Shaktedhar Bir (Bengali), **Yerra Mandaram (The Red Hibiscus)** by Mohan Kumar Valasala (Telugu), **Kaatti Ri Raatti (Hunters Moon)** by Ridham Janve (Gaddi, Nepali), **Umali** by Siddharth Badi (Marathi), and **The Good, The Bad, The Hungry** by Vivek Kumar (Hindi). Notably, **five of these films** are debut features, shining a spotlight on young filmmakers' immense potential and innovative vision, inspiring hope for the future of cinema. The Lab's hybrid online and offline mentoring model facilitates vital feedback, enabling these filmmakers to refine their projects with regional authenticity and global appeal.



IFFI 2024, in a significant move, honors Australia as the “**Country of Focus.**” This unique recognition enhances the festival’s international character and underscores shared storytelling traditions through the India-Australia Audio Visual Co-production Treaty. It’s a clear example of how IFFI goes beyond being just a festival—it is a meeting ground for global narratives, where diverse voices come together to celebrate cinema.

With extensive global and regional participation, IFFI 2024 is set to be a beacon of artistic exchange. It reflects how cinema can act as a conduit for connection across borders. By championing both emerging and seasoned filmmakers and facilitating a blend of local authenticity and international collaboration, IFFI 2024 cements its position as a vital cultural hub that celebrates the vivid stories of the world.

Reference: Press Information Bureau

India's Political Stability Boosts Apparel Appeal

India's growing appeal as a global apparel sourcing hub has been reinforced by a recent report from the U.S. International Trade Commission (USITC), which cites political stability as a critical factor driving U.S. buyers to source more apparel from India. As the global garment supply chain becomes more complex, the ability to guarantee production timelines and mitigate political stability risks has made India an increasingly attractive option for U.S. buyers. The report highlights that with its stable political climate, India offers a reliable and scalable solution for high-value fashion items, positioning it as a strong competitor in the global apparel market.

India's Market Share in U.S. Apparel Imports (2013-2023)

India's apparel market share in the U.S. has grown steadily over the past decade. In 2013, India held a modest 4% share of U.S. apparel imports. By 2023, this figure had increased to 5.8%. This growth reflects India's increasing competitiveness, particularly in high-value apparel. As the U.S. continues diversifying its sourcing away from China, India is emerging as a viable and strategic partner for apparel sourcing.

India's market share in U.S. apparel imports has steadily risen from 4% in 2013 to 5.8% in 2023, showcasing growing confidence in Indian-made garments.

Political Stability as a Sourcing Factor

Political stability is critical in ensuring the smooth functioning of supply chains, especially in industries like apparel, where timely deliveries are crucial. According to the USITC report, political unrest in countries like Bangladesh can lead to disruptions, strikes, and delays, making them less reliable for high-value and time-sensitive garment orders. Conversely, India's relatively stable political

environment has positioned it as a dependable alternative for apparel sourcing, especially in the U.S. market.

As a result, American buyers are shifting more of their sourcing to India, where they feel confident in the reliability of both production and delivery schedules. This shift is particularly evident in high-value, fashion-focused apparel, where quality, timely production, and dependable logistics are paramount.

India's Strengths in Apparel Production

Several vital points drive India's competitiveness in the apparel industry:

Vertical Integration: India's textile industry is highly vertically integrated, encompassing all stages of production—from cotton farming to spinning, weaving, dyeing, and garment manufacturing. This self-sufficiency reduces dependency on external suppliers, ensuring a more controlled and reliable production process.

Skilled Labor Force: India's large and skilled workforce is mainly adept at high-quality garment finishing, which is a significant advantage in producing high-value fashion items. The country's labor force is trained in detailed stitching and garment customization, making Indian apparel highly desirable for global markets.

Government Support: The Indian government has introduced policies like the **Production Linked Incentive (PLI) Scheme** to enhance domestic manufacturing and exports. This initiative is helping apparel manufacturers invest in production capacity, technology, and innovation, positioning India to meet growing international demand.

Cotton-Based Apparel: India's strengths in cotton production give it a natural advantage in manufacturing cotton-based garments. The country is one of the largest producers of cotton in the world, supporting a robust apparel industry that exports a wide range of cotton garments to the U.S.

Growing Export Market: India has consistently increased its share of U.S. apparel imports. In 2023, India's apparel exports to the U.S. totaled \$4.6 billion, making it the fourth-largest supplier of apparel to the U.S. market.

India is also addressing the challenges that fuel the growth of the apparel industry. Dedicated steps have been taken to boost labor productivity, diversify artificial fiber, and improve logistics and infrastructure development.

Competitive Landscape: India vs. Other Suppliers

The USITC report also offers a detailed comparative analysis of India and other leading suppliers to the U.S. apparel market, including Bangladesh, Vietnam, Indonesia, and Pakistan. Understanding India's competitive positioning relative to these countries is crucial to assessing its growth potential.

Supplier	Market Share in U.S. Apparel Imports(2023)	Key Strengths	Challenges
Vietnam	17.8%	Expertise in both cotton & MMF garments	Increasing labor costs; limited domestic cotton production
Bangladesh	6.2%	Low labor costs; duty-free access to U.S.	Political instability; limited high-value product offerings
India	5.8%	Vertical integration; skilled labor; government support	Rising labor costs; infrastructure challenges; limited MMF production
Indonesia	8.5%	High-quality complex garments (business, outdoor, athletic)	Relatively high production costs; logistics inefficiencies
Pakistan	4.5%	Strong cotton sector; quality denim	Geopolitical risks; limited diversification in apparel

This table compares the market share and competitive strength of India versus other major suppliers of U.S. apparel imports in 2023

India's apparel industry is well-positioned to continue its upward trajectory in the global market, especially in the U.S. The country's political stability, vertical integration, skilled workforce, and strong government support make it an attractive destination for buyers seeking reliability and high-quality garments.

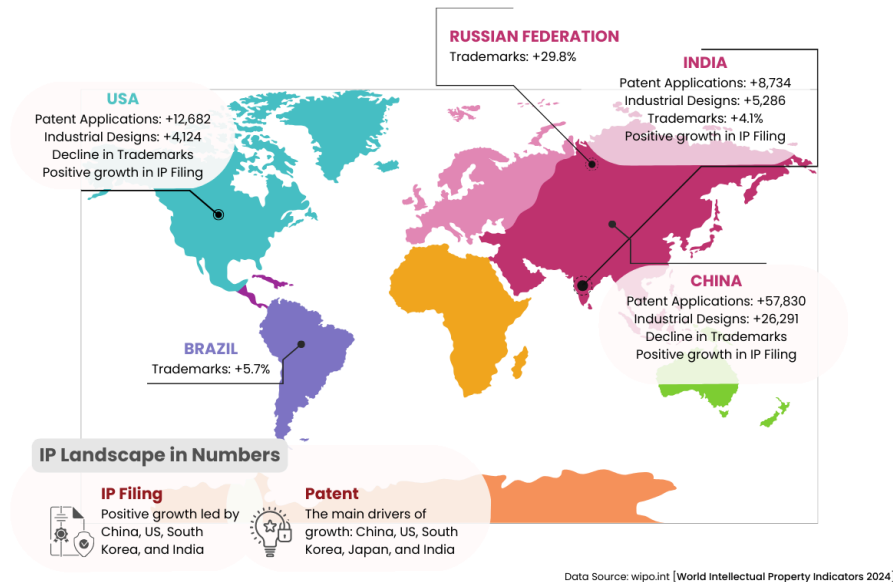
References:

[USITC Report](#)

<https://www.usitc.gov/publications/332/pub5543.pdf>

India Secures Position in Top Ten Countries in Patents, Trademarks, and Industrial Designs: WIPO 2024 Report

The World Intellectual Property Organization (WIPO) has published the World Intellectual Property Indicators (WIPI) 2024, underscoring global trends in intellectual property (IP) filings. The report reveals significant patent, trademark, and industrial design application growth across top economies. India's achievement of securing a spot in the global top 10 for all three significant intellectual property (IP) rights—patents, trademarks, and industrial designs—is a testament to its growing influence in the global IP landscape. This solidifies India's position as a worldwide leader in the intellectual property (IP) landscape, showing substantial progress and marking new milestones in IP activity.



India recorded the fastest growth in patent (+15.7%) applications in 2023 among the top 20 origins, marking the fifth consecutive year of double-digit growth. India ranks sixth globally for patents with 64,480 applications, with resident filings accounting for over half of all submissions (55.2%)—a first for the country. The patent office granted 149.4% more patents in 2023 than the previous year, underlining the country's fast-evolving IP ecosystem.

The report indicates a steady rise (36.4%) in India's industrial design applications, which aligns with increasing emphasis on product design, manufacturing, and creative industries within India. The top three sectors—Textiles and Accessories, Tools and Machines, and Health and Cosmetics—made up almost half of all design filings. Between 2018 and 2023, patent and industrial design applications more than doubled, while trademark filings increased by 60%, reflecting the country's growing emphasis on IP and innovation. India's patent-to-GDP ratio also saw significant growth, rising from 144 to 381 in the past decade, indicating that IP activity is scaling alongside economic expansion.

India ranked fifth globally in trademark filings, with a 4.1% increase in 2023. Nearly 90% of these filings were by residents, with key sectors including Health (21.9%), Agriculture (15.3%), and Clothing (12.8%) leading the way. India's trademark office holds the second-largest number of active registrations worldwide, with over 3.2 million trademarks in force, reflecting the country's strong position in global brand protection.

The report underscores the continued growth in global intellectual property (IP) filings, a testament to innovation resilience despite economic challenges. Key findings show a record of 3.55 million patent applications filed worldwide in 2023, up 2.7% from 2022, with notable contributions from leading Asian economies. Residents in China, the United States, Japan, South Korea, and India largely drove this increase. This growth trend, especially in resident filings, emphasizes a shift towards local innovation, with many countries, including India, demonstrating resilience and a commitment to strengthening their domestic IP landscapes.

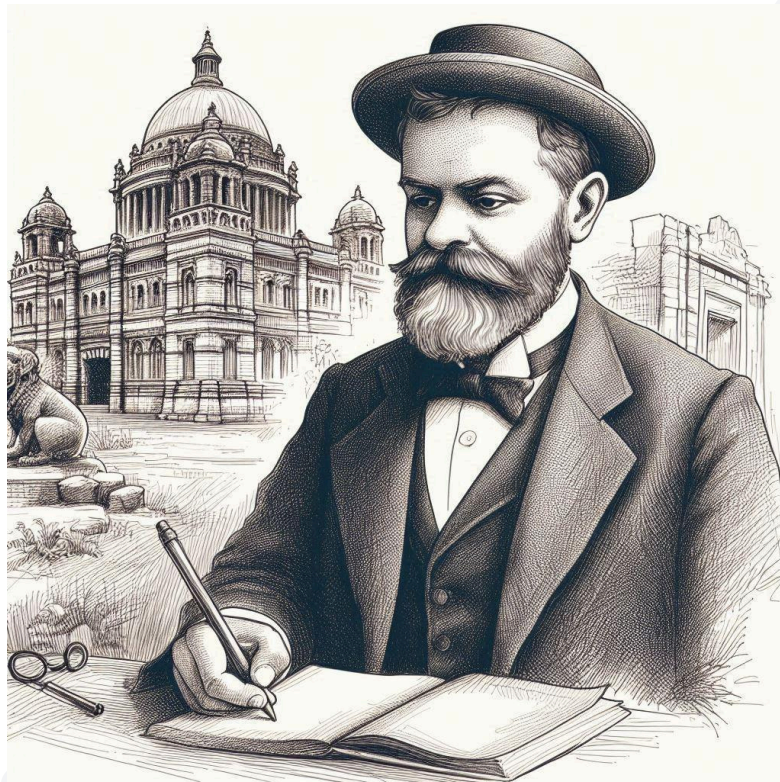
The findings from WIPO's World Intellectual Property Indicators 2024 showcase India's advancements in innovation and IP. The steady increase in resident filings demonstrates the impact of government initiatives, such as the 'Make in India' and 'Startup India' campaigns, to make India a global innovation leader. These initiatives have not only encouraged local innovation but also attracted foreign investment, contributing to India's strong position in the global IP landscape.

"Life is not a matter of holding good cards, but of playing a poor hand well"

Robert Louis Stevenson

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The Identification of Taxila



Many major cities mentioned in ancient Indian texts were identified in the 19th century. One of the men who significantly contributed to this field was Sir Alexander Cunningham, an archaeologist who became the first Director General of the Archaeological Survey of India in 1871. Like others, Cunningham pieced together valuable clues to the location of ancient Indian cities from details given in the classical Graeco-Roman accounts and the travelogs of the Chinese pilgrims Xuanzang and Faxian. Unlike others, however, he routinely confirmed his identifications through field surveys. Cunningham counted among his significant achievements the identifications of Aornos, Taxila, Sangala, Srughna, Ahichchhatra, Bairat, Sankisa,

Shravasti, Kaushambi, Padmavati, Vaishali, and Nalanda. Cunningham had initially identified the site of ancient Taxila (Takshashila) with Manikyala. However, his explorations at Shah-dheri in 1863-64 convinced him that the correct identification lay here. The following extract reveals how he reached this conclusion:

The position of the celebrated city of Taxila has hitherto remained unknown, partly owing to the erroneous distance recorded by Pliny and partly to the desire for information regarding the vast ruins that still exist in the vicinity of Shah-dheri. All the copies of Pliny agree in stating that Taxila was only 60 Roman, or 55 English, miles from Peucolaitis, or Hashtnagar, which would fix its site somewhere on the Haro river, to the west of Hasan Abdal, or just two days' march from the Indus. But the itineraries of the Chinese pilgrims agree in placing it at three days' journey to the east of the Indus, or in the immediate neighborhood of Kala-ka-Sarai, which was the third halting-place of the Mogul emperors, and which is still the third stage from the Indus, both for troops and baggage.

Now as Hwen Thsang, on his return to China, was accompanied by laden elephants, his three days' journeys from Takshashila [sic] to the Indus at Utakhanda, or Ohind, must necessarily have been of the same length as those of modern days, and, consequently, the site of the city must be looked for somewhere in the neighborhood of Kala-ka-sarai. This site is found near Shah-dheri, just one mile to the north-east of Kala-ka-sarai, in the extensive ruins of a fortified city, around which I was able to trace no less than 55 stupas, of which two are as large as the great Manikyala tope (i.e., stupa), 28 monasteries, and nine temples. Now the distance from Shah-dheri to Ohind is 36 miles, and from Ohind to Hashtnagar is 38 more, or 74 miles, which is 19 above the distance recorded by Pliny between Taxila and Peukelaotis [sic]. To reconcile these discrepant numbers, I suggest that Pliny's 60 miles, or LX, be read as 80 miles or LXXX, equivalent to 73% English miles, or within half a mile of the distance between the two places.

Then follows a discussion of Taxila's history and a detailed description of the mounds at the site, namely Bhir, Hathial, Sirkap, Kacha-kot, Babar Khana, and Sirsukh.

In closing my account of the extensive ruins near Shah-dheri, which I have endeavored to identify with the famous Taxila of the Greeks, I may remark that the identification is most satisfactorily confirmed by the bearings and distances of the following two places visited by Hwen Thsang, both of which will be now described under the names of Hasan Abdal and Baoti Pind. The ruins at these places form what may be called the western group of the suburban or outlying remains of Taxila, the ancient capital of Panjab.

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Carl Sagan

"Look again at that dot. That's here. That's home. That's us. On it everyone you love, everyone you know, everyone you ever heard of, every human being who ever was, lived out their lives... on a mote of dust suspended in a sunbeam."

– Carl Sagan



Carl Edward Sagan was a renowned American astronomer, planetary scientist, and science communicator. He is best recognized for his groundbreaking research on the potential existence of extraterrestrial life. One of his notable achievements includes an experimental demonstration showing how amino acids could be formed from simple chemicals when exposed to light.

Biofuels

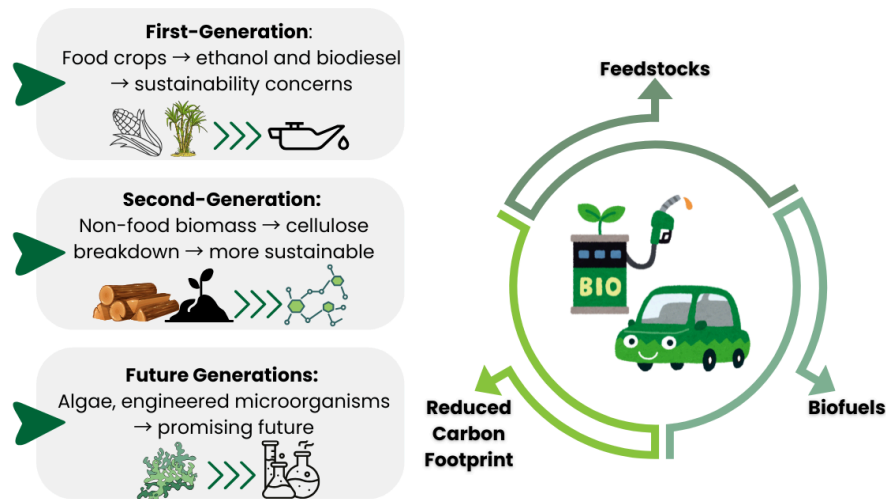
Biofuels are renewable energy sources derived from organic matter. They are typically produced in two primary forms, though they span across first to fourth-generation biofuels. First-generation biofuels, primarily bioethanol and biodiesel, are produced using food crops as feedstock, raising essential questions about their sustainability and impact on the global food supply. **Bioethanol is the most widely produced first-generation biofuel, derived from the microbial fermentation of starch-and sugar-rich crops such as corn and sugarcane.**

Commercially used strains, such as *Saccharomyces cerevisiae* and *S. pombe*, ferment the C5 and C6 sugars (mostly xylose and glucose) into bioethanol. The bioethanol is then distilled and refined as a fuel or fuel additive. Biodiesel, or fatty acid methyl ester (FAME), is produced from food-grade oils or animal fats such as rapeseed, soy, or palm oil. Unlike bioethanol, biodiesel production involves a chemical process known as transesterification. In this process, lipids are reacted with short-chain alcohol, typically methanol, in the presence of a catalyst, usually potassium hydroxide, to produce biodiesel. While bioethanol and biodiesel offer viable alternatives to fossil fuels, their dependence on food crops and extensive agricultural land use poses significant sustainability challenges.

These concerns have spurred growing interest in 'second-generation' biofuels. **Second-generation biofuels, in contrast, are derived from non-food biomass**, such as agricultural residues (e.g., corn stover or bagasse), forestry waste, and other lignocellulosic materials plant-based biomass that includes rigid, fibrous components like lignin, cellulose, and hemicellulose. This type of biofuel is produced using more complex processes, often involving converting fibrous non-edible material called cellulose or hemicellulose into fuel. Second-generation biofuels are considered more

sustainable, as they utilize waste products and do not compete directly with food production, offering reassurance about the progress in biofuel technology. Bioethanol is another type of second-generation biofuel derived from agricultural residues, woody biomass, or byproducts from pulp mills. It is produced through biomass gasification to create syngas, which is then converted into methanol.

Similarly, biogas is produced through the anaerobic digestion of organic waste, including manure, food scraps, and wastewater. Microbes break down the organic matter without oxygen, producing biogas, primarily composed of methane and carbon dioxide. The future of biofuels looks promising with the development of third and fourth-generation biofuels. These next-generation biofuels, which are still in the early stages of development, build on prior advances by utilizing new feedstocks, such as algae or engineered microorganisms. They offer the potential for greater efficiency and carbon reduction, providing hope for a more sustainable energy future.



UNDERSTANDING BIOFUELS: FROM FOOD CROPS TO ALGAE.

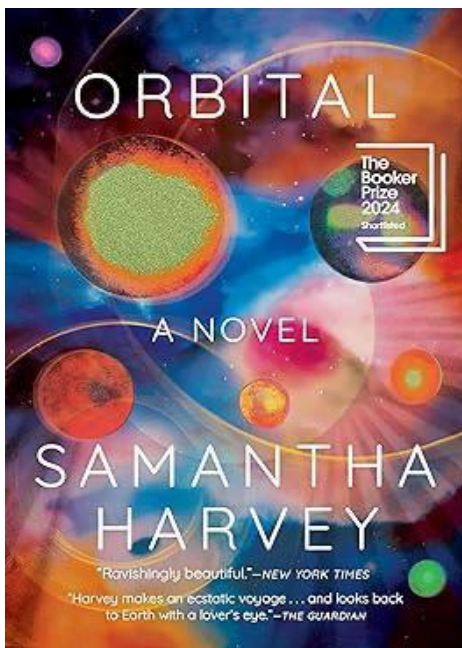
theknowledgeandlearningenterprise.com

ASSET Platform of NITI Aayog

NITI Aayog, in collaboration with the Ministry of Power and the Ministry of New and Renewable Energy, launched the ASSET platform—Accelerating Sustainable Solutions for Energy Transition. ASSET platform is a timely initiative to support states in accelerating their green transition. The platform will assist in formulating state energy transition blueprints along with aiding in its implementation, preparing a pipeline of bankable projects, showcasing best practices across states as well as upcoming technology and innovations in critical sectors like BESS, Green Hydrogen, Energy efficiency, e-mobility, offshore wind, etc. The role of states is crucial in achieving India's national aspirations of becoming *Viksit Bharat* by 2047 and achieving Net-zero GHG emissions by 2070. This requires sustained economic growth over the next two decades. States must develop and implement energy transition plans aligning with national goals. This involves three key steps:

1. Preparing comprehensive energy transition blueprints
2. Developing investible projects and ensuring their effective implementation
3. Fostering innovation in emerging technologies

Orbital by Samantha Harvey Won the Booker Prize: A Journey of Unity in Space



Samantha Harvey has been awarded the prestigious Booker Prize for her novel *Orbital*.

Orbital, a 2023 novel by English writer Samantha Harvey, is a celebration of diversity and international cooperation. Published by Jonathan Cape in the UK and Grove Atlantic in the US, the novel, told over the course of 24 hours, follows six astronauts from Japan, Russia, the United States, Britain, and Italy (men and women) aboard the International Space Station as they orbit above the Earth. The novel's narrative structure, which includes the reflections of the astronauts on humanity and the Earth, as well as the inclusion of the

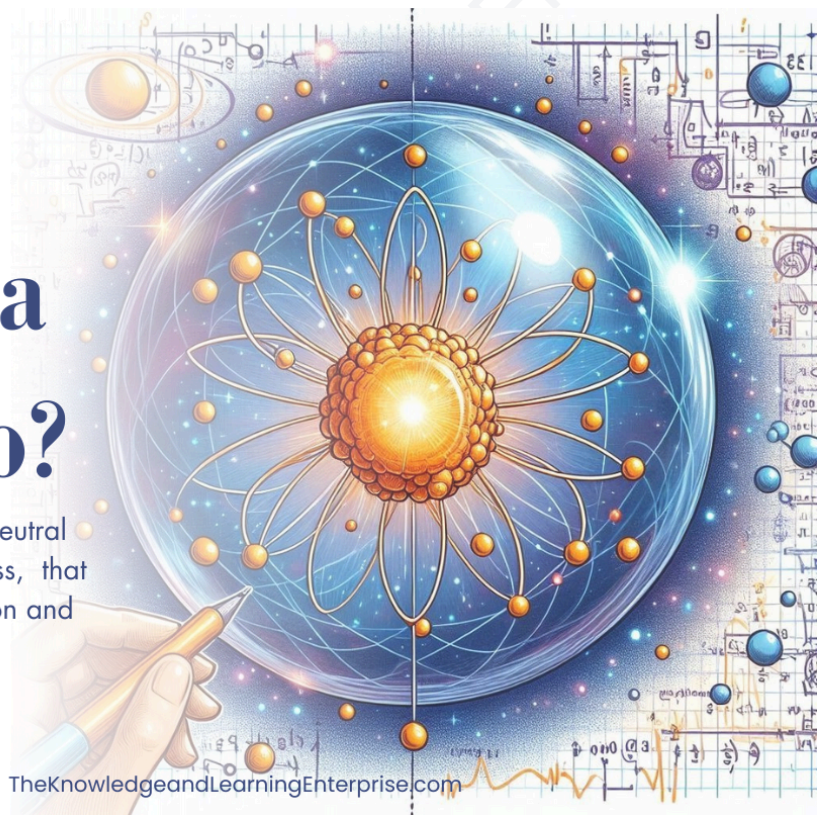
narrative of an alien, a robot, and a pre-historic human sailing on the sea, sets it apart. Each chapter of the book covers a single 90-minute orbit around the Earth, with sixteen orbits in twenty four hours.

Critics praised the novel, which won the 2024 Booker Prize. It also earned spots on the shortlists for the Orwell Prize for political fiction and the Ursula K. Le Guin Prize for imaginative fiction.

Neutrinos Explained: How the Universe's Smallest Particles Shape Physics?

What is a Neutrino?

An elementary electrically neutral particle, with a tiny rest mass, that interacts via weak interaction and gravity



A neutrino, denoted by the Greek letter ν , is an elementary particle that interacts via weak interaction and gravity. The neutrino is so named because it is electrically neutral and because its rest mass is so tiny (-ino) that it was long thought to be zero. The rest mass of the neutrino is much smaller than that of the other known elementary particles. The weak force has a very short range, the gravitational interaction is extremely weak due to the minimal mass of the neutrino, and neutrinos do not participate in the electromagnetic or strong interaction.

However, despite their elusive nature, neutrinos play a significant role in the field of particle physics. Their ability to pass through ordinary matter unimpeded and undetected is a key aspect of their study and understanding.

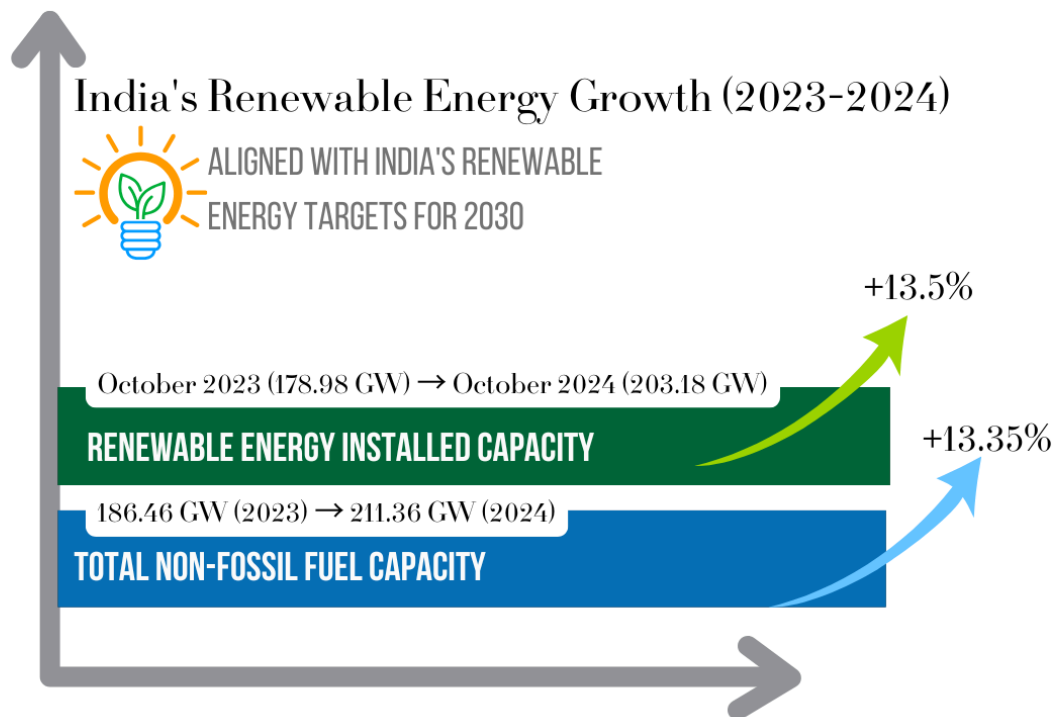
“Life is a succession of lessons which must be lived to be understood”

Helen Keller

Volume 03 | 2024

Breaking Down India's Renewable Energy Milestones in 2024

The Ministry of New and Renewable Energy (MNRE) has released its latest data, highlighting substantial growth in India's renewable energy sector from October 2023 to October 2024. This progress underscores India's commitment to achieving its clean energy targets in line with Prime Minister Shri Narendra Modi's 'Panchamrit' goals.



India's total renewable energy installed capacity increased by a staggering 24.2 GW (13.5%) in a year, reaching 203.18 GW in October 2024 from 178.98 GW in October 2023. This significant rise aligns with India's ambitious targets in the RE sector.

Including nuclear energy, the total non-fossil fuel capacity rose to 211.36 GW in 2024, compared to 186.46 GW in 2023.

Solar and Wind Power Surge

- **Solar Power:** The solar sector witnessed a remarkable surge, with an increase of 20.1 GW (27.9%), growing from 72.02 GW in October 2023 to 92.12 GW in October 2024. The combined total solar capacity, including projects under implementation and tendered, now stands at 250.57 GW, a substantial rise from 166.49 GW last year. This significant rise in solar power capacity is a promising sign for the future of solar energy in India.
- **Wind Power:** Wind energy also demonstrated steady growth, with installed capacity increasing by 7.8%, from 44.29 GW in October 2023 to 47.72 GW in 2024. The total capacity in the pipeline for wind projects has now reached 72.35 GW, indicating a stable and consistent growth in wind energy in India.

Capacity Additions

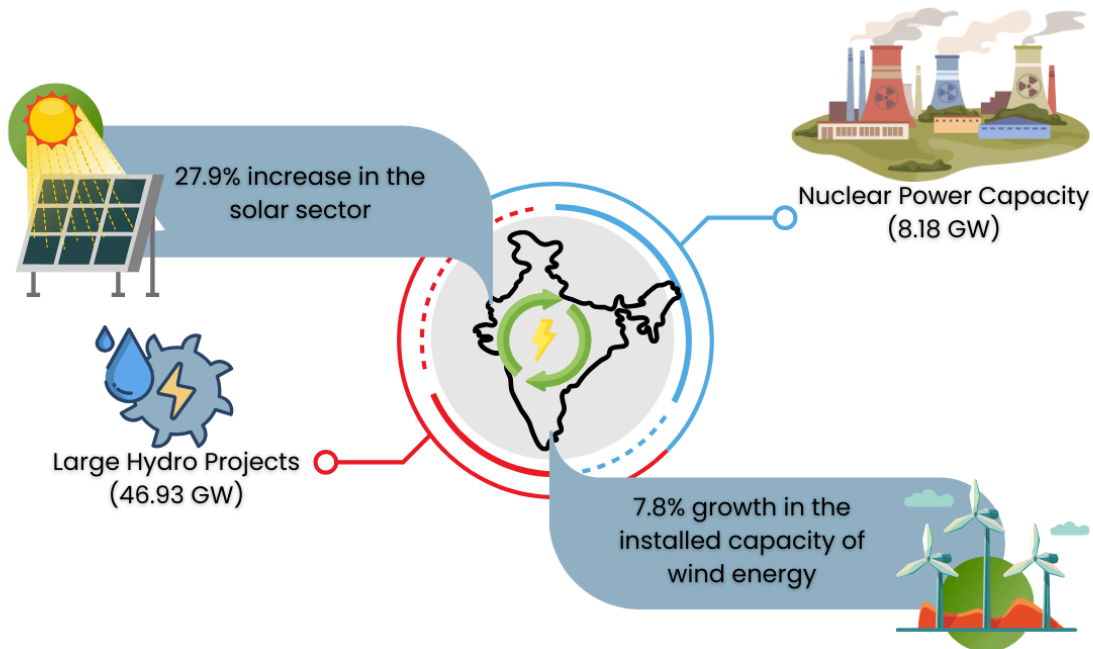
From April to October 2024, India added 12.6 GW of renewable energy capacity. In October 2024 alone, 1.72 GW was installed, marking an accelerated shift towards renewable energy. This rapid pace of transition is encouraging and reflects India's commitment to clean energy.

The renewable energy projects under implementation and tendered saw significant expansion, with 143.94 GW under implementation and 89.69 GW tendered as of October 2024. This notable increase from 99.08 GW under implementation and 55.13 GW tendered as of October 2023 ensures consistent progress toward India's clean energy targets.

Hydro and Nuclear Contributions

As of October 2024, large hydro projects contributed 46.93 GW to India's renewable portfolio, while nuclear power capacity contributed 8.18 GW. These contributions

strengthen the diversity and resilience of India's renewable energy mix, supporting the country's comprehensive approach to green energy transition.



INDIA'S RENEWABLE ENERGY: GROWTH AND CONTRIBUTIONS

theknowledgeandlearningenterprise.com

Source: Press Information Bureau

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How Glacial Lake Outburst Floods (GLOFs) Threaten Communities and What's Being Done

A glacial lake outburst flood (GLOF) is a sudden and rapid release of water from a glacial lake. GLOFs can be caused by the collapse or breach of a moraine or ice dam, glacial meltwater, avalanches, volcanic activity, and fragmentation of the source glacier.



Saddlebag Lake, Yosemite National Park, California, USA

GLOFs can have catastrophic consequences, including severe damage to downstream populations and infrastructure, significant loss of life, and threats to people's livelihoods. GLOFs can occur when glaciers retreat, forming lakes behind moraine or ice dams. These dams can be weak and burst suddenly. The Glacial Lake Outburst Flood and Landslide Lake Outburst Surveillance System is a framework that monitors and mitigates the risks of GLOFs and landslide-induced lake outbursts. The system uses advanced technologies, real-time monitoring, and community engagement to address these urgent threats.

Image: Rennett Stowe from USA, CC BY 2.0 <<https://creativecommons.org/licenses/by/2.0>>, via Wikimedia Commons

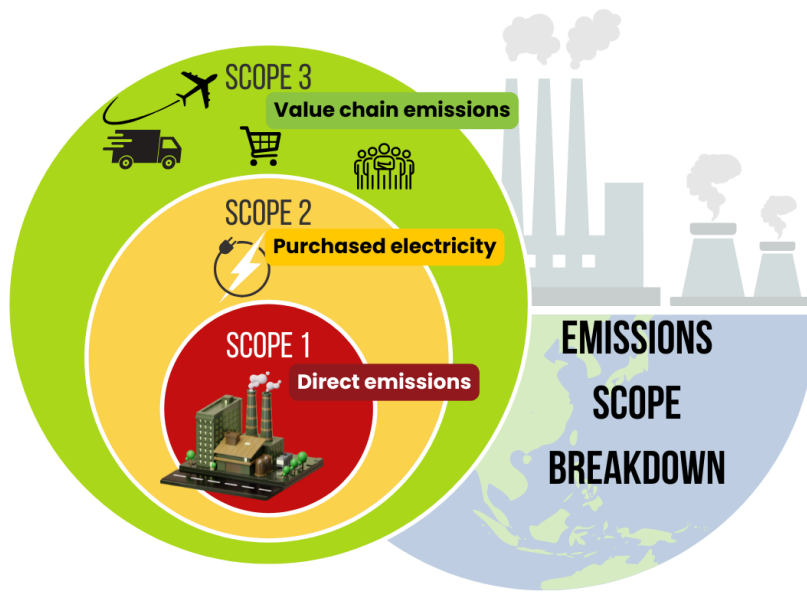
Understanding Scope 1, 2, and 3 Emissions: A Guide to Corporate Carbon Footprint

Climate Basics

What are Scope 1, 2, and 3 emissions?

Scope 1, 2, and 3 emissions are greenhouse gases released across an organization's entire value chain. Scope 3 emissions are the most complex, released before and after a product is delivered or consumed.

Organizations must first understand their emissions across Scope 1 (direct emissions), Scope 2 (indirect emissions from purchased electricity), and Scope 3 (all other indirect emissions in their value chain). Tackling these emissions, particularly the complex Scope 3, is not just a task, but a strategic move that is essential for businesses aiming to achieve their net-zero ambitions.



This understanding is the first step towards developing a transition plan towards net zero, involving several key steps. Companies must start by identifying their primary GHG emission sources across all scopes. This mapping forms the basis for setting realistic targets and finding the most significant areas for emission reductions.

School

One word, six letters, millions of memories, thousands of mistakes, hundreds of stories, zero regrets, infinite love, care and happiness

Ancient Indian Manuscripts on Palm Leaves: History, Craft, and Conservation Technique

Paper was invented in China in about the 2nd century BCE. Block printing was invented in that land in about the 8th century, and printing from movable type in the 11th century. These technologies gradually spread to other parts of Asia and eventually to Europe. In India, traditional writing materials and methods continued to be used for many centuries. However, a unique and enduring aspect of Indian history is the use of palm leaves for manuscript writing. These ancient Indian manuscripts, known as talapatra in Sanskrit and olai in Tamil, hold a significant place in our cultural heritage.

Here is a description of how such manuscripts were usually made:

- The leaf used was either from the talipot palm (*Corypha umbraculifera*; tali in both Sanskrit and Tamil) or the palmyra palm (*Borassus flabelliformis*, Sanskrit tala, Tamil panai). The talipot leaf is larger, thinner, more flexible, and more durable than the palmyra. Talipot leaves may measure about 90 x 8-9 cm, and the palmyra ones about 50 x 3-4 cm.
- The selected leaves were cut to the right shape and size with utmost precision.
- They were then pierced in one, two, or three places (on the left, middle, and right top).
- A string was woven through these holes and then wound around the leaves, a process that required great attention to detail.
- The cover of the palm leaf manuscript was made of wood, dry palm petioles, or, in rare cases, ivory, showcasing the craftsmanship and dedication of the scribes.

- The writer engraved letters on the leaf with a stylus (a pointed, pen-like object).
- The leaf was then smeared with soot or powdered charcoal mixed with vegetable juice so that the black mixture filled the grooves and the writing was easy to read. The letters ran parallel to the length of the leaves. In some cases where the leaf was very long or when the text was in verse, the words were written in two or three columns. If there was a commentary, it was usually written above, below, or sometimes around the text. Page numbers were often given in the right margin.

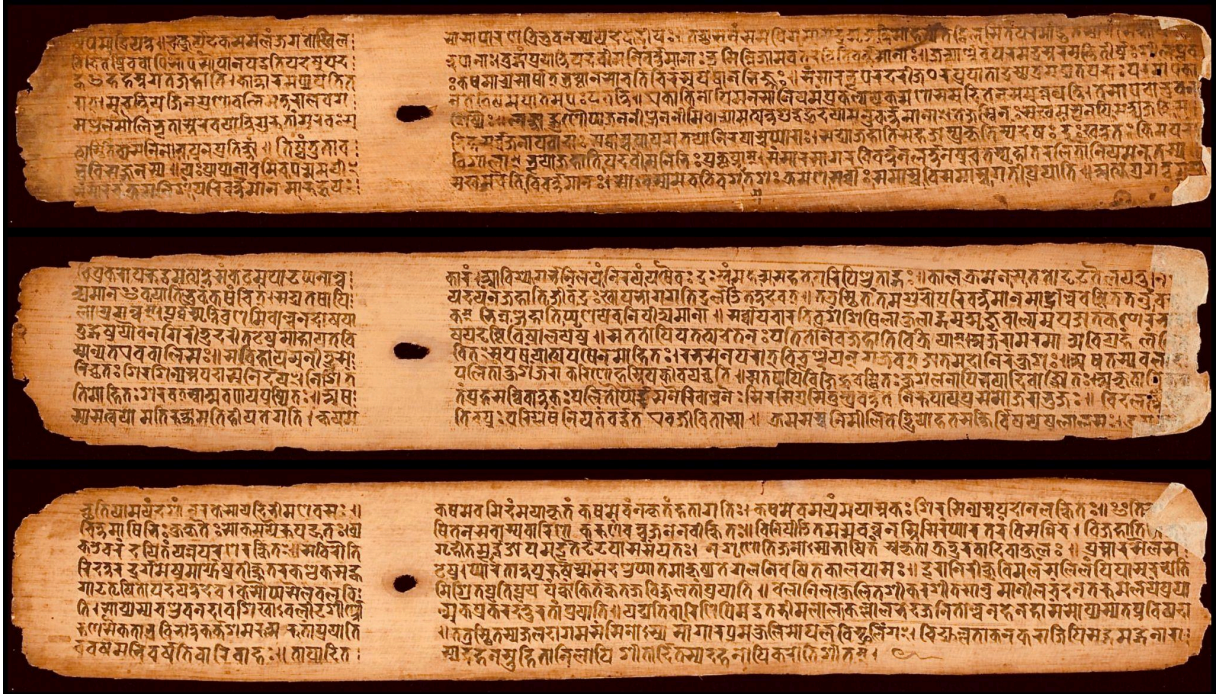
Palm leaf manuscripts, despite their historical significance, were vulnerable to many natural hazards such as heat, insects, water, fungus, dust, fire, and the danger of destruction by human hands. This vulnerability underscores the importance of the meticulous preservation efforts. Scribes kept the manuscript tradition alive by repeatedly making copies of old manuscripts. This vibrant tradition started declining around the 19th century with the coming of the printing press.

There are particular techniques for treating and preserving old palm-leaf manuscripts.

First, the manuscript is fumigated or treated with insecticides (e.g., thymol, chloro-mate solution, formaldehyde, pho-sphene gas, or ethylene oxide). The leaves are then cleaned using water, detergents, or ethyl alcohol. Next, any split, broken, or damaged portions are repaired. This can be done using special, thin paper and a water-soluble mixture, including small quantities of polyvinyl acetate and methylcellulose. Once the repairs are complete, the leaves are oiled to make them flexible and polished gently with a soft, dry cloth. They can then be restrung, and the covers are attached. The repaired manuscript must be stored carefully to protect it from any fresh damage.

The discovery, preservation, and care of ancient manuscripts are crucial to the preservation of historical heritage. Thousands of old manuscripts exist in various

parts of the subcontinent whose contents have not yet been studied or published. It is impossible to estimate how many have been destroyed and how many are waiting to be discovered. [Reference: A History of Ancient and Early Medieval India by Upinder Singh]



Shisyalekha (IAST: Śiṣyalekha) is a 5th-century Sanskrit composition by Buddhist grammarian and poet Candragomin, who was the mentor of Ratnakirti. This work, written in the form of an elaborate epistolary poem, narrates the story of a monk who violates his celibacy vow by engaging in a romantic relationship with a princess. Though notable as a standalone poem, Shisyalekha holds historical importance due to its use of a well-developed Devanagari script in 1084 CE. The text was transcribed shortly after its creation, resulting in multiple versions of Devanagari manuscripts that have survived. Notable copies are housed in institutions such as Tokyo University Library and the St. Petersburg Saltykov-Schedrin Library.

A palm-leaf manuscript version was acquired by Daniel Wright in May 1875 and is now preserved at Cambridge University Library.

Image: Ms Sarah Welch, CC BY-SA 4.0 <<https://creativecommons.org/licenses/by-sa/4.0/>>, via Wikimedia Commons

Know Your Institutions: IEPFA, NCAER, and BSE for Financial Growth



IEPFA: The Investor Education and Protection Fund Authority (IEPFA) was established on September 7, 2016, under the Ministry of Corporate Affairs, Government of India. This date marks a significant milestone in India's financial history as it signifies the formal recognition of the need for an institution dedicated to safeguarding investor interests. IEPFA manages the Investor Education and Protection Fund, which focuses on safeguarding investor interests by facilitating the refund of shares, unclaimed dividends, and matured deposits/debentures. Through

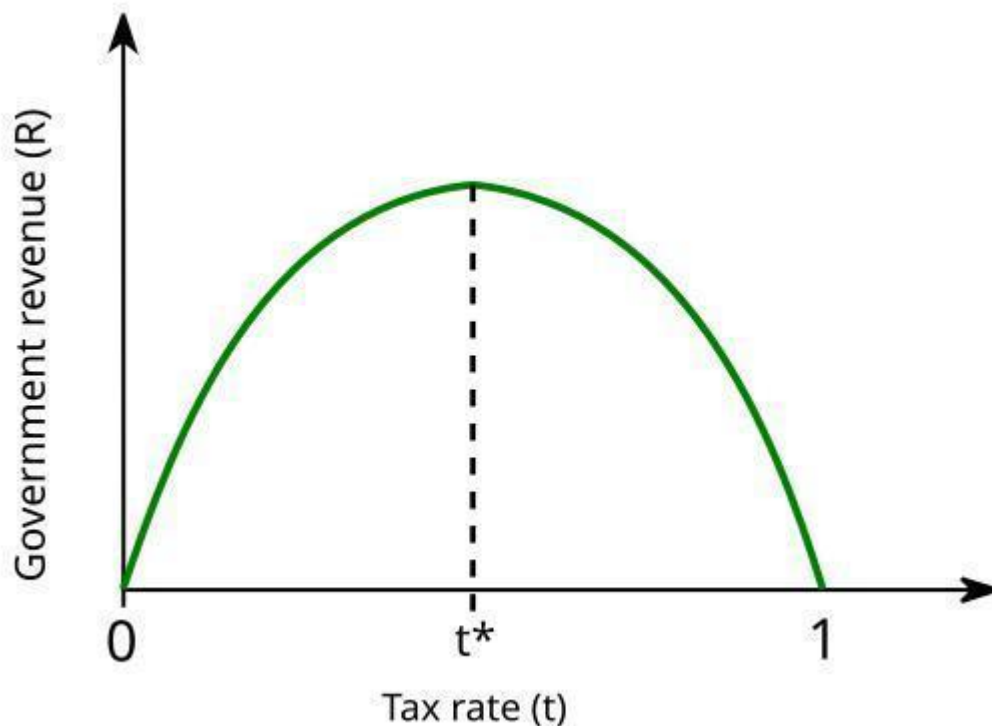
its initiatives, the IEPFA aims to ensure transparency, protect investors' rights, and promote financial literacy nationwide.

NCAER: NCAER, India's oldest and largest independent economic think tank, has been a key player in shaping policy choices for both the public and private sectors since its establishment in 1956. It stands out among global think tanks for its unique combination of rigorous economic analysis, policy outreach, and extensive data collection capabilities, particularly for large-scale household surveys. Under the leadership of its Director General, Dr. Poonam Gupta, who assumed office on July 1, 2021, and the guidance of an independent governing body chaired by Mr Nandan M. Nilekani, NCAER continues to be a beacon of informed decision-making.

BSE: Established in 1875, BSE (formerly Bombay Stock Exchange) is not just Asia's first, but also the world's fastest stock exchange with a trading speed of 6 microseconds. As India's leading exchange group, BSE has been instrumental in the growth of the Indian corporate sector by providing an efficient platform for raising capital. Its expansion into trading in equities, currencies, debt instruments, derivatives, and mutual funds has further solidified its position. The globally tracked SENSEX index and BSE's continued influence in the financial markets underscore its global reach, making it a key player in the international financial community.

Understanding the Laffer Curve: Taxation and Revenue

Assume that no tax revenue is raised at the extreme tax rates of 0% and 100%, meaning that there is a tax rate between 0% and 100% that maximizes government tax revenue.



A basic representation of a Laffer curve, plotting government revenue (R) against the tax rate (t) and showing the maximum revenue at t^*

The shape of the curve, a fascinating subject of ongoing debate among economists, is a function of taxable income elasticity—i.e., taxable income changes in response to changes in the rate of taxation. As popularized by supply-side economist Arthur

Laffer, the curve is typically represented as a graph that starts at 0% tax with zero revenue, rises to a maximum revenue rate at an intermediate rate of taxation, and then falls again to zero revenue at a 100% tax rate. However, the shape of the curve is uncertain and disputed among economists.

One implication of the Laffer curve is that increasing tax rates beyond a certain point is counter-productive for raising further tax revenue. However, the hypothetical maximum revenue point of the Laffer curve for any given market cannot be observed directly and can only be estimated, leading to intense and often controversial debates. According to The New Palgrave Dictionary of Economics, estimates of revenue-maximizing income tax rates have varied widely. The shape of the Laffer curve may also differ between different global economies. The Laffer curve was popularized in the United States with policymakers following an afternoon meeting with Ford Administration officials Dick Cheney and Donald Rumsfeld in 1974, in which Arthur Laffer reportedly sketched the curve on a napkin to illustrate his argument. The term "Laffer curve" was coined by Jude Wanniski, who was also present at the meeting. The basic concept was not new; Laffer notes antecedents in the writings of the 14th-century social philosopher Ibn Khaldun and others.

Impact of Section 143(10) on Auditing Standards in India

Section 143(10) of the Companies Act, 2013.

The three SAs, SA 800 (Revised) (Special Considerations–Audits of Financial Statements Prepared per Special Purpose Frameworks, SA 805 (Revised) (Audits of Single Financial Statements and Specific Elements, Accounts or Items of a Financial Statement, SA 810 (Revised) (Engagements to Report on Summary Financial Statements) also for notifying under Section 143(10) of the Companies Act, 2013 are also recommended.

Out of 11 NFRA members attending the meeting, 8 Members representing CAG, RBI, SEBI, two independent experts, Prof Narayan Swamy, Retired Professor IIM Bangalore, Professor Sanjay Kallapur, Professor ISB, Hyderabad, two Full-Time Members of NFRA, and the Chairperson of NFRA supported these four proposals, providing a strong mandate for the decisions. The three ICAI representatives expressed their disagreement with the above four proposals. The Authority also approved the other 33 auditing standards per the corresponding global standards.

In line with the practice followed globally in countries such as the UK, Australia, and Singapore, the Authority, as a leading voice in the field, recommended that the Central Government name the Auditing Standards IndSAs. Upon the Central Government's approval, these Standards are recommended to be effective from 1.04.2026.

The National Financial Reporting Authority (NFRA) was constituted on 01st October 2018 by the Government of India under Sub Section (1) of Section 132 of the Companies Act, 2013.

- Functions and Duties As per Sub Section (2) of Section 132 of the Companies Act, 2013, the duties of the NFRA are to:
- Recommend accounting and auditing policies and standards to be adopted by companies for approval by the Central Government;
- Monitor and enforce compliance with accounting standards and auditing standards;
- Oversee the quality of service of the professions associated with ensuring compliance with such standards and suggest measures for improvement in the quality of service;
- Perform such other functions and duties as necessary or incidental to the aforesaid functions and duties.

Successful Technologies from TDF Scheme: Key Developments

Technology Development Fund Scheme

Since January 2023, a total of Rs 120 crore has been allocated and Rs 43.89 crore has been disbursed as grant-in-aid to the industries under the Technology Development Fund (TDF) Scheme; 16 Micro, Small and Medium Enterprises (MSMEs) and 20 start-ups have been supported under the TDF Scheme since January 2022.

During the last five years, 42 projects of cost Rs 182.41 crore to MSMEs and 25 projects of cost Rs 59.47 crore to start-ups have been sanctioned under the TDF scheme. As of now, 26 technologies have been successfully developed. The details of these technologies are as follows:

S No	Successfully developed Technologies
1.	AVPSM, ARINC 818 for an Advance Military Aircraft
2.	SMFD (Smart Multi-Functional Display) for an advance Military Aircraft
3.	40TPH Pump (Submersible for watering & dewatering) for Indian Naval Ship
4.	125 TPH Pump (Recirculation Pump) for Indian Naval Ship
5.	Pru Decorp 340mg capsule for decontamination CS/TL from body during Nuclear Emergency
6.	Pru Decorp Mg 500mg capsule for decontamination CS/TL from body during Nuclear Emergency
7.	Development of Health Usage and Monitoring System (HUMS) for MIG 29K
8.	Development of WT/GT (Water Tight/Gas Tight) EMI/EMC compliant doors for Naval platforms

9.	Development of WT/GT (Water Tight/Gas Tight) EMI/EMC compliant Hatches for Naval platforms
10.	V/UHF Blade Antenna for Aircraft Application
11.	Development of Temperature Transducer for Aircraft Application
12.	Propellant & Thruster for Low Orbit Satellite using Ethanol & Hydrogen peroxide propellant system
13.	Propellant & Thruster for Low Orbit Satellite using non toxic Hydrazine Nano propellant system
14.	VLF Loop Aerial system for U/W platform
15.	VLF-HF Matrix for U/W Platform
16.	AI based detection of a person based on physiological parameters
17.	Software to predict sensor reading within Noncontact strain measurement
18.	Software for virtual sensor implementation in AGTE for strain measurement
19.	Virtual sensor for compressor & turbine tip measurement in AGTE
20.	Development JT cryocooler for missile application
21.	Multi therapeutic technologies seeking for faster healing
22.	Development of Simulator for Unmanned Ground, Marine (Sea-surface and Underwater) and Aerial Vehicles
23.	Development of Tools for Data Assessment Active learning & Believability for Visual Data
24.	Autonomous Drone as first responder for search & report mission in enclosed/indoor environment
25.	Surge relief valve for F1F2, F1A tank, wing tank
26.	AC double ended fuel booster pump for aircraft application

Reference: Press Information Bureau

India's Remarkable Leap in Network Readiness Index 2024

India has made significant strides in the global digital landscape, evidenced by its improved ranking in the Network Readiness Index (NRI) 2024, where the country now stands at 49th position, up from 60th in the 2023 report. This remarkable leap of eleven positions reflects India's growing role as a leader in digital transformation, driven largely by robust government initiatives. The NRI 2024 evaluates the network readiness of 133 economies based on four key pillars: Technology, People, Governance, and Impact, and uses a wide range of 54 variables to determine rankings.

India's improved score of 53.63 (up from 49.93 in 2023) underlines the country's enhanced technological, governance, and infrastructural capabilities. The country's rise in the rankings is a direct result of government policies and strategic initiatives aimed at boosting connectivity, innovation, and digital services across all sectors of the economy.

Key Highlights of India's Performance in NRI 2024

India's improved position in the NRI 2024 is not just a numerical shift but an indication of the country's progress in several key areas. Notable achievements include:

- **1st Rank:** AI Scientific Publications, AI Talent Concentration and ICT Services Exports
- **2nd Rank:** FTTH (Fiber to the Home) / Building Internet Subscriptions, Mobile Broadband Internet Traffic within the Country, International Internet Bandwidth
- **3rd Rank:** Domestic Market Scale
- **4th Rank:** Annual Investment in Telecommunication Services

India has also ranked 2nd among lower-middle-income countries, showcasing its leadership in digital advancement within its income group. These achievements reflect India's growing dominance in technological innovation, artificial intelligence, and the telecommunications sector.

Government Initiatives Driving India's Digital Transformation

India's rise in the NRI 2024 is deeply intertwined with the government's ongoing efforts to create a favorable environment for technological progress. Through a combination of policies, infrastructure development programs, and public-private partnerships, the Indian government has been fostering growth in several key areas. Below are some of the most impactful initiatives that have contributed to India's improved network readiness.



- **Digital India Program**

Launched on July 1, 2015, Digital India is one of the flagship programs of the Indian government, designed to transform India into a digitally empowered society and knowledge economy. This initiative has been at the core of India's digital revolution and has had a profound impact on internet penetration and digital infrastructure.

Broadband Access Expansion: Digital India has significantly improved access to broadband services, especially in rural and underserved areas, by promoting public-private partnerships. It has driven a massive increase in internet subscribers, growing from 25.1 crore to 94.4 crore over the past decade.

Digital Literacy: The program has also focused on improving digital literacy, with millions of people in rural and remote areas trained to use digital tools and services.

Government Services Online: It has digitized many government services, making them available online, enhancing accessibility and transparency.

- **BharatNet Initiative**

The BharatNet Project is a cornerstone of India's digital infrastructure. The program aims to connect all of India's 2.5 lakh gram panchayats (village councils) with high-speed broadband, making broadband accessible even in the most remote parts of the country. The initiative has led to:

Expansion of Internet Access: BharatNet has enabled internet connectivity in rural areas, bridging the digital divide between urban and rural India.

Enhancement of Government-to-Citizen Services: The availability of broadband has enhanced the delivery of e-governance services, such as online education, healthcare, and agriculture services, to rural populations.

- **5G and Future Telecom Technologies**

India's launch of 5G services in 2022 marks a significant milestone in the country's telecom sector. With this leap into the next generation of mobile broadband, India has improved its global ranking in mobile broadband speed from 118th to 15th.

Infrastructure Upgrades: The Indian government has been working with telecom operators to expand 5G infrastructure across the country, offering faster data speeds and better connectivity.

An example of the government's commitment to expansion of 5G infrastructure, is the **5G Intelligent Village Initiative**, which aims to bridge connectivity gaps and

empower rural communities by leveraging the transformative power of 5G technology. The initiative invites proposals under the theme, "From Connectivity Gaps to Smart Solutions: Designing 5G Networks for Rural Innovation," to foster technological advancement in rural areas.

Bharat 6G Vision: The Bharat 6G Vision, introduced by the government, aims to make India a global leader in 6G technology. The vision includes the development of indigenous technology, setting up research hubs, and accelerating innovation in future technologies such as Artificial Intelligence (AI), the Internet of Things (IoT), and blockchain.

- **National Digital Communications Policy (NDCP) 2018**

The National Digital Communications Policy (NDCP) 2018 is another significant initiative aimed at promoting a vibrant digital economy in India. This policy seeks to improve connectivity, create job opportunities, and attract investment in the telecommunications sector.

Broadband for All: The policy emphasizes providing high-speed internet to all rural and urban areas, ensuring equal access to information and services across India.

- **PM Gati Shakti National Master Plan**

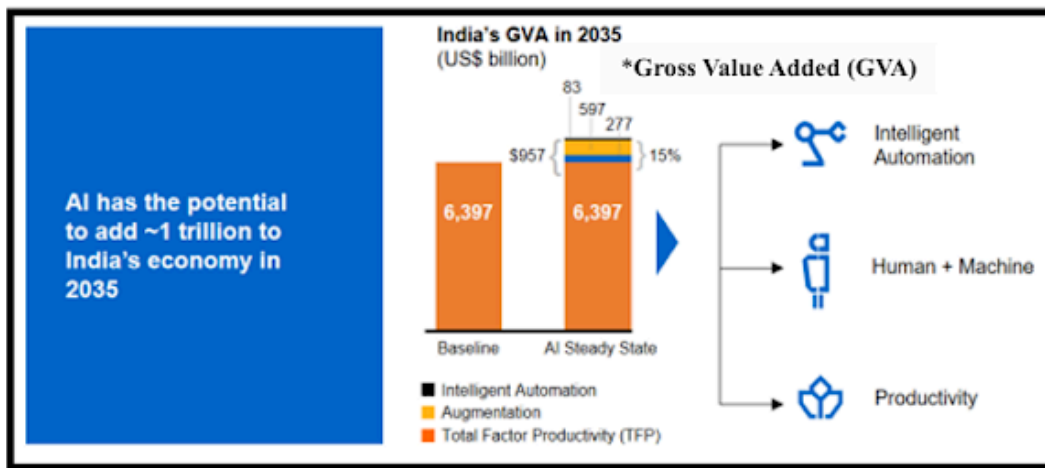
The PM Gati Shakti National Master Plan, launched in 2021, is aimed at creating integrated infrastructure for seamless connectivity across the country. This includes the creation of multimodal connectivity for better transport and logistics, which also supports digital infrastructure development.

Transport and Digital Infrastructure: The plan focuses on improving the country's transport, logistics, and telecommunication networks, ensuring that digital and physical infrastructure complement each other.

- **National Artificial Intelligence (AI) Strategy**

In recognition of the growing importance of AI, the Indian government has laid the foundation for AI as a key driver of economic growth. The National Strategy for Artificial Intelligence, launched by NITI Aayog, aims to position India as a global

leader in AI research and development. Accenture, in its recent AI research reports, provides a framework for evaluating the economic impact of AI for select G20 countries and estimates AI to boost India's annual growth rate by 1.3 percentage points by 2035[4].



***Gross Value Added (GVA)**

AI Research & Development: India has been fostering AI innovation through a series of research institutions and partnerships with private industry players. This has led to India's top ranking in AI Scientific Publications and AI Talent Concentration in the NRI 2024 report.

AI for Social Good: The strategy also focuses on using AI to address societal challenges such as healthcare, education, and agriculture, driving inclusive growth.

- **Skill Development and Digital Literacy Programs**

The Skill India initiative aims to equip the youth with relevant digital and technical skills, making them more competitive in the global workforce. With a focus on digital literacy, the government is preparing a new generation of talent that can drive technological advancement.

Digital Literacy for All: Programs like **Pradhan Mantri Gramin Digital Saksharta Abhiyan (PMGDISHA)** have significantly boosted digital literacy in rural areas, helping people to access online services and participate in the digital economy.

Conclusion

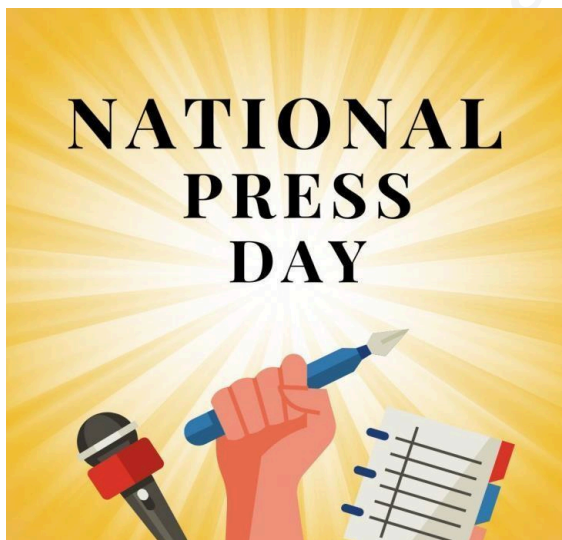
India's impressive performance in the Network Readiness Index 2024 is a direct reflection of the significant strides made in digital infrastructure, technological innovation, and governance. The government's extensive initiatives such as Digital India, BharatNet, and Startup India, along with its forward-looking 6G Vision, have played an instrumental role in positioning India as a global leader in the digital realm. With continued investment in digital technologies, regulatory reforms, and skill development, India is poised to further improve its network readiness and lead the world in future technological advancements.

References: Press Information Bureau

National Press Day: Celebrating the Guardians of Democracy and Free Press in India

Introduction

The media is often referred to as the fourth pillar of democracy, playing a crucial role in shaping public opinion, driving development, and holding power to account. As a powerful tool for progress, it is essential that the press remains free from bias and upholds its duty to inform and educate the masses. For years, the media has been at the forefront, safeguarding the interests of millions and fostering transparency. To recognize its vital contributions, National Press Day is celebrated every year on November 16th, honoring the essential role of a free and responsible press in our society.



Roots of National Press Freedom

National Press Day, observed on November 16, marks the day the Press Council of India (PCI) began its operations in 1966. Established as an independent body, the PCI's primary role is to ensure that the press maintains high standards of journalism

while remaining free from external influences. The idea for the Council was first proposed by the First Press Commission in 1956, which emphasized the need to protect press freedom and promote ethical reporting. Since its formation, the PCI has played a crucial role in safeguarding the independence of the press, even holding authority over state actions to ensure that the media can operate without fear or interference. This day symbolizes a free and responsible press, central to democracy. It is commemorated through various activities, including the National Awards for Excellence in Journalism and the release of a Souvenir.

National Press Day serves as an important reminder of the vital role that the press plays in shaping our democracy. Since its establishment, the Press Council of India has worked tirelessly to uphold press freedom, maintain journalistic standards, and address challenges facing the media. From tackling issues like media ethics and press safety to adapting to the digital age, the Council continues to guide and support the media in its mission to inform, educate, and empower the public. National Press Day not only celebrates the achievements of the press but also reinforces the responsibility it carries in building a more informed and transparent society, ensuring that the future of journalism remains strong, free, and responsible.

Ref: Press Information Bureau

Press Council of India: Championing Ethical Journalism and Press Freedom in India

The Press Council of India (PCI) was first established in 1966 under the Indian Press Council Act, 1965, following the recommendations of the First Press Commission. Its primary objectives were to preserve press freedom and maintain high standards of journalism in India. However, the Council was dissolved during the Emergency in 1975, and a new Act, the Press Council Act, 1978, re-established the PCI in 1979, reaffirming its role as a quasi-judicial body with statutory authority.

The Council consists of a Chairman (usually a retired Supreme Court judge) and 28 members, including journalists, media owners, and representatives from Parliament, education, law, and literature. It is empowered to arbitrate on issues related to press freedom, journalistic ethics, and public taste, offering recommendations on laws affecting the press.

It can take suo-motu action or investigate complaints related to unethical reporting or interference with press freedom. Its decisions are final and cannot be challenged in any court. Over the years, the PCI has played a crucial role in shaping the ethical framework of Indian journalism and safeguarding the independence of the media.

Initiatives to Empower Press

The Press Council of India (PCI), since its inception, has taken significant strides in shaping the landscape of press freedom and ensuring that the media in India upholds high ethical standards while remaining independent.

Here's a brief overview of the Council's key developments and initiatives over the years:

2023:

Representation of LGBTQ+ Community: The PCI adopted a report on the representation of the LGBTQ+ community in the media, promoting fair and responsible coverage.

Guidelines for Reporting on Natural Disasters: The Council formulated guidelines for media professionals covering news during natural disasters, emphasizing sensitivity and accuracy in reporting.

2022:

The PCI continued its advocacy for journalistic ethics by updating its Norms of Journalistic Conduct, ensuring that journalists adhere to professional and ethical standards.

2004-2000:

Throughout these years, the PCI focused on a range of issues such as media ethics, democracy, media's role in disaster management, and freedom of expression.

International Engagement:

* The PCI has been an active participant in global forums and international exchanges. It has engaged with media councils in countries like Bangladesh, Sri Lanka, Nepal, Indonesia, and Myanmar, aiming to promote cross-border cooperation on press freedom and peace journalism.

* The South Asian Alliance of Press Councils (SAAPC) was also established, fostering collaboration between press councils in the region.

Memoranda of Understanding (MoUs):

* The PCI has signed MoUs with press councils from countries like Indonesia, Nepal, Bangladesh, and Sri Lanka, aimed at fostering mutual cooperation and advancing press freedom globally.

Internship Programs and Educational Initiatives:

* The PCI introduced merit-based internships for journalism students to foster a sense of responsibility and awareness regarding press freedom. The Summer Internship Program (SIP) and Winter Internship Program (WIP) offer students an opportunity to engage with the PCI's work.

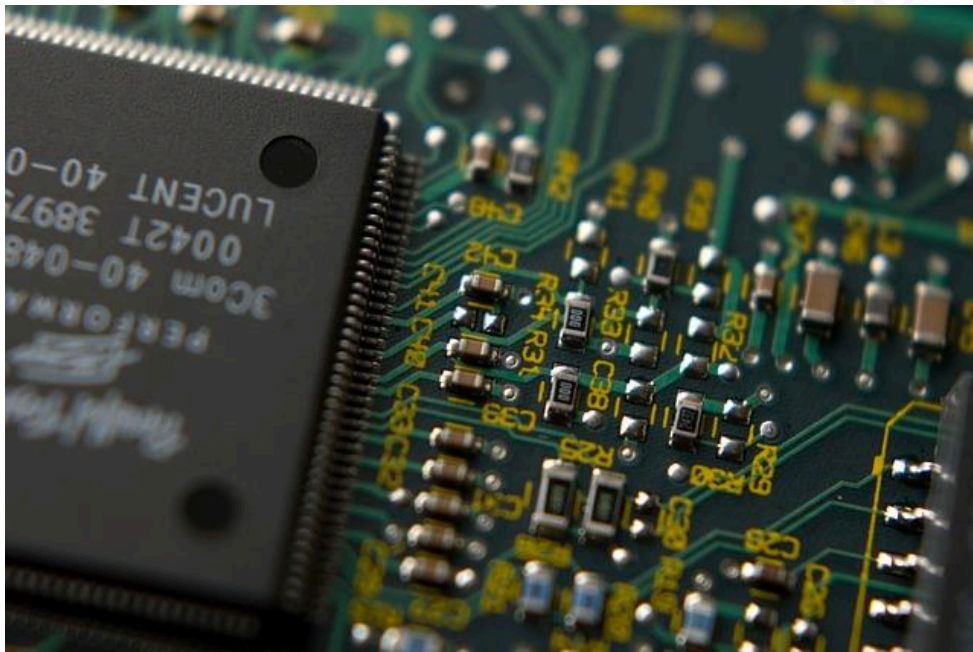
The PCI's activities and initiatives reflect its ongoing commitment to protecting press freedom, upholding ethical standards, and supporting the professional development of journalists across India and internationally.

Issue Resolved by the Council over the years

The Press Council of India (PCI) has played a vital role in safeguarding press freedom and maintaining ethical standards in journalism. Over the years, it has resolved a wide range of issues, including addressing complaints related to violations of press norms and threats to press freedom, with over 37,000 complaints filed between 1979 and 2024. The Council has been instrumental in issuing guidelines and principles to help journalists regulate their conduct and has consistently appealed for media responsibility during times of national crisis. Additionally, the PCI has conducted studies on key topics like election coverage, press reporting on defense, and the safety of journalists, contributing to the ongoing development of media standards in India.

Reference: Press Information Bureau

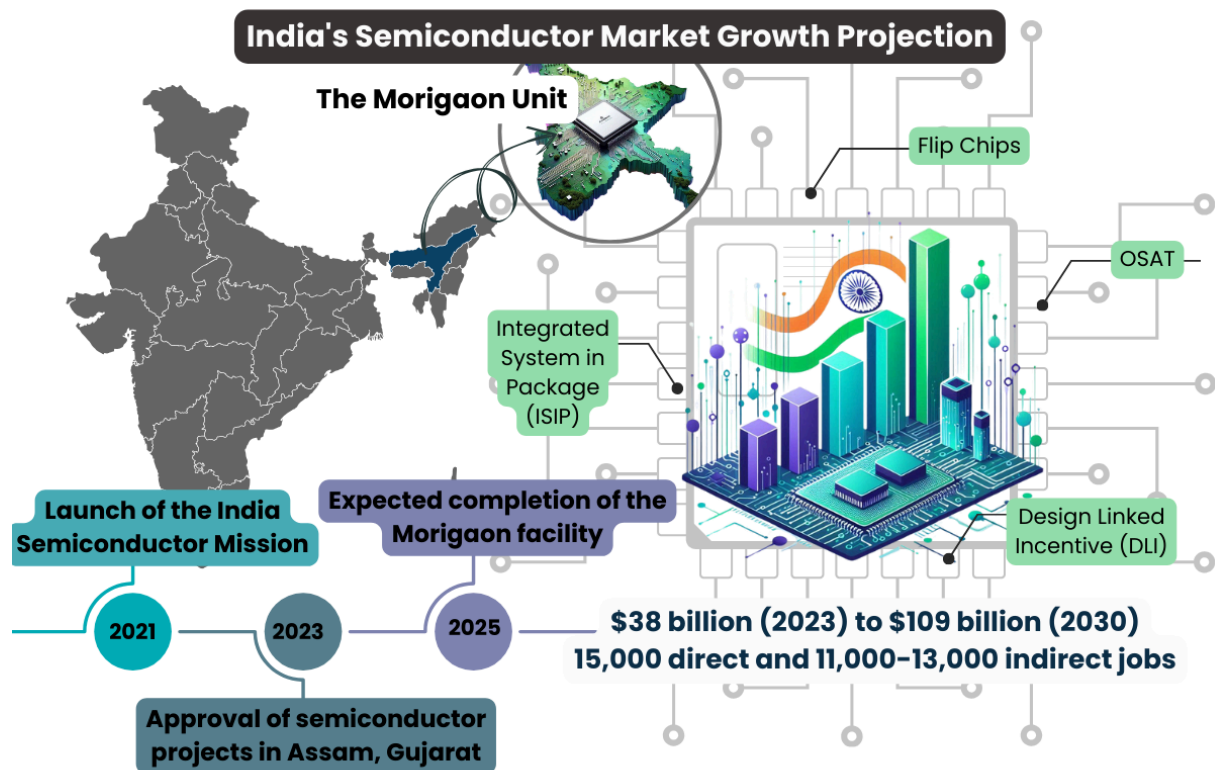
Tata's Role in India's \$38 Billion Semiconductor Revolution



India's ambitious strides in the semiconductor industry are best exemplified by the development of a semiconductor unit in Morigaon, Assam, spearheaded by Tata Semiconductor Assembly and Test Pvt Ltd (TSAT). TSAT, a key player in India's semiconductor industry, is leading this project, which is set to become one of the country's premier manufacturing sites. This project aligns with the nation's broader goal of establishing a self-sufficient semiconductor ecosystem. With an investment of Rs. 27,000 crores, the Morigaon facility is expected to produce up to 48 million semiconductor chips per day, employing advanced packaging technologies like flip chips and Integrated System in Package (ISIP). This facility is designed to cater to essential sectors such as automotive, electric vehicles, telecommunications, and consumer electronics and is projected for completion by mid-2025.

The Morigaon unit goes beyond technological development; it brings significant socio-economic benefits by generating a substantial workforce of 15,000 direct and 11,000-13,000 indirect jobs, contributing to regional economic growth in Assam and nearby areas. As a high-capacity production site, the facility's daily output will serve domestic and international markets, positioning India as a competitive force in the global semiconductor supply chain.

India Semiconductor Mission: Fostering a Self-Reliant Semiconductor Industry



Industry estimates place the Indian semiconductor market at approximately \$38 billion in 2023, with projections indicating growth to \$109 billion by 2030. To support this rapid expansion and reduce reliance on imports, the Indian government has taken proactive steps and implemented several initiatives to promote domestic semiconductor manufacturing. The India Semiconductor Mission (ISM) aims to build

a sustainable semiconductor and display ecosystem to position India as an electronics manufacturing and design leader. Guided by international semiconductor experts, ISM coordinates efforts across government ministries, industry, and academic institutions to ensure efficient deployment of resources and support.

Launched in 2021 with a financial outlay of ₹76,000 crore, the Semicon India program is structured to promote the domestic semiconductor industry through incentives and strategic partnerships. This initiative supports various semiconductor industry sectors, extending beyond just fabrication facilities (fabs) to include packaging, display wires, Outsourced Semiconductor Assembly and Testing (OSATs), sensors, and other critical components, creating a comprehensive ecosystem. Under the program, four schemes have been introduced, namely Modified Scheme for setting up Semiconductor Fabs in India, Modified Scheme for setting up of Display Fabs in India, Modified Scheme for setting up of Compound Semiconductors/ Silicon Photonics/ Sensors Fab/ Discrete Semiconductors Fab and Semiconductor ATMP/ OSAT facilities in India, and Design Linked Incentive (DLI) Scheme.

The Morigaon semiconductor facility is part of a more comprehensive network of government-backed projects to bolster India's semiconductor production capabilities. The Union Cabinet has approved the establishment of multiple semiconductor units across the nation, including new facilities by Tata Electronics in Dholera, Gujarat, and CG Power in Sanand, Gujarat. Additionally, Kaynes Semicon Pvt Ltd was approved to set up a unit in Sanand. This expansion signifies India's commitment to reducing reliance on semiconductor imports and fortifying its global semiconductor value chain position.

The government has also focused on modernizing the Semiconductor Laboratory in Mohali and implementing the Scheme for the Promotion of Manufacturing of Electronic Components and Semiconductors (SPECS) and the Production Linked Incentive (PLI) Scheme for Large-Scale Electronics. These efforts ensure support for every segment of semiconductor production, fostering an ecosystem encompassing chip design, fabrication, testing, and assembly.

Establishing the semiconductor unit in Morigaon, Assam, marks a pivotal step toward achieving India's semiconductor ambitions. This project and others approved under the SemiconIndia program strengthen India's technological foundation and support the nation's vision for economic resilience and self-reliance. As the demand for semiconductors surges worldwide, India's burgeoning semiconductor infrastructure is set to drive innovation, create jobs, and secure the country's position as a significant player in the global digital economy.

Image: [Pixabay](#)

Know Your Word

“HYGGE”

...creating a warm atmosphere and enjoying the good things in life with good people.



The Danish word "hygge" loosely translates as "coziness," but it's more than that: it's the social fabric of Danish culture. Shortlisted for Oxford Dictionary's word of the year in 2016, it's defined as "a quality of coziness and comfortable conviviality that engenders a feeling of contentment or well-being." Hygge is the warm glow of candlelight, a cozy atmosphere, oversized scarves, woolly blankets, and the joy of good food and heartfelt conversation with friends and family. It's about creating a sense of togetherness and community, especially in the winter months.

Image: Bing AI

India Expresses Dissatisfaction with Developed Countries' Unwillingness to Engage in the Climate Finance and Mitigation Work Programme at CoP29 in Baku, Azerbaijan

On 16.11.2024, India delivered a statement in the closing plenary of the Subsidiary Bodies on the 'Agenda on Sharm el-Sheikh Mitigation Ambition and Implementation Work Programme (MWP)' at the CoP29, which was held in Baku, Azerbaijan.

India, in alignment with the views of the Like-Minded Developing Countries (LMDCs), the Arab Group, and the African Group of Negotiators (AGN), expressed dissatisfaction with the insistence of developed countries to expand the scope of MWP from what was agreed upon in the past, thus inhibiting progress on the agenda item.

India expressed severe concern about the lack of progress at CoP29. The statement mentioned, "We have seen no progress in critical matters for developing countries. Our part of the world is facing some of the worst impacts of climate change, with far lower capacity to recover from those impacts or adapt to the climatic system changes for which we are not responsible."

The statement further read, "We notice a tendency to ignore the decisions taken in the past – related to the Sharm el-Sheikh mitigation ambition and implementation work program at CoP27 and the context of the Global Stocktake in the Paris Agreement, where it informs the parties for undertaking climate actions."

India stressed that the MWP was established with a specific mandate that it shall be operationalized through focused exchanges of views, information, and ideas, noting that the outcomes of the work program will be non-prescriptive, non-punitive, facilitative, respectful of national sovereignty and national circumstances, while

taking into account the nationally determined nature of nationally determined contributions and will not impose new targets or goals.

India, expressing frustration at the developed countries' unwillingness to engage on this issue during the past week in this Finance CoP, the statement read, "If there are no means of implementation, there can be no climate action. How can we discuss climate action when it is being made impossible for us to act, even as our challenges in dealing with the impacts of climate change are increasing?"

India asserted that those with the highest capacity to take climate action have continuously shifted goalposts, delayed climate action, and consumed a disproportionate share of the global carbon budget. The lead negotiator stated, "We now have to meet our developmental needs in a situation of increasingly depleting carbon budget and increasing impacts of climate change. We are being asked to increase mitigation ambition by those who have shown no such ambition, either in their mitigation ambition and implementation or in providing the means of implementation."

The statement added that this bottom-up approach is being attempted to be made into a top-down approach, which would, in turn, attempt to turn the whole mandate of the MWP and the principles of the Paris Agreement upside down.

Reference: Press Information Bureau

Understanding the Biological Diversity Act, 2002: Safeguarding India's Natural Heritage

The Biological Diversity Act, 2002 (BDA 2002) is an act of parliament that aims to protect India's biodiversity and associated knowledge. The act was enacted to:

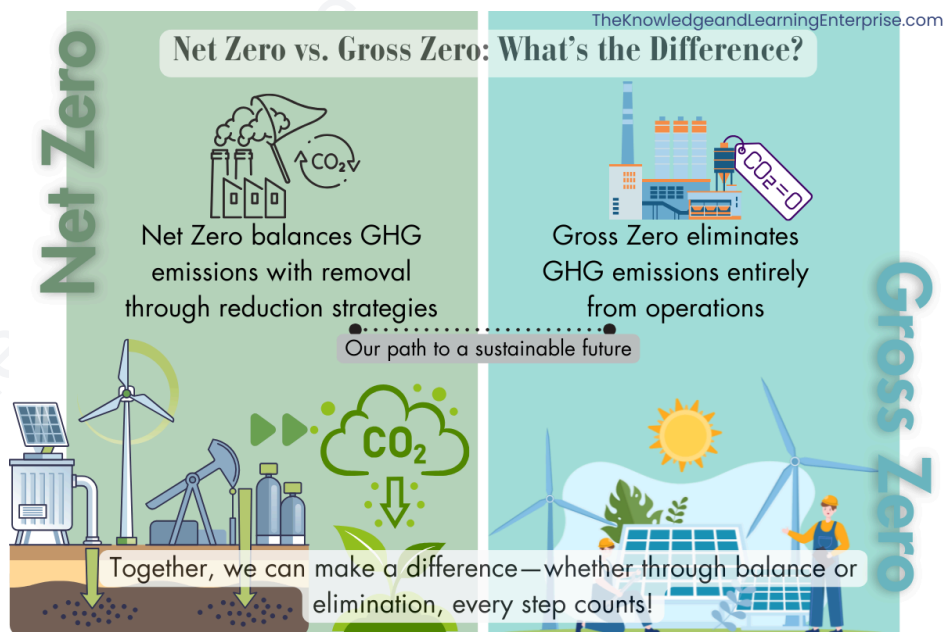
- Conserve biological resources
 - Ensure sustainable use of biological resources
 - Ensure fair and equitable sharing of benefits from biological resources
 - Prevent foreign individuals and organizations from using India's biodiversity and knowledge without sharing the benefits
- The act includes the following provisions:
- National Biodiversity Authority (NBA): The act establishes the NBA to oversee the implementation of the act.
 - State Biodiversity Boards (SBBs): The act establishes SBBs to support the NBA.
 - Biodiversity Management Committees (BMCs): The act establishes BMCs at the local level.
 - Prohibition on transfer of biological resources: The act prohibits the transfer of biological resources and associated traditional knowledge to foreign entities without prior NBA approval. The BDA 2002 aligns with India's commitment to the UN Convention on Biological Diversity (UNCBD).

Understanding Net Zero: Its Importance and Implications

Net zero, a term we've all come across; but do we truly understand its implications?

Put simply, 'net zero' refers to the balance between the amount of greenhouse gases (GHG) produced and the amount removed from the atmosphere. It's a goal that can be achieved through our collective efforts in emission reduction and emission removal, empowering us to take responsibility for our planet's future.

'Gross zero,' also known as 'real zero,' refers to industry sectors (such as the energy sector) that aim to completely eliminate carbon emissions from their operations. Understanding this distinction between net zero and gross zero is key to being informed and knowledgeable about our climate change strategies.



Exploring the Life and Legacy of Franz Kafka



Franz Kafka (3 July 1883 – 3 June 1924) was an Austrian-Czech novelist and writer from Prague. He is widely regarded as a major figure of 20th-century literature; he wrote in German. His work fuses elements of realism and the fantastic. It typically features isolated protagonists facing bizarre or surrealistic predicaments and incomprehensible socio-bureaucratic powers. It has been interpreted as exploring themes of alienation, existential anxiety, guilt, and absurdity. His best known works include the novella *The Metamorphosis* and the novels *The Trial* and *The Castle*. The term Kafkaesque has entered English to

describe absurd situations like those depicted in his writing.

Kafka was born into a middle-class German- and Yiddish-speaking Czech Jewish family in Prague, the capital of the Kingdom of Bohemia, which belonged to the Austrian part of the Austro-Hungarian Empire (today the capital of the Czech Republic, also known as Czechia). He trained as a lawyer, and after completing his legal education was employed full-time, for a year handling cases for the indigent in the city's Provincial and Criminal Courts by an insurance company, then working for nine months for an Italian insurance company, and finally, starting in 1908, spending 14 years with the Austrian Imperial and Royal Workmen's Accident Institute for the

Kingdom of Bohemia and its successor under the Czechoslovak Republic, rising to the position of chief legal secretary.

Being employed full-time forced Kafka to relegate writing to his spare time. Over the course of his life, Kafka wrote hundreds of letters to family and close friends, including his father, with whom he had a strained and formal relationship. He became engaged to several women but never married. He died in obscurity in 1924 at the age of 40 from tuberculosis.

Kafka was a prolific writer, spending most of his free time writing, often late into the night. He burned an estimated 90 percent of his total work due to his persistent struggles with self-doubt. Much of the remaining 10 percent is lost or otherwise unpublished. Few of Kafka's works were published during his lifetime; although the story collections *Contemplation* and *A Country Doctor*, and individual stories, such as his novella *The Metamorphosis*, were published in literary magazines, they received little attention.

In his will, Kafka instructed his close friend and literary executor Max Brod to destroy his unfinished works, including his novels *The Trial*, *The Castle*, and *Amerika*, but Brod ignored these instructions and had much of his work published. Kafka's writings became famous in German-speaking countries after World War II, influencing German literature, and its influence spread elsewhere in the world in the 1960s. It has also influenced artists, composers, and philosophers.

Image: socalorization, CC BY-SA 4.0 <<https://creativecommons.org/licenses/by-sa/4.0/>>, via Wikimedia Commons

Franz Kafka: Love and Loss Through a Doll's Journey

At forty, Franz Kafka (1883-1924), who never married and had no children, was walking through a park one day in Berlin when he met a girl, her innocent eyes filled with tears because she had lost her favorite doll. She and Kafka searched for the doll unsuccessfully. Kafka, moved by her innocence, instructed her to rendezvous with him at that location the following day, promising they would return to search for her. The next day, when they had not yet found the doll, Kafka gave the girl a letter "written" by the doll, saying, *"Please don't cry. I took a trip to see the world. I will write to you about my adventures."* Thus began a story which continued until the end of Kafka's life.



During their meetings, Kafka carefully read the doll's letters, which included adventures and conversations that the girl found adorable. Finally, Kafka brought back the doll (he had bought one) that had returned to Berlin. "It doesn't look like my doll at all," said the girl. Receiving the doll's letter, the girl was filled with a mix of emotions. The doll wrote, *"My travels have changed me."* The little girl hugged the new doll, feeling a sense of closure, and brought the doll with her to her happy home.

A year later, Kafka died.

Many years later, the now-adult girl found a letter inside the doll. In the tiny letter signed by Kafka, it was written:

"Everything you love will probably be lost, but in the end, love will return in another way."

Image: Bing AI

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Know your Word**Opia: The Ambiguous Intensity of Eye Contact**

So much can be said at a glance. You feel such ambiguous intensity, looking someone in the eye—somehow intrusive and vulnerable. Their pupils are glittering black, bottomless, and opaque. The eye is a keyhole through which the world pours in, and a world spills out. For a few seconds, you can peek into a vault containing everything they are and catch a glimpse of their vulnerability, pain, humor, vitality, power over others, and what they demand of themselves.

But whether the eyes are the windows of the soul or the doors of perception, it doesn't matter: you're still standing outside the house. Eye contact isn't contact at all. It's only ever a glance—a near-miss—that you can only feel as it slips past you. There's so much that we keep in the back room, so much that other people never get to see. We only offer up a sample of who we are and what we think people want us to be. And yet, how rarely do we stop to look inside, let our eyes adjust, and try to see what's there, the worlds hidden away in the eyes of others? This act of self-reflection is essential in understanding the complexities of human connection.



You, too, are peering out from behind your door. You put yourself out there, deciding how much of the world to let in. It's all too easy for others to size you up and carry on their way. They can see you more clearly than you ever could. But the mystery of your own self-perception remains. Yours is the only vault you can't see into and size

up in an instant. You'll always have to wonder if someone might come along and peer into your soul. Or if anyone out there will put in the effort to try to find the key.

We're all just exchanging glances, trying to tell each other who we are—trying to catch a glimpse of ourselves, feeling around in the darkness. This 'exchange of glances' is a metaphor for the interactions we have with others, the moments of connection and understanding that shape our relationships.

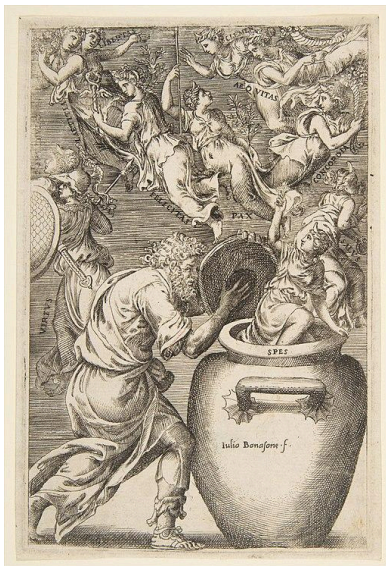
Greek *όπτιο* (*όpio*), *opium* + *-ωπία* (*-opia*), of the eyes.

*The word pupil is from the Latin **pupilla**, "little girl-doll," a reference to the tiny image of yourself you see reflected in the eyes of another. This idea originated from the Elizabethan expression to look at babies, which means "to stare lovingly into another's eyes." Pronounced "oh-pee-uh"*

Image: [Pixabay](#)

The Myth of Pandora's Box

Pandora's box, an artifact in Greek mythology, has left an indelible mark on modern language, connected with the myth of Pandora in Hesiod's c. 700 B.C. poem *Works and Days*. Hesiod related that curiosity led her to open a container left in the care of her husband, thus releasing curses upon humanity. Later depictions of the story have varied, with some literary and artistic treatments focusing more on the contents than Pandora herself. In modern times, an idiom has grown from the story, meaning "Any source of great and unexpected troubles," or alternatively, "A present which seems valuable but which in reality is a curse." This influence of the myth is a testament to its enduring power.



Epimetheus opening Pandora's box, print, Giulio Bonasone (MET,

64.682.102)

Image: Giulio Bonasone, CC0, via Wikimedia Commons

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Know your Word

Koinaphobia: The Fear That You've Lived an Ordinary Life

While you're in it, life seems epic. Fiery, tenuous, and unpredictable. But when you look back over your story or try to put it down on paper, you can see more of it at once than ever before—yet it seems somehow diminished. Humble. Almost quaint.



So you begin scanning your life, looking for something exciting or beautiful. You see an ordinary house on an ordinary street. It seems smaller than you remember. You once had wild dreams, obstacles, and risks looming around you, but now those look

smaller, too. You remember giants, goddesses, and villains, but now all you see are ordinary people assembled in their tiny classrooms and workspaces, each moving around in little steps, like tokens on a game board. And in these ordinary moments, you find a reflection of your own life, a connection to the shared human experience.

As you reflect, you realize that no matter how many times you rolled the dice, these little moves were always here and there. Do a little work. Take a little rest. Make a little friend. Throw a little party. Feel a little boredom. Have a tiny rebellion. There are so many of these token moments that you could have sworn were supposed to represent something more significant. You keep adding them all up as if there were something you must've forgotten to count, some stash of glory that fell off the back of a truck. This process of reflection leads you to a deeper understanding of your life.

You may well adore the life you have for everything it is. You know it isn't groundbreaking, but you wouldn't change a thing. Still, you can't shake the feeling that something is missing. This feeling of longing, of a puzzle with a missing piece, is a part of the human experience.

Maybe the trouble is, you were never really "in it" to begin with. Maybe when you first started building the life you wanted, you put so much thought in

Ancient Greek κοινός (koinós), common, ordinary, stripped of specialness + -φοβία (-phobía), fear. Pronounced "key-noh-foh-bee-uh."

Key Strategies Behind India's Polio Eradication Success

India's achievement of polio-free status in 2014 represents one of the most significant successes in global public health. The eradication of polio was not a singular event, but the culmination of decades of dedicated efforts, starting with India's participation in the Global Polio Eradication Initiative (GPEI) and complemented by the robust national immunization efforts under the Universal Immunization Programme (UIP). The strategic integration of new vaccines, innovative surveillance systems, and government-led immunization campaigns played a crucial role in making India polio-free. This achievement was made possible through the tireless efforts of the Government of India in partnership with key global organizations, including UNICEF, the World Health Organization (WHO), the Bill & Melinda Gates Foundation, Rotary International, and the Center for Disease Control and Prevention (CDC). Together, they mobilized resources, provided technical expertise, and created widespread public awareness about the critical need to vaccinate every child under five against polio.

Immunization in India

India's immunization efforts can be traced back to 1978, when the Expanded Programme on Immunization (EPI) was launched. This program aimed to provide vaccines to children against various diseases. In 1985, this program was renamed the Universal Immunization Programme (UIP), broadening its reach to rural areas beyond urban centers. Over time, the UIP became an integral part of several national health initiatives, including the National Rural Health Mission (NRHM), launched in 2005 to improve the health of rural populations.

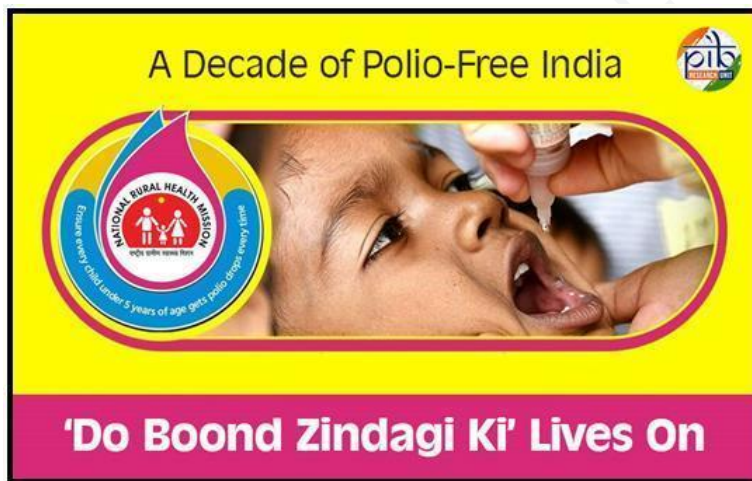
Today, UIP is one of the world's largest public health programs, targeting over 2.67 crore newborns and 2.9 crore pregnant women annually, providing free vaccines

for 12 vaccine-preventable diseases. Polio was one of the first diseases targeted under UIP, and its elimination became a key public health milestone.

Key Milestones in Polio Eradication

- Pulse Polio Programme Launch (1995)

India's fight against polio took a significant step forward in 1995 with the launch of the Pulse Polio Immunization Programme. The first large-scale vaccination campaign, held on 2nd October 1994 (Gandhi Jayanti) in Delhi, was the precursor to the national Pulse Polio campaign. The campaign used an Oral Polio Vaccine (OPV) strategy, reaching over 1 million children and ensuring every child under five was vaccinated. This model was subsequently scaled up nationwide.



The campaign became iconic, with the slogan "Do Boond Zindagi Ki" (Two drops of life) becoming synonymous with India's efforts to eliminate polio.

- Routine Immunization and System Strengthening

While Pulse Polio campaigns were essential for mass immunization, India also strengthened its routine immunization efforts under the Universal Immunization Programme (UIP). The UIP provided free vaccines against polio, diphtheria, pertussis(whoopingcough), tetanus, measles, hepatitis B,

and tuberculosis, ensuring that children received vaccinations as per the national immunization schedule. Through these routine efforts, India aimed to maintain high immunity levels and prevent the re-emergence of vaccine-preventable diseases.

India also made significant strides in cold chain management, ensuring that vaccines were stored and transported at the correct temperatures. The establishment of the National Cold Chain Training Centre (NCCTE) and the Electronic Vaccine Intelligence Network (eVIN) played crucial roles in improving vaccine storage and distribution logistics.

- Inactivated Polio Vaccine (IPV) Introduction (2015)

In line with the Global Polio Endgame Strategy, India introduced the Inactivated Polio Vaccine (IPV) in 2015 as part of its commitment to polio eradication. IPV provides additional protection against polio, especially against type 2 poliovirus, and was gradually introduced in six states before being expanded nationwide by 2016. This switch was essential after the global shift from trivalent OPV (tOPV) to bivalent OPV (bOPV), which excludes the type 2 strain, and IPV ensured continued protection.

- Surveillance and Monitoring

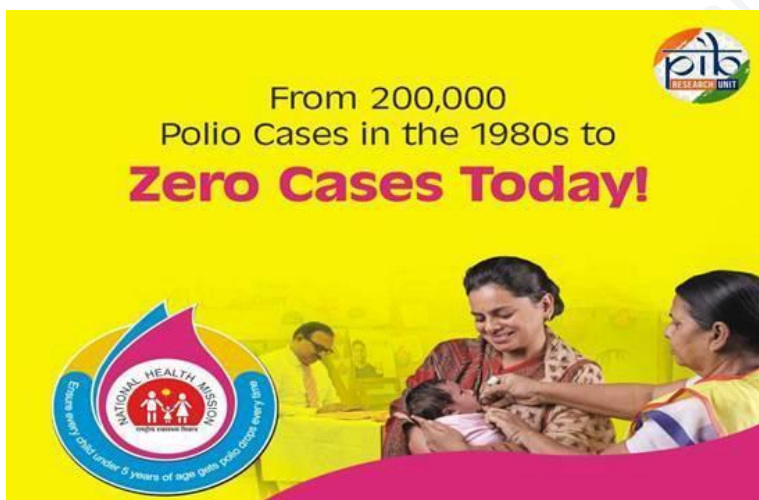
India's success in polio eradication was largely due to its rigorous surveillance systems, including Acute Flaccid Paralysis (AFP) Surveillance and Environmental Surveillance. The focus on surveillance helped India detect and respond to any potential outbreaks quickly.

- AFP Surveillance: This system involves monitoring cases of unexplained paralysis in children under 15, as this is a common symptom of polio.
- Environmental Surveillance: Monitoring sewage water to detect poliovirus strains also helped identify pockets where the virus may still be circulating.

By maintaining a high level of sensitivity in surveillance, India could track and control any residual poliovirus transmission.

- Political Will and Community Engagement

One key factor behind India's polio eradication success was the unwavering political will demonstrated by the central and state governments. Political leaders at all levels provided consistent support, ensuring that resources were allocated and the program received the needed attention. Additionally, community engagement played a pivotal role. Health workers, volunteers, and local leaders helped raise awareness, provided information on the importance of vaccination, and ensured that children in even the most remote areas were immunized. The Pulse Polio campaigns also relied heavily on door-to-door efforts, reaching children in difficult-to-reach areas.



Certification and Final Leap

In 2011, India saw the last case of wild poliovirus in Howrah, West Bengal. Following that, the country ramped up its surveillance efforts, and no further wild poliovirus cases were reported.

For India to be certified as polio-free by the World Health Organization (WHO), the country had to meet stringent criteria. These included three years of no wild poliovirus transmission, robust surveillance systems, and the destruction of any remaining stocks of the virus. The certification process was rigorous, involving

comprehensive checks and evaluations by the Regional Polio Certification Commission.

On 27th March 2014, India was officially declared polio-free, a milestone celebrated not just within the country but globally as an example of successful public health intervention.

Beyond Certification: Staying Alert & Safe!

Even after being declared polio-free, India continues to take several preventive measures to maintain its polio-free status:

- **Annual Polio Campaigns:** India continues to conduct National Immunization Days (NID) and Sub-National Immunization Days (SNID) annually to keep immunity levels high and ensure that no child is missed.
- **Surveillance and Border Vaccination:** Continuous surveillance through AFP and environmental monitoring remains critical. Vaccination at international borders continues to mitigate the risk of polio re-importation from endemic regions.
- **New Vaccines and Expansion:** In addition to IPV, India has introduced several new vaccines under its immunization program, including Rotavirus, Pneumococcal Conjugate Vaccine (PCV), and Measles-Rubella (MR) vaccine, as part of broader efforts to prevent other vaccine-preventable diseases.
- **Mission Indradhanush:** Launched in 2014, Mission Indradhanush (MI) aims to increase immunization coverage to 90%. Special attention is given to hard-to-reach areas with low immunization rates. In its Intensified Mission Indradhanush phase, the program has significantly increased immunization coverage, further reinforcing India's commitment to child health.

Conclusion

India's journey to becoming polio-free is a remarkable story of determination, collaboration, and innovation. The country's achievement was the result of an

integrated approach combining mass immunization campaigns, strong political leadership, effective surveillance systems, and community mobilization efforts. With continued vigilance and sustained immunization efforts, India remains committed to maintaining its polio-free status and contributing to the global goal of eradicating polio once and for all.

The success of the Pulse Polio Programme and the Universal Immunization Programme serves as an inspiration for other nations and highlights the transformative power of public health interventions when supported by effective systems, robust policy, and community involvement.

Reference: Press Information Bureau

India Streamlines Environmental Clearances for New Industries

The Government of India has accepted the long-standing demand of industry to remove dual compliance of Environmental Clearance (EC) and Consent to Establish (CTE) for setting up of new industries. Now, non-polluting white category industries will not be required to take CTE or Consent to Operate (CTO) at all. The industries who have taken EC will not be required to take CTE. This will not only reduce compliance burden, but also prevent duplication of approvals. Notifications to this effect have been issued by MoEFCC under the Air Act and Water Act.

The notification effectively integrates these two approvals and a Standard of Procedure has also been issued in this regard to take into account the issues considered during the CTE process, in the EC itself. State Pollution Control Boards will be consulted during the EC process. Further, the CTE fee shall be required to be paid by the industry, so that there is no loss of revenue to the States.

[The Gazette of India CG-DL-E-13112024-258622](#)

[The Gazette of India CG-DL-E-13112024-258619](#)

India's Industrial Corridors: A Path to Global Manufacturing

The Department for Promotion of Industry and Internal Trade (DPIIT) today celebrated the 8th anniversary of four new industrial corridors—Amritsar-Kolkata Industrial Corridor (AKIC), Chennai-Bengaluru Industrial Corridor (CBIC), East Coast Economic Corridor (ECEC), and Bengaluru-Mumbai Industrial Corridor (BMIC)—being added to India's Industrial landscape. These corridors, which have accelerated India's journey towards becoming a global manufacturing powerhouse, stand as a testament to the transformative power of strategic planning and development.

Earlier, India's first corridor, the Delhi-Mumbai Industrial Corridor (DMIC), spanning Uttar Pradesh, Haryana, Rajasthan, Madhya Pradesh, Gujarat, and Maharashtra, was solely leading the country's Silent Industrial Revolution.

Approved on 20 November 2019, these corridors represent the Government of India's pioneering vision to boost manufacturing and drive planned urbanization nationwide, creating significant socio-economic benefits.

Establishing these corridors has been critical to transforming India's industrial landscape. Spread across key regions in India; each corridor was strategically designed to integrate industry and infrastructure, establishing world-class connectivity that supports rapid industrialization. With high-speed rail networks, modern ports, dedicated logistics hubs, and advanced airports, these corridors are setting new standards in infrastructure development.

Each of the five corridors has played a distinctive role in shaping India's economic narrative:

Delhi-Mumbai Industrial Corridor (DMIC) has emerged as a flagship industrial and urban development. Anchored by advanced infrastructure, DMIC's Dholera Special Investment Region in Gujarat, Shendra-Bidkin Industrial Area in Maharashtra, and Integrated Industrial Townships—Greater Noida and Vikram Udyogpuri have created a benchmark in high-tech manufacturing, offering 'plug-and-play' infrastructure that facilitates ease of doing business. As a joint initiative between Japan and India, DMIC not only showcases India's potential but also exemplifies the power of international collaboration for industrial growth.

The Amritsar-Kolkata Industrial Corridor (AKIC) connects Delhi, Amritsar, and Kolkata, spanning over 1,800 km and impacting 20 cities. This corridor benefits 40% of India's population, supporting regional industrial development in one of the world's most densely populated areas. Regions like Khurpia in Uttarakhand and Rajpura-Patiala in Punjab have seen a surge in industry interest, driven by tailored investment incentives and robust connectivity, demonstrating the local impact of these national projects.

Chennai-Bengaluru Industrial Corridor (CBIC) is planned to achieve accelerated development and regional industry agglomeration in the states of Tamil Nadu, Karnataka, and Andhra Pradesh. It enhances trade between East Asia and Southern India, with nodes stretching from Chennai to Bengaluru and planned extensions to Mangalore.

East Coast Economic Corridor (ECEC), India's first coastal corridor, has amplified the nation's trade and export capacities. Several ports across the corridor serve as international gateways and, more importantly, act as critical links in the supply chain. They are a valuable source of economic activity and development by supporting logistics, packaging, and other services for production clusters and distribution centers. The Vizag-Chennai Industrial Corridor (VCIC) has been designated as the first phase of the ECEC.

Bengaluru-Mumbai Industrial Corridor (BMIC) has prioritized regions with high industrial potential, such as Dharwad in Karnataka and Satara in Maharashtra. As one of the latest corridors, BMIC is establishing high-tech, multi-modal logistics and manufacturing hubs that complement existing industrial zones, ensuring balanced regional development and bridging the north-south economic axis. Some of these new projects are situated directly on the five corridors.

On DMIC, the Dighi node in Maharashtra and the Jodhpur-Pali node in Rajasthan will amplify the corridor's high-tech manufacturing and logistics capacity.

On AKIC, Khurpia in Uttarakhand, Rajpura-Patiala in Punjab, Agra and Prayagraj in UP, Gaya in Bihar will further integrate northern states into the nation's industrial landscape, leading to inclusive regional economic growth and fostering a sense of optimism about the development in these regions.

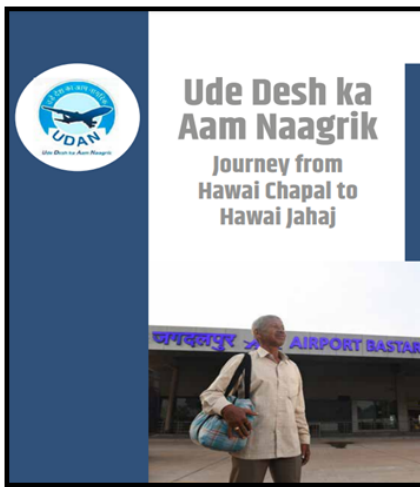
On CBIC, Palakkad in Kerala will enhance connectivity with southern manufacturing hubs, promoting trade and export potential. On ECEC, the nodes of Kopparthy and Orvakal in Andhra Pradesh will strengthen coastal supply chains, bridging export-driven industries with inland clusters.

These intelligent industrial cities, like jewels in India's economic necklace, represent the next generation of connected, autonomous hubs to support local communities and elevate India's global standing. As the nation marks five years of significant industrial progress, the recent approval of 12 new nodes signals a strong future for India's industrial landscape, strengthening the country's capacity for innovation, self-reliance, and sustainable economic development.

As India celebrates this milestone, the significance of the industrial corridors becomes ever more evident. These corridors are not just roads and factories but arteries of growth, pumping life into the nation's industrial ambitions. They testify to India's potential and commitment to innovation, resilience, and progress. As the nation steps into the future, the corridors stand as both a foundation and a promise of what lies ahead.

UDAN Scheme: Transforming Air Travel in India

“A common man who travels in slippers, should also be seen in the aircraft. This is my dream.” - Prime Minister Shri Narendra Modi



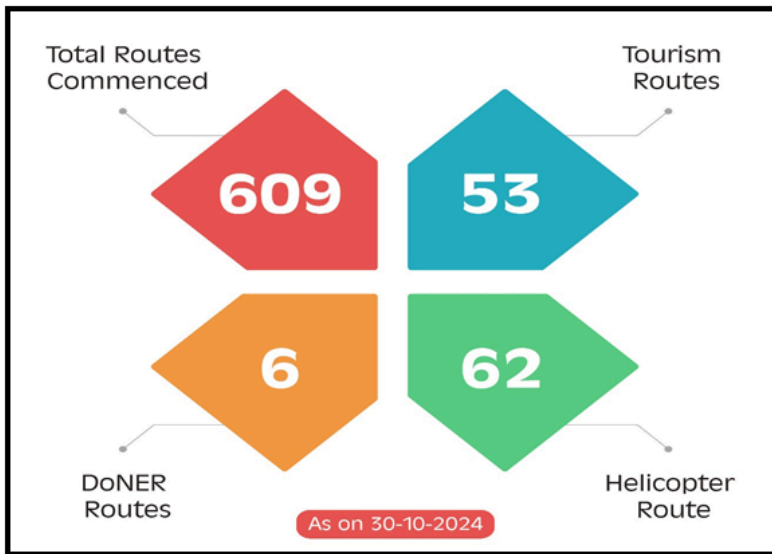
The UDAN (Ude Desh ka Aam Nagrik) Scheme has fuelled the civil aviation sector to soar to greater heights time and again. On November 17, 2024, India's aviation sector reached a historic milestone as 5,05,412 domestic passengers took to the skies daily, a monumental achievement that marked the first time daily passenger numbers crossed the 5-lakh mark. In a country where the sky symbolizes hope and aspiration, the dream of affordable flying became a reality with the launch of UDAN (Ude Desh ka Aam Nagrik) on October 21, 2016.

With over 3,100 flights operating nationwide, this achievement not only highlights India's growing prominence in the global aviation landscape but also instills a sense of pride and optimism. The UDAN scheme has been instrumental in this transformation, operationalizing 609 routes, including helicopter services, and seamlessly connecting states and Union Territories across the country.

Creating a Difference for the Aam Nagrik

The UDAN scheme has not just transformed the aviation sector, but it has also made a significant difference in the lives of the 'Aam Nagrik', making air travel more accessible and affordable. Spearheaded by the Ministry of Civil Aviation, the scheme has transformed air travel by enhancing regional connectivity and making it

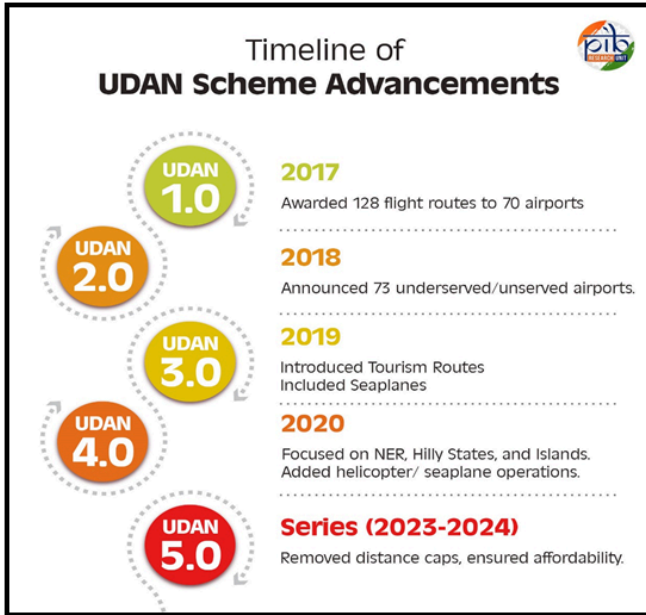
accessible to millions. With continuous advancements like helicopter routes and last-mile connectivity, UDAN has bridged the gap between aspirations and accessibility, reshaping India's aviation landscape. This relentless progress has now culminated in a historic milestone, showcasing the scheme's far-reaching impact.



The Dream Takes Flight

The story of UDAN is deeply rooted in Prime Minister Narendra Modi's vision. In a pivotal meeting before the National Civil Aviation Policy was announced, Modi emphasized the need to democratize air travel. He famously remarked that he wanted to see people wearing slippers boarding planes, a sentiment that ignited the vision for a more inclusive aviation sector. This commitment to the ordinary person's dreams, to make air travel a reality for all, led to the birth of UDAN.

The first UDAN flight took off on April 27, 2017, connecting the serene hills of Shimla to the bustling metropolis of Delhi. This inaugural flight not only marked a significant milestone but also heralded the beginning of a transformative journey in Indian aviation. It opened up the skies to countless citizens, inspiring hope and a brighter future for air travel in India.



Over the past seven years, the UDAN Scheme has evolved through various phases to enhance regional air connectivity in India. Starting with UDAN 1.0 in 2017, which awarded 128 flight routes and operationalized 36 new airports, the scheme progressed with UDAN 2.0, adding helipad connectivity and underserved airports. UDAN 3.0 introduced tourism routes and seaplanes, focusing on the Northeast. UDAN 4.0 expanded operations to hilly regions, islands, and helicopters. The UDAN 5.0 series (5.0 to 5.4) brought significant advancements, including removing distance caps, prioritizing operational airports, boosting helicopter and small aircraft connectivity, and reactivating discontinued routes, ensuring last-mile air connectivity and affordability across India.

A Market-Driven Approach

The UDAN Scheme operates on a unique market-driven model, where airlines assess demand on specific routes and submit proposals during bidding rounds. This approach incentivizes airlines to connect underserved regions by offering support through Viability Gap Funding (VGF) and various concessions provided by airport operators, the Central Government, and State Governments.

Support Mechanisms

The government has implemented several supportive measures to attract airlines to operate flights in less lucrative markets:

- **Airport Operators:** They waive landing and parking charges for RCS flights, and the Airports Authority of India (AAI) does not levy Terminal Navigation Landing Charges (TNLC) on these flights. Moreover, a discounted Route Navigation and Facilitation Charge (RNFC) is applied.
- **Central Government:** Excise duty on Aviation Turbine Fuel (ATF) purchased at RCS airports is capped at 2% for the first three years. Airlines are also encouraged to enter code-sharing agreements to expand their reach.
- **State Governments:** States have committed to reducing VAT on ATF to 1% or less for ten years and providing services such as security, fire, and utility at reduced rates.

This collaborative framework, where the government, airport operators, and airlines work together, has fostered an environment where airlines can thrive while serving regions that have long been overlooked. This sense of collaboration and shared responsibility is what makes the UDAN Scheme not just a government initiative, but a collective effort to enhance regional air connectivity in India.

Fuelling Growth in the Aviation Industry

The RCS-UDAN scheme has played a pivotal role in revitalizing the civil aviation industry in India. Over the past seven years, it has catalyzed the emergence of many new and successful airlines. Regional carriers such as Fly Big, Star Air, India One Air, and Fly91 have benefited from the scheme, developing sustainable business models and contributing to a burgeoning ecosystem for regional air travel.

The incremental expansion of the scheme has also generated a rising demand for new aircraft of all sizes, broadening the spectrum of planes deployed on RCS routes. This includes a diverse fleet featuring the Airbus 320/321, Boeing 737, ATR 42 and 72,

DHC Q400, Twin Otter, Embraer 145 and 175, Tecnam P2006T, Cessna 208B Grand Caravan EX, Dornier 228, Airbus H130, and Bell 407. Notably, Indian carriers have placed orders for over 1,000 aircraft slated for delivery in the next 10-15 years, significantly augmenting the existing fleet of approximately 800 planes.

Promoting Tourism

The RCS-UDAN Scheme is not just about offering last-mile connectivity to tier-2 and tier-3 cities; it is a significant contributor to the burgeoning tourism sector. Initiatives like UDAN 3.0 have introduced tourism routes connecting several destinations in the Northeast region, opening up new travel opportunities for both domestic and international tourists. At the same time, UDAN 5.1 is focused on expanding helicopter services in hilly areas to stimulate tourism, hospitality, and local economic growth. The UDAN Scheme is not just about flying from one place to another; it's about exploring new destinations and experiences.

Significant destinations like Khajuraho, Deoghar, Amritsar, and Kishangarh (Ajmer) are now more accessible, catering to the religious tourism segment. Furthermore, the introduction of airports in Pasighat, Ziro, Hollongi, and Tezu has spurred growth in the Northeast's tourism industry. Notably, Agatti Island has also been included in the Indian aviation map, enhancing tourism in Lakshadweep.

Soaring High: Some UDAN Airports

- **Darbhanga Airport (Civil Enclave):** Once off the aviation map, Darbhanga celebrated the arrival of its first flight from Delhi on November 9, 2020. This airport now serves as a gateway for 14 districts in North Bihar, connecting to major cities like Delhi, Mumbai, Hyderabad, and Kolkata. It will handle over 5 lakh passengers in FY 2023-24.
- **Jharsuguda Airport (AAI Airport):** Previously a dilapidated WWII airstrip, Jharsuguda became operational in March 2019, serving as the second airport in Odisha. It now connects the region to Delhi, Kolkata, Bengaluru, and Bhubaneswar, with over 2 lakh passengers in FY 2023-24.

- **Pithoragarh Airport:** Nestled in the Himalayas, this airport was identified for RCS operations in 2018 and began service in January 2019. Currently, it connects to Dehradun and Pantnagar, showcasing its strategic importance.
- **Tezu Airport:** Known for its scenic beauty and religious significance, Tezu Airport commenced RCS operations in August 2021. It connects Guwahati, Jorhat, and Dibrugarh and accommodates approximately 12,000 passengers in FY 2023-24.

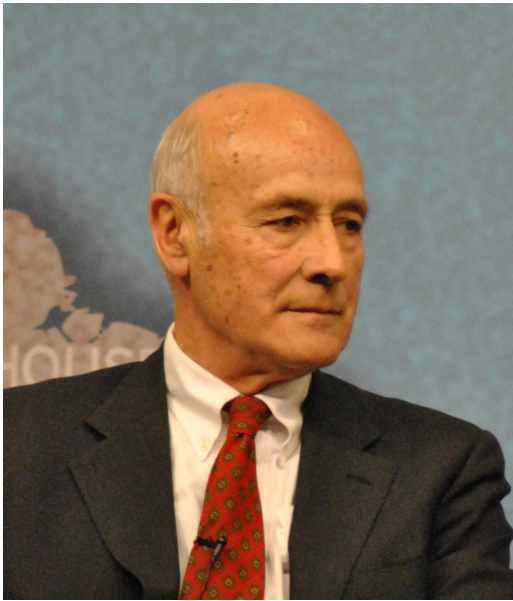
On October 20, 2024, Prime Minister Shri Narendra Modi inaugurated three new airports under the RCS UDAN scheme: Rewa in Madhya Pradesh, Ambikapur in Chhattisgarh, and Saharanpur in Uttar Pradesh.

Conclusion: A Testament to Inclusivity

UDAN is not just a scheme; it is a movement aimed at empowering every Indian with the gift of flight. Enhancing regional connectivity and ensuring affordability has fulfilled the aspirations of countless citizens while stimulating economic growth and job creation. As UDAN continues to evolve, it promises to transform India's aviation landscape, ensuring the sky is everyone's limit. With its ongoing commitment to connecting underserved regions and promoting tourism, the UDAN scheme remains a game changer for Indian aviation, contributing significantly to India's vision of a connected and prosperous nation.

Understanding Soft Power: Influence Without Coercion

Soft power is the ability to co-opt rather than coerce (in contrast with hard power). It involves shaping the preferences of others through appeal and attraction. Importantly, soft power is non-coercive, using culture, political values, and foreign policies to enact change.



In 2012, Joseph Nye of Harvard University explained that with soft power, "the best propaganda is not propaganda," further explaining that during the Information Age, "credibility is the scarcest resource."

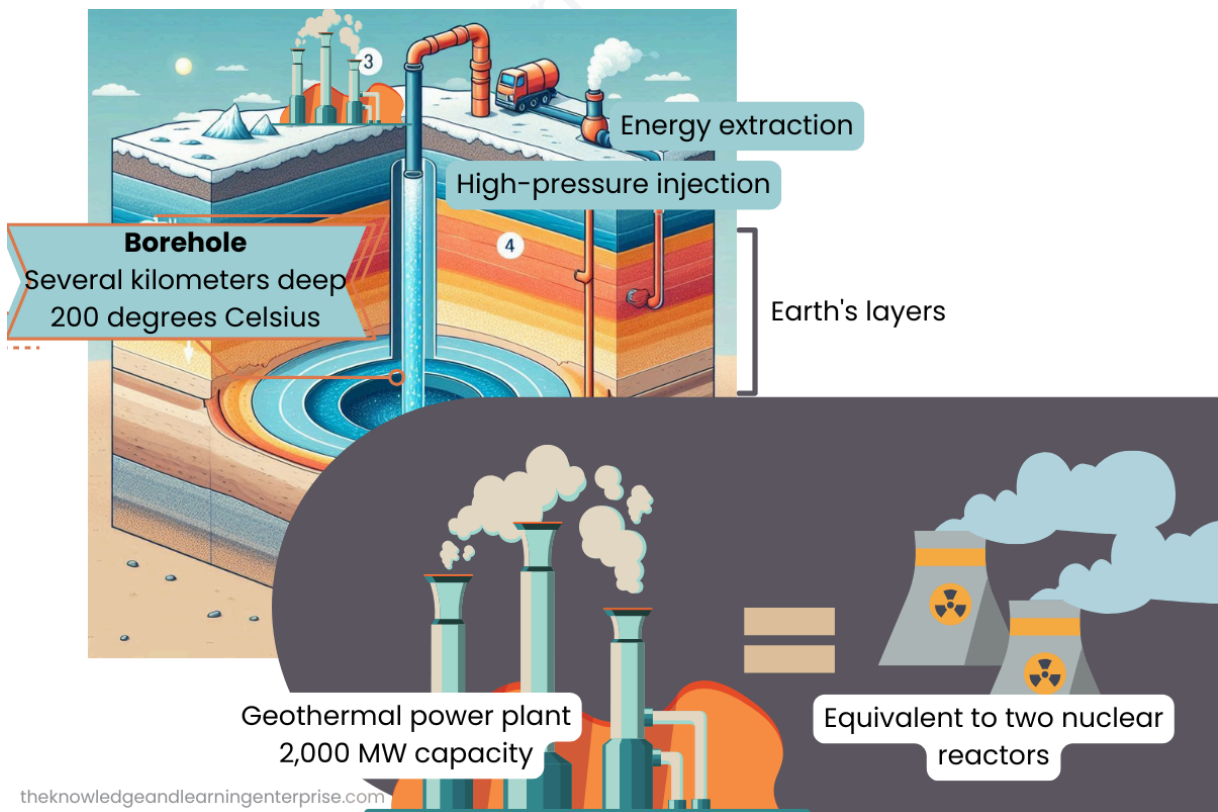
Nye popularized the term in his 1990 book—*Bound to Lead: The Changing Nature of American Power*. In this book, he wrote: "*When one country gets other countries to want what it wants might be called co-option or soft power in contrast with the hard or command power of ordering others to do what it wants.*"

He further developed the concept in his 2004 book, *Soft Power: The Means to Success in World Politics*.

Image: Chatham House., CC BY 2.0 <<https://creativecommons.org/licenses/by/2.0/>>, via Wikimedia Commons

Why Tech Giants Are Investing in Enhanced Geothermal Energy?

While tech giants like Microsoft, Google, and Amazon are making strides in nuclear-energy deals, other companies, such as Meta, are choosing to invest in a different, promising source of low-carbon energy — enhanced geothermal systems. These systems involve drilling boreholes up to several kilometers deep, where the rocks are at a temperature of around 200 °C, and injecting water and sand at high pressure. One geothermal plant greenlit in the United States could eventually generate 2,000 megawatts, a capacity on par with two large nuclear reactors.



This innovative approach, although costly, holds great potential for the future of renewable energy, despite the risks associated with seismic activity and fracking.

Here's a handy breakdown of enhanced geothermal engineering. Instead of relying on natural hot springs—a conventional approach that has been around for about a century—this method involves creating artificial ones to meet the high energy demands of AI. Projects in South Korea and Switzerland have had to shut down due to increased seismic activity. However, startups are trying to expand production while keeping a close eye on seismographs or doing away with fracking altogether. Their efforts are paving the way for exciting technological advancements in the energy industry.

Reference: NATURE

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Poetry in Brief

"There is freedom waiting for you, in the breezes of the sky; and you ask "What if I fall?" Oh! But my darling, what if you fly?"

– Erin Hanson



Image: [Pixabay](#)

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Lessons from Icarus: The Dangers of Over-Ambition

The saying "Don't fly too close to the sun" is a stark reminder of Icarus's tragic fate, a result of his recklessness and defiance of limitations. Despite Daedalus's warnings, Icarus flew too close to the sun, causing the beeswax in his wings to melt. The consequences were dire-Icarus fell from the sky, plunged into the sea, and drowned. This myth, which gave rise to the idiom, serves as a cautionary tale, warning us of the perils of over-ambition and the need to respect our limitations.



In Icarus and the wax : with too with the wing as attached his too body, melting

Icarus, the son of Daedalus, is a tragic figure in Greek mythology. He escaped from Crete using wings made by his father but met his demise when he flew too near the sun and the wax attaching his wings melted. This cautionary tale serves as a reminder of the consequences of over-ambition.

In Greek mythology, Daedalus was a skillful architect and craftsman, seen as a symbol of wisdom, knowledge, and power.

Image: Bing AI

Kichak-Vadha: A Masterpiece of Maithili Literature

KICHAK-VADHA (Maithili), which translates to 'The Killing of Kichak', is an epic in blank verse by Tantranath Jha. It was written at the request of his elder brother, Ramanatha Jha, for publication in his literary journal, Sahityapatra. It was intended to be issued as a whole book later on. It may be regarded as having been published partly in 1937. But the Sahityapatra stopped publication with six Cantos, and it was out in 1962 when three more Cantos were added, and the epic could be published in book form for the first time. Later, on the advice of the veteran Bengali novelist of Bihar, Bidhubhushan Mukhopadhyaya, one more Canto was added between the seventh and the eighth in 1976. Tantranatha conceived the idea of writing about the story of Kichak when he went to Calcutta in 1934 to treat his eyes. There, he was highly impressed by Sisirkumar Bhaduri's performance as Kichaka in a Bengali play. It also struck him that he should experiment with the blank verse in Maithili on the lines of Michael Madhusudan Datta's Meghanada-bath.

Kichak-vadha was acclaimed as a significant work even when it appeared in Sahityapatra, and even today, it is regarded as one of the glorious achievements in Maithili. It is an epic in a new manner, different from the traditional epics. It is particularly remarkable for its masterly use of a dignified style and subtle psychological insight into the tremendous dramatic event of the Mahabharata that is taken up as the theme. The fourth Canto is regarded as its best, but, as is known to all familiar with the episode, the entire story has an abiding charm in itself, more so when told in a fluent and elevated manner as in Tantranath's epic. The work uses no symbolism and does not pretend to be the modern mouthpiece of a renascent Mithila. That was achieved in Tantranath's second epic, Krishna Charita, which discusses the modern educational system and has a message for the contemporary reader.

But aesthetically, Kichak-vadha remains an outstanding achievement. Its gripping narration, excellent diction, command over the elevated language, graceful movement, and rhythmic sublimity are unparalleled. The narrative quality of Kichak-Vadha is such that it captivates and engrosses the reader, making it a truly immersive literary experience.

Source : Sahitya Akademi (GOI)

Note: In the Hindu epic Mahabharata, Kichaka or Keechaka is the commander-in-chief of the Matsya kingdom, ruled by King Virata. He was the younger brother of Sudeshna, the queen of Virata. Kichaka was a very powerful man and had immense strength. He saved Virata's kingdom many times from foes. He was killed by Bhima because he was harassing Draupadi and received a punishment. This story is of the days of Pandavas when they were required to live incognito .

Understanding the Rise and Fall of Keechaka in Mahabharata

Stories from Mahabharata



In the Hindu epic Mahabharata, Kichaka or Keechaka, the commander-in-chief of the Matsya kingdom, ruled by King Virata, is portrayed as a powerful person. His role was crucial in saving Virata's kingdom from numerous threats, earning him a reputation for his protective nature. However, his actions took a darker turn when he began to harass Draupadi, leading to his eventual demise at the hands of Bhima. This story is a reflection of the complex dynamics of power and protection

Image: Bing AI

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The Science of Anticipating Fun for Well-Being



How can anticipating fun enrich humans?

In 2020, scientists taught rats to drive tiny cars, and the animals loved it. (There is a fantastic video!) Now, the researchers have extended their work to show how anticipating a good time can ramp up rats' capacity for joy. Preliminary results suggest that animals who learned to wait for their turn behind the wheel tested as more 'optimistic' in their thinking, performed better on cognitive tasks, and were bolder in their

problem-solving strategies.

"Rather than pushing buttons for instant rewards, they remind us that planning, anticipating, and enjoying the ride may be key to a healthy brain," says behavioral neuroscientist Kelly Lambert, who led the research. "That's a lesson my lab rats have taught me well."

Reference: Nature

Image: Bing AI

Ustad Bismillah Khan Yuva Puraskar: Honoring Young Artists

The Sangeet Natak Akademi instituted the Ustad Bismillah Khan Yuva Puraskar (UBKUP) in the name of Bharat Ratna Ustad Bismillah Khan for young performing art practitioners up to the age of 40 years in 2006. The Ustad Bismillah Khan Yuva Puraskar is given annually to outstanding young artists in a diverse range of art forms including music, dance, drama, folk & tribal arts, and puppetry in a special ceremony held in Delhi and outside Delhi. The Yuva Puraskar carries a purse of INR 25,000/- (Rupees twenty-five thousand only), a plaque, and an *angavastram*.

The Ustad Bismillah Khan Yuva Puraskar was instituted with the noble aim of encouraging and motivating young artists in the fields of music, dance, drama, folk and tribal art forms, and other allied performing arts of the country. This award has the potential to significantly impact the careers of the recipients, providing them with recognition and support in their artistic journey. For more information about the Ustad Bismillah Khan Yuva Puraskar and its recipients, visit <https://www.sangeetnatak.gov.in/press-releases>. The list of recipients of Ustad Bismillah Khan Yuva Puraskar for the years 2022 and 2023 is as follows:

Ustad Bismillah Khan Yuva Puraskar for 2022

Field of Activity: Music -10

- | | |
|-------------------------|-----------------------------------|
| 1. Samit Mallick | Hindustani Vocal |
| 2. Samarth Janve | Hindustani Vocal |
| 3. Sangeet Mishra | Hindustani Instrumental– Sarangi |
| 4. Partho Roy Choudhury | Hindustani Instrumental – Santoor |
| 5. K. Gayatri | Carnatic Vocal |

- | | |
|------------------------|---|
| 6. I. Sweta Prasad | Carnatic Vocal |
| 7. B. Anantha Krishnan | Carnatic Instrumental –Violin |
| 8. Sahana S.V | Carnatic Instrumental - Veena |
| 9. Manoj Rai | Creative & Experimental Music |
| 10. Nandini Rao Gujar | Other Major Traditions of Music (Sugam Sangeet) |

Field of Activity: Dance -10

- | | |
|----------------------------|---------------------------------------|
| 1. Mandakranta Roy | Bharatanatyam |
| 2. Kadam Parikh | Kathak |
| 3. Urmika Maibam | Manipuri |
| 4. T. Reddi Lakshmi | Kuchipudi |
| 5. Arupa Gayatri Panda | Odissi |
| 6. Dimpee Baishya | Sattriya |
| 7. Akshara M Das | Mohiniattam |
| 8. Pradyumna Kumar Mohanta | Chhau |
| 9. Mingma D. Lepcha | Creative & Experimental Dance |
| 10. Aparna Nangiar | Others– Dance Theatre (Nangiarkoothu) |

Field of Activity –Theatre – 08

- | | |
|-----------------------|-------------|
| 1. Beluru Raghunandan | Playwriting |
| 2. Ifra Mushtaq Kak | Direction |
| 3. Harishankar Ravi | Direction |
| 4. Harwinder Singh | Acting |
| 5. Kumar Ravikant | Acting |
| 6. Siddhi Upadhye | Acting |
| 7. Mukunda Nath | Mime |

8. Sangeet Shrivastava

Allied Theatre Arts – Lighting

Field of Activity: Other Traditional/Folk/Tribal Dance/Music/Theatre and Puppetry - 11

1. Lata Tiwari & Sanjay Datt Panday, (Joint Award)

Folk Music & Dance, Uttrakhand

2. Chow Saratham Namchoom

Folk Music, Arunachal Pradesh

3. Sampriya
Pooja

Folk Music & Dance, Chhattisgarh

4. Suryawanshi Pramila Kautikrao

Folk Dance Lavani, Maharashtra

5. Kumar Uday
Singh

Folk Dance, Bihar

6. Nasarullah
EPI

Folk Dance, Lakshadweep

7. Binita Devi

Puppetry, Assam

8. Mahesh Aba Satarkar

Folk Dance, Goa

9. Vasava Mukeshbhai M.

Folk Dance, Gujarat

10. Gulzar Ahmad Bhat

Folk Dance, Jammu & Kashmir

11. Moirangthem Kendra Singh

Nata Sankirtan, Manipur

Overall Contribution/Scholarship in Performing Arts – 1

1. Anuthama Murali

over all contribution in performing arts

Ustad Bismillah Khan Yuva Puraskar for the year 2023

Field of Activity: Music -10

- | | |
|---------------------------------|--|
| 1. Anuja Zokarkar | Hindustani Vocal |
| 2. Monika Soni | Hindustani Vocal |
| 3. Rishi Shankar Upadhyay | Hindustani Instrumental– Pakhawaj |
| 4. Sarang Rajan Kulkarni | Hindustani Instrumental – Sarod |
| 5. S. R. Vinay Sharva | Carnatic Vocal |
| 6. Ramakrishnan Murthy | Carnatic Vocal |
| 7. Akshay Anantapadmanabhan | Carnatic Instrumental –Mridangam |
| 8. Saikhom Pinky Devi | Creative & Experimental Music |
| 9. Satyavathi Mudavath | Creative & Experimental Music |
| 10. Nagesh Shankarrao Adgaonkar | Other Major Traditions of Music (Abhang) |

Field of Activity: Dance -10

- | | |
|-------------------------------|-----------------|
| 1. Apoorva Jayaraman | Bharatanatyam |
| 2. Meghranjani Medhi | Kathak |
| 3. Kalamandalam Vipin Sankar | Kathakali |
| 4. Pukhrambam Reepa Devi | Manipuri |
| 5. Muramalla Surendra Nadh | Kuchipudi |
| 6. Debasis Pattnaik | Odissi |
| 7. Mukunda Saikia Barbayan | Sattriya |
| 8. Vidya Pradeep | Mohiniattam |
| 9. Sunita Mahato | Chhau |
| 10. Venkateshwaran Kuppuswamy | Music for Dance |

Field of Activity –Theatre – 08

- | | |
|---|---------------------------------|
| 1. Priyadarshini Mishra | Playwriting |
| 2. Bendang Walling | Direction |
| 3. Suvojit Bandyopadhyay | Direction |
| 4. Rutuja Rajan Bagwe | Acting |
| 5. Vipin Kumar | Acting |
| 6. Shruti Singh | Acting |
| 7. Mallikarjuna Rao Bachala | Allied Theatre Arts – Make-up |
| 8. Puneet Dimari & Amit Khanduri (Ramleela) | Others (Joint Award) Uttrakhand |

Field of Activity: Other Traditional/Folk/Tribal Dance/Music/Theatre and Puppetry - 11

- | | |
|--------------------------------|----------------------------------|
| 1. Angadi Bhaskar | Folk Music – Dappalu, Telangana |
| 2. Alok Bishoyi | Folk Dance & Music, Odisha |
| 3. M. Prakash | Folk Dance, Puducherry |
| 4. Padma Dolker | Folk Music & Dance, Ladakh |
| 5. Sukhram Pahan | Folk Music, Jharkhand |
| 6. Yusuf Khan Mewati Jogi | Folk Music, Rajasthan |
| 7. Kalamandalam Ravisankar T S | Folk Instrument (Chenda), Kerala |
| 8. Dixit Kushal Manvantray | Folk Dance, Gujarat |
| 9. Priyanka Shakti Thakur | Traditional Music, Maharashtra |
| 10. Anureet Pal Kaur | Folk Music, Punjab |
| 11. Charu Sharma
Pradesh | Folk Music, Himachal Pradesh |

Overall Contribution/Scholarship in Performing Arts – 1

- | | |
|----------------------|--|
| 1. Laxminarayan Jena | over all contribution in performing arts |
|----------------------|--|

The Significance of Kirtilata in Mithila's History

KIRTILATA (Maithili), is a historical *kavya* composed by Vidyapati (1350-1440) in 'Maithili Avahattha'. It is divided into four *pallavas*. It was composed in the praise of Kirti Simha who, with the help of Ibrahim Shah Sharqi, the Nawab of Jaunpur, got back the kingdom of Mithila from a Muslim usurper, Aslan. Vidyapati has neither produced a historical document nor has he mixed up historical events with much that is fanciful, a practice prevalent among the writers of Sanskrit historical *kavyas*. The Kirtilata is unique in being both a piece of history and pleasant poetry.

Source : Encyclopaedia of Indian Literature (published by Sahitya Akademi)

Note: Maithili is an Indo-Aryan language spoken in India and Nepal. It's one of the three main languages of Bihar, along with Magadhi and Bhojpuri. Maithili is native to the Mithila region, which includes parts of Bihar and Jharkhand in India, and the Koshi and Madhesh Provinces in Nepal. It's one of India's 22 scheduled languages and the second national language of Nepal. Maithili has its own script called Tirhuta, but most Maithili writers now use the Devanagari script.

The Power of Gratitude: Boost Your Mood This Holiday Season

Each [holiday season](#) has high expectations for a cozy and festive time. However, for many, this time of year is tinged with sadness, anxiety, or depression. Indeed, major depression or a severe anxiety disorder benefits most from professional help. But what about those who feel lost, overwhelmed, or down at this time of year? Research (and common sense) suggests that one aspect of the Thanksgiving season can lift the spirits, built right into the holiday — being grateful.



The word gratitude is derived from the Latin '*gratia*,' which means grace, graciousness, or gratefulness. In many ways, gratitude is a universal language that transcends cultures and beliefs. It is a thankful appreciation for what an individual receives, whether tangible or intangible. With gratitude, people from all walks of life acknowledge the goodness in their lives, often recognizing that the source of that

goodness lies at least partially outside themselves. As a result, being grateful also helps people connect to something larger than themselves as individuals — whether to other people, nature, or a higher power.

In positive psychology research, gratitude is strongly and consistently associated with greater happiness. Gratitude helps people feel more positive emotions, relish good experiences, improve their health, deal with adversity, and build strong relationships.

People feel and express gratitude in multiple ways. They can apply it to the past (retrieving positive memories and being thankful for elements of childhood or past blessings), the present (not taking good fortune for granted as it comes), and the future (maintaining a hopeful and optimistic attitude). Regardless of the inherent or current level of someone's gratitude, it's a quality that individuals can successfully cultivate further.

Research on gratitude

Two psychologists, Dr. Robert A. Emmons of the University of California, Davis, and Dr. Michael E. McCullough of the University of Miami, have researched gratitude. In one study, they asked all participants to write a few sentences each week, focusing on particular topics.

One group wrote about things they were grateful for that had occurred during the week. A second group wrote about daily irritations or things that had displeased them, and the third wrote about events that had affected them (with no emphasis on them being positive or negative). After 10 weeks, those who wrote about gratitude were more optimistic and felt better about their lives. Surprisingly, they also exercised more and had fewer visits to physicians than those who focused on sources of aggravation.

Another leading researcher in this field, Dr. Martin E.P. Seligman, a psychologist at the University of Pennsylvania, tested the impact of various positive psychology interventions on 411 people, each compared with a control assignment of writing about early memories. When their week's assignment was to write and personally deliver a letter of gratitude to someone who had never been adequately thanked for their kindness, participants immediately exhibited a huge increase in happiness

scores. This impact was more significant than any other intervention, with benefits lasting for a month.

Of course, studies such as this one cannot prove cause and effect. However, most studies on this topic support an association between gratitude and an individual's well-being.

Other studies have looked at how gratitude can improve relationships. For example, a study of couples found that individuals who took time to express gratitude for their partner not only [felt more positive](#) toward the other person but also felt more comfortable expressing concerns about their relationship.

Managers who remember to say "thank you" to people who work for them may find that those employees feel motivated to work harder. Researchers at the Wharton School at the University of Pennsylvania randomly divided university fundraisers into two groups. One group made phone calls to solicit alum donations like they always had. The second group — assigned to work on a different day — received a pep talk from the director of annual giving, who told the fundraisers she was grateful for their efforts. During the following week, the university employees who heard her message of gratitude made 50% more fundraising calls than those who did not.

There are some notable exceptions to the generally positive results in research on gratitude. One study found that middle-aged divorced women who kept gratitude journals were no more satisfied with their lives than those who did not. Another study found that children and adolescents who wrote and delivered a thank-you letter to someone who had made a difference in their lives may have made the other person happier — but did not improve their well-being. This finding suggests that gratitude is an attainment associated with emotional maturity.

Ways to cultivate gratitude

Gratitude is not a complex concept. It's a simple way for people to appreciate what they have instead of always reaching for something new in the hope it will make them happier. It's about refocusing on what we have instead of what we lack. And

the best part? It's a mental state that grows stronger with use and practice, making it a powerful tool in our emotional toolkit.

Here are some ways to cultivate gratitude regularly.

Write a thank-you note. You can make yourself happier and nurture your relationship with another person by [writing a thank-you letter](#) or email expressing your enjoyment and appreciation of that person's impact on your life. Send it, or deliver and read it in person if possible. Make a habit of sending at least one gratitude letter a month. Once in a while, write one to yourself.

Thank someone mentally. Do you lack time to write? It may help to think about someone who has done something nice for you and mentally thank them.

Keep a gratitude journal. Make it a habit to write down or share thoughts about the gifts you've received each day with a loved one.

Count your blessings. Pick a time every week to sit down and write about your blessings — reflecting on what went right or what you are grateful for. Sometimes, it helps to pick a number — such as three to five things — that you will identify each week. As you write, be specific and think about the sensations you felt when something good happened to you.

Pray. Religious people can use prayer to cultivate gratitude.

Meditate. Mindfulness meditation involves focusing on the present moment without judgment. Although people often focus on a word or phrase (such as "peace"), it is also possible to focus on what you're grateful for (the warmth of the sun, a pleasant sound, etc.).

Reference : Harvard Journal of Health

Image: Pixabay

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Alladi Krishnaswamy Ayyar: Architect of Indian Democracy



Alladi Krishnaswamy Ayyar, born on 14th May 1883 in Pudur village, Andhra Pradesh, was a distinguished jurist and a key figure in the drafting of the Indian Constitution. He pursued history at Madras Christian College, where his academic excellence earned him a tutor's position in the same subject. Balancing work and studies, he completed his B.L. degree, marking the beginning of an illustrious legal career.

Ayyar's professional journey was remarkable. He became a leading member of the Bar and was appointed Advocate-General of Madras State from 1929 to 1944. His contributions to legal reform included his role in the Government of India Committee tasked with amending the laws on Partnership and Sale of Goods in 1929. Honored with the title Dewan Bahadur in 1930 and knighted in 1932, he later renounced his knighthood as a mark of solidarity with India's freedom movement. Ayyar was also known for his generosity, often mentoring young lawyers and making his library accessible to all.

Despite not actively participating in the independence movement, Ayyar's legal expertise earned him a place in the Constituent Assembly. Representing Madras Province on a Congress ticket, he contributed significantly to the framing of the Constitution. As a member of nine critical committees, including the Drafting

Committee, the Advisory Committee, and the Sub-Committee on Fundamental Rights, Ayyar played a vital role in shaping provisions on citizenship, fundamental rights, and emergency measures. His insights and meticulous work ensured that the Constitution addressed the diverse needs of the nation while upholding democratic principles.

After completing his work with the Constituent Assembly, Ayyar retired from public life. He passed away on 3rd October 1953, leaving behind a legacy of legal brilliance and constitutional vision. Alladi Krishnaswamy Ayyar's life and work remain an enduring testament to his dedication to justice and democracy. His role in shaping India's constitutional framework stands as a cornerstone of the nation's democratic governance, inspiring generations to uphold the ideals he so fervently advocated.

Excerpts of Speeches Made by Alladi Krishnaswami in the Constituent Assembly

- **On Democracy and Equality**

"The Constitution truly reflects the spirit of the Objectives Resolution with which this Assembly started its work and the Preamble of the Constitution which is mainly founded on the Objectives Resolution."

"In spite of the ignorance and illiteracy of the large mass of the Indian people, the Assembly has adopted the principle of adult franchise with an abundant faith in the common man and the ultimate success of democratic rule."

"The introduction of democratic government on the basis of adult suffrage will bring enlightenment and promote the well-being, the standard of life, the comfort, and the decent living of the common man."

"The breakdown provisions in the Constitution are not intended in any way to hamper the free working of democratic institutions or responsible Government in the different units, but only to ensure the smooth working of the Government when actual difficulties arise in the working of the Constitution."

"Our Constitution is much more flexible than many written and Federal Constitutions. An easy and flexible method of amendment has been provided for. But that does not mean that amendment must be undertaken lightheartedly."

- **On Citizenship and Responsible Government**

"The Constitution deliberately adopts the principle of single citizenship for the whole of India and departs from dual citizenship, a common feature of many Federations."

"The Union Government is entrusted with the power of intervention while there is a failure or deadlock in the working of democratic machinery."

"The exceptions and qualifications introduced into the articles reproduce in statutory form the well-recognised exceptions and limitations on the Fundamental Rights dealt with in the article."

- **On Religious Freedom and Inter-State Relations**

"While religious freedom is guaranteed to every individual and every religious persuasion, the State does not identify or ally itself with any particular religion or religious belief."

"The Assembly, while adhering to the principle that freedom of trade between the different units is indispensable to the proper functioning of the Union, has made the inter-State relations much more elastic and flexible in our Constitution."

- **On the Judiciary**

"The Supreme Court in India under the Indian Constitution, as this House is aware, has wider powers than the highest courts in any other known Federation including that of the U.S.A."

"The Supreme Court is the ultimate arbiter in all matters involving the interpretation of the Constitution."

"The judiciary is there to interpret the Constitution or adjudicate upon the rights between the parties concerned."

"The doctrine of independence is not to be raised to the level of a dogma so as to enable the judiciary to function as a kind of super legislature or super-executive."

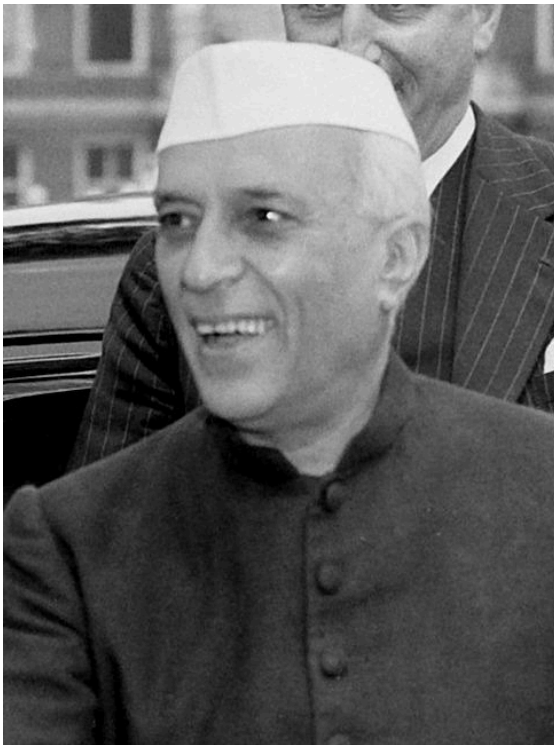
Image: Krishnaswami Alladi, CC BY-SA 3.0 <<https://creativecommons.org/licenses/by-sa/3.0/>>, via Wikimedia Commons

"Train hard, fight easy"

Alexander Suvorov

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Jawaharlal Nehru: Architect of Modern India



Born on 14 November 1889 at Anand Bhawan in Allahabad, Jawaharlal Nehru was a towering personality who shaped India's modern identity. The son of prominent lawyer Motilal Nehru and Swarup Rani, he imbibed Indian cultural values alongside progressive ideals. At 15, Nehru went to England, studying at Harrow, Trinity College, Cambridge, and the London School of Economics. His time in England sparked his intellectual growth and introduced him to Indian political movements, leaving a lasting impression on his ideals.

Returning to India in 1912, Nehru began his legal career at the Allahabad High Court.

However, his involvement in the Indian National Congress soon took precedence. Influenced by Mahatma Gandhi's leadership, he actively participated in the freedom struggle. From opposing the repressive Rowlatt Act to enduring imprisonment during the Salt Satyagraha and Quit India Movement, Nehru dedicated himself to India's liberation. His international engagements, including the Brussels Congress (1927) and visits to Moscow, cemented his vision of socialism and self-reliance for India.

Nehru's political acumen shone at the Lahore Congress in 1929, where he advocated for complete independence, a milestone in the freedom struggle. Following

independence, he became India's first Prime Minister, delivering his iconic "Tryst with Destiny" speech on 15 August 1947. Nehru skillfully navigated the Herculean task of nation-building, emphasizing democracy, secularism, and scientific progress.

A firm believer in planning for progress, Nehru established the Planning Commission and initiated Five-Year Plans to combat poverty and unemployment. His visionary leadership led to river-valley projects and community development programs, laying the foundation for India's economic development. Internationally, he championed the Non-Aligned Movement and principles of Panchsheel, advocating global peace and cooperation.

Nehru's contributions extended beyond politics. His writings, such as *Glimpses of World History* and *The Discovery of India*, reflect his intellectual depth. Affectionately called 'Chacha Nehru,' he held a special place for children, dedicating efforts to their welfare and education.

Jawaharlal Nehru passed away on 27 May 1964, leaving behind an enduring legacy. Tributes poured in from leaders worldwide, recognizing his role as a statesman, visionary, and advocate for peace and justice. Nehru's commitment to democracy and progress continues to guide India's path forward.

Excerpts of Speeches Made by Nehru in the Constituent Assembly

- **On the Purpose of the Constitution**

"In this Constituent Assembly we are functioning on a world stage and the eyes of the world are upon us and the eyes of our entire past are upon us. Our past is witness to what we are doing here and though the future is still unborn, the future too somehow looks at us."

"This Constituent Assembly declares its firm and solemn resolve to proclaim India as an Independent Sovereign Republic and to draw up for her future governance a Constitution" "We have to approach the framing of this constitution in the spirit that we have to consider it in detail, always using that Objectives Resolution as the yard measure."

"The Constitution is after all some kind of legal body given to the ways of Governments and the Life of a people."

"A Constitution if it is out of touch with the people's life, aims and aspirations, becomes rather empty."

"There should be a certain flexibility. If you make anything rigid and permanent, you stop a Nation's growth."

- **On National Spirit**

"Words are magic things often enough, but even the magic of words sometimes cannot convey the magic of the human spirit and of a Nation's passion."

"The time comes when we have to rise above party and think of the Nation, think sometimes of even the world at large of which our Nation is a great part."

"It tried to embody, insofar as it is possible in cold print to embody, the spirit that lay behind the Indian people at the time."

"Freedom brings responsibility; of course there is no such thing as freedom without responsibility.'

"The main thing is this great significant factor that India after a long period of being dominated over has emerged as a free sovereign democratic independent country."

"The freedom that has come to India by virtue of many things, history, tradition, resources, our geographical position, our great potential and all that, inevitably leads India an important part in world affairs."

"This ancient land attains its rightful and honored place in the world and makes its full and willing contribution to the promotion of world peace and the welfare of mankind."

"The only way to influence India is through friendship and co-operation and goodwill. Any attempt at imposition, the slightest trace of patronage, is resented and will be resented."

"At such a moment this New India is taking birth-renascent, vital, fearless."

"I stand for Socialism and, I hope, India will stand for Socialism and that India will go towards the constitution of a Socialist State and I do believe that the whole world will have to go that way. What form of Socialism again is another matter for your consideration."

"It is not so much the mere act of living that counts but what one does in this brief life that is ours; it is not so much the mere existence of a nation that counts but what that nation does during the various periods of its existence."

"The service of India means the service of the millions who suffer. It means the ending of poverty and ignorance and disease and inequality of opportunity."

- **On Freedom and Humanity**

"There will be no full freedom in this country or in the world as long as a single human being is unfree."

"Freedom is still far off in this world and nations, all nations in greater or lesser degree are struggling for their freedom."

"We shall face all the other disagreeable things that face us in the present or may do so in the future, and we shall not flinch and we shall not falter and we shall not quit."

"India carried on its cultural tradition, not unchanging, not rigid, but always keeping its essence, always adapting itself to new developments, to new influences."

"The Constitution itself will lead us to the real freedom that we have clamored for, and that real freedom in turn will bring food to our starving peoples, clothing for them, housing for them and all manner of opportunities of progress."

"Much more trouble will there be if there is freedom in parts of India and lack of freedom in other parts of India."

"The task of wresting freedom and ousting the foreign government was before us till now, and that task is now accomplished. But uprooting the foreign domination is not all unless and until each and every Indian breathes the air of freedom and his miseries are banished and his hard lot is improved, our task remains unfinished."

"Freedom and power bring responsibility. That responsibility rests upon this Assembly, a sovereign body representing the sovereign people of India."

- **On Unity and Inclusivity**

"India does not belong to any one party or group of people or caste. It does not belong to the followers of any particular religion. It is the country of all, of every religion and creed."

"Our freedom is to be shared equally by every Indian. All Indians shall have equal rights, and each one of them is to partake equally in that freedom."

"We have to build the noble mansion of free India where all her children may dwell."

"The one thing that should be obvious to all of us is this: that there is no group in India, no party, no religious community, which can prosper if India does not prosper."

"A free India will see the bursting forth of the energy of a mighty nation."

- **On Global Perspective and Peace**

"All the nations and peoples are too closely knit together today for any one of them to imagine that it can live apart. Peace has been said to be indivisible, so is freedom, so is prosperity now, and so also is disaster in this One World."

"We wish for peace. We do not want to fight any nation if we can help it."

"If we seek to be a free, independent, democratic republic, it is not to dissociate ourselves from other countries but rather as a free nation to cooperate in the fullest measure with other countries for peace and freedom."

Image: Behrens, Herbert / Anefo, CC BY-SA 3.0 NL, via Wikimedia Commons

Start in November. Start on Friday. Start at 5 pm. Start on the 31st. Start late. Start.

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Pollen Germination Insights from Arabidopsis Research

Scientists have identified a novel gene that plays a crucial role in the development of stamens (male reproductive structure) including pollen grain and seed formation, in *Arabidopsis* flowering plants related to cabbage and mustard. The study opens up new possibilities for improving crop fertility and seed production.

Pollen formation represents a very important developmental stage in plant life cycle. It represents the male gametophyte and its role is to deliver the genetic material to the embryo sac. The production and transfer of viable pollen grains to the stigma, germination of the pollen grains, growth of the pollen tubes down the style, and effective fertilization are necessary for the formation of a successful seed set. Thus, understanding the pollen development process not only elucidates the basic mechanism of sexual reproduction of flowering plants but also adds valuable information for subsequent manipulation in crop production.

“Pollen germination speed” and “pollen tube growth” are the two important characteristic features of healthy pollen that have evolved with the evolution in flowering plants (Angiosperms). The rapid growth of the pollen tube through the style to reach the ovary, is a pre-requisite for fertilization in flowering plants. Since many pollen tubes grow through the style, the reproductive success of a pollen grain is determined by its rate of pollen tube elongation.

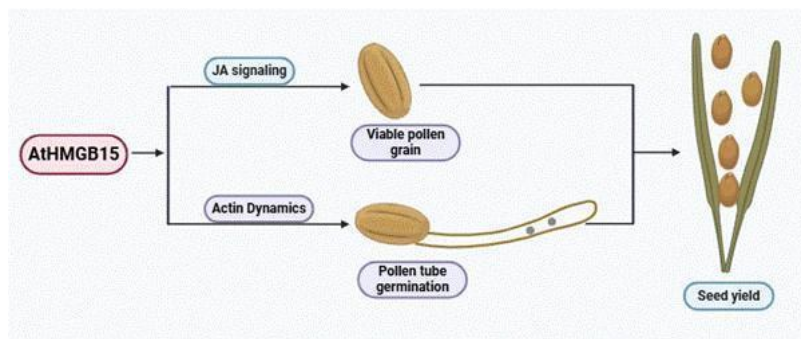
It has been shown that maturation of pollen grain with proper structure and composition of cell wall determines its interaction with the stigma as well as its germination ability for successful fertilization. Thus, it is important to understand the molecular mechanisms responsible for pollen development, pollen hydration and pollen germination- factors that are responsible for the formation of mature viable pollen grains.

Recent investigations on pollen development by Prof. Shubho Chaudhuri's lab at Bose Institute, Kolkata, an autonomous institution of Department of Science and Technology, identified a novel gene named *HMGB15*, a non-histone protein that restructures chromatin, plays a crucial role in the development of stamens (male reproductive structure) in *Arabidopsis*.

A mutation in this gene causes partial male sterility in plants. The mutant plants exhibit low pollen grain viability, defective pollen wall patterning, retarded pollen tube germination rate, shorter filaments that are unable to reach the stigma resulting in reduced seed production. The abnormalities in the mutants are due to the disruption in gene regulatory networks important for pollen development, maturation and pollen tube germination.

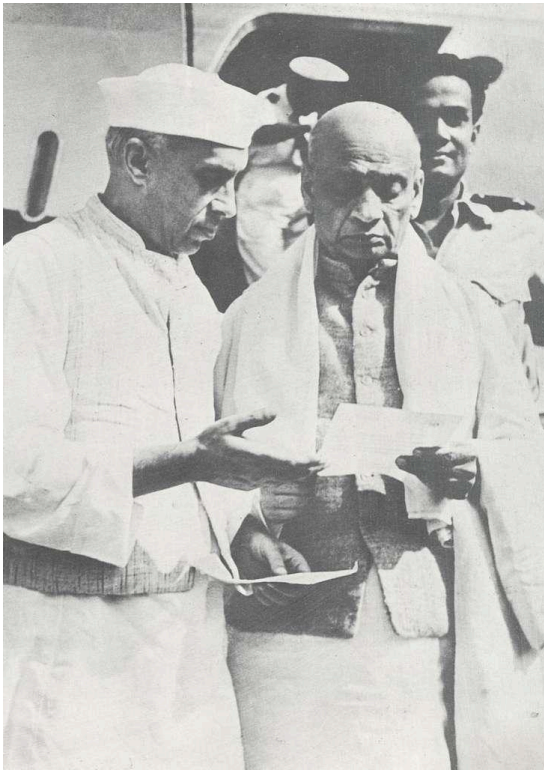
Molecular analysis indicated that several developmental pathways like biosynthesis of phytohormone jasmonic acid (JA), apoptosis of tapetal cells and actin polymerization dynamics have been severely affected in the *HMGB15* loss of function mutants.

Understanding this mechanism on a model organism used for studying plant biology, not only sheds light on the intricate biology of plants but also opens new possibilities for improving crop fertility and seed production. The studies have been published in reputed plant journals namely, *Plant Physiology* (Sachdev *et al.*, 2024) and *Plant Reproduction* (Biswas *et al.*, 2024). Financial support for this work was provided by SERB, India.



The Legacy of Sardar Vallabhbhai Patel

The Architect of India's Political Unity



Sardar Vallabhbhai Patel, born on 31 October 1875 in a farmer's family in Nadiad, Gujarat, was a key figure in India's independence and the architect of its integration. His father, Jhaverbhai, a patriotic farmer believed to have participated in the 1857 uprising, and his mother Ladbai, a deeply religious and hard-working woman, instilled in Vallabhbhai values of self-reliance, discipline, and resilience.

Educated in his village until 17, he later passed his matriculation in 1897 from Nadiad High School. Driven to pursue law but unable to afford university education initially, he began as a district pleader. In 1910, he moved to England to study at

Middle Temple, excelling in Roman Law and graduating with distinction in 1912. Upon his return to India in 1913, he established a successful law practice in Ahmedabad but gradually transitioned to public service.

Sardar Patel's political journey began with his association with Mahatma Gandhi during the Kheda Satyagraha (1918). He led the peasants in refusing to pay taxes due to famine-induced hardships, marking his first major victory against colonial authorities. This experience solidified his commitment to Gandhian principles of

non-violence and civil disobedience. His leadership during the Bardoli Satyagraha (1928) against unjust tax hikes earned him the title "Sardar," a recognition of his role as a leader of the masses.

Patel played a pivotal role in the freedom movement, participating in the Non-Cooperation Movement and leading protests against repressive British policies. Arrested several times, he endured imprisonment during the Civil Disobedience Movement and the Quit India Movement (1942). As a trusted lieutenant of Gandhi, he presided over the Karachi Session of Congress (1931) and led organizational efforts for India's independence.

Post-independence, as India's first Deputy Prime Minister and Home Minister, Patel achieved his most enduring legacy: the peaceful integration of over 560 princely states into the Indian Union. Despite immense challenges, he united the nation through diplomacy and firmness, earning the title of "The Iron Man of India." His work ensured a stable foundation for a democratic and sovereign India. Patel also played a key role in framing the Constitution and establishing administrative frameworks.

Sardar Patel passed away on 15 December 1950, leaving behind an indelible legacy as the "Consolidator of India." Tributes poured in globally, with Prime Minister Nehru describing him as a "tower of strength" and a "builder of modern India." His contributions remain a cornerstone of India's unity and democratic ethos.

Excerpts of Speeches Made by Sardar Patel in the Constituent Assembly

- **On the Integration of States**

"The Central Government should perform the same functions and exercise the same powers in States as in Provinces"

"By integrating 500 and odd States into sizable units and by the complete elimination of centuries-old autocracies, the Indian democracy has won a great victory of which the Princes and the people of India alike should be proud. This is an achievement which should rebound to the credit of any nation or people at any phase of history."

"The amendments which are now being proposed concerning the provisions of the Constitution applicable to the States, embody the results of the bloodless revolution which within a remarkably short period, has transformed the internal and external set up of the States."

"Whether the article provides for consultation or consent of the legislature of the affected State, the wishes of the people cannot be ignored either by the Central Government or legislature."

"As a result of the policy of integration and democratization of States pursued by the Government of India since December 1947 the process of what might be described as 'unionization' of States has been greatly accelerated."

- **On the Importance of a Unified Constitution**

"We discussed this matter with the Premiers of the various Unions and decided, with their concurrence, that the Constitution of the States should also form an integral part of the Constitution of India."

"The legislative and executive authority of the Union in respect of the States will, therefore, be co-extensive with its similar authority in and over the Provinces."

"Our new Constitution is not an alliance between democracies and dynasties, but a real union of the Indian people built on the basic concept of the sovereignty of the people."

- **On the Benefits of Integration to States**

"The States have benefited very considerably from the process of integration in the form of cash balances inherited by them from the Rulers."

"The privy purse settlements are therefore in the nature of consideration for the surrender by the Rulers of all their ruling powers and also for the dissolution of the States, as separate units."

"Autocracy in the States has gone and has gone for good."

- **Democratic Freedom and Purna Swarajya**

"The Purna Swaraj or complete Independence, which is the objective of the Congress, is for the whole of India, inclusive of the States, for the integrity and unity of India must be maintained in freedom as it has been maintained in subjection."

"The only kind of federation that can be to the Congress is one in which the States participate as free units, enjoying the same measure of democratic freedom as the rest of India."

"Need we cavil then at the small-purposely use the word small-price we have paid for the bloodless revolution which has affected the destinies of millions of our people."

- **On Unification of India**

"The fiscal unification of India will patch up the disruptive rents in the economy of India which rendered effective implementation of economic policies in the Provinces impossible."

"The Government of India has guaranteed to the Rulers of merged and integrated States payment of privy purses as fixed under the terms of the various Covenants and Agreements of Merger.

"Our new Constitution is not an alliance between democracies and dynasties, but a real union of the Indian people built on the basic concept of the sovereignty of the people.

"It removes all barriers between the people of the States and the people of Provinces and achieves for the first time the objective of a strong democratic India built on the

true foundation of a co-operative enterprise on the part of the people of the Provinces and States alike."

"All the citizens of India, whether residing in States or Provinces, will enjoy the same fundamental rights and the same legal remedies to enforce them."

After all, we are a democracy; the main sanction behind us is the will of the people and we cannot act in disregard of public opinion.

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World Toilet Day 2024: Addressing Global Sanitation Crisis

World Toilet Day, celebrated annually on **November 19**, is an official United Nations observance aimed at raising global awareness and action to address the urgent sanitation crisis. Observed since **2013**, this day has been dedicated to emphasizing the importance of **safe and accessible toilet facilities** as part of **Sustainable Development Goal 6: Ensuring water and sanitation for all by 2030**. This year's theme is **'Toilets - A Place for Peace'** which emphasizes that billions of people face heightened threats to sanitation due to conflict, climate change, natural disasters, and systemic neglect.



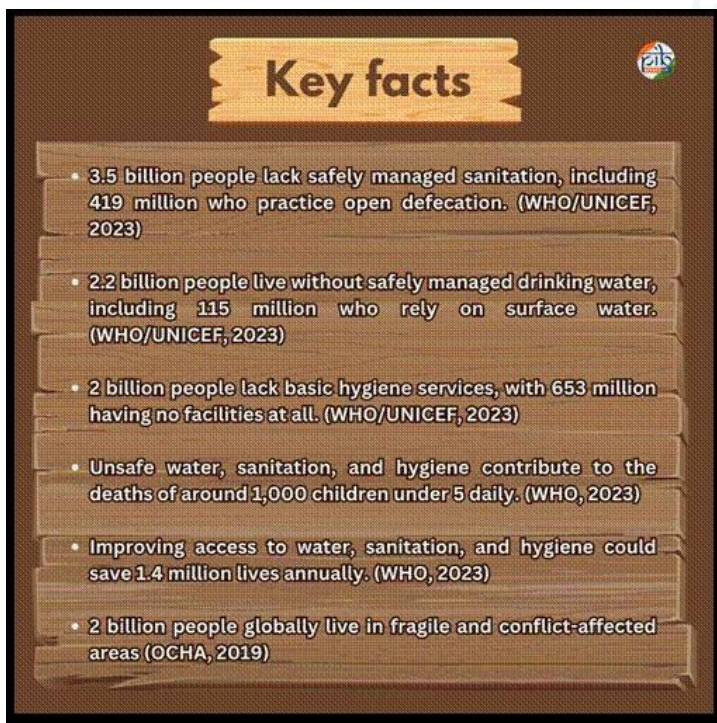
Context and Significance

World Toilet Day was established to shed light on the challenges faced by billions worldwide due to inadequate sanitation. The observance underscores the indispensable role of proper toilet facilities in maintaining public and environmental health by preventing the spread of deadly diseases such as cholera. There is a desperate need for sanitation services with **3.5 billion people** still living without

safely managed sanitation and **419 million** practicing open defecation around the world.

Sanitation services act as a protective barrier, ensuring that human waste does not enter ecosystems and endanger communities. The **World Health Organization (WHO) reported in 2023** that unsafe water, sanitation, and hygiene are responsible for approximately **1,000 deaths of children** under the age of five every day. Improved sanitation could potentially save **1.4 million lives annually**, highlighting the urgent need for action.

World Toilet Day 2024: A Call for Resilient Sanitation



The 2024 campaign for World Toilet Day carries a clear and urgent message: governments must ensure that sanitation and water services are resilient, effective, and accessible to everyone, safeguarded against conflict and climate-induced disruptions. The statistics are staggering—**2.2 billion people still lack safely managed drinking water, and 2 billion lack basic hygiene services, including 653 million with no facilities at all.**

Children living in fragile contexts are particularly vulnerable, being **three times** more likely to practice open defecation and **eight times** more likely to lack basic drinking water services. In conflict-affected areas, **children under 15 are nearly three times**

more likely to die from diseases linked to poor sanitation than from direct violence, underscoring the catastrophic impact of inadequate sanitation.

Celebrations in India and Global Campaigns

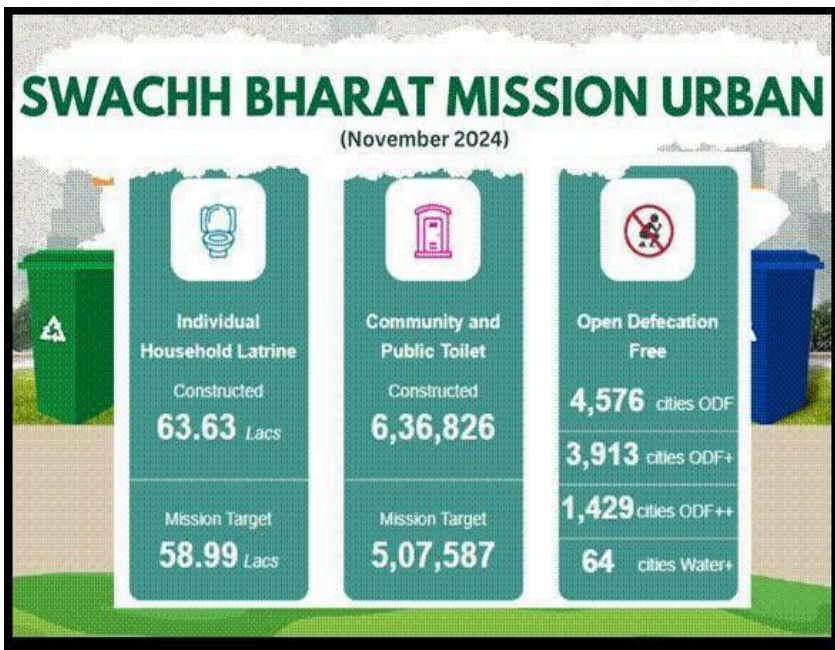
In India, World Toilet Day serves as a pivotal moment to reinforce efforts toward sustaining the nation's Open Defecation Free (ODF) status. The government has directed all States and Union Territories to conduct ground-level surveys to identify existing gaps and expedite the construction of Individual Household Latrines (IHHLs). Additionally, village-level registration drives and camps are organized to ensure that all eligible beneficiaries receive timely sanction orders for toilet construction.

This year, India is going to launch the campaign “**Hamara Shauchalay: Hamara Samman**”, which will commence on **November 19 and culminate on Human Rights Day, December 10, 2024**, linking sanitation with human rights and the universal need for dignity and privacy, especially for women and girls.



The **Swachh Bharat Mission (SBM)** has been a cornerstone of India's efforts to improve sanitation and eliminate open defecation, marking a transformative journey since its launch in 2014. Under SBM-Grameen, substantial progress has been made, including the construction of over **11.73 crore** household toilets, resulting in more than **5.57 lakh ODF Plus villages**. This initiative significantly contributed to public

health, with WHO reporting **300,000 fewer diarrheal deaths by 2019 compared to 2014**. The mission's economic impact was equally impressive, saving ODF villages an average of **INR 50,000** per family annually on healthcare. The urban counterpart, Swachh Bharat Mission-Urban, also met and exceeded its targets, facilitating the construction of **63.63 lakh household latrines** and over **6.36 lakh community and public toilets**. These efforts led to **4,576 cities** achieving ODF status, with many progressing to ODF+ and ODF++ designations. The mission has profoundly impacted women's safety and dignity, with **93% of women in ODF** regions reporting enhanced feelings of security. Collectively, SBM has laid the foundation for a cleaner, healthier, and more equitable India, aligning with the overarching goals of World Toilet Day and SDG 6.



A Human Right and a Public Health Imperative

In conclusion, World Toilet Day 2024 serves as a vital reminder of the global urgency to address sanitation challenges, particularly in vulnerable and conflict-affected

regions. This observance underscores that access to safe and resilient sanitation is not just a matter of infrastructure, but a fundamental human right tied to dignity, health, and security. Governments, organizations, and communities must come together to prioritize sustainable solutions, promote awareness, and invest.

Supernovae and the Fiery Gas Surrounding Our Galaxy

Scientists may have finally hit upon the possible mysterious sources that have pumped heat and kept alive the fiery hot gas which has been recently detected but has remained unexplained, so far.

There is more gas than stars in our galaxy. The prevailing, massive gas reserve is the main source for star formation in our galaxy. The availability of such abundant gas helped sustain this process till date. However, because of its tenuous nature, astronomers have found it extremely difficult to see, let alone measure the volume of this gaseous matter.

But a few decades ago, studies established the presence of gaseous matter surrounding our galaxy, the Milky Way. It was found that the galaxy was surrounded by a large sphere of gas which was a few million degrees Kelvin hot. This sphere of gas extended to 700 thousand light years. Such high temperatures, researchers said, could be associated with the gravity of the Milky Way, as atoms would have to constantly swirl around in order to rescue themselves from falling prey to the galaxy's strong gravity.

But what further intrigued the scientific community, in the more recent years, was the discovery of gaseous matter which was even hotter than what was known previously. This latest discovered gaseous matter was pitched to be around ten million degrees Kelvin. Faint X-ray emissions were found in all directions of the Milky Way that bore a strong signature of a super-hot gas. At the same time, this gas also showed up in the spectra of at least three distant quasars, as an absorbing medium.

A keenly studied research area emerged, and, since then, astronomers have been trying to find clues and links to the sources that were pumping heat and keeping alive the fiery hot gas.



A quiescent spiral galaxy known as NGC 1058 has a record of supernovae and starburst activity

Scientists at the Raman Research Institute (RRI), an autonomous institute funded by the Department of Science and Technology (DST), Government of India, along with their collaborators at IIT-Palakkad and Ohio State University, have detailed the mysterious source through their proposed model in two related studies.

They have confirmed that the gas responsible for emitting and absorbing the signals detected by astronomers were not the same. Instead, the X-ray emitting hot gas was caused by a puffed-up region around the stellar disc of the Milky Way. Since there is a continuous on-going star formation at various regions across the disk of the Milky

Way, the massive stars in these regions explode as supernovae, and heat the gas around the disk to high temperatures.

“As such, explosions keep heating up the gas floating around the disc of the Milky Way and they enrich the gaseous matter with elements synthesized within massive stars,” said Mukesh Singh Bisht, PhD student at RRI.

As this turbulent gas is swept up from the disc and swirls around violently, it either escapes into the surrounding medium or cools and falls back onto the disc.

In the case of absorption studies, along with the superhot temperatures that the vast gaseous matter possessed, its elemental composition, too, surprised the astronomers. This absorbing hot gas was found to be enriched with α -elements.

“This fiery gas, at least in a few directions, seems to be enriched with large quantities of α -elements, such as Sulphur, Magnesium, neon etc., whose nuclei are nothing but multiples of Helium nuclei. This is a vital clue of nuclear reactions occurring within the stellar core. These elements are thrown out of massive stars during supernovae explosions,” explained Biman Nath, faculty, RRI, and one of the contributory authors in both the papers.

Even though there are thousands of run-away stars that get constantly ejected out of the Milky Way disc, when some of them which may hover above the stellar disc explode as supernovae, they potentially create a puff of α -enriched and fiery gas around them.

“If they fall in line with the direction of distant sources of light quasars, the atoms in this hot gas would absorb and produce shadow signals, thus explaining the absorbing hot gas. At the same time, a veil of fiery hot gas keeps engulfing the Milky Way disc, as a result of the star forming activities in the stellar disc of the Milky Way which explains the hot gas seen in X-ray emission,” said Bisht. The study was published in the *Astrophysical Journal*.

The faint X-ray signals thus produced could be further studied to obtain more clues. The group plans to test the models in other frequencies.

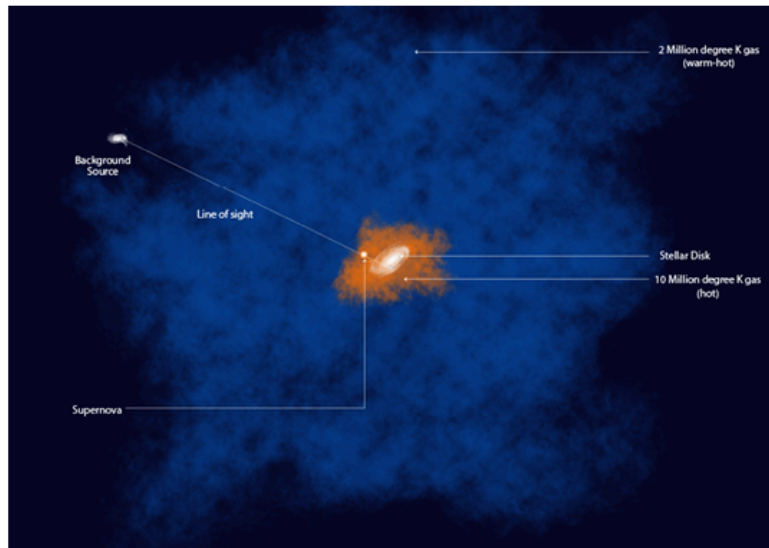


Figure Caption: This illustration shows the various components of the Milky Way. The spiral features at the center represent the stellar disc. The stellar disc is surrounded by the newly discovered very hot gas in emission with puffed-up disc-like structure. The blue region marks the extent of the two-million degrees Kelvin gas. The white line shows the direction along a background source (a quasar). Along this direction, a supernova from a runaway star is shown with a bright blob which explains the absorption by the very hot gas.

Image of NGC 1058: International Gemini Observatory/NOIRLab/NSF/AURA Image processing: T.A. Rector (University of Alaska Anchorage/NSF's NOIRLab), J. Miller (Gemini Observatory/NSF's NOIRLab), M. Rodriguez (Gemini Observatory/NSF's NOIRLab) & M. Zamani (NSF's NOIRLab), CC BY 4.0 <<https://creativecommons.org/licenses/by/4.0/>>, via Wikimedia Commons

Infrastructure Development for Fisheries: The Role of FIDF

Blue Revolution Integrated Development and Management Fisheries Scheme or Blue Revolution Scheme was launched in FY2015-16. The scheme primarily focused on increasing fish production and productivity.

Pradhan Mantri Matsya Sampada Yojana (PMMSY)

The government launched the Pradhan Mantri Matsya Sampada Yojana (PMMSY) in May 2020. It is a flagship initiative to transform India's fisheries sector.



The scheme focuses on enhancing aquaculture productivity, improving fisheries management, and creating 55 lakh new jobs in the sector, along with big infrastructural changes of establishing five integrated aquaparks. It also envisages doubling fisheries exports to 1 lakh crores. One of the central goals of PMMSY is to

increase aquaculture productivity, which currently stands at 3 tonnes per hectare (Ha), to 5 tonnes per hectare. It also aims to improve fish farming infrastructure and reduce seafood production waste. In addition to these, the scheme strongly focuses on sustainable practices, ensuring that growth in the sector is achieved without compromising environmental integrity.

Fisheries and Aquaculture Infrastructure Development Fund (FIDF)

The Fisheries and Aquaculture Infrastructure Development Fund (FIDF) was introduced in 2018-19 to provide funding for the creation of infrastructure in both marine and inland fisheries. FIDF loans can cover up to 80% of the project cost, with interest subvention of up to 3%. This financial support is essential for fish farmers, entrepreneurs, and cooperatives looking to improve the infrastructure required to scale up production.

ICAR-Central Institute of Fisheries Education (CIFE): A Centre of Excellence

Institutional Development and Mission

The Central Institute of Fisheries Education (CIFE), established in 1961, is India's leading institution for higher education and research in fisheries. CIFE has trained more than 4,000 fisheries extension workers and professionals who play a crucial role in promoting sustainable fisheries practices across the country. CIFE's role in capacity building has been critical to the growth of India's fisheries sector. By providing technical expertise and scientific knowledge, CIFE has helped improve fish production methods, reduce waste, and develop innovative solutions for sustainable aquaculture. Additionally, the institute conducts applied research on fish health, aquatic nutrition, and sustainable fish farming practices, helping the sector adapt to new challenges.

Promoting Sustainable Fishing in India: Safeguarding Marine Resources for the Future

India's commitment to sustainable fisheries management is reflected in its comprehensive approach to regulating and conserving marine resources, particularly within its territorial waters and Exclusive Economic Zone (EEZ). The subject of fisheries within the 12 nautical miles from the coast falls under the 'State list' of the Constitution, with the coastal states and Union Territories (UTs) enacting the Marine Fishing Regulation Act (MFRA) to manage and regulate fishing activities.

Key highlights of India's sustainable fishing efforts include:

National Policy on Marine Fisheries (NPMF, 2017): The Government of India has introduced the NPMF, which places a strong emphasis on sustainability as the core principle for all marine fisheries actions. This policy guides the conservation and management of India's marine fishery resources.

Regulation and Conservation Measures: To ensure the long-term sustainability of marine fish stocks, the Government has implemented several conservation measures, including:

- **Uniform Fishing Ban:** A 61-day uniform fishing ban during the monsoon season in the EEZ to allow fish stocks to replenish.
- **Prohibition of Destructive Fishing Methods:** Bans on pair trawling, bull trawling, and the use of artificial LED lights in fishing, which help reduce overfishing and minimize damage to marine ecosystems.
- **Promotion of Sustainable Practices:** Encouraging sea ranching, the installation of artificial reefs, and mariculture activities such as seaweed cultivation.
- **Fisheries Regulations by States/UTs:** Coastal States/UTs have also implemented gear-mesh size and engine power regulations, minimum legal size (MLS) of fish, and zonation of fishing areas for different types of vessels, contributing to sustainable fishing.

Conclusion

As India continues to strengthen its fisheries sector, it will not only help meet the growing global demand for seafood but also contribute to the economic empowerment of millions of fishers and fish farmers, fostering a sustainable and inclusive growth model for the future. The collaboration between the government, scientific institutions like ICAR-CIFE, and global initiatives will be instrumental in ensuring that India remains at the forefront of the global push for responsible and sustainable fisheries practices.

In conclusion, with its robust policy framework, increased investments, and a clear focus on sustainability, India's fisheries sector is poised to play a leading role in securing the future of global food systems and ecosystems while providing economic empowerment to its fishing communities.

Reference: Press Information Bureau

"Life is like riding a bicycle. To keep your balance, you must keep moving"

Albert Einstein

Volume 03 | 2024

Sagarmanthan: Shaping the Future of India's Maritime Sector

The recently held Sagarmanthan - The Great Oceans Dialogue, an initiative by the Ministry of Ports, Shipping & Waterways (MoPSW) and the Observer Research Foundation (ORF), drew a successful closure. The sessions attempted discussions and examination of how partnerships can be developed and built upon.

Sagarmanthan is South Asia's largest maritime thought leadership forum. Organized by the Ministry of Ports, Shipping and Waterways (MoPSW) in partnership with the Observer Research Foundation (ORF), Sagarmanthan offers a premier platform for global leaders, policymakers, and visionaries to share insights and shape the future of the marine sector. With critical themes spanning the blue economy, global supply chains, maritime logistics, and sustainable growth, the dialogue aims to chart a bold, actionable course for a vibrant and future-ready maritime ecosystem.

Identified as the region's first of its kind thought leadership event on maritime sector, 'Sagarmanthan - the Great Oceans Dialogue', has been designed around four central themes which are New Frontiers, Blue Growth Partnerships for Progress, Green and Blue, and Coasts & Communities. The New Frontiers will explore subjects around connectivity, infrastructure and development in a dynamic world. The second theme, Blue Growth, is aimed at fostering partnerships for progress. The Green & Blue theme will dabble at important issues of sustainability, technology and innovation. The discussion will also hover around maritime governance and social impact, which is covered under the Coasts and Communities theme.

India's maritime sector serves as the backbone of its trade and commerce, handling around 95% of the country's trade by volume and 70% by value. With 12 major ports and over 200 notified minor and intermediate ports, the country's port infrastructure underpins its growing economy. As the **sixteenth-largest maritime nation in the world**, India occupies a key position on global shipping lanes. Most cargo ships traveling between East Asia and destinations like America, Europe, and Africa

traverse Indian waters, highlighting the nation's strategic importance. The sector's contributions extend beyond trade. India boasts a fleet of 1,530 ships sailing under its flag as of 2023, a testament to its growing presence in global shipping. Additionally, **the country is the third-largest in the world in terms of ship recycling by tonnage**, underscoring its role in sustainable maritime practices and the global supply chain. This prominence complements the nation's efforts to modernize and expand its port infrastructure. Between 2014-15 and 2023-24, major ports increased their annual cargo-handling capacity from 871.52 million tonnes to 1,629.86 million tonnes, reflecting an impressive growth of 87.01%. In the financial year 2024 alone, Indian ports managed 819.22 million tonnes of cargo, a 4.45% rise from the previous year. This growth aligns with a surge in merchandise exports, which climbed to USD 451 billion in FY23 from USD 417 billion the year before.

Reference: Press Information Bureau

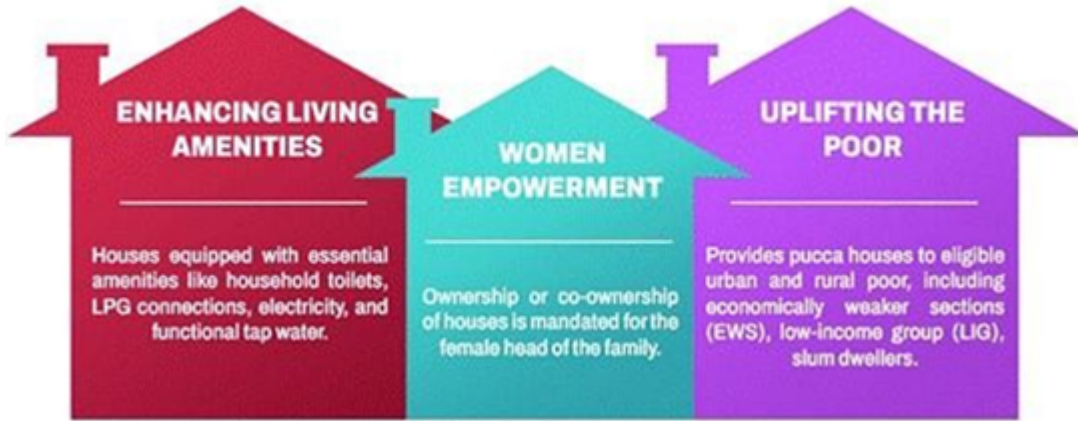
Pradhan Mantri Awas Yojana: Transforming Rural Housing

In May 2014, Prime Minister Narendra Modi's vision and the government's steadfast commitment to building and providing pucca houses for poor people in rural and urban areas culminated in the launch of Pradhan Mantri Awas Yojana—Urban (2015) and Gramin (2016).

Pradhan Mantri Awas Yojana - Rural

The Pradhan Mantri Awas Yojana – Rural (PMAY – Rural) was launched on 20th November 2016, aiming to provide housing for the poorest segments of society. Beneficiaries are selected through a rigorous three-stage validation process that includes the Socio-Economic Caste Census (SECC 2011) and Awaas+ (2018) surveys, Gram Sabha approvals, and geo-tagging. This ensures that aid reaches the most deserving individuals. The scheme has further incorporated IT and Direct Benefit Transfer (DBT) for efficient fund disbursement. It has also implemented region-specific housing designs, and evidence-based monitoring through geo-tagged photos at various construction stages.

Originally targeting 2.95 crore houses to be completed by 2023-24, the scheme got extended with 2 crore more houses, with a total outlay of ₹3,06,137 crore for FY 2024-29 and ₹54,500 crore allocated for FY 2024-25.



On August 9, 2024, the Union Cabinet, chaired by Prime Minister Shri Narendra Modi, approved the proposal for financial assistance to be provided for the construction of two crore more houses at the existing unit assistance of Rs.1.20 lakh in plain areas and Rs.1.30 lakh in North Eastern Region States and Hill States of Himachal Pradesh, Uttarakhand, Union Territories of Jammu & Kashmir, and Ladakh.

Application Process

To avail benefits under PMAY-G, beneficiaries must go through a simple online registration process:

Progress under PMAY-G:

Under the Pradhan Mantri Awas Yojana - Gramin (PMAY-G), the Government has set an ambitious target to build 3.32 crore houses. As of November 19, 2024, 3.21 crore houses have been sanctioned, and 2.67 crore houses have been completed, significantly improving the living conditions of millions of rural families.

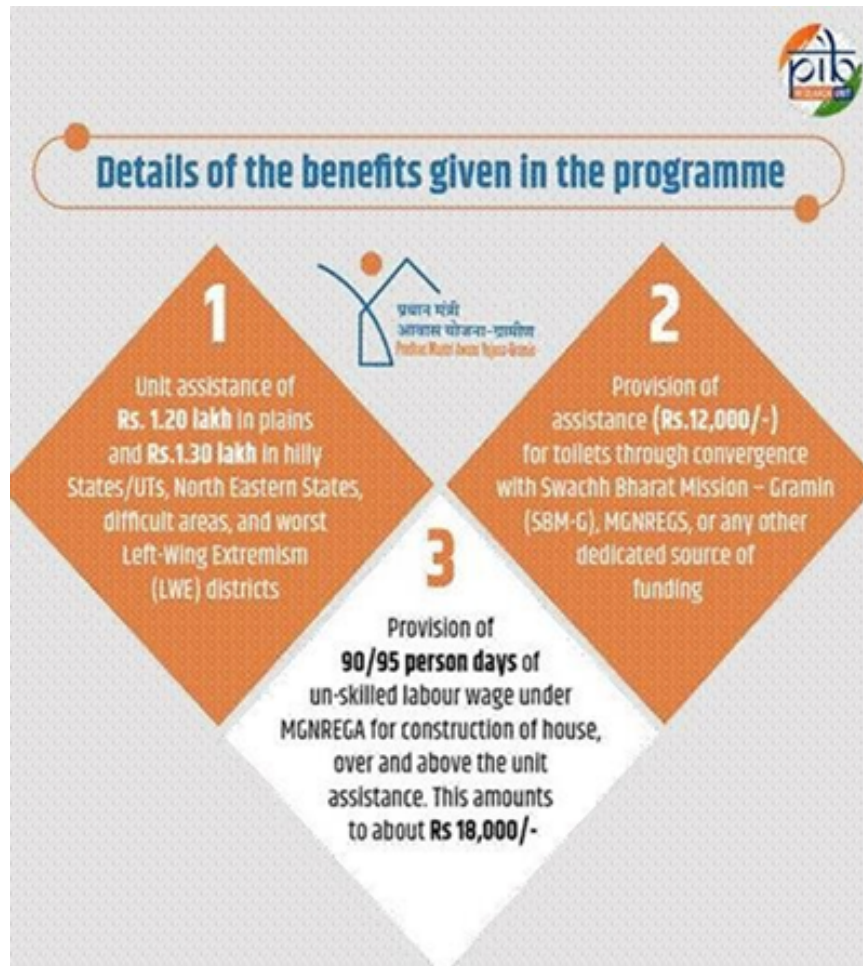
MoRD Target (in No.)	Sanctioned (in No.)	Completed (in No.)
3,32,80,374	3,21,26,661	2,67,14,866

The scheme has also placed a special focus on women empowerment, with 74% of sanctioned houses owned by women solely or jointly. The scheme now aspires to provide 100% ownership to women. Skilled employment has also been a priority, with almost 3 lakh rural masons trained in disaster-resilient construction, boosting their employability.

The construction of houses for two crores more households is expected to benefit nearly ten crore individuals. The approval would facilitate the building of safe and secure houses of good quality with all the basic amenities for all people without housing and people living in dilapidated and kutcha houses. This will ensure the safety, hygiene and social inclusiveness of the beneficiaries.

Key Features of PMAY-G are:

- A minimum unit (house) size of 25 sq. mt., including a dedicated area for hygienic cooking.
- The beneficiaries construct quality houses using local materials and trained masons.
- The beneficiary also has a wide selection of structurally sound, aesthetically, culturally, and environmentally appropriate house designs available rather than standard cement concrete house designs.



- **Institutional Loan for Construction**

- Loan up to ₹70,000 is available to eligible beneficiaries at a 3% reduced interest rate for the construction of their permanent house.
- The maximum principal amount for which subsidy can be availed is ₹2,00,000, ensuring that the construction cost is covered comprehensively.
- This additional loan support helps ease the financial burden on beneficiaries, making home construction affordable for rural households.

Convergence with Government Schemes for Enhanced Benefits

PMAY-G works in conjunction with various other government initiatives to ensure comprehensive support for rural households. These schemes aim to improve the quality of life by addressing multiple needs such as sanitation, employment, cooking fuel, and water supply.

- **Swachh Bharat Mission-Gramin (SBM-G):** Beneficiaries receive up to ₹12,000 to construct toilets, ensuring better sanitation facilities in rural homes.
- **MGNREGA (Mahatma Gandhi National Rural Employment Guarantee Act):** Eligible households can avail 95 days of employment as unskilled labour, specifically under Rural Mason Training, with a daily wage of ₹90.95.
- **Pradhan Mantri Ujjwala Yojana (PMUY):** Under this scheme, each house is entitled to a free LPG connection, promoting cleaner and safer cooking fuel.
- **Piped Drinking Water & Electricity Connections:** Beneficiaries are provided with access to piped drinking water and electricity connections, improving their living standards and reducing the health risks associated with unsafe water and irregular power supplies.
- **Social & Liquid Waste Management:** PMAY-G also converges with government programs for managing waste, ensuring better health and hygiene for the beneficiaries.
- **Payment Transfer Process**

To ensure transparency and efficiency, all payments under PMAY-G are made electronically. Payments are directly transferred to the beneficiaries' bank accounts or post office accounts that are linked to Aadhaar, ensuring that funds reach the intended recipients without delays.

Technological innovation plays a pivotal role here. The **Awaas+ 2024 mobile app** ensures **transparent beneficiary identification** with Aadhaar-based face

authentication and 3D house designs in collaboration with the **Central Building Research Institute (CBRI)**, enabling beneficiaries to choose suitable designs.

Eligibility Criteria for Beneficiaries

The beneficiaries of PMAY-G are identified using specific criteria, ensuring that the most deserving households, especially those facing housing deprivation, are prioritized. 4. Under this scheme, the beneficiaries are identified through SECC 2011 and Awaas+ (2018) surveys, verified by Gram Sabhas. Over the last decade, the permanent waiting list of SECC 2011 has been saturated, and more than 20 states' Awaas+ 2018 lists are also completed.

The eligibility criteria are as follows:

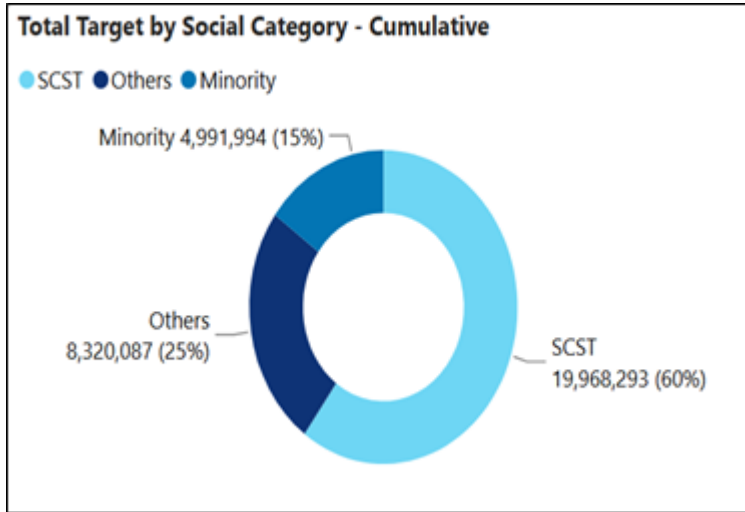
- Houseless Households: All households without any shelter.
- Households with Kuccha Houses: Households living in homes with kuccha walls and kuccha roofs or houses with zero, one, or two rooms as per the Socio Economic and Caste Census (SECC) 2011.

Compulsory Inclusion Criteria:

The following categories of people are automatically included in the list of beneficiaries:

- Destitute households or those living on alms.
- Manual scavengers
- Primitive Tribal Groups.
- Legally released bonded laborers.

Priority for Assistance



*As on November 19, 2024

Within the universe of eligible beneficiaries, priority will be given to the following categories:

- Houseless households.
- Households with zero or fewer rooms (in the case of households with more than one room, priority will be given to those with fewer rooms).

Special prioritization will also be given based on cumulative deprivation scores, calculated using the following socio-economic parameters:

- Households with no adult member aged 16 to 59.
- Female-headed households with no adult male members.
- Households with no literate adult above 25 years.
- Households with a disabled member and no able-bodied adult.
- Landless households dependent on manual casual labor.

Earmarking of Targets

PMAY-G also ensures targeted assistance for specific disadvantaged groups:

- Scheduled Castes (SC) and Scheduled Tribes (ST): The scheme reserves minimum 60% of targets for SC/ST households, with 59.58 lakh SC houses and 58.57 lakh ST houses completed.
- Another crucial initiative for fulfilling the objective of “Housing for All” is the **Dharati Aaba Tribal Village Utkarsh Abhiyan** which focuses on tribal development, covering **63,843 villages**, benefiting over **5 crore tribal people** across 30 States/UTs. This initiative addresses housing and critical gaps in social infrastructure, health, education, and livelihoods, with **72.31 lakh tribal families** already benefitting.
- 5% of the target is reserved for differently-abled beneficiaries, and another 5% prioritizes housing for families affected by natural disasters, such as the Fani Cyclone in Odisha
- **Minorities:** 15% of the total funds at the national level are earmarked for Minority households. The allocation of targets among States/UTs is based on the proportionate rural population of minorities according to the Census 2011 data.

Exclusion Criteria

Certain households are excluded from the scheme based on their financial status and assets. The following households will be automatically excluded:

- Households with a Kisan Credit Card having a credit limit of ₹50,000 or above.
- Government employees or those with non-agricultural enterprises.
- Households with monthly income over ₹15,000 or those paying income tax.

- Households owning assets such as refrigerators, landline phones, or irrigated land (more than 2.5 acres).

To enhance inclusivity, the exclusion criteria have been reduced from 13 to 10, conditions such as ownership of a fishing boat or motorized two-wheeler have been removed, and the income threshold has been raised to ₹15,000 per month.

Conclusion

The Pradhan Mantri Awas Yojana – Gramin (PMAY-G) has made remarkable progress in transforming the living conditions of millions of rural families by providing safe and secure housing. **PMAY-G** is more than a housing scheme—it is a movement to empower rural India, ensure social equity, and uplift marginalized communities. With the recent approval for constructing two crore additional houses, the Government continues to reinforce its commitment to achieving "Housing for All," ensuring that every eligible household has access to quality housing and a dignified life.

India's Maritime Sector: Growth and Global Impact

India's maritime legacy is as vast and dynamic as its 7,500-kilometer coastline, which anchors 12 major ports and over 200 minor ones. Positioned along the world's busiest shipping routes, India is not just a key trading hub but a rising global power. In 2023, the nation contributed 16 percent of global growth, and according to some estimates, it is on course to become the third-largest economy within the next three years. As India ascends the global stage, its maritime sector emerges as a linchpin for commerce, connectivity, and international cooperation.

This growing influence brings with it both opportunity and responsibility. To lead in global maritime governance, India must foster deeper engagement with policymakers, business leaders, and thought leaders. By shaping conversations around sustainable practices and forward-thinking strategies, India can redefine its role in the maritime domain.

Against this backdrop, the first edition of '**Sagarmanthan: The Great Oceans Dialogue**' takes center stage. Being held from November 18 to 19 in New Delhi, this landmark event is South Asia's largest maritime thought leadership forum. Organized by the Ministry of Ports, Shipping and Waterways (MoPSW) in partnership with the Observer Research Foundation (ORF), Sagarmanthan offers a premier platform for global leaders, policymakers, and visionaries to share insights and shape the future of the marine sector. With critical themes spanning the blue economy, global supply chains, maritime logistics, and sustainable growth, the dialogue aims to chart a bold, actionable course for a vibrant and future-ready maritime ecosystem.

Sagarmanthan: Thematic Pillars

Sagarmanthan is designed to facilitate in-depth discussions on key aspects of the blue economy and maritime governance. Its structure revolves around four

interconnected themes, each addressing critical challenges and opportunities shaping the future of the oceans.

Four central themes are:

New Frontiers

- Focuses on connectivity, infrastructure, and development in a rapidly evolving global landscape.

Blue Growth

- Emphasizes building partnerships to advance progress in maritime trade and commerce.

Green and Blue

- Highlights sustainability, technology, and innovation as critical factors for a greener maritime future

Coasts and Communities

- Explores maritime governance and its social impact, centering on coastal communities and sustainable development.

Overview of India's Maritime Sector

India's maritime sector serves as the backbone of its trade and commerce, handling around 95% of the country's trade by volume and 70% by value. With 12 major ports and over 200 notified minor and intermediate ports, the country's port infrastructure underpins its growing economy. As the sixteenth-largest maritime nation in the world, India occupies a key position on global shipping lanes. Most cargo ships traveling between East Asia and destinations like America, Europe, and Africa traverse Indian waters, highlighting the nation's strategic importance.

Functional Major and Non-Major Ports in India



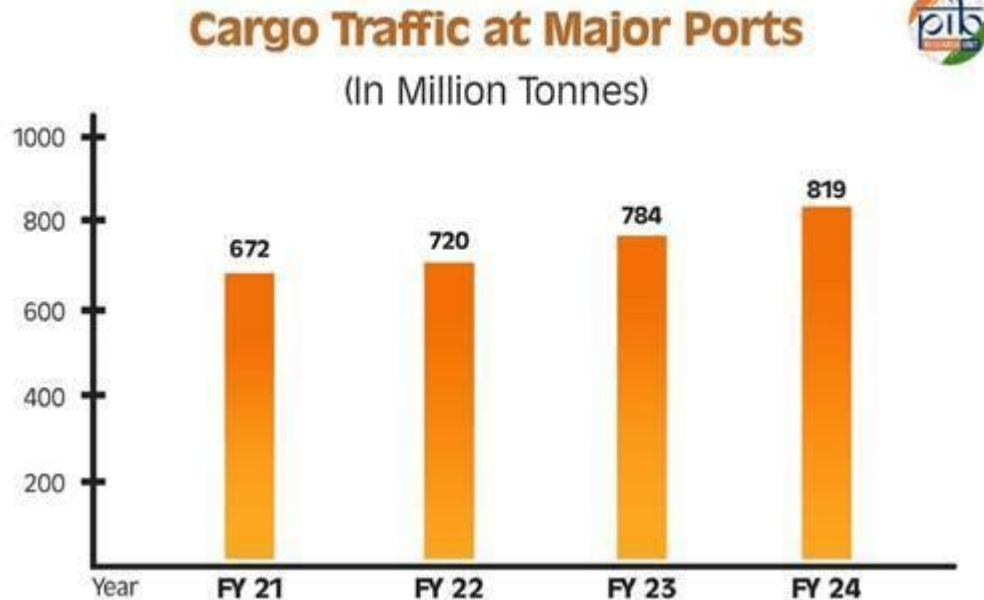
Sr. No.	State / UT	Non-Major Ports	Major ports
1	Andhra Pradesh	15	1
2	Goa	5	1
3	Gujarat	48	1
4	Karnataka	13	1
5	Kerala	17	1
6	Maharashtra	48	2
7	Odisha	14	1
8	Tamil Nadu	17	3
9	West Bengal	1	1
10	Andaman and Nicobar Islands	24	-
11	Daman & Diu	2	-
12	Puducherry	3	-
13	Lakshadweep	10	-
		Total = 217	12

(As of July 26, 2024)

Source: [GOVERNMENT OF INDIA MINISTRY OF PORTS, SHIPPING AND WATERWAYS LOK SABHA UNSTARRED QUESTION NO- 831](#)

The sector's contributions extend beyond trade. India boasts a fleet of 1,530 ships sailing under its flag as of 2023, a testament to its growing presence in global shipping. Additionally, the country is the third-largest in the world in terms of ship recycling by tonnage, underscoring its role in sustainable maritime practices and the global supply chain. This prominence complements the nation's efforts to modernize and expand its port infrastructure. Between 2014-15 and 2023-24, major ports increased their annual cargo-handling capacity from 871.52 million tonnes to 1,629.86 million tonnes, reflecting an impressive growth of 87.01%. In the financial year 2024 alone, Indian ports managed 819.22 million tonnes of cargo, a 4.45% rise from the

previous year. This growth aligns with a surge in merchandise exports, which climbed to USD 451 billion in FY23 from USD 417 billion the year before.



Source: <https://www.ibef.org/industry/ports-india-shipping>

The Indian Government has played a crucial role in fostering this growth. Policies such as allowing 100% Foreign Direct Investment (FDI) under the automatic route for port and harbor projects and offering a 10-year tax holiday to enterprises engaged in port development have bolstered the sector. These measures, combined with the nation's expanding trade networks, position India's maritime industry as a cornerstone of its economic ambitions.

Some of the major recent developments and initiatives:

- In 2023-24, major Indian ports reduced container turnaround time to 22.57 hours, exceeding global benchmarks. Paradip Port earned ₹1,570 crore (US\$ 188 million) with a 21% rise in net surplus, while Jawaharlal Nehru Port reported a net surplus of ₹1,263.94 crore (US\$ 151 million).

- India plans to establish a new shipping company to expand its fleet by at least 1,000 ships within a decade. This initiative aims to cut foreign freight costs by one-third by 2047 and increase trade revenue, with joint ownership involving state-run corporations and foreign firms.
- Paradip Port became India's largest major port by cargo volume in FY24, handling 145.38 million tonnes. It surpassed Deendayal Port Authority due to enhanced operational efficiency, record coastal shipping traffic, and a surge in thermal coal shipments.
- India has outlined investments of US\$ 82 billion in port infrastructure projects by 2035 to bolster the maritime sector.
- In June 2024, the Government approved the establishment of a major port at VadHAVAN, Maharashtra, with an estimated cost of ₹76,220 crore (US\$ 9.14 billion). This project aims to expand EXIM trade capacity and attract public-private partnerships for infrastructure development.
- In July 2024, the Government updated the Shipbuilding Financial Assistance Policy (SBFAP), providing ₹337 crore (US\$ 40.40 million) in financial aid to boost India's shipbuilding competitiveness. Since the policy's launch, 313 vessel orders worth ₹10,500 crore (US\$ 1.26 billion) have been secured.
- The 'Panch Karma Sankalp,' announced in May 2024, includes five major announcements focusing on green shipping and digitization: MoPSW will provide 30% financial support for promoting Green Shipping; under the Green Tug Transition Programme, Jawaharlal Nehru Port, VO Chidambaranar Port, Paradip Port, and Deendayal Port will procure two green tugs each; Deendayal Port and VO Chidambaranar Port, Tuticorin will be developed as Green Hydrogen Hubs; a Single Window Portal will be established to facilitate and monitor river and sea cruises; and Jawaharlal Nehru Port and VO Chidambaranar Port, Tuticorin will be transformed into smart ports by next year.

Government Schemes in the Maritime Sector

The Indian maritime sector plays a critical role in supporting the country's trade and economic growth. Several government schemes have been launched to modernize infrastructure, enhance port connectivity, and promote sustainability in the sector. These initiatives aim to strengthen India's position as a global maritime hub and improve its efficiency across various maritime segments. Here are some of the major schemes in the maritime sector:

- **Sagarmala Programme:** The Sagarmala Programme is a flagship initiative by the Ministry of Ports, Shipping, and Waterways aimed at driving port-led development across India. With a focus on leveraging India's 7,500 km coastline and 14,500 km of navigable waterways, the scheme supports various port infrastructure projects, coastal development, and connectivity enhancements. Financial assistance is provided to State/UT Governments for projects like coastal berths, road and rail connectivity, fish harbors, skill development, cruise terminals, and Ro-Pax ferry services. As of July 26, 2024, 130 projects with a total allocation of ₹3,714 crore have been sanctioned.
- **Maritime India Vision (MIV) 2030:** To position India as a global maritime leader, the Ministry of Ports, Shipping, and Waterways has launched Maritime India Vision 2030 (MIV 2030). This comprehensive blueprint aims to accelerate and harmonize the growth of India's maritime sector over the next decade. Developed in consultation with over 350 public and private stakeholders, MIV 2030 encompasses more than 150 initiatives across ten key themes, addressing all areas of the maritime sector, from ports and shipyards to inland waterways and trade bodies.
- **Inland Waterways Development:** The Inland Waterways Authority of India (IWAI) has identified 26 new national waterways, following feasibility studies to make them navigable. These new routes will provide an alternative mode of

transportation, easing the load on congested road and rail networks and promoting sustainable, cost-effective transport options for various regions.

- **Green Tug Transition Program (GTTP):** The Green Tug Transition Program (GTTP) aims to phase out conventional, fuel-based harbor tugs at Indian major ports. These will be replaced with environmentally friendly tugs powered by cleaner, sustainable fuels. The transition is set to be completed by 2040, ensuring a fully eco-friendly fleet across the country's major ports.

Conclusion

In conclusion, India's maritime sector is poised for significant growth, underscored by its strategic initiatives and government schemes. The first edition of *Sagarmanthan: The Great Oceans Dialogue* has further cemented India's commitment to becoming a global maritime leader, bringing together stakeholders to discuss key themes such as sustainability, connectivity, and governance. With programs like the Sagarmala Programme, Maritime India Vision 2030, and the Green Tug Transition Program, the nation is taking decisive steps to modernize its infrastructure, promote green shipping, and enhance port connectivity. These efforts, coupled with the insights shared at *Sagarmanthan*, will propel India's maritime sector toward a sustainable, innovative, and future-ready ecosystem, ensuring its place as a central player in the global maritime landscape.

Advancements in Piezoelectric Nanostructures from Peptide Self-Assembly

Peptide-based tune-able piezo responsive nano materials developed can help in energy harvesting and biodevice applications.

A group of Indian researchers have developed different nanostructures by controlling the self-assembly pathway of the peptides. This control over the self-assembly process enables the adjustment of material properties in response to mechanical stimuli, effectively enhancing their piezo responsive characteristics that can be used in energy harvesting, biodevices, soft robotics, flexible electronic and sensing devices.

Self-assembly of peptides, technically called supramolecular self-assembly, involves the spontaneous organization of small molecules into larger, structured formations driven by non-covalent interactions. This process is fundamental for creating nanodevices used in fields like electronics, optoelectronics, and biomedicine, where precise molecular control is crucial for performance.

Piezoelectric materials have the unique ability to generate an electric charge when subjected to mechanical stress. This characteristic makes them ideal for applications in sensors, actuators, and energy-harvesting devices, where mechanical energy is converted into electrical signals or vice versa.

Combining supramolecular self-assembly with piezoelectricity offers a powerful approach in designing next-generation nanomaterials with dynamic and customizable properties. This innovation not only enhances the functionality of smart materials but also paves the way for breakthroughs in technology and material science, driving progress in various fields from healthcare to electronics.

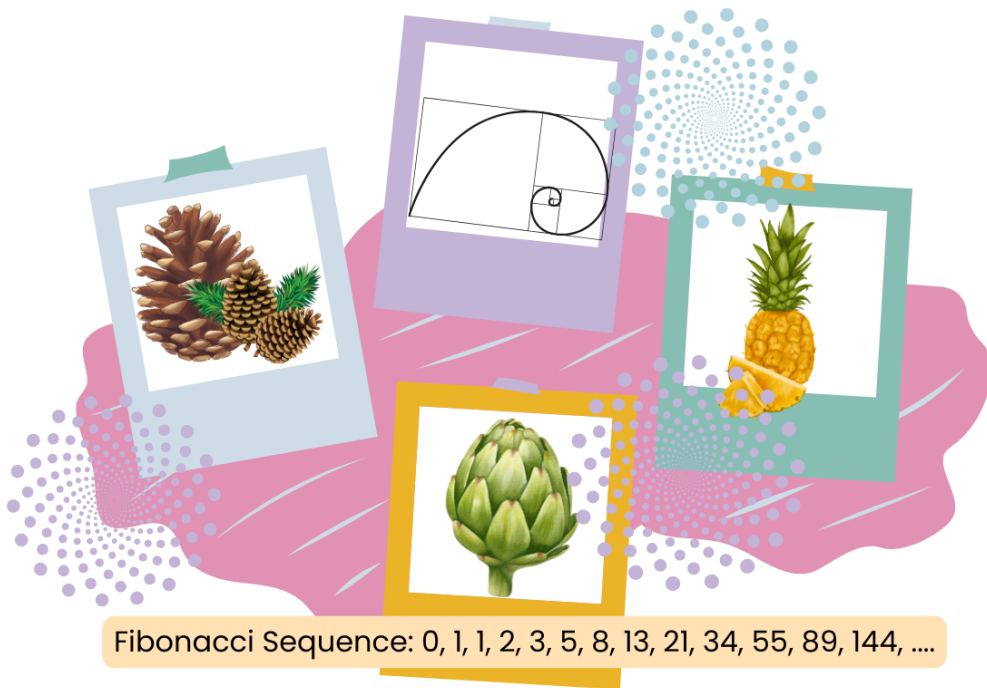
Researchers from the Centre for Nano and Soft Matter Sciences (CeNS), Bengaluru, in collaboration with the researchers from Jawaharlal Nehru Centre for Advanced Scientific Research (JNCASR), Bengaluru, both autonomous institutes under the Department of Science and Technology (DST), have revealed a complex interplay between kinetic and thermodynamic states in the supramolecular self-assembly of peptides by manipulating multiple parameters including temperature and solvent compositions. This complexity plays a crucial role in determining the final structure and properties of the assembled nanomaterials.

Reference: Press Information Bureau

Exploring the Fascinating Fibonacci Sequence

In mathematics, the Fibonacci sequence is a sequence in which each number is the sum of the two preceding ones. Numbers that are part of the Fibonacci sequence are known as Fibonacci numbers, commonly denoted F_n . Many writers begin the sequence with 0 and 1, although some authors start it from 1 and 1 and some (as did Fibonacci) from 1 and 2. Starting from 0 and 1, the sequence begins

0, 1, 1, 2, 3, 5, 8, 13, 21, 34, 55, 89, 144,



The Fibonacci numbers were first described in Indian mathematics as early as 200 BC in work by Pingala on enumerating possible patterns of Sanskrit poetry formed from syllables of two lengths. They are named after the Italian mathematician Leonardo of

Pisa, also known as Fibonacci, who introduced the sequence to Western European mathematics in his 1202 book 'Liber Abaci'. Fibonacci numbers appear unexpectedly often in mathematics, so much so that there is an entire journal dedicated to their study, the 'Fibonacci Quarterly'. Applications of Fibonacci numbers include computer algorithms such as the Fibonacci search technique and the Fibonacci heap data structure, and graphs called Fibonacci cubes used for interconnecting parallel and distributed systems. They also appear in biological settings, such as branching in trees, the arrangement of leaves on a stem, the fruit sprouts of a pineapple, the flowering of an artichoke, and the arrangement of a pine cone's bracts, though they do not occur in all species.

Fibonacci Day is important to acknowledge because it promotes an appreciation of mathematics and its beauty, encouraging people to explore and understand mathematical concepts. Recognizing the Fibonacci sequence, which appears in many natural patterns, can foster a deeper appreciation of nature and inspire creativity and innovation in art, architecture, and design.

Nafithromycin: New Antibiotic Set to Combat AMR in Pneumonia



In a ground breaking step for India's biotechnology sector, Union Minister Dr. Jitendra Singh today formally launched the first indigenous antibiotic "Nafithromycin" for resistant infections.

The antibiotic "Nafithromycin" has been developed with the support of "Biotechnology Industry Research Assistance Council" (BIRAC), a unit of the Department of Biotechnology and has been brought to market under the trade name "Miqnaf" by pharma company "Wolkardt". It is the country's first indigenously developed antibiotic aimed at tackling Antimicrobial Resistance (AMR).

This innovation is designed to treat Community-Acquired Bacterial Pneumonia (CABP), a severe illness caused by drug-resistant bacteria, which disproportionately affects vulnerable populations, including children and the elderly as well as immune compromised hosts like patients with diabetes, cancer etc.

Dr. Jitendra Singh described the three-day treatment regimen of Nafithromycin as a game-changer in addressing drug-resistant pneumonia, a condition responsible for over two million deaths globally each year. India, which bears 23% of the world's community pneumonia burden, faces challenges with existing treatments, including widespread resistance to drugs like azithromycin. The new antibiotic, developed by Wockhardt with support from the Biotechnology Industry Research Assistance Council (BIRAC), is ten times more effective than current options and offers a safer, faster, and more tolerable solution for patients.

Nafithromycin's efficacy stands out as it targets both typical and atypical pathogens, offering a potent solution where no new antibiotic in this class has been developed worldwide for over three decades. Remarkably, it is ten times more effective than azithromycin and achieves comparable outcomes with just a three-day regimen, as validated by clinical trials. Beyond its efficacy, Nafithromycin boasts superior safety and tolerability. The antibiotic has minimal gastrointestinal side effects, no significant drug interactions, and remains unaffected by food, making it a versatile option for patients.

Nafithromycin marks a historic breakthrough as the first new antibiotic in its class to be developed globally in over 30 years. This significant milestone comes at a time when antimicrobial resistance (AMR) is a growing global health crisis, with few new drugs entering the pipeline. The development of Nafithromycin is a testament to India's scientific advancement, offering a much-needed solution to combat multi-drug-resistant pathogens. Its innovative design, targeting both typical and atypical organisms and its ability to overcome existing resistance mechanisms, positions it as a beacon of hope in the fight against AMR, with the potential to save countless lives worldwide.

The development of Nafithromycin represents 14 years of dedicated research and an investment of ₹500 crores, with clinical trials spanning the U.S., Europe, and India. Supported by BIRAC under its Biotechnology Industry Partnership Program (BIPP), the initiative showcases the power of public-private collaboration in advancing healthcare innovation. Dr. Jitendra Singh highlighted that the drug is now awaiting final approval from the Central Drugs Standard Control Organization (CDSCO) for manufacturing and public use, marking a major leap forward in India's fight against AMR.

The Minister underscored the importance of addressing AMR, calling it a global crisis that prolongs illnesses and raises healthcare costs. He pointed to the critical role of innovation and collaboration in tackling this issue, emphasizing that the COVID-19 pandemic had significantly increased public awareness of biotechnology and its potential. Dr. Jitendra Singh also urged the scientific community to leverage this momentum to drive further advancements in diagnostics, AMR surveillance, and new antibiotic research.

As World AMR Awareness Week shines a spotlight on the global challenge of antimicrobial resistance.

Reference: Press Information Bureau

Image: [Pixabay](#)

Dr. Harekrushna Mahtab: Pioneer of Odisha's Development and Freedom Struggle

The Department of Posts released a commemorative postage stamp to honor the 125th Birth Anniversary of Dr. Harekrushna Mahtab, fondly known as Utkal Keshari.

Born on November 21, 1899, in Agarpara village, Bhadrak district, Odisha, Dr Mahtab's journey was marked by his commitment to Gandhian ideals and his relentless efforts toward national integration. From joining the Indian National Congress during the Non-Cooperation Movement to leading the salt satyagraha in Odisha, Dr Mahtab stood as a steadfast pillar in India's freedom struggle.

His contributions as the first Chief Minister of Odisha (1946–1950, 1956–1960) were transformative, focusing on uniting Odia-speaking princely states, relocating the state capital to Bhubaneswar, and spearheading development projects like the Hirakud Dam and Rourkela Steel Plant. His vision for Odisha remains a benchmark of progress and industrialization.



The commemorative postage stamp, designed by Shri Sankha Samanta, beautifully encapsulates Harekrushna Mahtab's contributions towards the development of Odisha. The accompanying First Day Cover (FDC) and Brochure further enrich the collection, making it a cherished memento for philatelists and admirers.

The stamp, FDC, and Brochure are now available on <https://www.epostoffice.gov.in/>

Reference: Press Information Bureau

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Know Your Word



Cwtch (pronounced 'kutch', to rhyme with 'butch') is a Welsh-English word, meaning a cuddle or embrace, with a sense of offering warmth and safety; to cuddle someone (= hold them in your arms) in a loving way that makes them feel very happy and safe. It's a very special word.

Image: [Pixabay](#)

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The Role of CARICOM in Caribbean Development

The Caribbean Community (CARICOM or CC) is an intergovernmental organization that is a political and economic union of 15 member states (14 nation-states and one dependency) and five associated members throughout the Americas, The Caribbean and Atlantic Ocean. It has the primary objective to promote economic integration and cooperation among its members, ensure that the benefits of integration are equitably shared, and coordinate foreign policy. The organization was established in 1973, by its four founding members signing the Treaty of Chaguaramas. Its primary activities involve:

- Coordinating economic policies and development planning.
- Devising and instituting special projects for the less-developed countries within its jurisdiction.
- Operating as a regional single market for many of its members (Caricom Single Market).
- Handling regional trade disputes.

CARICOM consists of 20 countries, of which 15 are actual Member States (Antigua and Barbuda, Bahamas, Barbados, Belize, Dominica, Jamaica, Grenada, Guyana, Haiti, Montserrat, Saint Kitts and Nevis, Saint Vincent and the Grenadines, Saint Lucia, Suriname, Trinidad and Tobago) and five associated states

Understanding CARA's Role in Adoption in India

The Central Adoption Resource Authority (CARA), a statutory body under the Ministry of Women & Child Development, oversees ethical and legal adoptions in India, prioritizing the best interests of children. As the central authority for Indian adoptions, CARA regulates and monitors both in-country and inter-country adoptions, adhering to the Hague Convention on Inter-country Adoption, 1993, ratified by India in 2003. Working with recognized adoption agencies, CARA facilitates the adoption of orphaned, abandoned, and surrendered children.



"To adopt a child is a great work of love. When it is done, much is given, but much is also received. It is a true exchange of gifts"

Pope John Paul II

Atal Innovation Mission: Recognizing Grassroots Innovators

The Atal Innovation Mission (AIM), NITI Aayog marked a significant milestone in November 2024 with the formal recognition of its fourth cohort of Community Innovator Fellows (CIFs). This year, the program has been further strengthened with the support of Capgemini India, marking a key partnership in fostering grassroots innovation across the country. The CIF initiative continues to empower local innovators, enabling them to address community-specific challenges through creative and sustainable solutions.

In conjunction with the cohort recognition, AIM commenced a two-day intensive bootcamp aimed at equipping these CIFs with the necessary skills and knowledge to scale their innovative solutions as part of AIM's continued commitment to fostering grassroots innovation and promoting an entrepreneurial ecosystem across India, particularly in underserved regions. AIM, through its Atal Community Innovation Centers (ACIC) program has envisaged to serve the unserved/underserved areas of the country and provide support to every grassroots innovator and work towards accelerating the pathway to reach SDGs 2030.

The CIF Program is a one-year intensive initiative designed to provide aspiring innovators from all socio-economic backgrounds with the infrastructure, training, and mentorship necessary to scale their ideas and build sustainable businesses. Each Fellow is hosted at an Atal Community Innovation Center, where they receive entrepreneurial, SDG-focused, and life skills training while working on solutions tailored to their community's unique challenges.

Capgemini India, a global leader in consulting, technology services, and digital transformation, is supporting this cohort by providing grants of INR 1 lakh each to 15 CIFs, helping them scale their innovative solutions. SRF Foundation is leading the program's implementation in collaboration with AIM and Capgemini.

The Legacy of World Chess Champions: A Timeline

Wilhelm Steinitz (Austria, USA) 1886-1894
Emanuel Lasker (Germany) 1894-1921
Jose Raul Capablanca (Cuba) 1921-1927
Alexander Alekhine (France) 1927-1935; 1937-1946
Max Euwe (The Netherlands) 1935-1937
Mikhail Botvinnik (USSR) 1948- 1957; 1958-1960; 1961-1963
Vasily Smyslov (USSR) 1957-1958
Mikhail Tal (USSR) 1960-1961
Tigran Petrosian (USSR) 1963-1969
Boris Spassky (USSR) 1969-1972
Bobby Fischer (USA) 1972-1975
Anatoly Karpov (USSR) 1975-1985
Garry Kasparov (USSR) 1985-1993
Vladimir Kramnik (Russia) 2006-2007
Viswanathan Anand (India) 2007-2013
Magnus Carlsen (Norway) 2013-2023
Ding Liren (China) 2023

Learn About Abscission: Your Word of the Day

Abscission (from Latin ab- 'away' and scindere 'to cut') is the shedding of various parts of an organism, such as a plant dropping a leaf, fruit, flower, or seed.



Image: [Pixabay](#)

Exploring the Impact of KM Munshi on Education and Culture

Visionary Leader, Freedom Fighter, and Cultural Luminary

Kanhaiyalal Maneklal Munshi was born on 30th December 1887, popularly known as 'Ghanshyam Vyas'. He founded 'Bharatiya Vidya Bhavan', an educational trust in 1938. Under the influence of Shri Aurobindo he leaned towards revolutionary groups. But after settling in Mumbai, he joined the 'Indian Home Rule Movement' and became its Secretary in 1915. In 1927, he was elected to the Bombay Legislative Assembly but resigned after 'Bardoli Satyagraha'. He participated in the 'Civil Disobedience Movement' in 1930 and 1932 and was arrested and spent two years in jail in 1932. Munshi was elected in the 1937 Bombay Presidency election and as Home Minister, he suppressed the communal riots in Bombay. Munshi was again arrested after he took part in 'Individual Satyagraha' in 1940. He died on 8 February 1971.

Contributions to Education and Literature

Author of over 50 books in Gujarati, Books in English; Gujarat and its literature; Bhagwat Gita and Modern Life; Saga of Indian Sculpture; End of an Era - Hyderabad memoirs; Warnings of History; Krishnavatara etc.

Excerpts of Speeches made by KM Munshi in Constituent Assembly

- **On the Role of the Constitution**

“By the 15th August India will be a free and independent Dominion. We want to attain that stage as early as possible and to secure a constitution of our own which will give us the necessary strength.”

“Time is of the essence of our activities here. We have to face the world with the determined purpose of framing a Constitution for a strong India which will be great and powerful.”

Source: Amendment Of Rules Volume IV 14/07/1947

- **On Justice and Sovereignty**

“It is difficult for me to say, but I am sure "fraud" is fraud all over the world and in all systems of jurisprudence.”

Source: Interim Report On Fundamental Rights-Contd. Volume Iii 01/05/1947

“The sovereign people are not all the people but the sovereign people of India as one unit acting through its supreme organ, the Constituent Assembly, which is creating the Constitution for the country as a whole. There is no provincial-autonomy, there is no federation by or for itself: these are not sacrosanct words. Every Government must satisfy the needs of the sovereign people of India.”

Source: Article 280A Volume X 16/10/1949

“It must be the duty of the other people, and particularly of the administration, to enforce the rule of law in such a manner that all the vestiges of feudalism disappear.”

Source: Draft Constitution -- (Contd.): Part VI-A -- (Contd.) Volume X 13/10/1949

- **On Unity and Strength of India**

“We have now an India which, even without Pakistan, is as large and much more integrated and harmonious and unified than ever before in history, and it is now for

us, particularly the future Parliament and the future Government of India, so to consolidate all the different parts of the country that India may emerge a strong and compact nation.”

“I feel happy also that the nightmare of the Indian States which have been a survival from Moghul and the British days is all gone and the sovereign people of India can now march forward from strength to strength and attain the cherished ideals which they have placed before the country in the Preamble to our Constitution.”

Source: Draft Constitution -- (Contd.): Part VI-A -- (Contd.) Volume X 13/10/1949

- **On Preparedness for Global Challenges**

“The world, I am afraid, is moving towards another crisis, and when that crisis comes--may it never come--it should not find us unprepared.”

Exploring the Life of Dr. Syama Prasad Mookerjee and His Contributions

Dr. Syama Prasad Mookerjee, born on 6th July 1901 in Calcutta, was a multifaceted personality - patriot, educationist, parliamentarian, statesman, and humanitarian. He inherited a legacy of erudition and nationalism from his father, Sir Ashutosh Mookerjee, an esteemed Vice-Chancellor of Calcutta University and Judge of the Calcutta High Court. This upbringing instilled in him a deep respect for India's cultural heritage and a keen interest in modern scientific thought. Dr. Mookerjee's academic brilliance was evident from an early age. After excelling at the Presidency College, he earned degrees in law and literature, including a D.Litt. and LL.D.

While in England, Dr. Syama Prasad represented Calcutta University at the Conference of the Universities of the British Empire, establishing himself as a prominent Indian educationist. Elected to the University Senate and Syndicate in 1924, he initially joined the Bengal Legislative Council as a Congress candidate. However, when Congress boycotted the legislatures in 1930, he resigned but soon re-entered as an independent to protect the University's interests.

His tenure as the youngest Vice-Chancellor of Calcutta University (1934) allowed him to implement his progressive vision for education. He played a pivotal role in promoting Indian languages and fostering intellectual growth, inviting luminaries like Rabindranath Tagore to inspire students. He later joined the Hindu Mahasabha and, in 1937, united non-Congress forces to form a Progressive Coalition government under the leadership of Fazal-ul-Haq, with himself as the Finance Minister. In 1940, he became the acting President of the Hindu Mahasabha and declared complete independence for India as its political goal. Syama Prasad resigned from the Bengal Cabinet in November 1942, protesting against the Governor's interference in

administration and criticizing provincial autonomy as ineffective. His humanitarian efforts during the Bengal famine of 1943, including relief initiatives, highlighted his commitment to serving society.

Post-Independence, Dr. Mookerjee joined the interim government under Jawaharlal Nehru as Minister for Industry and Supply, where he laid the foundation for India's industrial growth by establishing iconic institutions like the Chittaranjan Locomotive Factory, Sindri Fertilizer Corporation and the Hindustan. However, ideological differences led to his resignation, after which he founded the All-India Bharatiya Jan Sangh (1951) to champion nationalist ideals.

As a parliamentarian, Dr. Mookerjee was a formidable orator and a respected opposition leader, earning the title "The Lion of Parliament" for his incisive debates on issues like Kashmir issue, migration between Pakistan and India, foreign policy of India, preventive detention, electoral reforms, etc. His unwavering commitment to Indian unity was exemplified by his fight for the integration of Jammu and Kashmir. His declaration, "I will get you the Indian Constitution or lay down my life for it," epitomized his dedication. Tragically, he died in 1953 while under detention in Kashmir, a loss mourned across political lines. Dr. Syama Prasad Mookerjee remains an enduring symbol of patriotism and selfless service to India, remembered for his visionary leadership and unwavering dedication to national unity.

Excerpts of Speeches made by Syama Prasad Mukherjee in Constituent Assembly

- **On Framing Constitution**

"I believe in the course of the chequered history of our country, we have often passed motions and resolutions from different political parties and platforms embodying our demands for an Independent Sovereign State for our motherland. But so far as

today's Resolutions is concerned, it has a deep and special significance. It is for the first time in the history of our country, since we came under British rule, that we have met to frame our own constitution. It is a great responsibility-in fact, as the Hon'ble the Mover of the Resolution reminded us, it is a solemn and sacred trust which we Indians have agreed to perform and we propose to do so to the best of our ability."

- **On Hindi as the National Language**

"If it is claimed by anyone that by passing an article in the Constitution of India, one language is going to be accepted by all, by a process of coercion, I say, that that will not be possible to achieve."

"Why do we accept Hindi? Not that it is necessarily the best of Indian languages. It is for the main reason that it is the one language which is understood by the largest single majority in this country today."

"You have got some time fifteen years, within which English will have to be replaced. How is it to be replaced? It will have to be replaced progressively. We will have to decide realistically whether for certain special purposes English should still be continued to be used in India."

- **On Foreign Policy**

"We want peace. We want to avoid war. We would like to follow the policy of negotiations. We would like to be patient, though not, as the Prime Minister said, too patient always. At the same time we must guard ourselves against not following a policy of drift. We must be able to arrive at decisions-we hope we make the correct decision and at the right time."

"We stand for freedom of expression, for freedom of thought, for freedom of association and religion and our Constitution has been based on the sound principles of democracy. India will not, therefore, and cannot accept any principles attached to totalitarianism or dictatorship."

"What is needed is firmness. What is needed is a decisive policy. What is needed is a clear enunciation of the interest of our own Motherland. And bearing all these in mind, if we proceed to act, I am sure it will be possible for us to do much more than what we have hitherto achieved."

- **On Linguistic States**

"Although we may draw upon the lessons of history, we have to consider the grave situation that has arisen in different parts of the country and settle once for all whether India is going to be divided mainly on a linguistic basis. Speaking for myself, I have always maintained that linguistic consideration cannot be the only consideration on which India can be divided. You must take into consideration other factors also, like administrative efficiency, security, economic prosperity, and the unity of the country. These are vital factors which no one in his senses can possibly ignore."

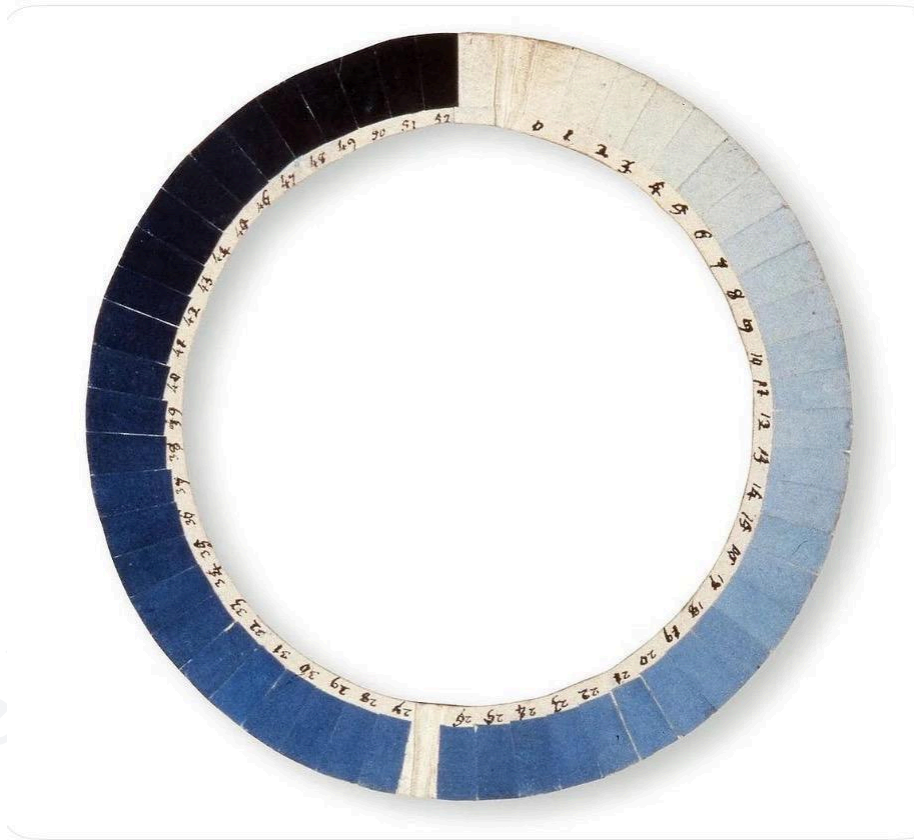
- **On Voluntary Donation**

"We now get, now Rs. 40 per day. I do not know what the allowance of the members of the House of the People will be hereafter. Let us agree to a voluntary cut of Rs. 10 per day and let us set apart this sum for the purpose of opening homes where these women and children (of famine-affected areas) may be housed and fed."

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Discover the Device from the 1760s by Saussure

The Swiss physicist and geologist, Horace-Bénédict de Saussure created this device in the 1760s. What does it measure? What is it called?



Swiss physicist and geologist Horace-Bénédict de Saussure invented a device called a cyanometer in the 1760s to measure the color intensity of the blue sky

The cyanometer is a color chart with squares of paper in various shades of blue, arranged in a circle or square. To use the cyanometer, you hold it up and compare the color of the sky to the chart.

De Saussure invented the cyanometer after noticing that the sky appeared darker and more blue at higher altitudes in the Alps.

De Saussure also invented other devices, including:

- Eudiometer: Measured the "goodness" of air, or its oxygen content and flammability
- Heliothermometer: The first solar hot-box, which measured the intensity of sunlight

"The future belongs to those who believe in the beauty of their dreams"

Eleanor Roosevelt

Recognizing Top Dairy Farmers: National Gopal Ratna Awards 2024

The Department of Animal Husbandry and Dairying (DAHD) declared the winners of the National Gopal Ratna Awards (NGRA); one of the highest National Awards in the field of livestock and dairy sector for the year 2024. These awards will be given on the occasion of National Milk Day celebrations on 26th November 2024 at Manekshaw Centre, New Delhi. The Awards to the winners will be conferred by Union Minister, Shri Rajiv Ranjan Singh alias Lalan Singh, Ministry of Fisheries, Animal Husbandry and Dairying in the august presence of Prof. S.P. Singh Baghel and Shri George Kurian, Minister of State, Ministry of Fisheries, Animal Husbandry and Dairying in a grand function being organized by the department as part of the National Milk Day celebrations 2024.

About National Gopal Ratna Awards

The National Gopal Ratna Awards are conferred with an objective to recognize and encourage all individuals like Farmers rearing indigenous animals, AI Technicians and Dairy cooperative societies / Milk Producer Company / Dairy farmers Producers Organizations working in the sector of animal husbandry and dairying. The Award is conferred in three categories, namely,

- i. Best Dairy Farmer Rearing Indigenous Cattle/buffalo Breeds,
- ii. Best Artificial Insemination Technician (AIT) and
- iii. Best Dairy Cooperative/ Milk Producer Company/ Dairy Farmer Producer Organization.

From this year onwards, the Department has incorporated a Special award for North Eastern Region (NER) States, in all the three categories under National Gopal Ratna Awards, so as to encourage and boost the dairy development activities in NER.

This year's awardees include:

1. Best Dairy farmer rearing indigenous cattle/buffalo breeds 1st Smt. Renu, Jhajjar, Haryana, 2nd Shri Devendra Singh Parmar, Shajapur, Madhya Pradesh, 3rd Smt. Surbhi Singh, Bijnor, Uttar Pradesh,

Special Award in the category for NER:

Ms. Juna Tamuli Barman, Bajali, Assam,

Mrs Junuma Mali, Morigaon, Assam

2. Best Dairy Cooperative society/Milk Producer company/ Dairy Farmer producer organization 1st The Gabat Milk Producers Cooperative Society Limited, Aravali, Gujarat,

1st Milk Producer Cooperative Society Limited Bisanal, Bagalkot, Karnataka, 2nd Pratppura Dugdh Utpadak Sahakari Samiti Limited Pratppura, Bhilwara, Rajasthan, 3rd TND 208 Vadapathy MPCs Ltd, Cuddalore, Tamil Nadu,

Special Award in the category for NER:

Kamdhenu Dugdha Utpadak Samabay Samitee Ltd Nityananda, Bajali, Assam,

3. Best Artificial Insemination Technician (AIT) 1st Shri Bhaskar Pradhan, Subarnapur, Odisha,

1st Mr. Rajender Kumar, Hanumangarh, Rajasthan,

2nd Mr. Virender Kumar Saini, Hanumangarh, Rajasthan,

3rd Shri V Anil Kumar, Annamayya, Andhra Pradesh,

Special Award in the category for NER:

Shri Md. Abdur Rahim, Kamrup, Assam

The Award consists of a cash prize of Rs. 5 lakh for 1st rank, Rs. 3 lakh for 2nd rank, Rs. 2 lakh for 3rd rank and Rs. 2 lakh for Special Award for North Eastern Region, along with a Certificate of merit and a memento in the first two categories i.e. Best Dairy Farmer and Best DCS / FPO/ MPCs. In the Best Artificial Insemination Technician (AIT) category, National Gopal Ratna Award-2024 will consist of a Certificate of merit and a memento. The winners were selected out of a total of 2574 applications received that were invited through an online application portal i.e. <https://awards.gov.in>

Background

The livestock sector is a crucial sector of the Indian economy, comprising one third of the agriculture and allied sector GVA and having over 8% CAGR. At the same time, Animal Husbandry, Dairying and Fisheries activities play a significant role in generating farmer income, particularly among the landless, small and marginal farmers and women, besides providing cheap and nutritious food to millions of people. Indigenous bovine breeds of India are robust and possess the genetic potential to play a crucial role in the national economy. In the absence of a specific programme on development and conservation of indigenous breeds, their population has been declining and their performance is below the potential at present. Thus, the Department of Animal Husbandry and Dairying under the Ministry of Fisheries, Animal Husbandry and Dairying, had initiated “RashtriyaGokul Mission”, under National Programme for Bovine Breeding and Dairy Development in December 2014 with a view to conserve and develop the indigenous bovine breeds.

Reference: Press Information Bureau

Understanding the Riyadh Design Law Treaty Impact on India

After nearly two decades of negotiations, the member states of the World Intellectual Property Organization (WIPO) adopted the landmark Design Law Treaty (DLT). By signing the Final Act of the Riyadh Design Law Treaty, India builds on its progress and reaffirms its commitment to fostering inclusive growth and ensuring equitable access to intellectual property protection.

The treaty seeks to harmonize the procedural frameworks for industrial design protection, improving the efficiency and accessibility of registration processes across multiple jurisdictions. By standardizing procedural requirements, the DLT reduces administrative burdens, thereby promoting global creativity in design. Its goal is to ensure that the benefits of streamlined design protection are accessible to all stakeholders, with particular emphasis on small and medium-sized enterprises (SMEs), startups, and independent designers.

The DLT introduces several key provisions aimed at benefiting design applicants, including relaxed time limits, the reinstatement of lost rights, the option to correct or add priority claims, simplified procedures for recording assignments and licenses, and the option to file multiple designs in a single application. These changes provide greater flexibility for design applicants. Furthermore, the treaty encourages contracting parties to work towards implementing electronic industrial design systems and facilitating the electronic exchange of priority documents. When combined with initiatives like the Startup India program and the Startups Intellectual Property Protection (SIPP) scheme, these provisions will help empower startups and SMEs to secure design rights globally, boosting their competitiveness and supporting market growth.

India, with its rich heritage of creativity and craftsmanship, has long recognized the crucial role of design in driving sustainable economic development. The country's policy emphasis on design protection as a catalyst for innovation has delivered impressive results. Over the past decade, design registrations in India have tripled, with domestic filings increasing by 120% in the last two years alone. Notably, design applications grew by 25% last year.

"The good life is one inspired by love and guided by knowledge"

Bertrand Russel

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Understanding Consumer Rights and Grievance Redressal in India

Imagine a young couple in India, excited to purchase their first home appliance—a washing machine. After much research, they find what seems to be the perfect model at a great price. However, once they bring it home, the machine fails to work as expected, and the retailer is unresponsive to their concerns. This scenario highlights the importance of consumer protection, ensuring that every individual, regardless of their background, is treated fairly and their rights are upheld. In India, where millions of consumers face similar challenges in a complex marketplace, consumer protection has become more crucial than ever.

To address this, the Indian government has implemented various measures to safeguard consumer interests. The Department of Consumer Affairs plays a pivotal role in addressing grievances and offering effective solutions. Additionally, advancements in technology, such as the evolution of the National Consumer Helpline (NCH), have significantly improved the speed and efficiency of consumer support. Through these initiatives, India continues to strengthen its commitment to consumer protection, ensuring a safer and more transparent marketplace for all.

Consumer Protection Laws and Regulations

The Department of Consumer Affairs (DoCA), under the Ministry of Consumer Affairs, Food & Public Distribution, is at the forefront of consumer protection efforts in India. Constituted as a separate department in June 1997, DoCA was established with the vision of giving a dedicated push to the emerging consumer movement in the country. Since its formation, the department has been entrusted with the responsibility of implementing various consumer protection laws and regulations, as well as facilitating the overall welfare of consumers.

Some of the key responsibilities of the Department of Consumer Affairs include:

Implementation of the Consumer Protection Act, 2019

To strengthen consumer protection in the era of globalization, e-commerce, and online platforms, the Consumer Protection Act, 2019 was enacted to replace the Consumer Protection Act, 1986. The 2019 Act enhances consumer protection, particularly for online transactions. It expands the definition of "consumer" to include individuals engaging in online purchases or services, a provision absent in the 1986 Act. Additionally, the Act defines advertisements to encompass all forms of publicity, including those on electronic media, the internet, and websites. The Act also established the Central Consumer Protection Authority (CCPA), effective from July 24, 2020, to regulate matters like false or misleading advertisements that harm consumers.

Implementation of the Bureau of Indian Standards Act, 2016

The Bureau of Indian Standards (BIS), India's national standards body, is responsible for the development of standards, quality certification, and marking of goods, ensuring the safety, reliability, and quality of products. BIS's work benefits the economy by minimizing health hazards, protecting the environment, promoting exports, and addressing public policies like Swachh Bharat Abhiyan, Digital India, Make in India, and Ease of Doing Business. The BIS Act, 2016, positions BIS as the National Standards Body, allows multiple conformity assessment schemes, and mandates certification for products linked to health, safety, and national security. The Act also introduces consumer protection measures, including product recalls and penalties.

Implementation of Standards of Weights and Measures - The Legal Metrology Act, 2009

Legal Metrology (Weights and Measures) Laws form the basis of commercial transactions in any civilized society. To ensure accuracy of measurement in such transactions, the Government has enacted legislation namely, the Legal Metrology

Act, 2009 (1 to 2010). The said Act is a unified act of two repealed acts namely the Standards of Weights & Measures Act, 1976 & the Standards of Weights & Measures (Enforcement) Act, 1985. The Legal Metrology Act, 2009 has come into force with effect from 1st April, 2011. Rules have been formulated for better implementation of the Act.

Other Steps

- **Guidelines for Regulation of Dark Patterns (2023):** Dark patterns refer to design strategies that manipulate consumers into making decisions that are not in their best interest. The CCPA has taken a strong stance against such practices by issuing guidelines for their regulation, focusing on protecting consumers from deceptive online practices such as drip pricing, disguised advertisements, and false urgency.
- The Department of Consumer Affairs (DoCA) has been conducting nationwide multimedia awareness campaigns under the title “Jago Grahak Jago” to promote consumer awareness. These campaigns deliver simple messages to educate consumers about fraudulent practices, common issues, and the available mechanisms for seeking redress. The strategy behind the Information, Education, and Communication (IEC) activities under this initiative is designed to conduct an effective and comprehensive consumer awareness campaign that reaches urban, semi-urban, rural, and remote areas.
- Additionally, DoCA has introduced “Jagriti,” a mascot aimed at empowering consumers and raising awareness of their rights.

Technological Advancements in Consumer Grievance Redressal

In recent years, significant strides have been made in improving the efficiency and accessibility of consumer grievance redressal mechanisms, particularly through the National Consumer Helpline (NCH). The NCH, which is a crucial component of India's consumer protection framework, has undergone a technological

transformation aimed at improving its call-handling capacity and making the grievance redressal process more seamless.

National Consumer Helpline (NCH)

The National Consumer Helpline (NCH) has emerged as a central point of access for consumers seeking to address their grievances. It has played an essential role in enabling consumers to register complaints and seek resolutions in an efficient and effective manner. In a notable development, the number of calls received by NCH has grown nearly tenfold, from 14,795 calls in January 2015 to 1,41,817 calls in January 2024. This surge indicates the growing trust and confidence consumers place in the helpline as a reliable resource for resolving issues. The Department has revamped the National Consumer Helpline (NCH), making it a central platform for grievance redressal at the pre-litigation stage. Available in 17 languages, including Hindi, English, and regional languages, the helpline allows consumers to register complaints via the toll-free number 1915. Complaints can also be filed through the Integrated Grievance Redressal Mechanism (INGRAM) portal, which provides multiple channels such as WhatsApp, SMS, email, the NCH app, web portal, and the Umang app for ease of access.

Additionally, the NCH has partnered with over 1000 companies under its Convergence Programme. These companies span various sectors, including e-commerce, banking, telecommunications, and retail. By collaborating with these organizations, the NCH ensures that complaints related to these companies are directly transferred to them for resolution. The number of convergence partners has steadily increased, from 263 companies in 2017 to 1009 companies in 2024, highlighting the success of this initiative in improving grievance redressal efficiency.

NCH 2.0 Initiative

To further enhance the consumer grievance redressal process, the NCH is rolling out the NCH 2.0 initiative, which incorporates advanced technologies to streamline complaint handling. This includes the introduction of AI-powered Speech

Recognition, a Translation System, and a Multilingual Chatbot. These innovations aim to make the grievance filing process more inclusive, enabling consumers from diverse linguistic backgrounds to file complaints in their local languages through voice input. The AI-powered Speech Recognition and Translation System enables consumers to file complaints using voice input in their local languages, reducing manual intervention. The Multilingual Chatbot streamlines the process by offering real-time assistance and minimizing data entry, improving the overall user experience.

National Consumer Day

In India, National Consumer Day is celebrated annually on December 24th to commemorate the enactment of the Consumer Protection Act, 1986, (replaced by Consumer Protection Act 2019) which received the assent of the President on this date.

The Consumer Protection Act, 1986 was a pioneering piece of legislation that aimed to protect consumers from exploitation in various sectors, such as goods and services. It introduced the concept of consumer courts, which empowered consumers to seek justice and redress in cases of defective products, deficient services, and unfair trade practices. The Consumer Protection Act establishes a three-tier system for resolving consumer disputes, comprising three levels of consumer courts:

- District Consumer Disputes Redressal Forum (District Forum) – the first level, located at the district court.
- State Consumer Disputes Redressal Commission (State Commission) – the second level, at the state level.
- National Consumer Disputes Redressal Commission (National Commission) – the highest level, operating at the national level.

The District Forum and State Commission are created by individual states with approval from the Central Government, while the National Commission is established by the Central Government. These forums do not replace the jurisdiction

of civil courts but offer an alternative remedy for consumer grievances. The Consumer Protection Act, 1986, empowers both the Central and State Governments to create rules governing various aspects of the consumer protection system. The basic consumer rights that have formed the foundation of modern consumer protection in India are:

- The Right to Safety
- The Right to Be Informed
- The Right to Choose
- The Right to Be Heard
- Right to Seek Redressal
- Right to Consumer Education

Conclusion

The protection of consumer rights is a global priority that requires continuous effort from governments, businesses, and consumer organizations. Through initiatives like World Consumer Rights Day, National Consumer Day, and various reforms in consumer protection laws and mechanisms, significant progress has been made in safeguarding the interests of consumers worldwide. The Department of Consumer Affairs in India, in particular, has been a driving force in enhancing consumer protection, with initiatives like the National Consumer Helpline and the NCH 2.0 upgrades further strengthening grievance redressal systems.

“Rest, nature, books, music, such is my idea of happiness”

Leo Tolstoy

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The Role of ESG in Sustainable Coal Mining

Impact of Global Environment, Social and Governance (ESG) Standards

Global Environment, Social and Governance (ESG) standards emphasize reducing carbon emissions, managing waste, minimizing environmental degradation and governance impacts. For the coal industry, this means complying with environmental norms, adopting cleaner technologies and practices to reduce their carbon footprint.

ESG standards focus on improving the social aspects of business operations, such as ensuring fair labour practices, community engagement, and health and safety standards. Coal companies are now more accountable for their impact on local communities and workers.

Governance practices are critical under ESG standards. This includes transparency in operations, ethical business practices, and robust risk management. Companies are required to disclose their ESG performance, which increases accountability and trust among stakeholders.

Public Sector Undertakings (PSUs) under the Ministry of Coal, are adopting the sustainable and socially responsible practices as per Global Environment, Social and Governance (ESG) standards. Coal India Limited (CIL) has published comprehensive Business Responsibility and Sustainability Reports (BRSR) to link their financial results with ESG performance.

Clause 11.5 of Coal Block Development and Production Agreement (CBDPA) for commercial mining executed between successful bidder and Nominated Authority mandates that the Successful Bidder shall implement mechanised coal extraction, transport and evacuation in the Coal Mine, in line with modern and prevalent technologies. Further, the Successful Bidder shall strive to minimise the carbon

footprints from operations at the Coal Mine, undertake steps to reduce environmental pollution and promote sustainability, in accordance with Good Industry Practice.

Steps taken to ensure Compliance Disclosure of adoption of ESG through Business Responsibility and Sustainability Report (BRSR) are as follows:

i. The Securities and Exchange Board of India (SEBI) has mandated the top 1,000 listed companies to disclose their ESG performance through the BRSR. This framework aligns with global standards like the Global Reporting Initiative (GRI) and the Sustainability Accounting Standards Board (SASB). BRSR for FY-2023-24 was prepared and published as part of the Annual Report of CIL. It is a public document and is also filed with NSE and BSE.

ii. Environmental Initiatives: Afforestation and Green Cover, Water Management, Emission Reduction through cleaner coal technologies, alternative use of overburden, Deployment of Blast-free technology in mining, Energy Efficiency Measures, deployment of E-Vehicles, development of Eco-parks, mine water supply to community, promoting Renewable Energy and clean coal initiatives, etc.

iii. Social Initiatives through Corporate Social Responsibility (CSR)

iv. Governance Initiatives through Transparency and Accountability

Reference: Press Information Bureau

Understanding Digital Bharat Nidhi Rules for 2024

'Digital Bharat Nidhi' rules under the new Telecommunications Act, 2023 were made available to the public by gazette notification on 30.08.2024. Further, press notification and social media publicity was also done for widespread dissemination amongst stakeholders and citizens.

These rules propose to provide telecommunication equipment and services, including mobile and broadband services, in underserved rural, remote and urban areas and also provide targeted access to telecommunication services for underserved groups of the society such as women, persons with disabilities and economically and socially weaker sections. DBN covers various schemes and projects including Bharat Net, 4G Saturation Project, Provision of Mobile Service in uncovered areas of Aspirational Districts, Mobile Services in Left Wing Extremist Areas, Mobile Services in Himalayan and Border areas, Mobile Services in Islands, Mobile Services in North Eastern Areas, Mobile Services in Meghalaya, Mobile Services in Arunachal Pradesh and 2 Districts of Assam, Submarine Optical Fiber Cable (OFC) connectivity between Chennai to A&N Islands, Submarine OFC connectivity between Kochi to Lakshadweep Islands.

Fostering Biomanufacturing: The Aims of India's BioE3 Policy

Aims and Objectives of BioE3 Policy

The objective of the BioE3 Policy is to set forth a framework that ensures the adoption of cutting-edge advanced technologies, and aligning innovative research for promoting Biomanufacturing. The BioE3 Policy outlines guidelines and principles for enabling mechanisms for 'Fostering High Performance Biomanufacturing' in the country across diverse sectors. The Policy aims at revolutionizing the biomanufacturing process for enhanced efficiency, sustainability, and quality while also accelerating the development and production of bio-based high-value products.

The BioE3 Policy is aligned with India's vision of Green Growth (announced in the Union Budget 2023-24) and also with the clarion call of the Hon'ble Prime Minister on 'Lifestyle for Environment (LiFE)' that envisions collective approach towards sustainability. The Policy also aligns with the Hon'ble Prime Minister's vision of 'Net-Zero' carbon economy of the country. Further, the Biomanufacturing and Biofoundry initiative has been announced as a scheme during the Government's Interim Budget for 2024-25.

Highlights of achievements of India Bioeconomy over the last ten years are as follows:

As in December 2023, Bioeconomy contributes 4.25% to India's Gross Domestic Product (GDP) of \$3.55 trillion

Indian Bioeconomy has grown from \$10 billion in 2014 to \$151 billion in 2023, achieving this target two years ahead of projections for 2025.

The number of Biotech Startups has grown from 50 in 2014 to 8,531 Biotech Startups in 2023.

DBT-BIRAC have issued a joint call to invite proposals for setting up of “मूलांकुर BioEnablers – Biofoundries and Biomanufacturing Hubs” in the country. All the proposals received are under evaluation.

The BioE3 Policy aims at accelerating development of technologies for bio-based products and their commercialization by setting up of BioEnablers that include Bio-Artificial (Bio-AI) Intelligence Hubs, Biofoundries and Biomanufacturing Hubs across the country. Bio-AI hubs will be set up to augment research and innovation for the development of technologies for bio-based products across the identified thematic sectors/subsectors of Biomanufacturing, by powering data-driven research and AI-informed predictive analytics. The Bio Foundries and Biomanufacturing Hubs will aim at setting up of infrastructure/ facilities for augmenting scale up of technologies for bio-based products. The key performance indicators (KPIs) for meaningful success have been identified in terms of setting up of Bio Foundries and Biomanufacturing Hubs.

DBT-BIRAC have issued a joint call for proposals to invite applications for setting up of “मूलांकुर BioEnablers – Biofoundries and Biomanufacturing Hubs” in both academia and industry. The Bio-Enablers will also provide training and internship for building human resources with the required interdisciplinary, cross functional technical skills to foster biomanufacturing.

The BioE3 Policy is aligned with India’s vision of Green Growth (announced in the Union Budget 2023-24) and also with the clarion call of the Hon’ble Prime Minister on ‘Lifestyle for Environment (LiFE)’ which envisions collective approach towards sustainability. The Policy also aligns with the Hon’ble Prime Minister’s vision of ‘Net-Zero’ carbon economy of the country. Further, the Biomanufacturing and Biofoundry initiative has been announced as a scheme during the Government’s Interim Budget for 2024-25.

Based on National Consultation meetings and inter-ministerial consultations six thematic sectors along with sub-sectors of national importance have been prioritised for implementation under the BioE3 Policy. These include (i) Bio-based chemicals and enzymes, (ii) Functional foods and Smart proteins, (iii) Precision biotherapeutics, (iv) Climate resilient agriculture, (v) Carbon capture and its utilization, (vi) Futuristic marine and space research. A series of Sectoral Expert Committee meetings have been conducted across the country and current scenario (both global and national), gaps and challenges as well as existing strengths and opportunities have been identified for each selected sector/ sub-sector. These are currently being addressed.

*“Today. Have more respect for life. Have more hope for yourself. Have more positive thoughts.
Have beautiful conversations. Have more gratitude”*

Sangeeta Rana

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India Ranks 49th in Network Readiness Index 2024

India leads in several indicators: AI, FTTH Internet Subscriptions, Mobile Broadband Internet Traffic

The report maps network readiness landscape of 133 economies based on performance in Technology, People, Governance and Impact

India has improved its position by eleven slots and is now placed at 49th rank as per the Network Readiness Index 2024 (NRI 2024) report released on 21st November 2024, as against 60th rank scored in the NRI 2023 report. In its latest version of 2024, the Report maps the network-based readiness landscape of 133 economies based on their performances in four different pillars: Technology, People, Governance, and Impact, covering a total of 54 variables. The report has been published by the Portulans Institute, an independent non-profit research and educational institute based in Washington DC.

India has not only improved its ranking, but also improved its score from 49.93 in 2023 to 53.63 in 2024. It is noteworthy that India leads in several indicators. The report states that India secured 1st rank in 'AI scientific publications', 'AI talent concentration' and 'ICT services exports', 2nd rank in 'FTTH/Building Internet subscriptions', 'Mobile broadband internet traffic within the country' and 'International Internet bandwidth', 3rd rank in 'Domestic market scale' and 4th rank in 'annual investment in telecommunication services.

India has ranked 2nd in the group of lower-middle-income countries after Vietnam. As per the report, India has demonstrated significant digital progress, with notable strengths in technological innovation and digital transformation.

India's performance in NRI 2024 is the latest in a string of advancements in the telecommunications sector. The Department of Telecommunications (DoT) has made significant strides in advancing India's telecommunication infrastructure. Over the past decade, tele density increased from 75.2% to 84.69%, and wireless connections reached 119 crore. Digital India has set an example by expanding broadband access to rural areas through partnerships with technology companies, resulting in the sharp rise in internet subscribers from 25.1 crore to 94.4 crore, with a substantial rise in wireless internet usage. Reforms in spectrum management, ease of doing business, and consumer protection have further strengthened the sector.

Furthermore, India launched 5G services in 2022, rapidly improving its global mobile broadband speed ranking from 118 to 15. Now, India aims to position itself as a leader in future telecom technologies with the Bharat 6G Vision. Coupled with investment in emerging technologies, impressive data capabilities and robust telecom infrastructure, India's performance in network readiness index is a testament to our digital progress and innovation.

Reference: Press Information Bureau

Multilateral Fund Proposal for Plastic Pollution

India proposes a dedicated Multilateral Fund for a new International Legally-Binding Instrument on Plastic Pollution, at the 5th session of the Intergovernmental Negotiating Committee in Busan, Republic of Korea

Proposal links compliance by developing countries to developed countries meeting the former's incremental costs of transition

Provision of technical and financial assistance to developing countries is key to drive global action for addressing plastic pollution. The Indian delegation presented a proposal at the 5th session of the Intergovernmental Negotiating Committee, in Busan (Republic of Korea), to set up a dedicated multilateral fund modelled on the Multilateral Fund set up for implementation of the Montreal Protocol. The Indian proposal on Financial Mechanism for the new instrument mandates provision of financial and technical assistance, including the transfer of technologies, to Developing countries parties to enable their compliance with control measures agreed in the instrument.

The proposal links compliance by Developing countries to be incumbent on Developed countries meeting the incremental cost of transition of Developing countries. Most importantly, the proposed new dedicated multilateral fund will provide grant-based finance to Developing countries, and the Developed countries will be mandated to replenish the fund on a periodic basis and also provide flexibility of accepting private funds based upon agreed modalities.

The Indian proposal also provides for the setting up of a subsidiary body, with equal representation of Developed countries and Developing countries, to make operational policies, guidelines and administrative arrangements, including the

disbursement of resources, for the purpose of achieving the objectives of the Multilateral Fund. Such an arrangement brings in joint ownership. The list of incremental costs covered by the new dedicated multilateral fund will be decided by the Governing Body of the instrument. The proposed subsidiary body will also look into issues of technology transfer to Developing countries.

The Indian proposal on financial mechanism provides a workable model for providing funding for transitioning to environment friendly technologies by Developing countries. The model proposed by India has been under operation for some time under Montreal Protocol on Substances that deplete the Ozone layer. Therefore, it is a practical and workable model which can drive global action on plastic pollution under the new international legally-binding instrument on plastic pollution.

Background

The fifth session of the United Nations Environment Assembly (UNEA) in 2022 adopted a historic resolution to address plastic pollution at the global level. The resolution mandated the Intergovernmental Negotiating Committee (INC) to develop an International legally binding Instrument on Plastic Pollution, and set into motion a process to have a global agreement. The UNEA resolution took an ambition to conclude the negotiations of the INC by 2024. Four sessions of the Intergovernmental Negotiating Committee have been held since 2022 in Uruguay, France, Canada and Kenya. India has been engaging constructively in the negotiations. The fifth session of the INC being held from 25th November to 1st December, 2024 in Busan, is the last planned session of INC and is expected to conclude negotiations on the international legally binding instrument.

Enhancing Financial Transparency with PAN 2.0

PAN 2.0: A Digital Leap in Taxpayer Services

The Permanent Account Number (PAN) has long been a cornerstone of India's financial and administrative systems, connecting individuals and businesses to vital economic activities while promoting financial transparency and compliance. As a critical enabler of the digital economy, PAN has transformed into a gateway for essential services, making it indispensable in daily life. To enhance user-friendliness and align with technological advancements, the Indian Cabinet, a key decision-making body, has recently approved PAN 2.0, a step forward in redefining how PAN serves India's evolving digital and financial landscape.

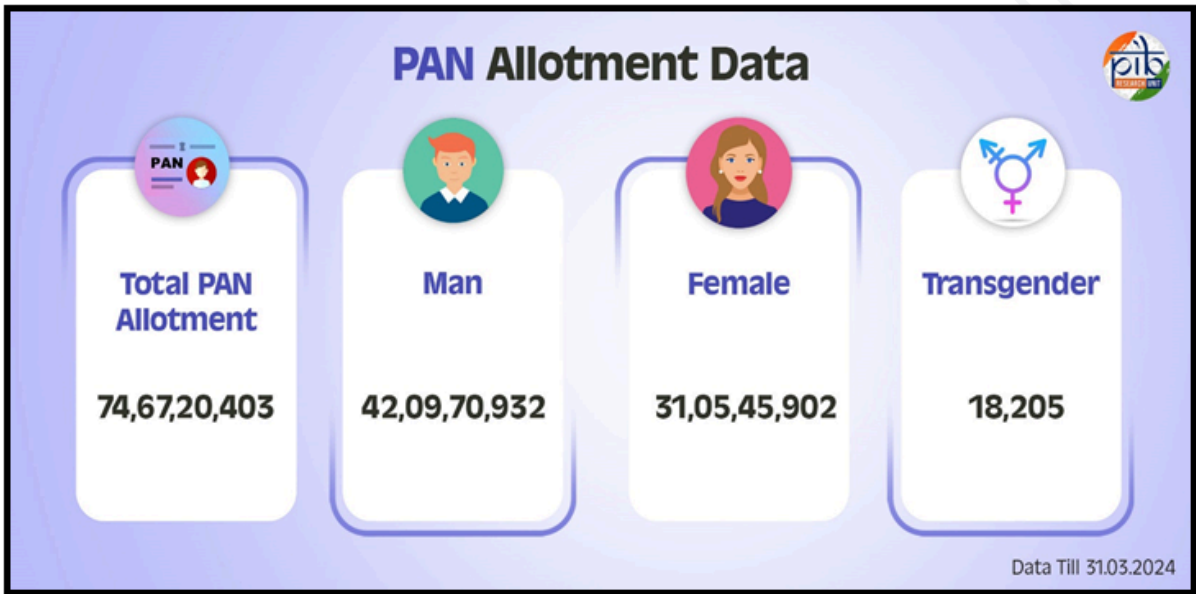
PAN 2.0: A Landmark in Financial Innovation

The PAN 2.0 Project is a transformative initiative to modernize taxpayer registration through advanced e-governance. With a financial outlay of **₹1,435 crore**, it **re-engineers the PAN/TAN services** to offer seamless digital experiences. This project aims to streamline and modernize issuing and managing PAN and TAN, making it more user-friendly and efficient. The project addresses taxpayers' requirements, focusing on consolidating multiple platforms/portals and efficient services to PAN/ TAN holders, ensuring a smooth and effective process.

PAN 2.0 Project enables technology driven transformation of taxpayer registration services and has significant benefits including:

- A single portal for all PAN/TAN-related services to simplify access for users.
- Eco-friendly paperless processes to reduce paperwork.
- PAN will be issued free of cost, with quicker processing times.

- Personal and demographic data will be protected through enhanced security measures, including a PAN Data Vault.
- A dedicated call centre and helpdesk to address user queries and issues.



PAN 2.0 Revolutionizing Existing System

PAN 2.0 aims to revolutionize the existing system by consolidating all PAN/TAN services into a single, user-friendly portal. This will ensure a smooth and paperless process, enhancing taxpayer convenience. The addition of free e-PAN services and simplified updates will further streamline the process, making it more convenient for you.

Have a look at these key features in detail:

1. **Integration of Platforms:** PAN-related services are currently hosted on three different portals ([e-Filing Portal](#), [UTIITSL Portal](#), and [Protean e-Gov Portal](#)). In the PAN 2.0 Project, all PAN/TAN-related services will be hosted on a single unified portal of the Income Tax Department. The said portal would host all end-to-end services related to PAN and TAN like allotment, updation,

correction, Online PAN Validation (OPV), Knowing your AO, AADHAAR-PAN linking, verifying your PAN, request for e-PAN, request for re-print of PAN card, etc.

2. **Comprehensive use of technology for paperless processes:** Complete the online paperless process against the prevailing mode.
3. **Taxpayer facilitation:** Allotment/update/correction of PAN will be done free of cost, and e-PAN will be sent to the registered mail ID. The applicant has to request a physical PAN card along with the prescribed fee of Rs 50 (domestic). For delivery of the card outside India, Rs. 15 + India post charges at actuals will be charged to the applicant.

Changes for Existing PAN Cardholders

For existing PAN cardholders, there's no need to worry. Under the upgraded PAN 2.0 system, your current valid PAN cards will remain fully operational. You are not required to apply for a new PAN unless you specifically request an update or correction. This should provide you with a sense of security and continuity.

QR Code Feature in PAN 2.0

A look at the QR code feature and what's changing under PAN 2.0:

1. The QR code is not new; it has been part of PAN cards since 2017-18. Under PAN 2.0, it will be enhanced with a dynamic QR code displaying the latest data from the PAN database.
2. PAN holders with older cards lacking a QR code can apply for a new card with a QR code under both the current PAN 1.0 system and the upgraded PAN 2.0.
3. The QR code facilitates the validation of PAN details, ensuring authenticity.

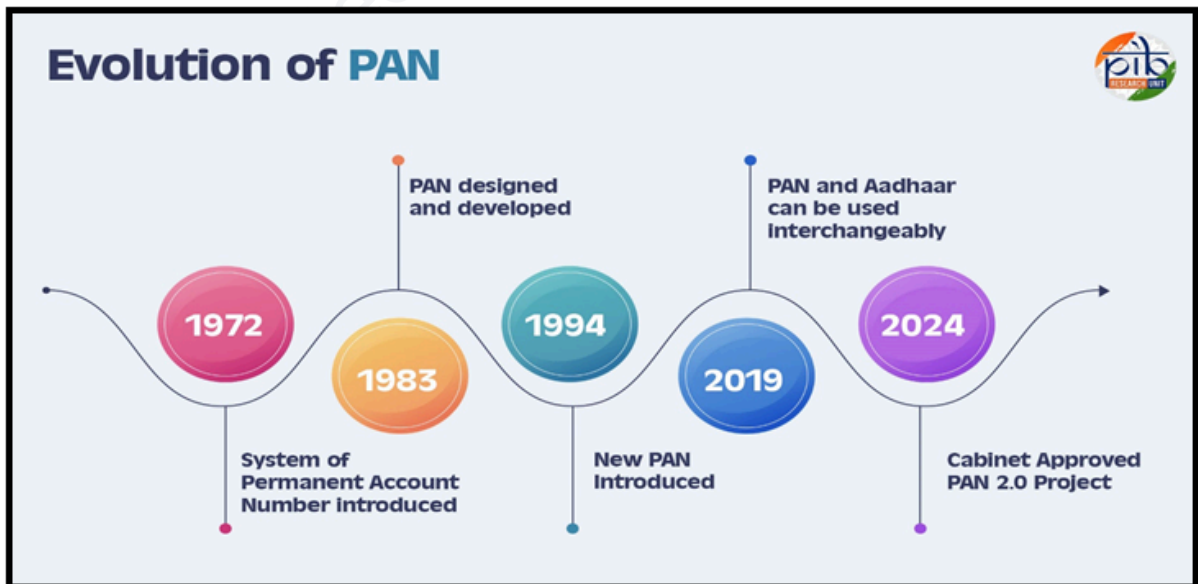
4. A dedicated QR reader application is available to verify details. When scanned, it displays the holder's photo, signature, parents' names, and date of birth.

Global Standards for Secure and Seamless Services

The PAN 2.0 Project is committed to adopting global standards to enhance taxpayer registration with seamless digital processes and robust data security. It ensures compliance with crucial ISO certifications for quality, security, and service management (e.g., ISO 27001, ISO 9001). The project streamlines PAN/TAN registration with simplified online processes, minimal documentation, and centralized databases, improving user experience while safeguarding data through robust security and international best practices. This emphasis on security should reassure you of the safety of your information.

PAN Service in India

PAN 2.0 builds upon decades of evolution since the introduction of the Permanent Account Number (PAN) in 1972.



Designed as a unique 10-digit alphanumeric identifier, PAN links an individual or entity's financial transactions, such as tax payments, TDS/TCS credits, and income returns, to the Income Tax Department. By streamlining and modernizing these processes, PAN 2.0 aims to enhance efficiency, security, and ease of access, ensuring a robust digital framework that simplifies compliance and strengthens financial transparency.

PAN is to be obtained by:

- Every person if his total income or the total income of any other person in respect of which he is assessable during the year exceeds the maximum amount which is not chargeable to tax.
- A charitable trust who is required to furnish return under Section 139(4A)
- Every person who is carrying on any business or profession whose total sales, turnover, or gross receipts are or is likely to exceed five lakh rupees in any year
- Every person who intends to enter into specified financial transactions in which quoting of PAN is mandatory.
- Every non-individual resident person and person associated with them shall apply for PAN if the financial transaction entered into by them during the financial year exceeds Rs. 2,50,000.

Penalty for not having PAN or having more than one PAN

- Section 272B of the Income-tax Act imposes a penalty of Rs. 10,000 for taxpayers who fail to comply with PAN-related provisions. This includes not obtaining a PAN when required, knowingly quoting an incorrect PAN on prescribed documents, or providing an incorrect PAN to the person deducting or collecting tax.
- As per the Income-tax Act, no individual is allowed to hold more than one PAN. If a person does hold multiple PANs, they must inform the Jurisdictional Assessing Officer and request the additional PAN to be deactivated or deleted.

- Under PAN 2.0, the system has been enhanced with improved logic to identify duplicate PAN requests. This centralized and advanced mechanism will help minimize instances of individuals holding more than one PAN.

TAN Allotment

TAN (Tax Deduction and Collection Account Number) is a 10-digit alphanumeric code issued by the Income Tax Department for entities responsible for TDS/TCS. It is mandatory for filing returns, making payments, and issuing TDS/TCS certificates. TAN cannot be replaced with PAN except under specific provisions like Section 194-IA. Failure to obtain or quote TAN can lead to penalties, emphasizing its critical role in ensuring compliance with tax regulations and accurate deduction tracking.

Conclusion

The PAN 2.0 Project marks a significant leap towards modernizing India's tax system with enhanced digital processes, security, and greater accessibility. By shifting to a Direct Delivery Model and integrating global best practices, it promises a more streamlined and efficient experience for taxpayers, aligning with the government's vision of a digital India. This initiative not only simplifies services but also ensures data security and transparency, fostering better tax compliance and governance.

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What is India Post Payments Bank?

There is only one payments bank, i.e., India Post Payments Bank (IPPB), set up under the Department of Posts. The bank has 650 branches and over 1.63 lakh access points through the post office network.

IPPB is offering a range of services and products such as savings and current accounts, Virtual Debit Card, Domestic Money Transfer services, bill and utility payments, insurance services for IPPB customers, Post Office Savings Account (POSA) linkage with IPPB accounts, online payment for Post Office Savings schemes, Digital Life Certificate (DLC), Aadhaar Enabled Payment System (AePS), mobile number update in Aadhaar for any citizen and Child Enrolment services for any child of 0-5 years old.

Sustainable Coal Mining Practices in India

Exploring Alternative Energy Sources

The Government has taken the following initiatives for the development of Coal Bed Methane (CBM):

- To harness CBM potential in the country, the Government of India formulated CBM Policy in 1997, wherein CBM being Natural Gas is explored and exploited under the provisions of the Oil Fields (Regulation and Development) Act 1948 (ORD Act 1948) and Petroleum & Natural Gas Rules 1959 (P&NG Rules 1959) administered by Ministry of Petroleum & Natural Gas (MoPNG).
- A Memorandum of Understanding (MoU) was signed between the Ministry of Coal (MoC) and the MoPNG, to act in a cooperative manner for the development of CBM. As per the policy, the MoPNG became the Administrative Ministry and Directorate General of Hydrocarbons (DGH) was made the nodal agency for the development of CBM in the country. MoPNG in consultation with the Ministry of Coal (MoC) identified and offered CBM Blocks located in coal-bearing areas.
- At present total, 15 CBM Blocks are active. Out of these 15 Blocks, 6 are in the production stage, 2 are in the development stage and 7 are in the exploration stage.
- Additionally, Bharat Coking Coal Limited (BCCL) has delineated Jharia CBM Block-I within the existing leasehold area for coal mining in Jharia Coalfield. The block is in the exploration stage.

Regarding Underground Coal Gasification (UCG), a pilot R&D project has been undertaken, for implementation in two phases, to establish UCG technology in Indian geological conditions at Kasta (West) coal block, Jamtara District in Jharkhand.

Presently during Phase-I, project activity is being carried out for site characterization and plant site selection. The government has taken following measures to address environmental concerns with coal mining, particularly regarding reforestation efforts and compliance with legal regulations:

- For opening a new mine, prior Environmental Clearance (EC) is obtained from the Ministry of Environment, Forests & Climate Change (MoEF&CC) under Environment (Protection) Act & Rules, 1986, EIA Notification, 2006 and subsequent amendments. The mines are operated complying with the EC conditions thereby ensuring environment sustainability.
- In compliance with the Van (Sanrakshan evam Samvardhan) Adhiniyam, 1980, prior Forestry Clearance is also obtained from MoEF&CC, in case of projects involving forest land.
- In case of Expansion Projects (for enhancement in Production Capacity and / or land area) prior Environmental Clearance is obtained from MoEF&CC under Environment (Protection) Act & Rules, 1986, EIA Notification, 2006 and subsequent amendments.
- After receipt of EC, Consent to Establish (CTE) and Consent to Operate (CTO) are also obtained from respective State Pollution Control Boards under Air (Prevention & Control of Pollution) Act, 1981 and Water (Prevention & Control of Pollution) Act, 1974.
- During implementation of the project, Six-monthly Environmental Compliance Reports against the stipulated EC conditions are submitted to MoEF&CC.
- In compliance of the EC/ CTE/ CTO conditions, regular environmental monitoring with respect to ambient air quality, effluent quality, noise level monitoring and ground water (both levels and quality) are monitored and reports are submitted to MoEF&CC / State Pollution Control Boards (SPCBs) / Central Ground Water Board (CGWB).

- In compliance with the statute, Annual Environmental (Audit) Statement for the preceding financial year for each operating mine is submitted to respective SPCB on or before 30th September every year.
- In compliance of EC and Consent conditions, various pollution control measures and environment sustainability measures are undertaken which are regularly augmented / strengthened.
- Tree Plantation is done around the source of air pollution like mine, infrastructure and roads to reduce air pollution; Green belt has been provided around the mine as well as residential colony for noise attenuation. Avenue plantation i.e. plantation on the OB dumps, plantation around mines, residential colonies, and available land is undertaken in existing as well as new projects.
- Compensatory Afforestation (CA) as per the provisions Van (Sanrakshan Evam Samvardhan) Adhiniyam, 1980 is complied with and necessary funds deposited in the CAMPA account for CA, Soil and moisture conservation measures, plantation in safety zone etc. Regular monitoring of land reclamation is also carried out through remote sensing techniques (Satellite imagery).
- The mine closure plan is an integral part of the project report for Coal mines. The goal is to achieve its coal production target sustainably and ensure land usage for future generations after final closure of the mine.

The Union Government is in collaboration with the coal-producing States to enhance coal availability and ensure an uninterrupted power supply to all States. To cater to the domestic demand, Government has formulated and finalized a long-term production roadmap, wherein coal production of 1.5 BillionTonnes by 2029-30 has been envisaged with commensurate offtake. With the increase in production and offtake, the Government intends to fulfill most of the domestic demand of the Power Sector.

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How Digital Bharat Nidhi Supports Telecom Access

In New Telecom Policy 1999, the Government expressed its commitment to provide access to all people for basic telecom services at affordable and reasonable prices under Universal Service Obligation (USO). Digital Bharat Nidhi (erstwhile USOF) was established under the Indian Telegraph (Amendment) Act, 2003 w.e.f. 01.04.2002. As per 'The Telecommunications Act, 2023' the Universal Service Obligation Fund, has become the Digital Bharat Nidhi (DBN). The DBN has a mandate to support universal service through promoting access and delivery of telecommunication service in underserved rural, remote and urban areas.

At present, as per the License agreement, the license fee is based on Adjusted Gross Revenue (AGR) which includes USO Levy. Telecom Service Providers are depositing the Licence Fee as per license agreement.

During the last five financial years (2019-20 to 2023-24), a total of 5,262 towers were installed and an amount of Rs. 8,311 Cr. was spent.

Reference: Press Information Bureau

"Life will always be hardest when you're crossing over to a new level. Don't get discouraged"

Anonymous

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Understanding AMRUT 2.0: A Comprehensive Overview

Atal Mission for Rejuvenation and Urban Transformation (AMRUT) 2.0 scheme was launched on 01 October, 2021 in all ULBs/ cities, enabling the cities to become 'self-reliant' and 'water secure'. Providing universal coverage of sewerage & septage management in 500 AMRUT cities is one of the major focus areas of AMRUT 2.0. Rejuvenation of water bodies, development of green spaces and parks and Technology Sub-Mission to leverage latest technologies in the field of water are other components of the Mission. The total indicative outlay for AMRUT 2.0 is ₹2,99,000 crore including Central share of ₹76,760 crore for five years.

Under AMRUT 2.0, a total of 8,998 projects worth ₹1,89,458.55 crore (including Operations & Maintenance cost) have been approved by the Ministry of Housing and Urban Affairs (MoHUA). Funds for projects are released by MoHUA to the States/ Union Territories (UTs) and not to the Districts/ Urban Local Bodies (ULBs) directly. The States/ UTs further release funds to the ULBs/ implementing agencies.

As per AMRUT 2.0 guidelines, the States/ UTs were required to complete all State Water Action Plan (SWAP) and get it approved within 2 years from the start of the Mission. So far, central assistance (CA) of ₹63,976.77 crore have been approved for the projects out of the total ₹66,750 crore CA allocated for the States/UTs. Some of the States namely Arunachal Pradesh, Chhattisgarh, Delhi, Haryana, Ladakh, Lakshadweep, Manipur, Punjab, Uttarakhand have not yet got their SWAP approved for 90% of the allocated CA.

Reference: Press Information Bureau

Achieving a Digital Legislative Environment with NeVA 2.0

NeVA 2.0, the upgraded version of the National e-Vidhan Application (NeVA), is a comprehensive initiative aimed at achieving a paperless legislative environment by digitalizing legislative processes across all States and Union Territories. It incorporates advanced features such as multi-lingual support, functionalities for sending birthday wishes to members, automatic generation of members' bio-profiles, and a revamped member dashboard, enhancing linguistic inclusivity and improving user experience on both the NeVA mobile and web applications.

The transition of NeVA 2.0 to the National Government Cloud (NGC) 2.0 ensures improved scalability, reliability, enhanced data security, and optimized performance, supporting seamless delivery of legislative services.

By digitalizing legislative processes, it has successfully enabled Members to access, submit, and manage legislative business entirely through digital platforms, achieving a truly paperless environment. Additionally, it has promoted real-time governance by ensuring instant availability of legislative data, streamlining processes through automation, and enabling timely decision-making and seamless collaboration among stakeholders via its integrated digital platform.

Digital systems like the National e-Vidhan Application (NeVA) play a vital role in achieving good governance by enhancing transparency, efficiency, and accountability in legislative processes. It contributes to good governance by streamlining

The Rise of Gig Workers in India: Future Trends

As per an estimation by NITI Aayog vide its report titled “India’s Booming Gig and Platform Economy” published in June 2022, the number of gig workers and platform workers in the country was 7.7 million in 2020-21, including women, which is expected to rise to 23.5 million by 2029-30.

For the first time, the definition of ‘gig workers’ and ‘platform workers’ and provisions related to the same have been provided in the Code on Social Security, 2020 which has been enacted by the Parliament.

The Code on Social Security, 2020 provides for framing suitable social security measures for gig workers and platform workers on matters relating to life and disability cover, accident insurance, health and maternity benefits, old age protection, etc.

Reference: Press Information Bureau



Image: [Pixabay](#)

India's 2024 Global Nature Conservation Index Results

The Global Nature Conservation Index (NCI) 2024 was brought out recently, for the first time, by Goldman Sonnenfeldt School of Sustainability and Climate Change, Ben-Gurion University of the Negev, Israel and BioDB.com.



India has been ranked 176 out of a total 180 countries undermining the well-recognized efforts of India in Land Management, Threats to Biodiversity, Capacity & Governance and Climate Change Mitigation. NCI has not taken into account the country reported data in respect of many indicators and relied on many other sources leading to unrealistic NCI index. Further, NCI has completely ignored

India's leadership role in international environmental forums such as International Big Cat Alliance (IBCA), Mission LiFE, International Solar Alliance (ISA) and Coalition for Disaster Resilience Infrastructure (CDRI) advocating for global cooperation on biodiversity conservation as well as its leadership role on global climate change agenda.

In recent years, India has taken several measures in areas of land management and threats to its biodiversity which have not been taken into account while deriving NCI. For example, the Government of India enacted Biological Diversity Act, 2002, as amended by the Biological Diversity (Amendment) Act, 2023 (BD Act) together with a new set of Rules to conserve, sustainably use and regulate the access of biological resources and knowledge associated thereto. The Act covers various measures under the provisions of the BD Act to conserve biodiversity including the constitution of Biodiversity Management Committees (BMCs), notification for Biodiversity Heritage Sites and notification for threatened species. The notification confers power to the State Biodiversity Boards (SBBs) for regulating access to the notified species and to take measures to rehabilitate and preserve those species.

Some of India's key achievements in land management and biodiversity conservation are as follows:

- India has 1022 protected areas in the country, covering an area of 178,640 sq. km, which is about 5.43 % of the geographical area of the country.
- Total forest cover has increased from 21.23% in 2013 to 21.71% in 2021.
- India has 72.16 lakh Ha of forest cover as per the FAO's Global Forest Resource Assessment 2020, securing its place among the top ten countries worldwide.
- Eco-Sensitive Zones of 487 protected areas have been established across India.
- The number of Ramsar sites have increased from 26 in 2014 to 85 in 2024.

- There are 55 tiger reserves in India and tiger population has increased from 2226 in 2014 to 3682 in 2022.
- India's Project Lion has fostered a growing lion population in the Gir Landscape—from 284 in 1990 to 674 in 2020.
- India has reintroduced Cheetah in the Indian habitat through the world's first inter-continental large wild carnivore translocation project.
- With 33 elephant reserves, India holds by far the largest number of wild Asian elephants, estimated at about 30,000 or nearly 60% of the population of the species.
- India's leopard population is estimated at 13,874 individuals, representing a stable population in comparison to the similar area being sampled in 2018 with 12,852 individuals.
- The Namami Gange Program to rejuvenate river Ganga and its tributaries has been recognised as a world restoration flagship project by the UN which reflects the commitments of the Government towards conservation, rejuvenation and development of natural ecosystems and its services.

India has already submitted its National Targets under the National Biodiversity Strategy and Action Plans on 10th September, 2024 and also submitted its National Biodiversity Strategy and Action Plan (NBSAP) on 31st October, 2024 on the Convention on Biodiversity Portal during the recently concluded CBD COP at Cali, Colombia. Both the National Biodiversity Targets and the Action Plans are fully aligned with the goals and targets set under the Kunming Montreal Global Diversity Framework (KMGBF). KMGBF is to be implemented in accordance with the national circumstances, priorities and capabilities.

India's National Biodiversity Strategy and Action Plan (NBSAP) envisages protecting terrestrial and marine areas, restoring degraded ecosystems and reducing biodiversity threats through pollution control as also invasive species management.

India emphasizes species conservation, sustainable resource use, wildlife corridors to reduce fragmentation, and community engagement in biodiversity governance.

India has submitted its Long Term Low Emission Development Strategy (LT-LEDS) for reducing GHG emissions to UNFCCC in November 2022 highlighting strategic low-emissions development transitions for the country. The LT-LEDS was prepared in the light of India's right to an equitable and fair share of the Global Carbon Budget, which is the practical implementation of Climate Justice. The key elements of the strategy include- Low carbon development of electricity systems consistent with development; development of an integrated, efficient, inclusive low-carbon transport system; promoting adaptation in urban design, energy and material-efficiency in buildings and sustainable urbanisation; promoting economy-wide decoupling of growth from emissions and development of an efficient, innovative low-emission industrial system; CO2 removal and related engineering solutions; enhancing forest and vegetation cover consistent with socio-economic and ecological considerations; and developing strategy on economic and financial aspects of low-carbon development. Some of the initiatives include the Smart Cities Mission (SCM), National Action Plan of Climate Change (NAPCC) promoting climate-resilient and sustainable urban development.

The Adaptation Communication submitted to UNFCCC in 2023 outlines the actions taken for adaptation to climate risks and challenges, and future strategy for the same. India has developed an integrated approach, ranging from food security, energy use efficiency, and water management aiming to address these issues simultaneously through appropriate policies and initiatives.

Image: BingAI

Understanding India's AEO Program for Global Trade

About AEO Program

AEO is a program under the aegis of the World Customs Organisation's (WCO) SAFE Framework of Standards to secure and facilitate Global Trade. AEO is a voluntary compliance program that enables Indian Customs to enhance and streamline cargo security through close cooperation with the principal stakeholders of the international supply chain, viz. importers, exporters, logistics providers, custodians or terminal operators, customs brokers, and warehouse operators. The Indian AEO program started in 2011 and was strengthened in 2016. The Directorate of International Customs of CBIC implements it. There has been an exponential increase in the number of AEO-certified clients. As of 31.10.2024, there are 5,947 AEO entities in India in a three-tier program with an additional tier of logistical operators.

India has signed an MRA on AEO with the Customs Administrations of South Korea, Hong Kong, Taiwan, USA, UAE, Australia, and Russia. By this agreement, the AEO status of the MRA partner's AEO program is recognized by each other, and trade facilitation is extended reciprocally. India has also signed Joint Action Plans (JAP) to conclude an MRA with Uganda, East African Community, South Africa, Japan, Bahrain, Singapore, New Zealand, the UK, Belarus and BRICS. A joint action plan with Brazil was signed during the conference to enter into an MRA.

Reference: Press Information Bureau

Trivia Treasures: Unearth Fun Facts!

1. What is a dark store?
2. What does White Label ATM mean?
3. What is an asteroid belt and the Kuiper Belt?
4. Have you ever wondered about speaking through patterns and symbols? What do you think Musawwari could be?
5. How is AI reshaping creativity and industries, and what are some unique examples of its applications?
6. Niels Bohr and Werner Heisenberg were pioneers in which branch of physics?
7. What is a biomarker?
8. If Razia Sultan has been the only female to rule from the throne of Delhi, who has been the only female Empress of imperial China?
9. What does the word Haka signify?
10. And what does the word Hakka denote?
11. What is parkour?
12. What are "Janus words"?
13. What is an Exoplanet?
14. The King's representative, the clerk of the Crown, took his place on one side of the long table. The clerk of Parliament took his position opposite him. He reached out for the first bill in the pile and, in a solemn voice, read out its title: 'The South Metropolitan Gas Bill.' 'Le Roy le veult,' replied the clerk of the Crown in the ancient Norman phrase which had signified a sovereign's pleasure at enacting a royal decree or Act of Parliament for centuries. The clerk

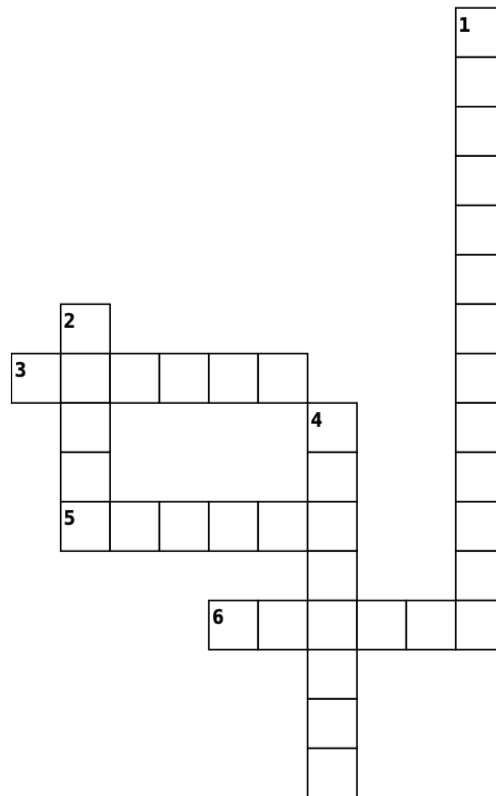


of Parliament took the next bill from the stack. 'The Felixstowe Pier Bill,' he said. 'Le Roy le veult,' the clerk of the Crown intoned in return. The clerk of Parliament reached for another bill. 'Le Roy le veult,' came the reply. The Prime Minister flushed lightly and lowered his eyes at those words. A hush filled the chamber as the echoes of the clerk's voice died. It was over. **This is a scene from the British Parliament. The passage of which Bill led to this deafening silence?**

15. What is Anti - Microbial Resistance (AMR)?
16. The world championship: The title match of which sports was held between Ding Liren and Gukesh Dommaraju?
17. Which Chinese traveller came during the reign of King Harsh Vardhan?
18. What are hieroglyphs?
19. Which is the oldest stock exchange of Asia?
20. Ever wondered about the mysterious things visible only from the sky? What are Geoglyphs?

Answers are on page 307

The K&L Crossword Craze #03



Across

- 3. If Kimono is to Japan, _____ is to Korea [6]
- 5. Chogyal was the title of the traditional ruler of this part / state of India [6]
- 6. This company has placed an order for six or seven new small nuclear reactors in a bid to source low-carbon energy to power its AI technologies [6]

Down

- 1. One of the first scales to estimate wind speeds and the effects, developed in 1805 [8,5]
- 2. It is the national capital of the pacific island New Caledonia [5]
- 4. The famed temple of Angkor Vat is located in this country [8]

Answers will be in the K&L Digest, Part 1, Volume 04

Answers: Trivia

1. What is a dark store?

A store that is entirely online, with no physical storefront, used for fulfilling online orders.

2. What does White Label ATM mean?

An ATM not owned by a bank, but operated by a third-party company offering services to customers of various banks.

3. What is an asteroid belt and the Kuiper Belt?

The asteroid belt is a collection of asteroids located between Mars and Jupiter, and the Kuiper Belt is a region beyond Neptune that contains icy bodies and dwarf planets.

4. Have you ever wondered about speaking through patterns and symbols? What do you think Musawwari could be?

Musawwari, an ancient and enduring art form, has transcended centuries and geographic boundaries. While often associated with South Asia, it holds a much broader significance, inspiring artists worldwide to create miniature works that are unique, captivating, and extraordinary.

Over time, Musawwari has evolved significantly, integrating diverse cultural influences and ideas, especially with the advent of new technologies.

Today, Musawwari represents more than just traditional paintings—it embodies a vibrant emotion and a timeless artistic spirit. Artists across the globe continue to embrace this rich heritage, reimagining it in contemporary and innovative ways.

5. How is AI reshaping creativity and industries, and what are some unique examples of its applications?

It's a world in constant evolution, reminiscent of the science fiction of the past. We now have AIs that are not just creative, but also self-learning. These AIs are not just a part of our lives, but are also reshaping industries. They are even venturing into the field of medicine, albeit in a unique way. Websites like "This Person Does Not Exist" are using AI to create entirely fictional human faces that are not just realistic, but indistinguishable from real ones. Each time you refresh, you see a person who doesn't exist—created by a neural network, a testament to the amazing capabilities of AI in creating realistic images.

6. Niels Bohr and Werner Heisenberg were pioneers in which branch of physics?

Ans . Quantum Mechanics

Quantum mechanics is the field of physics that explains how extremely small objects simultaneously have the characteristics of both particles (tiny pieces of matter) and waves (a disturbance or variation that transfers energy). Physicists call this the "wave-particle duality."

7. What is a biomarker?

In biomedical contexts, a biomarker, or biological marker, is a measurable indicator of some biological state or condition. Biomarkers are often measured and evaluated using blood, urine, or soft tissues to examine normal biological processes, pathogenic processes, or pharmacologic responses to a therapeutic intervention.

8. If Razia Sultan has been the only female to rule from the throne of Delhi, who has been the only female Empress of imperial China?

Ans. Wu Zetian, she also happens to be the first Emperor of China.

9. What does the word Haka signify?

Ans. Haka are a variety of ceremonial dances in Māori culture, indigenous people of New Zealand . A performance art, haka are often performed by a group, with vigorous movements and stamping of the feet with rhythmically shouted accompaniment.

10. And what does the word Hakka denote?

Ans. The Hakka are a Han Chinese ethnic group who migrated south from the Yellow River plain to the hilly areas of southeastern China. The word "Hakka" means "guest people" in Chinese, and was used by the natives of southern China to distinguish the Hakka from themselves. The Hakka are thought to have originated around 400 AD and 900 AD.

11. What is parkour?

Ans. Parkour is an athletic training discipline or sport in which practitioners (called traceurs) attempt to get from one point to another in the fastest and most efficient way possible, without assisting equipment and often while performing feats of acrobatics. With roots in military obstacle course training and martial arts, parkour includes flipping, running, climbing, swinging, vaulting, jumping, plyometrics, rolling, and quadrupedal movement—whatever is suitable for a given situation. Parkour is an activity that can be practiced alone or with others, and is usually carried out in urban spaces, though it can be done anywhere. It involves seeing one's environment in a new way, and envisioning the potential for navigating it by movement around, across, through, over and under its features.

12. What are “Janus words”?

Ans. They are also known as contronyms, words having two opposite meanings.

The word "sanction" is an excellent example of a Janus word (or contronym), which has two opposite meanings depending on its context. Here's how it functions in both senses:

1. To Approve or Permit. Example: The government sanctioned the new housing project. (Here, "sanction" means to approve or authorize the project.)
2. To Punish or Restrict. Example: The country faced economic sanctions due to its actions. (Here, "sanction" means a penalty or punitive measure.)

This duality makes "sanction" an intriguing word in the English language, capable of conveying either positive endorsement or punitive restriction.

13. What is an Exoplanet?

Ans. An exoplanet, or extrasolar planet, is a planet that orbits a star outside of our solar system. There are billions of exoplanets in the Milky Way galaxy, and scientists have confirmed over 5,600 of them.

14. The King's representative, the clerk of the Crown, took his place on one side of the long table. The clerk of Parliament took his position opposite him. He reached out for the first bill in the pile and, in a solemn voice, read out its title: 'The South Metropolitan Gas Bill.'

'Le Roy le veult,' replied the clerk of the Crown in the ancient Norman phrase which had signified a sovereign's pleasure at enacting a royal decree or Act of Parliament for centuries.

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The clerk of Parliament reached for another bill.

'Le Roy le veult,' came the reply.

The Prime Minister flushed lightly and lowered his eyes at those words. A hush filled the chamber as the echoes of the clerk's voice died. It was over.

This is a scene from the British Parliament. The passage of which Bill led to this deafening silence?

Ans. The India Independence Bill, which was passed by the British Parliament on 18 Th July 1947, vide which it came into force as the India Independence Act 1947 .

15. What is Anti - Microbial Resistance (AMR)?

Ans . Antimicrobial resistance (AMR) is a global health threat that occurs when microorganisms like bacteria, viruses, fungi, and parasites no longer respond to antimicrobial drugs. This makes infections harder to treat, which can lead to disease spread, disability, severe illness, and death. AMR can have significant economic costs, including reduced productivity and higher treatment costs. The World Bank estimates that AMR could result in \$1 trillion additional healthcare costs by 2050. In 2017, India's Union Ministry of Health and Family Welfare released the National Action Plan (NAP) for AMR. The NAP's objectives include improving awareness, strengthening infection prevention and control, and promoting research and development.

16. The world championship. The title match of which sports was held between Ding Liren and Gukesh Dommaraju?

Ans. Chess. Gukesh Dommaraju at 18 years is the youngest player to appear in the final of the world championship of chess.

17. Which Chinese traveller came during the reign of King Harsh Vardhan?

Ans. The Chinese traveler Hiuen Tsang, also known as Xuanzang, was a dedicated scholar who visited India during the reign of King Harshavardhana. Between 629 and 645 CE, Hiuen Tsang undertook a journey of immense dedication, traveling from China to India to obtain Buddhist scriptures. He followed the Central Asian Route, visiting Kashmir, Saurashtra, Vallabhi, Kamarupa, and Malakotta. His commitment to understanding Buddhism was evident in his studies of Hinayana and Mahayana Buddhism at the monasteries in Kashmir, Sialkot, and Nalanda, where he delved deep into the teachings and practices of the faith.

18. What are hieroglyphs?

Ans: The ancient Egyptian script is known as Hieroglyphics, which means, 'sacred writing.' They used ink to write on grass papyrus growing around the river Nile.

19. Which is the oldest stock exchange of Asia?

Ans. Bombay Stock Exchange. BSE Limited, also known as the Bombay Stock Exchange (BSE), is an Indian stock exchange which is located on Dalal Street. Established with the efforts of cotton merchant Premchand Roychand in 1875, it is the oldest stock exchange in Asia, and also the tenth oldest in the world. The first stock exchange in the world was created in Amsterdam in 1611, when the Dutch East India Company was the first publicly traded company. To raise capital, the company decided to sell stock and pay dividends of the shares to investors.

20. Ever wondered about the mysterious things visible only from the sky? What are Geoglyphs?

Answer:

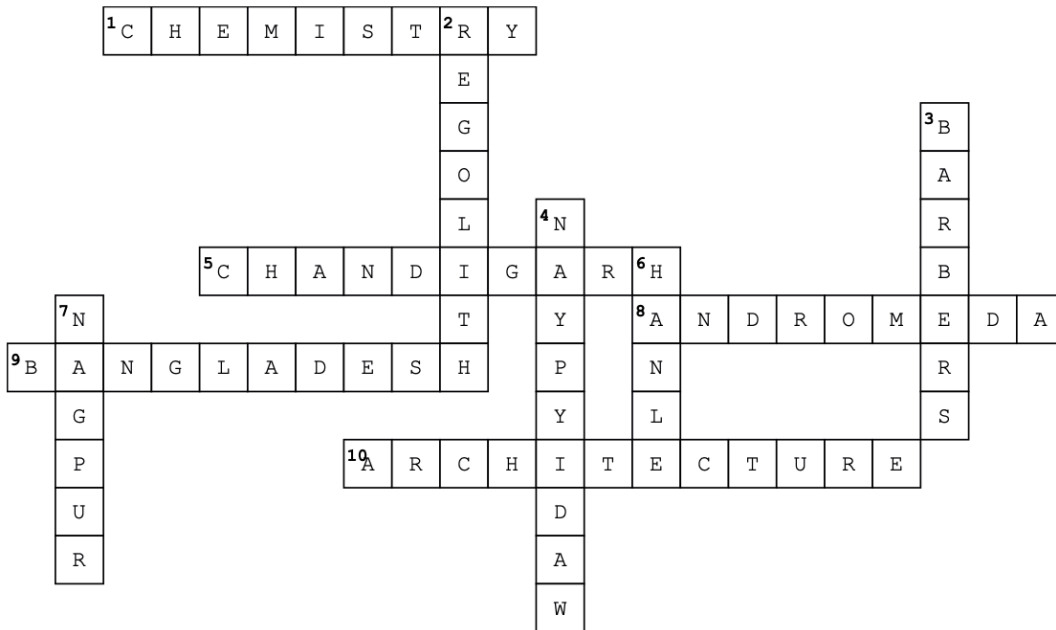
Geoglyphs are large-scale designs or motifs created on the ground using natural elements like stones, gravel, or earth. These designs, typically longer than 4 meters, are made by adding or removing material from the ground to contrast with the surrounding area.

Famous Example:

The most renowned geoglyphs are the [Nazca Lines](#) in Peru. These intricate figures, including a spider, hummingbird, condor, whale, and dog, remain an enigma. While their exact purpose is still debated, some researchers believe they were used for astronomical observations.

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Answers: The K&L Crossword Craze #02



Across

1. Demis Hassabis, CEO of DeepMind Technologies, was a joint winner of 2024 Nobel Prize in this field of study [9]
5. It serves as the capital of two states [10]
8. Milky Way's immediate neighbor, a galaxy [9]
9. Petrapole, a land customs station, is located at its border [10]
10. Pritzker prize is considered the Nobel's equivalent of this field of study [12]

Down

2. A region of loose, unconsolidated rock and dust that sits atop a layer of bedrock [8]
3. Also known as Imazighen, these are the indigenous people of North Africa [7]
4. Capital of Myanmar [9]
6. _____ Dark Sky reserve (HDSR) in Ladakh is a major attraction for astro-tourism [5]
7. It used to be the capital of the erstwhile Central province in independent India [6]

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