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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

"An investment in knowledge pays the best interest." – Benjamin Franklin

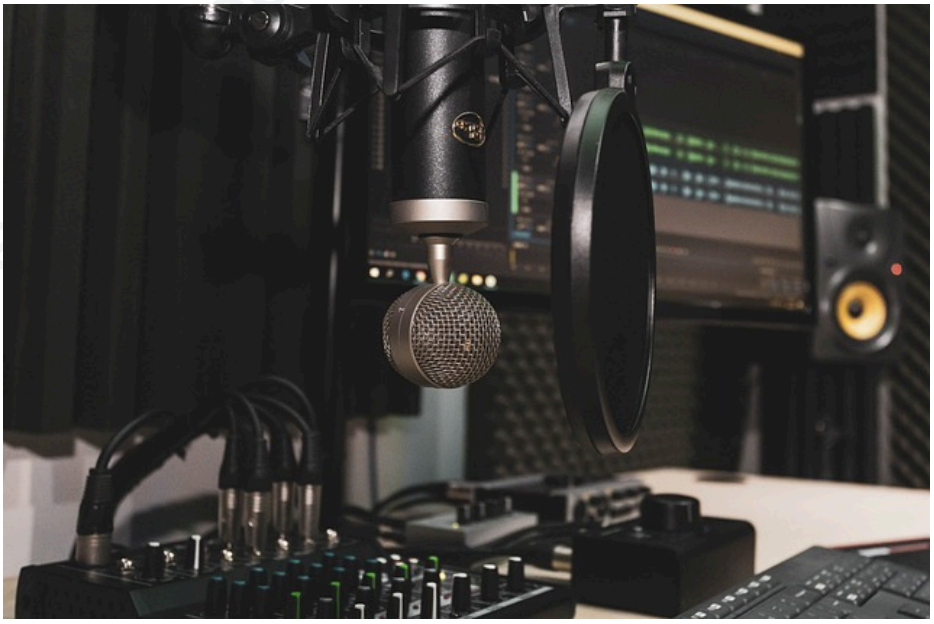
Contents

1

The Shift to Digital: TRAI's New Consultation Paper on Radio Broadcasting

The Telecom Regulatory Authority of India (TRAI) has today released a Consultation Paper (CP) on "Formulating a Digital Radio Broadcast Policy for Private Radio Broadcasters."

At present, analog terrestrial radio broadcast in India is carried out in Medium Wave (MW) (526–1606 KHz), Short Wave (SW) (6–22 MHz), and VHF-II (88–108 MHz) spectrum bands. VHF-II band is popularly known as the FM band due to the deployment of Frequency Modulation (FM) technology in this band. All India Radio (AIR) - the public service broadcaster - provides radio broadcasting services in MW, SW and FM bands. Private-sector radio broadcasters are licensed to transmit programs in FM frequency bands (88-108 MHz) only.



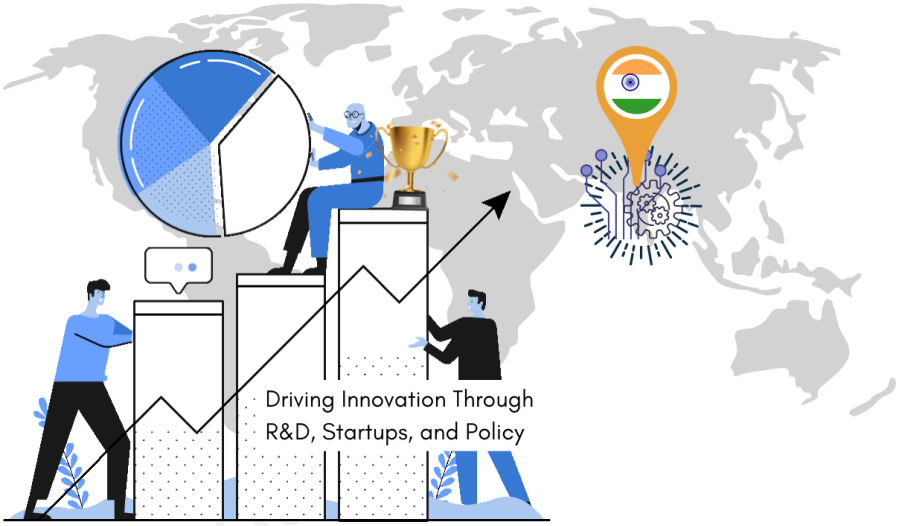
Digital radio broadcasting will provide several advantages over analog radio broadcasting. One of the most exciting is the significant improvement in audio quality. The capability of broadcasting three to four channels on a single frequency carrier ensures excellent audio quality for all the channels, a feature that will surely excite and please the audience. In contrast, in the analog mode, only one channel is possible on a frequency carrier. In a competitive environment, digital radio broadcasting can provide exciting new opportunities to radio broadcasters as well as a host of value-added services to listeners.

Image Credit: Pixabay

"Stay positive. The only difference between a good day and a bad day is your attitude."

2

India Climbs to 39th Place: A Look at the Global Innovation Index 2024



India has achieved a significant milestone in the Global Innovation Index (GII) 2024, securing the 39th position among 133 global economies. This leap in ranking reflects India's commitment to fostering a robust innovation ecosystem that is underpinned by strong policies, investment in research and development (R&D), and a collaborative environment for startups and industries. The country's growing innovation potential has been supported by government initiatives that prioritize technological advancement, ease of doing business, and entrepreneurship. This impressive achievement is a clear indication of India's emergence as a global innovation leader, a feat that also underscores its rapid transformation from a developing economy into a hub of cutting-edge technological and scientific breakthroughs.

3

Insights into India's Manufacturing Growth: Annual Survey of Industries (ASI) Results 2022-23

The Ministry of Statistics and Programme Implementation (MoSPI) has released the results of the Annual Survey of Industries (ASI) for the reference periods April 2022 to March 2023 (i.e., financial year 2022-23) referred to as ASI 2022-23 in this press note. This survey's fieldwork was conducted from November 2023 to June 2024 for ASI 2022-23.

The timely release of the Annual Survey of Industries provides meaningful insight into the dynamics of change in the composition, growth, and structure of various manufacturing industries in terms of output, value-added, employment, capital formation, and a host of other parameters.

It provides valuable input to the National Accounts Statistics at the national and state levels. The results are prepared at the state and significant industry levels, ensuring the audience is updated with the latest economic data.

Download the report from here.

4

Understanding WTO Trade Remedies: Anti-Dumping, Countervailing, and Safeguard Measures in India

Under the existing WTO arrangement, and in terms of various provisions under the Customs Tariff Act of 1975 (as amended in 1995) and Rules framed thereunder, anti-dumping/Countervailing/Safeguard measures constitute the legal framework. This framework is crucial as it addresses the global issue of dumping /subsidization/sudden surge in imports of goods and articles by exporting companies and firms of any country from any part of the world, providing the domestic industry with necessary relief and protection.

The various trade remedial measures mandated by WTO Agreements are as follows:

- Anti-dumping duty is a measure to rectify the situation arising out of the dumping of goods and its trade distortive effect.
- Countervailing measures seek to counteract artificially low prices that are a result of subsidies or assistance granted by the government in the exporting country to its local industry. Subsidies can be in the form of subsidized loans, tax exemptions, indirect payments, etc., because of which exporters are able to export at lower prices.
- Safeguard measure is used when imports of a particular product increase unexpectedly to a point that they cause or threaten to cause serious injury to domestic producers of "like or directly competitive products". Safeguards measures give domestic producers a period of grace to become more competitive vis-a-vis imports.

Legal Framework for various trade remedial measures is as under:

Anti-dumping Duty

- Article VI of GATT 1994
- Agreement on Anti-dumping
- Sections 9A and 9B of the Customs Tariff Act, 1975 as amended in 1995
- Customs Tariff (Identification, Assessment and Collection of Anti-Dumping Duty on Dumped Articles and for Determination of Injury) Rules, 1995

Countervailing Duty

- Article VI of GATT 1994
- Agreement on Subsidies and Countervailing Measures
- Section 9 of Customs Tariff Act 1975 as amended in 1995
- Customs Tariff (Identification, Assessment and Collection of Countervailing Duty on Subsidized Articles and for Determination of Injury) Rules, 1995

Safeguard Measures

- Article XIX of GATT
- Agreement on Safeguards
- Section 8B of Customs Tariff Act, 1975
- Chapter III A of "The Foreign Trade (Development and Regulation) Act, 1992
- Customs Tariff (Identification and Assessment of Safeguard Duty) Rules 1997
- Safeguard Measures (Quantitative Restrictions) Rules, 2012

5

International Day of Non-Violence

The International Day of Non-Violence, celebrated annually on October 2, marks the **birth anniversary of Mahatma Gandhi**, a global beacon of peace and non-violence. This day, proclaimed by the **United Nations in 2007**, serves as a reminder of the power of non-violence in shaping societies.

Mahatma Gandhi's philosophy of **Satyagraha and non-violent resistance**, remains one of the most potent forces for change in modern history. His peaceful protests against British rule, particularly the **Dandi March in 1930**, exemplified his belief in the power of non-violence to confront oppression. For Mahatma Gandhi, non-violence was not merely a political tool but a way of life, grounded in the belief that peace could only be achieved through peaceful means. In an era marked by **political, social, and environmental challenges,** Mahatma Gandhi's principles of non-violence resonate deeply. **Terrorism, conflict, climate change, and growing inequality** emphasize the urgent need for peaceful solutions.

Gandhi's belief in the intrinsic goodness of humanity offers a roadmap for healing divisions and addressing modern crises, including pandemics and poverty. His philosophy reminds us that peace is not just a distant ideal but an achievable goal! His teachings offer a timeless message of hope and reconciliation. Mahatma Gandhi's wisdom extended beyond political resistance to touch on issues of sustainability. His famous quote, **"There is enough for everyone's need, but not for everyone's greed,"** underscores the link between non-violence and responsible resource use.

In today's context, his values of simplicity, conservation, and self-reliance are reflected in India's initiatives like the **Swachh Bharat Abhiyan (Clean India Campaign)**, which promotes cleanliness and environmental sustainability.

6

Anti-Dumping Measures for Fair Trade

In general parlance, dumping is considered to mean cheap or low-priced imports. However, dumping in its legal sense under the Trade Remedies Law means exporting goods by a producer exporter in the exporting country to India at a price lower than the prevailing price in that country's domestic market.

Initiating an Anti-dumping investigation is a serious process that requires substantial evidence of the alleged dumping of goods. This evidence must demonstrate that the dumped imports are causing material injury, threatening to cause material injury, or causing material retardation to the establishment of the domestic industry.

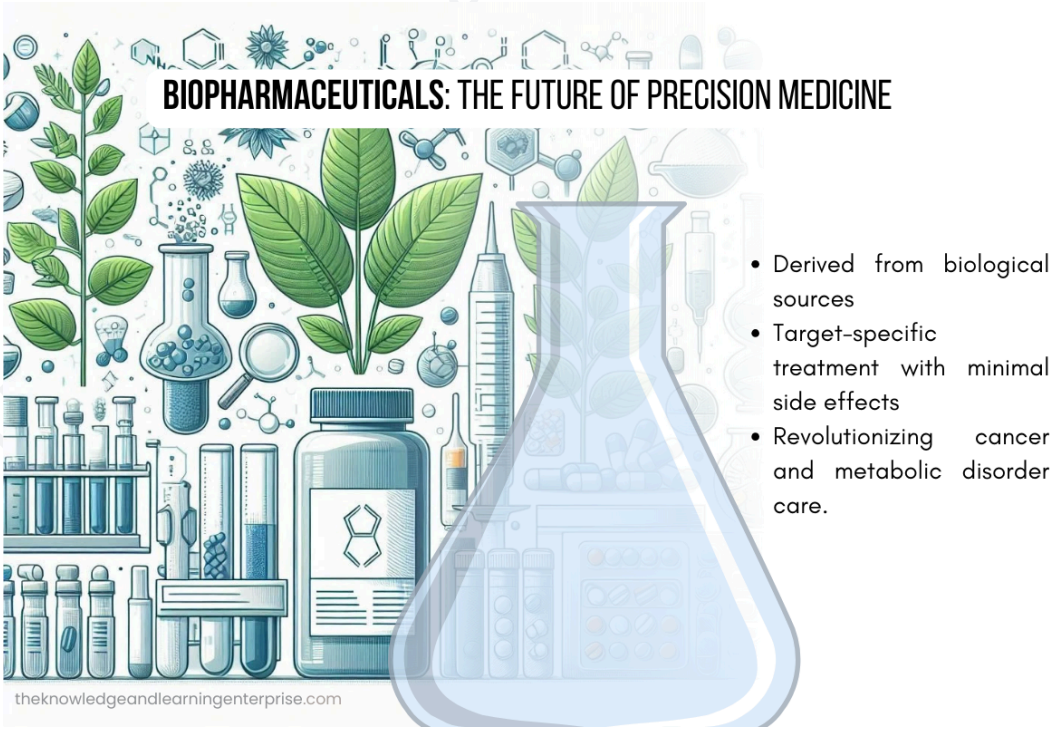
Injuries may be analyzed regarding the volume and price effects of imports. The parameters by which injury to the domestic industry is to be assessed in the anti-dumping proceedings are well elaborated in Annexure-II of the Customs Tariff (Identification, Assessment, and Collection of Anti-dumping duty on dumped articles and for Determination of Injury) Rules, 1995, comprising of such economic indicators as having a bearing upon the state of the industry including the natural and potential decline in sales, profits, output, market share, productivity, return on investments or utilization of capacity; factors affecting domestic prices; the magnitude of the margin of dumping; actual and potential adverse effects on cash flow, inventories, employment, wages, growth, ability to raise capital investment etc.

The concept of 'Injury Margin' is crucial in anti-dumping investigations. It refers to the difference between the Non-Injurious Price and the Landed Value of the dumped imports of the like articles. The landed Value, for this purpose, is the assessable value under the Customs Act and the applicable essential Customs duties, excluding CVD, SAD, and special duties.

7

SCIENCE WATCH: Biopharmaceuticals Usher in a New Era in Medicine

Biopharmaceuticals refer to pharmaceutical substances or drugs derived from biological sources. These drugs are increasingly being used in nearly all branches of medicine and have become one of the most effective clinical treatment modalities for a broad range of diseases, including cancers and metabolic disorders. They are produced using biotechnology techniques especially genetic engineering, hybridoma technology, recombinant human technology, gene transfer, or antibody production methods. Biopharmaceuticals are known to target only specific molecules, rarely causing the side effects associated with conventional small-molecule drugs.



Additionally, compared with conventional drugs, they are known to exhibit high specificity and activity. The first biopharmaceutical substance approved for therapeutic use was biosynthetic human insulin made via recombinant DNA technology in 1982 under the trade name Humulin. The insulin was developed by Genentech but licensed to Eli Lilly and Company, who manufactured and marketed it starting in 1982. In India, most of the growth in Indian biopharmaceuticals is because of vaccines, compared to therapeutics and diagnostics. Indian companies manufacture an increasingly wide range of biopharmaceutical products such as recombinant insulin, recombinant hepatitis-B vaccine etc.

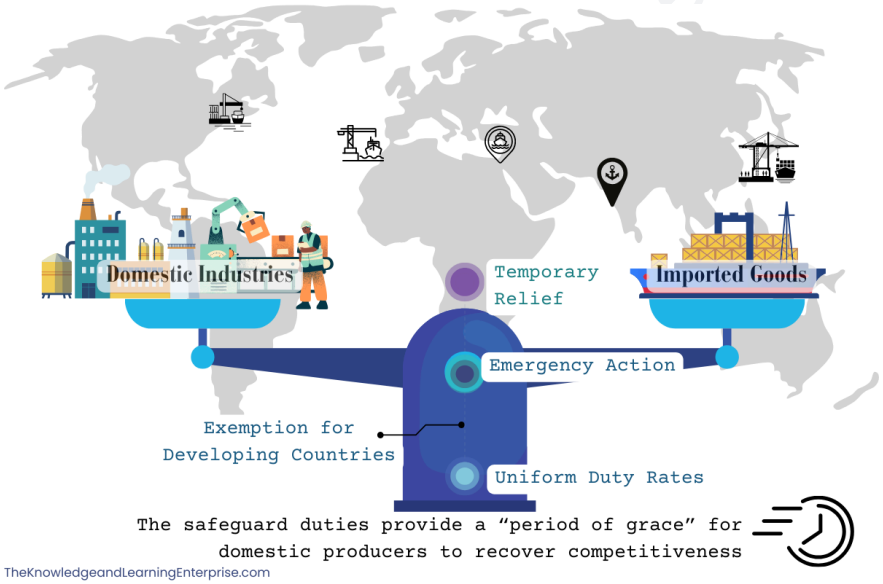
"*We should keep doing our work, even if it is unrecognized or un-appreciated.*"

Ram Manohar Lohia

8

Safeguard Measures: A Brief Overview

Safeguard measures are defined as "emergency" actions to address serious injury to the importing Member's domestic industry for a particular product. Safeguard duties give domestic producers a period of grace to become more competitive vis-à-vis imports, when imports of a particular product suddenly increase to a point that they cause or threaten to cause serious injury to domestic producers of like or directly competitive products, a safeguard duty is used as temporary relief.

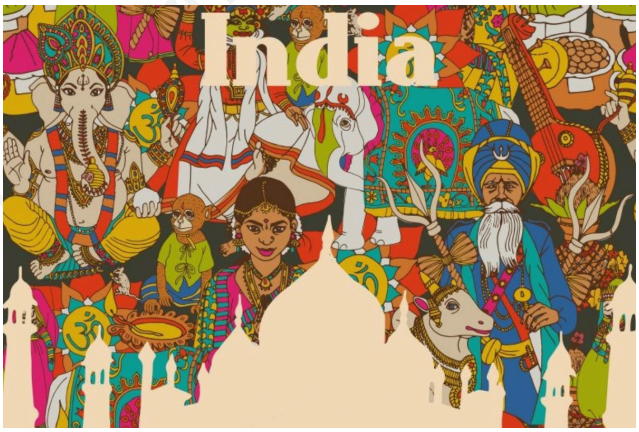


The Safeguard duties are applicable against all the countries with uniform rate of duty unlike the anti-dumping duties. Safeguard Measures are applicable on all imports of the like article or directly competitive article from all the countries. However, the safeguard duty is applicable to only those developing countries where the imports are more than 3%, provided that developing country members with less than 3% share collectively account for not more than 9% of the total imports of the product under consideration.

9

India Recognizes Five New Classical Languages

The Union Cabinet has approved to confer the status of classical language to **Marathi, Pali, Prakrit, Assamese and Bengali** languages. The classical languages serve as a custodian of *Bharat's* profound and ancient cultural heritage, embodying the essence of each community's historical and cultural milestone.



The Government of India decided to create a new category of languages as "Classical Languages" on 12th October 2004 declaring Tamil as a classical language and setting following as criteria for the status of classical language:

A. High antiquity of its early texts/ recorded history over a thousand years.

B. A body of ancient literature/ texts, which is considered a valuable heritage by generation of speakers.

C. The literary tradition must be original and not borrowed from another speech community.

A Linguistic Experts Committee (LEC) was constituted by the Ministry of Culture under Sahitya Akademi in Nov 2004 to examine the proposed languages for the status of classical language.

Image Credit: iStock

10

Countervailing Duties (CVDs): A Tool for Fair Trade

Countervailing Duties (CVDs) are applicable when a government in the exporting country provides subsidies or assistance to a local industry. This can be in the form of subsidized loans, tax exemptions, indirect payments, etc. The assistance provided enables these foreign suppliers and manufacturers to potentially export and sell the goods for a price less than that at which domestic companies of the target member country can reasonably sell.

Countervailing Duties are meant to neutralize the adverse effects of the subsidies allowed for a particular product in an exporting member country. CVD Investigations can be initiated, if there is sufficient evidence to the effect that; there is subsidy, there is injury to the domestic industry; and there is a causal link between the subsidized imports and the injury, that is to say, that the subsidized imports have caused the alleged injury. In CVD cases, a pre-initiation consultation is granted to the government of the subject country(ies) for defending their respective interest.

"A man is but the product of his thoughts. What he thinks, he becomes."

Mahatma Gandhi

11

India's Renewable Energy Boom Creates Over a Million Jobs

In a significant milestone for India's renewable energy sector, the total number of jobs reached an estimated 1.02 million in 2023, according to the 2024 Annual Review by the International Renewable Energy Agency (IRENA). The global renewable energy workforce grew to 16.2 million, up from 13.7 million in 2022, with India making a notable contribution to this rise.

The report, developed in collaboration with the International Labour Organization (ILO), highlights India's growing leadership in clean energy and its focus on creating green jobs that drive economic growth. As renewable energy continues to grow in India, it is not only boosting the economy but also creating sustainable livelihoods for millions. The sector plays a vital role in shaping a greener future, supporting India's journey toward energy independence and environmental sustainability while opening up new avenues for employment across the country.

Initiatives such as the National Green Hydrogen Mission, PM-KUSUM, PM Surya Ghar, and the PLI scheme for solar PV modules are instrumental in expanding renewable technologies and enhancing workforce skills. By prioritizing job opportunities alongside energy transition, India not only advances its environmental goals but also fosters a robust economy that supports livelihoods nationwide. This dual focus on sustainability and employment positions India as a global leader in renewable energy, paving the way for a cleaner, greener future.

12

Logistics Data Bank Tracks Over 75 Million EXIM Containers

Logistics Data Bank (LDB), a key initiative under the collaborative efforts of NICDC Logistics Data Services Ltd. (NLDSL), has achieved a significant milestone by tracking over 75 million EXIM containers. This achievement underscores the pivotal role of NLDSL in transforming India's logistics ecosystem, providing the sector with greater visibility and analytics.

LDB, as a single-window container logistics visualization system, offers comprehensive tracking using container numbers. It tracks containers between ports and their hinterlands, including Inland Container Depots (ICDs), Container Freight Stations (CFSs), port-associated parking plazas, toll plazas, railway stations, industrial corridors, SEZs, empty yards, etc., during EXIM and domestic journeys. This extensive tracking capability ensures the effectiveness and reliability of the system.

India's LPI ranking improved from 44 in 2018 to 38 in 2023, showcasing the significant advancements in logistics efficiency driven by LDB's contributions.

Image Credit: Pixabay

13

Government Welfare Schemes for Unorganised Workers: A Guide to Social Security Benefits

Ministry of Labour and Employment is developing a Standard Operating Procedure (SOP)/Manual in the form of guidelines containing the different categories of unorganized workers and matching them with a bucket of central & state welfare schemes, i.e., Pradhan Mantri Jeevan Jyoti Bima Yojana (PMJJBY), Pradhan Mantri Suraksha Bima Yojana (PMSBY), Pradhan Mantri Jan Arogya Yojana (PM-JAY), Pradhan Mantri Shram Yogi Maan-dhan (PM-SYM), etc. under which they can be given coverage of social security for life insurance, health benefits, pension, housing, education and other benefits. Some priority **areas** of the Ministry are as follows:

1. Bringing Beedi/Cine/Non-Coal Mineworkers, **aged 70 years and above**, under the health benefits of **Ayushman Bharat** – Pradhan Mantri Jan Arogya Yojana (PM-JAY).
2. Strengthening a **coordinated approach** to work with the State BoCW Welfare Boards to extend the benefits of various central government schemes to BoC workers by utilizing the BoCW cess fund.
3. **Follow up** with the States/UTs to expedite the integration of BoC workers' data with the Ministry's e-Shram portal, enabling access to various schemes as a one-stop solution for unorganized workers.

"A room without books is like a body without a soul"

Marcus Tullius Cicero

14

Exploring the India-UAE Bilateral Investment Treaty (BIT) 2024: Key Features and Implications for Investors

The Bilateral Investment Treaty (BIT), signed on 13th February 2024 in Abu Dhabi, UAE, between the Government of the Republic of India and the Government of the United Arab Emirates (UAE), entered into force on 31st August 2024. This new BIT with UAE is significant as it provides continuity of investment protection to investors of both countries, replacing the earlier Bilateral Investment Promotion and Protection Agreement (BIPPA) between India and UAE that expired on 12th September 2024.

UAE is the seventh largest country, with a share of 3% in the total Foreign Direct Investment (FDI) received in India, with a cumulative investment of approximately $19 billion from April 2000 to June 2024. India also makes 5% of its total Overseas Direct Investments in UAE to $15.26 Billion from April 2000 - August 2024. India – UAE BIT 2024 is expected to increase the comfort level and boost the investors' confidence by assuring the minimum standard of treatment and non-discrimination while providing an independent forum for dispute settlement by arbitration. However, while providing investor and investment protection, the balance has been maintained about the State's right to regulate and thereby provides adequate policy space.

The signing and enforcement of the BIT reflect both nations' shared commitment to enhancing economic cooperation and creating a more robust and resilient investment environment. The Treaty is not just a legal document, but a symbol of the promising future of India-UAE economic relations. It is expected to pave the way for increased bilateral investments, benefiting businesses and economies in both countries.

Some of the key features of the India-UAE BIT 2024 are:

1. The new BIT offers a closed asset-based definition of Investment with comprehensive coverage, including Portfolio Investment. This ensures that a wide range of investments are protected under the Treaty, providing a sense of security to the investors.
2. It ensures fair treatment of investments, with obligations for no denial of justice, no fundamental breach of due process, no targeted discrimination, and no manifestly abusive or arbitrary treatment. This commitment to fair treatment instills confidence in the investment environment.There is scope for measures such as taxation, local government, government procurement, subsidies or grants, and Compulsory licenses.
3. It includes Investor-State Dispute Settlement (ISDS) through arbitration with mandatory exhaustion of Local remedies for 3 years
4. General and Security Exceptions
5. Right to Regulate for State
6. The Treaty also specifies that no investor claims can be made in case investments involve corruption, fraud, round-tripping, etc. This provision is in place to ensure that investments are made under fair and legal conditions, and to discourage any unethical practices in the investment process. Provision of National Treatment,
7. The Treaty protects investments from Expropriation and provides for Transparency, Transfers, and Compensation for losses.

The India-UAE 2024 BIT can be accessed at Department of Economic Affairs, Ministry of Finance website

Source: PIB

15

Critical Minerals: The Building Blocks of the Global Clean Energy Transition

The world's energy system is mainly powered by fossil fuels. The transition to a low-carbon one will shift its underpinnings away from coal, oil, and gas to the minerals needed for solar, wind, nuclear, and other technologies.

- **Bauxite**: Primary source of aluminum. Essential for wind turbines, solar panels, batteries, electrolyzers, and transmission cables.
- **Chromium**: Key for geothermal and concentrated solar power. Used in wind turbines, and for radiation shielding in nuclear power plants.
- **Cobalt**: Used in consumer electronics, catalysts for the oil industry, resistant metal alloys, critical components in many lithium-ion battery technologies.
- **Copper**: Critical element in solar photovoltaics, wind power, battery storage, and electricity grids.
- **Graphite**: Key component of battery anodes and therefore important for the transition to electric vehicles, and stationary batter- les for balancing electricity grids. Lithium: Core component of lithium-ion batteries.
- **Manganese**: Widely used in solar and wind power, and in lithium-ion batteries for electric cars. Molybdenum: Has a very high electrical conductivity but expands little when exposed to heat.
- **Nickel**: Key component in the cathodes of lithium-ion batteries in electric cars.
- **Rare earths**: Used in wind power for permanent magnets.
- **Silver**: Its most important role in clean energy is in solar photo- voltaic and electric vehicles.
- **Uranium**: Primary fuel for nuclear energy production.

16

Comprehensive Review of India's Income-tax Act 1961: A Step Toward Simplification and Efficiency

Review of Income-tax Act. In pursuance of the announcement in the Union Budget 2024-25 by Union Minister for Finance and Corporate Affairs Smt. Nirmala Sitharaman, the Central Board of Direct Taxes (CBDT) has formed an internal committee to oversee a comprehensive review of the Income-tax Act, 1961 (Act). The goal is to make the Act concise, clear, and easy to understand, which will reduce disputes, litigation, and provide greater tax certainty to taxpayers.

The committee invites public inputs and suggestions in four categories:

1. Simplification of Language
2. Litigation Reduction
3. Compliance Reduction, and
4. Redundant/Obsolete Provisions

To facilitate this, a web page has been launched on the e-filing portal, which can be accessed here.

The above link is live and accessible to the stakeholders/experts/public in the E-filing portal from 06.10.2024. The stakeholders/experts/public can access the page by entering their name and mobile number, followed up by a validation via OTP.

Suggestions by stakeholders/experts/public should specify the relevant provision of the Income-tax Act, 1961 or Income-tax Rules, 1962 (mentioning the specific section, sub-section, clause, rule, sub-rule, or form number), as the case may be, to which the suggestion relates under the aforementioned four categories.

Source: PIB

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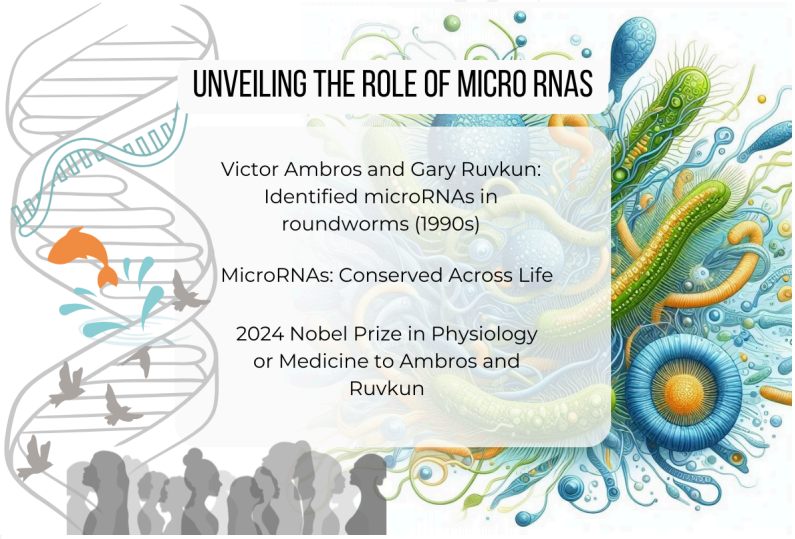
2024 Medicine Nobel Prize Awarded for Groundbreaking Discovery of microRNAs



The 2024 Nobel prize in Physiology or Medicine has been awarded to geneticists Victor Ambros and Gary Ruvkun for the discovery of C, a class of tiny RNA molecules that help to control how genes are expressed in multicellular organisms. (miRNA is not to be confused with messenger RNA or mRNA, which became a household name because of its application to vaccines against COVID-19 and won a Nobel prize last year.)

In the 1990s, the laureates identified genes that encoded microRNAs in the roundworm, Caenorhabditis elegans. For years, the discovery was viewed as a quirk unique to roundworms, with little relevance to other organisms. The discovery that microRNAs are conserved across the tree of life caused the field to explode.

18

Jal Jeevan Mission: Ensuring Tap Water Access to Every Rural Household by 2024

The Jal Jeevan Mission (JJM) was launched on August 15, 2019, with the ambitious goal of providing tap water supply to every rural household by 2024. At the time of its inception, only 3.23 crore (17%) of rural households had tap water connections. The mission aims to bridge this gap by providing nearly 16 crore additional households with tap water by 2024, ensuring the functionality of existing water supply systems, and directly benefiting over 19 crore rural families. This initiative is intended to reduce the rural-urban divide and enhance public health.

Jal Jeevan Mission also strives for the freedom of mothers and sisters from centuries old drudgery of fetching water for the household, and improving their health, education and socio- economic condition. The Mission is bringing 'ease of living' and adding pride and dignity to rural families. Jal Jeevan Mission also implements source sustainability measures as mandatory elements, such as recharge and reuse through greywater management, water conservation and rainwater harvesting. The Mission is based on a community approach to water and will include extensive Information, Education and Communication (IEC) as a key component. JJM looks to create a *jan andolan* for water, thereby making it everyone's priority.

Image Credit: Pixabay

19

Geoffrey Hinton Wins 2024 Nobel Prize for Pioneering AI and Deep Learning Innovations

Geoffrey Hinton, a computer scientist whose pioneering work on deep learning in the 1980s and 90s underpins all of the most powerful AI models in the world today, has been awarded the 2024 Nobel Prize for Physics by the Royal Swedish Academy of Sciences. Hinton shares the award with fellow computer scientist John Hopfield, who invented a type of pattern-matching neural network that could store and reconstruct data. Hinton built on this technology, known as Hopfield networks, to develop back propagation, an algorithm that lets neural networks learn. [*Source: Nature]*

Image Credit: Pexels

20

Explore Hanle Dark Sky Reserve: A Stargazer's Paradise in India

Expert astrophotographers and amateur astronomers came together at the Hanle Dark Sky Reserve between 29 September and 4 October 2024 for the second Star Party.

The second star party, a unique event, was made possible through a collaborative effort. The Indian Institute of Astrophysics (IIA), an autonomous institute of the Department of Science and Technology (DST), joined hands with the Department of Wildlife Protection of UT Ladakh and Bhabha Atomic Research Centre (BARC) to

organize this event. Their combined efforts attracted more than 45 astronomy enthusiasts from all over the country.

Hanle and the surrounding region are host to some of the darkest night skies in India. Hence, the Hanle Dark Sky Reserve (HDSR), centered around the Indian Astronomical Observatory, was notified by the Govt. of Ladakh in December 2022, and since then, **it has been a major attraction for astro-tourism from across the country**.

HDSR is a science-based socio-economic development project that aims to preserve the darkness of the night sky through various measures to curb light pollution. It is coupled with an astronomy program in which local villagers have been provided telescopes and trained to be astronomy guides or HDSR Astronomy Ambassadors, thereby earning revenue for the local community.

Hanle holds a special place among the amateur astronomy community in India. The extremely dark sky, along with the exceptionally clear and transparent atmosphere, allows serious astronomy enthusiasts to visually see, as well as photograph, faint celestial objects which cannot be done from other locations. The participants of the Star Party, chosen from more than 200 people who had registered based on their experience and expertise, came from across India, showcasing the high level of interest and expertise in astronomy among the attendees.

Image Credit: Pixabay

21

Marine Resource Geopolitics at Indo-Pacific Regional Dialogue 2024

The three-day-long Indo-Pacific Regional Dialogue 2024 (IPRD-2024) concluded on **05 Oct 24** in New Delhi. This annual apex-level strategic dialogue of the Indian Navy was conducted from **03 – 05 October** and saw active participation from globally renowned experts from India and abroad, senior officers from the Indian Armed Forces and the Government of India, scholars, and the public at large. The conference witnessed intensive deliberations in several sub-topics under the overarching theme of ***"Resource-Geopolitics and Security in the Indo-Pacific."***

The conference, which was spread over three days, concentrated on the significant marine resources of the Indo-Pacific, such as offshore hydrocarbons, fish, and other living marine resources, as well as mineral resources of the seabed. Distinguished

speakers – academic experts and practitioners – from **over twenty countries** participated in this mega-conference and presented regional perspectives, backed by their incisive analysis, on various issues impacting marine resources.

With its thematic focus on resource-geopolitics, the conference also examined the ways in which the competition for resources could potentially fuel contestations. It also explored possible avenues through which such situations could be managed, with a strong emphasis on sustainable development and the responsible harnessing of resources. This hopeful perspective featured extensively in the intensive deliberations during the conference.

The IPRD 2024 offered a platform for the free exchange of ideas, not only to the countries located within the geographic expanse of the Indo-Pacific but also to others who have a stake in this region. A common theme emerging from the conference was the urgent need for stakeholder cooperation. The conference underscored the importance of working together to find workable solutions that are inclusive, focused on sustainable economic development, and fostering peace, thereby uniting all participants in a common cause.

The IPRD 2024 was organized by the National Maritime Foundation (NMF), New Delhi, as the Indian Navy's knowledge partner.

Source: PIB

Image Credit: Pixabay

"As soon as you trust yourself you will know how to live"

Johann Wolfgang Von Goethe

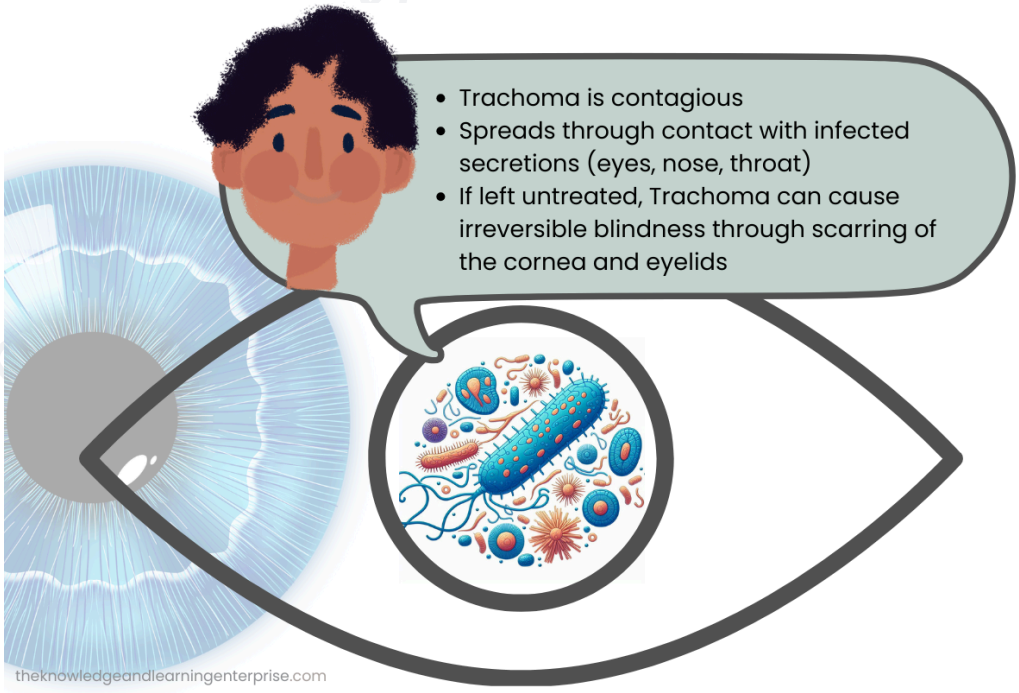
22

How India Successfully Eliminated Trachoma as a Public Health Threat

India has Eliminated Trachoma

The World Health Organisation (WHO) has declared that the Government of India has eliminated Trachoma as a public health problem, becoming the third country in the Southeast Asia Region to achieve this milestone.

Trachoma is a bacterial infection that affects the eyes. It is caused by the bacterium Chlamydia Trachomatis. Trachoma is contagious, spreading through contact with infected people's eyes, eyelids, nose, or throat secretions; if left untreated, it causes irreversible blindness.



WHO has termed Trachoma as a neglected tropical disease. WHO estimates suggest that 150 million people worldwide are affected by Trachoma, and 6 million of them are blind or at risk of visually disabling complications. Trachoma is found in underprivileged communities living in poor environmental conditions.

Trachoma was the leading cause of blindness in the country during 1950-60. The Government of India launched the National Trachoma Control Program in 1963, and later, Trachoma control efforts were integrated into India's National Program for Control of Blindness (NPCB).

In 1971, the incidence of blindness due to Trachoma was 5%. Due to the various interventions under the National Programme for Control of Blindness & Visual Impairment (NPCBVI), it has come down to less than 1%. The WHO SAFE strategy was implemented throughout the country, and SAFE stands for adopting surgery, antibiotics, facial hygiene, environmental cleanliness, etc. As a result, in 2017, India was declared free from infectious Trachoma. However, surveillance continued for trachoma cases in all the districts of India from 2019 onwards till 2024.

The National Trachomatous Trichiasis (TT only) Survey was also carried out in 200 endemic districts of the country under NPCBVI from 2021-24, which was mandated by WHO to declare that India has eliminated Trachoma as a public health problem.

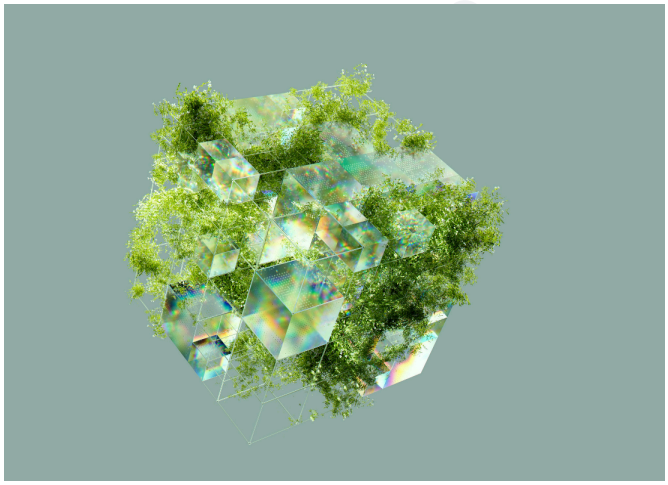
The NPCBVI team compiled all the reports in a specific dossier format and shared them with the WHO country office for final scrutiny. Finally, after years of fighting against Trachoma, the WHO declared that India had eliminated it as a public health problem.

"Adjust yourself in every situation and in any shape. But most importantly find your own way of flow"

23

Google DeepMind's Demis Hassabis Wins Nobel Prize for AI-Powered Protein Structure Prediction

Google DeepMind founder **Demis Hassabis** has won a joint Nobel Prize for Chemistry for using artificial intelligence to predict the structures of proteins. Hassabis shares half the prize with **John M. Jumper**, a director at Google DeepMind, while the other half has been awarded to **David Baker**, a professor in biochemistry at the University of Washington, for his work on computational protein design. The potential impact of this research is enormous. Proteins are fundamental to life, but understanding what they do involves figuring out their structure—a challenging puzzle that once took months or years to crack for each type of protein.



By cutting down the time it takes to predict a protein's structure, computational tools such as those developed by this year's award winners are helping scientists better understand how proteins work and opening up new avenues of research and drug development. The technology could unlock more efficient vaccines, speed up research for the cure to cancer, or lead to completely new materials. **It also marks a second Nobel win for AI, after computer scientist Geoffrey Hinton was awarded the 2024 Nobel Prize in physics for his foundational contributions to deep learning.**

Image Credit: Pexels

24

How India's Thali and Millet Mission are Leading the Global Shift Towards Sustainable Food Practices

Food plays a crucial role in human survival and in shaping environmental sustainability. It impacts biodiversity, water use, and greenhouse gas emissions. Sustainable food choices are becoming increasingly important as we aim to balance human health with the health of our planet.

Studies increasingly show that our current food systems are straining the planet's resources. Yet, amidst this challenge, there is a glimmer of hope. The WWF's 2024 Living Planet Report highlights India's food practices as a model of sustainability. Remarkably, if the world adopted India's consumption habits, we would only need 0.84 of an Earth by 2050 to sustain global food production. This recognition positions India as a potential leader in the global movement towards environmentally responsible consumption.

Indian Thali: Food for Sustainability

The traditional Indian diet, primarily plant-based, stands out as an environmentally sustainable model. By relying on grains, pulses, lentils, and vegetables rather than resource-intensive animal products, the Indian diet uses fewer natural resources and emits fewer greenhouse gasses.

According to the WWF report, if all countries followed India's consumption patterns, global resource demand would be significantly lower. The report estimates that by 2050, the world would only need 0.84 of an Earth to sustain food production if India's diet model were adopted worldwide.

The report mentions India's approach to sustaining global food production by 2050. It emphasizes traditional and resilient crops like millet through initiatives such as the National Millet Campaign.

"Self control is strength. The right thought is mastery. Calmness is power"

Anonymous

25

PM Gati Shakti: Revolutionizing India's Infrastructure and Connectivity for a Seamless Future

The National Master Plan for Multi-modal Connectivity, launched on October 13, 2021, is set to celebrate its third anniversary this Sunday. This digital platform is designed to bring various Ministries, including Railways and Roadways, to ensure integrated planning and coordinated execution of infrastructure projects. The initiative aims to provide seamless and efficient connectivity for the movement of people, goods, and services across various modes of transport, thereby enhancing last-mile connectivity and reducing travel time.

PM Gati Shakti incorporates the infrastructure schemes of different Ministries and State Governments such as Bharatmala, Sagarmala, inland waterways, dry/land ports, and UDAN. PM Gati Shakti incorporates the infrastructure schemes of various Ministries and State Governments such as Bharatmala, Sagarmala, inland waterways, dry/land ports, and UDAN.

Image Credit: Bing AI

26

New Guidelines to Combat Greenwashing: Protecting Consumers from Misleading Environmental Claims

In the exercise of the mandate to regulate matters relating to misleading advertisements that are prejudicial to the interest of the public and consumers, the Central Consumer Protection Authority (CCPA) has issued guidelines for the Prevention and Regulation of Greenwashing and Misleading Environmental Claims to address the issue of greenwashing and misleading environmental claims. These Guidelines seek to foster truthful practices where environmental claims are honest and meaningful, thus enhancing consumer trust and encouraging sustainable business practices**.** The notable suggestions include:

- Specific environmental claims must be supported by disclosure about credible certification and reliable scientific evidence.
- Words such as sustainable, natural, organic, regenerative, and similar assertions shall not be used without adequate, accurate, and accessible qualifiers.

The guidelines stress the importance of adequate disclosures for specific environmental claims, such as 'natural,' 'organic,' and 'pure.' This requirement is a significant step towards ensuring clarity and honesty in advertising.

Image Credit: Bing AI

27

A Complete Guide to the Direct Tax *Vivad Se Vishwas* Scheme 2024: Eligibility, Forms, and Timelines

CBDT issues Frequently Asked Questions (FAQs) on Direct Tax Vivad Se Vishwas Scheme, 2024

To facilitate the various queries raised by the stakeholders following the enactment of the Direct Tax Vivad Se Vishwas (DTVSV) Scheme, 2024, the Central Board of Direct Taxes (CBDT) has today issued a Guidance Note in the form of Frequently Asked Questions (FAQs). This note is designed to provide clarity and assist taxpayers in better understanding the scheme's provisions. The Guidance Note can be accessed on the Income Tax Department's official portal at https://incometaxindia.gov.in/news/circular-12-2024.pdf.

The Direct Tax Vivad Se Vishwas (DTVSV) Scheme, 2024, was announced in the Union Budget 2024-25 by the Union Finance Minister to resolve pending income tax disputes. The Finance (No. 2) Act of 2024 enacted the scheme. Additionally, the corresponding Rules and Forms for implementing the scheme were notified on September 20, 2024. For detailed provisions of the DTVSV Scheme, 2024, sections 88 to 99 of the Finance (No. 2) Act, 2024, may be referred to along with the Direct Tax Vivad Se Vishwas Rules, 2024.

"Nothing is impossible, the word itself says 'I' m possible'!"

Anonymous

28

India's Commitment to Ethical AI: Eight Key Projects Driving Responsible AI Development

The **IndiaAI Mission** has selected **eight responsible AI projects** against the Expression of Interest (EoI) floated under the **Safe and Trusted AI Pillar** of the IndiaAI Mission. Recognizing the need for adequate guardrails to advance the responsible development, deployment, and adoption of AI, the selected Responsible AI Projects include the development of Indigenous tools and frameworks and the establishment of guidelines for ethical, transparent, and trustworthy AI technologies.

Image Credit: Bing AI

Promoting Responsible AI Through Eight Strategic Projects

As AI continues to permeate various sectors of society, India is committed to investing in agile mechanisms for developing indigenous governance tools, frameworks, and guidelines that are based on Indian datasets and reflect its unique challenges, opportunities, and datasets. IndiaAI has issued an Expression of Interest (EOI) to support this vision to promote responsible AI projects across a range of critical themes. These themes include **Machine Unlearning, Synthetic Data Generation, AI Bias Mitigation, Ethical AI Frameworks, Privacy-Enhancing Tools, Explainable AI, AI Governance Testing, and Algorithm Auditing Tools, each playing a crucial role in the responsible development of AI.**

The details of the selected projects are given below:

S.No.	Name of the Theme	Name of the Selected Project	Title of the Project
1	Machine Unlearning	Indian Institute of Technology, Jodhpur	Machine Unlearning in Generative Foundation Models
2	Synthetic Data Generation	Indian Institute of Technology, Roorkee	Design and Development of Method for Generating Synthetic Data for Mitigating Bias in Datasets; and Framework for Mitigating Bias in Machine Learning Pipeline for Responsible AI
3	AI Bias Mitigation Strategy	National Institute of Technology Raipur	Development of Responsible Artificial Intelligence for Bias Mitigation in Health Care Systems
4	Explainable AI Framework	Defence Institute of Advanced Technology (DIAT), Pune in partnership with Mindgraph Technology Pvt. Ltd.	Enabling Explainable and Privacy Preserving AI for Security

5	Privacy Enhancing Strategy	Indian Institute of Technology, Delhi in partnership with Indian Institute of Technology, Dharwad, Indraprastha Institute of Information Technology, Delhi and Telecommunication Engineering Center (TEC)	Robust Privacy-Preserving Machine Learning Models
6	AI Ethical Certification Framework	Indraprastha Institute of Information Technology, Delhi in partnership with Telecommunication Engineering Center (TEC)	Nishpaksh: Tools for assessing fairness of AI model
7	AI Algorithm Auditing Tool	Civic Data Labs	ParakhAI - An open-source framework and toolkit for Participatory Algorithmic Auditing
8	AI Governance Testing Framework	Amrita Vishwa Vidyapeetham in partnership with Telecommunication Engineering Center (TEC)	Track-LLM, Transparency, Risk Assessment, Context & Knowledge for Large Language Models

Advancing India's Leadership in AI through the IndiaAI Mission

This initiative aligns with the Government of India's vision of leveraging **AI for inclusive growth. IndiaAI, an IBD (Independent Business Division)** under the **Digital India Corporation (DIC) of the Ministry of Electronics and IT (MeitY)**, is the implementation agency of the **IndiaAI Mission**, which aims to democratize AI's benefits across all strata of society, bolster India's global leadership in AI, foster technological self-reliance, and ensure ethical and responsible use of AI.

29

Seventh ISA Assembly: Accelerating Global Solar Energy Deployment for a Sustainable Future

The Seventh Session of the International Solar Alliance (ISA) Assembly, a significant event in the renewable energy sector, was inaugurated today in New Delhi. Representatives from 60 countries, including stakeholders in renewable energy, policymakers, and members of the International Solar Alliance, participated in the event. The focus of this Assembly will be on the strategies and mechanisms to expedite solar deployment across member countries, particularly in regions with limited energy access, a topic of great importance to our global community.

The Assembly is the apex decision-making body of ISA, 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. 120 countries are signatories to the ISA Framework Agreement, of which 102 countries have submitted the necessary instruments of ratification to become full members of the ISA. The Republic of India holds the office of the President of the ISA Assembly, with the Government of the French Republic as the co-president.

The Seventh Session of the ISA Assembly will deliberate on initiatives of ISA that impact energy access, security, and transitions with a focus on:

- Empowering member countries to adopt solar energy as the energy source of choice

- Make energy access universal by supporting solar entrepreneurs to scale up local solutions
- Mobilize finance to speed up solar deployment

About the International Solar Alliance

The International Solar Alliance is an international organization with 120 members 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.

ISA was formed at the 21st Conference of Parties (COP21) to the United Nations Framework Convention on Climate Change (UNFCCC) held in Paris in 2015 and 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 energy solutions powered by the sun, especially in the least Developed Countries (LDCs) and the Small Island Developing States (SIDS).

30

Abhidhamma Divas: Celebrating India's Enduring Spiritual Legacy and the Teachings of Buddha

India, the birthplace of Buddhism, holds an enduring spiritual legacy as the land where Gautam Buddha attained enlightenment and shared teachings that continue to shape human understanding.

The country's historical and cultural connection to Buddhism is vividly reflected through the veneration of sacred sites, including Bodh Gaya, where Buddha achieved Nirvana. These sites are not just places of worship, but living symbols of the Buddha's journey toward liberation. They invite seekers to walk the same path of introspection and peace, fostering a deep connection with the spiritual journey of Buddha.

Central to Buddha's teachings is the Abhidhamma, a profound philosophical component that extends beyond ethical conduct into the realms of mental discipline and self-awareness.

International Abhidhamma Divas

International Abhidhamma Divas, observed globally, celebrate this philosophical cornerstone, recognizing its timeless relevance in guiding ethical conduct and mental discipline. The occasion underscores the unique role of India in preserving and promoting the legacy of Buddhism to the world, a bridge between ancient wisdom and contemporary spiritual practices. It serves as a reminder of India's enduring bond with Buddhism, where Buddha's teachings continue to inspire spiritual seekers and those pursuing a life of mindfulness and inner peace.

Historical Background and Significance

Abhidhamma Divas commemorates the day when Lord Buddha descended from the celestial realm, *Tāvatiṃsa-devaloka*, to *Sankassiya* (now Sankisa Basantapur) in Uttar Pradesh. The Asokan Elephant Pillar, a historical marker at the site, marks this significant event. According to Theravāda Buddhist texts, Lord Buddha spent three months teaching the Abhidhamma to the deities in Tāvatiṃsa, including his mother. The celebration of Abhidhamma Divas coincides with the end of the first Rainy Retreat (Vassa) and the Pavāraṇā festival, a time when monks and nuns conclude their retreat period with a ceremony.

Image Credit: Pixabay

31

Draft National Sports Governance Bill 2024: A New Era for Indian Sports Governance and Athlete Welfare

The Draft National Sports Governance Bill 2024 establishes a comprehensive framework to promote the development and welfare of sportspersons, ensure ethical governance, and provide effective dispute-resolution mechanisms. The meeting aimed to gather various stakeholders' insights, suggestions, and feedback to create a law that benefits Indian sports. The Union Minister reiterated that stakeholders and the general public are encouraged to share their suggestions and comments on the draft bill.

The comments can be sent to the Ministry by email at draft.sportsbill@gov.in by 25.10.2024. Draft National Sports Governance Bill 2024 can be accessed at https://yas.nic.in/sports/draft-national-sports-governance-bill-2024-inviting-comments-suggestions-general-public-and.

The Ministry of Youth Affairs and Sports will continue to engage with various stakeholders as the draft bill progresses towards finalization, ensuring that the voices of athletes, administrators, experts and public are incorporated in shaping a progressive and sustainable sports governance framework for India.

Source: PIB

"You can't cross the sea merely by standing and staring at water"

Rabindranath Tagore

32

India's Fortified Rice Program: A Key Initiative to Combat Micronutrient Deficiencies

With the Union Cabinet approving the continuation of the initiative to provide fortified rice under all schemes of Government, including Pradhan Mantri Garib Kalyan Anna Yojana (PMGKAY) and Other Welfare Schemes etc. in its present form, from July 2024 and up to December 2028, the Centre is continuing the ambitious initiative as a complementary strategy to combat micronutrient deficiencies in the country. It's important to note that scientific evidence supports the safety of fortified rice for all, including individuals suffering from haemoglobinopathies such as

Thalassemia and Sickle Cell Anaemia, providing reassurance and confidence in the initiative.

India's rice fortification program, which began in 2019 as a pilot program and was subsequently scaled up in a 3-phased manner, has gained global recognition. It is a practice aligned with the guidelines of the World Health Organization (WHO), and according to WHO's 2018 recommendations, rice fortification with iron is essential in countries where rice is a staple food. With 65% of its population consuming rice daily, India's iron-fortified rice program is relevant and a source of pride.

The rice fortification ecosystem in India has expanded significantly. Of 30,000 operational rice mills, more than 21,000 have installed blending equipment, with a total capacity of 223 LMT of fortified rice per month. Testing infrastructure has also grown, with numerous NABL-accredited labs across India conducting rigorous quality checks on fortified rice.

Rice fortification is a well-established global practice. According to the Global Fortification Data Exchange, 18 countries actively allow rice fortification, 147 support salt fortification, 105 have adopted wheat flour fortification, 43 endorse oil fortification, and 21 promote the fortification of maize flour.

Image Credit: Pixabay

33

National Water Awards 2023: Honoring India's Champions of Water Conservation

The Department of Water Resources, River Development, and Ganga Rejuvenation (DoWR, RD & GR), under the Ministry of Jal Shakti announced the 38 winners, including joint winners, for the 5th National Water Awards, 2023, in 09 categories viz Best State, Best District, Best Village Panchayat, Best Urban Local Body, Best School or College, Best Industry, Best Water User Association, Best Institution (other than school or college), and Best Civil Society on 14th October 2024.

In the category of Best State, Odisha has been conferred the first prize, with Uttar Pradesh securing the second position and Gujarat and Puducherry jointly securing the third position. Each award winner will be conferred with a citation and a trophy, as well as cash prizes in certain categories.

Under the guidance of the Hon'ble Prime Minister, the Ministry of Jal Shakti has been undertaking a comprehensive campaign to spread awareness about water management and conservation nationally. From this standpoint, to create awareness among the people about the importance of water and to help motivate people to adopt the best water usage practices, the 1st National Water Awards were launched in 2018 by the DoWR, RD & GR. The 2nd, 3rd, and 4th National Water Awards were given for 2019, 2020 and 2022. The awards were not presented in 2021 due to the COVID-19 pandemic.

The National Water Awards (NWAs) focus on the good work and efforts made by individuals and organizations across the country in attaining the government's vision of a 'Jal Samridh Bharat'. The awards are intended to create awareness among people about the importance of water and motivate them to adopt the best water usage practices.

34

World Iodine Deficiency Day: Understanding the Vital Role of Iodine in Preventing Health Disorders

World Iodine Deficiency Day, also known as **Global Iodine Deficiency Disorders Prevention Day**, is observed annually on **the 21st of October.**

The day aims to raise awareness about iodine's essential role in maintaining good health and emphasize the consequences of iodine deficiency. This document outlines the importance of iodine in daily nutrition and its crucial significance in preventing iodine deficiency disorders.

Iodine is an essential component of the thyroid hormones **thyroxine (T4) and triiodothyronine (T3),** which regulate metabolism and are crucial for **fetal and infant development.** In foods and iodized salt, iodine exists in several forms, **including sodium and potassium salts, inorganic iodine (I2), iodate, and iodide**.

Iodide, the most common form, is quickly absorbed in the stomach and used by the thyroid for hormone production. Most excess iodide is excreted through urine. Iodine deficiency has multiple adverse effects on growth and development and is the most common cause of **preventable intellectual disability** in the world. Iodine deficiency disorders result from **inadequate thyroid hormone production secondary to insufficient iodine**. During pregnancy and early infancy, iodine deficiency can cause **irreversible effects.**

"Don't judge each day by the harvest you reap but by the seeds that you plant"

Robert Louis Stevenson

35

The UDAN Scheme: How India is Making Affordable Air Travel a Reality for All

The Journey of UDAN: Soaring Towards Inclusivity in Indian Aviation. In a country where the sky often symbolizes hope and aspiration, the dream of flying has remained an elusive luxury for many. This dream began to take shape with the launch of the Regional Connectivity Scheme (RCS) - UDAN, or "**Ude Desh ka Aam Nagrik,**" on October 21, 2016. Spearheaded by the Ministry of Civil Aviation (MoCA), UDAN aims to enhance regional air connectivity from unserved and underserved airports across India, making air travel affordable. As it celebrates its seventh anniversary, UDAN stands as a testament to the commitment of the Indian government to improve infrastructure and connectivity, especially in remote regions.

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 marked the beginning of a transformative journey in Indian aviation that would open up the skies to countless citizens. UDAN operates on a market-driven model, where airlines assess demand on specific routes and submit proposals during bidding rounds. The scheme 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 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 has fostered an environment where airlines can thrive while serving regions that have long been overlooked.

Image Credit: Bing AI

36

Stevia's Hidden Health Benefits

A Natural Sweetener with Potential to Treat Diabetes, Heart Disease, and Autoimmune Conditions

Candy Leaf (Stevia rebaudiana Bertoni), a plant recognized for its natural non-caloric sweetening characteristics, also has therapeutic properties for diseases like endocrine, metabolic, immune, and cardiovascular diseases because of its effect on cellular signaling systems, according to a new study.

Assam exports Stevia worldwide. The North Eastern Council (Government of India) also highlighted stevia cultivation's potential to help the northeast Indian economy due to high demand and use. A recent study by the Institute of Advanced Studies in Science and Technology (IASST) Guwahati has explored Stevia's medicinal properties and effects on cellular signaling mechanisms to prove Assam's Stevia's therapeutic qualities. Their multimodal strategy integrated network pharmacology with *in vitro* and *in vivo* techniques, showing that the plant used phosphorylation of Protein Kinase C (PKC) to inhibit a crucial cellular signaling route.

PKC is connected to inflammatory, autoimmune, endocrine, and cardiovascular illnesses. Stevia suppresses PKC phosphorylation, which alters downstream pathways that cause inflammation, a

significant cause of endocrine metabolic and cardiovascular issues.

The study shows Stevia's promise in this field for the first time. The study also found that active stevia molecules strongly interact with AMPK, highlighting the need for additional research.

This work, published in "Food Bioscience," revealed Stevia's potential and identified new targets for immunological endocrine and cardiovascular problems. It could have therapeutic effects on diabetes, type 1 and type 2, autoimmune diabetes, pre-diabetes, chronic inflammation-related autoimmune disease—rheumatoid arthritis—chronic kidney diseases, and cardiovascular diseases like hypertension, vasculopathy, and so on.

The study illuminates an undiscovered facet of Stevia, underlining the necessity of creative tactics and scientific data to support traditional therapeutic practices.

Source: PIB release.

Image Credit: Bing AI

"The time is always right to do what is right"

Martin Luther King Jr.

37

Exploring India's Maritime Heritage: Highlights from the 2nd National Lighthouse Festival in Puri

The 2nd National Lighthouse Festival

The 2nd National Lighthouse Festival was recently hosted by the Ministry of Ports, Shipping, and Waterways (MoPSW) at Puri. The event aimed to explore the vast potential of lighthouse tourism and strategies for preserving these maritime structures, blending tourism development with heritage conservation.

- A lighthouse is a tower or structure with a powerful light that helps guide ships and warn them of danger.
- Lighthouses are built on the coast, on islands, or on reefs. They can also be found at the entrance to bays and harbors.
- Lighthouses help mariners navigate safely, especially in dark or foggy conditions. They can warn of dangerous shallows and rocky coasts and help guide ships in and out of harbors.
- Lighthouses often have a rotating or flashing light at the top and may also have fog horns or sirens.
- Lighthouses remain an essential tool for navigation, even in the age of GPS and satellite navigation systems. They provide a reliable backup and are especially important in remote and weak signal areas.

A detailed presentation by the Directorate General of Lighthouses and Lightships (DGL) showcased the current status and prospects of lighthouse tourism in India, highlighting various initiatives underway. With an investment of ₹60 crore, 75 iconic lighthouses across nine coastal states and one union territory have been developed under the visionary leadership of the Hon'ble Prime Minister. Each lighthouse has become a beacon of heritage and recreation, with modern amenities such as museums, amphitheaters, children's parks, and more.

In Odisha, five lighthouses—Gopalpur, Puri, Chandrabhaga, Paradip, and False Point—have been developed as part of this initiative to promote lighthouse tourism. In the fiscal year 2023-24 alone, the 75 dedicated lighthouses attracted 16 lakh visitors.

Through this conclave, the Ministry of Ports, Shipping, and Waterways aims to raise awareness about the unique blend of history and tourism that lighthouses represent and how their preservation is essential for future generations. The event sets the stage for upcoming initiatives and collaboration in the lighthouse tourism sector.

Image Credit: Pexels

38

The Evolution of 'One Nation, One Election' in India: Historical Context and Future Implications

A Brief Background of One Nation One Election

Following the adoption of the Constitution of India in 1950, Indians were transformed from subjects to citizens. Citizenship empowered Indians to elect their representatives at the federal and state levels based on the principle of universal adult suffrage enshrined in Article 326 of the Constitution.

Article 324 of the Constitution mandated the creation of an independent body, namely the Election Commission of India, to "superintend, direct and control" elections to Parliament, state legislatures, and the offices of the President and the Vice President of India. To facilitate the conduct of elections by the Election Commission of India, Parliament enacted the Representation of the People Act, 1950 and Representation of the People Act, 1951, and a series of rules were framed to effectuate such legislation, including the Registration of Electors Rules, 1960 and Conduct of Elections Rules, 1961. Under these laws, the first general elections to Lok Sabha and all State Legislative Assemblies were held together in 1951-52. That practice continued over three subsequent general elections held in 1957, 1962, and 1967.

However, due to the premature dissolution of some Legislative Assemblies in 1968 and 1969, the cycle was disrupted for the first time in 1970. The Fourth Lok Sabha itself was dissolved prematurely, and elections were held in 1971. Over the next 50-plus years, India didn't have simultaneous elections. Since 2017, the NITI Aayog and the government have proposed a return to simultaneous elections in India, highlighting that asynchronous elections negatively impact administrative and developmental activities in poll-bound states/regions and the more extensive governance process in general. The NITI Aayog white paper and Law Commission

Reports also note that simultaneous elections would bring tremendous cost savings for political parties and the government.

Well done is better than well said

39

How Doppler-Enhanced Quantum Magnetometry Improves Atomic Clocks and Magnetometers

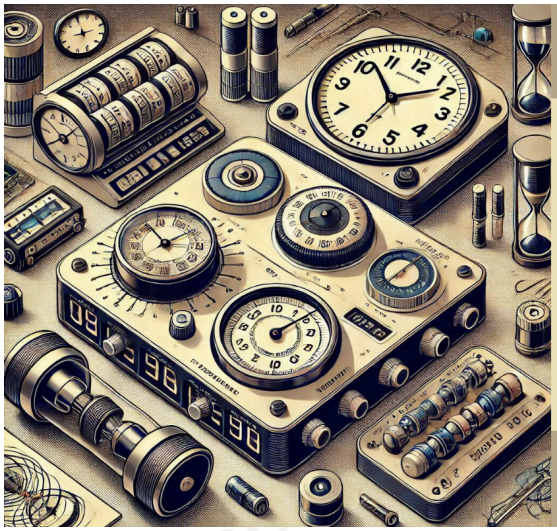
Towards More Precise Atomic Clocks Useful for Navigation, Telecommunication & Aviation

A team of experimentalists working with cold Rydberg atoms have used Quantum magnetometry to help the atomic clocks and magnetometers used for precise timekeeping in navigation, telecommunication, and aviation achieve higher precision and make them additionally robust.

A Rydberg atom is an excited atom with one or more electrons with a very high principal quantum number. This state of excitation is measured with a spectroscopic method called the Electromagnetically Induced Transparency (EIT). Researchers at the Raman Research Institute (RRI) have leveraged the Doppler effect to their advantage and achieved a ten times enhanced response to the magnetic field while performing quantum magnetometry (phenomenon exploiting the quantum nature of light and atoms for precision measurement of magnetic fields) on thermal rubidium atoms using Rydberg Electromagnetically Induced Transparency (EIT) in a room temperature-based environment.

Electromagnetically Induced Transparency (EIT) is a fascinating phenomenon that makes an opaque medium transparent, can slow down light pulses to crawling speeds, and even trap light inside atomic media. EIT has led to many vital applications in precise atomic clocks, atomic magnetometers, and quantum computation. EIT generally occurs in a three-level atomic system involving two atomic transitions addressed by a weak probe laser beam and an intense coupling laser beam. Scientifically, interference occurs when a wave can travel between two points via multiple paths, either resulting in their enhancement or cancellation. On

similar lines, an atom can transition between multiple quantized energy levels by different routes that can interfere. This determines the amount of light an atom absorbs. Like interference of light, where constructive interference gives bright fringes and destructive interference gives dark fringes, the probabilities of atomic transitions between these energy levels can also interfere destructively, known as quantum interference. It can result in atoms in a dark state not absorbing the probe light, thereby rendering the atomic medium transparent. This phenomenon is called Electromagnetically Induced Transparency (EIT). Deploying Rydberg EIT, the researchers detected atoms in their highly excited (Rydberg) states.



COLD RYDBERG ATOMS AND QUANTUM MAGNETOMETRY ADVANCING ATOMIC CLOCK PRECISION FOR NAVIGATION AND AVIATION.

Rydberg Electromagnetically Induced Transparency has a Rydberg state as one of the energy levels involved in the EIT process. Rydberg EIT signals were used to measure the response of the Rydberg atoms to the external magnetic field. When the Rydberg EIT was observed in an unconventional configuration of the probe and the coupling beam, where the Doppler shift was not compensated, an enhanced response to the magnetic field was observed. Generally, a moving observer perceives a Doppler shift as a wave's frequency change. When a laser beam flashes on atoms, their thermal motion leads to a Doppler shift – an atom moving towards the laser beam sees a higher frequency, whereas one moving away sees a lower frequency. This effect is generally assumed to be detrimental to sensing. The experimentalists, in the paper published recently in the New Journal of Physics, have demonstrated and successfully harnessed the quantum effects at room temperature by effectively using this Doppler effect to their advantage.

Cryogenically cooled superconducting devices are useful for sensing ultra-weak magnetic fields. Such Doppler-enhanced quantum Magnetometry offers a wide variety of applications, ranging from geophysics to the detection of brain activity and mineralization to space explorations and archaeology.

Image Credit: Bing AI

40

What to Expect from COP29 on Climate Change: Energy, Equity, and Future Targets

COP 29 ON CLIMATE CHANGE

The 29th Conference of Parties, to be held in Baku, Azerbaijan, will focus on enhancing the Nationally Determined Contributions and the New Collective Quantified Goal. The Global Stock Take on energy at COP28 made clear the need for transitioning away from fossil fuels to renewable energy, requiring member states to:

- transition away from fossil fuel in energy systems in a just, orderly, and equitable manner, accelerating action in this critical decade, in keeping with the science, and with developed countries taking the lead;
- increase global energy capacity threefold by 2030 and enhance the worldwide annual average rate of energy efficiency improvements twofold;
- eliminate inefficient fossil fuel subsidies that fail to tackle energy poverty or facilitate equitable transitions as swiftly as possible.

COP29 will mark the beginning of this journey spread over the next nine to 12 months when countries will be asked to submit enhanced NDCs aligned with the 1.5 degrees Celsius, including actionable energy transition targets and strategies underpinned by robust implementation and investment. It will be necessary to pair renewable and efficiency scale-up with fossil fuel phase-out, as fossil fuel use has yet to decline to safe levels despite an exponential rise in renewable energy. According to the Production Gap Report 2023, the government's plan to produce around 110pc more fossil fuels in 2030 than would be consistent with limiting warming to 2ºC. The magnitude of the production gap is also projected to grow over time: by 2050,

planned fossil fuel production will be 350pc and 150pc above the levels consistent with limiting warming to 1.5ºC to 2ºC, respectively.

It will be equally important to disclose how voluntary pledges (Global Methane, Forest Declaration) and alignment with the SDGs and the Kunming Montreal Global Biodiversity Framework goals are integrated into NDC and tracked for implementation. The comprehensiveness, accuracy, consistency, and comparability in completing the checklist while avoiding double counting as per Article 4.13 of the Paris Agreement will be the benchmark for evaluating the real success of COP29.

Across the world, the water demand is exceeding availability. Global water demand is projected to increase by 20-25pc by 2050 while the number of watersheds with predictable water supply will decrease by 19pc. Gender disparity at the global level continues to deprive women of equal opportunity. The Pact for the Future at the Summit of the Future outlined 56 actions to turbocharge the SDGs and speed up progress on peace, security, global governance, climate change, digital cooperation, human rights, gender, youth, and future generations.

41

Role of IBC in Reviving Stalled Real Estate Projects and Strengthening Home Buyers' Rights

Before 2016, the only remedy available for homebuyers whose housing projects were stalled for various reasons was through the Consumer Forums established under the Consumer Protection Act of 1986. In FY24, over 5,500 cases were filed with the National Consumer Dispute Redressal Commission, and almost 21 percent were related to the housing sector. However, the number of cases resolved through the consumer redressal route has been minimal. It was estimated that 4.1 lakh dwelling units in real estate projects across the country involving ₹4.1 lakh crore were under stress.

The year 2016 saw the enactment of the Real Estate (Regulation and Development) Act 2016 (RERA Act). This provided a dedicated grievance redressal mechanism to the aggrieved homebuyers and a means to rein in errant real estate contractors and companies. Subsequent enactment of the IBC in the same year opened another channel and has been the most favored among the three available remedies. As of March 2024, over 1500 real estate companies were admitted into the insolvency resolution process under the IBC, accounting for 21% of total admissions. One in four cases settled after admission was also from this sector. Of the 891 corporate debtors resolved, 133 were real estate companies, forming 15 percent of the companies resolved.

Insolvency resolution of real estate companies posed a unique set of challenges for the standardized corporate insolvency process. Real estate companies have multiple projects spread across geographies, projects at different stages of construction, and diversified business models. The large number of homebuyers across these projects meant claims from thousands of homebuyers who needed to be included in the

process. The judiciary, the Government, and the market have recognized these difficulties and moved in cohesive steps to improve outcomes for these projects. The availability of two new remedial routes led to discord and friction in the system.

The Insolvency Law Committee, in its March 2018 report, took cognizance of the peculiarity of the real estate sector. It was recommended that the amount raised from homebuyers be considered financial debt as it significantly contributed to finances raised and had the commercial effect of borrowing. This led to substantial changes in the CIRP by making homebuyers a distinguished class of creditors and a part of the Committee of Creditors, enabling their direct participation in decision-making. A system to organize and derive decisions, through consensus of majority voting of the thousands of homebuyers, was also worked out to introduce insolvency professionals as authorized representatives. Further amendments enabled insolvency to be initiated by a joint application of at least 100 allottees or not less than 10 percent of the total number of allottees under the same project, ensuring that frivolous applications are not filed. As clarity emerged on the use of IBC as a remedy for homebuyers, it was also laid out that resolution plans approved for real estate projects should necessarily be compliant with the RERA Act, thereby restoring primacy to the sectoral law and the sectoral regulator in its domain for optimal oversight of the sector.

By innovation in economic law, the judiciary paved the way for solutions in resolving real estate corporate debtors. As a class of creditors, it enabled homebuyers to act as resolution applicants. It approved a "reverse CIRP," where the corporate debtor could take measures to complete the project even as the resolution process was underway. The judiciary has allowed project-specific resolution plans, targeting the affected project alone under the same corporate debtor. This measure relieved the corporate debtors and allottees of different projects, and the market has responded positively.

Several real estate companies have successfully resolved and enabled the progress of stalled projects. In the case of Value Infracon India Private Limited, the resolution

process yielded creditors 98 percent of the claim value and 189 percent of the asset's liquidation value.

In the cases of Ashiana Landcraft Realty Private Limited and Anudan Properties Private Limited, the resolutions yielded around 2.5 times the liquidation value of the assets. Large corporate debtors in the sector, like Jaypee Infratech Limited, have been resolved with a recovery of 88 percent for creditors, and assets have been acquired at over 114 percent of liquidation value.

Even as the pace of resolutions picked up under the IBC, there was still a need to channel/ redirect investments into these stressed projects. To address this vital gap, the Government set up the Special Window for Affordable and Mid-Income Housing (SWAMIH) with a target corpus of ₹12,500 crore in 2019. It is a professionally managed Alternative Investment Fund (AIF) aimed at providing priority debt financing for the completion of stalled housing projects, including corporate debtors and projects undergoing the resolution process under the Code. As of April 2024, the SWAMIH Fund has delivered 32,000+ homes, and the delivery of 20,000 homes every year for the next three years is being targeted.

The impact of seamless resolutions, progress of cases under IBC, and improvement in liquidity through the AIF is reflected in banks' healthy balance sheets, thereby enhancing their ability to lend further.

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Product Specific Success Stories of Boosting Exports

A series of measures undertaken by the government have shown a remarkable increase in product-specific exports. Some of the success stories are mentioned below:

Toys Exports

India's toy industry has long faced challenges in the global trade landscape, consistently being a net importer of toys for many years. However, the industry's exports experienced notable growth in 2023. Per the Directorate General of Commerce Intelligence and Statistics (DGCI&S) data, India's toy exports have risen, registering a Compound Annual Growth Rate (CAGR) of 15.9 percent between FY13 and FY24. Rising exports, coupled with declining imports, transformed India from a deficit to a surplus nation in the trade of toys. India heavily relied on China for around 76 percent of its toy imports for over a decade. India's import bill for toys from China dropped from USD 214 million in FY13 to USD 41.6 million in FY24, leading to a decline in China's share in India's toy imports from 94 percent in FY13 to 64 percent in FY24, indicating India's competitiveness in the international toy market.

Over the period 2014 to 2020, the government's focused efforts resulted in the number of manufacturing units doubling, dependence on imported inputs reducing from 33 percent to 12 percent, gross sales value growing by a CAGR of 10 percent, and an overall rise in labor productivity.

The measures taken by the government for the toy industry include the formulation of a comprehensive National Action Plan for Toys with 21 specific action points, an increase in essential customs duty on toys, sample testing of each import consignment by the Directorate General of Foreign Trade (DGFT) to curb sub-standard imports, issuance of a Quality Control Order for toys, and support through cluster-based approaches. India's emergence as a toy exporting nation can be further attributed to its integration into the global toy value chain and zero-duty market access for domestically manufactured toys in critical countries such as the UAE and Australia.

Defense Exports

India's defense production grew substantially from ₹74,054 crores in FY17 to ₹108,684 crores in FY23, boosting defense exports. Between 2015 and 2019, India held the distinction of being the world's second-largest arms importer. The narrative, however, has changed. India has transitioned from an arms importer and found a place in the list of the top 25 arms exporter nations. The defense industry, including

the private sector and defense Public Sector Undertakings (DPSUs), has made tremendous efforts to achieve the highest-ever defense exports. In addition, there has been a rise in the number of export authorizations issued to defense exporters. From 1,414 export authorizations in FY23, the number has increased to 1,507 in FY24. About 100 domestic companies export a wide range of defense products and equipment, such as aircraft like Dornier-228, artillery guns, Brahmos Missiles, PINAKA rockets and launchers, radars, simulators, and armored vehicles.

To give a push to defense exports, the government has taken several policy initiatives over the past ten years. Export procedures have been simplified and made industry-friendly, with end-to-end online export authorization curtailing delays and facilitating ease of doing business. Further, the Aatmanirbhar Bharat initiatives have helped the country by encouraging Indigenous design, development, and manufacture of defense equipment, thereby reducing dependency on imports in the long run.

Footwear Exports

The Indian footwear and leather industry is an important foreign exchange earner. India is the second-largest global footwear producer after China, accounting for 13 percent of global footwear production and 2.2 percent of global exports. India is the ninth-largest global footwear exporter. As per DGCIS, India's footwear exports have increased from USD 1.9 billion in FY21 to USD 2.5 billion in FY24.

The government has undertaken various measures to boost footwear exports. These include the issuance of three Quality Control Orders for the footwear and leather sector after consultation with the Bureau of Indian Standards, relaxation in the creation of testing facilities by allowing outsourcing of the majority of the tests which are carried out less frequently, creating awareness amongst footwear manufacturers of footwear across India, among others. The government has approved the continuation of the 'Indian Footwear and Leather Development Programme' till 31 March 2026. The leather and footwear sector can avail of benefits of export promotion

schemes under the Foreign Trade Policy 2023 and other benefits provided under the Market Access Initiatives Scheme, Trade Infrastructure for Export Scheme, Interest Equalisation Scheme, etc. The Indian footwear market, valued at USD 26 billion, is expected to reach USD 90 billion by 2030. This growth will be driven by increased non-leather footwear demand and a possible shift in leather shoe production from small-scale cottage industries to large corporations. Changing market dynamics, mainly fuelled by evolving shopping habits, rapid urbanization, greater brand awareness, the development of retail precincts/malls, and rising discretionary budgets, are contributing to this trend.

Smartphone Exports

India's domestic production and exports of smartphones have been increasing steadily, with significant changes achieved, especially since the launch of the Production Linked Incentive (PLI) scheme in 2020. FY20 marked the first time domestic production exceeded domestic demand, and smartphones became one of India's top export categories. Exports now provide the primary stimulus for the growth of the sector. A 42.2 percent increase in exports in FY24 (on a YoY basis) enabled smartphones to rank among India's top five export items, considered six-digit HS product categories.

India also became the world's sixth-largest smartphone exporter in 2022, up from the 23rd-largest smartphone exporter in 2014. This high export growth has led to an increase in the ratio of exports to production, with exports being above 31 percent of the total output of smartphones in India in FY24.

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Strengthening The Statistical System of India

A sound and dynamic statistical system is the cornerstone for an informed citizenry, data-driven policies, and decision-making. Official statistics are pivotal in addressing societal challenges and promoting inclusive growth. The government is strengthening administrative and survey statistics, building capacities, and improving data quality and timeliness. MoSPI is the nodal Ministry for the planned and integrated development of the Indian statistical system. MoSPI anchors the core statistics by publishing GDP, price and volume indices, and countrywide macroeconomic and sectoral importance surveys. The Ministry has initiated various new surveys, namely, the annual survey of unincorporated sector enterprises and a time-use survey, and it has started a pilot for a yearly survey of service sector enterprises.

MoSPI is also working towards increasing the frequency of PLFS data and extending the generation of quarterly estimates for rural areas. Modern IT tools are being adopted for improved data capturing and processing. A National Metadata Structure is also being developed to encourage greater use of administrative data. MoSPI has envisaged the Unified Data Portal project to create a centralized database and storage system. Ministries are also taking initiatives to enhance the frequency of various surveys to make more informed policy decisions. Given India's 2047 goals, it is essential for development policy that (a) MoSPI is capacitated fully to produce and integrate all required statistics with the desired quality, regularity, and timeliness and (b) the quality and timeliness of administrative and transactional data of the line Ministries are brought to levels that fully facilitate timely course corrections.

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How TRAI's 2024 Regulations are Revolutionizing Digital Connectivity in Buildings

The Telecom Regulatory Authority of India (TRAI) has released the "Rating of Properties for Digital Connectivity Regulations, 2024 ". The full text of the Regulations is available on TRAI's website at www.trai.gov.in.

To provide policy and regulatory triggers for addressing the issue of the quality of digital connectivity inside buildings, the Authority submitted recommendations to the Government on "Rating of Buildings or Areas for Digital Connectivity" on 20 February 2023. The recommendations aim to create an ecosystem for co-creations of Digital Connectivity Infrastructure (DCI) as a part of any development activity. Further, to enable the co-creation of DCI in Buildings or Areas, the Authority has recommended including DCI development as a part of Model Building by-laws and suggested a draft chapter titled "Digital Connectivity Infrastructure in the Buildings" covering the requirement of DCI for new and existing buildings. This assumes importance as most data consumption occurs indoors or on public premises. In contrast, the quantum & speed of data consumption has seen exponential growth, more so with the advent of 5G technology.

As part of the aforesaid recommendations, the Authority also decided to establish a framework for rating buildings or properties for digital connectivity to promote the creation of good digital connectivity through a collaborative and self-sustainable approach.

Accordingly, these regulations are being notified to encourage and nudge property managers to provide a good digital connectivity experience to their existing and prospective customers. A property with better ratings will attract more users, buyers, or investors and thereby add value to it.

In India, there are 927.56 million wireless internet subscribers, compared to 42.04 million internet subscribers (as of June 2024) who have wired connectivity in their homes or offices. Thus, most of the population is currently dependent on wireless networks to access the internet.

Despite significant coverage of the 4G (LTE) network, the rollout of the 5G network, and the availability of more spectrum bands, the coverage and quality of digital connectivity inside buildings remain a major issue that needs to be addressed largely through collaboration between service providers and property managers.

The regulations have been finalized after following a detailed consultative process. A Consultation Paper on "Regulation on Rating Framework for Digital Connectivity in Buildings or Areas," released on the TRAI website on 27 September 2023, invited written comments from the stakeholders. An Open House Discussion (OHD) through Virtual mode was held with the stakeholders on 18 June 2024.

The salient features of the regulations include the following:

1. A Rating platform, an information technology system, and associated applications shall be set up or authorized by the TRAI to manage the rating of properties for digital connectivity as per provisions of the regulations. The rating process shall be implemented only through the rating platform.
2. Any entity fulfilling the eligibility criteria intending to commence activity as a Digital Connectivity Rating Agency (DCRA) shall be impaneled by the Authority through registration on the rating platform.
3. A property manager who intends to apply for the rating of his/her property of a minimum specified size shall register on the rating platform in such manner and format and upon payment of such fees as may be specified by the Authority.
4. For the purpose of rating digital connectivity, the properties are classified into different categories: Residential, Government Properties, Commercial

Establishments, Other private or public areas, Stadiums or Sports Arenas or spaces of frequent gathering, and Transport corridors.

5. The DCRA shall disclose the fee to be charged and other terms and conditions, if any, to the property manager and obtain their acceptance before commencing any rating activity.
6. DCRA's fees shall be based on the category and classification of properties, DCRA's responsibility under the provisions of these regulations, the complexity involved, the area of the property, etc.
7. No telecom service provider shall enter into an exclusive arrangement or tie-up arrangement with any property manager to develop or access digital connectivity or digital connectivity infrastructure in their property.
8. For the purposes of rating digital connectivity, Model Building Bye Laws (MBBL) issued by the Ministry of Housing and Urban Affairs (MoHUA) shall be referred to in cases where the MBBL of a State or Union Territory does not have provisions for digital connectivity infrastructure.
9. DCRA shall evaluate the property and assign scores on the rating platform against each rating criteria and sub-criteria. The property shall be awarded a Digital Connectivity Rating of one to five stars. The detailed guidelines for awarding the score and process shall be issued separately as per the provisions of these regulations.
10. The Authority shall notify us of the date the rating platform will be made live. Further, the Authority may provide an alternate mechanism for rating property until an online rating platform is developed.

These regulations shall apply to:

1. Property Managers who intend to get their property, of minimum specified size, rated for digital connectivity, either voluntarily or under the provisions of applicable laws, rules, or regulations.
2. Digital Connectivity Rating Agency (DCRA), who may evaluate and award ratings for property under these regulations; and
3. The service providers may enter into an arrangement with the property manager to develop or access digital connectivity or digital connectivity infrastructure.

The regulations shall come into force with effect from 25 October 2024.

Source: PIB

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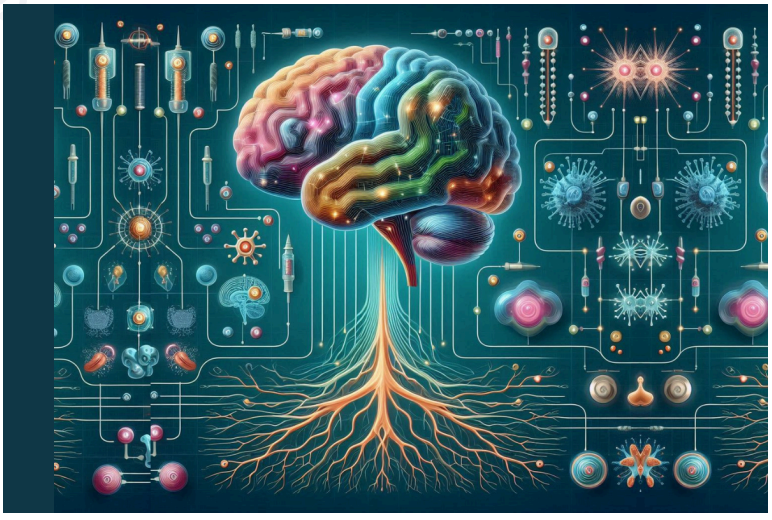
Targeting Alzheimer's: How New Molecules Could Transform Treatment Options

Novel Molecules Developed to Treat Alzheimer's Disease

Scientists have designed and synthesized novel molecules through synthetic, computational, and *in-vitro* studies for treating Alzheimer's Disease (AD). These non-toxic molecules could be effective in the treatment of the disease.

Neurons are specialized cells in the brain that form the nervous system. The nervous system communicates between the brain and the rest of the body. Alzheimer's disease (AD) disrupts this communication, causing limitations in learning and memory and changes in adaptive behavior. AD occurs due to an imbalance in certain hormones.



AD is the most common form of dementia and constitutes around 75% of all dementia cases. Of the about 55 million people worldwide with dementia, 60% to 70% are estimated to have AD. The disease most commonly affects people over the age of 65. The causes mainly include a combination of age-related brain changes and genetic, environmental, and lifestyle factors. The treatment may be able to slow dementia and improve quality of life, but these conditions are progressive, and symptoms of the disease worsen over time.

To date, treatment options available to cure AD are limited to one *N*-methyl-*D*-aspartate receptor antagonist (Memantine) and three anti-cholinesterase drugs (Donepezil, Rivastigmine, Galantamine). However, approved anti-cholinesterase drugs suffer from limitations of short-term benefits and serious side effects that restrict their clinical applications.

Recently, scientists from Agharkar Research Institute, Pune, an autonomous Department of Science and Technology institute, have developed a rapid one-pot, three-component reaction with high synthetic yields to generate novel molecules. *In-vitro* screening methods were then used to assess the potency and cytotoxicity of these molecules. Developed molecules were found to be non-toxic and effective against cholinesterase enzymes. The lead molecule was selective for acetylcholinesterase, with a significant selectivity ratio compared to butyrylcholinesterase. Effective molecules have also shown good stability in the pocket of enzymes through interactions with amino acids during molecular dynamics simulation.

Finally, molecules identified through synthetic, computational, and *in-vitro* studies have proved suitable dual cholinesterase inhibitors. They could be further optimized to develop more effective anti-AD ligands. Utilized multi pronged approaches with modern scientific validation offer the potential for holistic health and wellness of society. Together, these molecules could be exploited to develop dual anti-cholinesterase drugs to treat AD in combination with other drugs. Future studies will plan to synthesize novel substituted carbazole and chromene clubbed analogs with additional anti-AD properties.

Image Credit: Bing AI

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How Germany and India are Teaming Up for a Greener, Sustainable Future?

Focus on India Report by Germany

The German cabinet has released the "**Focus on India**" document, which outlines a blueprint for how the world's two leading economies and democracies can collaborate to become a "Force for Global Good."

Key Highlights of the Report

- **Dynamic Transformation:** India is undergoing significant changes that reflect a vibrant democracy and a thriving economy. This transformation is marked by an assertive role in global affairs, demonstrating India's ambition to shape a more equitable and sustainable world.
- **Global Influence:** India, the world's most populous nation, is crucial in shaping global policies. The country actively participates in climate protection, environmental sustainability, and biodiversity conservation initiatives, aligning with the **Sustainable Development Goals (SDGs)** to ensure a sustainable future for all.
- **Peaceful Mediation Role:** India's willingness to contribute to peaceful conflict resolution, such as its involvement in the Russia-Ukraine war, underscores its commitment to diplomacy and constructive engagement in global issues. This role enhances India's reputation as a responsible global actor.
- **Regional Stability:** India has a stabilizing influence in a region where the global order based on the principles of the UN Charter and international law is facing considerable pressure. The geopolitical lines of conflict in the

Indo-Pacific and the high economic dynamics in the region will play a significant role in shaping the international order of the 21st century.

- **Voice of the Global South:** India is a leading representative of the Global South, advocating for the interests of developing nations. India amplifies the voices of those often underrepresented in global discussions by participating in platforms like the **G20, BRICS, and the Shanghai Cooperation Organization**.
- **Rapid Economic Growth:** Recognized as the fastest-growing major economy, India is projected to become the **world's third-largest economy by 2030.** Rising prosperity, a burgeoning domestic market, and significant investments in infrastructure and technology drive this growth.
- **Innovation and Technology Leadership:** India has emerged as a global innovation hub, excelling in **information technology, digital infrastructure, and space exploration**. This leadership contributes to economic growth and positions India as a critical player in shaping the future of global technology.
- **Home to Rich Biodiversity:** India is home to a huge variety of different species, and protecting biodiversity is of global significance. It is home to around **seven percent** of global biodiversity. India's engagement in biodiversity conservation is, therefore, of global importance!
- **Commitment to the 2030 Agenda:** India is recognized as a critical player in achieving the **2030 Agenda and the Sustainable Development Goals.** The nation's collaboration is essential in addressing shared objectives, including climate action and sustainable development.
- **Commitment to Climate Goals:** India remains steadfast in its commitment to climate-neutral growth, investing heavily in renewable energy and environmental protection. The nation's efforts align with the **Paris Agreement goals**, emphasizing the importance of sustainable development while acknowledging its significant greenhouse gas emissions.

- **Renewable Energy and Green Transition:** With immense potential in renewable energy, India is leveraging its **solar, wind, and green hydrogen resources** to transition to a sustainable energy future. Collaborative partnerships, such as those with Germany, focus on phasing out fossil fuels while ensuring energy security.
- **Green and Sustainable Development Partnership**: The Green and Sustainable Development Partnership, established in 2022 with Germany, emphasizes climate action, energy transition, biodiversity conservation, and sustainable urbanization. Key initiatives include **agroecology, renewable energy projects, and forest conservation efforts**. Additionally, India intends to draft a **National Adaptation Plan by 2025** to address vulnerabilities to climate impacts like extreme heat, droughts, and floods.
- **Green Hydrogen Task Force:** In the Green Hydrogen Task Force, German and Indian experts are jointly compiling a roadmap to promote the market ramp-up of this fuel of the future, which is intended to be implemented rigorously.
- **Investment Platform for Renewable Energy:** By creating a platform for investment in renewable energies, India and Germany want to elaborate tailor-made solutions for the rapid expansion of renewable energy. This will pave the path for India to become an ideal investment platform worldwide.

"You can never cross the ocean unless you have the courage to lose sight of the shore"

Christopher Columbus

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In Honor of Rohini Godbole and Kanaka Raju: Pioneers Who Shaped Our World

Legendary Personalities

Ms. Rohini Godbole

Ms. Rohini Godbole, a renowned, pioneering physics scientist and innovator, left an indelible mark on the world of science. Her strong advocacy for more women in science continues to inspire and motivate us all.

Shri Kanaka Raju

Shri Kanaka Raju Ji, a prolific dancer and cultural icon, was known for his rich contribution to preserving Gussadi dance (folk dance of Telangana). His dedication and passion for ensuring that the critical aspects of cultural heritage flourish in their authentic form is something we can all appreciate and respect.

Both Ms. Rohini Godbole and Sh. Kanaka Raju passed away recently. Their legacies will continue to inspire generations to come.

"I was invited to speak about my experience as a woman physicist in India who had achieved some measure of success, and it resonated with the audience. Women from Ghana, Mauritius, Egypt came to me and said that when Western women talk, we feel that they are from a different culture, but when we listen to you we feel – if she can do it, we can do it too!"

Rohini Godbole

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Propelling India's Space Sector: How the New VC Fund Will Drive Growth

The Union Cabinet has approved the establishment of a **Rs.1,000 crore Venture Capital (VC) Fund dedicated to supporting India's space sector**. This pioneering initiative, developed under the aegis of IN-SPACe (Indian National Space Promotion and Authorization Center), aims to propel the growth of space startups, strengthen India's space economy, and position the country as a global leader in space technology. The establishment of this fund aligns with the government's broader vision of promoting innovation, ensuring economic growth, and fostering self-reliance in high-tech industries, thus supporting the goals of Atmanirbhar Bharat.

Objectives and Strategic Vision of the Fund

The Rs. 1,000 crore VC Fund is structured to align with India's strategic vision for the space sector and supports the goals outlined in the 2020 space reforms. The fund is designed to address the unique needs of private companies operating in the high-risk, high-reward field of space technology. The fund aims to achieve the following objectives:

- **Capital Infusion:** The capital fund is expected to encourage additional funding for later-stage development, instill market confidence, and provide critical early-stage financial support for growth.
- **Talent Retention and Domestic Development:** Many Indian startups relocate abroad due to better financial opportunities. The fund will work to retain talent within India, prevent brain drain, and foster the growth of homegrown space companies.

- **Five-Fold Expansion of Space Economy:** The government aims to grow India's space economy by five times over the next decade, supporting the establishment of India as a significant global player in space technology.
- **Technological Advancements:** Investment in innovation will help advance space technology, supporting the development of sophisticated solutions for both domestic and international markets.
- **Boosting Global Competitiveness:** Enabling Indian companies to develop unique space-based solutions will reduce dependency on foreign technology and allow for stronger global competition.
- **Supporting Atmanirbhar Bharat:** By investing in indigenous startups, the fund underscores India's commitment to self-reliance, fostering a robust domestic space economy with fewer dependencies on external technology.
- **Creating a Vibrant Innovation Ecosystem**: The fund seeks to foster a dynamic space innovation ecosystem by nurturing startups and fostering collaborations between sectors. This environment encourages the development of new ideas, products, and technologies, stimulating a continuous cycle of innovation in the Indian space industry.
- **Driving Economic Growth and Job Creation**: The fund is expected to boost economic activity by supporting startups and entrepreneurs in the space sector, leading to the creation of thousands of direct and indirect jobs. It will enable companies across the supply chain to scale operations, thus enhancing India's competitive position in the global space economy.

"Stop being afraid of what could go wrong, and start being excited about what could go right"

Tony Robbins

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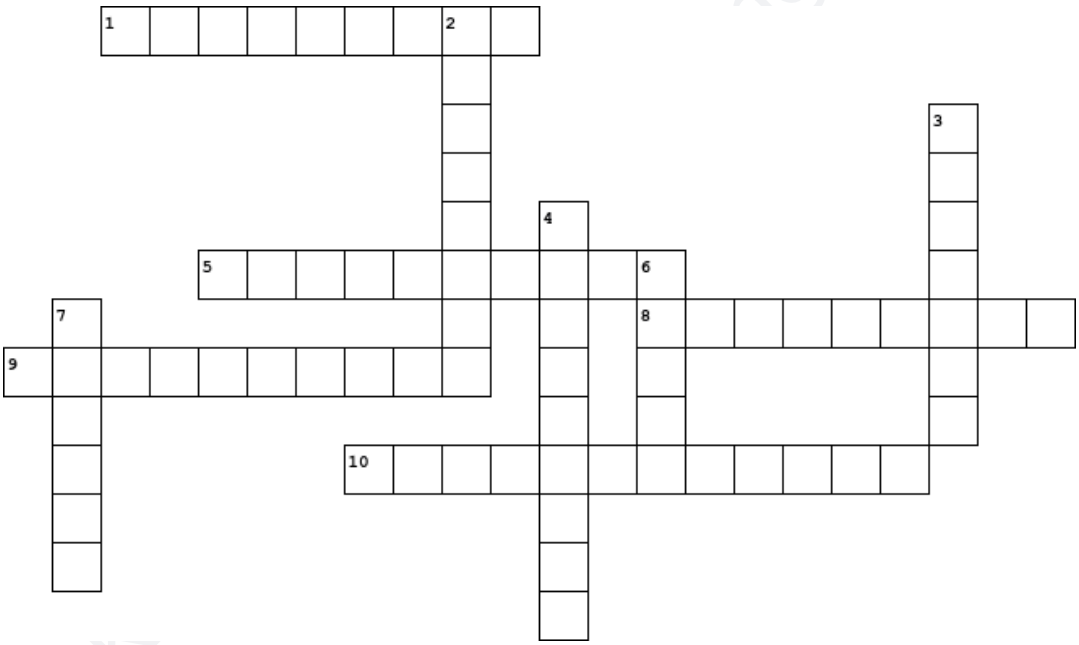
The K&L Crossword Craze #02

Challenge your mind with this engaging trivia crossword quiz. Grab a pencil and see how many answers you can fill in—let's see if you can conquer the grid! The solved puzzle will appear in the next issue.



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 filed 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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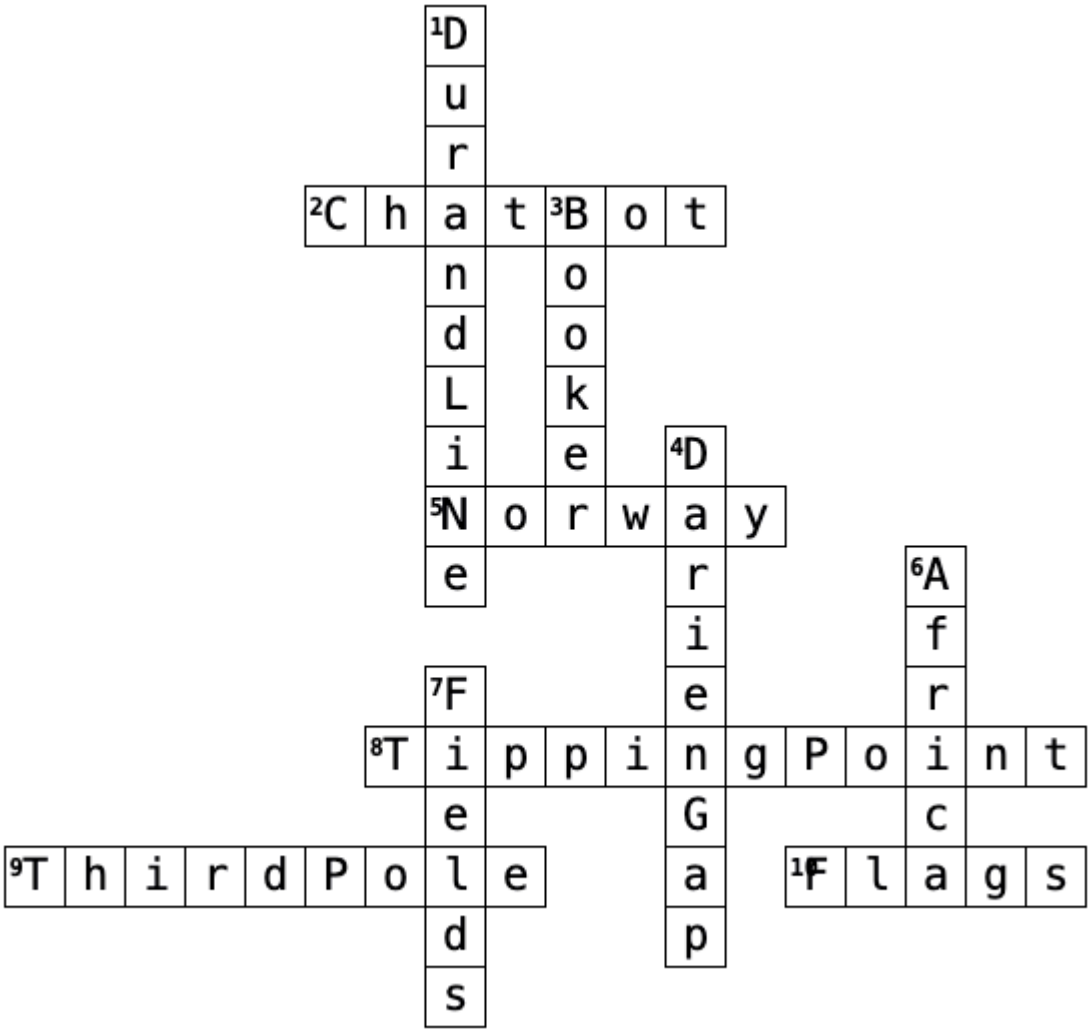
Answer: The K&L Crossword Craze #01



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Trivia Treasures: Unearth Fun Facts!

1. What do the Olympic rings represent?
2. If the permanent settlement of land revenue administration was introduced by Lord Cornwallis, who introduced the Ryotwari system of land revenue administration, and in which province?
3. Which two countries are separated by the 38th parallel?
4. Which prizes are considered the Nobel equivalent in the fields of mathematics and computer science?
5. What is the mechanism on a canal that allows the water level to be raised or lowered?
6. What is the minimum age required to be a member of the Lok Sabha and the Rajya Sabha in India?
7. Which constitutional amendment is known as the "mini-constitution" due to the extensive changes it introduced?
8. Which Carthaginian general achieved a famous victory over the Romans at the Battle of Cannae?
9. Which comet that has a retrograde orbit and orbits the sun once every 80,000 years is visible these days across different places?
10. What is Elo rating?
11. The treaty of Sugauli (1816) was signed between whom?

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Answers: Trivia Treasures

1. When Pierre de Coubertin designed the Olympic rings in 1913, he wanted them to symbolize more than just the Olympic Games. The five interlocking rings of blue, yellow, black, green, and red on a white background were chosen because every national flag in the world includes at least one of these colors. The rings represent the **union of the five continents** (Africa, the Americas, Asia, Europe, and Oceania) and the coming together of athletes from around the globe in a celebration of unity and sportsmanship. It's a symbol of how sports can bridge cultural divides and foster peace.

2. In British India, different regions saw different systems of land revenue collection. While the Zamindari system empowered landlords, the Ryotwari system, introduced by **Thomas Munro** in the Madras province, directly assessed individual farmers (ryots). This system was designed to give farmers more control over their lands and reduce the influence of landlords. However, it came with its own challenges, as farmers were left vulnerable to the whims of fluctuating agricultural yields and harsh tax demands. Munro's system was a bold experiment in colonial governance, aiming to balance revenue needs with agricultural productivity.

3. After World War II, **the Korean Peninsula** was divided along the 38th parallel, with the Soviet Union occupying the north and the United States occupying the south. This division was initially meant to be temporary, but the Cold War tensions soon turned it into a permanent split. The Korean War erupted in 1950, further entrenching the divide. Today, the Demilitarized Zone (DMZ)

along the 38th parallel is one of the most fortified borders in the world, symbolizing the ongoing tension between North and South Korea. The stark contrast between the two nations' political and economic systems continues to be a focus of global attention.

4. Although there is no Nobel Prize in mathematics, the **Fields Medal** is widely regarded as the most prestigious award in this field, awarded to young mathematicians under the age of 40 for outstanding discoveries. For computer science, the **Turing Award**, named after British mathematician Alan Turing, is considered the highest honor, celebrating groundbreaking contributions to the field.

5. The concept of a canal **lock** is one of the marvels of engineering, dating back to ancient China. Imagine you're navigating a boat along a canal and encounter a sudden change in elevation. Instead of turning back, you enter a chamber called a lock. Gates close behind you, and water is either added or drained from the chamber to match the water level ahead. The most famous example is the Panama Canal, which uses a series of locks to allow massive ships to pass between the Atlantic and Pacific Oceans, saving nearly 8,000 miles of travel around the tip of South America.

6. The Indian Constitution sets clear age limits for parliamentary participation, reflecting the maturity and responsibility expected from elected representatives. **To become a member of the Lok Sabha, the lower house of Parliament, you must be at least 25 years old. For the Rajya Sabha, the upper house, the minimum age is 30 years.** This ensures that members have sufficient life experience and knowledge to contribute to the nation's governance. These rules, outlined in Article 84, also emphasize the importance

of citizenship and a clean legal record, ensuring that only those committed to serving the country can take up these roles.

7. The **42nd Amendment of 1976** is often called the "mini-constitution" because of its sweeping changes to the Indian Constitution. Introduced during the Emergency period under Prime Minister Indira Gandhi, it expanded the powers of the central government, added the words "socialist," "secular," and "integrity" to the Preamble, and curtailed the powers of the judiciary. The amendment faced significant criticism for being too authoritarian, leading to subsequent amendments to restore the balance of power. It remains a pivotal moment in India's constitutional history, demonstrating the delicate balance between governance and individual freedoms.

8. **Hannibal Barca,** one of history's greatest military strategists, stunned the world with his victory at the Battle of Cannae in 216 BC. Leading his troops across the Alps with war elephants, Hannibal outflanked a much larger Roman army using a brilliant double envelopment tactic. This battle became a classic example of military strategy, studied by commanders for centuries. Despite his victories, Hannibal's prolonged campaign against Rome eventually faltered, leading to Carthage's defeat in the Punic Wars. Hannibal's legacy endures as a testament to strategic brilliance against overwhelming odds.

9. In the vast darkness of space, beyond the orbits of the known planets, lies the mysterious Oort Cloud, a distant reservoir of icy bodies left over from the birth of the solar system. Every so often, one of these icy wanderers is disturbed, perhaps by the gravitational pull of a passing star, sending it hurtling towards the inner solar system. This is the story of **Comet C/2023 A3**,

a celestial traveler that has journeyed for thousands of years to reach our part of the universe.

Discovered in early 2023 by astronomers using telescopes in South Africa and China, Comet C/2023 A3 immediately caught the attention of the scientific community because of its highly unusual retrograde orbit. Unlike most objects in our solar system that travel in the same direction as the planets, this comet is moving in the opposite direction. What makes Comet C/2023 A3 even more fascinating is its incredibly long journey. It takes approximately 80,000 years to complete one orbit around the Sun. To put this into perspective, the last time it passed by Earth, early humans were still figuring out how to use fire, and the mammoth roamed the Earth. Now, after an interstellar voyage spanning millennia, it has returned to light up our skies once more.

10. Elo rating is a system for calculating the **relative skill levels of players in zero-sum games, like chess or esports**. It was invented by Hungarian-American physicist Arpad Elo. The system is based on a formula that calculates ratings based on the difference in qualities of two opponents. The International Chess Federation (FIDE) uses a variation of the Elo rating system to rank chess players. Other organizations and some chess websites also use the Elo system. The Elo rating system ranges from 1000 Elo for a complete novice to 2800 Elo and beyond for the strongest players. Two Indian chess players only have crossed ELO rating of 2800, Vishwanathan Anand and Arjun Erigaisi.

11. The early 19th century was a time of rapid expansion for the British East India Company, which was steadily extending its control over the Indian subcontinent. However, as the British Empire pushed northwards, it found itself facing a formidable opponent: the Kingdom of Nepal.

Nepal, led by its ambitious and war-hardened Gurkha soldiers, had been expanding its own borders, coming into conflict with British territories in India. These tensions escalated into what became known as the Anglo-Nepalese War (1814-1816). The war was marked by fierce battles, with the Nepalese forces proving to be a challenging adversary for the British, known for their tenacity and guerrilla tactics in the rugged Himalayan terrain.

Despite their bravery, the Nepalese were ultimately outmatched by the East India Company's better-equipped and larger forces. After two years of intense fighting, the Nepalese leaders realized they could not continue the war without risking severe losses to their kingdom. This led to the signing of the Treaty of Sugauli in December 1815, which was ratified in March 1816.

The Treaty of Sugauli was a landmark agreement that reshaped the map of Nepal. It was signed between representatives of the East India Company and the Kingdom of Nepal. It stands as a significant moment in South Asian history, illustrating the dynamics of colonial power and the resilience of a small kingdom caught between the ambitions of a global empire.

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