

WEEKLY NEWS

October 06-12, 2024

Lunar Polar Exploration Mission (LUPEX)



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India Eliminates Trachoma




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HIGHLIGHTS

- MACE Observatory
- India-Maldives Bilateral Talks

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Draft National Sports Policy (NSP) 2024

● Why in News?

- ➔ The Ministry of Youth Affairs and Sports released the Draft National Sports Policy (NSP) 2024.
- ➔ Builds upon earlier initiatives like NSP 2001, Khelo India, and Target Olympic Podium Scheme (TOPS).

● Need for NSP 2024

- ➔ Existing NSP was framed over two decades ago.
- ➔ A new comprehensive policy is required to address modern challenges and developments in the sports ecosystem.

● Vision

- ➔ "Sports for Nation Building – Harnessing the Power of Sports for Nation's Holistic Development"
- ➔ Aligned with the vision of 'Viksit Bharat' for India's development.

● Key Features

➔ 5 Pillars of NSP 2024:

Excellence on the Global Stage: Focus on talent identification, infrastructure development, and global competitiveness.

Sports for Economic Development: Boost industries like tourism and manufacturing through sports.

Sports for Social Development: Promote indigenous games, inclusivity, and health and education through sports.

Sports – A People's Movement: Engage communities through a National Fitness Ranking & Indexing System and revamp physical education frameworks.

Integration with NEP 2020: Align sports development with educational frameworks under the National Education Policy (NEP) 2020.

● Significance

- ➔ A comprehensive roadmap for the holistic development of sports, fostering inclusivity and international competitiveness.

● **Way Forward**

- ➡ NSP 2024 envisions making sports a key tool for nation-building.
- ➡ Leverage India's vast youth population (15-29 age group) as a catalyst for development through sports.



India's First Mission to Venus: Venus Orbiter Mission (VOM)

● Why in News?

- ⇒ ISRO has announced the launch target for the **Venus Orbiter Mission (VOM)**, marking India's first mission to Venus.
- ⇒ **Union Cabinet approval** for the project was recently granted.

● Launch Details

- ⇒ **Target Launch Date:** March 2028
- ⇒ **Journey Duration:** 112 days to reach Venus
- ⇒ **Launch Vehicle:** LVM-3 (Launch Vehicle Mark-3)

● Mission Objectives

- ⇒ **Atmosphere Study:** Examine dust particles in the Venusian atmosphere and analyze airglow emissions.
- ⇒ **Surface Mapping:** Map Venus's **topography** and **study sub-surface features**.
- ⇒ **Solar X-ray Spectrum:** Measure and study the **solar X-ray spectrum** at Venus.
- ⇒ **Technology Demonstration:** Test **aerobraking techniques** and **thermal management systems** to withstand harsh Venusian conditions.

● Scientific Payloads & Experiments

- ⇒ **Venus Thermal Camera:** For atmospheric and cloud dynamics.
- ⇒ **NAVA (Narrow band oxygen Airglow detection):** To detect airglow in the atmosphere.
- ⇒ **VARTISS:** Study ionospheric structure, detect active volcanic sites, and explore buried geological features.
- ⇒ **VODEX:** Analyze Interplanetary Dust Particles (IDPs) at Venus.
- ⇒ **Other Payloads:**
 - VISWAS (Venus Ionospheric and Solar Wind Particle AnalySer)**
 - RAVI (Radio Anatomy of Venus Ionosphere)**
 - VIRAL:** Developed by **Russia**, studies atmospheric gases.
- ⇒ **Total Payloads:** 19 (16 Indian, 2 collaborative, 1 international).



● **Comparison with Past and Upcoming Venus Missions**

➡ **Past Missions:**

Pioneer Venus (1978) – NASA

Vega (1985) – USSR

Venus Express (2005) – ESA

Akatsuki (2015) – Japan

➡ **Upcoming Missions:**

DAVINCI (2029) and VERITAS (2031) – NASA

EnVision (2031) – ESA

● **Way Forward**

➡ **Strengthen International Collaboration:** Leverage partnerships for payload development and data exchange.

➡ **Expand Exploration Capabilities:** Develop advanced technology to withstand Venus's extreme environment.

➡ **Boost India's Role in Planetary Science:** Demonstrate India's capability for **deep-space exploration.**



BARC's Participation in IAEA's 'Atoms4Food' Initiative

● Why in News?

- ➔ Bhabha Atomic Research Centre (BARC) participated in the **International Atomic Energy Agency (IAEA) Scientific Forum** under the theme '**Atoms4Food**.'
- ➔ The initiative was launched by **IAEA and FAO** during the **2023 World Food Forum** held in **Rome, Italy**.

● About 'Atoms4Food'

➔ Objective:

Utilize **nuclear techniques** and advanced technologies to enhance **agriculture** and **livestock productivity**.

Reduce food losses and boost global food security to tackle hunger.

➔ Key Statistics:

600 million people are projected to suffer from chronic undernourishment by **2030** (FAO).

World population expected to increase by **one-third by 2050**, mostly in developing countries (UN).



● **Nuclear Technologies in Agriculture**

- ➔ **Irradiation Technique:** Extends shelf life of food by reducing/eliminating **microorganisms and insects**.
- ➔ **Fallout Radionuclide (FRN) Technique:** Measures **soil erosion patterns** by analyzing radionuclide concentrations in soil.
- ➔ **Cosmic-Ray Neutron Sensor (CRNS) Technology:** Detects **soil moisture levels** across large areas using reflected cosmic-ray neutrons.
- ➔ **Radioimmunoassay (RIA) Technology:** Measures **hormone levels** in animals to optimize timing for **artificial insemination**.
- ➔ **Sterile Insect Technique (SIT):** Controls pests by releasing sterilized insects that reduce wild populations.
- ➔ **Other Technologies:**
 - Nitrogen-15 technique:** Measures nitrogen fixation in plant roots.
 - Isotopic tracing:** Enhances crop nutrition and water management strategies.

● **India's Initiatives in Nuclear Agriculture**

- ➔ **Food Irradiation Units:** Provisions under **Pradhan Mantri Kisan SAMPADA Yojana (PMKSY)** to support multiproduct irradiation units.
- ➔ **High-Yield Seed Varieties:** BARC developed **42 seed varieties** through **Gamma irradiation**.
- ➔ **Irradiation Facilities:** BARC operates two major irradiation facilities at **Vashi and Nashik** in Maharashtra.

● **Way Forward**

- ➔ **Expand Use of Nuclear Techniques:** Promote wider adoption of technologies like **SIT and RIA** for pest control and livestock productivity.
- ➔ **Strengthen Irradiation Infrastructure:** Increase the number of **food irradiation units** to reduce post-harvest losses.
- ➔ **International Collaboration:** Enhance partnerships with organizations like **IAEA and FAO** to gain access to cutting-edge technologies.
- ➔ **Public Awareness Campaigns:** Educate farmers and consumers about the benefits of nuclear techniques in **food production and safety**.



'Benchmarking Infrastructure Development' Report

● Why in News?

- ➡ World Bank Group released the 'Benchmarking Infrastructure Development' report.
- ➡ The report analyzes **Public-Private Partnership (PPP)** regulatory frameworks across **140 economies**.
- ➡ It highlights the correlation between **PPP regulatory reforms** and **infrastructure investments**.

● What is PPP?

- ➡ **Public-Private Partnership (PPP)**: A model where **private sector organizations** (both for-profit and non-profit) deliver public services, while the **government** remains responsible for providing essential resources.

● Key Highlights of the Report

➡ Public Fiscal Management System (PFMS):

Only **19 economies** have adopted budgeting, reporting, and accounting provisions for PPPs.

Only **18 economies** disclose **PPP liabilities** publicly.

Importance: A robust PFMS ensures **financial sustainability** and mitigates risks related to distressed or cancelled PPP projects.

➡ Monitoring and Evaluation:

Only **37% of economies** link payments to **project performance** through monitoring mechanisms.

➡ Renegotiation of PPP Contracts:

90% of surveyed economies have express regulations for renegotiation.

However, only 19% explicitly address changes in **risk allocation** during renegotiation.

● **Challenges to PPP in India**

➡ **Financial Issues:**

Aggressive bidding and **project underpricing** lead to unsustainable outcomes.
Frequent **project delays** result in **cost overruns**.

➡ **Capacity and Procedural Challenges:**

Public sector lacks adequate management capacity for handling PPPs effectively.
Delays in environmental clearances and other approvals impede progress.

➡ **Regulatory and Institutional Gaps:**

No comprehensive National PPP policy to guide investments and operations.
Information asymmetry and lack of reliable data on private sector providers pose challenges.

● **Existing PPP Framework in India**

➡ **Department of Economic Affairs (DEA):**

A **Private Investment Unit** within the DEA, under the **Ministry of Finance**, handles **policy-level matters** on PPPs.

➡ **NITI Aayog's PPP Vertical:**

Provides **policy recommendations** and **standardizes PPP documents**.
Focuses on **recycling and monetization of core infrastructure assets** to enable **creative destruction**.

➡ **Kelkar Committee (2015) Recommendations**

Establish Independent Sectoral Regulators: To harmonize performance across PPP sectors.

Discourage Unsolicited Proposals (Swiss Challenge): To promote transparency and address information asymmetry.

Create a National Facilitation Committee: To ensure **time-bound resolutions** for approvals and clearances.

● **Way Forward**

➡ **Policy Reforms:** Formulate a **comprehensive National PPP policy** to guide public and private collaboration.

➡ **Capacity Building:** Enhance **public sector capacity** for PPP project management.

➡ **Robust Monitoring:** Implement mechanisms linking **payments to performance** to ensure project accountability.

➡ **Strengthen Information Systems:** Improve **data reliability** and access to information on private sector providers.

India-Maldives Bilateral Talks

● Why in News?

- ➔ The **Prime Minister of India** held bilateral talks with **Maldives President** during the latter's visit to New Delhi.
- ➔ Key agreements and initiatives were announced to enhance **economic, maritime, and strategic cooperation** between the two countries.

● Key Outcomes of the Bilateral Talks

- ➔ **Comprehensive Economic and Maritime Security Partnership** Both sides adopted a **joint vision** for economic and maritime cooperation, covering multiple areas.
- ➔ **Development Cooperation:** Agreed on **timely completion** of the **Greater Malé Connectivity Project**.
- ➔ **Trade and Economic Cooperation**
 - Initiated discussions on a **Bilateral Free Trade Agreement (FTA)**.
 - Decided to **operationalize trade in local currencies**, reducing dependency on foreign currencies.
- ➔ **Digital and Financial Initiatives:** **RuPay card** launch in Maldives to facilitate easier payments for **Indian tourists**.
- ➔ **Health Cooperation:** Maldives to **recognize Indian pharmacopoeia**, paving the way for **India-Maldives Jan Aushadhi Kendras** across the country.
- ➔ **Currency Swap Agreement (CSA)**
 - Signed a **Currency Swap Agreement (CSA)** of **USD 400 million and INR 30 billion** to support Maldives' **foreign exchange reserves**.
 - Signed under the **SAARC Currency Swap Framework (2024-27)**.

● What is a Currency Swap Agreement (CSA)?

- ➔ A **CSA** is a contract between two countries to **exchange currencies** at a pre-determined rate, with a future **re-exchange** at a set date.
- ➔ India has previously signed **CSA agreements** with countries like **Sri Lanka** and **Japan**.

● Importance of Maldives for India

➔ Strategic Positioning

Maldives acts as a 'toll gate' between critical **Indian Ocean** chokepoints:

Gulf of Aden and **Strait of Hormuz** (Western Indian Ocean).

Strait of Malacca (Eastern Indian Ocean).

➔ 'Neighbourhood First' Policy (NFP) and SAGAR Initiative

Maldives is a key partner under **India's Neighbourhood First Policy** and **SAGAR (Security and Growth for All in the Region)**.

● India-Maldives Relations

➔ **Covid-19 Vaccine Diplomacy:** Maldives was the **first country** to receive Covid-19 vaccines from India.

➔ **Trade and Economic Ties:** India emerged as **Maldives' largest trade partner** in 2023.

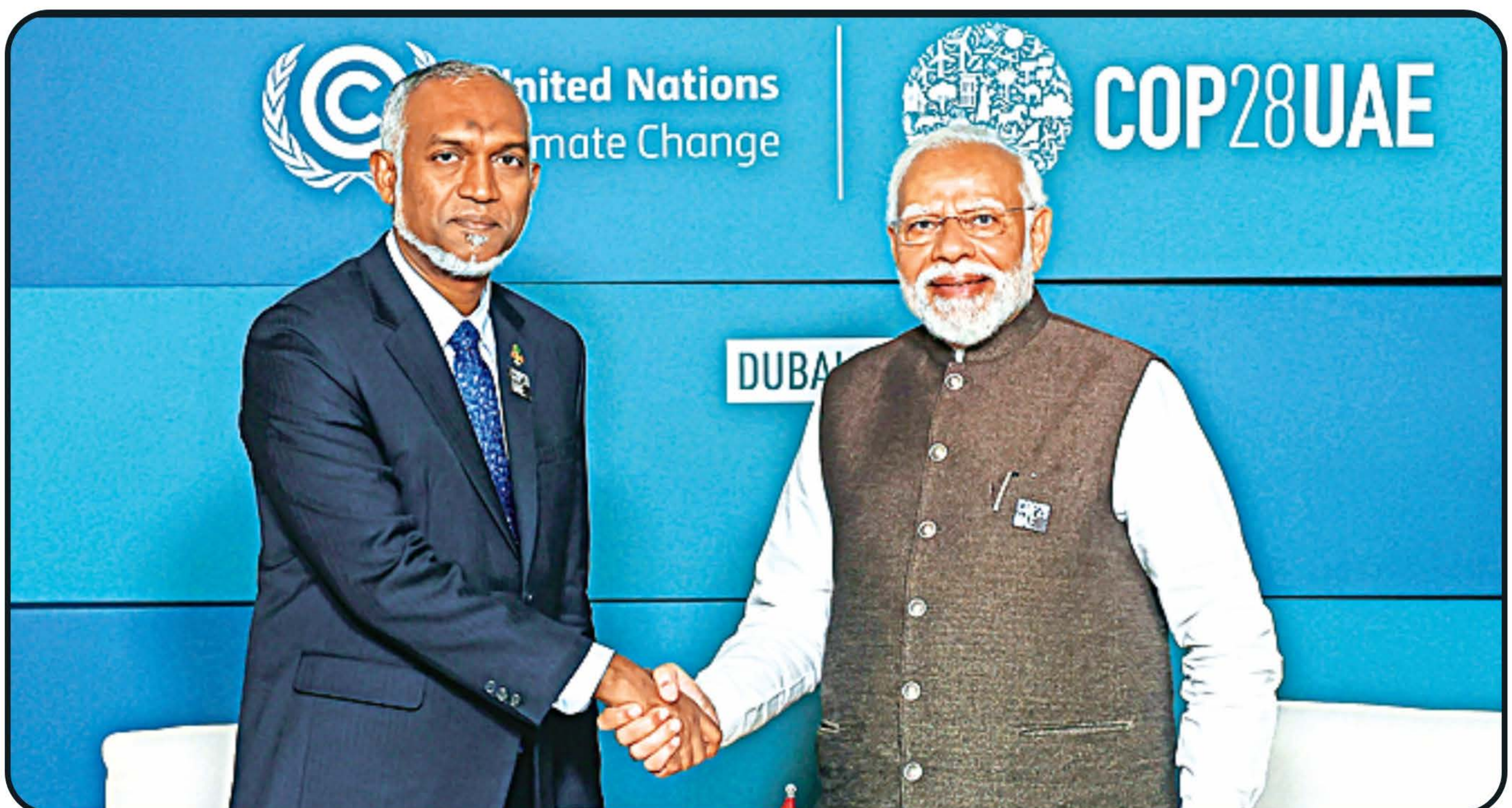
➔ **Humanitarian Aid:** India provided **water aid to Malé** through **Operation NEER**.

● Way Forward

➔ **Strengthen economic ties** through faster completion of development projects and trade agreements.

➔ **Enhance strategic cooperation** to maintain maritime security in the Indian Ocean region.

➔ Promote **people-to-people connections** through tourism, healthcare, and digital payment initiatives.



India-UAE Bilateral Investment Treaty (BIT)

● Why in News?

- ➔ The India-UAE Bilateral Investment Treaty (BIT), signed in February 2024 in Abu Dhabi, came into force on 31st August 2024.
- ➔ The Bilateral Investment Promotion and Protection Agreement (2013) between the two countries expired in September 2024.

● About Bilateral Investment Treaties (BITs)

- ➔ Reciprocal agreements between two nations to promote and protect foreign private investments.
- ➔ Ensure fair treatment under international law and protect investments from expropriation by host countries.
- ➔ India adopted a new Model BIT text in 2015, replacing the 1993 model to better safeguard national interests.

● Key Features of India-UAE BIT (2024)

- ➔ Investor-State Dispute Settlement (ISDS): Disputes will be resolved through arbitration after exhausting local remedies for 3 years.
- ➔ Definition of Investment: Uses a closed asset-based definition that includes portfolio investments.
- ➔ Fair Treatment and Legal Protection
 - Ensures no denial of justice or fundamental breach of due process for foreign investments.
 - Protects investments from expropriation and mandates compensation for losses.
- ➔ Transparency and Transfer Provisions: Provides clear policies on investment transparency, transfer of capital, and compensation.



● **Significance of India-UAE BIT**

- ➡ **UAE's Importance for India's FDI:** UAE is the **seventh largest FDI source** for India, contributing **3%** of total FDI (\$19 billion) between **April 2000 and June 2024**.
- ➡ **Boosting Investor Confidence:**
- ➡ The BIT ensures **minimum standards of treatment** and **non-discrimination** for foreign investments.
- ➡ Provides an **independent arbitration forum** for resolving disputes, improving ease of doing business.

● **Way Forward**

- ➡ **Strengthen economic cooperation** by encouraging **FDI flows** from UAE across key sectors.
- ➡ Monitor the **implementation of BIT provisions** to ensure smooth functioning and investor trust.
- ➡ Use the BIT framework to **explore new investment avenues** and build stronger **bilateral economic relations**.



Nobel Prize for microRNA Discovery

● **Why in News?**

- ➡ **Nobel Prize in Physiology or Medicine 2024** awarded to **Victor Ambros** and **Gary Ruvkun**.
- ➡ Recognized for the **discovery of microRNAs** and their crucial role in **post-transcriptional gene regulation**.

● **About Gene Regulation**

- ➡ **Gene Regulation:** Cells control which genes are expressed, allowing production of specific proteins.
- ➡ **Process:** Genetic info flows from **DNA** → **mRNA** (via transcription) → **Proteins**.
- ➡ Despite identical genetic info in all cells, gene regulation enables specialized functions of different cells (e.g., muscle, nerve).

● **What is microRNA?**

- ➡ **microRNAs:** Small, non-coding RNA molecules (~22 nucleotides) involved in regulating gene expression.
- ➡ Regulate gene expression by:
 - Binding with **mRNA** to prevent protein translation.
 - Degrading mRNA, inhibiting protein synthesis.
- ➡ Humans possess **1,000+ microRNA genes**, with universal gene regulation across multicellular organisms.

● **Roles of microRNA**

- ➡ **Cellular Development:** Involved in tissue and organ differentiation.
- ➡ **Immune Response:** Regulates both innate and adaptive immune systems.
- ➡ **Oncogenesis:** Dysregulation linked to cancer; can act as tumor suppressors.
- ➡ **Disease Diagnostics:** Serve as biomarkers for diseases like cancer and Parkinson's.

● **Way Forward**

- ➡ Continued research into microRNA could lead to **therapeutic breakthroughs** in treating diseases linked to gene regulation.
- ➡ **microRNA-based diagnostics** may improve early disease detection and personalized treatments.



Nobel Prize in Physics 2024

● Why in News?

- ➔ John Hopfield and Geoffrey Hinton awarded Nobel Prize in Physics 2024 for their pioneering work on Artificial Neural Networks (ANNs).
- ➔ Their contributions laid the foundation for machine learning using ANNs, a critical component of Artificial Intelligence (AI).

● What are ANNs?

- ➔ ANNs are a subset of Machine Learning algorithms that model the workings of the human brain.
- ➔ They consist of interconnected nodes (artificial neurons) that process information like biological neurons in the brain.

● Key Discoveries

➔ John Hopfield

Developed **Hopfield Networks** to store and recall patterns, akin to human memory.

Based on the physics of atomic spin, which describes a material's characteristics at the atomic level.

➔ Geoffrey Hinton

Invented the **Boltzmann Machine**, a network that autonomously learns patterns in data.

This model uses principles from statistical physics and can identify features in data such as images.

● Role of ANNs in AI

- ➔ **Deep Learning:** ANNs form the basis of Deep Learning, allowing the processing of large datasets and complex models.
- ➔ **AI Applications:** Used in image recognition, natural language processing, and autonomous systems.
- ➔ **Learning from Data:** Example: ANNs trained on medical images can detect tumors in new images with high accuracy.



● **Way Forward**

- ➡ Continued advancements in ANN-based technologies will enhance AI's capabilities across sectors.
- ➡ Exploring the integration of physics-based methods can further optimize machine learning models.



Nobel Prize in Chemistry 2024

● Why in News?

- ➔ **Nobel Prize in Chemistry 2024:** Awarded to **David Baker, Demis Hassabis, and John M. Jumper** for their groundbreaking work in protein research.
- ➔ **David Baker:** Recognized for **computational protein design**.
- ➔ **Demis Hassabis and John M. Jumper:** Awarded for their work in **protein structure prediction** using Artificial Intelligence (AI).

● Key Contributions

➔ Prediction of Protein Structures:

Demis Hassabis and John M. Jumper developed the AI model AlphaFold2.

Solved a 50-year-old problem: Predicting how proteins fold into complex structures.

AlphaFold2 can predict the structure of nearly all 200 million proteins based on their amino acid sequence.

➔ Computational Protein Design:

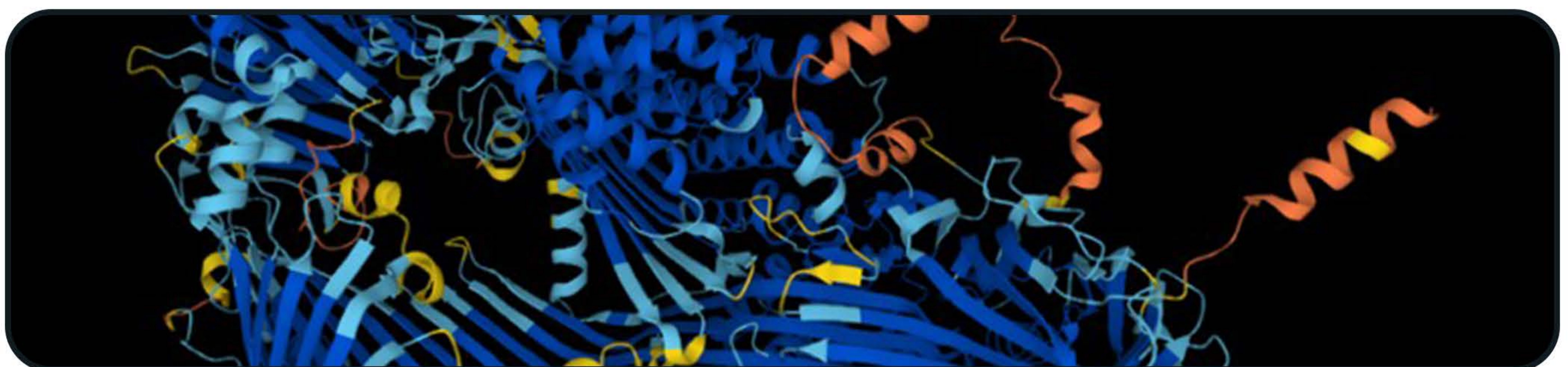
David Baker created new proteins with unique shapes and functions.

His program, **Rosetta**, suggests amino acid sequences to produce desired protein structures.

These newly designed proteins have various applications, such as in pharmaceuticals, vaccines, nanomaterials, and plastic breakdown.

● Applications of New Proteins

- ➔ **Pharmaceuticals:** Creation of new drugs and treatments.
- ➔ **Vaccines:** Development of innovative vaccines.
- ➔ **Nanomaterials:** Use in tiny sensors and advanced materials.
- ➔ **Environmental Solutions:** Proteins designed to break down plastics and other pollutants.



● **About Proteins**

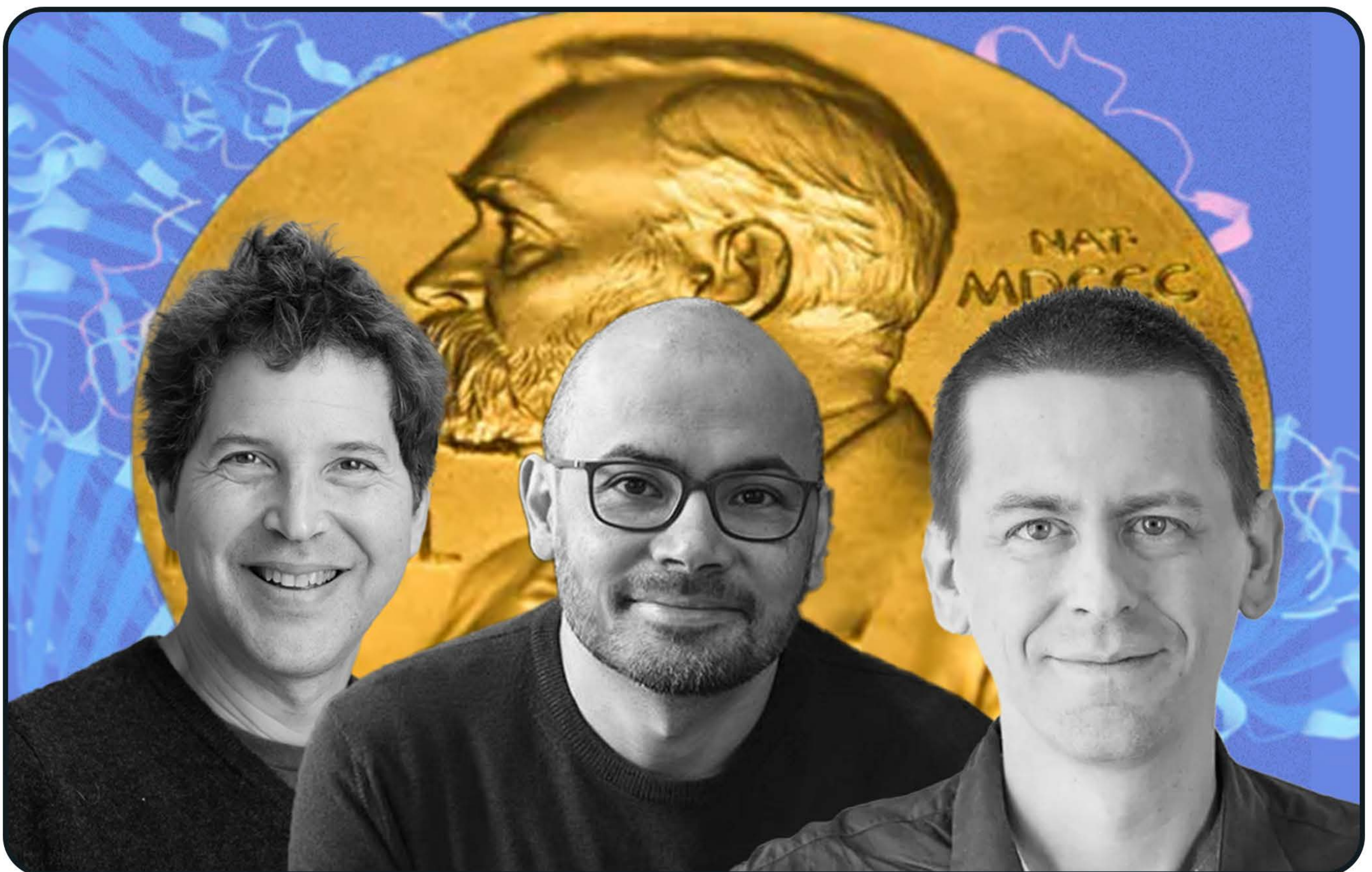
- ➔ **Essential Biomolecules:** Proteins are large, complex molecules responsible for driving chemical reactions, structure, function, and regulation in living organisms.
- ➔ **Structure:** Made up of long chains of amino acids (polypeptides) whose sequences are determined by the DNA of protein-encoding genes.
- ➔ **Functions:** Proteins act as hormones, signal substances, antibodies, and structural components of tissues and organs.

● **Significance of the Research**

- ➔ **Solving Complex Biological Problems:** The ability to predict protein structures and design new proteins represents a huge leap in understanding life processes and advancing biotechnology.
- ➔ **AI in Science:** The use of AI in predicting protein structures opens doors for more rapid discoveries in biological research and medicine.

● **Way Forward**

- ➔ **Further Exploration:** Future research could focus on creating proteins for targeted medical treatments, sustainable materials, and more effective environmental solutions.
- ➔ **Collaboration in Biotechnology:** The combination of AI and computational biology can lead to significant advancements in health, environmental sustainability, and industrial innovation.



MACE Observatory at Hanle, Ladakh: Key Highlights

● ***Why in News?***

- ➡ The **Department of Atomic Energy (DAE)** inaugurated the **Major Atmospheric Cherenkov Experiment (MACE) Observatory** in Hanle, Ladakh, as part of its **Platinum Jubilee** celebrations.
- ➡ The DAE, established in **1954** under the **Atomic Energy Act, 1948**, leads **research and development** for the peaceful uses of atomic energy.

● ***About MACE Observatory***

- ➡ **Asia's largest imaging Cherenkov telescope** and **second-largest in the world**.
- ➡ **Located at an altitude of ~4,300 meters**, making it the **highest such observatory globally**.
- ➡ Built **indigenously** by **Bhabha Atomic Research Centre (BARC)**, with support from **Electronics Corporation of India Ltd. (ECIL)** and other partners.

● ***Objective***

- ➡ To observe **high-energy gamma rays** and study **energetic cosmic events** such as supernovae, black holes, and gamma-ray bursts.
- ➡ Complements global observatories like the **High Energy Stereoscopic System (HESS)**.

● ***Cherenkov Radiation***

- ➡ Named after **Pavel Alekseyevich Cherenkov**, who discovered that **charged particles emit light** when they travel through a non-conducting medium at high speed.

● ***About Gamma Rays***

- ➡ **Gamma rays** are electromagnetic waves with **smallest wavelengths** and the **highest energy**.

- ➡ Sources of Gamma Rays

In the universe: Emitted by **neutron stars, supernovae, pulsars, and black holes**.

On Earth: Produced by **radioactive decay, nuclear explosions, and lightning**.



● **Why was Hanle, Ladakh, Chosen?**

- ➔ **Hanle Valley (4250m above sea level)**, a **dry, cold desert**, offers minimal atmospheric interference and **low human activity**.
- ➔ **Cloudless skies** and **low water vapor** make it an ideal location for **optical, infrared, and millimetre-wave observations**.
- ➔ In **2022**, the **Hanle Dark Sky Reserve (HDSR)** was established to promote **astro-tourism**.

● **Way Forward**

- ➔ **Strengthen international collaborations** through complementary research with other observatories.
- ➔ **Promote Hanle as a hub** for scientific research and **astro-tourism** in India.
- ➔ Facilitate advanced **gamma-ray studies** to unlock deeper insights into **cosmic phenomena**.



India Eliminates Trachoma as a Public Health Problem: WHO Announcement

● Why in News?

- ➔ The **World Health Organization (WHO)** has declared that **India** has successfully eliminated **trachoma** as a public health problem.
- ➔ India becomes the **third country** in the South-East Asia Region to achieve this milestone, following **Nepal** and **Myanmar**.
- ➔ Previously, WHO recognized India as free from two other **Neglected Tropical Diseases (NTDs)**:
 - Guinea Worm Disease (2000)
 - Yaws (2016)

● About Trachoma

- ➔ **Trachoma** is an eye infection caused by the bacterium **Chlamydia trachomatis**.
- ➔ It is a **contagious disease**, spreading through contact with infected eyes, noses, and other bodily fluids.
- ➔ If left untreated, it can lead to **irreversible blindness**.
- ➔ **Status in India:** In **1971**, blindness due to trachoma was **5%**; this has now decreased to **less than 1%**.

● Interventions Implemented

- ➔ **National Programme for Control of Blindness & Visual Impairment (NPCBVI)**.
- ➔ Adoption of the **WHO SAFE strategy** (Surgery, Antibiotics, Facial cleanliness, Environmental improvement).

● Understanding Neglected Tropical Diseases (NTDs)

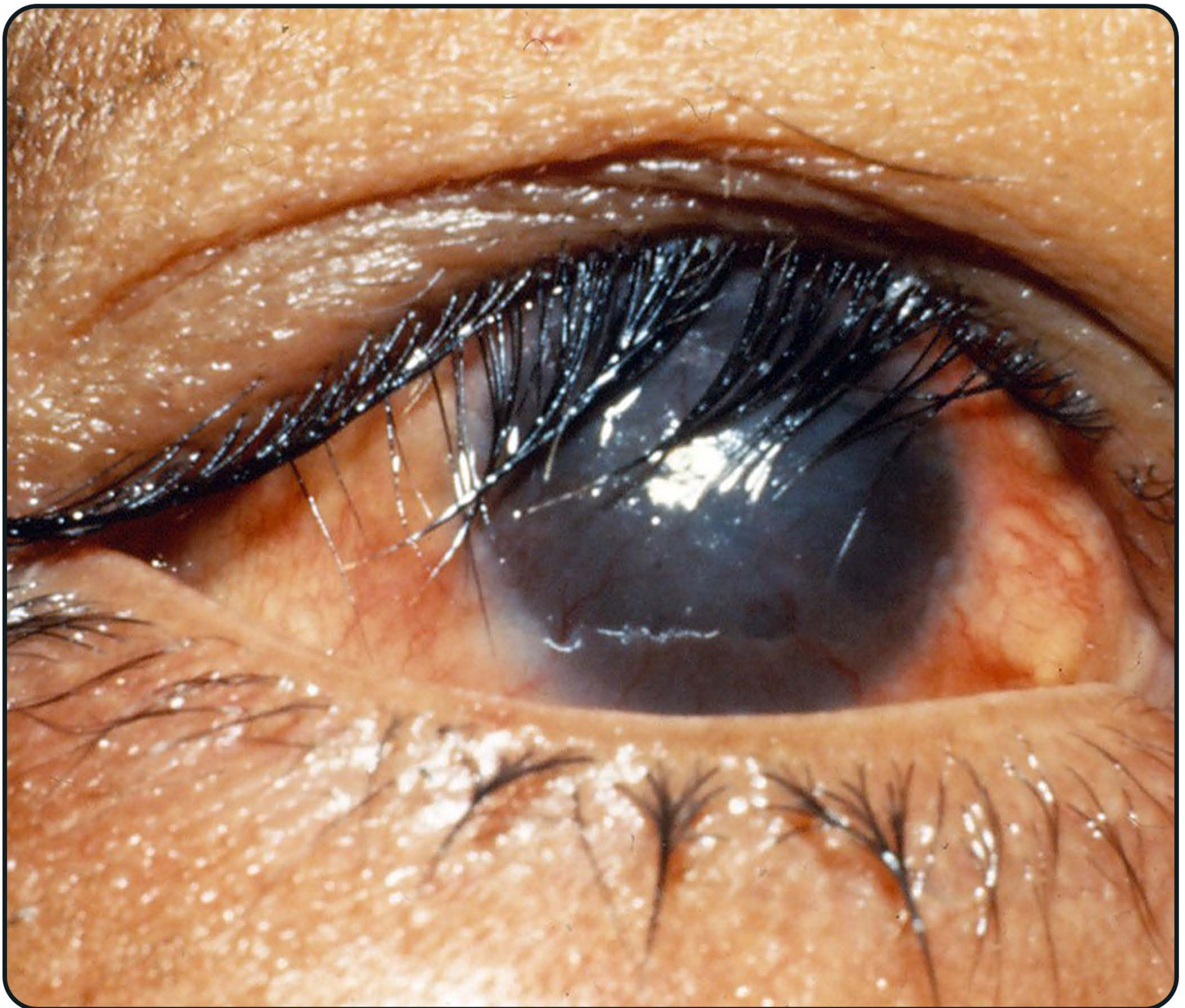
- ➔ NTDs are a diverse group of diseases caused by various pathogens, including **viruses, bacteria, parasites, fungi, and toxins**.
- ➔ Predominantly found in impoverished communities living in **tropical regions** with poor environmental conditions.
- ➔ Referred to as **neglected** due to their absence from the global health agenda, low funding, and associated **stigma** and **social exclusion**.

● **Steps Taken for NTDs**

- ➔ **Globally:** Initiatives include the **Global NTD Annual Reporting Form (GNARF)**, **Global Vector Control Response 2017–2030 (GVCR)**, and the **Kigali Declaration on NTDs (2022)**.
- ➔ **India:** Implementation of the **National Vector Borne Diseases Control Programme (NVBDCP)**.

● **Way Forward**

- ➔ **Continue surveillance and monitoring** to ensure trachoma does not re-emerge.
- ➔ **Enhance public awareness** about trachoma prevention and treatment.
- ➔ **Strengthen healthcare infrastructure** to support ongoing initiatives for the elimination of other NTDs.
- ➔ **Collaborate with global health organizations** to secure funding and technical assistance for NTD programs.
- ➔ **Promote research and development** for innovative solutions to tackle NTDs effectively.





Categories of NTDs

- **Helminth NTDs**
 - Taeniasis/Cysticercosis
 - Guinea Worm Disease
 - Echinococcosis
 - Foodborne Trematodiasis
 - Lymphatic Filariasis
 - Soil-Transmitted Helminthiasis
 - Schistosomiasis
 - Onchocerciasis
- **Protozoan NTDs**
 - Chagas Disease
 - Leishmaniasis
 - Human African Trypanosomiasis
- **Fungal NTDs**
 - Mycetoma
 - Chromoblastomycosis
 - Other deep mycoses
- **Viral NTDs**
 - Rabies
 - Dengue
 - Chikungunya
- **Bacterial NTDs**
 - Buruli Ulcer
 - Leprosy
 - Trachoma
 - Yaws
- **Non-Infectious NTDs**
 - Snakebite envenoming
- **Ectoparasitic NTDs**
 - Scabies
 - Other ectoparasites



India's 5th Lunar Mission: Lunar Polar Exploration Mission (LUPEX) Approved

● Why in News?

- ➔ The **National Space Panel** has approved **LUPEX**, India's fifth lunar mission.
- ➔ LUPEX will serve as a precursor to India's **lunar sample return mission** and aims to send the first Indian to the moon by **2040**.

● About the LUPEX Mission

➔ Purpose:

Investigate the quantity and quality of water on the Moon.

Explore the **dark side** (far side) of the Moon, which is never visible from Earth due to its **tidal locking** with Earth.

➔ International Collaboration:

The Indian Space Research Organisation (**ISRO**) will develop the lunar rover.

Japan's JAXA is responsible for the lander.

Observation instruments from **NASA** and the **European Space Agency (ESA)** will be mounted on the rover.

➔ Landing Location:

The mission will target the **south pole of the Moon**, believed to have high water potential.

The south pole presents challenges for landing due to limited flat areas with adequate illumination and communication conditions.

● Significance of the Mission

- ➔ India made history with the successful landing of the **Vikram Lander** on the south pole during the **Chandrayaan-3** mission, becoming the first country to land in this region and the fourth country overall to land on the Moon (after the US, Russia, and China).



● Way Forward

- ➔ **Prepare for the LUPEX mission:** Ensure that all technical and operational aspects are in place for a successful launch and landing.
- ➔ **Enhance international collaboration:** Strengthen partnerships with JAXA, NASA, and ESA to leverage expertise and resources.
- ➔ **Conduct thorough research and development:** Focus on developing advanced technologies for the lunar rover and lander.
- ➔ **Engage the public:** Increase awareness and interest in lunar exploration through outreach programs and educational initiatives.
- ➔ **Plan for future missions:** Use the findings from LUPEX to pave the way for India's lunar sample return mission and human exploration by 2040.



Second All India Rural Financial Inclusion Survey (NAFIS) 2021-22

● Why in News?

- ➔ **NABARD** released the **Second All India Rural Financial Inclusion Survey (NAFIS)** for 2021-22.
- ➔ The survey provides a comprehensive overview of rural livelihoods and financial inclusion, with a focus on loans, insurance, and pension schemes.
- ➔ NAFIS 2021-22 offers insights into rural development trends since its first edition in 2016-17.

● Key Highlights

- ➔ **Rural Income Growth:** Average monthly household income increased by **57.6%**.
- ➔ **Consumption Patterns:** Share of food in household consumption dropped from 51% to 47%.
- ➔ **Financial Inclusion:** The **Kisan Credit Card** emerged as an effective tool for financial inclusion in the rural farming sector.
- ➔ **Landholding Size:** Average landholding size decreased from **1.08 hectares to 0.74 hectares**.
- ➔ **Financial Literacy:** Respondents reporting good financial literacy rose from **33.9% to 51.3%**.
- ➔ **Institutional Loans:** Agricultural households taking loans from institutional sources increased from **60.5% to 75.5%**.

● Reasons for Rise in Rural Income

- ➔ **Government Support:** Programs like **MGNREGA** helped 5.6 crore households secure employment (as of January 2023), boosting income and livelihood security.
- ➔ **Female Workforce Participation:** The rural female labor force participation rate increased from **19.7% (2018-19) to 27.7% (2020-21)** (Economic Survey 2022-23).



● **About NABARD**

- ➡ Formed based on the recommendation of the **B. Sivaraman Committee**.
- ➡ Established in **1982** as India's apex development bank, focusing on sustainable and equitable agriculture and rural development.

● **NAFINDEX: Financial Inclusion Measure**

- ➡ **NAFINDEX** is a tool based on data from the first NAFIS (2016-17) that measures financial inclusion across Indian states.
- ➡ It uses three dimensions: traditional banking products, modern banking products, and payment systems.

● **Way Forward**

- ➡ Continue strengthening financial literacy programs to empower rural communities.
- ➡ Encourage the use of institutional loans to reduce dependence on informal credit.
- ➡ Leverage government schemes to enhance income and provide livelihood security, especially in agriculture and allied sectors.



Draft National Sports Governance Bill, 2024 Released

● Why in News?

- ➡ The **Ministry of Youth Affairs and Sports** has unveiled the **Draft National Sports Governance Bill, 2024**, seeking public feedback.

● Aims of the Bill

- ➡ **Promote Sports Development:** Enhance athlete welfare and promote ethical practices through effective governance.
- ➡ **Establish Governance Standards:** Develop institutional capacity and set prudential standards for sports federations.
- ➡ **Resolve Grievances:** Create a unified and effective framework for resolving sports grievances and disputes.

● Key Features of the Bill

➡ Sports Regulatory Board:

Acts as the central authority to recognize **National Sports Federations (NSFs)**.

Ensures compliance with governance and ethical standards.

- ➡ **Ethical Standards:** Establishes mandatory ethical governance through **Ethics and Dispute Resolution Commissions** to maintain integrity and transparency.
- ➡ **Athletes Commissions:** Represents athletes in decision-making processes and allows them to raise concerns, with funding provided by the government.
- ➡ **Athlete Representation:** Mandates that **10% of voting members** in sports bodies be top athletes elected by the Athletes Commission, including one male and one female member on the Executive Committee.
- ➡ **Safe Sports Policy:** Protects athletes, particularly minors and women, from harassment, in compliance with the **Protection of Women from Sexual Harassment Act**.
- ➡ **Anti-Doping Compliance:** Enforces strict anti-doping regulations aligned with international ethical standards.
- ➡ **Public Accountability:** Ensures sports organizations are subject to the **Right to Information Act** for enhanced transparency.
- ➡ **Gender Representation:** Requires that at least **30% of governing body members** be female.

● **Way Forward**

- ➔ **Public Feedback:** Encourage stakeholders, including athletes and sports organizations, to provide input on the draft bill.
- ➔ **Finalize the Bill:** Incorporate feedback and finalize the legislation for approval by the government.
- ➔ **Implementation:** Develop a comprehensive strategy for the effective implementation of the bill once enacted.
- ➔ **Awareness Campaigns:** Conduct awareness campaigns to educate athletes and sports bodies about their rights and responsibilities under the new governance framework.
- ➔ **Monitoring Mechanism:** Establish a robust monitoring mechanism to ensure compliance with the provisions of the bill and promote good governance practices.






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