



WEEKLY CURRENT AFFAIRS

OCTOBER, 2024

Week-2

8-14 Oct., 2024

★★ Useful for ★★

**CSE, ESE, PSUs, State Services Exams,
SSC and Banking Exams**

8th OCTOBER 2024

Nobel Prize in Physiology or Medicine, 2024

- **Context:** The Nobel Prize in Physiology or Medicine 2024 was awarded jointly to Victor Ambros and Gary Ruvkun "for the discovery of microRNA and its role in post-transcriptional gene regulation".

Key Facts

- Victor Ambros and Gary Ruvkun discovered microRNA, a new class of tiny RNA molecules that play a crucial role in gene regulation. Their groundbreaking discovery revealed a completely new principle of gene regulation that turned out to be essential for multicellular organisms, including humans.
- MicroRNAs are proving to be fundamentally important for how organisms develop and function.
- The Nobel Prize in Physiology or Medicine is awarded by the Nobel Assembly at Karolinska Institutet, Stockholm, Sweden.

India-Maldives Relations

- **Context:** Prime Minister Narendra Modi and the President of Maldives recently comprehensively reviewed the bilateral ties.

Key Highlights

- The Prime Minister underscored the importance of Maldives under its 'Neighbourhood First' Policy and Vision SAGAR, and reaffirmed India's commitment to assist Maldives on its developmental journey and priorities.
- India has extended support of 400 million dollars and a bilateral currency swap of 3,000 crore rupees to the Maldives. The support will be instrumental in tackling the ongoing financial challenges faced by the Maldives.

Significance of Maldives:

- The Maldives is strategically located in the Indian Ocean, and its stability and security are of interest to India.
- Situated along crucial maritime trade routes between the Gulf of Aden and the Strait of Malacca, the Maldives acts as a "toll gate" for nearly half of India's external trade and 80% of its energy imports.
- Maldives presents an opportunity for India to counterbalance China's growing influence in the Indian Ocean, fostering regional balance of power.

Key Challenges:

- Recent political upheavals and changes in government create uncertainty and complicate long-term cooperation projects.
- China's growing economic presence in the Maldives, evidenced by investments in infrastructure projects and debt-trap diplomacy, is perceived as a challenge to India's strategic interests in the region. Chinese naval expansion and potential military ambitions in the Indian Ocean with the active support from Maldives can raise concerns for India.
- Piracy, terrorism, and drug trafficking remain concerns in the region, requiring continuous collaboration and intelligence sharing between India and the Maldives.
- The Maldives' vulnerability to religious extremism and radicalization poses a security threat that necessitates joint efforts in countering such ideologies.
- The significant trade imbalance between India and the Maldives leads to resentment and calls for diversifying trade partnerships.

ADITI 2.0 and DISC 12

- **Context:** Defence Minister Rajnath Singh recently unveiled two key initiatives: ADITI 2.0 and the 12th edition of Defence India Start-up Challenges (DISC 12) at DefConnect 4.0.

Key Highlights

ADITI 2.0:

- Features 19 challenges focused on Artificial Intelligence (AI), Quantum Technology, military communication, anti-drone systems, and adaptive camouflage.
- Winners are eligible for grants up to Rs 25 crore to advance defence critical technologies.

12th edition of Defence India Start-up Challenges (DISC 12):

- Introduces 41 challenges in areas like Unmanned Aerial Vehicles (UAVs) and networking.
- Includes the Medical Innovations and Research Advancement (MIRA) initiative, targeting medical technology advancements for the Armed Forces.
- Winners can receive grants up to Rs 1.5 crore.
- This initiative is designed to support start-ups, MSMEs, and innovators in developing prototypes and commercializing defence products.

9th OCTOBER 2024

Nobel Prize in Physics, 2024

- **Context:** John Hopfield and Geoffrey Hinton were awarded the 2024 Nobel Prize in Physics for their foundational contributions to machine learning using artificial neural networks (ANNs).

Key Highlights

- Artificial neural networks (ANNs), which process data through interconnected nodes, have become well-known due to the popularity of AI apps like ChatGPT.
- John Hopfield, a professor at Princeton University, developed the Hopfield network, a type of recurrent neural network that processes information based on Hebbian learning. It enables the storage and reconstruction of images and patterns.
- The Hopfield network is inspired by the physics of magnetic atoms, with neurons mimicking atoms' energy-minimizing behavior to complete patterns or

denoise images. His 1982 paper laid the foundation for using statistical physics in modeling neural circuits.

- The Hopfield network finds patterns by lowering its overall energy, comparing distorted or incomplete input to saved patterns.
- Geoffrey Hinton, a professor at the University of Toronto, adapted the Boltzmann machine for cognitive tasks and created the restricted Boltzmann machine (RBM). It uses statistical physics to recognize features in data and learns by recognizing patterns and generating new examples of the data on which it was trained, playing a significant role in machine learning's current growth
- His work led to the development of deep learning ANNs, with layers of neurons capable of complex tasks.

Trachoma

- **Context:** The World Health Organisation (WHO) has declared that India has eliminated Trachoma as a public health problem becoming the third country in the South-East Asia Region to achieve this milestone.

Key Facts

- Trachoma was amongst the leading causes of blindness in the country during 1950-60.
- The Government of India launched the National Trachoma Control Program (1963) and later on Trachoma control efforts were integrated into India's National Program for Control of Blindness (NPCB).
- WHO-SAFE strategy was implemented throughout the country wherein SAFE stands for Surgery adoption, Antibiotics, Facial hygiene, Environmental cleanliness, etc.
- As a result, in 2017, India was declared free from infective Trachoma. However, surveillance continued for trachoma cases in all the districts of India from 2019 onwards till 2024.

About Trachoma

- It is a disease of the eye caused by infection with the bacterium *Chlamydia trachomatis*.
- It is contagious, spreading through contact with the eyes, eyelids, nose or throat secretions of infected people, if left untreated it causes irreversible blindness.
- WHO has termed Trachoma as a neglected tropical disease and according to its estimates around 150 million people worldwide are affected by Trachoma and 6 million of them are blind or at risk of visually disabling complications.

Ni-Kshay Poshan Yojana (NPY)

- **Context:** The Union Ministry of Health and Family Welfare has doubled the monthly nutrition support under Ni-Kshay Poshan Yojana (NPY) for tuberculosis (TB) patients.

Key Facts

- The monthly nutrition support has been revised from existing Rs. 500 per month/patient to Rs. 1,000/month/patient for the entire duration of the treatment.
- Ni-Kshay Poshan Yojana (NPY) is a centrally sponsored scheme under National Health Mission (NHM), and all notified TB patients are beneficiaries of the scheme.
- It was launched in 2018 and is implemented by the Ministry of Health and Family Welfare.
- The monetary assistance scheme is expected to aid nutritional recovery, improve response to treatment and outcomes and reduce mortality due to TB in India.
- India has the highest burden of TB and it kills an estimated 4,80,000 Indians every year.
- Although elimination of tuberculosis is one of the sustainable development targets to be achieved by 2030 by the world, India has set the target of 2025.

10th OCTOBER 2024

Nobel Prize in Chemistry, 2024

- **Context:** The Nobel Prize for 2024 in Chemistry was awarded to David Baker “for computational protein design” along with Demis Hassabis and John M. Jumper “for protein structure prediction”.

Key Facts

- Proteins are large, complex molecules that play many critical roles in the body. They are made up of smaller units called amino acids, which are linked together in long chains. There are 20 different types of amino acids, and the specific sequence in which they are arranged determines the protein's structure and function.
- In 2003, David Baker, a professor at the University of Washington, succeeded in using these blocks to design a new protein that was unlike any other protein. Since then, his research group has produced one imaginative protein creation after another.
- In 2020, Demis Hassabis and John Jumper developed an AI model called AlphaFold2, as part of Google's DeepMind project, that was able to predict the structure of virtually all the 200 million proteins that researchers have identified.
- It allows us to better understand how life functions, including why some diseases develop, how antibiotic resistance occurs or why some microbes can decompose plastic.

Major Atmospheric Cherenkov Experiment (MACE) Observatory

- **Context:** The Major Atmospheric Cherenkov Experiment (MACE) Observatory has been inaugurated at Hanle, Ladakh.

About MACE Observatory

- It is the largest imaging Cherenkov telescope in Asia.

- It is the highest Cherenkov telescope in the world, situated at an altitude of ~4,300 m.
- It is an indigenous project built by BARC with support from ECIL and other Indian industry partners.
- The telescope will advance India's role in cosmic-ray research and study high-energy gamma rays to better understand the universe's energetic events like supernovae, black holes, and gamma-ray bursts.
- It promotes scientific research while contributing to the socio-economic development of Ladakh.
- It will complement global observatories, furthering India's contributions to multi-messenger astronomy and strengthening international collaborations in space research.
- The project is part of India's pioneering efforts in cosmic-ray research, following the legacy of Dr. Homi J. Bhabha, and will serve as a beacon for future astrophysical explorations.

Humsafar Policy

- **Context:** The Union Minister for Road Transport and Highways launched the 'Humsafar Policy'.

Key Facts

- The policy offers highway users a convenient, safe, and enjoyable experience while empowering entrepreneurs, generating jobs, and enhancing livelihoods for service providers.
- The following essential facilities will be introduced across national highways:
 - Hygienic and well-maintained toilets;
 - Dedicated rooms for baby care and wheelchair provisions,
 - EV charging stations at strategic points,
 - Restaurants and food courts at regular intervals,
 - Dormitories at fuel stations to provide short-term accommodation.

11th OCTOBER 2024

Nobel Prize in Literature, 2024

- **Context:** The Nobel Prize in Literature 2024 is awarded to the South Korean author Han Kang, "for her intense poetic prose that confronts historical traumas and exposes the fragility of human life."

Key Facts

- It was announced by the Swedish Academy in Stockholm, Sweden.
- She is the first South Korean and the first Asian female Nobel laureate in literature.
- In 2016, Han Kang's *The Vegetarian* became the first Korean language novel to win the Man Booker International Prize.

70th National Film Awards

- **Context:** President Droupadi Murmu gave away the 70th National Film Awards to the winners in various categories.

Key Facts

- National Film Awards are the most prestigious awards, which are announced annually to honor the best filmmaking talent across the country.
- It aims at encouraging the production of films of aesthetic and technical excellence and social relevance.
- The awards are given in three sections – Features, Non-Features and Best Writing on Cinema.

About National Film Awards

- The awards were first presented in 1954 and were known as the 'State Awards'. At the time, only best films in different regional languages were recognised and awarded.
- Separate awards for artists and technicians were instituted in 1968 for the films of 1967.

- Nargis Dutt and Uttam Kumar being the first actress and actor to get the Best Actress and Best Actor Awards respectively.

Key Recipient of the National Film Awards, 2024

- **Best Feature Film:** Aattam (The Play)
- **Best Non-feature film:** Ayena (Mirror)
- **Best Actor:** Rishab Shetty (Kantara)
- **Best Actress:** Nithya Menen (Thiruchitrabalam) and Manasi Parekh (Kutch Express)
- **Veteran actor Mithun Chakraborty** was honored with the Dadasaheb Phalke Lifetime Achievement Award for the year 2022.

National Maritime Heritage Complex (NMHC)

- **Context:** The Union Cabinet, chaired by Prime Minister Narendra Modi, approved the development of the National Maritime Heritage Complex (NMHC) at Lothal, Gujarat.

About National Maritime Heritage Complex (NMHC)

- It is being constructed at Lothal, Gujarat, a site of historical significance linked to the Indus Valley Civilization. The project is under the Ministry of Ports, Shipping, and Waterways.
- Its primary objective is to showcase the maritime heritage of India from ancient to modern times, utilizing an edutainment approach and incorporating the latest technology
- The NMHC is set to become the world's largest maritime museum complex, positioning it as a key international tourist destination.
- The project aligns with the Prime Minister's vision to showcase India's 4,500-year maritime heritage, initiated by the Ministry of Ports, Shipping & Waterways (MoPSW).

- It is a part of the Sagarmala Programme, a flagship initiative by the Government of India aimed at promoting port-led development and enhancing the efficiency of logistics in the country.

12th OCTOBER 2024

Nobel Peace Prize, 2024

- **Context:** The 2024 Nobel Prize for Peace has been awarded to Nihon Hidankyo, a Japanese organisation of survivors of the Hiroshima-Nagasaki bombings for its "efforts to achieve a world free of nuclear weapons".

About Nihon Hidankyo

- Founded on 10th August 1956, it is composed of survivors from the atomic bombings in Hiroshima and Nagasaki conducted by the United States in 1945.
- The survivors, referred to as "Hibakusha" or "bomb-affected people," played a pivotal role in leading the global movement aimed at abolishing nuclear weapons.

MALABAR - 2024

- **Context:** The maritime exercise Malabar 2024, the most comprehensive version of all editions so far, commenced at Visakhapatnam, India.

About Exercise Malabar

- The Malabar series of exercises began as an annual bilateral naval exercise between India and the United States in 1992.
- However, it has evolved into a key multilateral event aimed at enhancing interoperability, fostering mutual understanding, and addressing shared maritime challenges in the Indian Ocean and Indo-Pacific region.
- Japan joined the naval exercises in 2015 and Australia rejoined the exercise in 2020 after having last participated in 2007.

21st ASEAN-India Summit

- **Context:** Prime Minister Narendra Modi and ASEAN leaders reviewed how the ASEAN-India Comprehensive Strategic Partnership has progressed so far and discussed plans for future cooperation in Vientiane, Lao PDR.

Key Highlights

- **PM announced a 10-point plan which includes:**

1. Celebrating the year 2025 as ASEAN-India Year of Tourism,
2. To celebrate a decade of Act East Policy,
3. Review of ASEAN-India Trade in Goods Agreement by 2025 etc.
4. The leaders declared that they would explore collaboration of cross-border linkages between payment systems in ASEAN and India through digital solutions.
5. India will share its knowledge and experiences in using digital public infrastructure (DPI) such as Aadhaar and Unified Payments Interface (UPI) with the ASEAN nations.
6. The leaders agreed to create a new ASEAN-India Plan of Action (2026-2030) and adopted Two Joint Statements;
7. Joint Statement on Strengthening ASEAN-India Comprehensive Strategic Partnership for Peace, Stability and Prosperity in the Region in the context of the ASEAN Outlook on the Indo-Pacific (AOIP) with the Support of India's Act East Policy (AEP),
8. Joint Statement on Advancing Digital Transformation.
9. Leaders welcomed the launch of the ASEAN-India Fund for Digital Future to support joint activities.
10. The PM of India emphasized the need to complete the review of ASEAN-India FTA (AITIGA) in a time bound manner.

13th OCTOBER 2024

Nobel Prize in Economics, 2024

- **Context:** The Nobel Memorial Prize in economics was awarded to Daron Acemoglu, Simon Johnson and James A Robinson for their research into differences in prosperity between nations.
- The three awardees "have demonstrated the importance of societal institutions for a country's prosperity", the Nobel committee of the Royal Swedish Academy of Sciences said, adding, "Societies with a poor rule of law and institutions that exploit the population do not generate growth or change for the better. The laureates' research helps us understand why."
- Formally known as the Bank of Sweden Prize in Economic Sciences in Memory of Alfred Nobel, the economics prize was established by the central bank in 1968 as a memorial to the 19th-century Swedish businessman and chemist who invented dynamite.
- He had established five Nobel Prizes — medicine, physics, chemistry, literature and peace.

Global Hunger Index, 2024

- **Context:** India has been ranked 105th out of 127 countries in the Global Hunger Index (GHI) 2024, placing it in the "serious" category for hunger levels.

Key Highlights of the GHI 2024

- The 2024 Global Hunger Index score for the world is 18.3, considered moderate, down only slightly from the 2016 score of 18.8.
 - Little progress has been made on reducing hunger since 2016, and the prospects for achieving Zero Hunger by the target date of 2030 are grim, with 42 countries still experiencing alarming or serious hunger.
- The wars in Gaza and Sudan have led to exceptional food crises.
- Somalia, Yemen, Chad, and Madagascar are the countries with the highest 2024 GHI scores; Burundi and South Sudan are also provisionally designated as alarming.

- Progress has been notable for example in Bangladesh, Mozambique, Nepal, Somalia, and Togo, although challenges remain.
- India's performance remains concerning, in comparison to the South Asian neighbours such as Bangladesh, Nepal, and Sri Lanka, which fall into the "moderate" category.
 - India is listed alongside countries like Pakistan and Afghanistan, which also face severe hunger challenges.
- **The report reveals alarming statistics:** 13.7 percent of India's population is undernourished, 35.5 percent of children under five are stunted, 18.7 percent suffer from wasting, and 2.9 percent of children die before their fifth birthday.
- Economic Zones like textile clusters, pharmaceutical clusters, defence corridors, electronic parks, industrial corridors, fishing clusters, agri zones will be covered to improve connectivity & make Indian businesses more competitive.
- It will also leverage technology extensively including spatial planning tools with ISRO (Indian Space Research Organisation) imagery developed by BiSAG-N (Bhaskaracharya National Institute for Space Applications and Geoinformatics).

Biopolymers

- **Context:** The Union Minister inaugurated India's first demonstration facility for biopolymers at Jejuri in Pune (Maharashtra).

Key Highlights

- The facility is a demonstration of India's commitment to transitioning from fossil-based plastics to eco-friendly alternatives, addressing the global plastic pollution crisis.
- India's bioeconomy has grown to more than US \$150 billion in 2023 and is projected to reach US \$300 billion by 2030.
- Earlier, the government has approved the BioE3 Policy (Biotechnology for Economy, Environment, and Employment), aimed at promoting sustainable growth against the backdrop of climate change and resource depletion.

About Biopolymer

- Biopolymers are the materials derived from biological sources such as fats, vegetable oils, and sugars, which offer several advantages over traditional synthetic polymers, which are typically made from petrochemical sources.
- Biopolymers decompose naturally in the environment, primarily through the action of bacteria, leading to minimal environmental pollution.
- When biopolymers degrade, the carbon dioxide (CO₂) they release can be absorbed by the crops or biomass used to replace them, thus maintaining a carbon-neutral cycle.

About Global Hunger Index (GHI)

- GHI is a tool for comprehensively measuring and tracking hunger at global, regional, and national levels.
- The index is published by Concern Worldwide, an Irish humanitarian organisation, and Welthungerhilfe, a German aid agency.

14th OCTOBER 2024

PM GatiShakti National Master Plan

- **Context:** The PM GatiShakti National Master Plan (NMP) for multimodal connectivity, launched in 2021 has completed three years of implementation.

Key Highlights

- It was launched to enhance the country's infrastructure and promote seamless connectivity across various sectors.
- It is a transformative approach for economic growth and sustainable development which is driven by seven engines – railway, roads, ports, waterways, airports, mass transport and logistics infrastructure.
- **Implementation:** PM Gati Shakti will incorporate the infrastructure schemes of various Ministries and State Governments like Bharatmala, Sagarmala, inland waterways, dry/land ports, UDAN etc.