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Date: 11-10-2024

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UNION CABINET APPROVES CONTINUATION FORTIFIED RICE

Context

- The Union Cabinet extends the rice fortification initiative across welfare schemes until 2028 to combat anemia and nutritional deficiencies.

Background

- The rice fortification would continue as a **central sector initiative** with **100% funding by the Centre** in order to ensure inclusive nutritional security in the country.
- The free fortified rice will be provided under programmes such as **Targeted Public Distribution System, Integrated Child Development Service, PM POSHAN**, in all the States and Union Territories.
- FSSAI (Food Safety and Standards Authority of India) has established **Food Fortification Resource Centre (FFRC)** as a resource center to promote large-scale fortification of food

What is food fortification?

- **According to WHO**, fortification is the practice of deliberately increasing the content of one or more micronutrients (i.e., vitamins and minerals) in a food or condiment.
- This is done to **improve the nutritional quality** of the food and provide a public health benefit with minimal risk to health.

Food Fortification in India

- **Rice fortification involves** the addition of fortified rice kernels enriched with micronutrients (**Iron, Folic Acid, Vitamin B 12**) as per standards prescribed by FSSAI to regular rice.
- **Milk is fortified** with **vitamins A and D**, which helps in combating deficiencies linked to these vitamins.
- **Salt fortified** with **iodine** (iodized salt) to prevent iodine deficiency disorders.

Advantages of fortification in India

- **Addressing Nutritional Deficiencies:** India faces significant issues related to **hidden hunger**, where micronutrient deficiencies exist even if calorie intake is adequate.
 - ♦ Fortification tackles deficiencies like **anemia (iron)**, **rickets (vitamin D)**, and **blindness (vitamin A)**.

- **Cost-Effective:** Fortification is an inexpensive way to improve the nutritional value of foods without requiring people to change their eating habits.
- **Improved Public Health:** By preventing conditions like anemia, iodine deficiency etc. Fortification leads to better results in cases of maternal and infant mortality.
 - ♦ According to the **National Family Health Survey (NFHS-5)**, anemia remains a widespread issue in India, affecting children, women, and men across various age groups and income levels.
- **The Copenhagen Consensus** estimates that every 1 Rupee spent on fortification results in 9 Rupees in benefits to the economy.

Concerns of food fortification

- **Absorption:** The added nutrients are not always fully absorbed by the body due to factors like cooking methods and the presence of inhibitors in food.
 - ♦ **Example:** Phytates in cereals that hinder iron absorption.
- **Regulatory Oversight:** Without strict regulatory oversight, there is a risk of inadequate or excessive fortification, which could undermine the health benefits.
- **Limited Access:** Fortified food products fail to reach the poorest segments of society (Low Purchasing Power), who are among the worst section affected with nutritional deficiencies.

Government Measures

- **The 'F+' logo** is an initiative by the FSSAI to standardize and indicate fortified foods.
- **The Milk Fortification Project** is a major initiative by the **National Dairy Development Board (NDDB)**, undertaken in collaboration with the World Bank. The project's goal is to fortify milk with **vitamins A and D**.

Way Ahead

- Food fortification offers a powerful tool for **addressing India's significant malnutrition and micronutrient deficiency** challenges.
- While it is not a panacea, when combined with other nutritional strategies and strong governmental support, it can help improve public health and contribute to the nation's sustainable development goals.

Food Safety and Standards Authority of India (FSSAI)

- Established under **Food Safety and Standards, 2006**, the Food Safety and Standards Authority of India (FSSAI) handles food-related issues including ensuring the safe availability of food for human consumption.
- It is an autonomous body under the **Ministry of Health and Family Welfare** that is responsible for promoting and protecting public health through various regulations and supervisions of food safety.

Source: TH

21ST ASEAN-INDIA SUMMIT

Context

- The **Prime Minister 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:
 - Celebrating the year 2025 as **ASEAN-India Year of Tourism**,
 - To celebrate a decade of **Act East Policy**,
 - Review of ASEAN-India **Trade in Goods Agreement** by 2025 etc.
- The leaders declared that they would explore **collaboration of cross-border linkages between payment systems** in ASEAN and India through digital solutions.
 - 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.
- The leaders agreed to create a new **ASEAN-India Plan of Action (2026-2030)** and adopted Two Joint Statements;
 - 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),
 - Joint Statement on **Advancing Digital Transformation**.

- Leaders welcomed the launch of the **ASEAN-India Fund for Digital Future** to support joint activities.
- The PM of India emphasized the need to complete the review of **ASEAN-India FTA (AITIGA)** in a time bound manner.

ASEAN India Trade in Goods Agreement (AITGA)

- India signed an FTA in goods with ASEAN in 2009, which came into force in 2010.
 - A separate FTA in services was signed in 2014.
- The FTA between India and ASEAN is also known as the ASEAN India Trade in Goods Agreement (AITGA).
- The pact resulted in disproportionate benefits for ASEAN.

Significance of ASEAN for India

- Counter China's Influence:** ASEAN's strategic location makes it a critical partner for balancing China's growing influence in the region.
- Trade and Investment:** In 2021-2022, trade between India and ASEAN stood at around \$110 billion. ASEAN countries are also a significant destination for Indian investments.
- Indo-Pacific Region:** ASEAN is central to India's Indo-Pacific strategy, which seeks to promote a free, open, and rules-based order in the region.
- India's Act East Policy** places ASEAN at its core to enhance connectivity, maritime cooperation, and economic engagement.
- Counter-Terrorism:** India collaborates with ASEAN on counter-terrorism, transnational crime, and cybersecurity initiatives. These efforts are crucial in maintaining regional security.
- Connectivity and Infrastructure:** Initiatives such as the India -Myanmar-Thailand Trilateral Highway and the Kaladan Multimodal Transit Transport Project aim to improve physical connectivity between India and ASEAN, promoting trade and economic integration.
- ASEAN-led Mechanisms:** India is part of key ASEAN-led platforms like the;
 - East Asia Summit (EAS),
 - ASEAN Regional Forum (ARF), and
 - ASEAN Defense Ministers' Meeting-Plus (ADMM-Plus), which are vital for fostering regional dialogue on strategic issues.

Association of Southeast Asian Nations (ASEAN)

- **About:** It is a political and economic organization aimed primarily at promoting economic growth and regional stability among its members.
- **Members:** Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, the Philippines, Singapore, Thailand and Vietnam.
- **History:** It was established in **1967 in Bangkok, Thailand**, with the signing of the ASEAN Declaration (**Bangkok Declaration**) by the Founding Fathers of ASEAN: **Indonesia, Malaysia, Philippines, Singapore and Thailand**.
 - ♦ **Brunei Darussalam** joined ASEAN in **1984**, followed by **Vietnam in 1995**, **Lao PDR and Myanmar in 1997**, and **Cambodia in 1999**.
- **ASEAN Summit:** It is the highest policy-making body in ASEAN comprising the Head of States or Government of ASEAN Member States. Summit is held twice annually.
 - ♦ **The First ASEAN Summit** was held in **Bali, Indonesia in 1976**.

Way Ahead

- The Summit represents a milestone in ASEAN-India relations, with both sides reaffirming their strategic and economic importance to one another.
- India's sustained engagement with ASEAN, through its Act East Policy, will continue to shape the regional architecture in the Indo-Pacific, aligning with ASEAN's Outlook and the broader goals of regional stability and prosperity.

Source: PIB

ROAD SAFETY IN SOUTHEAST ASIA

Context

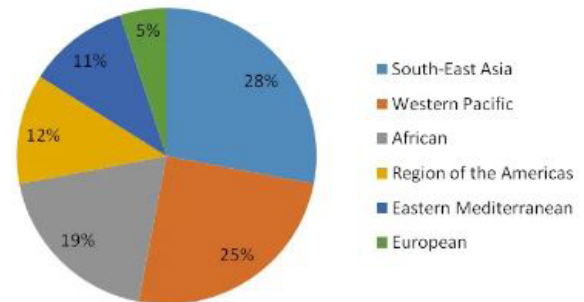
- A deadly fire accident on a Thai school bus has reignited a debate about **road safety in Southeast Asia**.

Road Accidents in Southeast Asia

- **The Region has 11 Member States:** Bangladesh, Bhutan, Democratic People's Republic of Korea, India, Indonesia, Maldives, Myanmar, Nepal, Sri Lanka, Thailand and Timor-Leste.
- Southeast Asia accounted for **3,30,223 of the 1.19 million** estimated global road traffic deaths in 2021, accounting for **28% of the global burden**.

- Vulnerable road users, including pedestrians, bicyclists, and two or three-wheelers **constitute 66% of all reported road traffic deaths** in the southeast Asia region.

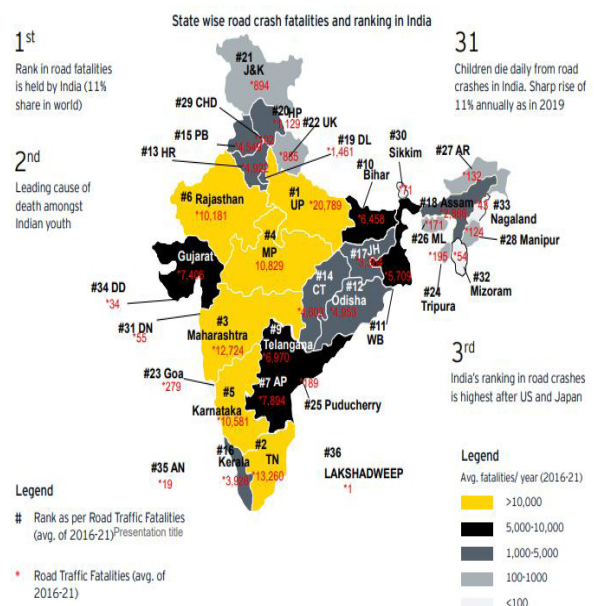
WHO Regions and Road Accidents



- **Challenges:** A high prevalence of motorised two and three-wheelers, inadequate traffic injury data, poor pedestrian and cyclist infrastructure, and limited emergency services.

Road Accidents in India

- According to the Ministry of Road Transport and Highways (MoRTH), 153,972 persons were killed in road crashes in the year 2021. This corresponds to **11.3 deaths per 100,000 population**.
- With **11% share in total fatalities** due to road crashes, India ranks **3rd globally** for road crashes.
- Data indicates that traffic violations is the cause of road crashes in **90% of incidents in India**. Of these, speeding accounts for **70% of the cases**.
- Over the last decade (2009-2019) road traffic crashes have been the **13th largest contributor to health burden in India**.



Do you know?

- In September 2020, the UN General Assembly launched the **Decade of Action for Road Safety 2021-2030** which aims to reduce road traffic deaths and injuries by **at least 50 per cent by 2030**.
- The 2nd Global High-Level Conference on Road Safety was held in Brazil, that declared **2011-2020 as the 1st decade of action for Road Safety**.
 - ♦ In the **Brasilia Declaration**, the participating countries set targets under the Sustainable Development Goals and pledged to reduce road crash **fatalities by 50% in the next 5 years**.

Government Initiatives

- **National Road Safety Policy India, 2010:** It emphasized the need for better road infrastructure, stricter enforcement of traffic rules, enhanced emergency medical services, public awareness campaigns, and improved post-crash care.
- **Supreme Court Committee on Road Safety (SCCoRS):** It was established In 2014 to address the issue, guide and monitor all states and Union Territories to bring down crash fatalities in the country.
- **India signed Brasilia Declaration:** India was one amongst the initial 100+ countries to have signed the Brasilia Declaration in 2015 committing to achieve the Sustainable Development Goal 3.6 i.e. to half the number of global deaths and injuries from road traffic crashes by 2030.
- **Motor Vehicles Amendment Act, 2019:** The act brought about higher penalties for traffic violations, including speeding, drunk driving, and not wearing helmets or seat belts.
 - ♦ It introduced stricter provisions for driving licenses and imposed stricter penalties for offenses by juveniles.
- **A steering committee** formed in 2023 to work on e-enforcement uniformity across India Under the directions of SCCoRS.
 - ♦ It will prepare a concept plan for implementation of a nation-wide roll out of effective e-enforcement.

Way Ahead

- Global best practices show that countries that adopted a **Systems Approach** have been able to achieve their targets of 50% reduction in fatalities or are close to achieving it.
 - ♦ **Countries like Australia and Sweden** have gone beyond the UN Sustainable

Development Goals (SDG) 3.6 and dug deep into the issue. India can, therefore, **learn from these global best practices**.

- India has done substantial research on road safety through premiere institutions like Indian Institute of Technology (IITs) and Central Road Research Institute (CRRI).
 - ♦ The government can collaborate with these institutes to improve policies and action plans.
 - ♦ The researchers are working on developing models that can help government make quick data based decisions customized for different road stretches.
- **The corporate sector can play a role** in helping strengthen road safety by funding research, spreading awareness, making strict health policies for drivers, or provide roadside infrastructure for resting.

Source: IE

ESCAPING THE MIDDLE-INCOME TRAP**In News**

- The **World Development Report 2024** calls attention to the phenomenon of the “middle-income” trap, or the slowing down of growth rates as incomes increase.

Do you know ?

- The “middle-income trap” describes a situation where countries struggle to attain high-income status.
- The concept introduced by Indermit Gill and Homi Kharas in 2007, highlights the challenges faced by countries transitioning from low to middle-income levels.

About the report

- It was authored by the World Bank and it estimates a stagnation of income per capita when economies reach a level of per capita incomes 11% of that of the U.S., hindering their journey to high-income status.
- It details the policies and strategies necessary to break out of the trap based on the development experiences of those countries that did manage the transition.

Key Findings

- **Global export** growth has slowed, and many countries face protectionism.
 - ♦ Premature deindustrialization is affecting the manufacturing sector, diminishing its role in growth.

- Over the last 34 years, only 34 middle-income economies — defined as economies with per capita incomes between \$1,136 and \$13,845 — have transitioned to higher income levels.
- Many successful countries were part of the European Union, benefiting from free capital and labor mobility.
- Successful cases like **South Korea and Chile** illustrate the role of state intervention.
 - ♦ South Korea's government directed private sector activities towards an export-driven growth model, rewarding successful companies with support while allowing underperformers to fail.
 - ♦ Similarly, Chile's targeted interventions bolstered its natural resource sectors.
- ♦ Powerful business entities can drive growth through investment and innovation.
- Historical examples from South Korea and Chile demonstrate that authoritarian regimes can achieve rapid growth, but at a cost to democracy.
 - ♦ Therefore there is a need for Balancing effective state intervention with democratic principles is crucial for India to navigate the middle-income trap.

Source: TH

SYNTHETIC MEDICAL IMAGES

In News

- The rise of AI-generated synthetic medical images has been observed.

About Synthetic medical images

- They are generated by AI or computer algorithms without being captured by traditional imaging devices such as MRI, CT scans, or X-rays.
- These images are entirely constructed using mathematical models or AI techniques like generative adversarial networks (GANs), diffusion models, and autoencoders.
 - ♦ **GANs** involve a generator creating images and a discriminator assessing their authenticity, improving through competition.
 - ♦ **VAEs** compress images into latent spaces and reconstruct them.
 - ♦ **Diffusion models** transform random noise into realistic images step-by-step.

Advantages:

- It allows intra- and inter-modality translation, helping generate missing scans from available data.
 - ♦ **Intramodality Translation:** Generates synthetic images within the same imaging modality (e.g., reconstructing MRI scans).
 - ♦ **Inter-Modality Translation:** Creates synthetic images by converting data between different modalities (e.g., generating CT scans from MRI data).
- It is generated without real patient data, reducing privacy concerns and facilitating data sharing.
- It addresses the time and expense associated with collecting real medical images.

Challenges:

- Risk of creating deepfakes that could impersonate patients, leading to incorrect diagnoses and fraudulent claims.

Economic Challenges for India

- **Scenario in India :** The influence of billionaires close to the state has hindered domestic capital investment.
 - ♦ Stagnation in manufacturing and a shift back to low-productive jobs in agriculture post-pandemic.
 - ♦ **Real GDP growth** is not translating to wage growth, leading to low consumption demand.
 - ♦ **Nominal wage increases have lagged behind inflation**, resulting in minimal real wage growth.
 - According to the PLFS, nominal wages for regular wage workers at the all-India level between April and June 2023-24 has only grown at around 5%, and that of casual workers at roughly 7%.
 - ♦ **Insufficient worker participation** in economic growth risks perpetuating the middle-income trap.

Suggestions

- The recent report highlights the importance of the "3i" approach: investment, infusion, and innovation.
 - ♦ Economies must invest, ensure the infusion of new global technologies, and develop an environment conducive to domestic innovation.
 - ♦ This is no easy task and requires nimble and responsive state policy.
- In the modern economy, there are plenty of headwinds that India must overcome to successfully navigate the middle-income trap.

- Synthetic images may not capture the subtle nuances of real-world medical data, risking the accuracy of AI diagnoses.
- Over-reliance on synthetic images could blur the lines between reality and fabrication, potentially leading to diagnostic models that misalign with actual patient cases.

Solutions:

- While synthetic medical images offer innovation opportunities, reliance on them poses regulatory and ethical challenges. Human oversight is crucial to maintain the integrity of healthcare decisions.
- Collaboration between clinicians and AI engineers is essential to enhance the quality of synthetic images and ensure they reflect real-world medical complexities.
- The use of synthetic images should be approached with optimism and caution to maximize benefits without undermining real-world healthcare understanding.

Source:TH

NEWS IN SHORT

BRAHMI INSCRIPTION

In News

- A **Brahmi Inscription** found from the 2nd century C.E. in Dharanikota village, Amaravathi mandal in Andhra Pradesh.
 - ♦ Engraved on a memorial pillar, the inscription is written in **Prakrit language using Brahmi script**.

About Brahmi Inscription

- Brahmi is one of the **oldest writing systems of the Indian subcontinent**, dating back to the Mauryan **Period**.
- Early Brahmi inscriptions were typically **written in Prakrit**, an ancient language, though later inscriptions were written in Sanskrit.
 - ♦ It is the precursor of many modern Indian scripts, including Devanagari, Tamil, Bengali, Kannada, and others.
- Brahmi inscriptions have been found in various regions of India, including Uttar Pradesh, Madhya Pradesh, Maharashtra, Tamil Nadu, and Andhra Pradesh.
- Brahmi played a key role in spreading Buddhist texts and inscriptions throughout South Asia and beyond, into Southeast Asia and Central Asia.

Source: TH

MLALAD FUND

In News

- The Delhi Cabinet approved a proposal to increase the annual **MLA Local Area Development (MLALAD) fund** from 10 crore to 15 crore to accelerate project implementation ahead of the Assembly elections.

About MLALAD fund

- **MLA Local Area Development (MLALAD) fund** allows Members of the Legislative Assembly (MLAs) to allocate funds for development works within their respective constituencies.
- Purpose: These funds are meant to address local needs, promote infrastructure development, and enhance the quality of life for residents.
 - ♦ They are issued to MLAs for local development such as repairing roads, and streetlights, developing parks, and laying sewer lines in colonies.
- **Process:** Each MLA has the choice to suggest to the Deputy Commissioner of his/her district, to the extent of allocations given from year to year, to be taken up by his/her constituency.
 - ♦ The amount provided under MLALAD Scheme is released in the form of Grant-in-aid for utilisation by the districts or local authorities.
 - ♦ The unspent amount from the MLALAD fund does not lapse and is allocated to the MLA in the next financial year.

Source :TH

NATIONAL COMMISSION FOR BACKWARD CLASSES (NCBC)

Context

- **The National Commission for Backward Classes (NCBC)** tenders advice to the Union Government for inclusion of certain Castes/Communities from Maharashtra, in the Central List of OBCs.

National Commission for Backward Classes

- It was initially constituted by the **Central Govt by the National Commission for Backward Classes Act, 1993** and **so far the Commission had been reconstituted 7 times up to 2016**.
- The present Commission (8th) has been accorded **Constitutional Status** and constituted through **“The Constitution (One Hundred and Second Amendment) Act, 2018”**.

- ♦ **Article 338B** has been inserted, forming a Commission for the socially and educationally backward classes to be known as **National Commission for Backward Classes**.
- ♦ It consists of **a Chairperson, Vice-Chairperson and three other Members in the rank & pay of Secretary to the Govt of India**.
- **Article 340** of the Constitution provides for the **appointment of a Commission** to investigate the conditions of and the difficulties faced by the socially and educationally backward classes and to make appropriate recommendations .

Source: PIB

CLIMATE RISK INFORMATION SYSTEM

In News

- The Reserve Bank of India (RBI) has proposed the **Reserve Bank – Climate Risk Information System (RB-CRIS)** to address fragmented climate-related data, which poses risks to the financial system.

Reserve Bank – Climate Risk Information System (RB-CRIS)

- It will be in two parts, to bridge the gap in climate-related data that is currently available in a fragmented manner.
 - ♦ **Part One:** A web-based directory that will list various publicly accessible data sources, including meteorological and geospatial data, on the RBI's website.
 - ♦ **Part Two:** A data portal with standardized datasets, accessible only to regulated entities in a phased manner.
- **Purpose:** It aims to support regulated entities in conducting climate risk assessments to maintain the stability of their balance sheets and the overall financial system.
 - ♦ High-quality data on local climate scenarios, forecasts, and emissions is essential for effective risk assessments.

Source :TH

COASTAL SLAG

Context

- Researchers documented a new kind of **sedimentary rock** made from **coastal slag** deposits in the U.K.

About

- **Slag** is a major component of artificial ground. It is a **composite material** containing metal

oxides and silicon dioxide, and is a by-product of the **steelmaking process** in the **iron and steel industries**.

- This rock follows other formations like molten glass and steel in the refuse of nuclear weapon tests and pieces of plastic pieces floating in oceans that disease-causing bacteria have grabbed hold of.
- **The lithification process** hardens industrial waste, including slag, into sedimentary rocks, creating artificial ground.
 - ♦ When these sedimentary rocks weather over time, they release sediments into the environment.
- Because the rocks are infused with industrial waste, their sediments often contain **toxic metals that contaminate soil, water, and air**.

Source: TH

ANACONDA STRATEGY

Context

- Taiwan's navy commander recently claimed that the People's Liberation Army (PLA) is using an 'anaconda strategy' to squeeze the island nation.

What is Anaconda Strategy?

- It refers to a military strategy aimed at slowly encircling and cutting off an enemy's resources, effectively "squeezing" them into submission without direct confrontation.
- The strategy was proposed by Union General **Winfield Scott** during the early stages of the **American Civil War**.
 - ♦ **The primary objective** of this strategy was to suffocate the Confederacy economically and militarily, similar to how an anaconda snake coils around and asphyxiates its prey.
- **China's 'anaconda strategy'** against Taiwan reportedly involves a mix of military maneuvers, psychological tactics, and cyber warfare to eventually weaken Taiwan's defenses.

Source: The Economist

150 YEARS OF UNIVERSAL POSTAL UNION

Context

- Year 2024, commemorates the 150th anniversary of the Universal Postal Union (UPU).

About

- **The Universal Postal Union** is a United Nations specialized agency and the postal sector's primary forum for international cooperation.

- **Origin:** On **9 October 1874**, 22 countries signed the **Treaty of Bern**, creating the General Postal Union.
 - ◆ Later it became known as the Universal Postal Union.
- **Member countries:** The UPU has **192 member countries**.
 - ◆ Any member country of the United Nations may become a member of the UPU.
 - ◆ Any non-member country of the United Nations may become a UPU member provided that its request is **approved by at least two-thirds of the member countries** of the UPU.
- **Headquarters:** The Swiss capital Berne
- **Consists of 4 bodies;**
 - ◆ **The Congress:** It is the supreme authority; meets every four years.
 - ◆ **The Council of Administration:** It supervises its activities and studies regulatory, administrative, legislative and legal issues.
 - ◆ **The Postal Operations Council:** It is the technical and operational mind of the UPU and consists of 48 member countries, elected during Congress.
 - ◆ **The International Bureau:** It provides logistical and technical support.

World Post Day

- World Post Day is annually observed across the globe on 9th October.
- It was **first declared at the UPU Congress in Tokyo in 1969** to highlight the essential role of postal services globally.
- **Theme for 2024:** 150 years of enabling communication and empowering peoples across nations

Source: UPU

Nobel Prize in Literature

Syllabus: Awards/ Miscellaneous

In News

- The **2024 Nobel Prize in Literature** has been awarded to **South Korean author Han Kang** for her “intense poetic prose that confronts historical traumas and exposes the fragility of human life.”
 - ◆ Also, her breakthrough novel, **The Vegetarian (2007)**, translated into English in 2015, won the **Man Booker International Prize in 2016**.

About Nobel Prize

- Established by **Alfred Nobel** in his will, which dedicated the bulk of his fortune to the creation of the **Nobel Prizes**. Nobel is best known for **inventing dynamite**. The first **Nobel Prizes were awarded in 1901**.
- The awards ceremony takes place in **Stockholm, Sweden**, for all categories except the Peace Prize, which is **presented in Oslo, Norway**.
- The Nobel Prizes are awarded annually in the following **six categories**:
 - ◆ Peace
 - ◆ Physics
 - ◆ Chemistry
 - ◆ Medicine (Physiology)
 - ◆ Literature
 - ◆ Economic Sciences: This was added in 1968 by Sweden’s central bank in Memory of Alfred Nobel.
- Since 1974, the Nobel Prizes **cannot be awarded posthumously**, except in cases where the recipient dies after the prize has been announced.

Source: TH

HORSESHOE CRAB

Context

- Horseshoe crabs are in demand for the medical industry.

About Horseshoe Crab

- Horseshoe crabs are **marine and brackish water arthropods** of the family **Limulidae** and the only living members of the **order Xiphosura**.
- They have been around for **more than 300 million years**, making them even older than dinosaurs.



- **Habitat:** The eggs are laid on coastal beaches in **late spring and summer**. After hatching, the juvenile horseshoe crabs can be found **offshore on the sandy ocean floor of tidal flats**. Adult horseshoe crabs feed deeper in the ocean until they return to the **beach to spawn**.
 - ♦ Maximum density of Horseshoe crabs is found along the Odisha coast and Balasore used to be the largest spawning ground.
 - **Threats: Overharvesting** for use as food, bait and biomedical testing, and because of habitat loss from coastal reclamation and development.
 - **Medicinal Use:** A horseshoe crab's **bright blue blood** is used to **test vaccines**, drugs and medical devices to ensure that they aren't contaminated with dangerous bacterial toxins.
 - ♦ Their blood contains a **special clotting agent limulus ameocyte lysate (LAL)** which detects a contaminant called **endotoxin**.
 - Every year, pharmaceutical companies roundup half a million Atlantic horseshoe crabs, bleed them, and return them to the ocean after which many will die.
- Conservation Status:** The American horseshoe crab is listed as **Vulnerable** to extinction and the tri-spine horseshoe crab is classified as **Endangered** on the IUCN Red List of Threatened Species.
- Horseshoe crabs are listed under **Schedule IV of India's Wildlife Protection Act, 1972**.
- Source: TH**

