

WEEKLY UPDATES – (29 July- 3Aug)

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POLITY

President of India appointed six new Governors

Recently, the President of India appointed six new Governors and reshuffled three others.

What is the Appointment Process for the Governor?

- **Chief Executive Head:** The governor is the chief executive head of the state, an office adapted from the Canadian model.
- **Non-Local Appointment:** Traditionally, the governor should not belong to the state where he is appointed to avoid local political influence.
- **Consultation with Chief Minister:** The president typically consults the chief minister of the state concerned to ensure smooth functioning.

Appointment:

- **Presidential Appointment:** The governor is appointed by the president by warrant under his hand and seal.
- **At President's Pleasure:** The governor holds office at the pleasure of the President and can be removed by the President at any time. The Supreme Court in the *Surya Narain v. Union of India Case (1982)* held that the pleasure of the President is not justiciable.
- **Independent Office:** The Supreme Court in *Hargovind Pant v. Raghukul Tilak Case* ruled that the office of the governor is an independent constitutional office, not an employment under the Central government.

Conditions of the Governor's Office:

- **Official Residence:** The governor is entitled to use his official residence (the Raj Bhavan) without payment of rent.
- **Emoluments and Allowances:** Determined by Parliament and cannot be diminished during his term of office.
- **Multiple States:** When the same person is appointed as the governor of two or more states, the emoluments and allowances are shared by the states as determined by the President.

Privileges:

- **Personal Immunity:** Under Article 361, the governor enjoys personal immunity from legal liability for his official acts.
- **Criminal Proceedings:** Immune from criminal proceedings during his term of office, even for personal acts.
- **Civil Proceedings:** Can only be instituted after giving two months' notice and only for personal acts.

Oath:

- **Oath of Office:** Administered by the chief justice of the concerned state high court or the senior-most judge available.
- **Oath Content:** The governor swears to faithfully execute the office, preserve, protect, and defend the Constitution and the law, and devote himself to the service and well-being of the people of the state.

Constitutional Provisions Related to the Governor

- **Article 153:** Establishes that there shall be a Governor for each state, and a single person can be appointed as the Governor for two or more states (recommended by the Sarkaria Commission).
- **Articles 157 and 158:** Specify the eligibility requirements for the post of Governor.
- **Article 163:** Provides for a Council of Ministers with the Chief Minister at the head to aid and advise the Governor in the exercise of his functions, except in some conditions where discretion is allowed.

Supreme Court Allows Sub-Classification of SCs and STs

The Supreme Court of India delivered a landmark verdict allowing states to sub-classify reserved category groups such as Scheduled Castes (SCs) and Scheduled Tribes (STs) for reservations. This 6-1 majority decision overturns the 2004 ruling in **E.V. Chinniah vs. State of Andhra Pradesh**, fundamentally altering reservation policies in India.

SC's Verdict on Sub-Classifications of SCs and STs

- **Sub-Classifications Permitted:** States can constitutionally sub-classify SCs and STs based on varying levels of backwardness.
- **Judicial Review:** State decisions on sub-classification are subject to judicial review to prevent political misuse.
- **Exclusion of Creamy Layer:** The 'creamy layer' principle will now apply to SCs and STs, ensuring reservations benefit the truly disadvantaged.
- **Generation Limit:** Reservation benefits are limited to the first generation that avails the reservation.
- **Empirical Basis:** Sub-classification must be based on empirical data and historical evidence of systemic discrimination.

Rationale for the Verdict

The court acknowledged that **systemic discrimination** prevents some members of SCs and STs from advancing, supporting sub-classification under **Article 14** of the Constitution to address these disparities effectively.

Background: Reference of the Sub-Classification Issue

- **State of Punjab v. Davinder Singh (2020):** A five-judge bench initiated the reference to reconsider the **E.V. Chinniah judgment**.
- **Legal Challenge:** Involved the validity of Section 4(5) of the **Punjab Scheduled Caste and Backward Classes Act, 2006**, which reserved vacancies for Balmikis and Mazhabi Sikhs.
- **High Court Ruling:** Struck down the provision, citing that all castes in the Presidential Order under **Article 341(1)** formed a homogeneous group.

Arguments For and Against Sub-Classification

Arguments For	Arguments Against
Enhanced Flexibility	Homogeneity
Allows tailored policies to better address the needs of the most disadvantaged.	Could undermine the uniform status of SCs and STs.

Arguments For	Arguments Against
Social Justice	Potential Inequality
Aligns with the constitutional goal of social justice.	Might lead to further division and exacerbate inequalities within the SC community.
Constitutional Provisions	
Supported by Articles 16(4), 15(4), and 342A.	

Significance of the Supreme Court Verdict

- **Overruling Previous Judgment:** Reverses the E.V. Chinnaiyah ruling and allows sub-classification of SCs and STs.
- **Impact on State Laws:** Upholds various state laws, enabling more nuanced reservation strategies.
- **Future of Reservations:** Sets a new precedent for how reservations can be administered, influencing similar cases and policies nationwide.

Challenges for Sub-Classification

- **Data Collection and Evidence:** Gathering accurate and comprehensive data is essential but challenging.
- **Balancing Interests:** Balancing competing interests within SC/ST communities can be complex.
- **Uniformity vs. Diversity:** Striking a balance between uniformity and addressing local needs is crucial.
- **Political Resistance:** Policies can face opposition from various political groups.
- **Social Tensions:** Might exacerbate existing social tensions within SC/ST communities.
- **Administrative Burden:** Managing and updating sub-categories adds a significant administrative burden on government agencies.

Way Forward

- **Consider Historical Discrimination:** States should avoid political motivations and ensure fairness.
- **Leverage Census Data:** Gather comprehensive data on SCs and STs, including sub-group specific information.
- **Establish Data Verification Processes:** Maintain credibility and transparency in data collection.
- **Define Clear Criteria:** Use socio-economic indicators for sub-classification rather than caste or tribal affiliations.
- **Monitor and Adjust Policies:** Ensure benefits reach the intended beneficiaries and make adjustments based on outcomes.
- **Recognize Sub-Classification as Temporary:** Focus on socio-economic development and gradually reduce reliance on reservations as broader conditions improve.

SC Launches Special Lok Adalat Drive

The Supreme Court of India has initiated a week-long **Lok Adalat drive** as part of its **75th anniversary celebrations**, aiming to address the backlog of cases and expedite justice.

Key Details of the Initiative:

Scope and Leadership:

- **First Seven Benches:** Involved in the drive, led by the **Chief Justice** and a five-member panel of prominent judges and legal professionals.
- **Cases Covered:** Matrimonial disputes, property disputes, motor accident claims, land acquisition, compensation, and service and labour issues.

Public Participation: Encouragement-Citizens with pending cases are encouraged to participate for **amicable and speedy resolutions**.

Technology-Based Solution: Informal and Efficient- Utilizes an informal, technology-based approach to make dispute resolution more accessible and efficient.

About Lok Adalats:

- **Gandhian Principles:** Based on Gandhian principles, Lok Adalats are **informal, voluntary, and conciliatory dispute resolution forums.**
- **Statutory Backing:** Supported under the **Legal Services Authorities Act, 1987.**
- **Alternative Dispute Resolution (ADR):** Part of the ADR system, providing **informal, inexpensive, and expeditious justice** to the common people.

ECONOMY

Liquidity Coverage Ratio (LCR)

The Reserve Bank of India (RBI) has issued draft guidelines requiring banks to hold more liquid assets to manage potential **bank runs**, which could slow credit growth. Banks must now consider outflows from digital deposits when calculating the **Liquidity Coverage Ratio (LCR).**

What is the Liquidity Coverage Ratio (LCR)?

The Liquidity Coverage Ratio (LCR) is a regulatory standard that mandates banks to hold sufficient **high-quality liquid assets (HQLA)**, easily convertible to cash, to meet their short-term obligations over a **30-day stress period.** This ensures that banks can withstand significant financial stress without external help. The LCR was introduced under the **Basel III agreement.**

Impact of LCR

The RBI's move aims to ensure banks can meet sudden **digital withdrawal** demands, as seen in the **Silicon Valley Bank collapse.** This conservative approach may lead banks to:

Invest more
in government
securities

Reduce credit
growth

Maintain
higher deposit
rates

Report on Currency and Finance 2023-24 by RBI

Theme: "India's Digital Revolution"

Key Findings:

- **Digital Economy Growth:**
 - Global digital economy grew 2.5 times faster than the physical economy, accounting for 15% of global GDP.
 - In India, the digital economy accounts for a tenth of GDP, expected to reach a fifth by 2026.
- **Growth Factors:** Internet penetration, low data cost, highest mobile data consumption, large startup ecosystem.
- **Global Leadership:** India ranks first in biometric-based identification (Aadhaar) and real-time payments volume.
- **Digital Public Infrastructure (DPI):**
 - DPI is expanding globally through initiatives like the **Modular Open Source Identity Platform (MOSIP)**.
 - Interlinking and broadening of **UPI** with other nations' fast payment systems like Singapore's PayNow.
- **Social Welfare:** Bridging economic inequalities through **Direct Benefit Transfer**. DPI helped lift 415 million people from poverty (UNDP, 2023).

Challenges to Digitalization:

- **Consumer Vulnerability:** 47% of RBI ombudsman complaints in 2022-23 were about digital payments.
- **Cyber Security:** Average cost of data breaches in India is US\$ 2.18 million in 2023, a 28% increase since 2020.
- **Use of Dark Patterns:** Misleading design tactics in digital interfaces that manipulate users into unintended actions

Reduction of the import duty on gold

Recently, the Union Government, in the Budget 2024-25, announced a reduction of the **import duty on gold from 15% to 6%**. Additionally, the government intends to finalize its decision on the future of the **Sovereign Gold Bonds (SGB)**.

The Status of the Gold Industry in India

Gold Reserves in India:

- **National Mineral Inventory (2015):** Total reserves/resources of gold ore estimated at 501.83 million tonnes.
- **Largest Resources:** Bihar (44%), Rajasthan (25%), Karnataka (21%), West Bengal (3%), Andhra Pradesh (3%), Jharkhand (2%).
- **Gold Output:** Karnataka commands around 80% of the nation's total gold output. The Kolar Gold Fields (KGF) in the Kolar district is one of the world's oldest and deepest gold mines.

India Gold Import:

- **Global Standing:** India is the world's second-largest gold consumer.
- **Import Statistics:** Gold imports increased by 30% in 2023-24, reaching USD 45.54 billion.
- **Recent Decline:** Significant decline of 53.56% in gold imports observed in March 2024.

What is the Sovereign Gold Bond Scheme?

Launch:

- **Introduction:** The SGB scheme was introduced in November 2015 to decrease the demand for physical gold and redirect a portion of domestic savings into financial savings.

Issuance:

- **Government Securities:** Issued as Government of India Stock under the Government Securities (GS) Act, 2006.
- **Issuer:** Issued by the Reserve Bank of India (RBI) on behalf of the Government of India.
- **Purchase Points:** Available through Scheduled Commercial banks, Stock Holding Corporation of India Limited, Clearing Corporation of India Limited, designated post offices, National Stock Exchange of India Limited, and Bombay Stock Exchange Limited.

Eligibility: Available for purchase by resident individuals, Hindu Undivided Families (HUFs), trusts, universities, and charitable institutions.

Features:

- **Issue Price:** Linked to the price of gold of 999 purity (24 carats) as published by the India Bullion and Jewellers Association (IBJA), Mumbai.

- **Investment Limit:** Minimum investment is 1 gram of gold.
 - Retail investors and HUFs: Maximum limit of 4 kilograms per financial year.
 - Trusts and similar entities: Maximum limit of 20 kilograms per financial year.
- **Term:** Maturity period of eight years, with an option to exit after the first five years.
- **Interest Rate:** Fixed annual interest rate of 2.5%, payable semi-annually. Interest is taxable under the Income Tax Act, 1961.
- **Benefits:**
 - Collateral for loans.
 - Capital gains tax on redemption for individuals is exempted.
 - Redemption: Refers to the issuer repurchasing a bond at or before maturity.

Disadvantages of Investing in SGB:

- **Long-Term Investment:** Unlike physical gold, SGBs cannot be sold immediately.
- **Low Trading Volumes:** Listed on exchanges, but low trading volumes make early exit challenging.

Green Bonds

- **Purpose:** Issued to fund projects with positive environmental or climate benefits, providing fixed income payments to investors.
- **Government Plan:** Issue sovereign green bonds worth approximately Rs 20,000 crore in the financial year 2024-25.

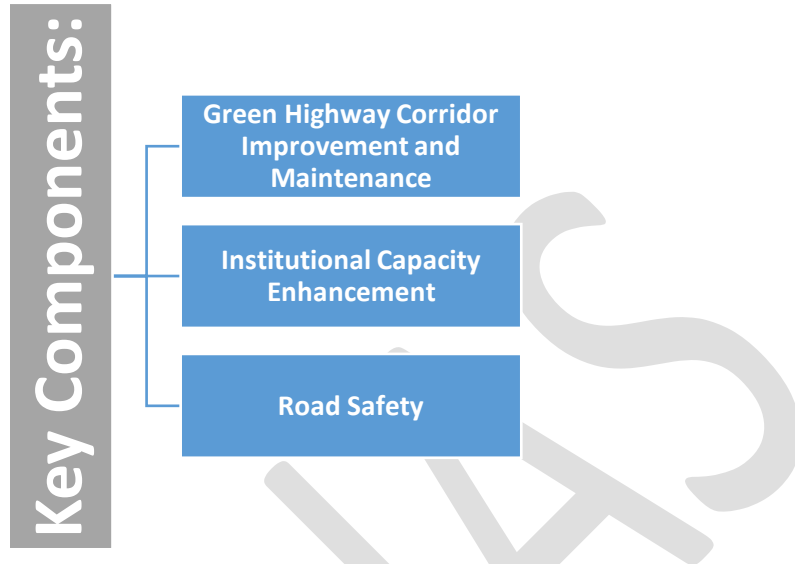
Green National Highway Corridor Project

The Government of India and the **World Bank** have signed an agreement for the construction of the **Green National Highway Corridors Project (GNHCP)** in **Himachal Pradesh, Rajasthan, Uttar Pradesh, and Andhra Pradesh** with a loan assistance of **USD 500 million**.

Project Overview:

- **Aim:** Demonstrate that highways can be safe and eco-friendly by using **green technologies** and focusing on **climate resilience**.

- **Completion Date:** Scheduled by **May 2026**.



Innovative Measures:

- **Conservation of Natural Resources:** Using cement-treated sub-base and reclaimed asphalt pavement.
- **Promotion of Local/ Marginal Materials:** Including lime, fly ash, and waste plastic.
- **Bio-engineering Measures:** For slope protection like hydroseeding, shotcrete crib wall with vegetation, bamboo plantation, and hedge brush layers.

Benefits:

- **Environmental:** Reduce carbon emissions and conserve natural resources.
- **Infrastructure:** Provide smooth, motorable roads with all-weather connectivity.
- **Socio-Economic:** Enhance trade and connectivity within the region, leading to socio-economic development.

INTERNATIONAL RELATIONATIONS

A Decade of India's Act East Policy (AEP)

The **Act East Policy (AEP)** was introduced during the Prime Minister's visit to Myanmar for the **East Asia Summit** and the **ASEAN + India Summit** in November 2014. AEP evolved from the **Look East Policy** initiated in 1992.

About Act East Policy (AEP)

- **AEP** focuses on India's extended neighborhood in the **Indo-Pacific region (IPR)**, with **ASEAN** at its core.
- **Objective:** To enhance **economic cooperation, cultural ties, and strategic relationships** in the **IPR** through improved connectivity.

Achievements of AEP

- **Launching Pad to IPR:** Positioned India in the IPR, exemplified by support for the **Philippines** in the **South China Sea dispute**.
- **Strategic Partnerships:** Strengthened ties with **Indonesia, Vietnam, Malaysia, Japan**, and established close links with **BIMSTEC** and the **Indian Ocean Region (IOR)**.
- **Northeastern Integration:** Promoted the integration of **Northeastern states** with **ASEAN** to end economic isolation. For example, the **India-Japan Act East Forum** promotes development and connectivity.

Challenges to AEP

- **Chinese Integration:** Increased Chinese influence in the **ASEAN economy**.
- **Economic Underperformance:** India faces challenges such as a trade deficit of **\$43.57 billion**.

Way Forward

- **Review ASEAN FTA**
- **Promote Tourism**
- **Partner with Singapore and Malaysia** to boost the **Indian Semiconductor Mission**

Quad foreign ministers' meeting in Tokyo

Recently, the **Quad foreign ministers' meeting** in Tokyo saw Australia, India, Japan, and the US emphasize ending violence in **Ukraine, Gaza, and Myanmar**. They also expressed their intention to expand the **Indo-Pacific Partnership for Maritime Domain Awareness (IPMDA)** into the **Indian Ocean Region (IOR)**.

What is QUAD?

The **Quad** is an informal diplomatic partnership between **Australia, India, Japan, and the United States** committed to supporting an open, stable, and prosperous **Indo-Pacific** that is inclusive and resilient.

- **Origins:** First proposed by Japanese Prime Minister **Shinzo Abe** in 2007.
- **Formation:** Became a formal group in 2017 after overcoming initial setbacks, including Australia's withdrawal due to Chinese pressure.
- **Coalition:** Formed by India, Australia, the US, and Japan in 2017.

What is the Indo-Pacific Partnership for Maritime Domain Awareness (IPMDA)?

The **IPMDA Initiative** was announced at the **Quad Leaders' Summit** in Tokyo in 2022. It focuses on integrating the **Pacific Islands, Southeast Asia, and the Indian Ocean Region (IOR)** in the Indo-Pacific.

- **Primary Aim:** Track dark shipping vessels that turn off their **Automatic Identification System (AIS)** to avoid detection.
- **Additional Focus:** Monitoring tactical-level activities to respond to climate and humanitarian events and protect fisheries, crucial to many Indo-Pacific economies.
- **Significance for India:** Enhances security and stability in the Indo-Pacific, a region of major global geopolitical importance. The Indian Navy, currently with over 140 ships and submarines, is set to expand to a formidable fleet of 170 to 180 vessels by 2028.

What is the Indian Ocean Region (IOR)?

The **Indian Ocean Region (IOR)** spans over 36 littoral and island countries and is crucial due to its trade routes, natural resources, and geopolitical importance.

- **Key Sea-Lanes:** Includes busy sea-lanes like the **Straits of Hormuz** and **Malacca**.
- **Challenges:** Faces issues like piracy, illegal fishing, and environmental degradation.
- **India's Role:** India, alongside China, the US, and regional organizations, emphasizes the need for cooperation to tackle common challenges and ensure sustainable development.

Other Groupings in the Indian Ocean Region (IOR)

- **Indian Ocean Rim Association (IORA):** An intergovernmental organization established to promote economic cooperation and regional integration among countries bordering the Indian Ocean.
- **AUKUS:** A trilateral security partnership formed in 2021 between **Australia, the UK, and the US**, focused on the Indo-Pacific. It includes sharing US nuclear submarine technology with Australia and aims to counterbalance China's actions in

the South China Sea. The partnership also promotes cooperation in emerging technologies like AI, quantum technologies, and undersea capabilities.

BIOTECHNOLOGY

Initiative for H5N1 mRNA Vaccine Development in LMICs

Objective: Accelerate the development and accessibility of H5N1 mRNA vaccine candidates for manufacturers in **low- and middle-income countries (LMICs)**.

Program: This initiative will be carried out through the **mRNA Technology Transfer Programme (MTTP)** of the **World Health Organization (WHO)**, supplementing the **Pandemic Influenza Preparedness (PIP) Framework**.

PIP Aim: Improve and strengthen the sharing of influenza viruses with human pandemic potential and increase LMIC access to vaccines.

Significance: Promote **vaccine equity** and prepare for the next pandemic in a decentralized manner.

About mRNA Vaccine Technology

- **Mechanism:** mRNA vaccines introduce a piece of **mRNA** corresponding to a viral protein, typically a small protein piece found on the virus's outer membrane.
- **Function:** mRNA contains instructions that direct cells to produce a protein, triggering the immune system to create antibodies and enhance immune response.
- **Example:** COVID-19 mRNA vaccines direct cells to produce the "spike protein" of the coronavirus.

Genetic testing in sports

The emergence of genetic testing in sports has gained significant attention, especially with athletes utilizing it for performance enhancement ahead of the 2024 Paris Olympics. This trend has sparked debates about the potential benefits and ethical concerns surrounding athletic genetic screening.

What is Genetic Testing?

Definition: Genetic testing involves analyzing an individual's DNA to identify genetic variants that can influence health, traits, and performance.

- **Detection:** It detects alterations in chromosomes, genes, or proteins to confirm or exclude genetic conditions and assess the likelihood of developing or transmitting genetic disorders.
- **Samples:** These tests can be conducted using samples from blood, hair, skin, amniotic fluid, or other tissues.

Types:

- **Cytogenetic Testing:** Examines whole chromosomes.
- **Biochemical Testing:** Measures proteins produced by genes.
- **Molecular Testing:** Detects small DNA mutations.

Applications:

- **Newborn Screening and Diagnostic Testing:** Identifies treatable genetic disorders just after birth and confirms or rules out specific genetic conditions based on physical signs and symptoms.
- **Carrier Testing:** Identifies individuals carrying one copy of a gene mutation that could cause a genetic disorder if present in two copies, useful for those with a family history of genetic disorders or belonging to certain high-risk ethnic groups.
- **Preimplantation Testing (PGD):** Used with in-vitro fertilization to test embryos for genetic changes before implantation, reducing the risk of genetic disorders.
- **Forensic Testing:** Utilizes DNA sequences for legal purposes, such as identifying crime victims, suspects, or establishing biological relationships.

What are Genes, DNA, and Chromosomes?

DNA:

- **Definition:** DNA is a long molecule containing our unique genetic code, composed of two strands that form a double helix.
- **Bases:** Each strand is formed of four bases: adenine (A), cytosine (C), guanine (G), and thymine (T).

Gene:

- **Definition:** Genes are sections of DNA containing instructions to produce specific molecules in the body, usually proteins.
- **Function:** Proteins control body growth and functions, responsible for characteristics like eye color, blood type, or height.

Chromosome:

- **Definition:** In the nucleus of each cell, the DNA molecule is packaged into thread-like structures called chromosomes.
- **Structure:** Each chromosome is made up of DNA tightly coiled around proteins called histones.

How is Genetic Testing Used to Improve Athlete's Performance?

Identification of Genetic Markers:

- **Markers:** Genetic testing can reveal specific markers associated with physical traits contributing to athletic performance, such as variations in genes like ACE and ACTN3 linked to endurance and strength capabilities.

Assessment of Muscle Fiber Composition:

- **ACTN3 Genes:** Influence the proportion of fast-twitch muscle fibers, crucial for explosive strength and sprinting, indicating predisposition to power sports or endurance activities.

Evaluation of Recovery and Injury Risk:

- **Predispositions:** Identifies predispositions to injuries or recovery times, such as variations in genes related to collagen production indicating susceptibility to tendon and ligament injuries.

Nutritional Needs and Metabolism:

- **Insights:** Helps determine how well an athlete metabolizes nutrients, guiding dietary choices that optimize performance and overall health, like identifying lactose intolerance or variations in vitamin D metabolism.

Psychological Traits:

- **Influence:** Certain genetic variants may influence psychological traits such as motivation, stress response, and pain tolerance, aiding in mental conditioning and preparation.

Tailored Training Programs:

- **Design:** By understanding an athlete's genetic predispositions, coaches can design training regimens that align with their strengths and weaknesses, enhancing performance potential.

What are the Limitations of Genetic Testing?

Scientific Uncertainty: The relationship between genetics and athletic performance is complex and not fully understood, with many studies yielding conflicting results.

Small Sample Sizes: Limited sample sizes in genetic studies can affect the reliability and generalizability of findings.

Overemphasis on Genetics: Focusing too much on genetic factors can overshadow the importance of training, practice, nutrition, and psychological aspects crucial for athletic success.

Ethical Concerns: Issues related to privacy, potential discrimination, and misuse of genetic information pose significant ethical challenges.

Misinterpretation of Data: Genetic data can be complex and may be misinterpreted without expert guidance, leading to incorrect conclusions about an athlete's potential.

Commercial Exploitation: The rise of direct-to-consumer genetic testing often prioritizes profit over scientific validity, raising concerns about the accuracy of results and motivations behind testing.

Way Forward

1. **Independent Research: Validation:** Encourage comprehensive studies by independent scientific bodies to validate findings on genetic influences and understand gene interactions better.
2. **Education and Training: Interpretation:** Provide training for coaches and nutritionists to accurately interpret genetic data and apply it effectively in athlete development.
3. **Ethical Guidelines: Protection:** Develop clear ethical guidelines to protect athletes' privacy and prevent discrimination based on genetic information, ensuring responsible use of data.
4. **Holistic Approach: Integration:** Emphasize a balanced approach integrating genetic insights with traditional training, nutrition, and psychological support, recognizing the interplay of genetics and environment.
5. **Collaboration with Regulatory Bodies: Policies:** Work with sports organizations to create policies governing the use of genetic testing, ensuring fairness and standardization in practices.
6. **Public Awareness Campaigns: Education:** Conduct campaigns to educate athletes and the public about the benefits and limitations of genetic testing, promoting informed decision-making.

ENVIRONMENT & DISASTER MANAGEMENT

Discovery of Dark Oxygen

Scientists have recently reported an **unknown process producing oxygen** deep in the world's oceans, where photosynthesis cannot occur due to the lack of sunlight. This discovery suggests the existence of previously unknown ecosystems and has significant implications for marine life.

What is Dark Oxygen?

- **Observation:** An unexpected increase in oxygen concentration in some areas of the abyssal zone, where sunlight is extremely low.
- **Term:** This new source of oxygen, where photosynthesis does not occur, is termed '**dark oxygen**'.

Possible Cause:

- **Hypothesis:** Polymetallic nodules might be transporting electric charges that split water molecules, releasing oxygen.
- **Nodules Composition:** These nodules are lumps of iron, manganese hydroxides, and rock found on the ocean floor.
- **Unclear Energy Source:** The exact energy source for the nodules' ability to produce oxygen remains unknown.

Location: Conducted in the **Clarion-Clipperton Zone Region** off Mexico's west coast, noted for its high concentration of polymetallic nodules.

What is Deep-Sea Mining?

- **Definition:** Extracting mineral deposits and metals from the ocean floor.
- **Types:**
 - Removing **polymetallic nodules**.
 - Mining **seafloor sulfides**.

- Extracting **cobalt crusts**.
- **Valuable Materials:** These contain nickel, rare earth elements, and cobalt, essential for batteries and renewable energy technologies.

Environmental Concerns:

- **Impact on Ecosystems:** 'Dark oxygen' raises concerns about potential damage to ecosystems relying on this oxygen source.
- **Study Findings:** Deep-sea mining could harm deep-sea jellyfish by creating mud plumes that interfere with the nutrient and reproductive cycles of marine species.
- **Limited Knowledge:** Limited scientific knowledge of abyssal zone ecosystems complicates efforts to gauge the potential impact of deep-sea mining.

Indian Context

Exploration Efforts:

- **Licenses:** India intends to apply for licenses to explore deep-sea minerals in the Pacific Ocean.
- **Pioneer Investor:** India received this status in 1987 and was given an area of about 1.5 lakh sq. km in the Central Indian Ocean Basin (CIOB) for nodule exploration.

Rights and Developments:

- **Exclusive Rights:** Extended in 2017 for five years.
- **2024 Application:** Rights to explore the Indian Ocean Seabed beyond its jurisdiction, including Cobalt-Rich Afanasy Nikitin Seamount (AN Seamount).
- **Deep Ocean Mission:** India's Ministry of Earth Sciences is developing a submersible vehicle (Samudrayaan Mission) for resource mining in the Indian Ocean.

Projects to Tackle Urban Flooding

The **High-Level Committee (HLC)**, chaired by the **Union Home Minister**, approved six projects in five states (**Telangana, Gujarat, Karnataka, West Bengal, Maharashtra**) for **urban flood management**.

About Urban Floods

Urban floods refer to the rapid rise of floodwaters in urban areas due to limited infiltration and heavy rainfall events. Management falls under the responsibility of **State Governments** and **Urban Local Bodies/Urban Development Authorities**, tasked with maintaining drainage and sewerage systems in cities and towns.

Factors Causing Urban Floods

- **Meteorological Factors:** Unprecedented rainfall (e.g., **Mumbai floods 2005**), cyclonic storms (**Hyderabad floods 2020**), global warming (snowfall, snowmelt, sea level rise).
- **Hydrological Factors:** Changes in river courses, landslides, soil erosion, overbank flow, high tide impeding drainage.
- **Human Factors:** Rapid urbanization, deforestation, poor infrastructure maintenance, unplanned water release from dams/lakes (e.g., **Chennai floods 2015**).

Impact of Urban Floods

- **Structural Damage:** Buildings, loss of lives and property.
- **Disruptions:** Transport, power, and incidence of epidemics (dengue, malaria, chikungunya).

Steps Taken by India to Prevent Urban Floods

- **State Initiatives:** **Chennai Flood Warning System**, flood forecasting and early warning system for **Kolkata City**.
- **AMRUT Mission:** Includes storm water drainage to reduce/eliminate flooding.
- **Standard Operating Procedure** for Urban Flooding by Ministry of Urban Development.
- **NDMA Guidelines:** Hazard risk zoning and mapping, urban flood disaster management information system, addressing urban flooding as a separate disaster with dedicated cells at national/state levels.

Landslides in Wayanad, Kerala

Several people died due to massive landslides in Wayanad, Kerala, triggered by extremely heavy rain.

Context:

- **Western Ghats:** The region is the second most vulnerable to landslides in India after the Himalayas. The combination of high soil depth and steep slopes in the

Western Ghats results in frequent landslides during the monsoon season. Increased pore water pressure due to high soil depth contributes significantly to landslides.

About Landslides

- **Definition:** Landslides occur when gravity forces on hill slope materials exceed frictional forces, causing slope failure.
- **Vulnerability in India:** Approximately 0.42 million sq. km (12.6% of land area) is prone to landslide hazard (Geological Survey of India).

Causes:

- **Natural:** Flooding, excavation, earthquakes, snowmelt.
- **Anthropogenic:** Overgrazing, deforestation, terrain modification.

Effects:

- Floods from diverted river courses or blocked channels.
- Traffic disruptions.

Challenges in Monitoring/Prevention:

- Landslides are influenced by localized factors, making information gathering and monitoring complex and costly.

Key Initiatives

- **National Landslide Risk Management Strategy (2019)** by NDMA.
- **National Landslide Susceptibility Mapping (NLSM) Programme** by GSI.
- **Indian Landslide Susceptibility Map (ILSM)** by IIT Delhi.
- **National Landslide Forecasting Centre (NLFC)** launched in Kolkata, aiming for a nationwide Landslide Early Warning System (LEWS) by 2030.

The Disaster Management (Amendment) Bill, 2024

The Disaster Management (Amendment) Bill, 2024 was introduced in the Lok Sabha. It seeks to amend the Disaster Management (DM) Act, 2005 to integrate disaster management more effectively into development plans, following the 15th Finance Commission's recommendations.

Key Features of the Bill

- **Disaster Database:** Establishes disaster databases at national and state levels, including disaster assessments, fund allocation details, expenditures, preparedness, mitigation plans, and risk registers.

- **Disaster Plan:** Empowers the **National Disaster Management Authority (NDMA)** and **State Disaster Management Authority (SDMA)** to prepare disaster plans at national and state levels, respectively, instead of the National Executive Committee and State Executive Committee. National plans must be reviewed every three years and updated at least once every five years.
- **Urban Authority:** Proposes the establishment of **Urban Disaster Management Authorities** for state capitals and large cities with municipal corporations.
- **Statutory Recognition:** Grants statutory recognition to existing bodies like the **National Crisis Management Committee** and **High-Level Committee** for disaster management and financial assistance approval.
- **State Force:** Enables state governments to constitute **State Disaster Response Forces** to enhance disaster response capabilities.

Initiatives Taken

- **National Ayush Mission:** Upgrades and establishes Ayush hospitals and dispensaries for better access to Ayush services.
- **Ayush Oushadhi Gunvatta Evam Utpadan Samvardhan Yojana:** Develops traditional medicine products.
- **Ayurswasthya:** Provides financial assistance to eligible organizations for establishing and upgrading research and development activities in Ayush.

Key Provisions of DM Act, 2005

- **Institutional Structure:**
 - **National Level:** NDMA, headed by the Prime Minister.
 - **State Level:** SDMAs, headed by respective Chief Ministers.
 - **District Level:** DDMA, headed by the District Collector, District Magistrate, or Deputy Commissioner.
- **Response Force and Fund:** Establishes the **National Disaster Response Force** for specialist responses and the **National Disaster Response Fund** for disaster situations

Western Ghats Eco-Sensitive Zone

The **National Green Tribunal (NGT)** has asked the **Ministry of Environment, Forests, and Climate Change (MoEF&CC)** to finalize a deadline for declaring the Western Ghats an eco-sensitive zone (ECZ).

About the Western Ghats

- **Spread:** The Western Ghats stretch across six states: **Gujarat, Maharashtra, Goa, Karnataka, Kerala, and Tamil Nadu.**
- **Significance:** The Gadgil panel (2011) recommended declaring the entire Western Ghats as an **Ecologically Sensitive Area** due to its dense forests and numerous endemic species. The Kasturirangan panel later reviewed this report.
- **Draft Notification (2022):** Following the panels' recommendations, the Central Government issued a draft notification to declare the Western Ghats an eco-sensitive area.

Regulation of Human Activities

- **Restricted Activities:** Mining, quarrying, sand mining, 'Red' category industries, new thermal power projects.
- **Regulated Activities:** Hydropower projects.
- **Unrestricted Activities:** Existing healthcare establishments, agriculture, and plantation activities.
- **Monitoring Centre:** Establishes a Decision Support & Monitoring Centre for the Western Ghats to assess and report on the region's ecological status.

Issues

- **Local Livelihoods:** The draft notification may harm local residents' livelihoods and development activities.
- **Scientific Survey:** States argue that no scientific survey determined the eco-sensitive area's size before issuing the draft.

REPORT

The "State of Food Security and Nutrition in the World 2024" (SOFI 2024) report, released by FAO, IFAD, UNICEF, WFP, and WHO, highlights the critical need for enhanced funding to eradicate hunger, food insecurity, and malnutrition.

Key Findings of SOFI 2024 Report

- **Global Hunger:** In 2023, 713-757 million people experienced hunger, equating to one in eleven people globally and one in five in Africa. Asia, although having a lower percentage, has the largest number of undernourished individuals (384.5 million).

- **Food Insecurity:** Around 2.33 billion people faced moderate or severe food insecurity, with 864 million severely affected.
- **Cost of Healthy Diet:** The average global cost rose to USD 3.96 PPP per person/day in 2022. Despite this, the number of people unable to afford a healthy diet fell to 2.83 billion.
- **Regional Differences:** The highest cost for a healthy diet is in Latin America and the Caribbean, and the lowest in Oceania. Africa has faced significant setbacks in affordability recovery.
- **Child Malnutrition:** There have been improvements in reducing stunting and wasting among children under five, but progress is insufficient to meet 2030 SDG targets. Exclusive breastfeeding rates have increased but remain below the 2030 goal.
- **Rising Obesity and Anaemia:** Global obesity rates are climbing, and anaemia among women aged 15-49 is also on the rise, presenting major public health issues.
- **Funding Shortfalls:** Public spending on food security and nutrition is inadequate, particularly in low-income countries, and private financing flows are hard to track, worsening the funding gap.

India-Specific Highlights

- **Undernourishment:** India has 194.6 million undernourished individuals, the highest number worldwide.
- **Diet Affordability:** 55.6% of Indians (approximately 790 million people) cannot afford a healthy diet.
- **Chronic Undernourishment:** 13% of India's population faces prolonged food insecurity.
- **Global Hunger Index:** Ranked 111th in 2023, indicating severe food security issues.
- **Child Malnutrition:** India has the highest prevalence of wasting (18.7%) and stunting (31.7%) in South Asia.
- **Low Birth Weight:** 27.4% of babies are born with low birth weight, the highest globally.
- **Anaemia:** 53% of women in India are anaemic, the highest in South Asia.

- **Obesity:** The prevalence of obesity is 2.8% in children under five and 7.3% in adults, with physical inactivity being a significant contributing factor.
- **Diet Quality:** High consumption of ultra-processed foods is linked to poor health outcomes. Most food products from top manufacturers in India do not meet WHO health standards.
- **Public Spending:** Although there have been increases, the allocation and utilization of resources need improvement to tackle food insecurity and malnutrition effectively.

Related Indian Initiatives



Key Recommendations

- **Increase Public Investment:** Enhance budgets for food security and nutrition programs, and involve local communities for better planning and implementation.
- **Mobilise Private Sector Investment:** Encourage private investments through social bonds, green bonds, and sustainability-linked bonds.
- **Promote Climate-Resilient Agriculture:** Invest in research and development of drought-resistant crops and sustainable farming practices.
- **Improve Agrifood Systems:** Enhance efficiency through better infrastructure, logistics, and market access to reduce food loss and waste.
- **Comprehensive Nutrition Programs:** Implement integrated nutrition programs to address both undernutrition and overnutrition.

- **Support Vulnerable Populations:** Focus policies on supporting small farmers, women, and children, and improve nutrition for pregnant women and young children.
- **Strengthen Data Collection:** Improve data collection and integration with national databases to enable better policy-making and identify areas needing improvement.

Report Released on World Mangrove Day (26th July)

Key Highlights of the Report:

- **Global Mangrove Distribution:**
 - **Southeast Asia:** Holds about one-third of all mangroves globally, with **Indonesia** alone containing 21%.
 - **West and Central Africa:** Follow Southeast Asia in mangrove coverage.
- **Threatened Mangroves:**
 - Half of the world's mangrove provinces are on the **IUCN Red List of Mangrove Ecosystems**.
 - **Lakshadweep archipelago** and the coast of **Tamil Nadu** have critically endangered mangroves.
- **Drivers of Mangrove Loss:**
 - **Climate change:** Sea-level rise, increased storm intensity.
 - **Industrial shrimp aquaculture:** Particularly in Andhra Pradesh, West Bengal, Gujarat.
 - **Conversion to plantations:** Oil palm plantations and rice cultivation resulted in a 43% loss between 2000-2020.

Benefits of Mangroves:

- **Biodiversity:** Support over 5,700 plant and animal species in Indian mangroves.
- **Carbon Sinks:** Store an average of 394 tonnes of carbon per hectare.
- **Disaster Protection:** Reduce flood depths by 15-20%, and up to 70% in some areas.
- **Nutrient-Rich Seafood:** Mangrove ecosystems provide fish and seafood rich in essential nutrients like protein, omega-3 fatty acids, vitamins (D and B12), and minerals (iron, zinc).

- **Water Quality:** Improve water quality by filtering pollutants and trapping sediments.

Mangrove Initiatives in India:

- **Mangrove Initiative for Shoreline Habitats & Tangible Incomes (MISHTI)**
- **Sustainable Aquaculture in Mangrove Ecosystem (SAIME)**
- **Global Initiatives:**

Global Initiatives:

- **Mangrove Breakthrough by GMA**
- **Mangrove Alliance for Climate:** Led by UAE in partnership with Indonesia

World Development Report 2024: Middle Income Trap

The **World Bank** has released the **World Development Report 2024**, focusing on the **Middle-Income Trap**. The report provides a comprehensive roadmap to help developing countries escape this trap.

What is the Middle-Income Trap?

The **Middle-Income Trap** occurs when a middle-income country (with an annual GDP per capita ranging from \$1,136 to \$13,845) experiences systematic growth slowdowns because it cannot adopt new economic structures needed to sustain high-income levels.

Key Highlights

- **Growth Slowdown:** Countries often hit a growth slowdown at around 10% of the annual U.S. GDP per person (\$8,000).
- **Transition Success:** Since 1990, only 34 middle-income countries (MICs) have transitioned to high-income status.
- **Current MICs:** At the end of 2023, 108 countries were classified as MICs, home to 75% of the global population and generating over 40% of global GDP.
- **Challenges:** MICs face challenges like rapidly aging populations, rising protectionism in advanced economies, and the need for a faster energy transition.

- **India's Status:** India joined the club of Lower MICs in 2007, with its current GNI per capita at \$2,540. At current trends, it will take India 75 years to reach one-quarter of the US income per capita.

AGRICULTURE

Union Budget 2024-25 Promotes Natural Farming

The **Union Budget 2024-25** announced that one crore farmers will be initiated into **natural farming** within two years, supported by certification and branding through scientific institutions and willing gram panchayats. Additionally, 10,000 need-based bio-input resource centres will be established.

About Natural Farming

Natural farming is a local, low-input, climate-resilient farming system that eliminates synthetic chemical agro-inputs. It integrates crops, trees, and livestock with functional biodiversity and promotes traditional indigenous practices.

Principles of Natural Farming

- **Multi-Cropping Systems**
- **No Synthetic Agroinputs:** Fertilizers, pesticides, herbicides.
- **Soil Coverage:** Using cover crops or mulch.
- **Bio-Stimulants:** Enhance microbial activity of the soil.
- **Minimal Tillage**
- **Cow Dung-Urine Formulations:** Such as Bijamrit, Jivamrit, Ghanjivamrit.

Practicing States: Andhra Pradesh, Karnataka, Himachal Pradesh, Chhattisgarh, Jharkhand, etc.

Significance of Natural Farming

- **Improves Yield and Increases Farmers' Income**
- **Ensures Better Health:** Higher nutrition density in food.
- **Environmental Conservation:** Better soil biology, improved agrobiodiversity, smaller carbon and nitrogen footprints.

Challenges of Natural Farming

- **Skeptical Farmers**

- **Non-Availability of Quality Inputs**
- **Lack of Adequate Research**
- **Higher Labor Costs**

Government Initiatives to Promote INM and Organic Farming

- **Paramparagat Krishi Vikas Yojana (PKVY)**
- **Mission Organic Value Chain Development in North East Region (MOVCDNER)**
- **Market Development Assistance (MDA)** for promoting organic fertilizers
- **PM-PRANAM** to promote sustainable and balanced use of fertilizers

Indian Heritage & Culture

Tell Umm Amer and Assam's Charaideo Moidams- UNESCO World Heritage

Recently, the World Heritage Committee added **Tell Umm Amer (Monastery of Saint Hilarion)** in the Gaza Strip and **Assam's Charaideo Moidams** to the UNESCO World Heritage Sites list. Tell Umm Amer was also placed on the List of World Heritage in Danger.

Key Facts About Tell Umm Amer

- **Historical Background:** A fourth-century CE Christian monastery founded by Hilarion the Great, located in Gaza. It is one of the largest and earliest monastic communities in the Middle East.
- **Archaeological Significance:** Features ruins of five churches, bath and sanctuary complexes, geometric mosaics, and a crypt. It was a major religious and cultural hub until the Umayyad period.
- **Damage from Conflict:** The ongoing Gaza conflict has significantly damaged the site.
- **World Heritage Status Impact:** Listing brings international recognition and protection, with increased support for preservation if designated "in danger."
- **Enhanced Protection:** In December 2023, UNESCO granted it provisional enhanced protection under the 1954 Hague Convention.

Note:

The List of World Heritage in Danger alerts the international community to sites facing threats like conflict, natural disasters, pollution, poaching, urbanization, and tourism development, encouraging global support and corrective action.

Key Facts About Assam's Charaideo Moidams

- **Historical Significance:** Burial sites of the Ahom dynasty, founded in 1253 AD by King Sukaphaa. These earthen mounds, or moidams, were used for burying royalty and aristocracy.
- **Architectural Value:** Known as the "Pyramids of Assam," these moidams are important tourist attractions but many are in disrepair.
- **Ahom Dynasty Legacy:** The Ahoms ruled Assam for six centuries, practicing burial instead of cremation, with the grandeur of moidams reflecting the status of the buried.
- **Cultural Integration:** Sukapha, who migrated from Burma, established the first principality in Charaideo, integrating various communities and adopting Hinduism and Assamese language while preserving traditional beliefs.
- **Modern Celebrations:** Assam celebrates 'Asom Divas' on December 2nd each year to honor Sukapha's legacy and the Ahom dynasty's contributions.

PRELIMS SPECIFIC

National Mission for Manuscripts and the National Culture Fund.

Recently, the **Ministry of Culture and Tourism** highlighted the achievements of the **National Mission for Manuscript** and the **National Culture Fund**.

National Mission for Manuscripts

- Established in **2003** by the **Ministry of Tourism and Culture, Government of India**.
- **Objective:** Document, conserve, digitize, and disseminate **India's manuscript heritage**.

Key Points:

- Over **100 Manuscripts Resource Centres** and **Manuscripts Conservation Centres** set up nationwide.

- **India** has an estimated **ten million manuscripts**, the largest collection globally, covering various **themes, scripts, languages, and aesthetics**.

Manuscripts:

- Defined as **handwritten compositions** on materials like **paper, bark, cloth, metal, or palm leaf**, at least **seventy-five years old**, with **scientific, historical, or aesthetic value**.
- Distinct from **historical records** as they contain **knowledge content** rather than direct historical information.
- Found in **hundreds of different languages and scripts**.

Note: The **Ancient Monuments and Archaeological Sites and Remains Act, 1958** defines an "**Ancient Monument**" as any historically, archaeologically, or artistically significant structure over **100 years old**.

National Culture Fund

Overview:

- Established in **1996** under the **Charitable Endowment Act, 1890**.
- **Purpose:** Mobilize resources through **Public-Private Partnerships (PPP)** to **promote, protect, and preserve India's cultural heritage**.

Objectives:

- **Train and develop specialists and cultural administrators.**
- Expand and create **museum spaces and galleries**.
- **Document cultural expressions** and forms facing extinction.

Features:

- Provides a platform for **heritage, culture, and arts partnerships**.
- Projects overseen by a **Project Implementation Committee (PIC)** with representatives from the **donor, implementer, and NCF**.
- Accounts audited annually by the **Comptroller and Auditor General of India**.

Management:

- Managed by a **Council** chaired by the **Minister of Culture** and an **Executive Committee** chaired by the **Secretary of Culture**.