Department of Telecommunications (DoT) has unveiled the 'Sangam: Digital Twin' initiative

- This initiative is a **Proof of Concept** focused on revolutionizing the **planning & design of infrastructure.**
  - It aims at **combining the prowess of Digital Twin and Artificial Intelligence, Internet of Things, 5G, 6G,** and next-gen computational technologies.
  - **It brings all stakeholders on one platform** to demonstrate practical implementation of innovative infrastructure planning solutions.
  - It is to be conducted in **one of the major cities of India** in two stages i.e. Exploration stage and Demonstration stage.
- **Digital Twin** is a **virtual model** designed to **accurately reflect a real-world physical object.**
  - It spans the **object's lifecycle** and uses real-time data sent from sensors to **simulate the behavior and monitor operations,** thus helping decision making.
  - **Digital twins differ from simulations** in their its large scale and two-way flow of information.
  - Digital twins are **already being used** in power generation equipment, large physical structures, manufacturing operations, healthcare services and automotive industry.
- **Significance of Digital twins**
  - **Remote monitoring** makes it viable for usage in hazardous operations
  - **Better predictions** helping in policy decisions
  - **Improvement in operational efficiency** thereby maintaining the output quality
  - **Aids in Urban planning** by creating different simulations and forecasting

> Recently, a private company has created digital twin of **Hyderabad's 16th century Qutub Shahi tombs** using drone scanners.
> - The site includes **seven tombs** dedicated to the **former kings of Golconda.**
> - They resemble **Persian, Pathan and Hindu architectural styles** that makes use of grey granite, with stucco ornamentation.
> - It is a **one-of-its-kind place** in the world where the **whole dynasty is buried at a single spot.**

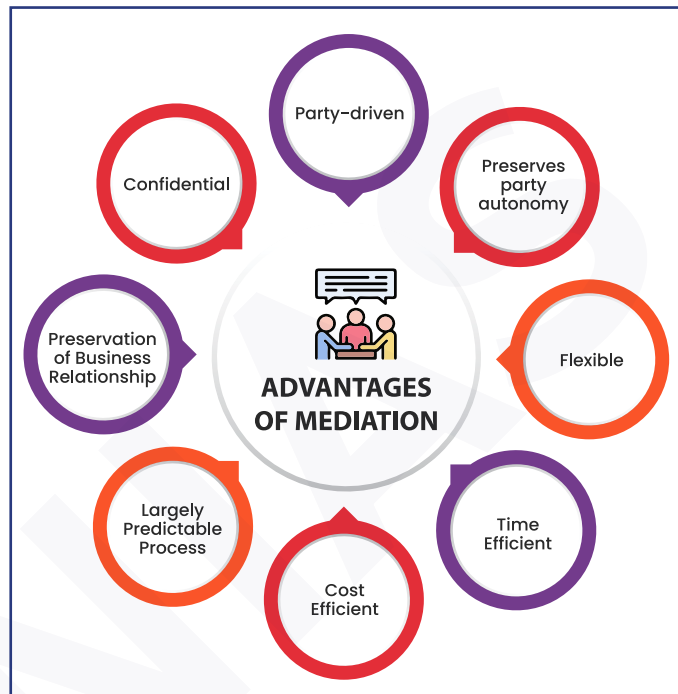## NITI Aayog unveiled the Greening and Restoration of Wasteland with Agroforestry (GROW) report

- Report emphasizes potential of **converting wastelands into productive agroforestry zones.**
  - It employed **remote sensing and GIS techniques** to evaluate the **suitability of agroforestry practices** across all districts of India and introduced an **Agroforestry Suitability Index (ASI)** for national-level prioritization.
  - NITI Aayog also launched **"GROW-Suitability Mapping" portal on Bhuvan (a geoportal of ISRO)** for ensuring universal access to state and district-level data.
- **Wastelands** are lands which are unproductive, unfit for cultivation, grazing and other economic uses.
  - According to **Wasteland Atlas of India 2019,** wastelands constitute **16.96% of geographical area** of India in 2015-16.
- **Agroforestry** is a collective name for land-use systems where **trees are managed together with crops and/or animal production systems** in agricultural settings.
  - Presently, agroforestry covers **8.65% of India's total geographical area.**
  - **Three main types:**
    - **Agrisilvicultural** systems are a combination of crops and trees.
    - **Silvopastoral systems** combine forestry and grazing of domesticated animals on pastures or on-farm.
    - **Agrosylvopastoral** systems where trees, animals and crops can be integrated.
- **Significance of Agroforestry**
  - **Mitigating climate change** through microclimate moderation and carbon sequestration
  - **Enhancing productivity,** soil fertility and conserving soil
  - Optimizing **use of arable land**

> **India's Initiatives for Agroforestry**
> - **National Agroforestry Policy in 2014**
> - **Sub-Mission on Agroforestry** under National Mission for Sustainable Agriculture
> - Agroforestry component under **Rashtriya Krishi Vikas Yojana**
> - India joined **Bonn Challenge pledges** to bring into restoration 13 million hectares (mha) of degraded and deforested land by the year 2020.

Report by IBBI's Expert Committee on Framework for Use of Mediation under the Insolvency and Bankruptcy Code (IBC), 2016

- Expert committee was constituted by **Insolvency and Bankruptcy Board of India (IBBI)** with **T.K. Vishwanathan** as Chairperson to examine the scope of using mediation in various processes under the IBC 2016.
  - Currently, there are **no specific provisions for mediation of insolvency and bankruptcy disputes** under IBC.
- Mediation is **use of a neutral third party to facilitate the negotiated settlement** of a dispute between two or more parties.
  - Typically, it is initiated by **mutual consent** of the parties, or **pre-agreed contract,** or **court reference** or **law-mandated requirement.**
- **Mediation framework in India**
  - **The Mediation Act, 2023** aims to facilitate mediation, especially institutional mediation.
  - **Provisions in other legislations:** Civil Procedure Code, 1908, Companies Act, 2013, Commercial Courts Act, 2015 and Consumer Protection Act, 2019.
  - India is signatory to the **Singapore Convention on Mediation.**
- **Recommendations of the Committee**
  - **Phased introduction of voluntary mediation** as a dispute resolution mechanism under IBC.
  - Centre may by rules prescribe **structure of insolvency mediation framework** with specifying categories of mediable disputes.
  - IBBI to specify **procedures for conduct of mediations** and their enforcement.
  - **Costs for the mediation to be borne equally** between parties or as mutually agreed.

ADVANTAGES OF MEDIATION: Party-driven, Preserves party autonomy, Flexible, Time Efficient, Cost Efficient, Largely Predictable Process, Preservation of Business Relationship, Confidential

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Public Accounts Committee (PAC) presented report titled 'Pollution caused by plastic' in Parliament

- Committee examined the plastic waste management in country and related issues.
- **Concerns:**
  - **Inadequate disposal and utilisation:** Most of the **total plastic waste** in the country **remained unutilised.**
    - It leads to pollution of air, water and soil, and ultimately affects human health.
  - **Governance Issue:** Non-compliance of **Plastic Waste Management Rules 2016 (latest notified in 2023),** mainly related with the Extended Producers Responsibility (EPR).
    - **Lackadaisical approach of Central Pollution Control Board (CPCB)** and SPCBs/ PCCs allowed the plastic units to function without valid registrations.
    - Lack of mechanism for assessment of generation of plastic waste.
  - **Other Issues:** Improper collection and segregation, delay in Elimination of Single Use Plastic, poor monitoring by Urban local bodies (ULBs) etc.
- **Key Recommendations:**
  - **Reporting** of **data online** on the **national dashboard** may be made mandatory, along with Proof of Photo/Video and GPS location.
  - **Comprehensive policy** is required for containing pollution caused by plastics.
  - Penal provisions for not setting up **Plastic Waste Management (PWM)** systems by ULBs.
  - Involvement of **rag pickers** and Junk dealers to expedite the process of segregation and collection.

Initiative Taken for Tackling Plastic Waste
- Project REPLAN (REducing PLAstic from Nature)
- Promotion of Circular Economy
- EPR Portal for Plastic Packaging
- Swachh Bharat Mission
- Lifestyle for the Environment (LiFE) Movement

Supreme Court (SC) strikes down the Electoral Bonds Scheme (EBS) as 'unconstitutional'

- **SC ruled that,**
  - Anonymous electoral bonds are **violative of the Right to Information (RTI) under Article 19(1)(a).**
  - Court also **quashed the amendments made to the Income Tax Act and the Representation of People Act 1951** which made the donations anonymous.
  - Amendments to Companies Act 2013 provision allowing unlimited corporate contributions is **arbitrary and violative of Article 14.**
- **About Electoral Bonds Scheme (EBS):**
  - Finance Act 2017 introduced EBS that allowed corporations and individuals to anonymously donate money to political parties by **purchasing electoral bonds from the SBI.**
  - Electoral bonds are **interest-free bearer instruments** like Promissory Notes, with 100% tax exemption.
    - They are issued in multiples of **Rs 1,000, Rs 10,000, Rs 1 lakh, Rs 10 lakh, and Rs 1 cr.**
    - A **citizen of India or a body incorporated in India is eligible** to purchase the bond.
  - It was proposed as a measure to address the lack of transparency in political parties' funding and **curbing black money.**
- **Issues related to EBS:**
  - As per RBI, **shell companies may misuse** bearer bonds **for money laundering** transactions.
  - Unlimited and anonymous corporate funding **infringes the principle of free and fair elections.**

Parliamentary Committee asks the government to strengthen critical digital infrastructure

- **Committee noted that,**
  - **373 govt websites** were hacked in the past 5 years (2018-2023).
  - **Low recovery rate** i.e **10.4%** of the transactions reported over the last three years (2020-2022).
  - Other issues highlighted includes **Money Laundering by Fintech, Biometrics cloning, etc.**
- **Recommendations of the committee**
  - Multipronged approach with **effective coordination of all stakeholders** to deal with cyber frauds.
    - **Rationalisation of Micro-ATMs** and Banking correspondents in hotspots.
- **Existing Framework of Cyber Security**
  - **National Cyber Security Framework, 2013**
    - **National Security Council Secretariat (NSCS)** is responsible for coordinating, overseeing and ensuring compliance with cyber security policies.
  - **Legislative measures** like Information Technology (IT) Act 2000.
  - **Dedicated agencies** like Indian Computer Emergency Response Team (CERT-In) act as the National agency (under Section 70B of the IT Act) for cyber security.
    - Computer Security Incident Response Team-Finance Sector under CERT-In.
  - **National Critical Information Infrastructure Protection Centre (NCIIPC)**- Nodal Agency in respect of Critical Information Infrastructure Protection.

Critical digital infrastructure

- It refers to the computer systems and networks that are crucial for the functioning of the society and economy.
- This includes systems used in areas like **healthcare, transportation, finance, and utilities.**

Also in News

Intuitive Machines (IM) mission

- **SpaceX launched this Private U.S. moon mission,** 52 years after the last Apollo lunar mission.
- The IM-1 flight is carrying l**ander Nova-C (Odysseus)** and six **NASA payloads** of instruments designed to gather data about the lunar environment.
- It will attempt to soft land near **Moon's south pole at Malapert A crater.**
- **Previous unsuccessful private attempts:**
  - In 2019, **Beresheet (Israel)**
  - In 2023, **Hakuto-R mission (Japan)**
  - In 2024, **The Peregrine lander (USA)**
- **The US, the former Soviet Union, China, India and Japan** are the only countries that have carried out successful soft lunar touchdowns.

Data Exclusivity

- India has **rejected the demand for 'data exclusivity'** provision in the free trade pact with the European Free Trade Association (EFTA) bloc.
  - This decision has been taken to **protect the interest of domestic generic drug manufacturer.**
- **About Data Exclusivity**
  - **Form of intellectual property protection** that applies specifically to data from pharmaceutical clinical trials.
  - **Generic drug manufacturer** cannot apply for regulatory approval for equivalent drugs relying on the originator's data for a specified number of years.
  - It lengthens the **monopoly** for the original drug manufacturer.
  - Not mandatory under **Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) Agreement (WTO)** and Indian laws do not provide for it.

Largest Economy Ranking

- Japan recently **slipped to the world's 4th-largest economy.**
- **USA, China, Germany** are the top 3 largest economies in the world, while **India is ranked as 5th Largest.**
- The comparisons among nations' economies is based on **nominal GDP** and are in dollar terms.
- **Reasons for declining status of Japan:**
  - **Aging population and low birth rates** contribute to Japan's declining competitiveness and productivity.
  - **Weak yen and lack of innovation** challenge Japan's economic growth.
  - **Labour shortage:** Japan's acceptance of **foreign labor is limited.**

e-Jagriti portal

- **Artificial Intelligence integration in e-Jagriti portal** is expected to help in reduce pending cases in consumer court.
- **About e-Jagriti portal**
  - It is a **unified platform** that caters to the needs of all stakeholders in **Consumer Grievance redressal mechanism.**
  - It streamlines and **enhances various stages of case management.**
  - It is **designed to optimise the existing procedures** by minimising redundancy, reducing human interventions, and automating end-to-end workflows.
  - **Ministry:** Ministry of Consumer Affairs, Food & Public Distribution.

H5N1 Avian Influenza

- Between 2021 and 2023, H5N1 has **wiped out a significant bird population** in the United Kingdom.
- H5N1 is a type of **influenza virus** that causes a highly infectious, severe r**espiratory disease in birds called avian influenza (or "bird flu").**
  - H5N1 is categorized as one of the **highly pathogenic avian influenza (HPAI) viruses.**
  - H5N1 infection in humans occurs through **close contact with infected live or dead birds, or H5N1-contaminated environments.**
  - H5N1 infection in humans can cause **severe disease and has a high mortality rate.**

Green Hydrogen Plant

- Cochin International Airport Ltd (CIAL) and BPCL are setting up **World's First Green Hydrogen Plant at Airport Premises**
  - The plant aims to produce **1000 KW of power** and add impetus to country's Green Hydrogen mission.
- Green Hydrogen refers to the **hydrogen produced by electrolysis of water** with electricity generated **by renewable energy.**
- **The National Green Hydrogen Mission** aims to make India a Global Hub for producing, utilising, and exporting Green Hydrogen.

Species Threat Abatement and Restoration (STAR) metric

- STAR metric, **developed by International Union for Conservation of Nature (IUCN)** in partnership with other organizations and experts, has been expanded for use in marine areas.
  - It was first unveiled in **2021 for use in terrestrial areas.**
- **The STAR metric** utilizes existing data from **IUCN Red List of Threatened Species** to quantify extinction risks and threats faced by species.
  - STAR assesses the **potential of specific actions at specific locations to contribute to international conservation targets.**
  - STAR estimates the contribution of two kinds of action – **threat abatement and habitat restoration.**

Security Printing and Minting Corporation of India Limited (SPMCIL)

- SPMCIL's **19th foundation day** was recently celebrated
- **About SPMCIL**
  - **Miniratna Category-I company** of Government of India.
    - Public sector units which have **made continuous profit in the last three years with pre-tax profit of Rs.30 crores or more** in at least one of the years are granted Miniratna-I status.
  - Works under the **Ministry of Finance.**
  - **Key Functions:** Production of Currency Notes, Security Paper, Non-Judicial Stamp Papers, Postal Stamps, Passport, Visas etc.

Places in News — Qatar (Capital: Doha)

- Prime Minister of India recently met with the Amir of Qatar in Doha.
- **Political features:**
  - Situated in West Asia on the **west coast of the Persian Gulf.**
  - **Bordering countries:** Land Border with **Saudi Arabia** and Maritime Border with **UAE and Bahrain.**
  - **Bordering water bodies**: Persian Gulf, Gulf of Bahrain
- **Geographical features:**
  - It occupies **Qatar peninsula,** a small desert peninsula extending northwards from the larger **Arabian Peninsula.**
  - **Highest Point:** Abū al-Bawl Hill
  - **Sand dunes and salt flats,** or **sabkhahs,** are chief topographical features.
  - **No permanent bodies of fresh water.**

AHMEDABAD BHOPAL CHANDIGARH DELHI JAIPUR JODHPUR GUWAHATI HYDERABAD LUCKNOW PRAYAGRAJ PUNE RANCHI SIKAR