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16th BRICS SUMMIT IN RUSSIA

- BRICS, in its earlier format, brought together 5 major emerging economies – Brazil, Russia, India, China and South Africa.
 - In 2023, during the 15th BRICS Summit, held in South Africa, **six countries were invited to join the alliance**. These were - Iran, the United Arab Emirates, Saudi Arabia, Argentina, Egypt, and Ethiopia.
- Before, expanding in 2023, BRICS as a platform represents **42% of the world population, 30% of the world's territory, 23% of global GDP, and around 18% of world trade**.
- The aim of the alliance is to challenge the economic and political monopoly of the West.
 - The group sets priorities and has discussions once every year during the BRICS summit, which members take turns hosting.

16th BRICS Summit

- **Host** – Russia (16th BRICS summit is being held in Kazan, one of Russia's largest and wealthiest cities).
- **Agenda**
 - The central theme uniting BRICS members is their disillusionment with Western-led global governance, particularly in the economic sphere.
 - This sentiment has intensified following the sanctions on Russia after its 2022 invasion of Ukraine, which raised concerns among Global South nations about the West potentially using global financial tools as weapons.
 - In response, BRICS aims to reduce reliance on the US dollar and the SWIFT financial system, from which Russian banks were excluded in 2022.
 - In 2023, Brazil's President Lula proposed a trading currency for BRICS, though experts expressed doubts about its feasibility.
 - Instead, the focus is shifting to using national currencies for bilateral trade, reducing exposure to currency fluctuations and dependence on the dollar.

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- Additionally, China has developed a limited alternative to SWIFT, while countries like Turkey and Brazil are increasing their gold reserves.
- Currency swaps for energy deals are also gaining popularity, all reflecting a desire for greater financial autonomy from the West.

Role of BRICS: An Analysis

- **Successes/achievements**
 - **Economic Cooperation and Trade**
 - The group has emphasized reducing dependency on Western financial systems and enhancing their own economic resilience, with a focus on creating more inclusive growth models.
 - **New Development Bank (NDB)**
 - A major milestone for BRICS is the establishment of the **New Development Bank (NDB)** in 2014, with a capital of \$100 billion.
 - The bank provides funding for infrastructure and sustainable development projects within BRICS and other developing nations.
 - **Contingent Reserve Arrangement (CRA)**
 - BRICS established a **CRA** with a \$100 billion reserve pool to provide financial support to members facing short-term liquidity pressures.

Challenges Faced by BRICS

- **Economic Disparities Among Members**
 - **Geopolitical Rivalries**
 - **Relationship with Western Powers**
 - **Slow Progress on Institutional Reforms**
 - **China's Economic Dominance**
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SPACE DOCKING EXPERIMENT (SPADEX)



Recently, Hyderabad-based company handed over two 400 kg class satellites to ISRO, which will be part of the Space Docking Experiment planned by the space agency later this year.

- It is one of ISRO's most significant steps towards developing **autonomous docking technology**.
- The mission involves two vehicles—‘Chaser’ and the ‘Target’—coming together and connecting in space.
- Docking systems allow two spacecraft to connect in orbit, enabling critical operations like **assembling space stations, refueling, or transferring astronauts and cargo**.
- It will also test how well the combined spacecraft maintains stability and control after docking, ensuring smooth operations for future missions.
- India’s SPADEX experiment is unique because it focuses on developing indigenous, scalable, and cost-effective docking technology.
- This experiment involves **two spacecraft docking autonomously in orbit**, demonstrating precision, navigation, and control capabilities critical for future missions.
- SPADEX is designed to serve a wide range of spacecraft sizes and mission objectives, including potential collaborations for building space stations or deep space exploration,”
- The **history of docking systems dates back to the Cold War** when the Soviet Union achieved the first successful docking in space.
 - On October 30, 1967, the Soviets completed the historic docking of Kosmos 186 and *Kosmos 188—the first fully automated docking between two unmanned spacecraft.
 - This paved the way for later space exploration efforts, including long-term stays aboard space stations.
- **Significance:** It is key to achieving India's **long-term space exploration goals**, including manned spaceflight, satellite maintenance, and future space station construction.

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WHAT IS CLOUD CHAMBER?

India is establishing a first-of-its-kind cloud chamber at the Indian Institute of Tropical Meteorology (IITM), Pune.



- A cloud chamber is a **scientific apparatus** that **mimics** the conditions required for **cloud formation**.
- It resembles a **closed cylindrical or tubular drum**, inside which water vapour, aerosols, etc. are injected.
- Under the desired humidity and temperature inside this chamber, **a cloud can develop**.
- India is building a **cloud chamber with convection properties**, as required to study Indian monsoon clouds. Globally, there are only a handful of convective cloud chambers.

Objective: The objective of establishing a convective cloud chamber is to **gain a better understanding of cloud physics** under conditions commonly affecting Indian weather systems. Thereafter, this knowledge can be used for strategic planning of weather modification.

- The Pune facility will allow scientists to study the seed particles that form cloud droplets or ice particles in a sustained manner.
 - Cloud physics basically involves the study of cloud behaviour during normal and extreme conditions; **intra-particle interactions** inside a cloud; the formation of rain droplets and ice particles; the **influence of moisture** added into the atmosphere due to cyclones or low pressure systems; and interactions between different cloud layers, among others.

Significance: Scientists will have the flexibility to tailor physical and atmospheric parameters to suit environmental requirements that influence the Indian weather and climate.



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BIODIVERSITY AND CLIMATE CHANGE: COP16 AND THE GLOBAL EFFORTS TO ADDRESS THE CRISIS

- As the world grapples with the twin crises of **climate change** and **biodiversity loss**, global conferences like the **UN Biodiversity Conference (COP16)**, scheduled in **Colombia**, are gaining significance.
- Following the **Convention on Biological Diversity (CBD)**, which was established at the **1992 Rio Earth Summit**, COP16 focuses on protecting biodiversity, restoring ecosystems, and ensuring fair distribution of the benefits derived from the world's biological resources.
- This meeting comes after a landmark agreement, the **Kunming-Montreal Global Biodiversity Framework (2022)**, which set ambitious targets for conserving biodiversity by 2030.

The Kunming-Montreal Global Biodiversity Framework:

- The **Kunming-Montreal Framework**, finalized at **COP15** in 2022, established four major goals and 23 specific targets to be achieved by 2030. One of the most prominent of these is the **30 x 30 target**, which aims to:
 - **Conserve 30% of the world's lands and oceans** by 2030, particularly focusing on biodiversity-rich areas.
 - **Restore 30% of degraded land or marine ecosystems** by 2030.
- This framework is an essential step in reversing biodiversity loss and restoring natural ecosystems.
- However, progress has been slow, and one of the main objectives of **COP16** is to accelerate efforts to meet these targets.
- Countries are required to submit their **National Biodiversity Strategies and Action Plans (NBSAPs)**, which are equivalent to the **Nationally Determined Contributions (NDCs)** under the **Paris Climate Agreement**.

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Interconnection Between Climate Change and Biodiversity:

- The crises of **climate change** and **biodiversity loss** are deeply intertwined:
 - **Climate change accelerates biodiversity loss**, with rising temperatures and erratic weather patterns destroying ecosystems.
 - In return, **ecosystem changes**—such as deforestation and ocean warming—contribute to **global warming**, further exacerbating climate issues.
- Although these two crises have been addressed on separate tracks for decades, there is now a growing recognition of their interdependence.
- As a result, biodiversity and climate discussions are starting to converge, with **COP16** focusing on biodiversity while parallel efforts continue in **climate change negotiations**.

High Seas Treaty and Ocean Conservation:

- This treaty aims to protect biodiversity in oceans outside of national boundaries.
- The treaty calls for the creation of **protected areas** in biodiversity-rich parts of the oceans where human activities can be regulated, similar to national parks on land.
- Additionally, the treaty ensures equitable sharing of benefits from the exploitation of genetic resources in the oceans.

Access and Benefit Sharing: The Nagoya Protocol

- The **Nagoya Protocol**, finalized at **COP10** in 2010, laid down rules for **Access and Benefit Sharing (ABS)**.
 - This mechanism ensures that the benefits from the commercial use of biological resources are fairly distributed, especially to the countries and communities that own or manage these resources.
 - At **COP16**, countries are expected to discuss the sharing of benefits from the **digital genetic information** of plants and organisms.
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THE SC'S VERDICT ON MADARSA EDUCATION ACT

The Supreme Court of India (SC) has reserved its judgement in a case concerning the constitutionality of the Uttar Pradesh (UP) Board of Madarsa Education Act, 2004.

This verdict holds significant implications for the future of religious education in India, as it addresses key issues related to secularism, the right to education, and the intersection of religious and modern education.

What is the UP Madarsa Education Act 2004?

- **Governs madaras:** The Act governs the education provided in madaras - institutions which offer education that integrates religious teachings with some elements of modern, secular subjects, though religious instruction takes precedence.
- **Established the UP Board of Madarsa Education:**
 - **This board**, predominantly composed of members from the Muslim community, is **responsible for preparing curriculum and conducting examinations for various madarsa courses**, ranging
 - From 'Maulvi' (equivalent to Class 10)
 - To 'Fazil' (equivalent to a Master's degree).

Status of Madaras in UP:

- **The state has the highest number of madaras in India:** In 2023, about 1.69 lakh students from over 14,000 recognised institutions took the UP Madarsa board exams, which correspond to the Class 10 and Class 12 levels.
- **The Madarsa Education Act was declared unconstitutional:** In March 2024, the Allahabad HC **struck down** the Act of 2004, deeming it unconstitutional and instructing the state government to integrate madarsa students into the formal education system.
- **What followed the HC decision?**
 - The SC temporarily stayed the ruling in April 2024 and began hearing the case in October.

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- The SC also stayed two notifications issued by the National Commission for the Protection of Child Rights (NCPCR), which called for inspections of madarasas and the enrollment of non-Muslim students into these institutions.

On What Grounds Allahabad HC Declared Madarsa Act Unconstitutional:

- **Violation of secularism:**
 - The HC referred to previous SC judgments to highlight that **secularism means equal treatment of all religions by the state.**
 - The court noted that the **madarsa curriculum made religious education on Islam compulsory** while offering modern subjects as optional, which it argued conflicted with the state's duty to provide secular education.
 - The court emphasised that **the government should not favour any particular religion** or religious sect through education policies.
 - **Violation of the right to education:**
 - The HC held that the Madarsa Act violated **Article 21A** of the Indian Constitution, which guarantees free and compulsory education to all children between the ages of six and fourteen.
 - It argued that the curriculum offered in madarasas did not meet the standard of quality education as defined by **the Right to Education (RTE) Act, 2009.**
 - The court criticised the state for failing to ensure that madarsa students receive a comprehensive education in modern subjects.
 - **Conflict with the UGC Act:**
 - The Allahabad HC also found that the provisions of the Madarsa Act conflicted with **the University Grants Commission (UGC) Act, 1956.**
 - The UGC Act grants only recognised universities or deemed universities the authority to **confer degrees.**
 - The madarsa board's ability to grant degrees, therefore, was deemed unconstitutional, as it overstepped the boundaries set by the UGC Act.
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RAJAJI TIGER RESERVE



Wildlife panel of the Union Environment Ministry has deferred nod to the National Highway Authority of India's (NHAI) four-lane project, which was proposed to pass through Rajaji Tiger Reserve and Shivalik Elephant Reserve in Uttarakhand.

- It is spread over three districts of **Uttarakhand**: Haridwar, Dehradun, and Pauri Garhwal.
- It is located in the **Shivalik range of the Himalayas** and spread over 820 kms.
- It was named after the famous freedom fighter **Rajgopalachari**, popularly known as "Rajaji"
- Its location in a transition zone **between temperate western Himalayas and central Himalayas** enhances the species diversity.
- It forms an important part of the **Terai-Arc landscape (7500 km) between the Yamuna River** in the northwest **and the Sharda River** in the southeast.

Vegetation: The area is covered with diverse forest types ranging from **semi-evergreen to deciduous** and from **mixed broad-leaved to Terai grassland** and has been classified as **Indus-Ganges Monsoon Forest**

Flora: Some popular floras found in this park include: Rohini, Palash, Shisham, Sal, Sandan, Khair, Arjun, Baans, Semul, Chamaror, etc.

Fauna: It has a sizeable population of **Tigers** and Asian **Elephants**. It is home to a variety of wild animals like **Leopard, Jungle cat, Himalayan Black Bear, Sloth Bear, Striped Hyena, Goral, Sambar, Wild Pig, Spotted Deer, Barking Deer**, etc.
