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Current affairs summary for prelims

20 September, 2024

Bio-RIDE scheme

Context: *The Union Cabinet recently approved the Bio-RIDE scheme to boost biotechnology research and entrepreneurship.*

Overview:

- Bio-RIDE combines two existing schemes — Biotechnology Research and Development (R&D) and Industrial and Entrepreneurship Development (I&ED)

Alignment with Vision

- **Supports DBT's Vision**: Aims for national development through advancements in biotechnology.
- **Economic Goal**: Targeting a $300 billion bioeconomy by 2030.
- **Long-term Vision**: Contributes to the "Viksit Bharat 2047" initiative.
- **Fostering Innovation**: Designed to promote bio-entrepreneurship and establish India as a global leader in biomanufacturing and biotechnology.

Goals

- **Accelerate Research**: Enhance product development in biotechnology.
- **Bridge the Gap**: Connect academic research with industrial applications.

Components

- **Biotechnology Research and Development (R&D)**: Focuses on innovative research in healthcare, agriculture, bioenergy, and environmental sustainability.
- **Industrial & Entrepreneurship Development (I&ED)**: Promotes industrial growth and supports biotechnology startups through incubation, seed funding, and mentorship.
- **Biomanufacturing and Biofoundry**: New component emphasizing sustainable manufacturing processes aligned with environmental goals, contributing to a circular bioeconomy and supporting the Prime Minister's LiFE initiative.

Funding and Duration

- **Outlay**: ₹9,197 crore proposed for implementation during the 15th Finance Commission period (2021-22 to 2025-26).

Objectives

- **Promotion of Bio-Entrepreneurship**: Supports startups with seed funding, incubation, and mentorship.
- **Advancement of Innovation**: Provides grants for research in synthetic biology, biopharmaceuticals, and bioplastics.
- **Facilitation of Industry-Academia Collaboration**: Encourages partnerships to commercialize bio-based technologies.
- **Encouragement of Sustainable Biomanufacturing**: Focuses on eco-friendly production practices.
- **Support for Researchers**: Offers extramural funding to institutions and researchers.
- **Human Resource Development**: Nurtures students and researchers to advance skills in biotechnology.

Indus Water Treaty

Context: *Recently, India has formally requested a review of the Indus Water Treaty due to unforeseen changes and security concerns.*

Overview:

- India formally sought a review of the 64-year-old Indus Water Treaty (IWT), Pakistan reaffirmed the agreement's importance
- India has raised concerns over cross-border terrorism, seeking an update to the Indus Water Treaty.
- India is frustrated with the World Bank's concurrent processes, claiming they violate the treaty's dispute resolution.

The Treaty

- **Date of Signing:** September 19, 1960
- **Involved Parties:** India and Pakistan
- **Broker:** World Bank
- **Objective:** Establishes a framework for cooperation and information exchange regarding the use of the Indus River and its five tributaries (Sutlej, Beas, Ravi, Jhelum, and Chenab).

Key Provisions

- **Water Sharing**:
  - **Western Rivers**: Indus, Chenab, and Jhelum allocated to Pakistan for unrestricted use.
  - **Eastern Rivers**: Ravi, Beas, and Sutlej allocated to India for unrestricted use.

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- **Permanent Indus Commission**:
  - Both countries are required to establish a commission that meets annually to discuss water management.
- **Dispute Resolution Mechanism**:
  - **Three-step Process**: Disputes can be resolved through the Permanent Commission or at the inter-government level.
  - **Neutral Expert**: If unresolved, disputes can be referred to a Neutral Expert appointed by the World Bank.
  - **Court of Arbitration**: Appeals from the Neutral Expert can be taken to a Court of Arbitration.

➢ **Projects Inspected Under IWT**

- **Pakal Dul and Lower Kalnai**: Hydro electric projects on the Chenab River.
- **Kishanganga Hydroelectric Project**: Located in Jammu and Kashmir; Pakistan raised concerns over its impact on water flow.
- **Ratle Hydroelectric Project**: A run-of-the-river project on the Chenab River.

➢ **Indus River and Its Tributaries**

- **Source**: The Indus River originates in Tibet near Mansarovar Lake.
- **Course**: Flows through Tibet, India, and Pakistan, draining about 200 million people in its basin.
- **Major Tributaries**:
  - **Left-bank**: Zaskar, Suru, Soan, Jhelum, Chenab, Ravi, Beas, Satluj, Panjnad.
  - **Right-bank**: Shyok, Gilgit, Hunza, Swat, Kunnar, Kurram, Gomal, Kabul.
- **Discharge Point**: Empties into the Arabian Sea near Karachi, Pakistan.

Bharatiya Antariksha Station (BAS)

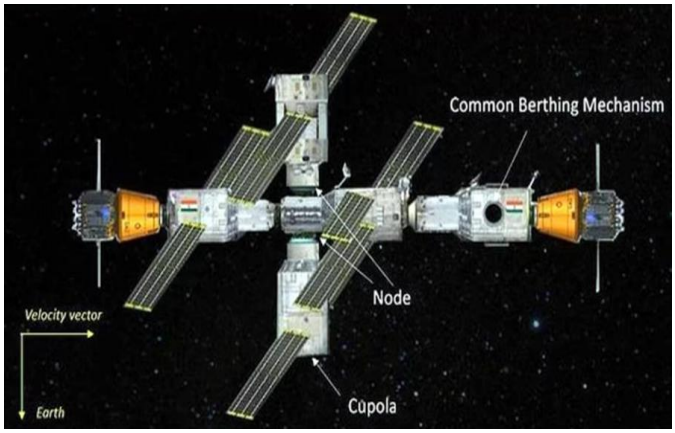
Context: *Recently, the Indian government approved the construction of BAS-1, the first module of its space station.*

➢ **Overview:**

- This development is a milestone toward operationalizing India's space station by 2035 and a crewed moon mission by 2040.
- Cabinet approval was granted for developing BAS-1 and missions to validate technologies for its operation.
- An additional **₹11,170 crore** allocated, raising total Gaganyaan budget to **₹20,193 crore** (~$2.4 billion).

➢ **About Bharatiya Antariksha Station (BAS): Weight**: Approximately **52 tonnes**.

- **Developed by**:India's planned modular space station, developed by the Indian Space Research Organisation (ISRO).
- **Orbit**: Expected to maintain an orbit at around **400 km** above Earth.
- **Crew Duration**: Astronauts can stay for **3-6 months**.
- **Completion Timeline**: Initially planned for **2030**, now postponed to **2035** due to technical delays and COVID-19 impacts.



➢ **Key Milestones**

- **First Module Launch**: BAS-1 is expected to launch in **2028** using the LVM3 launch vehicle.
- **Full Operational Capability**: Targeted for **2035**.
- **Gaganyaan Connection**: Expansion of the Gaganyaan mission to include BAS-1 and technology validation missions.

➢ **Historical Context**

- **2019**: ISRO chief K. Sivan presented initial plans; estimated weight was **up to 20 tonnes**.
- **2022**: Gaganyaan project entered testing phase, indicating progress in human spaceflight capabilities.
- **2023**: Focus on long-duration human spaceflight, with aspirations for a crewed Moon landing by **2040**.

➢ **Design and Structure**

- **Configuration**: Five modules connected via a **Common Berthing Mechanism**.

- **Dimensions**: Total station size of **27m x 20m**.
- **Crew Capacity**: Nominal size of **3-4 astronauts**, maximum of **6 for short durations**.
- **Orbit Characteristics**: Inclined at **51.6°**, accessible to international spaceports.

➢ **Technological Development**

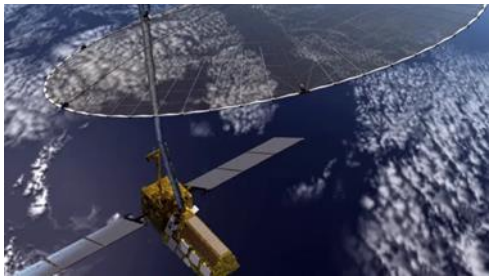
- **Power Supply**:
  - **Fuel Cell Power System (FCPS)** successfully tested to evaluate future power needs.
  - Development of **100 Kilowatt systems** and advanced lithium-ion batteries.
- **Docking Capabilities**: Testing planned through SPADEX mission before application in future missions.

➢ **Strategic Importance**

- **Scientific Research**: Provides a unique platform for microgravity experiments, advancing knowledge in various fields.
- **International Collaboration**: Potential partnerships with NASA and other space agencies to enhance capabilities.
- **Long-term Vision**: Goals include crewed lunar missions and interplanetary exploration by **2040**.

➢ **SPADEX (Space Docking Experiment)**

- A twin spacecraft mission developed by the Indian Space Research Organisation (ISRO) aimed at maturing technologies related to orbital rendezvous, docking, and formation flying.



➢ **Objectives:**

- Enhance capabilities for human spaceflight.
- Enable in-space satellite servicing.
- Facilitate other proximity operations.

➢ **Mission Components:**

- **Spacecraft:** Consists of two IMS class-2 (200 kg) satellites:
  - **Chaser:** Actively engages in docking.
  - **Target:** Serves as the docking target.
- **Deployment:** Both satellites will be launched as co-passengers or auxiliary payloads and injected into slightly different orbits.

Launch Timeline: Scheduled for launch from Satish Dhawan Space Centre aboard a dedicated Polar Satellite Launch Vehicle (PSLV) by November 2024.

NEWS IN BETWEEN THE LINES

PM-JI-VAN Yojana

Recently, the Central Government approved the modified Pradhan Mantri Jaiv Indhan Vatavaran Anukool Fasal Awashesh Nivaran (PM-JI-VAN) Yojana.

About PM-JI-VAN Yojana:

- The Pradhan Mantri JI-VAN (Jaiv Indhan- Vatavaran Anukool fasal awashesh Nivaran) Yojana is a program that **provides financial support to 2nd generation (2G) ethanol** projects in India.
- The program aims to increase the amount of ethanol blended with **petrol to 20%** by the end of the **2025-26 ethanol** supply year.
- It also aims to **provide remunerative income to farmers** for their agricultural residue and address environmental pollution.
- With the amendments in the scheme, financial assistance is available for advanced **biofuels**, and preference will be given to **new technologies** and innovation in project proposals.
- The scheme also **helps create local employment opportunities** and **contributes to India's energy security and self-reliance**.
- It aligns with India's goals to achieve **net-zero greenhouse gas** emissions by **2070**.

ICAR-NISA

Today, on 20th of September, President of India will address the ICAR-NISA centenary in Ranchi, release a commemorative stamp and plant saplings for the 'Ek Ped Maa Ke Naam' campaign.

About ICAR-NISA:

- The ICAR-National Institute of Secondary Agriculture (NISA) is a **key research institute**, located in Namkum, Ranchi, **Jharkhand**.
- This institute operates as a part of the Indian Council of Agricultural Research (ICAR) **under the Ministry of Agriculture and Farmer's Welfare**, Govt. of India.
- The institute aims to become a driving force in **rural agro-industrialization** and an **international referral center** for secondary agriculture.
- Its **mission is to bridge the gap in rural industrialization** and **reduce the need for imports** by developing and promoting secondary agriculture technologies.

	▪ It was **previously known as the Indian Lac Research Institute** (ILRI) and **later as the Indian Institute of Natural Resins and Gums** (IINRG). ▪ In **September 2022**, the institute was **renamed as ICAR-NISA** to reflect its expanded mandate, which now includes all aspects of secondary agriculture. ▪ It focuses on research and development in secondary agriculture, which **involves value addition to agricultural products**, **processing of crop residues** and increasing farmers' income through efficient use of by-products.
PM-JUGA 	*Recently, the Union Cabinet approved Pradhan Mantri Janjatiya Unnat Gram Abhiyan (PM-JUGA).* **About PM-JUGA:** ▪ Pradhan Mantri Janjatiya Utthan-Gaurav Abhiyan (PM-JUGA) **is a government initiative.** ▪ The primary aim of PM-JUGA is to **uplift tribal families in tribal-majority** villages and aspirational districts by adopting saturation coverage, focusing on overall **socio-economic development**. ▪ It **targets India's 10.45 crore Scheduled Tribe population** (as per the 2011 Census), which **includes more than 705 tribal communities** across the country. ▪ This initiative consists of **25 interventions** to be **implemented by 17 ministries.** ▪ Funding will be sourced from the **Development Action Plan for Scheduled Tribes** (DAPST) over the **next 5 years**. ▪ The progress of tribal villages will be monitored using the **PM Gati Shakti platform**. ▪ PM-JUGA is an example of **cooperative federalism**, involving close collaboration between the Central Government and State Governments, and reflects a whole-of-government approach to achieve its objectives. ▪ The four mission goals of PM-JUGA are to develop **enabling infrastructure**, **promote economic empowerment** through **skill development and self-employment,** ensure universal access to **quality education for tribal children**, and provide **healthcare support** for dignified aging in tribal populations.
Place in News **Jordan**	*Recently, the World Health Organization (WHO) declared Jordan as the first country in the world to eliminate leprosy.* **Jordan (Capital: Amman)** **Location:** Jordan, officially known as the **Hashemite Kingdom** of Jordan, is a country in the Southern Levant region of **West Asia**. **Boundaries:** Jordan shares its borders with **Iraq** (East), **Israel** and the occupied **Palestinian territories** (West), **Syria** (North) and **Saudi Arabia** (South). **Physical Features:** ▪ The highest point in Jordan is **Jabal Umm ad Dami**, located in the Wadi Rum area in the southern part of the country. ▪ The major rivers of Jordan include the **Jordan River**, which forms the western border with Israel and Palestine and its tributaries such as the **Yarmouk River** in the north and the **Zarqa River** in the central region. ▪ Jordan's major minerals include **phosphate**, **potash**, **limestone**, **gypsum**, **marble** and **oil shale**. **Membership:** Jordan is a member of several international organizations, including the **United Nations**, **Arab League**, **World Bank**, **International Monetary Fund** (IMF) and the **World Health Organization** (WHO).

POINTS TO PONDER

- According to the 'State of the Rhino' report by the International Rhino Foundation (IRF), which species of rhino is reportedly benefiting from improved habitats? **– Greater One-Horned Rhino**
- Seiyhama village, which recently celebrated the Naga king chilli festival, is situated in which Indian state? **– Nagaland**
- Which recent projects were cleared by the standing committee of the National Board for Wildlife (SC-NBWL)? **– Transmission lines in the Little Rann of Kutch and Goa's Mollem national park**
- What is the name of the tiger reserve in Madhya Pradesh facing issues due to overpopulated spotted deer? **– Pench Tiger Reserve**
- Recently, in which state was the 'SUBHADRA' flagship scheme launched by the Prime Minister of India? **– Odisha**