



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

Cabinet approves 'Biotechnology Research Innovation and Entrepreneurship Development (Bio- RIDE)'



- 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.

Face to Face Centres





20 September, 2024

- **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

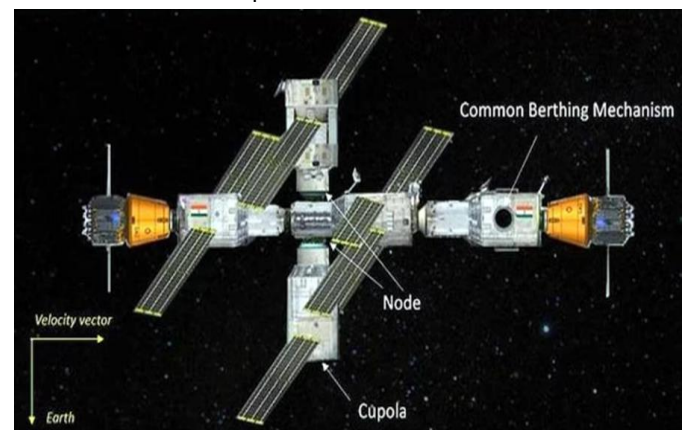
- **Source:** The Indus River originates in Tibet near Mansarovar Lake.
- **Course:** Flows through Tibet, India, and Pakistan, draining about 200 million people in its basin.
- **Major Tributaries:**
 - **Left-bank:** Zaskar, Suru, Soan, Jhelum, Chenab, Ravi, Beas, Satluj, Panjnad.
 - **Right-bank:**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

➤ 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.

Bharatiya Antariksha Station (BAS)

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

Face to Face Centres





20 September, 2024

- **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.

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| | <ul style="list-style-type: none"> 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. |
| <p style="text-align: center;">PM-JUGA</p>  | <p>Recently, the Union Cabinet approved Pradhan Mantri Janjatiya Unnat Gram Abhiyan (PM-JUGA).</p> <p>About PM-JUGA:</p> <ul style="list-style-type: none"> 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. |
| <p style="text-align: center;">Place in News</p> <p style="text-align: center;">Jordan</p> | <p>Recently, the World Health Organization (WHO) declared Jordan as the first country in the world to eliminate leprosy.</p> <p>Jordan (Capital: Amman)</p> <p>Location: Jordan, officially known as the Hashemite Kingdom of Jordan, is a country in the Southern Levant region of West Asia.</p> <p>Boundaries: Jordan shares its borders with Iraq (East), Israel and the occupied Palestinian territories (West), Syria (North) and Saudi Arabia (South).</p> <p>Physical Features:</p> <ul style="list-style-type: none"> 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.  <p>Membership:</p> <p>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).</p> |

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20 September, 2024

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**

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