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MINISTRY OF SCIENCE AND TECHNOLOGY



MK Yadav Sir

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THE HINDU Page 1

NANGARNI SPARDHA

(Syllabus: GS Paper 1 – Art and Culture)

Ploughing through



Raising dust: A farmer and his team of oxen plough through the mud at the Nangarni Spardha — a traditional race held at the peak of the rainy season — at Dervan village in Ratnagiri district of Maharashtra. AP

Context: In Maharashtra's Ratnagiri district, a farmer and his oxen plough through the mud during the Nangarni Spardha, a traditional race held at the height of the rainy season in Dervan village.

Nangarni Spardha

- **About:** It is a centuries-old tradition, taking place at the peak of the rainy season and organised by village committee.
- **Event**: Participants and spectators often arrive in vehicles after enduring bumpy rides over unpaved roads from nearby villages.
- **Soft Muddy Ground**: The soft, muddy ground helps prevent serious injuries to the drivers, who compete barefoot and without any protective gear.
- **Preparing the Oxen**: Some oxen need stimulation before the race, with men pulling them with ropes and prodding them with sticks. Others, overexcited, must be controlled and soothed.
- **Oxen with Unique Names**: The oxen, named creatively like Bullet, Sundar (meaning "beautiful"), and Raja (meaning "king"), are kept solely for the competition, no longer used for plowing fields.
- **Decorative Preparations**: The oxen's horns are brightly painted, and their bodies are sprinkled with colored powder before the race begins.
- **Challenges**: Drivers, covered in gray mud, must demonstrate exceptional skill in maneuvering their oxen around a U-bend, maintaining control of the reins, and managing the speed of the oxen by twisting their tails.
- **Risk of Disqualification**: Drivers face the challenge of being half-blinded by mud while ensuring they do not drop the reins, as doing so results in immediate disqualification from the race.

Similar tradition: Maramadi (Kerala), Kambala (Karnataka).

INDIAN EXPRESS

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UNIFIED LENDING INTERFACE

A platform like UPI to enable frictionless disbursement of credit; will soon be launched nationwide

THE RESERVE Bank of India Governor Shaktikanta Das on Monday said that a nationwide launch of the Unified Lending Interface (ULI), which will happen in due course, will transform the lending space in the country just like Unified Payment Interface (UPI) transformed the retail payments ecosystem.



RBI Governor Shaktikanta Das. *PTI*

What is ULI?

The RBI, last August, had started a tech platform for enabling frictionless credit. Das said on Monday that this will be called the Unified Lending Interface. The initiative is still in the pilot stage, he said.

ULI aims to bring efficiency in the lending process by reducing costs, and facilitating quicker disbursement and scalability.

How will ULI work?

For digital credit delivery, the data required for credit appraisal are currently available with different entities like Central and State governments, account aggregators, banks, credit information companies, and digital identity authorities. However, these data sets are in separate systems, creating hindrance in frictionless and timely delivery of rule-based lending.

This is what ULI will change. The RBI chief said that the platform will facilitate a seamless and consent-based flow of digital information, including land records, from multiple data service providers to lenders. This will cut down the time taken for credit appraisal, especially for smaller and rural borrowers, and allow them to benefit from quick and seamless delivery of credit without the need for extensive documentation.

Das said that the ULI architecture has common and standardised APIs (Application Programming Interfaces, or mechanisms that enable two software components to communicate with each other) designed to ensure digital access to information from diverse sources.

"By digitising access to customer's financial and non-financial data that otherwise resided in disparate silos, ULI is expected to cater to large unmet demand for credit across sectors, particularly for agricultural and MSME borrowers," Das said.

Why is this development significant?

In recent years, India has embraced the concept of digital public infrastructure which encourages banks, NBFCs, fintech companies and start-ups to create and provide innovative solutions in payments, credit, and other financial activities. ULI will be a major milestone in this process.

"The 'new trinity' of JAM-UPI-ULI will be a revolutionary step forward in India's digital infrastructure journey," Das said.

JAM (Jan Dhan, Aadhar and Mobile) is a tool used by the government to transfer cash benefits directly to the bank account of beneficiaries.

UPI, launched by the National Payments Corporation of India in 2016, allows individuals to access multiple bank accounts via a single mobile application, bringing several banking features under one hood. It has played a pivotal role in the growth of retail digital payments in India, and has emerged as a robust, cost-effective and portable retail payment system which is attracting global interest today.

HITESH VYAS

UNIFIED LENDING INTERFACE

(Syllabus GS Paper 3 – Economy)

Context: The Reserve Bank of India Governor announced that the nationwide launch of the Unified Lending Interface (ULI) will revolutionize the lending sector, similar to how the Unified Payment Interface (UPI) transformed the retail payments ecosystem.

Unified Lending Interface

- **About:** It is a digital platform which is expected to smoothen the lending processes.
- **Objective**: The platform is aimed at catering to a large unmet demand for credit across various sectors, particularly for agricultural and medium small and micro enterprises (MSME) borrowers.
- The platform is expected to reduce the turnaround time or TAT for processing and sanctioning loans, while shrinking the complexities for the parties involved in the process i.e. lenders and borrowers.
- **Significance:** The platform will reduce the complexity of multiple technical integrations, and will enable borrowers to get the benefit of seamless delivery of credit, and quicker turnaround time without requiring extensive documentation.
    - The 'new trinity' of JAM-UPI-ULI will be a revolutionary step forward in India's digital infrastructure journey,

How will ULI work?

- **Streamlined Information Flow**: ULI will simplify the flow of information required by lenders for loan processing, including both financial data and land records.
- **Enhanced Credit Appraisal**: By providing comprehensive digital information, ULI aims to reduce the time taken for credit appraisal, particularly benefiting rural and smaller borrowers.
- **Plug-and-Play Architecture**: The platform is designed with a plug-and-play approach to enable quick access to information from various data providers.
- **Standardized APIs**: ULI will use common and standardized APIs to ensure seamless access to information from diverse sources.

Unified Payments Interface or UPI

- **About:** It is a real-time payment system launched in India in April 2016 by the National Payments Corporation of India (NPCI).
- It is a system that powers multiple bank accounts into a single mobile application (of any participating bank), merging several banking features, seamless fund routing & merchant payments into one hood.

DTE

Aug 26

LEPTOSPIROSIS

(Syllabus: GS Paper 3 – Sci and Tech)

As Nipah threat subsides, Kerala faces a new health challenge: A deadly Leptospirosis outbreak

Context: As the Nipah threat subsides, Kerala is now grappling with a new health crisis: a deadly outbreak of Leptospirosis.

Leptospirosis

- **About:** It is a zoonotic disease, which means it's transmitted between animals and humans.
- **Also known as:** Rat fever
- The disease is also known for a high mortality rate.
- **Caused by**: Bacteria Leptospira.
- It a type of bacteria in the urine of animal carriers, particularly rats.
- **Transmission:** If a person is exposed to soil or water contaminated with an infected animal's urine, bacteria can enter their body through skin breaks, making people in flooded areas especially vulnerable.
- **Leptospirosis in humans**: It's estimated that more than 1 million people worldwide get leptospirosis each year. Almost 60,000 of those die from it.
- **Phases**: Leptospirosis consists of two phases: the leptospiremic (acute) phase and the immune (delayed) phase.
    - **Leptospiremic Phase**: During this phase it may experience a sudden onset of flu-like symptoms. This usually starts within two to 14 days after a Leptospira infection. It lasts between three and 10 days.
    - **Immune phase**: In this phase, Leptospira bacteria has moved from blood to your organs. The bacteria is most concentrated in kidneys, which make pee (urine).
- **Treatment**: It can be treated with antibiotics.



ECONOMIC TIMES

Aug 26

POLYGRAPH TEST

(Syllabus: GS Paper 2 – Polity & Governance)

CBI conducts second round of polygraph tests on RG Kar hospital ex-principal, others

Context: Recently, the CBI conducted a polygraph test on the main suspect in the Kolkata doctor rape-murder case, to evaluate his credibility during the ongoing investigation.

Polygraph Test

- **Definition**: A polygraph, or lie detector test, is a procedure that measures and records several physiological indicators, including blood pressure, pulse, respiration, and skin conductivity, while a person answers a series of questions.
- **Basis of the Test:** The test operates on the assumption that physiological responses during lying differ from those when a person is telling the truth.
- **Evaluation of Responses**: These are assigned numerical values to determine whether the person is being truthful, deceptive, or uncertain.
- **Historical Context**: The concept of a polygraph-like test was first used in the 19th century by Italian criminologist Cesare Lombroso, who measured changes in blood pressure during interrogations.

Legal Admissibility of a Polygraph Test

- **Violation of Article 20(3):** Conducting polygraph, narco-analysis, and brain mapping tests without consent violates Article 20(3) of the Indian Constitution, protecting against self-incrimination.
- **Judicial and Human Rights Concerns:** The use of these tests raises concerns about judicial integrity and human rights, particularly regarding individual rights and freedoms.
- **Criticism from Courts**: Courts have criticized these tests for potentially constituting mental torture and violating the right to life and privacy under Article 21.

Landmark Judgments Related to Polygraph Tests

- **Selvi v. State of Karnataka & Anr Case, 2010:** The Supreme Court ruled that involuntary narco or lie detector tests infringe on an individual's "mental privacy" and violate Article 20(3) against self-incrimination.
- **D.K. Basu v. State of West Bengal Case, 1997**: The Court deemed involuntary polygraph and narcos tests as cruel, inhuman, and degrading treatment, infringing on Article 21 or the Right to Life and Liberty.
- **State of Bombay v. Kathi Kalu Oghad, 1961**: The Court ruled that Article 20(3) does not cover physical evidence like fingerprints or blood samples, which can be used if voluntarily given.
- **Other Observations**: The Supreme Court noted that narco tests are not reliable as evidence and emphasized following the NHRC guidelines for polygraph administration. Information discovered through voluntary tests can be admitted under Section 27 of the Evidence Act, 1872, if it leads to a fact.

BUSINESS STANDARD
Aug 26

SOSA & MOU ON LIASION OFFICERS
(Syllabus: GS Paper 2 – IR)

Pentagon signs agreement with MoD for supply of defence equipment

Context: India and the US have signed a Security of Supply Arrangement (SOSA) and a Memorandum of Agreement on Liaison Officers, marking the latest in a series of bilateral military agreements that have strengthened defense and security cooperation between the two nations over the past decade.

Security of Supply Arrangement (SOSA)

- **About:** It is a non-binding agreement between nations that prioritizes mutual support for defense-related goods and services during peacetime, emergencies, or armed conflict.
- **Features**:
  - **Reciprocal Priority Support:** Under SOSA, the US and India will provide reciprocal priority support for goods and services that enhance national defence.
  - **Industrial Resource Acquisition:** The agreement will enable both countries to acquire necessary industrial resources from each other to address unexpected supply chain disruptions for national security.
- **Legal Status of SOSA**: India is the 18th SOSA partner of the US. While SOSA aims to strengthen interoperability with US defence trade partners, it is legally non-binding.
- **Ongoing Agreement Negotiations**: The US Department of Defense is working to finalize the Reciprocal Defence Procurement (RDP) Agreement with India, which will be legally binding.
- **Purpose of RDP Agreements**: RDP Agreements are designed to promote rationalisation, standardisation, interchangeability, and interoperability of conventional defence equipment with US allies and friendly governments.
- **Current RDP Partnerships**: The US has established RDP Agreements with 28 countries to date.

Memorandum of Agreement on Liaison Officers

- **About**: The initiative aims to improve communication and intelligence sharing between India and the US.
- **Liaison Officer Deployment**: Indian armed forces officers will be stationed at key US military commands to facilitate better coordination.
- **First Posting**: India's initial Liaison Officer will be assigned to the US Special Operations Command headquarters in Florida.
- **Strategic Collaboration**: The initiative reflects a commitment to deeper military and strategic collaboration between the two nations.

ALL INDIA RADIO

Aug 26

INS MUMBAI

(Syllabus: GS Paper 3 – Sci and Tech)

INS Mumbai Arrives In Colombo For Three Day Visit

Context: The Indian Navy's warship, INS Mumbai, reached Colombo for a three-day visit with the Sri Lanka Navy ceremonially receiving the ship.

INS Mumbai

- **About:** INS Mumbai is the third of the Delhi-class guided missile destroyers, indigenously built and commissioned into the Indian Navy on 22 January 2001.
- **Construction**: It was constructed at Mazagon Dock Limited in Mumbai.
- **Awards and Recognition:** The ship was adjudged the 'Best Ship' thrice and the 'Most Spirited Ship' twice, a rare feat for any warship.
- **Major Naval Operations**: The ship has been at the forefront of significant Naval Operations such as Op Parakram (2002), Op Sukoon (2006: evacuation from Lebanon), and Op Rahat (2015: evacuation from Yemen).
- **Features of INS Mumbai:**
  - **Displacement and Crew**: With a displacement of over 6500 tons, the ship is manned by 350 sailors and 40 officers.
  - **Dimensions and Speed**: The ship spans 163 meters in length and 17 meters at the beam, propelled by four gas turbines, achieving speeds in excess of 32 knots.
  - **Weaponry**: Fitted with a state-of-the-art weapons suite, including Surface to Surface Missiles, Surface to Air Missiles, Anti-Submarine rockets, and torpedoes, the ship can deliver lethal firepower upon the enemy.

THE HINDU Page 1

LADAKH

(Syllabus: GS Paper 1 – Geography)

Amit Shah announces five new districts for Ladakh

Vijaita Singh
NEW DELHI

Union Home Minister Amit Shah said on Monday that five new districts – Zanskar, Drass, Sham, Nubra and Changthang – would be created in the Union Territory of Ladakh for "bolstering governance in every nook and cranny". Ladakh now has two districts – Leh and Kargil – with autonomous hill development councils.

Prime Minister Narendra Modi said it was a step towards better governance and the districts would "now receive more focused attention, bringing services and opportunities even closer to the people".



Amit Shah

The decision comes days before the September 1-October 2 padayatra to Delhi planned by the Leh Apex Body (LAB), an influential civil society group. The LAB, along with the Kargil Democratic Alliance (KDA), has been demanding Statehood since 2020.

Cherring Dorjay Lakruk, co-chairman, LAB told *The Hindu*, "There is no giving up on our march to Delhi. Our struggle will continue. The decision to create the new districts does not change our demand for a Sixth Schedule status."

Echoing this, Sajjad Kargili of the KDA said, "Ladakh should be given an Assembly, the creation of seven districts validates the demand. If there is no Assembly and if it is only being done for bureaucratic control, then it should not be a reason to divert our demand for Sixth Schedule and statehood."

CONTINUED ON » PAGE 10

Ladakh's existing and new district headquarters

This map shows the locations of the district headquarters, including for the newly created districts of Zanskar, Drass, Sham, Nubra and Changthang

Boundaries of existing districts
Kargil Leh



Context: Union Home Minister said that five new districts — Zanskar, Drass, Sham, Nubra and Changthang — would be created in the union territory of Ladakh for "bolstering governance in every nook and cranny."

Ladakh

- **About:** Ladakh, also known as "the Land of Passes," is the largest among the regions of Jammu, Kashmir, and Ladakh,
- **Coverage**: Area of 95,876 km2. It is administered by India as a union territory.
- **Bordering Territories**: Shares borders with the Chinese Tibet Autonomous Region to the east, Himachal Pradesh to the south, Jammu and Kashmir, Gilgit-Baltistan, and Xinjiang across the Karakoram Pass to the west and far north, respectively.
- **Ladakh presently has two districts**: Leh and Kargil — with autonomous hill development councils.
- **River System**: The region is drained by the Indus River and its major tributaries, including Shyok-Nubra, Chang Chenmo, Hanle, Zanskar, and Suru-dras rivers. The high-altitude landscape is shaped by glacio-fluvial processes and freeze-thaw weathering.
- **Population**: 2.74 lakh according to 2011 Census.
- **Harsh Climate:** Ladakh experiences an extremely harsh environment, earning it the reputation of being one of the highest and driest inhabited places on earth.
  - Its climate is characterized as a **"cold desert"** due to a blend of arctic and desert features.

TIMES OF INDIA

Aug 26

VIGYAN DHARA
(Syllabus: GS Paper 2 – Education)

Vigyan Dhara scheme: Centre approves internships for Class 11 & 12 science, tech students

Context: The Union Cabinet, chaired by the Prime Minister approved continuation of the three umbrella schemes, merged into a unified central sector scheme namely 'Vigyan Dhara' of Department of Science and Technology (DST).

Vigyan Dhara

- **About:** It is scheme in which merge several existing science promotion programmes being run by the Department of Science and Technology (DST) for better fund utilisation, and improve efficiency.
- **Objective:** To focus scientific energies on some specific areas that were key to India's sustainable growth and development in the coming decades.
- **The scheme has three broad components:**
  - Science and Technology (S&T) Institutional and Human Capacity Building,
  - Research and Development and
  - Innovation, Technology Development and Deployment. These schemes merged in to Vigyan Dhara.
- **Duration:** The 15th finance Commission period from 2021-22 to 2025-26.
- **Aligned in line with**: The Anusandhan National Research Foundation (ANRF).
- **Features**: The scheme endeavours to promote research in areas such as basic research with access to the international mega facilities, translational research in sustainable energy, water, etc.
  - It will also contribute to building critical human resource pool to strengthen the science and technology landscape and expand the R&D base of the country towards improving the Full-Time Equivalent (FTE) researcher count.
  - Focused interventions will be taken up to enhance the participation of women in the field of Science and Technology (S&T) with the ultimate goal of bringing gender parity in Science, Technology and Innovation (STI).
- **Benefits**: DST gets the flexibility to reorient schemes within the broad framework of achieving the three objectives. This can include reallocation of funds as well…
  - The second thing is the ANRF (Anusandhan National Research Foundation, a newly created institution) is creating its own programmes.

HINDUSTAN TIMES Aug 26

MISSION RHUMI 1

(Syllabus: GS Paper 3 – Sci and Tech)

What is 'RHUMI-1', India's first reusable hybrid rocket launched by TN based start-up?

Context: A Tamil Nadu-based start-up has successfully launched India's first reusable hybrid rocket, "RHUMI 1." This milestone marks a significant achievement in the country's space technology advancements.



Mission RHUMI 1:

- **About**: Rhumi-1 is India's first reusable hybrid rocket on a mobile Launchpad aimed at advancing research on global warming and climate change.
- **Partnership**: It is an initiative of Space Zone India, a Tamil Nadu-based start-up, in collaboration with the Martin Group.
- **Altitude Range**: The rocket is designed to reach altitudes ranging from 1 km to 500 km.
- **Dimensions:** The rocket weighs 80 kilograms and stands 3.5 meters tall.
- **Power System**: Rhumi-1 is powered by a hybrid motor using a generic fuel and features an electrically triggered parachute deployer.
- **Fuel Composition**: The rocket combines the benefits of both liquid oxidizer and solid fuel propellant systems.
- **Trajectory Adjustments:** It has an adjustable launch angle that can be set between 0 and 120 degrees, allowing for precise trajectory adjustments.
- **Payloads:** Rhumi-1 carried 3 cube satellites to monitor and gather data on atmospheric conditions, including cosmic radiation intensity, UV radiation, and air quality.
- **Additional Satellites**: The rocket also deployed 50 Pico satellites to study various atmospheric factors, such as accelerometer readings, altitude, and ozone levels.

DTE Aug 26

Sunda Clouded Leopards
(Syllabus: GS Paper 3 – Env and Eco)

New plan to protect Borneo's wildlife puts focus on high-risk areas

Context: Researchers from Oxford University studied the Sunda clouded leopard, Borneo's top predator, to highlight the impact of deforestation on its habitat.

Sunda Clouded Leopards

- **About**: It is a medium-sized wild cat
- **Scientific Name**: Neofelis diardi
- **Habitat:** Islands of Borneo and Sumatra. Within Borneo, this species occurs in lowland rainforest, below 1,500m of elevation, It is also thought to occur within the protected areas of Sabah, Malaysia.
- In 2006, it was classified as a species, distinct from the Clouded leopard in mainland Southeast Asia.
- **Population**: There are just 3,800 Sunda clouded leopards remaining in the Borneo forests.
- **Conservation**:
  - **IUCN Red List status**: Vulnerable.
  - **MARXAN Software**: To test different conservation plans and find the best places to protect.

Clouded Leopard

- **Habitat**: Inhabits dense forests of the Himalayas through mainland Southeast Asia into South China.
- **Species:** Includes the clouded leopard (Neofelis nebulosa) and the Sunda clouded leopard (Neofelis diardi).
- **Life Span**: 12 to 15 years
- **Geographic Range**: Found in southern China, Bhutan, Nepal, northeast India, Burma, Thailand, Vietnam, Malaysia, Cambodia, Laos, and Bangladesh.
- **In India:** It occurs in the states of Sikkim, northern West Bengal, Tripura, Mizoram, Manipur, Assam, Nagaland and Arunachal Pradesh, as well as in the Meghalaya subtropical forests.

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