

● POLITY

● ECONOMICS

● TECHNOLOGY

● ECOLOGY

SCIENCE & TECHNOLOGY

It's official: 'Statio Shiv Shakti' approved as name of Chandrayaan-3 landing site

CONTEXT: The International Astronomical Union (IAU) Working Group for Planetary System Nomenclature on March 19 has approved the name "Statio Shiv Shakti" for the landing site of Chandrayaan-3's Vikram lander.



The IAU is the internationally recognised authority for assigning names to planetary surface features. On August 26, 2023, Prime Minister Narendra Modi announced the landing site of Chandrayaan-3 as "Shiv Shakti". The IAU's Rule 9 states: "No names having political, military or religious significance may be used, except for names of political figures prior to the 19th century." The citation in the gazetteer for the name of the landing site of the Vikram lander reads: "Compound word from Indian mythology that depicts the masculine ["Shiva"] and feminine ["Shakti"] duality of nature."

Planetary nomenclature, like terrestrial nomenclature, is used to uniquely identify a feature on the surface of a planet or satellite so that it can be easily located, described, and discussed. The Gazetteer of Planetary Nomenclature "contains detailed information about all names of topographic and albedo features on planets and satellites [and some planetary ring and ring-gap systems] that the IAU has named and approved from its founding in 1919 through the present time".

INTERNATIONAL RELATIONS

Unbreakable

CONTEXT: Prime Minister Narendra Modi announced India doubling its support for Bhutan's Five-Year Plan to ₹10,000 crore on his recent visit to Bhutan was seen as mainly symbolic, despite being productive.

The symbolic messaging was three-fold: first, that India is fully committed to Bhutan's development, particularly the upcoming Gelephu Mindfulness City, a project likely to benefit from India's increase in financial support to its neighbour. Second, Bhutan is an integral part of India's infrastructure initiatives for road, rail, integrated check points, and also for energy exchanges on India's grid, both of which are pushing sub-regional trade and travel among India, Bangladesh, Bhutan and Nepal. Third, that India is mindful of Bhutan's increased engagement with China, for the boundary agreement they hope to forge soon, but that it does not intend to give Beijing space in areas of engagement such as trade and investment, where China has made inroads with India's other close neighbours.

China-Bhutan talks about the possible swap of land at Doklam to Bhutan's west are, in fact, seen as a threat to India's Siliguri Corridor, whereas China's claim to areas on Bhutan's east could imperil India's border connectivity projects in Arunachal Pradesh. India and Bhutan will need to emphasise that lock-step even more in the days ahead to retain the permanence of their ties in the face of economic and social turmoil within their countries, as well as the challenge in the neighbourhood.

POLITY & GOVERNANCE

TB control in India calls for person-centred solutions

CONTEXT: Every day, 3,500 people worldwide lose their lives to tuberculosis (TB), and around 30,000 people become infected with TB bacilli, according to World Health Organization (WHO) estimates. India alone accounts for 27 % of global TB cases. March 24 celebrated as World TB Day commemorates Dr. Robert Koch's discovery of Mycobacterium tuberculosis (the bacteria that causes tuberculosis) in 1882.

TB in its various avatars — drug-resistant (DR-TB), totally drug-resistant (TDR-TB), extensively drug-resistant (XDR-TB), pulmonary TB (P-TB) and non-pulmonary TB continue to persist even after the inception of a TB control programme in India in 1962. The TB control programme incorporate evidence from various domains of public health and health systems, including pharmacology, microbiology, epidemiology, the social sciences, and information technology.

Access to efficient and high-quality care — diagnosis, treatment and support — is still not available to every person suspected to have TB or diagnosed with the disease. As India grapples with the complexities of controlling TB, we need a paradigm



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shift urgently — one that places those affected and their lived experiences at the centre of tackling this ancient disease.

At the core of this shift lies a fundamental recognition: the needs and the interests of patients and communities must be prioritised within the care paradigm and the health-care system. This principle, echoed by survivors, communities, health experts and policymakers, underscores the need for a person-centred approach to TB care and management.

10-point agenda towards 'ending TB':

Early detection is crucial in combating tuberculosis (TB) due to its nature. Symptoms are often overlooked or confused with other illnesses, causing delays in seeking treatment. Mandatory screening for family and contacts of each TB patient is necessary, requiring accessible laboratory services and effective follow-up procedures within healthcare systems.

Precise categorization of treatment is crucial for tuberculosis (TB), especially with the rise of drug-resistant TB (DR-TB). It is important to understand the resistance status at diagnosis is essential for assigning suitable treatment regimens based on phenotypic susceptibility.

Treatment adherence and follow-up are critical in tuberculosis (TB) management. TB treatment is lengthy, and non-compliance is common, possibly due to perceived health improvement or changes in residence. Despite the TB control program's follow-up system, treatment completion rates are not always optimal. There is a need to use technology to monitor and improve treatment compliance.

Mitigating mortality due to TB, be it DR-TB or non-pulmonary TB, is necessary to ensure zero mortality.

Drug resistance in tuberculosis (TB) is primarily caused by human actions. Unregulated use of antibiotics and non-compliance with treatment regimens lead to selective evolutionary pressure on the bacillus, in turn resulting in developing drug resistance. Poor regulatory mechanisms for drug control and non-compliance with treatment regimens are the main reasons for such a high degree of drug resistance.

It is crucial to assess the extent of drug-resistant tuberculosis (TB) by determining the proportion of TB cases that are rifampicin-resistant TB (RR-TB) or multidrug-resistant TB (MDR-TB). This information is essential for planning and designing control programs, allocating resources for diagnosis and treatment, and ensuring the availability of trained staff for drug-resistant TB management.

Ensuring the availability of appropriate medicines is crucial for tuberculosis (TB) control programs. Procurement challenges for drugs like bedaquiline and delamanid, needed for drug-resistant TB (DR-TB) treatment, must be addressed. Additionally, facilities for in-patient care are necessary for all DR-TB cases.

Integration into larger health systems is crucial for tuberculosis (TB) control. This includes strengthening referral networks within and between public and private health systems. This ensures that symptomatic cases are not lost, patients adhere to their treatment, and contacts of positive pulmonary TB cases are screened, whether drug-resistant or not.

A dynamic notification system is essential for easing the burden on health system personnel in tuberculosis (TB) control. While Ni-Kshay, the web-enabled patient management system for TB control, has evolved, it needs improvements to capture real-time TB data across sectors, practitioners, and locations.

Population mobility and migration are important considerations in tuberculosis (TB) control. Discussions often focus on disease and healthcare seeking, overlooking the productive aspects of life. TB, plagued by social and cultural stigma, can be quickly treated once diagnosed, allowing patients to resume daily activities. Therefore, policy-level portability of TB treatment within the country is crucial.

POLITY AND GOVERNANCE

Digital financial frauds in India: a call for improved investigation strategies

CONTEXT: Cybercrime poses a burgeoning threat in India, impacting millions of individuals and organisations. The Parliamentary standing committee on Finance in its report on "cyber security and rising incidents of cyber/white collar crimes" mentioned that the domestic fraud as reported by the SE (Supervising Entities) in FY'23 was ₹2537.35 crore.

According to the National Crime Records Bureau (NCRB), cybercrimes in India in 2023 resulted in a staggering loss of ₹ 66.66 Cr., with 4,850 reported cases. A recent report by the Indian Cybercrime Coordination Centre (I4C) revealed that digital financial frauds accounted for a staggering ₹ 1.25 lakh Cr. over the last three years. According to the National Cybercrime Reporting Portal (NCRP), in 2023, at least ₹ 10,319 Cr was reported to be lost by victims of digital financial fraud. According to the report, the number of complaints received in 2023 alone was 6.94 lakh.

How digital frauds work

While various names have been given to diverse types of frauds, the general modus operandi of a fraudster is any one of the following:

- Convincing the victim to send money, either by impersonation (fake WhatsApp/FB/Insta, social media profiles) or by giving them a false promise of greater return (investment, crypto, held up custom package etc.)
- Taking credentials such as Unified Payments Interface ID (UPI), Personal Identification Number (PIN), One-Time Password (OTP) or Internet banking ID/password from the victim and then using the same on other apps/websites and transferring money without the knowledge of the victim. For this the customer will either be given a fake link which looks exactly like a UPI app screen/banking website or the victim will be conned into installing a screen sharing app. The scammers can also convince the victims over phone to give out those details. When these details are used on official banking apps this gives the fraudsters access to even the Fixed Deposits/Recurring Deposits which are also siphoned out in most cases.
- Taking card details and convincing the victim to share OTP.

After the scam

After a fraudster empties a victim's bank account, the money goes through three stages of circulation. Initially, it is transferred to a temporary account along with money from other victims. Next, it moves to a group of accounts where middlemen circulate the money, taking a nominal cut. Finally, the money is consolidated in a sink account before being withdrawn in a large sum through conventional methods like ATMs, cheques, or e-wallet cash outlets.

How can frauds be prevented

Two security measures are proposed for financial institutions' apps. First, similar to Google accounts, logging in from a new device should require permission from the previous device. An alert would be generated on the old device when a UPI ID, password, or OTP is entered on a new device, requiring approval before further action. Second, the screen share feature should be disabled to enhance security.

Two additional security measures are proposed for banking and financial apps. Firstly, these apps should disable screen-sharing to prevent unauthorized access. Secondly, banks, non-banking financial companies (NBFCs), and stock exchanges (SEs) should provide more comprehensible data in bank statements. This includes providing transaction descriptions with the receiver's account number, mobile number, or other identifying information, regardless of whether the transaction is within the same bank or to an outside bank.

Law enforcement agencies often struggle to track the flow of money in financial crimes. Money moves quickly between bank accounts and wallets, but banks, non-banking financial companies (NBFCs), and wallets are unable to provide details to authorities quickly enough. Most crimes are reported after 24 hours, and victims often delete evidence due to stress. By the time a money trail is established, the money has usually been withdrawn, making it difficult to identify the perpetrator or recover the funds.

Speeding up information access

Certain basic changes to the form of data provided to enforcement agencies can help in minimising delays:

Banks/NBFCs/SEs must be mandated to provide data in a predetermined format with all the terms explained. The data must be given in a CSV or XLSX file. For example, the CDR (Call Data Record) shared to enforcement agencies has a fixed format and fixed file types, such as .CSV or .XLSX. Currently the banks give the statement either in a printed hardcopy or in PDF format. This causes huge inconveniences to the investigating officers. Most tech-savvy officers are often held back only because they do not get the data in a usable format.

The International Mobile Equipment Identity (IMEI) must be recorded. All banking and financial apps must be mandated to save IMEI details of the device being used. Fraudsters use fake mobile numbers and fake bank accounts which span across different States with the goal of adding layers to increase anonymity and preventing agencies from prosecuting them. Thus, the IMEI becomes crucial evidence in determining the device and its location. Recording IMEI will make for stronger evidence in establishing a device and its connection to fraudsters in a court of law.

The road ahead

The Bharatiya Nagarik Suraksha Sanhita 2023 which is set to replace the Indian Penal Code of 1861, recognises 'organised crime' as a "continuous unlawful activity". Digital financial frauds are very much covered in this definition. Law enforcement agencies face a lot of difficulties in conducting interstate raids and arrests. It requires a large team and coordinated effort. Interstate digital financial fraud networks must be recognised as a serious crime and bail may be restricted by the Courts. Additionally, digital frauds create a considerable amount of black money when seen from a macro-economic perspective. In conclusion, cybercrime being a subset of crime in general can be dealt like conventional offences, albeit with a different set of tools. Instead of a specialised unit, if the

fintech and telecom industries are mandated to take certain preventive steps in their technology and provide data in a manner which enables speedier investigation, the prevention, detection, recovery and conviction will be much more effective. Faster availability of data will make it easier to identify and convict pan-Indian gangs.

INTERNATIONAL RELATIONS

Pakistan to mull revival of trade ties with India

CONTEXT: Pakistan newly appointed Foreign Minister Mohammad Ishaq Dar expressed confidence of reviving trade with India.

External Affairs Minister S. Jaishankar criticized Pakistan for its extensive support to terrorism, stating that any talks with Pakistan must address this issue. In 2019, both countries took trade measures against each other—India withdrew Pakistan's Most Favoured Nation status and raised tariffs after the Pulwama bombing, while Pakistan suspended direct trade ties with India following India's Article 370 moves in Jammu and Kashmir. The closure of trade mainly affected businessmen and transporters at the Attari-Wagah land border. The Amritsar-based chamber of commerce hopes for a reconsideration following the Pakistani Foreign Minister's comments, urging New Delhi to reciprocate. Pakistani Finance Minister Mr. Dar expressed the Pakistani business community's keenness to restart trade with India, highlighting that imports from India were still happening through third countries, incurring higher costs.

No comment

The Ministry of External Affairs did not comment on remarks made by Pakistani Finance Minister Mr. Dar regarding trade with India. Meanwhile, speaking in Singapore, External Affairs Minister S. Jaishankar emphasized that India is committed to addressing terrorism, describing it as a sustained and organized activity. He stated that India will not overlook terrorism and will be honest in facing this problem. The Director of the Confederation of International Chamber of Commerce and Industry in Amritsar welcomed Mr. Dar's efforts to restart trade and urged the Indian government to respond positively, noting that the suspension of trade had left the Integrated Check Point at Attari unused.

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POLITY AND GOVERNANCE

Statehood for Ladakh: KDA begins three-day hunger strike in Kargil

CONTEXT: A three-day hunger strike by the Kargil Democratic Alliance (KDA) in support of their four-point demands, including Statehood and Ladakh's inclusion in the Sixth Schedule of the Constitution, commenced in Kargil on Sunday, with people from different walks of life joining the symbolic protest against the Central government.



Separately, the hunger strike led by climate activist Sonam Wangchuk in Leh entered the 19th day as he expressed his displeasure over the “breach of trust” by the Union Home Ministry amid a deadlock over the talks between the representatives of the Leh-based Apex Body and the government.

The KDA and the Apex Body, both separate groupings of various political, social and religious organisations representing the two districts, are jointly spearheading the agitation in support of their demands, which also include job reservation for local youth and one Rajya Sabha seat. The agitation was launched shortly after Ladakh was granted Union Territory status without an Assembly in August 2019.

INTERNAL SECURITY

Anti-piracy Act has been a great enabler, says Navy chief

CONTEXT: Indian Navy chief Admiral R. Hari Kumar lauded the Maritime Anti-Piracy Act enacted in 2022 as been a “great enabler”, as the Navy completed 100 days of Operation Sankalp in the Gulf of Aden.



The Maritime Anti-Piracy Act, 2022 has empowered the Indian Navy to visit, board, search and seize any suspicious vessel, craft, or fishing boat or dhow that we suspect, we board, inspect, and if we find piracy triggers like skiffs, weapons, or ammunition, then we take action to ensure that they don't proceed with their mission”. The Maritime Anti-Piracy Act, 2022 has been a great enabler for the security forces, particularly for the Navy, since we are involved in anti-piracy operations. In the past 100 days, as part of Operation Sankalp, the Navy has carried out over 1,000 boardings.

The Maritime Anti-Piracy Act empowers the Indian Navy and the Coast Guard to board, seize, and arrest pirates operating on the high seas, in the Exclusive Economic Zone (EEZ) and beyond, and Indian courts can prosecute the perpetrators with life imprisonment, fine, or both. The Act also considers the offence as extraditable, where India has signed such treaties with those countries. India has an agreement with Somalia where Somali pirates have been extradited since 2017.

According to the Act, it was enacted “to give effect to the United Nations Convention on the Law of the Sea (UNCLOS) relating to the repression of piracy on the high seas and for matters connected therewith”. India ratified UNCLOS in 1995.

‘Addressing threats’

Since mid-December, as part of Phase 2 of Operation Sankalp, the Indian Navy saw the deployment of over 5,000 personnel at sea, over 450 ship days (with over 21 ships deployed), and 900 hours of flying by the maritime surveillance aircraft to address threats in the maritime domain.

“At present, 11 submarines are operating simultaneously in the sea, with more than 35 ships and over five aircraft deployed in different parts of the Indian Ocean Region. The Naval chief noted our assets are deployed in an optimal manner to ensure that it covers the area of interest and gives us the best information so that the maritime domain awareness and the requisite degree of transparency is achieved.

ANTI-MARITIME PIRACY ACT

The Parliament of India enacted the Anti-Maritime Piracy Bill,



“Education is the ability to listen to almost anything without losing your temper or your self-confidence.” - Robert Frost

2019 to bring the UN Convention on the Law of the Sea into domestic law and enable Indian authorities to take action against piracy on the high seas.

“seaman, or robber who attacks, seizes or destroys any ship on the high seas and sometimes even harbours at the shore.”

- PIRATE

STATUS:

India currently does not have legislation on matters of piracy on the high seas.

India has not enacted a bill, though India has ratified the UN Convention on the Law of the Sea in 1995.

WHY WE NEED AN ANTI-MARITIME PIRACY BILL?

INVALIDITY OF INDIAN PENAL CODE (IPC) IN INTERNATIONAL WATERS: The sovereign rights of India extend up to the outer boundary of its territorial waters— 12 nautical miles from the coast. Previously, foreigners prosecuted under the IPC, 1860 for piracy acts performed outside India’s territorial waters have been acquitted due to the lack of jurisdiction.

INCIDENCE OF PIRACY: A shift in piracy operations from the Gulf of Aden region, off coast Somalia towards the east and south, which increases their proximity to India’s west coast.

SALIENT FEATURES:

DEFINES PIRACY: Act of violence or detention by the crew or passengers of a private vessel or private aircraft on high seas, directed against another vessel or aircraft and/or people or property on board.

EXTRA-TERRITORIAL JURISDICTIONS: Extends the territorial scope of jurisdiction to the international waters - sea beyond the Exclusive Economic Zone (EEZ).

PUNISHMENT: Prescribes punishment for acts of piracy

- Death / Life imprisonment for acts of piracy, itself causing death or attempts to cause the death of another person.
- Imprisonment up to 14 years and a fine, imprisonment for life or death for participating in or assisting acts of piracy.

EXTRADITABLE OFFENCES: Allow transfer of the accused to any country for prosecution with which India has signed an extradition treaty.

DESIGNATED COURT: Empowers the Centre, in consultation with the Chief Justice of the concerned High Court to notify any Sessions Courts to be the Designated Courts.

PRESUMPTION OF GUILT: The presumption of guilt will be on the accused if:

- The accused is in possession of arms, explosives and other equipment which were used or intended for use in committing the offence,
- There is evidence of use of force against the ship’s crew or passengers, and
- There is evidence of the intended use of bombs and arms against the crew, passengers or cargo of a ship.

POLITY AND GOVERNANCE

To curb illegal trade, Health Ministry tells States to plug gaps in compiling data of organ donors

CONTEXT: The Union Health and Family Welfare Ministry has expressed concern over some States not compiling data of living and deceased donors which are essential to monitor the implementation of the organ transplantation programme and prevent commercial dealings in organs.



The Health Ministry in an advisory to all States recently noted that the National Organ and Tissue Transplant Organisation (NOTTO), established under the Transplantation of Human Organs and Tissues Act (THOTA), 1994, was an apex organisation to provide for an efficient and organised system of organ procurement and distribution in the country and maintain a national registry of donors and recipients of organs and tissues. To fulfil the mandate, the hospitals carrying out organ and tissue transplantation, retrieval, or tissue banking were required to link with the NOTTO and provide both living and deceased organ and tissue donation and transplantation data for the National Registry.

It was observed that data were either incomplete or not provided by the States. Also, some States did not have a system for collecting living donor data. The Ministry asked State Health Secretaries to instruct all licensed or registered transplant hospitals (Organ Transplant, Non-Transplant Retrieval Centres, and Tissue Banks) to get linked up with the NOTTO web portal.

Every transplanting hospital needed to register patients requiring transplants in the ‘subject demography format’ as available on the NOTTO web portal and update their status. The advisory said that it was essential that the data were updated online on a regular basis and monthly offline reports related to deceased as well as living donors were required to be compiled, verified and provided to the NOTTO.

The State Appropriate Authority, which had the powers of a civil court under the Act, was told to ensure compliance with the provision of data by the hospitals for the National Registry. Non-compliance to the instructions should be dealt with by the authorities under the provisions of the THOTA, 1994.

Robust registry

The Ministry said a robust National Registry was “absolutely essential for better programme implementation and monitoring with the objective to prevent possible commercial dealings in organs and also to promote deceased organ donation,” the sources quoted the advisory as saying. It was also desirable that every transplant hospital, whether public or private, promoted deceased organ donation and made efforts to achieve a minimum number of donations annually for which they would be required to establish a system for brain stem death certification and its monitoring, and facility for deceased organ donor maintenance.

The advisory comes after the NOTTO issued a series of instructions to curb allegations of organs harvested from brain dead patients being transplanted on foreign nationals, overlooking deserving Indian patients on the waitlist. Going by data, 16,041 organs were transplanted in 2022, most of which were kidneys and livers, harvested from live and cadaver donors. Delhi topped the list with 3,818 organ transplants, the sources added.

POLITY AND GOVERNANCE

Bharat Biotech commences clinical trials of Spanish tuberculosis vaccine in India

CONTEXT: Bharat Biotech, vaccine maker is conducting the trials in partnership with Spanish biopharmaceutical company Biofabri which is responsible for clinical and industrial development of the vaccine “developed in the laboratory of the University of Zaragoza, with Dr. Brigitte Gicquel of the Pasteur Institute, Paris”.

MTBVAC, the only vaccine against tuberculosis undergoing clinical trials based on a genetically modified form of Mycobacterium tuberculosis, the pathogen that causes the disease. Unlike the BCG vaccine, the new vaccine contains all “the antigens present in strains that infect humans”. While trials to evaluate safety and immunogenicity of MTBVAC in India have begun, a pivotal safety, immunogenicity and efficacy trial is planned in 2025.

Bharat Biotech will be conducting a Phase 3 trial as Biofabri has completed the Phase 1 and 2 trials in other countries. The MTBVAC vaccine has passed several milestones before entering clinical trials in India.

Studying the safety, immunogenicity and efficacy of the vaccine in the most populated country and the one with the highest number of cases of the infectious disease is key to continue advancing this vaccine.

MTBVAC has been developed to be a more effective and potentially longer-lasting vaccine than BCG for new-borns and for prevention of TB in adults and adolescents, for whom there is currently no effective vaccine. It is a giant step to test in adults and adolescents in the country where 28 % of the world’s TB cases accumulate.

BCG is an attenuated variant of the bovine TB pathogen and more than a hundred years old with a limited effect on pulmonary tuberculosis that is responsible for the transmission of the disease.



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