



Factly Compilation

24th to 29nd July, 2023

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1. [On ED's power to arrest and seek custody](#)

Source: The post is based on the article “**On ED's power to arrest and seek custody**” published in **The Hindu on 21st July 2023**.

What is the News?

The Madras High Court has upheld the legality of Minister V. Senthilbalaji's arrest by the Enforcement Directorate (ED) and his subsequent remand in judicial custody in a money-laundering case linked to a cash-for-jobs scam.

What are the observations made by the Madras High Court?

The central question before the Madras High Court was whether the ED has the power to seek custody of a person arrested.

In this, the High Court accepted the argument on behalf of the petitioner that ED officials are not police officers as per the law laid down by the Supreme Court in **Vijay Madanlal Choudhary versus Union of India (2022)**.

However, the court also held that the Supreme Court designated ED officials to not be police officers only for the reason that the statements given to the latter in any criminal case would not be admissible in evidence before the trial court under the CrPC whereas statements given to the former were admissible in evidence under the Prevention of Money Laundering Act (PMLA), 2002.

However, this observation could not be stretched to the extent of denying the ED an opportunity to subject the accused to custodial interrogation for unearthing crucial facts related to the alleged crime.

Hence, the court ruled that the ED can subject any person accused in a case booked under the Prevention of Money Laundering Act (PMLA), 2002, to custodial interrogation.

What were the Supreme Court verdicts in the past about the PMLA?

[Vijay Madanlal Choudhary versus Union of India, 2022:](#) In this judgment, the Supreme Court upheld various provisions of the PMLA which relate to the powers of arrest, attachment, search, and seizure conferred upon the ED.

– The court was of the opinion that all the provisions under PMLA have a reasonable nexus with the objects sought to be achieved by the Act to effectively prevent money-laundering.

Chidambaram versus Directorate of Enforcement (2019): In this case, the Supreme Court rejected a prayer for anticipatory bail with respect to an offense of money-laundering and proceeded to grant custody to the ED.

– The court reasoned that money-laundering cases involves ‘systematic and analyzed’ investigations which would be impacted if pre-arrest bail is granted.

2. [Invasive weed threatens elephant habitats in Tamil Nadu](#)

Source: The post is based on the article “**Invasive weed threatens elephant habitats in Tamil Nadu**” published in **The Hindu on 22nd July 2023**.

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What is the News?

An Invasive aquatic weed named “**Ludwigia peruviana**” is threatening elephant habitats in Tamil Nadu and reviving the risk of human-elephant conflicts in the region.

What is Ludwigia peruviana?



Source: Wikipedia

Ludwigia peruviana is an aquatic weed native to some countries in Central and South America, including Peru.

It is usually found in wetlands, swamps, marshes and along the edges of lagoons and slow-moving waterways (sometimes also floating on the water surface).

Why is Ludwigia peruviana an invasive plant?

Ludwigia peruviana is among the **22 priority invasive plants in Tamil Nadu**. It was probably introduced as an ornamental plant for its tiny yellow flowers.

However, it is now challenging the existence of local vegetation in various swampy areas.

It is a fast growing aquatic weed. It forms dense colonies in slow-moving and static waterways.

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This impacts the water flows in waterways, outcompetes native plants, reduces food and shelter for fish and other native aquatic animals and decreases light and water temperature.

Moreover, unlike other invasive plants, *Ludwigia* poses a unique challenge as it grows in swamps and there is little scope to use machinery which may further destroy the ecosystem.

Even if *Ludwigia* is pulled out manually, the soft plant easily breaks and it spreads again from the root or broken stems that fall in the swamp.

How is *Ludwigia peruviana* impacting elephant habitats?

In Tamil Nadu, *Ludwigia peruviana* has limited the growth of grass and native plants that is a source of food for elephants and other animals including gaur. This has revived the risk of human-elephant conflicts in the region.

3. [India crosses a significant milestone for The National Tele Mental Health Programme of India](#)

Source: The post is based on the article “**India crosses a significant milestone for The National Tele Mental Health Programme of India**” published in **PIB on 22nd July 2023**.

What is the News?

Tele MANAS Initiative has reached a significant milestone. The toll-free service has received over 2,00,000 calls from various parts of the nation since the launch portraying a consistently progressive trend.

What is the Tele MANAS Initiative?



Tele Mental Health Assistance and Networking Across States (Tele-MANAS) initiative was launched by the Ministry of Health & Family Welfare during October 2022.

Aim: To provide free tele-mental health services all over the country round the clock, particularly catering to people in remote or under-served areas.

– The initiative maintains anonymity of the callers, thereby reducing the stigma generally surrounding mental health issues.

Nodal center: The initiative includes a network of 23 tele-mental health centers of excellence, with **National Institute of Mental Health and Neurosciences (NIMHANS)** being the nodal center and International Institute of Information Technology-Bangalore (IIITB) providing technology support.

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Features: Tele-MANAS is organized in two tier systems: Tier 1 comprises state Tele-MANAS cells which include trained counselors and mental health specialists.

– Tier 2 comprises specialists at District Mental Health Programme (DMHP)/Medical College resources for physical consultation and/or e-Sanjeevani for audio visual consultation.

4. [Will generic supply of bedaquiline be accessible?](#)

Source: The post is based on the article **“Will generic supply of bedaquiline be accessible?”** published in **The Hindu on 24th July 2023.**

What is the News?

Johnson & Johnson’s patent on bedaquiline has expired recently. This long-awaited expiry will allow generic manufacturers to supply the drug, but J&J appears intent on maintaining its monopoly over the bedaquiline market.

What is Tuberculosis?

[Click Here to read](#)

What is the threat from Tuberculosis?

According to WHO, Tuberculosis was the world’s deadliest infectious disease before COVID-19 swept the world.

Each year, nearly half a million people develop drug-resistant TB and nearly 10.4 million people develop drug-sensitive TB.

One-third of the world’s population has latent TB, a version of the disease that can turn active as immunity falls.

Nearly 2.8 million TB patients, the most in the world, live in India making it a national public health emergency.

What is Bedaquiline?

Bedaquiline is a medication used to treat active tuberculosis. Specifically, it is used to treat multidrug-resistant tuberculosis (MDR-TB) along with other medications for tuberculosis.

It was developed by Janssen Pharmaceutical (a subsidiary of J&J) around 2002.

Several of the phase I and II clinical trials of the drug were sponsored by public and philanthropic organizations such as the U.S. National Institutes of Health (NIH), National Institute of Allergy and Infectious Diseases, and the TB Alliance.

However, J&J has claimed sole ownership of it, protected by its aggressive patenting strategies.

What has Johnson & Johnson(J&J) done?

J&J has filed secondary patents over bedaquiline till 2027, which were granted in 66 low-and middle-income countries.

It includes 34 countries with high burden of TB, multidrug-resistant TB (MDR-TB), and TB/HIV. Over the past week, J&J has faced public outrage for seeking to extend its patent on bedaquiline.

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However in India, the Indian Patent Office has rejected J&J's secondary patent which would have extended its monopoly for four more years. Indian manufacturers will now be able to supply affordable, quality assured generic versions of bedaquiline in India as the primary patent expired.

It is estimated that, with the introduction of competition from India, the price of bedaquiline will reduce in the range of \$48-\$102 for a six-month treatment course.

5. [India hands over missile corvette INS Kirpan to Vietnam](#)

Source: The post is based on the article **“India hands over missile corvette INS Kirpan to Vietnam”** published in **Indian Express on 24th July 2023**

What is the News?

The Indian Navy has decommissioned INS Kirpan and handed it over to Vietnam People's Navy (VPN)—reflecting the growing defense ties and strategic partnership between New Delhi and Hanoi.

What is INS Kirpan?

INS Kirpan is a Khukri class indigenously-built missile corvette. It was commissioned in 1991.

The ship has been an integral part of the Navy's Eastern Fleet and has participated in several operations.

It is manned by about 12 officers and 100 sailors and is 90 meters long and 10.45 meters in width with a maximum displacement of 1,450 tons.

The ship is fitted with a medium-range gun, 30 mm close-range guns, chaff launchers and surface-to-surface missiles.

What is the significance of India giving INS Kirpan to Vietnam?

The transfer of INS Kirpan from the Indian Navy to the Vietnam People's Navy symbolizes the status of the Indian Navy of being the 'Preferred Security partner' in the Indian Ocean Region and would be a catalyst for enhancing the existing bilateral relations between India and Vietnam.

This development is also significant amid a growing Chinese influence in the South China sea, which is giving rise to territorial disputes with Vietnam in the region.

What are the other deals signed between India and Vietnam recently?

India and Vietnam recently signed a Joint Vision Statement on India-Vietnam Defence Partnership towards 2030 and had inked a pact on Mutual Logistics Support to strengthen bilateral defence cooperation between them.

India has also handed over 12 high-speed guard boats to Vietnam at a ceremony at the Hong Ha Shipyard.

India has also announced gifting two simulators and monetary grant towards setting up of Language and IT Lab at Air Force Officers Training School for capacity building of Vietnamese Armed Forces.

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6. [Banks write off bad loans worth Rs 2.09 lakh crore in 2022-23: RBI](#)

Source: The post is based on the article “**Banks write off bad loans worth Rs 2.09 lakh crore in 2022-23: RBI**” published in **Indian Express on 24th July 2023**.

What is the News?

According to the Reserve Bank of India, banks have written off bad loans worth over Rs 2.09 lakh crore during the year ended March 2023 taking the total loan write-off by the banking sector to Rs 10.57 lakh crore in the last five years.

What is a loan write-off?

Writing off a loan essentially means it will no longer be counted as an asset. By writing off loans, a bank can reduce the level of non-performing assets (NPAs) on its books. An additional benefit is that the amount so written off reduces the bank's tax liability.

Why do banks resort to write-offs?

The bank writes off a loan after the borrower has defaulted on the loan repayment and there is a very low chance of recovery. The lender then moves the defaulted loan or NPA out of the assets side and reports the amount as a loss.

After the write-off, banks are supposed to continue their efforts to recover the loan using various options. They have to make provisioning as well.

Once recovered, the provisions made for those loans flow back into the profit and loss account of banks.

What do the RBI guidelines say on Loan write-offs?

The RBI guidance on write-offs says that in a deregulated credit environment, banks have been advised to take credit related decisions including waiving off bad loans as per their commercial assessment of the viability of the loans in terms of their board approved policies subject to prudential norms issued by the RBI.

The policy on loan recoveries is required to lay down the manner of recovery of dues, targeted level of reduction (period-wise), norms for permitted sacrifice or waiver, factors to be taken into account before considering waivers, decision levels, reporting to higher authorities and monitoring of write-off and waiver cases.

However, the recovery process can take years as most of the loans involved in write-offs belong to wilful defaulters and shady promoters who generally don't pay back to the banks.

7. [Union Minister for Jal Shakti released Manual For Disaster Management Plan](#)

Source: The post is based on the article “**Union Minister for Jal Shakti released Manual For Disaster Management Plan**” published in **PIB on 22nd July 2023**.

What is the News?

Union Minister for Jal Shakti has released the Manual for Disaster Management Plan (DMP)

About the Manual for Disaster Management Plan (DMP):

Developed by: Department of Drinking Water and Sanitation.

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Aim: To ensure safety, uninterrupted supply and minimum loss of Water, Sanitation and Hygiene (WASH) assets and services involving stakeholders at national, state, district and village level.

Based on: The plan is developed based on the Advisory issued by National Disaster Management Authority (NDMA) which under Section 37 of Disaster Management Act, 2005 desires every Ministry/ Department to develop its own disaster plan to counter and be prepared for any emergency arising in future.

Significance: The plan aligns with the two-flagship programmes on WASH implemented by the Department namely the Jal Jeevan Mission (JJM) and Swachh Bharat Mission-Gramin (SBM-G).

What are the key provisions of the Disaster Management Plan (DMP) developed by the Department of Drinking Water and Sanitation?

The plan explores the Disaster Management(DM) Cycle in four stages:

Preparedness: Preparing WASH assets and services for disasters includes ensuring that the system is geared to respond swiftly and effectively to a disaster. The key elements of WASH Preparedness include the **5Ss:** Standards, Supplies, Surge (additional personnel), Strategic alliances and Surveillance.

Response: Disaster response includes emergency services provided during or immediately after a disaster to save lives, reduce health impacts, ensure public safety and meet the basic needs.

– In case of the WASH disaster response, this includes the immediate steps taken to restore water supply, correct water quality issues, and provide solutions for sanitation and hygiene.

Recovery and Reconstruction: Recovery and Reconstruction includes the restoration – and improvement where appropriate – of the facilities, livelihoods and living conditions of the affected communities.

– In the context of WASH, this means the restoration of water, sanitation, and hygiene systems – not just to their pre-disaster levels, but to actually “build back better” so that they are less vulnerable to future disasters of a similar nature.

Mitigation: Mitigation includes the steps taken to minimize the vulnerability of WASH infrastructure and services to future disasters.

Assessment: Three kinds of assessment need to be conducted

– **Before the disaster:** A Hazard-Vulnerability-Capacity mapping to guide the preparedness activities most needed.

– **During Response:** A Rapid Needs Assessment (RNA) which can be completed in a day and point out the immediate needs of the affected population.

– **During Recovery & Reconstruction:** A detailed Post-Disaster Needs Assessment (PDNA) which highlights the long-term needs of the community and helps the administration “build back better” the damaged infrastructure and update the service delivery mechanisms to mitigate against future disasters.

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8. [India may build solar infra in Pacific island nations amid Chinese push](#)

Source: The post is based on the article “**India may build solar infra in Pacific island nations amid Chinese push**” published in **Livemint on 20th July 2023**.

What is the News?

India is considering expanding its solar STAR-C initiative to a number of Pacific Island countries.

What is the STAR-C Initiative?

The STAR-C Initiative is being led by the International Solar Alliance (ISA) and the United Nations Industrial Development Organization (UNIDO) with funding from the Government of France.

Aim: To create a strong network of institutional capacities within ISA Member States to enhance quality infrastructure (QI) for the uptake of solar energy product and service markets, particularly in least developed countries (LDCs) and small island developing states (SIDS).

– To boost solar power ecosystems in the poorest countries.

Activities under the initiative: Building solar workforces, standardizing products, setting up infrastructure and raising awareness among policymakers in developing countries.

Focus regions: STAR C project will initially focus on the Economic Community of West African States (ECOWAS), the East African Community (EAC) and the Pacific Community (SPC)/Pacific Island Forum (PIF).

Significance: India’s expansion of the STAR-C initiative in Pacific Island countries demonstrates its commitment to promoting solar power ecosystems and addressing climate change in the region.

What is the International Solar Alliance (ISA)?

[Click Here to read](#)

9. [India Climate Energy Dashboard\(ICED\)](#)

Source: The post is based on the article “**India Climate Energy Dashboard(ICED)** ” published in **PIB on 20th July 2023**.

What is the News?

NITI Aayog has launched the India Climate Energy Dashboard (ICED) 3.0.

What is the India Climate Energy Dashboard(ICED)?

Launched by: NITI Aayog in association with Vasudha Foundation

Purpose: It is a one-stop platform for near real-time data on the energy sector, climate and related economic datasets based on government published sources.

– The portal enables users to freely access and analyze datasets using an analytical engine.

Significance: It will facilitate insights and enhance understanding about the energy and climate sectors while identifying the key challenges.

– The portal will also be immensely useful in monitoring the progress of India’s clean energy transition journey.

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10. [Manipur violence: What is a Zero FIR and why it is registered](#)

Source: The post is based on the article “**Manipur violence: What is a Zero FIR and why it is registered**” published in **Indian Express on 24th July 2023**.

What is the News?

Of the nearly 6,000 cases of arson, violence, dacoity, and other offences registered in Manipur, nearly a third of them have been **Zero FIRs**.

What are Zero FIRs?

When a police station receives a complaint regarding an alleged offence that has been committed in the jurisdiction of another police station, it registers an FIR and then transfers it to the relevant police station for further investigation. **This is called a Zero FIR.**

After receiving the Zero FIR, the relevant police station registers a fresh FIR and starts the investigation.

When was the provision of Zero FIR established?

The provision of Zero FIR came up after the recommendation in the report of the **Justice Verma Committee**, which was constituted to suggest amendments to the Criminal Law in a bid to provide for faster trial and enhanced punishment for criminals accused of committing sexual assault against women. The committee was set up after **the 2012 Nirbhaya gang rape case**.

Why was Zero FIR introduced?

The objective of a Zero FIR is to ensure the victim doesn't have to run from pillar to post to get a police complaint registered.

The provision is meant to provide speedy redressal to the victim so that timely action can be taken after the filing of the FIR.

What is FIR(First Information Report)?

[Click Here to read](#)

11. [Jammu to pioneer India's first Cannabis Medicine Project](#)

Source: The post is based on the article “**Jammu to pioneer India's first Cannabis Medicine Project**” published in **PIB on 23rd July 2023**.

What is the News?

India's first Cannabis Medicine Project is going to be set up in Jammu.

What is a Cannabis Research Project?

Initiative of: Council of Scientific and Industrial Research-Indian Institute of Integrative Medicine (CSIR-IIIM), Jammu.

Type: The project is under public-private partnership (PPP) with a Canadian firm.

Purpose of the project: To produce export quality drugs meant for different kinds of neuropathies, diabetic pains etc.

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– To spread awareness that this substance of abuse has diverse medicinal uses especially for the patients suffering from malignancies and other diseases.

Significance: The project has the potential to produce medicines that are currently imported from foreign countries, thereby promoting indigenous production and reducing dependency on external sources.

What is Cannabis?

Cannabis is a generic term used to denote the several psychoactive preparations of the plant *Cannabis sativa*. The major psychoactive constituent in cannabis is delta 9 tetrahydrocannabinol (THC).

The Mexican term ‘marijuana’ is frequently used in referring to cannabis leaves or other crude plant material in many countries.

Cannabis is by far the most widely cultivated, trafficked and abused illicit drug. Half of all drug seizures worldwide are cannabis seizures.

About 147 million people, 2.5% of the world population, consume cannabis (annual prevalence) compared with 0.2% consuming cocaine and 0.2% consuming opiates.

Cannabis in India: The central law that deals with cannabis (weed or marijuana) in India is the Narcotic Drugs and Psychotropic Substances Act, 1985.

– The NDPS Act prohibits the sale and production of cannabis resin and flowers, but the use of leaves and seeds of the cannabis plant is permitted, with the states having the power to regulate and form the state rules for it.

– For instance, Odisha is a state in which weed is legal in India and people commonly use ‘chillums’ to smoke weed within the state’s territory. Uttarakhand is the first state in India to allow commercial cultivation of Hemp.

12. [Measures to Reduce Methane Emissions](#)

Source: The post is based on the article “**Measures to Reduce Methane Emissions**” published in **PIB on 24th July 2023**.

What is the News?

The Union Minister of State for Environment, Forest and Climate Change has informed Lok Sabha about the measures the government is taking to reduce methane emissions.

What is the data on India’s methane emissions?

India is a Party to the United Nations Framework Convention on Climate Change (UNFCCC), and its Kyoto Protocol (KP) and the Paris Agreement (PA).

As a Party to the UNFCCC, India periodically submits its National Communications (NCs) and Biennial Update Reports (BURs) to the UNFCCC which includes national Greenhouse Gas (GHG) inventory containing information on methane emissions.

As per India’s third Biennial Update Report, India’s methane emissions in 2016 (excluding LULUCF) were 409 million tone CO₂e of which, 73.96% was from Agriculture sector, 14.46%

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from Waste sector, 10.62% from Energy sector and 0.96% was from Industrial Processes and Product Use sector.

What are the measures taken to reduce methane emissions?

National Mission on Sustainable Agriculture(NMSA): It is implemented by the Ministry of Agriculture and Farmers Welfare. It involves climate resilient practices including methane reduction practices in rice cultivation. These practices contribute to substantial reduction of methane emissions.

The Indian Council of Agricultural Research (ICAR) under National Innovations in Climate Resilient Agriculture (NICRA) project has developed several technologies with mitigation potential for methane from rice such as:

- **System for Rice Intensification:** This technique has potential to enhance rice yield from 36-49% with about 22-35% less water than conventional transplanted rice;
- **Direct Seeded Rice:** This system reduces methane emissions as it does not involve raising nurseries, puddling and transplanting. Unlike transplanted paddy cultivation, standing water is not maintained in this system and
- **Crop Diversification Programme:** Methane emissions are avoided due to diversion of paddy to alternate crops like pulses, oilseeds, maize, cotton and agro forestry.

Capacity building programmes are conducted through Krishi Vigyan Kendras across the country for creating awareness on climate resilient practices.

The Department of Animal Husbandry and Dairying (DAHD) is implementing the National Livestock Mission which includes Breed Improvement and Balanced Rationing. Feeding livestock with a superior quality balanced ration is helping to reduce methane emissions from the livestock.

Government of India promotes green fodder production, silage making, chaff cutting, and total mixed ration under National Livestock Mission with a view to reduce methane emissions from livestock.

Cattle waste utilization is being incentivised through initiatives like 'The Gobar (Galvanizing Organic Bio-Agro Resources) -Dhan' scheme and New National Biogas and Organic Manure Programme.

[13. Thirty Critical Minerals List Released](#)

Source: The post is based on the article **"Thirty Critical Minerals List Released"** published in **PIB on 24th July 2023.**

What is the News?

The Government of India has released a list of 30 critical minerals for India.

What are Critical Minerals?

These are minerals that are essential for economic development and national security, and the lack of availability of these minerals or the concentration of extraction or processing in a few

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geographical locations could potentially lead to supply chain vulnerabilities and even disruption of supplies.

What are the 30 critical minerals list released by the government of India?

The 30 critical minerals are Antimony, Beryllium, Bismuth, Cobalt, Copper, Gallium, Germanium, Graphite, Hafnium, Indium, Lithium, Molybdenum, Niobium, Nickel, PGE, Phosphorous, Potash, REE, Rhenium, Silicon, Strontium, Tantalum, Tellurium, Tin, Titanium, Tungsten, Vanadium, Zirconium, Selenium and Cadmium.

What are the other steps taken by the government of India for critical minerals?

The **Geological Survey of India**, an attached office of Ministry of Mines has carried out a G3 stage mineral exploration (fairly advanced) during Field Season 2020-21 and 2021-22 in **Salal-Haimna areas of Reasi district, Jammu & Kashmir** and estimated an inferred resource of 5.9 million tonnes of lithium ore.

A joint venture company namely **Khanij Bidesh India Ltd. (KABIL)** has been incorporated with the equity contribution from three Central Public Sector Enterprises namely, National Aluminum Company Ltd, Hindustan Copper Ltd and Mineral Exploration Company Ltd.

– The objective of KABIL is to identify and acquire overseas mineral assets of critical & strategic nature such as Lithium, Cobalt & others so as to ensure supply side assurance. KABIL has engagements with countries like Argentina, Australia etc. to acquire critical & strategic minerals assets.

India has recently been inducted into the **Mineral Security Partnership (MSP)**, a US-led collaboration of 14 countries that aims to catalyze public and private investment in critical mineral supply chains globally.

14. What does India's first gig workers' rights Bill stipulate?

Source: The post is based on the article “**What does India's first gig workers' rights Bill stipulate?**” published in **The Hindu on 25th July 2023.**

What is the News?

The Rajasthan government has passed the Rajasthan Platform Based Gig Workers (Registration and Welfare) Bill, 2023.

It is the first legislation of its kind in India outlining welfare schemes for the State's approximately three lakh gig workers.

What are the key provisions of Rajasthan Platform Based Gig Workers (Registration and Welfare) Bill, 2023?

Definition of Gig Worker: The bill defines a gig worker as a person who performs work or participates in a work arrangement and earns from such activities outside of the traditional employer-employee relationship and who works on contract that results in a given rate of payment, based on terms and conditions laid down in such contract and includes all piece-rate work.

Applies to: The Bill applies to “aggregators” (digital intermediaries connecting buyers and sellers) and “primary employers” (individual or organizations engaging platform-based workers).

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Welfare Board: The Bill proposes a Welfare Board. The Minister in charge of the Labour Department will be the chairperson of the board and at least one-third of its nominated members will be women. It will also have two members each from gig workers and aggregators to be nominated by the state government.

– The board will ensure registration of gig workers and aggregators operating in the state and establish a social security and welfare fund for gig workers.

Fund: The Welfare Board will create a “**Social Security and Welfare Fund**” comprising contributions made by individual workers, State government aids, other sources and a ‘welfare cess’ a cut from each transaction which the aggregator is required to pay.

– The rate of the welfare cess will not exceed 2% nor fall short of 1% of the value of each transaction and aggregators are required to submit the amount within the first five days of a month.

Access to schemes and grievance redressal: The Bill provides gig workers access to general and specific social security schemes and opportunity to be heard for any grievances and appropriate grievance redressal mechanism.

Aggregators duties: The aggregator’s duties under the Bill include: depositing welfare cess on time, updating the database of gig workers and documenting any variations in numbers within one month of such changes.

– If they fail to comply, they will be fined up to ₹5 lakh for the first offence and ₹50 lakh for further violations; primary employers will pay up to ₹10,000 for the first offence and ₹2 lakh for subsequent violations.

15. ICMR argues for controlled human infection studies

Source: The post is based on the article “**ICMR argues for controlled human infection studies**” published in **The Hindu on 25th July 2023**.

What is the News?

Indian Council of Medical Research’s (ICMR) Bioethics Unit has released a statement arguing for introducing controlled human infection studies (CHIS) in India.

What are Controlled human infection studies (CHIS)?

In controlled human infection studies (CHIS), healthy volunteers are intentionally exposed to pathogens in a controlled environment in order to promote understanding of the pathogenesis, transmission, prevention and treatment of infectious diseases in humans.

Such studies may be conducted to gain insights into how pathogens infect human hosts and cause disease, to better understand immune responses to infection or to evaluate the efficacy of vaccines and drugs designed to prevent and treat infectious diseases.

CHIS have a long history and have made important contributions to the treatment and prevention of many infectious diseases of global health importance.

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What are the concerns related to Controlled human infection studies (CHIS)?

There are ethical and other concerns such as: 1) deliberate harm 2) possible disproportionate payment and hence inducements 3) third-party risk 4) withdrawal from the study and 4) research with vulnerable participants.

Why is ICMR Bioethics Unit arguing for Controlled human infection studies (CHIS)?

India carries a high burden of morbidity and mortality from infectious diseases. They contribute about 30% of the disease burden in the country.

Finding novel, efficient, and cost-effective alternatives to existing methods of research in these diseases and their prevention is important to reduce this burden.

In this context, CHIS model can help provide unique insights into disease pathogenesis and can accelerate the development of novel medical interventions.

It offers accelerated, cost-effective and efficient outcomes using smaller sample sizes in comparison to large clinical trials.

Its social value includes potential contributions to public health response to diseases of concern, healthcare decision-making, policies and economic benefits, improved pandemic preparedness, and community empowerment.

However, ICMR has also cautioned that CHIS is a highly complex area and may require collaborations at different levels between researchers, institutions, organizations and/or between different countries as right expertise may not be available with one centre/research team.

16. ISRO to launch PSLV-C56 carrying Singapore's new imaging satellite

Source: The post is based on the article “**ISRO to launch PSLV-C56 carrying Singapore's new imaging satellite**” published in **The Hindu on 25th July 2023**.

What is the News?

Indian Space Research Organisation (ISRO) will be launching the Polar Satellite Launch Vehicle (PSLV-C56) mission.

What is the Polar Satellite Launch Vehicle (PSLV-C56) mission?

PSLV-C56 will lift off from the Satish Dhawan Space Centre in Sriharikota, Andhra Pradesh.

It will carry Singapore's DS-SAR satellite and six other satellites.

DS-SAR satellite has been developed under a partnership between DSTA, representing the Government of Singapore and ST Engineering.

– The satellite carries a Synthetic Aperture Radar (SAR) payload developed by Israel Aerospace Industries (IAI).

– Once operational, the DS-SAR will support the satellite imagery requirements of various agencies within the Singapore government.

Six other satellites: The six other satellites include **1) VELOX-AM**, a 23 kg technology demonstration microsatellite **2) ARCADE**, an experimental satellite **3) SCOOB-II**, a 3U nanosatellite with a technology demonstrator payload **4) NuLiOn** by NuSpace, an advanced 3U

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nanosatellite enabling seamless IoT connectivity in both urban and remote locations **5)** Galassia-2, a 3U nanosatellite set to orbit at low earth orbit and **6)** ORB-12 STRIDER, a satellite developed under international collaboration.

[17. FCI stops rice supply for ethanol production amid concerns over crop](#)

Source: The post is based on the article “**FCI stops rice supply for ethanol production amid concerns over crop**” published in **Business Standard on 25th July 2023**.

What is the News?

Food Corporation of India (FCI) has stopped the supply of rice from its depots for ethanol production.

Why has the FCI stopped the supply of rice for ethanol production?

Government had said the ban was aimed at containing inflation and to ensure adequate availability in the domestic market.

What will be the impact of this ban?

This FCI ban on supply of rice for ethanol production could impact India’s ambitious ethanol blending petrol (EBP) programme.

For instance, about 100 distilleries across the country depend on rice from the FCI for conversion into starch, which is processed to make ethanol.

– Dual-feed distilleries use sugarcane during the season and grains during the off-season. Both of them will get impacted due to the ban.

What is Ethanol blending petrol (EBP) programme?

[Click Here to read](#)

[18. OneWeb to set up India’s first ‘satellite network portal site’ in Gujarat: What is the project, its significance?](#)

Source: The post is based on the article “**OneWeb to set up India’s first ‘satellite network portal site’ in Gujarat: What is the project, its significance?**” published in **Indian Express on 23rd July 2023**.

What is the News?

The Gujarat government’s Department of Science and Technology (DST) has signed a Memorandum of Understanding with One Web India Communications Pvt Ltd to establish a ‘satellite network portal site’ in Mehsana, Gujarat.

What is OneWeb?

OneWeb Network Access Associates Limited is a communications company that aims to build broadband satellite Internet services. The company is headquartered in London.

It is powered by a constellation of 648 low Earth orbit (LEO) satellites.

It enables high-speed, low latency connectivity for governments, businesses and communities everywhere around the world.

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India's Bharti Enterprises is a major investor in OneWeb group.

What is the MoU signed between the Gujarat government and One Web?

OneWeb will set up a 'satellite network portal sites' in Mehsana, Gujarat.

OneWeb currently has 648 satellites in LEO orbiting at 1,000-1,200 km making 13 orbits per day, covering the entire globe.

The portal site will serve as a signal and data downlink and uplink terminal or base station on the ground, an intermediary for data transmission through satellite tracking antenna systems.

With this, the portal site will aim to provide affordable connectivity to various sectors including the government, offering continuous and secure satellite internet at affordable rates nationwide.

The setting up of this portal site will require a slew of regulatory approvals from the Indian National Space Promotion and Authorisation Centre (IN-SPACe) and spectrum allocation from the Telecom Regulatory Authority of India (TRAI).

Why was Gujarat chosen for the satellite network portal site?

The decision to set up the satellite network portal site in Gujarat was based on geographical and business interests, with Gujarat's long coastline making it suitable for maritime sector coverage.

19. Govt. launches Meri Maati, Mera Desh campaign

Source: The post is based on the article "**Govt. launches Meri Maati, Mera Desh campaign**" published in **The Hindu on 25th July 2023**.

What is the News?

The Union government has launched the *Meri Maati, Mera Desh* campaign.

What is the Meri Maati, Mera Desh campaign?

The Meri Maati Mera Desh campaign is envisaged as a culminating event of the 'Azadi Ka Amrit Mahotsav' celebration of 75 years of Indian Independence.

Activities planned under the campaign:

A memorial called "Shilaphalakam" will be built in every village or panchayat across the country to pay tribute to those who laid down their lives during the freedom struggle or defence personnel who lost their lives in the line of duty to mark 75 years of Independence.

– The memorials will be inaugurated between August 9 and August 15, 2023.

– A solemn pledge will be taken by people at the memorial site, affirming their commitment to the country.

– Work for the memorial may be executed through the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA), leveraging local materials and resources.

Veeron Ka Vandan: It will facilitate freedom fighters, and the families of deceased freedom fighters.

Vasudha Vandhan: It envisages every gram panchayat or village renewing "Mother Earth by planting 75 saplings of indigenous species.

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Amrit Vatika: Volunteers have been tasked with collecting “mitti” — earth — from each of the panchayats or villages and bring them to the block level. From each block, a “mitti kalash”, or an urn carrying this earth, will be carried to Delhi.

– The soil from all parts of the country will be utilized to develop a unique garden, called Amrit Vatika.

In urban areas, events will be organized at local bodies, notified area councils, Cantonment Boards, and town panchayats from August 9 and 15 and in bigger municipalities and municipal corporations from August 16 to 20.

20. What are marine heat waves, which have gripped parts of the world’s oceans this summer?

Source: The post is based on the article “**What are marine heat waves, which have gripped parts of the world’s oceans this summer?**” published in **Indian Express on 24th July 2023.**

What is the News?

Since April 2023, ocean temperatures have remained at record-high levels giving rise to **Marine Heat Waves (MHWs)** around the globe.

What are Marine Heat Waves (MHWs)?

A marine heat wave is an extreme weather event. It occurs when the surface temperature of a particular region of the sea rises to 3 or 4 degree Celsius above the average temperature for at least five days. MHWs can last for weeks, months or even years.

What is the impact of marine heat waves on ocean life?

An increase of 3 or 4 degrees Celsius in average temperatures may not impact humans a lot. But it can be catastrophic for marine life.

For instance, MHWs along the Western Australian coast during the summer of 2010 and 2011 caused unexpected death of many fish or other aquatic animals over a short period of time.

– Another example is when high ocean temperatures in the tropical Atlantic and Caribbean in 2005 led to a massive coral bleaching event. A 2010 study showed that more than 80% of surveyed corals had bleached and over 40 per cent of the total surveyed had died.

– MHWs also fuel the growth of invasive alien species, which can be destructive to marine food webs.

How do marine heat waves affect humans?

Higher ocean temperatures, which are associated with MHWs, can make storms like hurricanes and tropical cyclones stronger.

With warmer temperatures, the rate of evaporation escalates and so does the transfer of heat from the oceans to the air. When storms travel across hot oceans, they gather more water vapour and heat.

This results in more powerful winds, heavier rainfall and more flooding when storms reach the land — meaning heightened devastation for humans.

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How is global warming affecting marine heat waves and oceans?

According to a 2018 study titled **'Marine heatwaves under global warming'** due to increase in global temperatures, MHWs have become longer-lasting, more frequent and intense in the past few decades. The study has also attributed 87 percent of MHWs to **human-induced warming**.

Moreover, **according to Copernicus Climate Change Service**, oceans have absorbed 90% of the additional heat caused by the release of greenhouse gases into the atmosphere from burning fossil fuels and deforestation in recent decades. This has increased the global mean sea surface temperature by close to 0.9 degree Celsius since 1850.

Hence, as global air temperatures increase, so will ocean temperatures leading to more MHWs.

21. Social Security of Elders

Source: The post is based on the article **"Social Security of Elders"** published in **PIB on 25th July 2023**

What is the News?

The Ministry of Social Justice and Empowerment has informed Lok Sabha about the social security measures taken for elders.

Elderly Population in India:

According to the 2011 Census, the population of senior citizens is 10.38 crore amounting to 8.6% of the total population of the country.

The National Commission on Population's Report of the Technical Group on Population Projections (2011-2036) for India and States released in 2020 states that the population of senior citizens in 2036 will be 22.7 crore ie.15% of the total population of India.

What are the Social Security measures taken for elderly population?

Umbrella Scheme of Atal Vayo Abhyuday Yojana (AVYAY): It is being run by the Department of Social Justice and Empowerment. It includes components to provide financial security, healthcare, nutrition, shelter, welfare etc. for senior citizens. Important components of the scheme:

- **Integrated Programme for Senior Citizens (IPSRc):** Under this, grant-in-Aid is given to Implementing Agencies for running and maintenance of Senior Citizens Homes where basic amenities like shelter, food, medical care, entertainment opportunities etc are provided free of cost to indigent senior citizens.
- **Rashtriya Vayoshri Yojna (RVY):** Under this, assisted living devices are distributed free of cost, in camp mode, to senior citizens belonging to the families living below the poverty line or having Rs. 15000/- as monthly income and suffering from age related disabilities.
- **Elderline/National Helpline for Senior Citizens (NHSC):** It provides free information, guidance, emotional support and field intervention in cases of abuse and rescues in order to improve the quality of life of senior citizens.

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Indira Gandhi National Old Age Pension Scheme (IGNOAPS): It is a part of National Social Assistance Programme (NSAP). It is a Centrally Sponsored Scheme of the Department of Rural Development.

– It provides a monthly pension at the rate of Rs.200/- per month per beneficiary to elderly persons in the age group of 60-79 years belonging to Below Poverty Line (BPL) households. The rate of pension is increased to Rs.500/- per month per beneficiary on reaching the age of 80 years.

National Programme for Health Care of the Elderly(NPHCE): It was launched by the Ministry of Health and Family Welfare in 2010-11 with a view to provide dedicated healthcare services to senior citizens at various level of State Health Care delivery system i.e., at Primary, Secondary and Tertiary health care, including outreach services.

22. Lok Sabha passes contentious Biological Diversity Bill amid din

Source: The post is based on the article “**Lok Sabha passes contentious Biological Diversity Bill amid din**” published in **The Hindu on 26th July 2023**

What is the News?

Lok Sabha has passed the Biological Diversity (Amendment) Bill, 2021.

What is the Biological Diversity (Amendment) Bill, 2021?

The Bill amends the Biological Diversity Act, 2002 to simplify compliance requirements for domestic companies.

Key Provisions of the Bill:

Significant shift

The Biological Diversity (Amendment) Bill, 2021 seeks to exempt registered AYUSH medical practitioners from intimating biodiversity boards before accessing biological resources



Traditional knowledge: A tribal harvesting *Arogyapacha* leaves from a forest in Kerala. S. MAHINSHA

■ It also aims at easing compliance burden, boosting investment and simplifying patent application processes

■ Environmental organisations have raised concerns about potential for “bio piracy”; they say amendments favour industry and there is lack of clarity on benefit sharing with local communities

The Bill exempts registered AYUSH medical practitioners and people accessing codified traditional knowledge among others from giving prior intimation to State biodiversity Boards to access biological resources for certain purposes.

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The Bill removes research and bio-survey activities from the purview of benefit sharing requirements.

Benefit sharing will be based on terms agreed between the user and the local management committee represented by the National Authority.

The bill decriminalizes a range of offences under the Act and substitutes them with monetary penalties.

What are the concerns with the Biological Diversity (Amendment) Bill, 2021?

Firstly, the term codified traditional knowledge has not been defined. A broad interpretation might exempt all local traditional knowledge from benefit sharing requirements.

Secondly, Environmental organizations such as Legal Initiative for Forests and Environment (LIFE) have said that the amendments were made to “solely benefit” AYUSH (Ayurveda, Yoga and Naturopathy, Unani, Siddha and Homeopathy) firms and would pave the way for “bio piracy”.

Thirdly, the Bill decriminalizes offences under the Act and instead provides for a wide range of penalties. Further, the Bill empowers government officials to hold inquiries and determine penalties. It may be questioned whether it is appropriate to confer such discretion to government officials.

23. Centre withdraws DNA Bill: What it says, and what are the objections against it

Source: The post is based on the article “**Centre withdraws DNA Bill: What it says, and what are the objections against it**” published in **Indian Express on 26th July 2023**.

What is the News?

Government has withdrawn The DNA Technology (Use and Application) Regulation Bill 2019 from the Lok Sabha.

What is DNA Technology (Use and Application) Regulation Bill, 2019?

The DNA Technology (Use and Application) Regulation Bill, 2019 was introduced in Lok Sabha in 2019.

The Bill provides for the regulation of use of DNA technology for establishing the identity of certain persons.

The Bill was referred to the Department-related Parliamentary Standing Committee on Science and Technology. The committee submitted its report in 2021 recommending several changes in the draft.

What are the key provisions of the Bill?

[Click Here to read](#)

What are the key concerns with the bill?

Lack of privacy and dignity: Privacy concerns were paramount, especially with the establishment of DNA data banks and the possibility of misuse or mishandling of sensitive personal information.

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Data storage and security: Clear guidelines were required for the secure storage of DNA data, particularly in medical or research laboratories.

Inadequate consent requirements: The absence of explicit consent protocols for civil cases undermined individual agency and rights.

Misuse of DNA profiling: The potential linkage with surveillance systems raised concerns about possible misuse of DNA profiling data for caste-based or community profiling.

Lack of clarity on data storage: The scope of data that may be stored in the umbrella database required clearer guidelines to ensure data privacy and protection.

Insufficient guidelines for combining DNA technology with other Tools: The bill needed specific guidelines on the appropriate use of DNA technology in conjunction with other tools in the justice system to prevent potential miscarriages of justice.

Why has the DNA Technology (Use and Application) Regulation Bill, 2019 been withdrawn now? The Bill has been withdrawn as the main provisions of the Bill have already been enacted as part of another law, the [Criminal Procedure \(Identification\) Act](#) that was passed by both houses of Parliament in 2022.

[24. New algorithm to quantify terrestrial RFI in space for earth orbiting radio astronomy experiments](#)

Source: The post is based on the article “**New algorithm to quantify terrestrial RFI in space for earth orbiting radio astronomy experiments**” published in **PIB on 25th July 2023**.

What is the News?

Scientists at Raman Research Institute (RRI), an autonomous institute of the Department of Science and Technology, have developed an algorithm called STARFIRE to estimate the Radio Frequency Interference(RFI) emitted by FM radio stations, WiFi networks and others.

Background:

In order to study the early Universe and its evolution, astronomers tune their radio antennas within the 40 to 200 MegaHertz (MHz) range in search of the 21-cm hydrogen line, believed to contain some of the unknown secrets about the cosmos.

However, given their faint and weak strength, detecting these signals is extremely challenging. In addition, the fast-advancing technologies and expanding areas of human settlements have led to an increased number of sources emitting Radio Frequency Interference(RFI) constraining the efforts for recording astronomical observations on land.

What have the researchers developed to estimate this Radio Frequency Interference(RFI)?

Scientists have developed an algorithm called **STARFIRE**.

This algorithm can estimate the Radio Frequency Interference(RFI) emitted by FM radio stations, WiFi networks, mobile towers, radar, satellites, and communication devices.

This calculation can be used for designing and fine-tuning the antennas and other instrument components of missions like India’s Probing ReionizATIOn of the Universe using Signal from Hydrogen (PRATUSH).

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Note: PRATUSH is one of the several mission opportunities in space contemplated to address the growing RFI on land, to study the birth of the first stars and galaxies in the Universe using the 21-cm hydrogen line obtained from the far side of the moon.

25. Rehabilitation of Manual Scavengers

Source: The post is based on the article “**Rehabilitation of Manual Scavengers**” published in **PIB on 25th July 2023**

What is the News?

The Ministry of Social Justice and Empowerment has informed Lok Sabha about the measures taken to rehabilitate Manual Scavengers.

What are the measures taken by the government of India to rehabilitate Manual Scavengers?

Prohibition of Employment as Manual Scavenger and their Rehabilitation Act 2013: It bans manual scavenging and hazardous cleaning of sewers and septic tanks.

Swachhta Udyami Yojana: It was launched by the Ministry of Social Justice and Empowerment in 2014.

– Under the scheme, National Safai Karamcharis Finance & Development Corporation (NSKFDC) provides concessional loans to safai karamcharis, manual scavengers & their dependents and the Urban Local Bodies & other agencies responsible for cleaning for procurement of sanitation related instruments/vehicles for complete mechanization of all cleaning operations.

Self Employment Scheme for Rehabilitation of Manual Scavengers (SRMS): It is a Central Sector Scheme of the Ministry of Social Justice and Empowerment (MSJE). The scheme was introduced in y 2007 and was subsequently revised in November 2013 and in 2020-2021.

– The objective of SRMS is to provide assistance to the identified manual scavengers and their dependents for their rehabilitation in alternative occupations.

The following rehabilitation benefits have been provided under the SRMS Scheme:

– **One-time Cash Assistance** of Rs. 40,000/- per family has been provided to all identified and eligible 58098 manual scavengers.

– **Capital Subsidy** upto Rs. 5,00,000/- has been provided to 2313 identified manual scavengers and their dependents to take up alternate self employment projects.

– **Skill Development Training** has been provided to 22294 identified manual scavengers and their dependents with stipend @ Rs. 3,000/- per month during the training period.

– **Health Insurance** under Ayushman Bharat, Pradhan Mantri Jan Arogya Yojana (AB-PMJAY) to the families of all the identified manual scavengers

Workshops are organized in municipalities with the officers, engineers, contractors, sanitation workers etc. of urban local bodies to sensitize them about safe and healthy cleaning practices and mechanized cleaning of sewers & septic tanks.

National Action for Mechanized Sanitation Ecosystem(NAMASTE)

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26. [Geneva HIV patient cured? Can stem cell transplant help?](#)

Source: The post is based on the article “**Geneva HIV patient cured? Can stem cell transplant help?**” published in **Indian Express** on **25th July 2023**

What is the News?

A sixth person with HIV, being referred to as the Geneva patient has likely been cured of HIV after receiving a stem cell transplant for leukemia.

What is Stem Cell Transplant?

Stem cells are special human cells that are able to develop into many different cell types.

Stem cell transplantation (SCT) , sometimes referred to as bone marrow transplant (BMT) is a procedure in which a patient receives healthy stem cells to replace damaged stem cells.

How was Stem Cell Transplant used in Geneva HIV patient?

The Geneva patient had been living with HIV since the 1990s and underwent a stem cell transplant in 2018 for an aggressive form of leukemia.

One month after the transplant, his doctors found that there was a significant reduction in the number of HIV-infected cells.

Twenty months later, his tests did not find any viral particles, latent reservoirs of the infection, or elevated immune response against the HIV virus.

However, unlike the five previous cases of remission, the Geneva patient’s cells continue to be susceptible to HIV.

Which genetic mutation is associated with lower risk of HIV?

People who inherit CCR5 delta 32 mutation are associated with lower risk of HIV (CCR5 delta 32 mutation mainly occurs in Caucasians).

This is because HIV lowers immunity in infected individuals by attacking the CD4 immune cells. However, to gain entry into these cells, it needs receptors on the surface.

But people who inherit the CCR5 delta 32 mutation from both sets of parents do not form these receptors, essentially locking the virus out of the cells. Even those who inherit the mutation from one of the parents have fewer receptors and are also less likely to get the infection.

Can stem cell transplant become routine treatment for HIV?

It is highly unlikely. There are 38.4 million people living with HIV currently and it would be impossible to find a matching donor for all of them.

Besides, stem cell transplantation is a major procedure and comes with its own risks including the risk of the patient rejecting the donor cells. Even with the transplants, the virus may learn to infect cells through other mechanisms.

Instead, treatment of HIV across the world depends on **effective antiretroviral therapy**. This therapy suppresses the replication of the virus within the body, allowing the number of CD4 immune cells to bounce back. It also reduces the viral particles to undetectable levels, meaning the person can no longer transmit the infection to others. However, the anti-retroviral therapy needs to be taken for life.

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27. [Moon missions offer tough tests – landers, the toughest](#)

Source: The post is based on the article “**Moon missions offer tough tests – landers, the toughest**” published in **The Hindu on 26th July 2023**.

What is the News?

According to the data, historically 40% of moon missions have failed and 60% of lander missions have been unsuccessful.

What is the data on the success rate of Moon Missions?

Moon Missions: Historically, over 40% of moon missions have failed.

- If we consider only those missions which involved a robotic lander (a spacecraft performing a controlled landing on the lunar surface), the failure rate sharply increases to over 60%.
- The failure rate of ‘sample return’ missions, which collect samples from the moon and bring them back to the earth is even higher at 67% as such missions are complex and riskier.
- Impactor missions, in which a spacecraft or a part of it is deliberately made to collide with the moon in order to study the resulting crater or dust plume, also have a high failure rate of 56.3%.

Chandrayaan 2 Mission: Indian Space Research Organisation (ISRO) Chandrayaan 2 mission was launched in 2019. The lander of Chandrayaan 2 ‘Vikram’ lost contact with the earth and went blank minutes before lunar touchdown. The mission of the lander and the rover ‘Pragyan’ was declared a failure. The orbiter mission was a success as the orbiter was placed in the intended orbit.

Total number of lunar missions completed by decade: The 1950s had a very high failure rate across mission types. All the orbiter missions failed. The overall failure rate was 84.6%.

- The 1960s saw the highest number of moon missions (74) for any decade thus far. But the overall failure rate remained relatively high at 62.2%.
- The 1970s were much better with 40 missions and just a 25% failure rate. In general, the number of moon missions dropped in the following decades.
- The 2000s stood out as all the missions succeeded. The 2010s also had a much lower failure rate of 22% But the number of unsuccessful missions went up again in the following decade and the overall failure rate rose to 47.1%.

28. [Full-reserve banking: where banks act solely as custodians of customers’ money](#)

Source: The post is based on the article “**Full-reserve banking: where banks act solely as custodians of customers’ money**” published in **The Hindu on 26th July 2023**.

What is the News?

This article talks about the Full-reserve banking system.

What is Full-reserve banking?

Full-reserve banking also known as 100% reserve banking refers to a system of banking where banks are not allowed to lend out money that they receive from customers in the form of demand deposits.

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The banks can only lend money that they receive as time deposits from their customers.

Hence, in this case, banks simply act as custodians to depositors' money and may charge a fee from depositors for the service of safekeeping that they offer to the depositors. This is in contrast to today's banking system in which banks pay interest to customers on their demand deposits.

This is done to ensure that banks can successfully meet redemption demands from depositors, and thus avoid a run on the bank even if all depositors someday decide to come asking for their money at the same time.

Note: Demand deposits are deposits that customers can withdraw from the bank at any point in time without any prior notice.

– Time deposits are deposits that customers can withdraw from the bank only after a certain period of time that is agreed upon between the bank and its customers.

What is the type of banking system that exists in most of the countries currently?

The banking system that exists today is known as the **fractional-reserve banking system**.

Fractional-reserve banking is the banking system under which banks that take deposits from the public are required to hold a proportion of their deposit liabilities in liquid assets as a reserve, and are at liberty to lend the remainder to borrowers.

Bank reserves are held as cash in the bank or as balances in the bank's account at the central bank.

The country's central bank determines the minimum amount that banks must hold in liquid assets, called the "reserve requirement" or "reserve ratio".

What are the experts' views on the Full reserve and Friction reserve banking system?

Supporters of fractional-reserve banking believe that full-reserve banking unnecessarily restricts bank lending. They believe that allowing banks to create loans without the necessary savings to back these loans can help spur investment and economic growth.

However, proponents of full-reserve banking argue that it is the only natural form of banking and that it can prevent the various crises that affect today's fractional-reserve banking system.

The full-reserve banking supporters also argue that since banks will not be able to create money out of thin air in a full-reserve banking system, their influence on the economy's money supply will become severely restricted. This will prevent artificial economic booms and busts that are said to be the consequence of changes in money supply.

29. [Safety limits to flying](#)

Source: The post is based on the article "**Safety limits to flying**" published in **Indian Express on 26th July 2023**

What is the News?

Recently, around 100 passengers were stranded in Rajkot after their Air India flight to Delhi was cancelled.

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The pilot had refused to take off because the permitted duty hours of the crew were over, and operating the flight would have violated the flight duty time limitation (FDTL) norms laid down by India's aviation safety regulator.

What are Flight duty time limitation(FDTL) norms?

FDTL norms in India

IN INDIA, maximum flight duty periods per day are stipulated on the basis of maximum permitted landings and flight times. Rest periods are mandatory between flight duty periods, and in-flight for long-haul flights. There are guidelines for scheduling night operations, and maximum cumulative flight time and duty periods per week, two weeks, four weeks, 90 days, and 1 year. There are special norms for ultra-long-haul flights.¶

AIRLINES MUST establish their own limitations on these counts within the DGCA's framework of fatigue management regulations, which are based on ICAO standards and best practices of the US aviation regulator Federal Aviation Administration (FAA) and the European Union Aviation Safety Agency (EASA).¶

UNDER DGCA RULES, airlines can't ask the crew to operate a flight if the

prescribed time limitations are exceeded. They are also not supposed to ask a crew member to fly if it is known or suspected that he/she "is fatigued to the extent that the safety of flight may be adversely affected". Airlines are required to prepare flight crew rosters "sufficiently in advance".¶

CARRIERS ARE REQUIRED to train flight crew on fatigue management, and maintain a non-punitive and confidential system of fatigue report management, through which incidents of crew fatigue can be brought to light. Airlines must define executive responsibility for addressing fatigue management.¶

FLIGHT CREWS also have responsibility and accountability. Regulations expressly prohibit crew from accepting assignments that exceed the prescribed limitations. They are also not supposed to perform duties if it is known or suspected that they are fatigued.

Source: Indian Express

[Click Here to read](#)

Which airports usually face the problem of Flight duty time limitation(FDTL)?

Smaller airports are usually more susceptible to FDTL-related disruptions because they are unlikely to have standby crew, and it is difficult to mobilize them at short notice.

What are the challenges Indian air carriers are expected to face in the coming years?

Shortage of Pilots: Given the volume of traffic, India does not see many FDTL-related disruptions currently.

But this could change in the coming years as Indian carriers expand their fleet and networks and a steady supply of additional pilots is required.

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This could put pressure on the existing pool of pilots. In the worst case, airlines could face a major impediment to their growth plans even as demand surges.

For instance, India currently is estimated to have around 9,000 pilots for a fleet of some 700 aircraft currently.

Almost 2,000 additional pilots may be needed every year over the next few years to keep up with the expected pace of fleet expansion. This is more than double the number of commercial pilot licenses that the DGCA currently issues annually.

Moreover, the most acute shortage is expected to be of the experienced pilots or captains who lead the crew and are in charge of the flight. It takes a few years for a pilot to be promoted as captain and it is estimated that the existing Indian airline ecosystem produces fewer than 200 captains a year

30. [Scientists unveil method to power devices using air humidity](#)

Source: The post is based on the article **“Scientists unveil method to power devices using air humidity”** published in **The Week on 20th July 2023**

What is the News?

Researchers at the University of Massachusetts Amherst have successfully developed a technology called Hygroelectricity.

What is Hygroelectricity?

Hydroelectricity is a technology that can harvest electricity from nothing but humid air.

This technology was first explored by physicist Nikola Tesla and has been the subject of scientific inquiry for decades.

How does Hygroelectricity works?

The key to harvesting electricity from humid air lies in a tiny device comprising two electrodes and a thin layer of material filled with nanopores.

These nanopores, each less than 100 nanometres in diameter, allow water molecules from the air to pass through the device.

As these molecules move from an upper chamber to a lower chamber, they interact with the edges of the nanopores, leading to a buildup of electric charge imbalances between the chambers.

This process effectively transforms the device into a miniature battery, generating continuous electricity.

What are the advantages of Hygroelectricity?

The advantage of Hygroelectricity is its versatility. Unlike other renewable energy sources such as solar and wind, air humidity is continuously available making it a sustainable reservoir of energy.

Moreover, this technology can be applied to a wide range of materials including wood and silicon, as long as they possess the required nanopores. This breakthrough dramatically increases its potential for broad deployment and scalability.

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What are the challenges to Hygroelectricity?

The concept of generating electricity from air humidity is both promising and fascinating.

But some challenges lie ahead such as the nanopore device used by scientists can only produce electricity equivalent to a fraction of a volt. Hence, scaling up the technology to meet practical energy demands is a significant hurdle.

31. [530 districts reported as free of manual scavenging: Centre](#)

Source: The post is based on the article “**530 districts reported as free of manual scavenging: Centre**” published in **The Hindu on 27th July 2023**.

What is the News?

The Ministry of Social Justice has provided data on the Manual Scavenging.

What is the Status of Manual Scavenging in India?

Free from Manual Scavenging: Total 530 of 783 districts (as of March 2023) in India had so far declared themselves to be free of manual scavenging.

State wise Manual Scavenging: 100% of the districts in States such as Bihar, Rajasthan, Tamil Nadu and a few others had declared themselves to be free of manual scavenging.

– Jammu and Kashmir, Manipur, Telangana, Andhra Pradesh, West Bengal and Jharkhand are among the States and Union Territories that have the highest number of districts yet to declare themselves free of manual scavenging.

– Uttar Pradesh which had the highest number of manual scavengers (32,473) in two surveys conducted till 2018 has nearly 90% districts reporting to be free of manual scavenging.

Deaths: Between 2018 and 2023, 339 people lost lives while cleaning sewers and septic tanks in India.

– Nine such deaths were recorded in 2023, 66 in 2022, 58 in 2021, 22 in 2020, 117 in 2019 and 67 deaths in 2018.

Caste with highest Manual Scavenging: According to data released by the government in Parliament in 2021, over 90% of manual scavengers identified in the surveys till 2018, were from the Scheduled Caste communities.

32. [Harness silvopasture systems for local climate resilience](#)

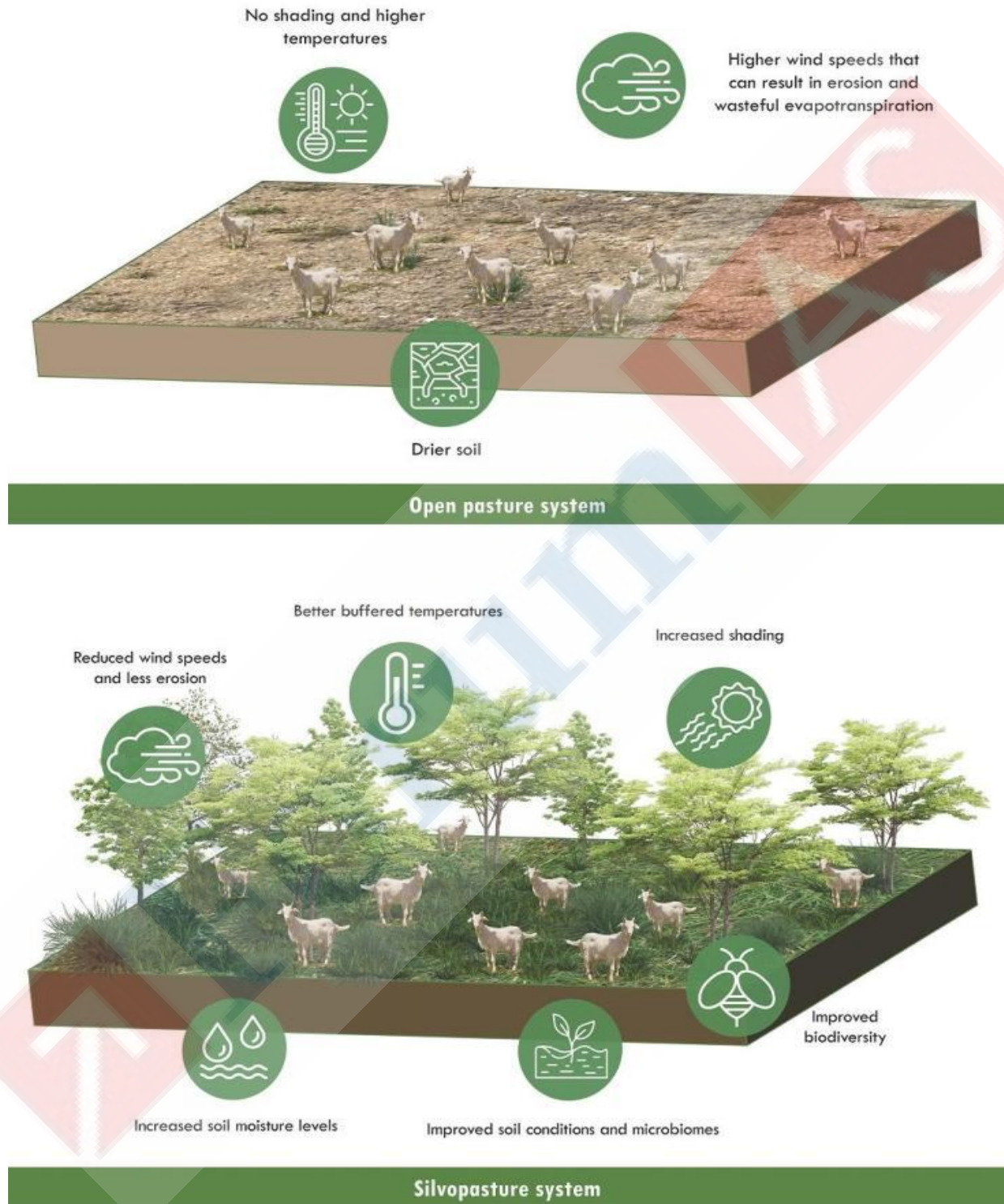
Source: The post is based on the article “**Harness silvopasture systems for local climate resilience**” published in **Down To Earth on 25th July 2023**.

What is the News?

In light of the global deterioration of natural resources and forests, silvopasture systems offer a relevant solution to deforestation trends.

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What is Silvopasture?



Source: Down to Earth

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Silvopasture is an ancient and proven practice that harmoniously integrates trees, forage and livestock on the same land.

By combining these elements, silvopasture brings numerous environmental advantages, including improved local climate resilience.

Silvopasture practices currently cover a vast expanse of 550 million hectares worldwide.

What are the advantages of Silvopasture?

Deforestation: Silvopasture can play a vital role in reversing the negative trend of deforestation for pasture land.

Carbon Sinks: The trees on silvopasture lands act as natural carbon sinks, sequestering five to 10 times more carbon than pastures without trees.

Regulate local climatic conditions: Silvopasture systems also regulate local climatic conditions, buffering against temperature and wind extremes, providing a favorable living environment for livestock.

Nutrition cycle: The extensive root systems of trees within silvopasture plots contribute to nutrient cycling, improved soil stability and quality while effectively combating erosion.

Soil infiltration rates: Soil infiltration rates in silvopasture systems surpass those of open pastures, enhancing water storage potential.

Livestock: The cattle utilized the silvopasture landscape more evenly as there was more shading throughout the plot, reducing heat stress during the warm-weather portions of the year.

33. LS passes Forest Conservation (Amendment) Bill

Source: The post is based on the article “**LS passes Forest Conservation (Amendment) Bill**” published in **The Hindu on 27th July 2023**

What is the News?

Lok Sabha has passed the Forest Conservation (Amendment) Bill. The Bill was introduced to amend the Forest Conservation Act, 1980.

What are the key provisions of the Forest Conservation (Amendment) Bill, 2023?

The Bill amends the Forest (Conservation) Act, 1980 to make it applicable to certain types of land. These include land notified as a forest under the Indian Forest Act, 1927 or in government records after the 1980 Act came into effect. The Act will not be applicable for land converted to non-forest use before December 12, 1996.

It also exempts certain types of land from the purview of the Act. These include land within 100 km of India's border needed for national security projects, small roadside amenities, and public roads leading to a habitation.

The state government requires prior approval of the central government to assign any forest land to a private entity. The Bill extends this to all entities, and allows the assignment to be made on terms and conditions specified by the central government.

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The Act specifies some activities that can be carried out in forests, such as establishing check posts, fencing, and bridges. The Bill also allows running zoos, safaris and eco-tourism facilities.

What are the objections raised against the Forest Conservation (Amendment) Bill, 2023?

Firstly, the amendments “diluted” the Supreme Court’s 1996 judgement in the *Godavarman case* that extended protection to wide tracts of forests, even if they were not recorded as forests.

Secondly, there were objections to the Act’s new name — Van (Sanrakshan Evam Samvardhan) Adhiniyam, translated as Forest (Conservation and Augmentation) Act, instead of the existing Forest (Conservation) Act — saying it was “non-inclusive” and left out many among the “(non-Hindi speaking) population in south India and in the northeast”.

Thirdly, there are fears that large parcels of forest land near the borders would no longer be protected.

34. Study on Global Warming

Source: The post is based on the article “**Study on Global Warming**” published in **PIB on 26th July 2023**

What is the News?

The Union Minister of Earth Sciences has informed Lok Sabha about the studies and steps taken against Global Warming.

What are the studies conducted on Global Warming?

The Ministry of Earth Sciences (MoES) has published ‘**Assessment of Climate Change over the Indian Region**’.

Purpose: The report contains a comprehensive assessment of the impact of climate change upon the Indian subcontinent.

The key highlights of the report are:

- India’s average temperature has risen by around 0.7°C during 1901-2018.
- Frequency of daily precipitation extremes (rainfall intensities >150 mm per day) increased by about 75% during 1950-2015.
- The frequency and spatial extent of droughts over India has increased significantly during 1951-2015.
- Sea-level rise in the North Indian Ocean occurred at a rate of 3.3 mm per year in the last two and half decades (1993-2017)
- Frequency of Severe Cyclonic Storms over Arabian sea has increased during the post monsoon seasons of 1998-2018.

What are the steps taken against Global Warming?

Warnings related to severe weather events: India Meteorological Department (IMD) issues forecasts and warnings related to severe weather events including heat waves, in different spatial and temporal scales (seasonal, monthly and daily) and shares the same with the public as well as disaster management authorities so as to initiate required mitigation measures.

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Heat Index: IMD has launched an experimental Heat Index to provide general guidance for the regions within India where the apparent temperature/feel like temperature (considering the impact of Humidity along with the temperature) are on a higher side causing discomfort for the human beings.

Heat Action Plan: IMD in collaboration with NDMA and local health departments have started Heat Action Plan in many parts of the country.

– The Heat Action Plan is a comprehensive early warning system and preparedness plan for extreme heat events. It became operational since 2013.

– The Plan presents immediate as well as longer-term actions to increase preparedness, information-sharing, and response coordination to reduce the health impacts of extreme heat on vulnerable populations.

India's rice export ban impacts Asian and African nations most

Source: The post is based on the article “**India's rice export ban impacts Asian and African nations most**” published in **The Hindu on 27th July 2023**

What is the News?

Panic-stricken Non-Resident Indians (NRIs) in the United States are rushing to grocery stores and supermarkets to hoard bags of rice.

The sudden rush to hoard bags of rice in the United States was triggered by the Indian government's decision to ban the export of non-basmati white rice.

What is the data on India's rice exports?

Over time, India exported varying quantities of three types of semi/wholly milled rice. Non-basmati white rice took the lead in the last two fiscal years, surpassing basmati rice in export share.

However, non-basmati white rice, which previously accounted for over a quarter of the exports, has now been banned from exports.

The aim behind the ban was to ensure sufficient availability of rice in the Indian market and to curb the increase in prices domestically.

Note: India did not restrict the export of the other types of semi/wholly milled rice — basmati and parboiled rice.

What will be the impact of India's rice export ban on other countries?

In FY23, non-basmati white rice from India was purchased by more than 140 countries.

The ban's most significant impact will be felt in neighboring countries like Nepal and Bangladesh, as well as African nations like Madagascar, Benin, Kenya, and Ivory Coast, and Asian countries such as Malaysia and Vietnam, along with the UAE which are the largest buyers of this rice type.

The U.S. ranks 34th on the list of non basmati rice imports from India. This suggests that the uproar over rice in the U.S. may be due to reporting bias, as there are 33 other countries more affected by the ban.

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[35. 2D nanoflakes of material extracted from iron ore can protect sensitive optical equipment from light-induced damage](#)

Source: The post is based on the article “**2D nanoflakes of material extracted from iron ore can protect sensitive optical equipment from light-induced damage**” published in **PIB on 27th July 2023**

What is the News?

Researchers in India have developed a new and highly efficient optical limiter using a novel 2D material, ‘hematene’.

They found that 2D nanoflakes of hematene are capable of withstanding and acting as shield from high laser intensities.

Hence, it could be used to make devices called optical limiters that can protect sensitive optical equipment from light-induced damage.

What are Nanoflakes?

Nanoflakes are a type of nanomaterial that consists of thin, two-dimensional (2D) flakes with nanoscale dimensions. These flakes typically have a high aspect ratio, meaning their length is much greater than their thickness.

Nanoflakes can be made from a variety of materials, including metals, metal oxides, semiconductors, and other types of nanomaterials.

Nanoflakes have attracted significant attention in various fields of science and technology, such as nanoelectronics, photonics, catalysis, energy storage, and sensing applications.

Their large surface area-to-volume ratio and unique electronic properties make them promising candidates for enhancing the performance of many devices and technologies.

What is Hematene?

Hematene refers to a nanomaterial derived from hematite, which is an iron oxide mineral. Hematite has a reddish-black color and is a common mineral found in nature.

Hematene is created by exfoliating, or peeling off, thin layers of hematite to obtain a two-dimensional (2D) nanomaterial with nanoscale thickness.

The unique properties of Hematene as a 2D nanomaterial, make it interesting for various applications in nanotechnology, such as in electronics, sensing and energy storage.

[36. Why trade unions in Kerala are opposing Centre’s power sector revamp scheme](#)

Source: The post is based on the article “**Why trade unions in Kerala are opposing Centre’s power sector revamp scheme**” published in **Indian Express on 27th July 2023**

What is the News?

The Kerala government is facing trouble over the Centre’s Revamped Distribution Sector Scheme (RDSS).

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What is Revamped Distribution Sector Scheme(RDSS)?

Government of India has launched the Revamped Distribution Sector Scheme (RDSS) for the duration of 5 years i.e. from (FY 2021-22 to FY 2025-26).

Aim: To reduce the Aggregate Technical & Commercial (AT&C) losses to pan-India levels of 12-15% and Average Cost of Supply (ACS)-Average Revenue Realized(ARR) gap to zero by 2024-25.

Components: The Scheme has two major components: **Part 'A'** – Financial support for Prepaid Smart Metering & System Metering and upgradation of the Distribution Infrastructure and **Part 'B'** – Training & Capacity Building and other Enabling & Supporting Activities.

– Financial assistance to DISCOMs is provided for upgradation of the Distribution Infrastructure and for Prepaid Smart Consumer Metering & System Metering based on meeting pre-qualifying criteria and achieving basic minimum benchmark in reforms.

– The smart meters are meant to facilitate the reduction of distribution losses and enable automatic measuring of energy consumption.

– The installation of the pre-paid meters is to be done through the TOTEX (total expenditure, including capital expenditure and operational expenditure) model with public-private participation.

Why are organizations in Kerala opposing the RDSS project?

Trade unions are opposing the TOTEX model, in which a private firm installs and maintains smart meters. The private agency will recover the cost incurred in installments. The unions fear that the smart meter system will thus pave the way for the privatization of power distribution in the state.

What is the alternative suggested by the trade unions opposing the project?

Trade Unions opposing the TOTEX model claim that the state should manufacture smart meters using the technology developed by the central government institution Centre for Development of Advanced Computing (C-DAC) which is willing to share the know-how. This will help bring down the cost of the smart meters significantly.

37. [UNESCO endorses banning smartphones in schools](#)

Source: The post is based on the article “UNESCO endorses banning smartphones in schools” published in **The Hindu on 27th July 2023**

What is the News?

The United Nations Educational, Scientific and Cultural Organization (UNESCO) has released its Global Education Monitoring Report,2023 titled “Technology in education: a tool on whose terms?”.

What are the key highlights from the Global Education Monitoring Report,2023?

The report has endorsed the ban on smartphones in schools and has warned against an uncritical rush toward embrace of digital products in educational settings. This is because:

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Firstly, there is little robust evidence on digital technology's added value in education. It cited the example of how Pearson funded its own studies, contesting independent analysis that showed its digital products had no impact on education.

Secondly, technology integration does not improve learning. It highlighted that mere proximity to a mobile device was found to distract students and have a negative impact on learning in 14 countries. But still only one in four countries have banned smartphone use in schools.

Thirdly, the report cited a study of young people between the ages of two and 17 which showed that higher screen time was associated with poorer well-being; less curiosity, self-control and emotional stability; higher anxiety and depression diagnoses.

Fourthly, the report has flagged the higher costs of delivering basic education where there is a dependence on the setting up of digital infrastructure and how this could worsen the problem of unequal access in low-income countries.

– For instance, the cost of moving to basic digital learning in low-income countries and connecting all schools to the Internet in lower-middle-income countries would add 50% to their current financing gap for achieving national SDG 4 targets.

Lastly, another major concern around the indiscriminate use of digital technology in education was children's privacy. Children's data are being exposed yet only 16% of countries explicitly guarantee data privacy in education by law.

– One analysis found that 89% of 163 education technology products recommended during the pandemic could survey children.

38. Nature inspires breakthrough achievement: Hazard-free production of fluorochemicals

Source: The post is based on the article “**Nature inspires breakthrough achievement: Hazard-free production of fluorochemicals**” published in **Phys.org** on **20th July 2023**

What is the News?

Researchers at the University of Oxford have achieved a groundbreaking breakthrough by developing a new technique to produce **fluorochemicals** without using hazardous hydrogen fluoride (HF) gas

What are Fluorochemicals?

Fluorine is a highly reactive element that comes from a calcium salt called calcium fluoride, or fluorspar.

Fluorine is used to make fluorochemicals, which in turn are used to produce plastics, agrochemicals, lithium-ion batteries and drugs.

What is the process of making Fluorochemicals and what are its drawbacks?

Process: Fluorspar is mined and then treated with sulphuric acid at a high temperature to release hydrogen fluoride (HF). HF is then made to react with other compounds to create fluorochemicals.

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Drawback: A major downside of this process is that HF is an extremely poisonous and corrosive liquid that irritates the eyes and respiratory tract even at low concentrations. It also requires special transportation and storage requirements.

– Moreover, despite stringent safety regulations, HF spills have occurred numerous times in the last decades, sometimes with fatal accidents and detrimental environmental effects.

What have the researchers developed to overcome this drawback in making Fluorochemicals?

Researchers took inspiration from how the human body makes bones and teeth through calcium phosphate biomineralisation.

Based on this, they developed an innovative process which involved grinding fluorospar with potassium phosphate in a ball-mill. While fluorine is very reactive, calcium atoms prefer phosphorus even more, so the milling created calcium phosphate and another compound with fluorine atoms. They called this process **Fluoromix**.

When this Fluoromix was reacted with organic compounds, it could create around 50 fluorochemicals with up to 98% yield.

Significance: This new method has the potential to enhance safety and environmental impact, streamline the supply chain and reduce energy demands in the rapidly expanding global fluorochemical industry.

[39. SEBI chief says instant settlement of trades in the works: What does it mean, and how will investors benefit?](#)

Source: The post is based on the article “**SEBI chief says instant settlement of trades in the works: What does it mean, and how will investors benefit?**” published in **Indian Express on 25th July 2023**.

What is the News?

The Securities and Exchange Board of India (SEBI) Chief has said that he is working on real-time settlement of transactions in India’s stock exchanges.

What is meant by Trade Settlement?

‘Settlement’ is a two-way process that involves the transfer of funds and securities on the settlement date.

A trade settlement is said to be complete once purchased securities of a listed company are delivered to the buyer and the seller gets the money.

Currently, there is a lag between trade and settlement — the settlement date is different from the trade date.

This is because the current cycle of trade settlement is ‘T+1’. This means trade-related settlements happen within a day, or within 24 hours of the actual transaction. The migration to the T+1 cycle came into effect in January, 2023.

Note: India became the second country to start the T+1 settlement cycle in top listed securities after China.

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What has SEBI announced now?

SEBI has said it is working on a plan for “instantaneous” settlement of trades in the securities market.

This means same-day, or ‘T+0’, settlement of trades will be possible with the real-time payment system — Unified Payments Interface (UPI), online depositories, and technology stack.

What will T+0 change for investors?

Under the current T+1 settlement cycle, if an investor sells securities, the money gets credited into her account the following day.

Under the T+0 settlement cycle, if investors sell shares, they will get the money in their account instantaneously and the buyers will get the shares in their demat accounts the same day.

This means that the investor’s money will not get stuck with brokers or stock exchanges, they will get the money on the same day after the transactions happen.

[40. House panel for DGCA-like authority for cybersecurity](#)

Source: The post is based on the article “**House panel for DGCA-like authority for cybersecurity**” published in **Business Standard on 28th July 2023**.

What is the News?

The Standing Committee on Finance has given several recommendations on cybersecurity and other issues.

What are the issues highlighted by the Standing Committee on Finance?


According to the Indian Computer Emergency Response Team (CERT-In), more than 13 million cybersecurity incidents were tracked in 2022 alone.

As per the Union Home Ministry, the volume of financial crimes reported increased from 2.62 lakhs in the financial year 2020-21 to 6.94 lakhs in 2022.

As per Indian Cyber Crime Coordination Centre, out of 6.9 lakhs complaints related to financial frauds in 2022, an FIR was issued only in 2.6% of the cases.

There is a major disparity in the cyber-resilience of commercial banks, cooperative banks and non-banking financial institutions. While all commercial banks have completed cyber security related audits, only a small percentage of cooperative banks, approximately 10.92 per cent – 206 out of 1886 entities – have undertaken such audits.

What are the recommendations given by the Standing Committee on Finance?



RECOMMENDATIONS

- Regulate third-party service providers, including Big Tech and telecom companies
- Whitelisting framework for digital lending agencies
- Adopt proactive approach to global security regulations
- Collaborate with financial institutions to improve service uptime and address recurring downtime issues
- Establish a centralised 'Cyber Protection Authority'

Source: Business Standard

Firstly, Establish a centralized and empowered Cyber protection authority(CPA) similar to the Directorate General of Civil Aviation (DGCA) to tackle the rising instances of white-collar crimes in cyberspace.

– One of the tasks of the CPA should be to create and maintain a Central Negative Registry, which would include information on fraudsters' accounts and the official documents they have utilized.

Secondly, the Centre should mandate Apple and Google to share “exhaustive” metadata, developer identities, and ownership and origin of apps they host on their respective app stores to curb financial fraud.

– The committee said that sharing such information with the government will empower regulators to conduct in-depth analysis, identify potential security vulnerabilities and institute appropriate measures to fortify the digital landscape.

Thirdly, create a whitelisting framework for Digital Lending Agencies (DLAs) and other financial intermediaries.

– This measure is intended to combat fraudulent activities and promote a standardized code of conduct within the digital lending industry, thus fostering a more secure and trustworthy environment for consumers.

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[41. Cinematograph Bill aimed at curbing piracy passed by RS](#)

Source: The post is based on the article “**Cinematograph Bill aimed at curbing piracy passed by RS**” published in **The Hindu on 28th July 2023**

What is the News?

The Rajya Sabha has passed the Cinematograph (Amendment) Bill, 2023.

What is the Cinematograph (Amendment) Bill, 2023?

The Bill amends the Cinematograph Act, 1952. The Act constitutes the Board of Film Certification for certifying films.

Key Provisions of the bill:

Additional certificate categories: The Bill adds certain additional certificate categories based on age.

- Under the Act, film may be certified for exhibition: (i) without restriction (‘U’), (ii) without restriction, but subject to guidance of parents or guardians for children below 12 years of age (‘UA’), (iii) only to adults (‘A’), or (iv) only to members of any profession or class of persons (‘S’).
- The Bill substitutes the UA category with the following three categories to also indicate age-appropriateness: (i) UA 7+, (ii) UA 13+, or (iii) UA 16+. The age endorsement within the UA category by the Board will inform guidance of parents or guardians, and will not be enforceable by any other persons other than parents or guardians.

Separate certificate for television/other media: Films with an ‘A’ or ‘S’ certificate will require a separate certificate for exhibition on television or any other media prescribed by the central government. The Board may direct the applicant to carry appropriate deletions or modifications for the separate certificate.

Unauthorized recording and exhibition to be punishable: The bill prohibits the unauthorized recording of films and their exhibition.

- An unauthorized recording means making or transmitting an infringing copy of a film at a licensed place for film exhibition without the owner’s authorisation.
- An unauthorized exhibition means the public exhibition of an infringing copy of the film for profit: (i) at a location not licensed to exhibit films or (ii) in a manner that infringes upon the copyright law.
- The above offences will be punishable with: (i) imprisonment between three months and three years, and (ii) a fine between three lakh rupees and 5% of the audited gross production cost.

Certificates to be perpetually valid: Under the Act, the certificate issued by the Board is valid for 10 years. The Bill provides that the certificates will be perpetually valid.

[42. National Framework for Safe Reuse of Treated Wastewater](#)

Source: The post is based on the article “**National Framework for Safe Reuse of Treated Wastewater**” published in **PIB on 27th July 2023**.

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What is the News?

Minister of State for Jal Shakti has informed Lok Sabha about the Arth Ganga Model and the initiatives taken to promote the reuse of treated water.

What is the Arth Ganga Model?

[Click Here to read](#)

What are the initiatives taken by the government to promote the reuse of treated water?

National Framework for Safe Reuse of Treated Wastewater: It has been published by the National Mission for Clean Ganga (NMCG). The framework gives guidelines for the formulation of State reuse policy and is intended to build appropriate market and economic models for the reuse of treated wastewater.

Centre of Excellence (CoE) on water reuse has been established in partnership with The Energy Research Institute (TERI) on Water Reuse at the TERI Headquarters in New Delhi.

Thermal Power Plants (TPPs) are required by the Ministry of Power's Tariff Policy 2016 to use treated sewage water from Sewage Treatment Plants (STPs) operated by municipalities or other local authorities located within a 50 km radius.

Central Pollution Control Board (CPCB) has formulated a charter based participatory approach to facilitate the industries for water recycling and pollution prevention in major industrial sectors like Pulp & Paper, Sugar, Textile and Tannery in river Ganga main stem states.

Industry Specific Improvement: Reuse and recycling of wastewater in Industries has been promoted in water intensive grossly polluting industrial units along river Ganga.

43. [Lok Sabha passes Jan Vishwas \(Amendment of Provisions\) Bill, 2023 in Parliament](#)

Source: The post is based on the article "**Lok Sabha passes Jan Vishwas (Amendment of Provisions) Bill, 2023 in Parliament**" published in **PIB on 27th July 2023**.

What is the News?

The Jan Vishwas (Amendment of Provisions) Bill, 2023 has been passed in Lok Sabha.

What is the Jan Vishwas (Amendment of Provisions) Bill, 2023?

The Jan Vishwas Bill aims to decriminalize around 180 offences by amending 42 laws across sectors including environment, agriculture, media, industry and publication.

Some of the acts which are being amended include The Drugs and Cosmetics Act, 1940; Public Debt Act, 1944; Copyright Act, 1957; Patents Act, 1970; Environment (Protection) Act, 1986; Motor Vehicles Act, 1988 among others.

The offences will be decriminalized by either **1)** eliminating both imprisonment and/or fine **2)** removing imprisonment while retaining or increasing fines or **3)** changing imprisonment and/or fine to penalties.

Moreover, the bill removes all offences under the Post Office Act, 1898.

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What are the benefits of the Bill?

Firstly, the Bill will help in rationalizing criminal provisions to ensure that citizens, businesses and the government departments operate without fear of imprisonment for minor or technical defaults.

Secondly, the bill establishes a balance between the severity of the offence or violation committed and the gravity of the prescribed punishment.

Thirdly, the technical and procedural lapses and minor defaults had been burdening the justice delivery system and delaying the adjudication of serious offences. Therefore, the bill would reduce undue pressure on the justice system and reduce the pendency of cases.

Fourthly, the decriminalization of provisions which affect citizens and some government employees will help them live without the fear of imprisonment for minor violations.

Lastly, it will help in rationalizing laws, eliminating barriers and bolstering growth of businesses and will save time and cost for both the government and businesses.

44. [Self Reliant India Fund](#)

Source: The post is based on the article “**Self Reliant India Fund**” published in **PIB on 27th July 2023**

What is the News?

The Minister for Micro Small and Medium Enterprises has informed Lok Sabha about the Self Reliant Fund and the other initiatives taken by the government for the MSME Sector.

What is the Self Reliant India(SRI) Fund?

Self Reliant India Fund was set up in 2021.

It is a Category-II Alternative Investment Fund registered with SEBI.

Aim: To provide growth capital to the deserving and eligible units of the MSME sector.

Size of the fund: The total size of the fund is Rs. 50,000 Crore where Rs.10,000 Crore will come from the Government of India and Rs.40,000 Crore through Private Equity / Venture Capital funds.

Structure of the fund: The Fund is an investment strategy of holding a portfolio of other investment funds, rather than investing directly. In the context of AIFs, a Fund of Fund is an AIF which invests in another AIF.

– Accordingly, SRI Fund will be a combination of Mother/Daughter Funds which will leverage private equity/ other funds and thus will multiply the impact of the initial budgetary infusion.

– The Mother Fund will provide funds only to the Daughter Funds for onward investment as growth capital, while the investment in MSMEs will be done by the Daughter Funds under the Fund.

Implementation: SRI fund is implemented by a special purpose vehicle, NSIC Venture Capital Fund Limited, which is a 100 percent subsidiary of National Small Industries Corporation, a mini-Ratna.

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What are the initiatives taken by the government for the MSME Sector?

Champions 2.0 portal

MSME Champions Scheme: It has been formulated with three components namely, 'MSME-Sustainable' (ZED), MSME-Competitive' (LEAN) and MSME-Innovative' (Incubation, Design, IPR)

Budget 2023-24 announced the infusion of Rs. 9,000 crore in the corpus of Credit Guarantee Fund Trust for Micro & Small Enterprises to enable an additional credit of Rs. 2.00 Lakh crore with reduced cost of credit.

Raising and Accelerating MSME Performance(RAMP) Scheme

45. Gulf Stream could collapse as early as 2025, study suggests

Source: The post is based on the article **“Gulf Stream could collapse as early as 2025, study suggests”** published in **The Guardian on 25th July 2023.**

What is the News?

According to a study, the Gulf Stream system could collapse as soon as 2025.

What is Gulf Stream?



Source: NOAA

The Gulf Stream is a strong ocean current that brings warm water from the Gulf of Mexico into the Atlantic Ocean. It extends all the way up the eastern coast of the United States and Canada.

It is a small part of something called the 'thermohaline circulation' or Atlantic Meridional Overturning Circulation.

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How does the Gulf Stream impact weather and climate?

This strong current of warm water influences the climate of the east coast of Florida, keeping temperatures there warmer in the winter and cooler in the summer than the other southeastern states. Since the Gulf Stream also extends toward Europe, it warms western European countries as well.

Why has the study predicted about the Gulf Stream?

The Atlantic Meridional Overturning Circulation (AMOC), which includes the Gulf Stream governs the climate by bringing warm, tropical waters north and cold water south.

The study estimates a timescale for the collapse of AMOC between 2025 and 2095 with a central estimate of 2050, if global carbon emissions are not reduced.

The last time AMOC stopped and restarted was during the Ice Ages about 115,000 to 12,000 years ago.

Impact of collapse of AMOC: A collapse of AMOC would have disastrous consequences around the world, severely disrupting the rains that billions of people depend on for food in India, South America and west Africa.

– It would also increase storms and drop temperatures in Europe, and lead to a rising sea level on the eastern coast of North America. It would also further endanger the Amazon rainforest and Antarctic ice sheets.

Note: The most recent assessment by the Intergovernmental Panel on Climate Change concluded that Atlantic Meridional Overturning Circulation (AMOC) would not collapse as quickly as the study has suggested.

[46. Supreme Court to appoint DERC chairperson: What is the Delhi govt, L-G tussle over the post](#)

Source: The post is based on the article “**Supreme Court to appoint DERC chairperson: What is the Delhi govt, L-G tussle over the post**” published in **Indian Express on 28th July 2023**

What is the News?

The Supreme Court has said that it will appoint a chairperson for the Delhi Electricity Regulatory Commission (DERC) on an ad hoc basis.

This order comes since the Delhi government and Lieutenant Governor (L-G) failed to arrive at a consensus on the name.

What is the issue between the Delhi government and Lieutenant Governor (L-G) over the DERC Chairman appointment?

The post of Delhi Electricity Regulatory Commission (DERC) chairperson fell vacant. After this, the Delhi government appointed a retired judge for the post and sent the file to L-G.

The LG office returned the file asking that a legal opinion on the appointment be sought from the Delhi High Court Chief Justice.

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The Delhi government went to Delhi High Court against this. The court ruled in its favour and said that the Lieutenant Governor cannot suppress a government like this and asked that the new chief be appointed in two weeks' time.

In the meantime, the Centre promulgated the Government of National Capital Territory of Delhi (Amendment) Ordinance which said that appointments of chiefs of autonomous commissions and boards will be done by the President. This power is usually delegated to the L-G as the administrator.

Based on this ordinance, the President appointed the Chairperson of DERC. The Delhi government challenged this decision in the Supreme Court.

It said that since power was a transferred subject falling under the jurisdiction of the elected government of a state or a Union territory, the Centre did not have the right to make an appointment.

The matter was then heard by the Supreme Court which stayed the appointment.

What is happening now?

Since the Delhi government and L-G have not been able to suggest a common candidate for DERC Chairperson, the Supreme Court has decided to make an appointment as an “ad-hoc” measure.

[47. Union Minister launches Resource Efficiency Circular Economy Industry Coalition in Chennai](#)

Source: The post is based on the article “**Union Minister launches Resource Efficiency Circular Economy Industry Coalition in Chennai**” published in **PIB on 27th July 2023**.

What is the News?

The Union Minister of Environment, Forest and Climate Change has launched a Resource Efficiency Circular Economy Industry Coalition (RECEIC).

It was launched on the sidelines of the 4th environment and climate sustainability working group meeting and ministerial talks taking place in Chennai, Tamil Nadu.

What is the Resource Efficiency Circular Economy Industry Coalition (RECEIC)?

Resource Efficiency Circular Economy Industry Coalition (RECEIC) was conceived during India's G20 Presidency.

Purpose: It is an industry-led initiative that aims to promote resource efficiency and circular economy practices.

Aim: To facilitate and foster greater company-to-company collaboration, build advanced capabilities across sectors and value chains, bring learnings from diverse and global experiences of the coalition members and unlock on-ground private sector action to enhance resource efficiency and accelerate circular economy transition.

Pillars: The Coalition is structured around the three guiding pillars of 1) partnerships for impact 2) technology cooperation and 3) finance for scale.

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Members: The Coalition has founding members representing 39 companies from 11 countries. Some of the founding members include companies like Maruti Suzuki, Coca Cola, Unilever, Nestle, Aditya Birla Group, Tata Power and Mahindra & Mahindra.

Significant role to be played by Coalition: RECEIC may be invited to the G20 Resource Efficiency Dialogue for annual convenings as well as sharing their experiences with the G20 and highlighting success factors to enhance resource efficiency and circular economy.

– RECEIC will also act as an overarching platform enabling industries to address information gaps and coordination challenges across the G20 members.

48. [Discovered: A mechanism that quietly removes unfit cells before you're born](#)

Source: The post is based on the article “**Discovered: A mechanism that quietly removes unfit cells before you're born**” published in **The Hindu on 26th July 2023**.

What is the News?

Scientists have found that cells that don't express a particular gene are destroyed before an embryo starts to develop.

What are non committed cells?

In the early stages of the human embryo, before it has implanted in the mother's womb, the cells arrange themselves in a particular way.

A blob of cells gathers towards one side of the embryo and the other cells arrange themselves around this blob. This blob is called the **inner cell mass**. It contains cells with the ability to make all the other types of cells in the human body – i.e. the cells in this blob are **pluripotent**.

Within the inner cell mass, researchers in 2016 had discovered a novel group of cells called **non-committed cells**.

These non-committed cells did not participate in the later stages of embryo development and appeared to be eliminated early on compared to the other inner cell mass cells, which contributed to forming the developing embryo.

Why do these non committed cells die so young?

A study has found that human embryonic stem cells express a gene called **HERVH**, a virus-like gene that's important in maintaining pluripotency.

Most of the inner cell mass cells also express HERVH – but not the non-committed cells that eventually die.

The non committed cells actually express **transposons also called “jumping genes”**. These jumping genes are dangerous little pieces of DNA that can insert themselves into different regions of the genome, damaging it and leading to cell death. The DNA damage caused by the transposons leads to these cells dying out early

On the other hand, HERVH actually ends up protecting the cells from the damage inflicted by the jumping genes, kickstarting a protective mechanism that prevents the transposons from getting expressed in most cells.

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But the non-committed cells that don't express HERVH are killed off by the uncontrolled transposon activity.

49. [Centre launches Technological Advancements in Crop Insurance to Empowering Farmers and Streamlining Operations in PMFBY](#)

Source: The post is based on the article “**Centre launches Technological Advancements in Crop Insurance to Empowering Farmers and Streamlining Operations in PMFBY**” published in **PIB on 21st July 2023**.

What is the News?

The Ministry of Agriculture and Farmers Welfare has launched several new technological initiatives under the [Pradhan Mantri Fasal Bima Yojana \(PMFBY\)](#) and [Restructured Weather Based Crop Insurance Scheme\(RWBCIS\)](#).

What are the technological initiatives launched under PMFBY and RWBCIS?

YES-TECH Manual: It is a comprehensive guide developed after extensive testing and piloting in 100 districts of India. It facilitates the implementation of Yield Estimation System, based on Technology (YES-TECH)

– YES-TECH is a technology-driven yield estimation system, offering methodologies, best practices and integration insights for accurate yield assessments at the Gram Panchayat level.

Weather Information Network Data Systems(WINDS) portal: It is a centralized platform that hosts, manages and processes hyper-local weather data collected by Automatic Weather Stations and Rain Gauges at Taluk/Block and Gram Panchayat levels.

– The portal enhances risk assessment and decision-making in crop insurance, agriculture advisories, and disaster mitigation, supporting the agricultural sector and rural economy.

AIDE mobile app: It is a mobile application specifically developed to streamline the enrollment process for farmers in crop insurance schemes like Pradhan Mantri Fasal Bima Yojana (PMFBY) and Restructured Weather-Based Crop Insurance Scheme (RWBCIS).

– It brings the enrolment process directly to the doorstep of farmers. This will ensure a seamless and transparent process, making crop insurance more accessible and convenient for farmers.

50. [Three new lakes may form in Parkachik Glacier in Ladakh due to glacial retreat](#)

Source: The post is based on the article “**Three new lakes may form in Parkachik Glacier in Ladakh due to glacial retreat**” published in **PIB on 28th July 2023**.

What is the News?

A study by scientists of Wadia Institute of Himalayan Geology has found that three glacial lakes are likely to form around Parkachik Glacier in Ladakh due to rapid ice melt.

What is Parkachik Glacier?

Parachik Glacier is a mountain glacier located in Ladakh.

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It is one of the largest glaciers in the Suru River valley, covering an area of 53 square km and is 14 km long.

The Suru River valley is a part of the southern Zaskar Ranges in the western Himalayas.

What are the reasons for the rapid melting of Parkachik Glacier?

There are two main reasons for the rapid melting of the Parkachik glacier: 1) first is global warming and increasing temperatures in the region and 2) second is that it is at a lower altitude than other glaciers in the Zaskar region.

Impact: The glacial melt is worrying as it not only increases chances of glacial lake outbursts but can also lead to paucity of water, glaciers being the region's primary source of water.

– The most catastrophic glacial lake outburst that India has faced in recent years resulted in the 2013 Kedarnath flash floods.

51. [What is Urea Gold launched by PM in Rajasthan](#)

Source: The post is based on the article “**What is Urea Gold launched by PM in Rajasthan**” published in **CNBCTV18 on 27th July 2023**.

What is the News?

The Prime Minister has launched “Urea Gold” during an event in Rajasthan.

What is Urea Gold?

Urea Gold is a new variety of Urea fertilizer that is coated with sulphur. It is being introduced to address the Sulphur deficiency in soil and reduce input costs for farmers.

What are the benefits of Urea Gold compared to other varieties of Urea?

Firstly, Urea Gold facilitates a gradual release of nitrogen, thereby enhancing its availability and uptake by crops.

Secondly, the inclusion of humic acid in Urea Gold further extends its lifespan as a fertilizer.

Thirdly, it is more economical and efficient than neem-coated urea.

Fourthly, Urea Gold not only substitutes traditional urea consumption but also reduces overall fertilizer usage.

– According to a report, 15 kg of Urea Gold provides comparable benefits to 20 kg of conventional urea, making it a more efficient and effective choice for farmers.

Fifthly, it will save input costs for the farmers and also raise incomes for farmers with enhanced production and productivity.

52. [Worms revived after 46,000 years in Siberian permafrost](#)

Source: The post is based on the article “**Worms revived after 46,000 years in Siberian permafrost**” published in **Livemint on 29th July 2023**.

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What is the News?

Scientists have revived a worm that was frozen 46,000 years ago in Siberian Permafrost.

What did the scientists discover?

In 2018, Scientists from Russia's Institute of Physicochemical and Biological Problems in Soil had discovered two species of microscopic nematode in Siberian Permafrost.

These worms have been frozen since the late Pleistocene era, which is around 46,000 years ago.

After analyzing the specimens, they've claimed at least one is from an entirely new species, which they have called them as **Panagrolaimus kolymaensis**.

Scientists revived one of the worms by rehydrating them with water and took other worms for further analysis.

How did these worms survive 46,000 years?

Many animals like nematodes, and more famously, tardigrades, can survive extreme conditions by entering a dormant state called "**cryptobiosis**".

Organisms in a cryptobiotic state can survive the complete absence of water and oxygen and withstand other extreme conditions including heat and cold in a "state between life and death."

The scientists also tested the hardiness of the ancient worms by mildly drying them in the laboratory. When they did that, the worms produced a sugar called **trehalose**, which might be helping them survive harsh desiccation (drying) and freezing.

What is the significance of this study?

This study increases the longest documented cryptobiosis period in nematodes by tens of thousands of years.

Further, this study also shows how animals can adapt to habitat change caused by climate change at a molecular level and survive despite changing weather patterns.

[53. National Waterways Project](#)

Source: The post is based on the article "**National Waterways Project**" published in **PIB on 28th July 2023**.

What is the News?

The Union Minister for Ports, Shipping and Waterways has informed Lok Sabha about the initiatives taken for developing National Waterways.

National Waterways for cargo and passenger movement:

Currently, 111 waterways, including 5 existing and 106 new ones, across 24 States have been declared National Waterways(NWs) under the National Waterways Act, 2016.

Out of these, 26 NWs were found feasible for cargo and passenger movement based on techno economic feasibility studies and Detailed Project Reports (DPRs) and an action plan has been formulated for their development.

Presently, development initiatives are underway for 20 of these NWs.

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What are the challenges in the development of National Waterways?

The development of National Waterways faces significant challenges such as:

- 1) varying and limited depths during lean seasons due to excessive upstream water utilization, causing meandering and braiding of alluvial rivers and erosion of banks leading to excessive siltation
- 2) insufficient cargo earmarked for Inland Water Transport (IWT)
- 3) non-mechanized navigation lock systems
- 4) inadequate unloading facilities at terminals
- 5) clearance issues due to cross structures
- 6) first and last mile connectivity problems
- 7) lack of vessel financing options and
- 8) logistics and shipping market apprehension to shift without policy support, which hinders the use of IWT by shippers.

54. Leg-up for lithium hunt as LS passes mining Bill

Source: The post is based on the article “**Leg-up for lithium hunt as LS passes mining Bill**” published in **Livemint on 29th July 2023**.

What is the News?

Lok Sabha has approved the Mines and Minerals (Development and Regulation Amendment) Bill, 2023.

What is Mines and Minerals (Development and Regulation Amendment) Bill, 2023?

The Bill amends the Mines and Minerals (Development and Regulation) Act, 1957 which regulates the mining sector.

The bill seeks larger participation of the private sector in mineral exploration and production.

How does the bill help in Lithium production?

The Bill brings lithium out from the list of restrictive atomic minerals which require mining grants from the Centre with only government companies given licenses.

This would allow auction of this critical mineral used extensively for making batteries for electric vehicles.

What are the other key provisions of the bill?

Critical and strategic minerals: The bill proposes to bring eight of 12 atomic minerals, including lithium bearing minerals, zirconium bearing minerals, beach sand minerals, titanium bearing minerals, minerals of rare earth group containing uranium and thorium, into a new category – critical and strategic minerals.

– The Centre will have the power to give concessions for these minerals to both public and private mining companies.

Auctioning of high value minerals: The bill empowers the central government to exclusively auction mining leases and composite exploration licenses for certain critical high value minerals such as gold, silver, platinum, copper.

Forest clearances: The Bill also dispenses with cumbersome forest clearances for mine reconnaissance and prospecting operations, making it easier for private firms to participate in exploration of the country’s mineral resources.

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Composite general License: The bill empowers states to grant composite mineral license without having to get a central nod. This is expected to enable state governments to put up blocks for auction at a faster pace.

[55. PM says India can become hub of chip-making industry](#)

Source: The post is based on the article “**PM says India can become hub of chip-making industry**” published in **The Hindu on 29th July 2023**.

What is the News?

The Prime Minister has inaugurated the ‘Semicon India 2023’ conclave in Gujarat. This is the second edition of the conference, which was first held in 2022.

What is Semicon India 2023?

Organized by: [India Semiconductor Mission](#) in partnership with industry and industry associations.

Aim: To make India a global hub for Semiconductor Design, Manufacturing and Technology Development which will help propel the vision of India Semiconductor Mission.

Theme: “Catalysing India’s Semiconductor Ecosystem”

What are the key highlights from PM’s address at Semicon India 2023?

India would emerge as a global hub of semiconductor and chip-making industry.

India has made huge progress in the electronic manufacturing sector which has grown from \$30 billion to over \$100 billion.

India’s exports of electronic manufacturing have doubled in the past few years and today has over 200 mobile manufacturing units.

Broadband users in the country have increased from 60 million in 2014 to 800 million.

India has identified more than 300 colleges where semiconductor courses will be available. In the next 5 years, we will have more than 1 lakh Semicon design engineers.

[56. Land-use changes putting rocky addresses of animals under stress in Sahyadri plateau](#)

Source: The post is based on the article “**Land-use changes putting rocky addresses of animals under stress in Sahyadri plateau**” published in **The Hindu on 29th July 2023**.

What is the News?

According to a study, rapid shift from traditional local grain cultivation to monoculture plantations of mango and cashew in the Sahyadri plateaus of Maharashtra is impacting elusive amphibians, insects, and reptiles that live under a crop of loose rocks.

About the study:

A team of scientists investigated how animals, from ants to snakes are responding to land-use changes in the loose rocks.

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Scientists focused on several animals, including the white-striped viper gecko, Seshachari's caecilian, saw-scaled viper, ants, spiders, and scorpions.

These animals seek refuge among loose rocks which protect them from extreme weather conditions.

However, the rapidly changing agricultural trends such as abandonment of traditional local grain cultivation and the establishment of mango and cashew monoculture plantations is leading to the destruction of natural plateaus.

For instance, the rapid expansion of mango orchards has resulted in the conversion of more than 25,000 hectares of lateritic plateaus.

This has impacted elusive amphibians, insects, and reptiles that live under a crop of these loose rocks.

[57. ADB, India sign \\$200 million loan for expanding urban services in Rajasthan](#)

Source: The post is based on the article **“ADB, India sign \$200 million loan for expanding urban services in Rajasthan”** published in **PIB on 28th July 2023**.

What is the News?

The Government of India and Asian Development Bank (ADB) today signed a \$200 million loan as additional financing for the ongoing Rajasthan Secondary Towns Development Sector Project.

What is the Rajasthan Secondary Towns Development Sector Project?

Aim of the project: To expand water supply and sanitation systems, while also enhancing urban resilience and promoting heritage conservation in selected towns.

The project will incorporate various innovative and climate-resilient solutions for expanding basic urban services such as incorporating nature-based solutions to rehabilitate heritage structures, piloting public-private partnerships in the state's water and sanitation sector among others.

What is the Asian Development Bank(ADB)?

The Asian Development Bank (ADB) is a regional development bank setup in 1996.

Purpose: ADB assists its members, and partners, by providing loans, technical assistance, grants, and equity investments to promote social and economic development.

Members: From 31 members at its establishment in 1966, ADB has grown to encompass 68 members—of which 49 are from within Asia and the Pacific and 19 outside.

Shares: As of 2022, ADB's five largest shareholders are Japan and the United States (each with 15.6%), the People's Republic of China (6.4%), India (6.3%), and Australia (5.8%).

Headquarters: Manila, Philippines.

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[58. A supermassive black hole is firing high-energy particle jet towards Earth](#)

Source: The post is based on the article “**A supermassive black hole is firing high-energy particle jet towards Earth**” published in **Indian Express on 26th July 2023**.

What is the News?

NASA's IXPE Mission has unveiled several mysteries of the Supermassive Black Hole Markarian 421.

It has found that Markarian 421 is firing a jet of high-energy particles aimed directly at Earth.

What is Markarian 421?

Markarian 421 is a supermassive black hole. It is about 400 million light-years away from the earth.

It is located in the constellation Ursa Major.

What is the IXPE Mission?

[Click Here to read](#)

What is a Supermassive Black Hole?

Supermassive black holes are extremely large and incredibly dense regions in the centers of most galaxies, including our own Milky Way galaxy.

They are characterized by their immense gravitational pull, which is so strong that nothing, not even light, can escape from them once it crosses a point called the event horizon. These black holes have masses that range from hundreds of thousands to billions of times that of our sun.

The origin of supermassive black holes is not entirely understood, but they are thought to have formed and grown through a combination of processes, including accretion of gas and the merging of smaller black holes over billions of years.

Supermassive black holes are associated with powerful phenomena, such as active galactic nuclei (AGNs) and quasars, where vast amounts of energy are released as material falls into the black hole and emits intense radiation

Studying supermassive black holes helps astronomers better understand the evolution of galaxies, the interactions between black holes and their surrounding environments, and the fundamental nature of gravity and space-time in extreme conditions.

[59. The 'free movement regime' along the India-Myanmar border, and why it has complicated the volatile situation in Manipur](#)

Source: The post is based on the article “**The 'free movement regime' along the India-Myanmar border, and why it has complicated the volatile situation in Manipur**” published in **Indian Express on 29th July 2023**.

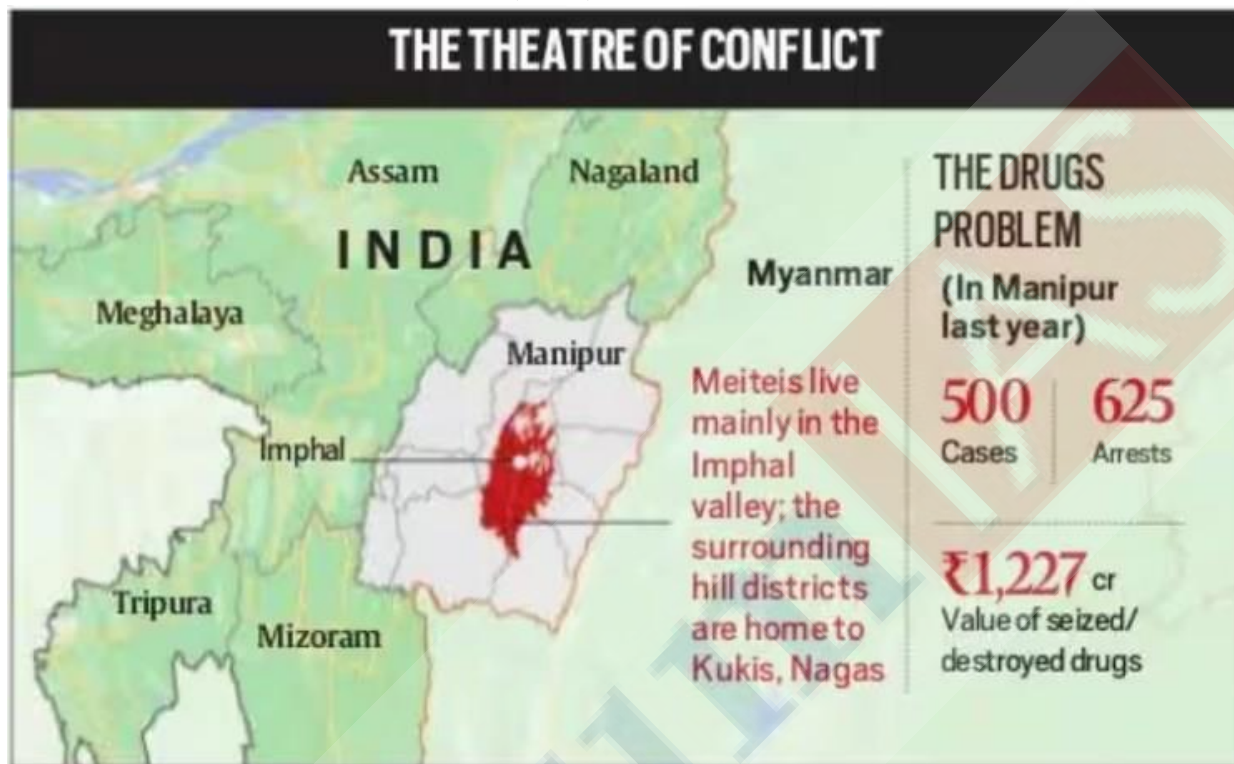
What is the News?

Tribal Kuki-Chin people illegally migrating into India from Myanmar is one of the key issues in the ethnic conflict between Meiteis and Kukis in Manipur.

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Due to this, questions have been raised on the Free Movement Regime (FMR) that facilitates migration across the Indo-Myanmar Border(IMB).

What is the Free Movement Regime (FMR) on the IMB?



Source: Indian Express

The border between India and Myanmar runs for 1,643 km in the four states of Mizoram, Manipur, Nagaland, and Arunachal Pradesh.

The FMR is a mutually agreed arrangement between the two countries that allows tribes living along the border on either side to travel up to 16 km inside the other country without a visa.

The FMR was implemented in 2018 as part of the India government's Act East policy.

However, as the crisis in Myanmar unfolded, India suspended the FMR in September 2022.

Why was the Free Movement Regime(FMR) conceptualized?

The border between India and Myanmar was demarcated by the British in 1826, without seeking the opinion of the people living in the region.

The border effectively divided people of the same ethnicity and culture into two nations without their consent.

Hence, FMR facilitates people-to-people contact. It was also supposed to provide impetus to local trade and business.

Why is the Free Movement Regime (FMR) criticized now?

FMR has been criticized for unintentionally aiding illegal immigration, drug trafficking, and gun running.

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The Indo-Myanmar border runs through forested and undulating terrain, is almost entirely unfenced, and difficult to monitor. In Manipur, less than 6 km of the border is fenced.

Since the military coup in Myanmar in 2021, the ruling junta has launched a campaign of persecution against the Kuki-Chin peoples. This has pushed large numbers of Myanmar tribes into India, especially into Manipur and Mizoram where they have sought shelter.

