

DAILY CURRENT AFFAIRS (DCA)

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LOK SABHA SPEAKER EXPRESSES CONCERN OVER FREQUENT DISRUPTIONS IN LEGISLATURES

Context

- Recently Lok Sabha Speaker highlighted that frequent disruptions in Parliament and State Legislatures pose a serious challenge to democratic institutions.

Role of Legislatures in a Democracy

- **Law-making:** Legislatures enact laws that govern the country and address emerging social, economic, and political challenges.
- **Executive Accountability:** Legislatures hold the executive accountable through debates, Question Hour, motions, and committee scrutiny.
- **Representation of People's Interests:** Legislatures provide a platform for elected representatives to articulate the concerns and aspirations of citizens.
- **Policy Deliberation:** Legislatures facilitate informed discussions on public policies, budgets, and developmental priorities.

Parliamentary & Legislative Disruptions

- Parliamentary and legislative disruptions refer to **repeated interruptions, adjournments, protests, and disorderly conduct** that prevent legislatures from effectively performing their constitutional functions.
- While disruptions have existed since the early decades of independence, their **frequency and intensity have increased** significantly since the **1990s** with the rise of coalition politics and competitive parliamentary obstruction.
- **Declining Legislative Productivity in India:**
 - ♦ **The 17th Lok Sabha (2019–2024)** held only **274 sittings** across **15 sessions**, the lowest for any full-term Lok Sabha in Indian history.
 - ♦ The proportion of Bills referred to **Parliamentary Standing Committees** declined from **71%** during the **15th Lok Sabha (2009–14)** to **27%** during the **16th Lok Sabha (2014–19)** and around **16%** during the **17th Lok Sabha (2019–24)**.
 - ♦ During the Monsoon Session 2025, the **Lok Sabha** functioned for only **29%** of its scheduled time, while the **Rajya Sabha** functioned for only **34%** of its scheduled time.

Causes of Frequent Disruptions

- **Political Polarisation:** Increasing political confrontation often leads to disruptions becoming a preferred mode of protest.
- **Search for Public Attention:** Political parties sometimes use disruptions to attract media coverage and highlight contentious issues.
- **Contentious Issues and Lack of Consensus:** Key policy matters such as economic reforms, minority rights, and constitutional amendments frequently lead to walkouts and protests.
 - ♦ **Laws like Farm Bills (2020), Citizenship Amendment Act (2019), and GST rollout (2017)** triggered walkouts and protests.
- **Weak Adherence to Parliamentary Norms:** Declining respect for parliamentary conventions and decorum contributes to disorderly proceedings.
- **Limited Consensus-Building:** Insufficient dialogue among political parties often results in legislative deadlocks and disruptions.

How do Frequent Disruptions Affect Democracy?

- **Weaken Executive Oversight:** Repeated adjournments diminish the effectiveness of accountability mechanisms such as **Question Hour and parliamentary debates**.
- **Reduce Legislative Productivity:** Disruptions result in the loss of valuable working hours and delay the passage of important legislation.
- **Erode Public Trust:** Persistent disorderly conduct **lowers citizens' confidence** in democratic institutions and elected representatives.
- **Increase Financial Costs:** Frequent interruptions lead to the wastage of public resources spent on conducting legislative sessions.

Way Ahead

- **Enforce Parliamentary Discipline:** Legislative rules and codes of conduct should be strictly enforced to discourage disruptive behaviour.
- **Strengthen Committee Systems:** Parliamentary committees should be empowered to undertake detailed examination of policies and legislation.
- **Encourage Constructive Opposition:** Political parties should prioritise substantive debate and policy engagement over obstructionist tactics.
- **Foster Citizen Engagement:** Greater public participation can improve transparency, accountability, and trust in democratic institutions.

Concluding remarks

- Frequent disruptions weaken legislative effectiveness, undermine democratic accountability, and erode public confidence, making it essential to promote parliamentary decorum, constructive debate, and institutional strengthening to realise the vision of Viksit Bharat.

Source: TH

WATER CONTAMINATION IN URBAN AREAS

Context

- In the South Delhi colony of Gulmohar Park, drinking water pipelines have been delivering sewage-contaminated water for over two weeks now.

Water Contamination

- **Water contamination** occurs when harmful substances mix with water, either due to natural processes or human activities, and exceed safe permissible limits.
 - ♦ **Biological contamination** occurs due to pathogens such as bacteria, viruses, protozoa, and parasites (e.g., E. coli, cholera bacteria).
 - ♦ **Chemical contamination** results from industrial effluents, pesticides, heavy metals, and excess nutrients.
 - ♦ **Physical contamination** includes sediments, plastics, and suspended solids.
 - ♦ **Radiological contamination** involves radioactive substances entering water sources.

Why does sewage mix with drinking water?

- **Leakages in water pipelines:** Sewage enters through cracks and damaged joints in water pipes. Risk increases when pipelines are old, corroded or damaged during construction activities.
- **Intermittent water supply:** Most Indian cities supply water only for a few hours daily. Empty or low-pressure pipes create suction, allowing contaminated water to enter through leaks.
- **Ageing urban infrastructure:** Many pipelines were laid decades ago and have exceeded their design life. Lack of regular maintenance increases contamination risks.
- **Poor sewage management:** A large share of urban households lack access to organized

sewer networks. Septic tanks and untreated effluents often discharge into drains and water channels.

Structural Challenges in Urban Water Governance

- Lack of comprehensive digitised maps of water and sewer networks.
- Fragmented responsibilities among multiple agencies.
- Weak coordination between water supply and sewage departments.
- Large informal settlements with inadequate water and sanitation infrastructure.
- Existing standards focus on water quality but not on service delivery mechanisms.

Concerns of Water Contamination in Urban Areas

- **Health Hazards:** Spread of water-borne diseases such as cholera, typhoid, dysentery, and hepatitis leading to an increased burden on public healthcare systems.
- **Economic Costs:** Higher household expenditure on bottled water, water purifiers, and medical treatment.
- **Environmental Degradation:** Due to poor wastewater management and pollution of urban water bodies.
- **Social Inequity:** Low-income households are less able to access alternative safe water sources.
- **Risk to Urban Resilience:** Frequent contamination incidents undermine sustainable urban development and public confidence in civic services.

Constitutional and Legal Provisions

- **Article 21 of the Constitution** guarantees the Right to Life, which includes access to safe drinking water.
 - ♦ **Subhas Kumar v. State of Bihar (1991):** The Supreme Court held that the right to live under Article 21 includes the right to enjoy pollution-free water and air.
 - ♦ **A.P. Pollution Control Board II v. Prof. M.V. Nayudu (1999):** The court stated that access to safe drinking water is fundamental to life.
- **Article 243W** empowers Urban Local Bodies to manage water supply, sanitation, and public health.
- **Article 47** of the Indian Constitution, part of the **Directive Principles of State Policy (DPSP)**, directs the State to raise the level of nutrition, standard of living, and improve public health.

Government initiatives

- **Solid Waste Management Rules, 2016:** Mandates segregation of waste at source into biodegradable, non-biodegradable, and domestic hazardous waste.
 - ♦ Promotes waste processing through composting, bio-methanation, and waste-to-energy technologies.
- **Swachh Bharat Mission (SBM): SBM-Urban** focuses on 100% door-to-door waste collection and encourages source segregation.
 - ♦ **SBM-Rural** promotes biodegradable waste composting and bio-gas plants in villages.
- **Smart Cities Mission** promotes technology-driven monitoring of civic services, including water systems.
- **The Atal Mission for Rejuvenation and Urban Transformation (AMRUT)** aims to develop robust sewage networks and treatment plants to manage urban waste.

Way Ahead

- **Urban local bodies** should prioritise replacement and modernisation of ageing water and sewer pipelines.
- **Real-time, sensor-based** water quality monitoring should be institutionalised across urban networks.
- **Decentralized Wastewater Treatment Systems (DEWATS):** Implementing small-scale, localized treatment units (e.g., in housing societies or parks) to reduce the burden on main sewer lines.
- **Independent third-party audits** of water infrastructure must be made mandatory.

Source: IE

UNDERSTANDING THE FALL IN INDIA'S NET FOREIGN DIRECT INVESTMENT (FDI)

Context

- India's net Foreign Direct Investment (FDI) has witnessed a sharp decline in recent years despite strong gross inflows.

What is Foreign Direct Investment (FDI)?

- It refers to **investments made by foreign entities** (individuals or companies) in the business interests of another country, typically in the form of **ownership or control of enterprises**.

- At present, **FDI is prohibited** in lottery, gambling and betting, chit funds, Nidhi company, real estate business, and manufacturing of cigars, cheroots, cigarillos and cigarettes using tobacco.
- **Net FDI:** It represents the difference between **foreign investment entering the country and capital flowing out** through disinvestment and repatriation.
 - ♦ **A decline in net FDI** does not necessarily imply a fall in investor interest, as gross inflows may remain strong.
 - ♦ India's net FDI fell dramatically from **\$44 billion in 2020-21** to less than **\$1 billion in 2024-25**, before recovering modestly to **\$7.6 billion in 2025-26**.
 - ♦ This decline occurred despite a substantial gross FDI inflow of **\$94.6 billion in 2025-26**, indicating that large capital outflows are offsetting fresh inflows.

Evolution of India's FDI Policy

- The economic reforms of **1991 promoted FDI** primarily to acquire advanced technology, enhance exports, and conserve foreign exchange reserves.
- Over time, policy emphasis shifted towards **attracting larger volumes of foreign capital** and improving India's investment attractiveness.
- Consequently, concerns relating to the quality of investment, technology transfer, and future external payment obligations received relatively less attention.

Different Types of FDI Investors

- **Real FDI (RFDI):** Real FDI is undertaken by **multinational corporations** that establish **production facilities and service operations** in the host country.
 - ♦ Such investments generally bring **technology, managerial expertise, employment generation**, and long-term industrial development.
 - ♦ Real FDI is considered the **most beneficial form of FDI** from a developmental perspective.
 - ♦ It accounted for **only 41.9%** of effective inflows during 2022-23 to 2025-26.
- **Financial Investors:** Financial investors include private equity funds, venture capital firms, sovereign wealth funds, and asset management companies.

- ◆ Their primary objective is **earning capital gains** rather than building long-term productive capacity.
- ◆ They accounted for **40.5% of effective inflows**, nearly matching the share of Real FDI.
- **Diaspora investments and special purpose vehicles (SPVs):** Diaspora investors and Special Purpose Vehicles (SPVs) contributed **17.6% of effective inflows**.
 - ◆ These investments are often routed through **offshore financial centres** and may involve **round-tripping of domestic capital**.

Routes for FDI in India

- **Automatic Route:** No prior approval is required.
 - ◆ Investors need to inform the **Reserve Bank of India (RBI)** after making the investment.
 - ◆ Most sectors, such as manufacturing and software, fall under this route.
- **Government Approval Route:** Requires prior approval from the concerned Ministry or Department.
 - ◆ Sectors such as telecom, media, pharmaceuticals, and insurance fall under this route.

Why Has Net FDI Declined?

- **Rising Disinvestment and Capital Repatriation:** The principal reason for weak net FDI is the growing scale of investor exits and capital repatriation.
 - ◆ During calendar year 2025, total recorded divestment reached **\$52 billion**.
 - ◆ Of this, **45 major private equity** and venture capital exits accounted for nearly **\$29 billion**.
- **Declining Manufacturing-Oriented FDI:** Manufacturing FDI has declined across **three consecutive four-year periods**.
 - ◆ Real FDI into manufacturing accounted for only **10.6%** of total effective inflows during the latest **four-year period**.
- **Rising Outward Foreign Direct Investment (OFDI):** India's outward FDI has increased significantly in recent years.
 - ◆ **Between 2023-24 and 2025-26**, Indian firms invested nearly **\$65 billion** abroad.
 - ◆ **The International Financial Services Centre (IFSC) at GIFT City** is emerging as an important conduit for **cross-border capital flows**.

- ◆ OFDI routed through GIFT City increased from **\$246 million in 2023-24** to **\$1.18 billion in 2025-26**.

What are the Concerns?

- **Financialisation of FDI:** The growing share of financial investors may reduce technology transfer and long-term industrial benefits.
- **Weak Manufacturing FDI:** The declining share of manufacturing-oriented FDI could hamper industrialisation, employment generation, and exports.
- **Declining Net FDI:** Rising disinvestment and capital repatriation have significantly reduced net foreign exchange gains.
- **Gross vs Net FDI Gap:** Strong gross inflows may mask the underlying weakness in net FDI and investment quality.
- **Capital Recycling Risks:** The use of SPVs and offshore financial centres can obscure the true nature of investment flows.

Way Ahead

- **Prioritise Quality over Quantity:** India should focus on attracting technology-intensive, export-oriented, and employment-generating FDI rather than merely maximizing inflow volumes.
- **Promote Manufacturing FDI:** Policy support should encourage greenfield investments in manufacturing to strengthen industrial capacity and integration with global value chains.
- **Enhance Transparency in FDI Reporting:** Official data should distinguish between Real FDI, financial investments, and SPV-based flows to enable better policy assessment.
- **Strengthen Domestic Competitiveness:** Improving infrastructure, logistics, ease of doing business, and innovation ecosystems can attract more productive and sustainable investments.

Source: TH

INDIAN RESERVOIRS CAN HOST 102 GW FLOATING SOLAR CAPACITY: REPORT

Context

- **India's reservoirs** can host about **102 gigawatt (GW) of floating solar capacity**, according to the first comprehensive national assessment by the **National Institute of Solar Energy (NISE)**.

Major Highlights

- **Report: Solar PV Potential of India (Floating Solar).**
- **Total FSPV Potential:** It estimates India's total floating solar (FSPV) potential at around 102.18 GW, with a constraint of using **only 20% of the reservoir area**.
- **Region wise Potential:** High concentrations in Maharashtra, Madhya Pradesh, Karnataka, Odisha, Telangana and Gujarat, reflecting the availability of large, technically suitable reservoirs and inland water bodies.
- **Complimentary to Ground-mounted PV:** Floating solar is a significant and scalable complement to ground-mounted PV in India's renewable energy portfolio.
- **Water Conservation:** FSPV also contributes to water conservation by shading water bodies, thereby reducing evaporation by 30–60%. Large scale projects demonstrate the impact of saving nearly 19.5 million cubic meters of water per year.
- **Economically, FSPV systems are currently approximately 25% more expensive** upfront than land-based solar due to floating structures, anchoring, and waterproofing.
 - ◆ However, higher efficiency, land savings, water conservation, reduced transmission costs, and hybrid integration **improve long-term financial viability**.
- **Comparison to Ground-mounted solar systems:** Ground-mounted solar systems dominate India's roughly 100 GW of installed solar capacity, **requiring three to four times more area** per megawatt than the panels themselves occupy.
 - ◆ Land acquisition, which is costly, prone to conflict with agriculture and habitation, has historically and continues to be a chokepoint as India pursues 500 GW of non-fossil capacity by 2030.

India's Energy Targets

- **Emissions Intensity Reduction:** India has committed to reducing the emissions intensity (CO₂ per unit of GDP) of its GDP by **47%** by 2035 from 2005 levels.
 - ◆ India has already reduced its emissions intensity by about 36% between 2005 and 2020.

- **Expansion of Non-Fossil Fuel Capacity:** India has committed to achieving **60%** of its installed electric power capacity from non-fossil fuel sources by 2035.
 - ◆ India has already achieved more than **50%** non-fossil fuel capacity by 2026, ahead of its earlier target.
- **Creation of Carbon Sink:** India has committed to creating a carbon sink of **3.5 to 4 billion tonnes** of CO₂ equivalent through forest and tree cover by 2035.

Floating Solar Photovoltaic (FSPV)

- Also known as "floatovoltaics," is a technology where **solar panels are installed on buoyant structures** floating on water bodies like reservoirs, lakes, and dams.

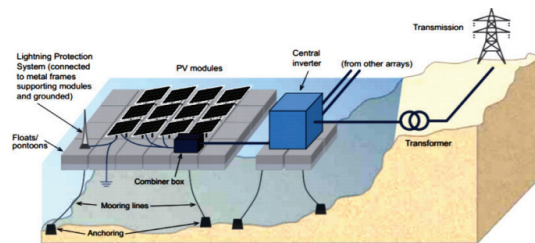


Figure 1. Typical schematic of FSPV plant⁴

- **Globally, floating solar reached about 9.6 GW by 2024, nearly 90% of it in Asia.**
 - ◆ China leads, with installations such as a 120 MW plant on a fish farm in Poyang Lake.
 - ◆ The **Netherlands** accounts for **roughly three-fourths of Europe's capacity**, built largely on quarry lakes.
- India's flagship is the **Omkareshwar floating solar park on the Narmada river in Madhya Pradesh** — at 278 MW, the country's largest, with plans to scale to 600 MW.

Key factors Driving the rise of FSPV:

- **Land-use Advantages:** FSPV uses water surfaces that typically have low competing demands. This reduces land acquisition challenges and minimises social conflicts compared to large GMPV installations.
- **Enhanced Energy Performance:** Water bodies provide a cooling effect on PV modules, which can reduce operating temperatures and potentially increase energy yield.
- **Synergy with Hydropower:** FSPV can be co-located with hydropower reservoirs, allowing shared infrastructure and enabling hybrid generation strategies.

- **Rapid Market Growth and Policy Momentum:** Countries like China, the Netherlands, Singapore, and South Korea have established dedicated guidelines. This standardisation effort is improving investor confidence and supporting utility-scale deployments.

Challenges

- Despite the rapid growth, FSPV still faces challenges related to system reliability, wave-induced stress, environmental uncertainties, and a lack of long-term performance datasets.
- The report underscores the need for better modelling frameworks, and robust degradation assessments.

Way Ahead

- **Development of a Dedicated Solar Potential Portal:** To enable more informed, transparent, and actionable planning, NISE is committed to developing a dedicated Solar Potential Portal.
- **Integration with National and State-Level Energy Planning:** NISE's periodic assessments and portal-based data will be directly linked to national and state energy planning frameworks.
 - ♦ **This will enable:** Prioritisation of high-potential zones for ultra-mega solar parks.
 - ♦ **Strategic allocation of resources** for grid strengthening and infrastructure development.
- Through a combination of continuous potential updates, a dedicated geospatial portal, and application-specific assessments, NISE aims to provide a scientific, transparent, and policy-relevant foundation for India's solar roadmap.

Source: TH

NEWS IN SHORT

BIRSA MUNDA

Context

- PM Modi paid tributes to Dharti Aaba Bhagwan Birsa Munda Ji on his martyrdom day.

About

- **Birsa Munda was born on 15th November 1875** in Ulihatu of the erstwhile Bengal Presidency (present day Jharkhand) .

- ♦ He was a legendary Indian tribal freedom fighter, religious leader, and folk hero from the Munda tribe.
- **Birsait religion:** He founded a new religion called “**Birsait**“ and declared himself as God's messenger. He believed in **One God**.
 - ♦ People of Munda and Oraon community joined the sect and challenged British conversion activities of tribals.
 - ♦ He was referred to as ‘**Dharti Abba or Father of Earth**’ by his followers.
- **Munda Rebellion:** It was the tribal movement led by Birsa Munda against the oppressions of the British Raj and local exploiters (Dikus).
 - ♦ It is also referred to as ‘**Ulgulan**’ or the ‘**Great Tumult**’.
 - ♦ In 1900 he was arrested in Jamkopai forest and passed away in custody (due to cholera).
 - ♦ **Outcome:** The British government introduced the **Chotanagpur Tenancy Act in 1908**, to prohibit the transfer of tribal land to **non-tribals (Dikus)**.
- **Janjatiya Gaurav Divas:** Observed on November 15 **since 2021** to honor his legacy.

Source: PIB

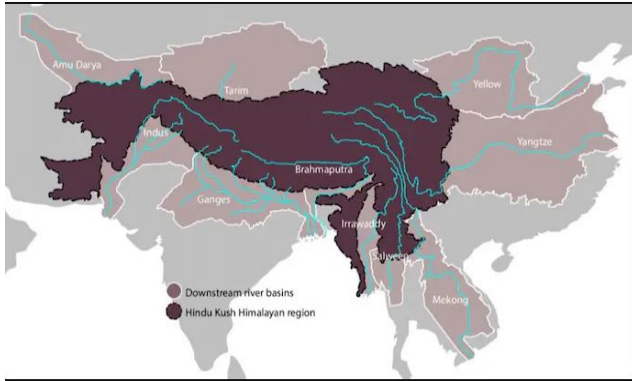
HINDU KUSH HIMALAYA

Context

- The HKH Monsoon Outlook 2026, projects below-normal rainfall and above-normal temperatures across the Hindu Kush Himalaya (HKH) region during the 2026 monsoon season.

Hindu Kush Himalaya (HKH)

- The HKH mountains extend around **3,500 km** over **eight countries** — Afghanistan, Bangladesh, Bhutan, China, India, Nepal, Myanmar, and Pakistan.
- These mountains are also called the “**water towers of Asia**” because they are the **origins of 10 crucial river systems** on the continent — Amu Darya, Indus, Ganga, Brahmaputra, Irrawaddy, Salween, Mekong, Yangtze, Yellow river, and Tarim.
- These river basins provide water to almost **one-fourth** of the world's population and are a significant freshwater source for **240 million people in the HKH region** .



Source: IE

Coal Sector in India

- India is the world's **second-largest producer and consumer of coal**. India has the **fifth-largest coal reserves** globally.
- Coal accounts for around 55% of India's primary commercial energy requirement and about **70% of electricity generation**.
- Major **coal-producing regions** are concentrated in states such as **Odisha, Jharkhand, Chhattisgarh, Madhya Pradesh, and West Bengal**.

Source: AIR

COAL EXCHANGE RULES, 2026

Context

- The Ministry of Coal has notified the Coal Exchange Rules, 2026, paving the way for the establishment of Coal Exchanges in the country to enable transparent and market-driven coal trading.

What is a Coal Exchange?

- A Coal Exchange is an electronic marketplace where **coal producers, consumers, traders, and other participants can buy and sell coal** through transparent trading mechanisms.
- It facilitates **efficient price discovery** based on market demand and supply conditions.

Key Features of the Coal Exchange Rules, 2026

- **Market-Based Trading:** The framework shifts coal marketing from the traditional one-to-many model (producer to multiple consumers) to a **many-to-many trading model**.
- **Price Discovery:** Coal prices will be determined through **market forces** rather than administrative allocations.
- **Regulatory Oversight:** The **Coal Controller Organisation (CCO)** is the nodal authority tasked with registering and overseeing these exchanges.
- **Exchange Registration:** Entities operating an exchange must be incorporated as a company in India with a minimum net worth of 50 crore. Registrations are granted for 25 years.
- **Transition Timeline:** Pre-existing electronic coal trading platforms must transition and register as a Coal Exchange within **six months** of the first registered exchange's commencement.
- **Demutualization:** The ownership and management do **not hold any trading rights** in the exchange.

DARK PATTERNS

Context

- According to a report, Indian consumers are losing an estimated 25,000 crore to 28,000 crore annually **due to dark patterns, across online marketplaces**.

About

- **Dark patterns** are user interface or user experience designs that manipulate, pressure, or mislead people into making choices they might not otherwise make.
- The term '**dark patterns**' was coined by **Harry Brignull in 2010**.
- It encompasses a wide range of **manipulative practices** such as drip pricing, disguised advertising, bait and click, choice manipulation, false urgency and privacy concerns.
- **Dark patterns can:**
 - ♦ Undermine informed consent.
 - ♦ Reduce user autonomy.
 - ♦ Lead to unintended purchases or data sharing.
 - ♦ Erode trust in products and companies.

India's Laws Related to Dark Patterns

- **Consumer Protection Act, 2019 & CCPA Guidelines, 2023:** The Consumer Protection Act empowers the Central Consumer Protection Authority (CCPA) to curb unfair trade practices.
 - ♦ The CCPA's Guidelines for Prevention and Regulation of Dark Patterns, 2023 explicitly prohibit deceptive practices such as false urgency, basket sneaking, confirm shaming, and subscription traps.
- **Consumer Protection (E-Commerce) Rules, 2020:** Require transparency in pricing,

advertisements, and terms of sale, and prohibit misleading practices on e-commerce platforms.

- **Digital Personal Data Protection Act, 2023:** Mandates free, informed, and unambiguous user consent for data processing, thereby discouraging dark patterns that manipulate users into sharing personal data.

Source: TH

DIGITAL ARREST

Context

- As per the National Human Rights Commission (NHRC), Indians have lost around 52,976 crore to cyber-enabled frauds over the past six years, with **nearly 8% of the losses linked to “digital arrest” scams.**

About

- A **digital arrest** refers to a cyber scam where fraudsters use fake video calls, forged IDs, and official-looking websites to falsely accuse individuals of crimes and coerce them into paying money.
 - ♦ **Emerging technologies** such as artificial intelligence, deepfakes and synthetic identities are likely to make such frauds more convincing and difficult to detect in the future.
- The Ministry of Home Affairs (MHA) and Indian Cyber Crime Coordination Centre (I4C) have issued public advisories.

Source: TH

NEW RULE REQUIRES FISH SURVIVAL TEST FOR CAUSTIC SODA INDUSTRY WASTEWATER

Context

- **Wastewater from caustic soda plants using membrane cell technology** will now have to pass

a **laboratory-based fish survival test** under new environmental standards notified by the Union government.

About

- The new standards apply to **standalone caustic soda plants that use membrane cell technology.**
 - ♦ **Membrane cell technology** uses a special membrane to control the chemical process and is considered **less polluting** than older mercury-based processes.
- The rules say **at least 90% of fish must survive** after 96 hours in 100% wastewater during laboratory-based bioassay testing.
 - ♦ The standards also set limits for **pH, chloride, suspended solids, dissolved solids, water use and wastewater generation.**
- Experts say enforcement will be key, as **bioassay testing requires specialised laboratories, trained staff and regular independent monitoring.**

Caustic soda

- **Caustic soda**, also known as **sodium hydroxide**, is one of India’s most widely used industrial chemicals.
- **It is used in industries such as** soap, detergents, paper, textiles, aluminium, petrochemicals and water purification.
- India has about **32 to 37 caustic soda plants**, with annual production of more than **five million metric tonnes.**
- But the industry can also pose environmental risks because its **wastewater is often highly alkaline and saline.** It may contain **chlorine, hydrochloric acid and high levels of dissolved solids.**

Source: DTE

