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INTERNET FREEDOM IN INDIA

Context

- India has consistently topped the **global list of countries imposing internet bans**, with approximately **60% of all recorded blackouts worldwide**.

About

- State imposed shutdowns in the last decade have cited **national security and threats to public order**.
- Shutdowns flared up during the protests against the **Citizenship Amendment Act in 2019, the abrogation of Article 370 in 2019, and the introduction of Farm Bills in 2020**.
- Internet disruptions in India accounted for more than **70% of the total loss to the global economy in 2020**.
- Regionally, **Jammu and Kashmir** saw the highest number of shutdowns in the last 12 years.

Legal Provisions Relating to Internet Shutdown

- Grounds:** Indian States and Union Territories can impose an internet shutdown only in case of a "public emergency" or in the interest of "public safety", according to the Indian Telegraph Act.
 - However, the law does not define what qualifies as an emergency or safety issue.
- Till the year 2017, shutdowns were imposed largely **under Section 144 of the Code of Criminal Procedure (CrPC)**.
 - Section 144 of CrPC gave the police and the District Magistrate the powers in order to prevent unlawful gathering of people and also to direct any person to abstain from a certain activity.
- However, in 2017 the law was amended and the Government promulgated the **Temporary Suspension of Telecom Services (Public Emergency or Public Safety) Rule 2017**.

Anuradha Bhasin v. Union of India Case:

- In **2020** the Supreme Court by **ruling on Jammu and Kashmir Internet shutdown** held that **indefinite internet shutdowns** by the State is not permissible under Indian Constitution.
- The apex Court further stated that **imposition of Section 144** can not be used as a mechanism to avoid genuine protest which is permitted under the Constitution.

- Section 144** has very specific parameters, only if those parameters are satisfied then only a Magistrate can pass the orders.
- Key Highlights of the orders:**
 - Usage of the Internet is the **Fundamental Right under Article 19** of the Indian Constitution.
 - Internet shutdowns can be of **temporary period** but not for indefinite period.
 - Government to publish all orders imposing restrictions under Section 144.
 - The Court had also said that any order with regard to Internet Shutdowns will come under **Judicial Scrutiny**.

Arguments in Favour of Internet Shutdown by the Government

- National Security:** The government suspend internet services as a temporary and targeted measure to prevent the spread of misinformation, coordinate unlawful activities, or address security threats.
- Temporary and Targeted Measures:** The internet shutdowns are intended to be temporary and narrowly focused.
 - These measures are not meant to infringe on long-term access but rather to address specific and immediate concerns.
- Preventing Unrest and Violence:** Suspending online communication helps prevent the organization of protests, riots, or other forms of civil unrest.
- Counteracting Fake News and Disinformation:** During times of crisis or conflict, false information circulating online can exacerbate tensions and contribute to misinformation.

Arguments Against the Internet Shutdown by the Government

- Impact on Freedom of Expression:** Internet shutdowns infringe upon the freedom of expression guaranteed by the Indian Constitution.
- Global Image and Investment:** Frequent internet shutdowns can impact India's global image, raising concerns among investors and international partners.
- Human Rights Concerns:** Internet shutdowns raise human rights concerns, including the right to access information, freedom of speech, and the right to peaceful assembly.

- **Economic Disruptions:** India has a rapidly growing digital economy, and internet shutdowns can lead to significant economic losses.
- **Educational Challenges:** With the increasing use of online platforms for education, internet shutdowns can severely affect students' access to learning resources, online classes, and communication with teachers.
- **Lack of Transparency:** The government needs to provide clear justifications for such actions and communicate transparently about the duration and reasons for the shutdown.

Conclusion

- In a democracy Governments should provide a rationale for disrupting the internet services in a periodic manner.
- The publications of all the orders must be made to maintain transparency.
- Indiscriminate shutdowns have high social and economic costs and are often ineffective.
- For better internet governance the Indian civil society needs to push for a transparent and accountable system.

Source: TH

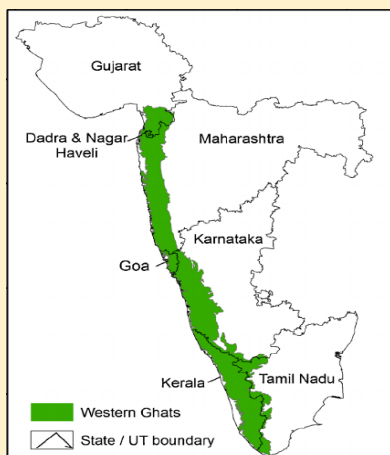
SOIL EROSION IN WESTERN GHAT REGION

Context:

- A recent study by the IIT Bombay reveals a staggering 94% increase in soil erosion in the Western Ghats Region from 1990 to 2020.

The Western Ghats (aka the Sahyadri Mountain Range):

- It is a **UNESCO's World Heritage Site** and one of the Earth's 36 biodiversity hotspots, and is recognized as **one of the world's eight 'hottest hotspots' of biological diversity.**



- It includes national parks, wildlife sanctuaries, and reserve forests etc.
- It is spread across six Indian states including **Tamil Nadu, Kerala, Karnataka, Goa, Maharashtra, and Gujarat.**
 - ♦ Western Ghats in Gujarat begin near the Tapi River.
- **Red soils** are typically found on the western side of the Ghats where the slopes are steep and the rainfall is high.

Protection of the Western Ghats:

- The Ministry of Environment and Forests (MoEF) constituted two Committees:
 - ♦ **Western Ghats Ecology Expert Panel (WGEEP)** headed by **Prof. Madhav Gadgil.**
 - ♦ **High Level Working Group (HLWG)** headed by **Dr. K. Kasturirangan**, to review the recommendations of the WGEEP.

Alarming Increase in Soil Erosion

- The study used remote sensing inputs, such as **LANDSAT-8, Digital Elevation Model (DEM)**, and rainfall records to estimate soil loss rates using the **Universal Soil Loss Equation (USLE)** method.
- The results indicated that the **average soil loss** for the Western Ghats Region was 32.3, 46.2, 50.2, and 62.7 tons per hectare per year for the years 1990, 2000, 2010, and 2020, respectively.
 - ♦ It shows a concerning 94% increase, and a consistently increasing trend.
- The **state-wise increase** is **highest in Tamil Nadu (121%)**, followed by Gujarat (119%), Maharashtra (97%), Kerala (90%), Goa (80%), and Karnataka (56%).

State	EROSION (tonnes/hectare/year)				Change from 1990-2020
	1990	2000	2010	2020	
Gujarat	34.43	69.03	71.15	75.39	119%
Kerala	24.77	26.9	29.3	47.1	90.3%
Karnataka	33	37.1	38.9	51.3	55.7%
Goa	30.09	44.43	49.15	54.28	80.37%
Tamil Nadu	30.90	36.55	39.1	68.3	121%
Maharashtra	40.6	63.5	73.4	79.73	96.33%
Average	32.3	46.26	50.19	62.69	93.76%

ALARMING RATE OF SOIL EROSION



HIGHLIGHTS OF THE STUDY

- The Western Ghats Region (WGR) is a globally significant biodiversity hotspot. Its importance was recognized by Unesco in 2012
- The region is an important agricultural area, with a significant portion of the land being used for the cultivation of tea, coffee, rubber, palm and other crops, as well as for livestock grazing and roads
- It is a major source of freshwater with many rivers and streams originating in the region
- WGR acts as a barrier to the eastward moving clouds during monsoon (June and Sept), leading to about 3,000-4,000mm of heavy rainfall being deposited on their western side
- The land cover type consists of tropical evergreen forests, moist deciduous forests, scrub jungles and savannahs
- The portion of WGR in Gujarat had registered soil erosion of 34.4, 69.1, 71.1 and 75.3 tonnes per hectare per year for years 1990, 2000, 2010 and 2020 respectively due to excessive rainfall owing to changing climate patterns

- These high rates of increase in soil loss are unsustainable to support the biodiversity of Western Ghats Region and can lead to permanent destruction.

The Impact and the Need for Conservation:

- The Western Ghats is home to hundreds of globally threatened flora, fauna, bird, amphibian, reptile, and fish species, and is impacted by urbanisation, agricultural expansion, livestock grazing, forest loss, habitat fragmentation, habitat degradation by invasive plant species, encroachment, conversion, and climate change.
- The loss of soil not only affects the fertility of the land but also leads to a decrease in the water-holding capacity of the soil, affecting the overall ecosystem.
 - ♦ The increasing soil erosion is detrimental to the region's globally important biodiversity.

Conclusion

- The study highlights the importance of considering the long-term effects of land use change on soil erosion and the need for sustainable land management practices.
- The results can be used to sensitise government agencies on the need to protect the natural land cover, which will reduce soil erosion.

Source: TOI

INDIA'S GAMING SECTOR

Context

- The **India Gaming Report 2024** has been released jointly by the Interactive Entertainment and Innovation Council and online gaming firm Winzo.

Major Findings

- **Annual Revenue:** The annual revenue for gaming is projected to reach **USD 6 billion by 2028**.
- **Mobile gaming contributes to 90 percent** of the gaming market in India as compared to around 37 percent and about 62 percent in the US and China.
 - ♦ Among the gaming community, nearly 50 percent fall within the age bracket of **18 to 30 years**.
- **Job Demand:** The Indian gaming sector is presently witnessing **a surge in demand for talent**, with job openings ranging from 50,000

to 60,000 across various roles, including developers, programmers, testers, artists, and customer support.

India's Gaming Sector

- India is the **world's largest mobile gaming market** in terms of App downloads.
- The sector is expected to grow by **20% by FY25** to reach INR 231 Bn.
- Indian gaming raised **\$2.8 Bn from domestic/global investors in the last 5 years**.
- India has produced **3 gaming unicorns:** Game 24X7, Dream11 and Mobile Premier League.
- It is widely estimated that AI and online gaming can add up to **\$300 billion to India's GDP by 2026-27**.

Government Initiatives

- **Digital Gaming Research Initiative:** The government has started a digital gaming research initiative, and the SERB-INAE Conclave was organised recently to support the Indian digital gaming research space and industry.
- **The Science and Engineering Research Board (SERB) of the Department of Science and Technology** has identified three main directions for its Digital Gaming Research Initiative - R&D in learning and leisure gaming platforms, immersive game prototypes with an emphasis on Indian culture and values, and a collaborative technical design process, which was made by SERB Game Labs.
- **AVGC Promotion Task Force:** The Ministry of Information and Broadcasting has established the Animation, Visual Effects, Gaming and Comic (AVGC) Promotion Task Force.
 - ♦ The government recognizes that the Indian AVGC industry has the ability to carry the "Make in India" and "Brand India" banners.

Regulation of Industry

- At present, there is **no uniform federal law** regulating the skill gaming industry in India.
- The **Public Gambling Act, 1867 and Prize Competitions Act, 1955** currently govern India's online gaming industry at the federal level while varying legislation in different Indian states supersede these Acts.
- This is because **state governments** in India are empowered by the constitution to **legislate on gambling**.

- Recently the government decision to appoint the **Ministry of Electronics and Information Technology (MeitY) as the nodal ministry** for online gaming in India has finally provided **legitimacy to the sector**.
- The government will shortly draft **regulations for intermediaries in the online gambling industry and initiate a public consultation process**.

Road Ahead

- In recent times, India has witnessed a genuine uptick in e-sports, console gaming, mobile gaming, and game development, this growth was significantly aided by the pandemic.
- Future growth in the Indian gaming industry will be brought about as a result of **rapid digitalisation and change**, rising internet usage, and increasing smartphone penetration.
- Gaming experiences will continue advancing and eventually help the Indian gaming industry achieve remarkable heights.

Source: BS

NUCLEAR ENERGY AS CLIMATE SOLUTION

Context:

Recently, it was seen as a series of efforts to pitch **nuclear energy** as an important solution to global problems like climate change and energy security.

Nuclear Energy & Climate Change

- **Low-Carbon Energy Source:** Nuclear power plants **produce no greenhouse gas emissions during operation**, and it remains the **second largest source of low carbon electricity** globally and has historically avoided around 70 billion tonnes of carbon dioxide.
 - ◆ According to IAEA, the **entire life cycle of nuclear power plants** is considered – accounting for activities like reactor construction, uranium mining and enrichment, waste disposal and storage, and other processes – **greenhouse gas emissions are only in the range of 5 to 6 grams per kilowatt hour**.
 - ◆ It is more than 100 times lower than coal-fired electricity, and about half the average of solar and wind generation.

Other Benefits:

- **Reliable and Scalable:** Nuclear energy can be deployed on a large scale and is a reliable source of power, providing clean, consistent, and affordable electricity.
- **Substitute for Fossil Fuels:** Nuclear energy can directly replace fossil fuel plants, avoiding the combustion of fossil fuels for electricity generation.
- **Supports Economic Development:** The use of nuclear energy can support global economic development by supplying the large quantities of electricity needed.
- **Contributes to Energy Security:** Nuclear power can contribute to energy security by providing a stable source of energy.
- **Potential for Heat Applications:** Nuclear power plants have the potential to utilise more nuclear capacity for heat applications for future decarbonization efforts.
- **Supports Decarbonization:** Nuclear power can play a key role in the transition to a clean energy future and in achieving carbon neutrality.

Global Efforts:

- **Paris Agreement (2015):** It is to keep the rise in global temperatures to well below 2°C compared to pre-industrial levels, and with the aim to limit the rise to 1.5°C.
 - ◆ To limit the impacts of climate change, the world must rapidly reduce its dependence on fossil fuels to reduce greenhouse gas emissions.
- **Role of International Atomic Energy Agency (IAEA):** It has launched an 'Atoms4Climate' initiative to talk about this and has begun an engagement with the climate community, especially at the COPs or the annual year-ending climate conferences.
- At **COP28 in Dubai**, about 20 countries pledged to work towards tripling global nuclear energy installed capacity by 2050.

The Indian Perspective

- India has 23 operable nuclear reactors, with a combined net capacity of 7.4 GWe.
 - ◆ In 2022, nuclear power generated 3.1% of the country's electricity.

- India in 2010 set an ambitious target to have 14.6 GWe nuclear capacity online by 2024.
 - ♦ At the end of October 2023 eight reactors were under construction in India, with a combined capacity of 6.7 GWe.
- India has a largely indigenous nuclear power program and is committed to growing its nuclear power capacity as part of its massive infrastructure development program.
 - ♦ India's long-term strategy to transition to a 'low emissions' pathway involves more nuclear power.

Future Plans

- India is on the course to increase nuclear energy production capacity to 22,480 MW by 2031.
- It aims to produce more than three times nuclear power from the current level of 6,780 MW in the coming decade.

Challenges of Nuclear Energy and Climate Solutions

- **Safety Concerns:** Incidents like the **Fukushima accident in 2011** have raised safety concerns about nuclear power.
 - ♦ The ongoing crisis at the **Zaporizhzhya nuclear power plant in Ukraine**, the first nuclear facility to have been caught in a dangerous armed conflict, has also been a source of grave concern.
- **Waste Disposal:** The long-term storage and disposal of radioactive waste is a complex issue that needs to be addressed.
 - ♦ In 2021, Japan announced plans to release over one million tonnes of contaminated water from the Fukushima nuclear plant into the sea over the **next 30 years**.
- **High Initial Costs:** The initial costs of setting up a nuclear power plant are high.
 - ♦ It includes costs for safety measures, which can make nuclear energy seem less economically viable compared to other energy sources.
- **Public Perception:** There is often public opposition to nuclear power due to fears of radiation and nuclear accidents.
 - ♦ It can lead to challenges in constructing new plants.
- **Regulatory Hurdles:** Nuclear energy is heavily regulated, which can slow down the development and deployment of new reactors.

- **Non-Proliferation Concerns:** There are concerns about the potential misuse of nuclear technology and materials for military purposes.

Conclusion

- Nuclear energy is a clean and environment-friendly source of electricity, which is available 24X7, and can provide the country long-term energy security in a sustainable manner.
- The growth of the Indian nuclear power program is imperative to meet the twin goals of energy security and sustainable development.

Source: IE

NEWS IN SHORT

STAGE-2 OF VIKRAM 1 SPACE LAUNCH VEHICLE

Context

- **Skyroot Aerospace**, the leading space-tech company, has successfully test-fired the **Stage-2 of Vikram-1 space launch vehicle, called Kalam-250**.

About

- Vikram-1 launch is a landmark event for the Indian space sector as it is the **first private orbital rocket launch**.
- **Vikram-1 is a three-stage**, solid-fuel based rocket and the testing of the "second stage" is significant because this stage propels satellites from the dense atmosphere of Earth to the deep vacuum of outer space.
- **The Kalam-250** is a high-strength carbon composite rocket motor, which uses solid fuel and a high-performance Ethylene-Propylene-Diene terpolymers (EPDM) Thermal Protection System (TPS).

Source: TH

POSCO OFFENCE TO BE TRIED AS PER JJ ACT

Context

- The Kerala High Court has held that a child **charged under the Protection of Children from Sexual Offences (POCSO) Act, 2012**, is to be prosecuted as per the provisions of the **Juvenile Justice (Care and Protection of Children) (JJ) Act**.

About

- **POCSO Act:** The Ministry of Women and Child Development introduced POCSO Act, 2012 to effectively **address the heinous crimes of sexual abuse and sexual exploitation of children** through less ambiguous and more stringent legal provisions.
 - ♦ The Act defines a child as **any person below eighteen years of age**, and regards the best interests and well-being of the child as being of paramount importance at every stage, to ensure the healthy physical, emotional, intellectual and social development of the child.
 - ♦ People who **traffic children** for sexual purposes are also punishable under the provisions relating to abetment in the Act.
 - ♦ The Act prescribes stringent punishment graded as per the gravity of the offence, with a maximum term of rigorous imprisonment for life, and fine.
- **The Juvenile Justice (Care and Protection of Children) Act, 2015** has come into force in **2016** and repeals the Juvenile Justice (Care and Protection of Children) Act, 2000.
 - ♦ The Act seeks to achieve the objectives of the **United Nations Convention on the Rights of Children** as ratified by India in 1992.
 - ♦ It specifies procedural safeguards in cases of **children in conflict with law**.
 - ♦ It seeks to address challenges in the existing Act such as delays in adoption processes, high pendency of cases, accountability of institutions, etc.
 - ♦ The Act further seeks to address children in the **16-18 age group**, in conflict with law, as an increased incidence of crimes committed by them have been reported over the past few years.

Source: TH

LUNA STRUCTURE**Context:**

- Recently, scientists revealed that a crater could have formed due to one of the largest **meteorites** on Earth in the last 50,000 years.

About the Luna Structure:

- It is a 1.8-kilometer-wide crater that has been linked to the **ancient Harappan Civilization** and is believed to be the outcome of one of the most monumental **asteroid crashes** ever witnessed on Earth.
- It remains submerged and inaccessible for a significant part of the year due to its location in the **low-lying Banni Plains of Gujarat's Kutch Basin in Gujarat**.
 - ♦ It is believed that during impact, this meteorite may have generated a colossal fireball, shockwaves, and subsequent wildfires, potentially engulfing the region inhabited by the people of the **ancient Indus Valley civilization** thousands of years ago.
- Further scrutiny of the rocks surrounding the Luna structure unearthed the **presence of elements synonymous with extraterrestrial origins**, including Rhodium, Palladium, Osmium, Iridium, and Platinum.
 - ♦ However, the dense ground cover enveloping the Luna structure poses an impediment to ascertaining the precise nature of the impact.

Do You Know?

- **Meteoroids** are lumps of rock or iron that orbit the sun.
 - ♦ Most meteoroids are small fragments of rock created by asteroid collisions.
- When **Meteoroids enter Earth's atmosphere** at high speed and burn up, the fireballs or 'shooting stars' are called **Meteors**.
- When a Meteoroid survives a trip through the atmosphere and **hits the ground**, it's called a **Meteorite**.

Source: FE

DOMESTIC SYSTEMICALLY IMPORTANT INSURERS (D-SLLS)

Context:

- Recently, Insurance Regulatory and Development Authority of India (IRDAI) retained certain insurers in India as Domestic Systemically Important Insurers (D-SIIs).

About the D-SIIs:

- These are perceived as insurers that are **'too big or too important to fail'** (TBTF).
- Life Insurance Corporation of India (LIC), General Insurance Corporation of India (GIC), and New India Assurance Co continue to be identified as D-SIIs for the year **2023-24**.
 - This identification is a continuation from the 2021-22 list of D-SIIs.

The Role of D-SIIs:

- D-SIIs refer to insurers of such size, market importance, and domestic and global interconnectedness, whose distress or failure would cause a significant dislocation in the domestic financial system.
- Therefore, the continued functioning of D-SIIs is critical for the uninterrupted availability of insurance services to the national economy.

Insurance Regulatory and Development Authority of India (IRDAI):

- It is a statutory body formed under an Act of Parliament, i.e., **Insurance Regulatory and Development Authority Act, 1999 (IRDAI Act 1999)**.
 - It was established in 2000 following the recommendation of the **Malhotra Committee report in 1999**.
- It acts as the regulator of the insurance industry in India and oversees the functioning of the Life Insurance and General Insurance companies operating in the country.

Objectives:

- To protect the interest and fair treatment of the policyholder.
- To regulate the insurance industry in fairness and ensure the financial soundness of the industry.
- To regularly frame regulations to ensure the industry operates without any ambiguity.

Source: TH

PEBANISTA YACURUNA

In News

- Scientists have discovered the fossilised skull of a giant river dolphin.

About Pebanista yacuruna

- It was named Pebanista yacuruna after the Yacuruna, a Peruvian mythological being that lived in deep water.



- It belongs to the Platanistoidea, a group of dolphins that were common in the world's oceans between 24 and 16 million years ago.
- It was the largest dolphin ever known to have lived in the waters of South America, measuring 3 to 3.5 meters long.
- Its closest living relatives are found today in South Asia.
 - The **Ganges river dolphin** (Platanista gangetica) is found in India, Nepal and Bangladesh.
 - The **Indus river dolphin** (Platanista minor) is found in the Indus and its tributaries in Pakistan and the Beas (also an Indus tributary) in India.

Source: DTE

GRAY WHALE

In News

- Gray whales were recently seen in the United States' New England region.

About Gray Whale (Eschrichtius robustus)

- It was last seen in the Atlantic Ocean in the 18th century.
- It is a primarily bottom feeders and are thus restricted to shallow continental shelf waters for feeding.



- **Habitat and Distribution** : It is now regularly found in the North Pacific and adjacent seas.
 - ◆ The greatest numbers occur along the west coast of Canada, the United States and Mexico, but small numbers are observed every year in near-shore waters of eastern Russia and Japan.
- **IUCN Red List status** : is listed as Least Concern.

Source: DTE

