



5 December, 2023

National Crime Records Bureau (NCRB) Annual Report 2022

Context: NCRB has released its yearly report on crimes in India.

1. Overview:

- The NCRB's annual report for 2022, released on December 3, is a comprehensive compilation of reported crime data from across India.
- This report, under the Union Ministry of Home Affairs, presents a holistic view of crime trends, encompassing various categories, including crimes against women and economic offenses.

2. Data Compilation Process:

- The NCRB, established in January 1986, serves as a national repository for crime data and fingerprint records.
- Its flagship Crime in India reports source information from police forces in 36 states and Union Territories, along with data from crime records bureaus of 53 cities.

3. Key Findings - 2022 Report:

- The report records a total of 58,24,946 cognizable crimes, indicating a 4.5% decline from the previous year.
- The crime rate per lakh population dropped from 445.9 in 2021 to 422.2 in 2022.
- Crimes against women increased by 4%, with the majority linked to 'Cruelty by Husband or His Relatives.'

4. Cyber Crimes:

- Notably, there was a significant 24.4% increase in reported cyber crimes, reaching 65,893 cases.
- Fraud constituted approximately 64.8% of the registered cases, followed by extortion and sexual exploitation.

5. Suicides:

- The report highlights a 4.2% uptick in reported suicides in 2022 (1,70,924 suicides) compared to the previous year.
- Leading causes included 'Family Problems (other than marriage-related problems),' 'Marriage Related Problems,' and 'Illness.'

6. State-wise Trends:

- States/UTs reporting the highest chargesheeting rates under IPC crimes include Kerala (96.0%), Puducherry (91.3%), and West Bengal (90.6%).

7. Limitations and Interpretation:

- The data record registered crime incidences, not the actual occurrence of crime, emphasizing the distinction.
- The 'Principal Offence Rule' may lead to undercounting, and data gaps at the local level impact accuracy.
- Socio-economic causative factors for crimes are not captured, and certain groups may hesitate to register cases.
- A shortage of police officers or unfilled vacancies at the local level may hinder accurate data collection.

8. National Crime Records Bureau (NCRB)

- The National Crime Records Bureau (NCRB) was established in 1986 under the Ministry of Home Affairs.
- Its creation was based on recommendations from the National Police Commission (1977-1981) and the MHA's Task Force (1985).
- **Functions:**
 - NCRB maintains the National Database of Sexual Offenders (NDSO) and regularly shares it with States/UTs.
 - It serves as the Central Nodal Agency for the 'Online Cyber-Crime Reporting Portal,' allowing citizens to file complaints or upload evidence related to crimes like child pornography or rape.
 - NCRB is responsible for implementing the Inter-operable Criminal Justice System (ICJS).
 - ICJS integrates IT systems for Police, Forensic Labs, Courts, Public Prosecutors, and Prisons.
 - The government aims to complete the second phase of ICJS by 2026, with an expenditure of around Rs. 3,500 crore.
- **Major Publications by NCRB:**
 - Crimes in India
 - Accidental Deaths and Suicides
 - Prison Statistics
 - Reports on Missing Women and Children in India

Coastal Erosion

Context: Minister for Environment, Forest and Climate Change mentioned Coastal Erosion in a written reply to Lok Sabha.

Definition of Coastal Erosion:

- Coastal erosion involves the long-term displacement of land along the coastline due to waves, currents, tides, wind-driven water, and various storm impacts.

Formation and Effects:

- Erosion on non-rocky coasts leads to distinctive rock formations, including tunnels, bridges, columns, and pillars.

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- Differential erosion occurs, with softer areas eroding faster than harder ones, resulting in an overall evening out of the coastline.
- The wind-blown sand creates a sandblasting effect, contributing to the erosion process and shaping the rocks.

Impact of Climate Change:

- According to the Intergovernmental Panel on Climate Change (IPCC), sea level rise induced by climate change is expected to significantly increase coastal erosion globally, causing substantial changes to coasts and low-lying coastal areas.

Coastal Processes:

- **Hydraulic Action:** Waves compress air in cliff cracks, leading to the splintering and removal of rock pieces.
- **Attrition:** Loose rock debris collides, grinding and chipping each other, resulting in smaller, smoother rocks.
- **Solution:** Acids in seawater dissolve certain rock types like chalk or limestone.
- **Abrasion/Corrosion:** Waves break on cliff faces, slowly eroding them over time.
- **Corrosion:** The sea's pH corrodes rocks, particularly affecting limestone cliff faces.

Factors Influencing Erosion Rates:

Primary Factors:

- The hardness (erodibility) of sea-facing rocks influenced by rock strength, presence of fissures, fractures, and non-cohesive materials.
- The rate at which debris is removed from the foreshore, depending on the power of waves crossing the beach.
- Beach stability and its resistance to lowering, which widens the foreshore over time, dissipating wave energy.
- The configuration of the seafloor influencing wave energy arriving at the coast, with shoals and bars providing protection against erosion.

Impact of Rising Sea Levels:

- Rising sea levels globally have led to increased coastal erosion, particularly noticeable on the Eastern seaboard of the United States.
- Locations like Florida have experienced heightened erosion, prompting increased budgets for sand replenishment to sustain the tourism industry.

Secondary and Tertiary Factors:

Secondary Factors:

- Weathering and transport slope processes, slope hydrology, vegetation, cliff foot erosion, sediment accumulation, resistance of cliff foot sediment, human activities.

Tertiary Factors:

- Resource extraction, coastal management.

Coastal Erosion in India

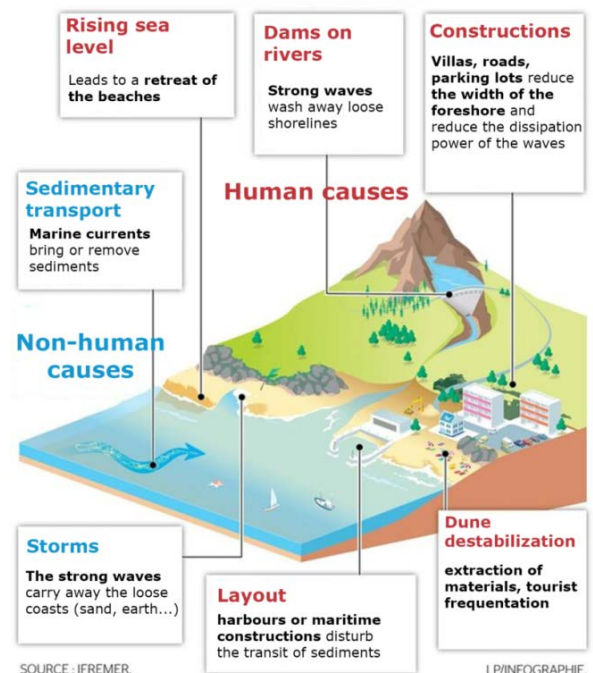
- The National Centre for Coastal Research (NCCR) monitors shoreline changes along the entire Indian coastline using multi-spectral satellite images and field-surveyed data from 1990 to 2018.
- Findings reveal 33.6% vulnerability to erosion, 26.9% growing (accretion), and 39.6% stability.
- NCCR's mapping system includes 526 maps for the mainland coast, 69 district maps, and maps for 9 States and 2 Union Territories at a 1:25000 scale.
- The "National Assessment of Shoreline Changes along Indian Coast" report, released in July 2018, identifies vulnerable areas and guides protective measures.
- An updated Atlas and digital report, released on March 25, 2022, provide comprehensive information.
- Shoreline changes result from natural causes and human activities, leading to the loss of land, habitats, and fishermen's livelihoods.
- Receding coastlines impact fishermen's daily operations, affecting space for parking boats, mending nets, and conducting fishing activities.
- The study highlights the need to implement shoreline protection measures to address challenges posed by erosion.

Steps taken by Government to combat Coastal Erosion:

- The Ministry of Environment, Forest & Climate Change outlines the hazard line for India's entire coast, indicating shoreline changes and sea level rise due to climate change. This serves as a tool for disaster management and is incorporated into Coastal Zone Management Plans.
- The Coastal Regulation Zone Notification, 2019, by the MoEFCC aims to conserve coastal stretches, marine areas, and ensure livelihood security. It permits erosion control measures and establishes No Development Zones (NDZ) for various coastal areas to prevent encroachment and erosion.

The reasons for coastal erosion

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- In response to an NGT order, Chief Secretaries of Coastal States/UTs are requested to finalize Coastal Zone Management Plans, including mapping erosion-prone areas and preparing Shore Line Management Plans.
- MoEFCC formulates a national strategy for coastal protection and provides guidelines to all Coastal States and Union Territories.
- The Ministry of Jal Shakti's Flood Management Scheme, including anti-sea erosion projects, is executed by State Governments with Union Government assistance in technical, advisory, catalytic, and promotional aspects.
- A "Coastal Management Information System (CMIS)" is initiated under the Central Sector Plan Scheme to collect near-shore coastal data for planning, designing, and maintaining coastal protection structures in vulnerable stretches.
- Coastal erosion mitigation measures are implemented in Puducherry and Chellanam, Kerala, restoring and protecting coastal areas. Technical support is extended to coastal States for designing protection measures and preparing Shoreline Management Plans.

NEWS IN BETWEEN THE LINES

Climate Club



Recently, the Climate Club has been launched during COP28 summit and co-led by Germany and Chile.

About Climate Club:

- The Climate Club is an intergovernmental forum that aims to mitigate climate change by reducing carbon emissions.
- The concept of a climate club was developed by Yale economist William Nordhaus in 2015
- It was first proposed by Germany during a G7 summit meeting in 2022.
- The G7 is a group of developed nations (the US, the UK, Canada, France, Germany, Italy and Japan) that gets together every year to discuss global challenges.
- So far, Climate Club is a group of 36 nations in which India is not included.

Mount Marapi



Recently, Mount Marapi volcano in Indonesia has erupted furiously, leading to a tragic aftermath.

About Mount Marapi:

- Mount Merapi is a stratovolcano in Indonesia.
- It is located on the border of the Central Java and Yogyakarta provinces.
- The volcano is also known as the "Mountain of Fire" in the Javanese language.
- It's the most active volcano in Indonesia and has erupted regularly since 1548.
- Indonesia is located on the Pacific Ring of Fire, which is a path along the Pacific Ocean with frequent earthquakes and active volcanoes.
- The Ring of Fire is a horseshoe-shaped region around the Pacific Ocean that is known for its high seismic and volcanic activity.
- It is also called the Circum-Pacific Belt or Circum-Pacific Seismic Belt.
- The Ring of Fire is caused by the subduction of oceanic and continental plates.
- This subduction is a very slow process, moving just one or two inches per year. Some important places located in the Ring of Fire including Bolivia, Chile, Ecuador, Peru, Costa Rica, Guatemala, Mexico, United States, Canada and Russia.

Pilatus PC-7 MK II



Recently, the two Indian Air Force (IAF) pilots were killed after their Pilatus PC-7 Mk II trainer aircraft crashed during a routine training sortie from the Air Force Academy at Dundigal, Telangana.

About Pilatus PC-7 MK II:

- The Pilatus PC-7 Mk II is a single-engine aircraft used for basic training by the Indian Air Force (IAF).
- It is a low-wing, tandem-seat training aircraft designed and manufactured in Switzerland by Pilatus Aircraft.
- The PC-7 Mk II has been in service since 1992.
- The PC-7 was developed from the Pilatus P-3.
- The Pilatus PC-7 Mk II boasts a length of 10.8m, a wing span of 10.19m, a height of 3.26m, a top speed of 412 km/h, and ascends to slightly over 10,000m.
- Currently, there are 75 Pilatus PC-7 Mk II aircraft in service with the IAF.

Solid-Fuel Rocket



Recently, South Korea has successfully conducted a flight of a solid-fuel rocket carrying a satellite over the sea near Jeju Island.

About Solid-Fuel Rocket:

- A solid fuel rocket is a rocket that uses a solid propellant.
- The propellant is a mixture of fuel and oxidizer that is packed into a solid cylinder.
- The cylinder has a hole in the middle that acts as a combustion chamber.
- They are used in air-to-air and air-to-ground missiles, model rockets and satellite launchers.
- Solid fuel rockets offer several advantages, including simplicity, high reliability and a long shelf life.
- The earliest solid fuel rockets were powered by gunpowder and were used in warfare as early as the 13th century.

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White Hydrogen



Recently, scientists found a huge stash of white hydrogen near the French-German border.

About White Hydrogen:

- White hydrogen is a naturally occurring gas found in the Earth's crust.
- It's also known as "natural," "gold," or "geologic" hydrogen.
- It is considered a potential clean energy source.
- It only produces water when it is burned.
- It's hailed as a promising clean energy source for industries such as aviation, shipping and steel production.
- White hydrogen is 33% cheaper than the cheapest hydrogen from fossil fuels and 2 times cheaper than the cheapest green hydrogen.
- The deposit could contain between 6 million and 250 million metric tons of hydrogen.
- Scientists Jacques Pironon and Philippe De Donato initiated a mission in northeastern France to assess methane levels in the subsoils of the Lorraine mining basin.
- The discovery and potential utilization of white hydrogen have a significant role in addressing the climate crisis

White Lung Syndrome



Recently, a respiratory illness named the White Lung Syndrome emerged in northern China and Ohio, USA, sparking concerns akin to those of a potential post-COVID-19 pandemic threat.

About White Lung Syndrome:

- White Lung Syndrome is identified through distinctive white patches observed on chest X-rays among affected children.
- This term encompasses various respiratory illnesses such as acute respiratory distress syndrome (ARDS), pulmonary alveolar microlithiasis (PAM) and silica-related conditions.
- The syndrome is believed to arise from a combination of bacterial, viral and environmental factors.
- Patients typically exhibit symptoms like cough, fever, runny nose, sinus congestion, difficulty breathing and fatigue.
- Treatment primarily targets managing pneumonia symptoms and ensuring optimal respiratory health.

Place in News

Kra Isthmus

"Kra, a little-known isthmus in Thailand, has recently gained attention due to its relevance to China's Indo-Pacific strategy.

About Kra Isthmus:

- The Isthmus of Kra is a land bridge in Thailand that connects the Malay Peninsula to the rest of continental Southeast Asia.
- It's located between the Andaman Sea to the west and the Gulf of Thailand to the east.
- The Kra Isthmus is sometimes called "Devil's Neck" because it creates a barrier for shipping traveling to and from the Gulf of Thailand and the Andaman Sea.
- The Kra Canal, also known as the Thai Canal or Kra Isthmus Canal, is a proposed canal project that would connect the Gulf of Thailand with the Andaman Sea.
- The economic corridor has transformed into a China-backed initiative featuring ports on either end.



POINTS TO PONDER

- ❖ Codex Alimentarius Commission (CAC) that was recently in news was established by which two organizations? - **WHO and FAO**
- ❖ What was the theme of World AIDS Day 2023? - **Let Communities Lead**
- ❖ What is the causative agent of white lung' syndrome that was recently making news? - **Bacteria**
- ❖ What is the common term used for false scarcity claims, confirm-shaming, forced bundling and subscription traps used in online; and recently banned in India? - **Dark Patterns**
- ❖ In which year was the Operation Trident carried by the Indian Navy? - **1971**

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