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MINISTRY OF SCIENCE AND TECHNOLOGY

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THE HINDU Page 8

HATTI COMMUNITY

(Syllabus: GS Paper 1 - Indian Society)

Anger in Himachal Pradesh over ST notification for Hattis

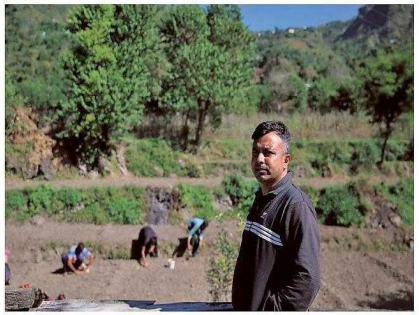
Gujjars, Scheduled Castes flay Centre's decision; say Hattis are upper caste and commit atrocities against Dalits. Political parties are attempting to capitalise on this ahead of the Assembly election

Abhinay Lakshman
SIRMAUR

In poll-bound Himachal Pradesh, the recent announcement by the Centre to bring the Hatti community under the Scheduled Tribes list in Sirmaur district is spreading resentment among some sections. The only ST community in the district – Gujjars – and Scheduled Caste groups have voiced concerns over the move.

The ruling BJP is faced with a delicate balancing act on the issue, while Opposition parties like the Congress and the Communist Party of India (Marxist) are hoping to capitalise on this resentment. The State is set to vote on November 12. Soon after Tribal Affairs Minister Arjun Munda announced the Cabinet's decision to include the Hatti community in the ST list, the BJP's ST Morcha chief in Sirmaur, Hansraj Bhatia, from Gujjar community, quit his position along with six other members.

Mr. Bhatia's outfit, the Gujjar Kalyan Parishad, had also staged a road blockade in Kala Amb – a key entry point to the State. The district has five Assembly seats – Pachhad, Nahan, Renukaji, Paonta Sahib and Shillai. Pachhad and Renukaji are reserved for SCs.



Ashish Kumar of the Dalit Shoshan Mukti Manch in Sirmaur district.

"Most people of our community live in the Nahan constituency area and in the entire district, our population is just 10,000-11,000, which includes both Hindus and Muslims. Now, if the government wants to bring 1.6 lakh Hatti members in the ST list, our share of job reservations will be wiped out," Mr. Bhatia told *The Hindu*, as he prepared for a meeting of Gujjar leaders in Kala Amb to decide which way they will vote in the upcoming Assembly election.

He added, "We are just saying our share of the benefits should not be diluted. Hatti people are generally better-off than us. A lot of our community members are still nomadic."

Congress leaders have been saying they will make the resentment among Gujjars an issue in the Assembly polls.

However, in a Tuesday meeting of Gujjar leaders in Nahan, most had thrown their weight behind the saffron party, sources said. "The logic is that the ST list is in the Centre's hands and a BJP MLA can take up the issue with the Centre as opposed to an MLA from Opposition," a Gujjar leader said.

On the other hand, there is disquiet among the SC communities in villages of Pachhad and Renukaji, where many Dalit villagers are afraid of atrocities and discrimination against them increasing if the Hatti community is notified as an ST. Ashish Kumar of the Dalit Shoshan Mukti Manch said, "Most of those who are Hattis are actually Bhats, Khash, and Kanaits – traditionally considered as upper-caste. Atrocities against Dalits in Sirmaur is an issue and those committing the atrocities are from these communities."

Parts of the Trans-Giri region, where most of the Hatti community lives, also come under the Assembly Constituencies of Renukaji, Shillai, and Pachhad. As per the most recent Census (2011), 5.71% of the State's population is ST and 25.19% of the population is classified as SC.

Context: In poll-bound Himachal Pradesh, the recent announcement by the Centre to bring the Hatti community under the Scheduled Tribes list in Sirmaur district is spreading resentment among some sections.

Hatti community

- **Hattis:** got their name from their tradition of selling homegrown vegetables, crops, meat, and wool, etc. at small markets called '**haat**' in towns.
  - Recently, the Union Cabinet approved a **Constitution amendment Bill** that seeks to grant tribal status to the Hatti community.
- **Two clans of Hatti: Trans-Giri and Jaunsar Bawar**, have similar traditions, and inter-marriages are common.
  - They **share social as well as cultural similarities with the Jaunsar community** of the Jaunsar-Bawar area of Uttarakhand.
    - Tribal status was accorded to people living in the Jaunsar Bawar area of Uttarakhand.
  - Hattis are governed by a traditional council called 'khumbli' which, like the 'khaps' of Haryana, decides community matters.
- **Habitat**: Hatti homeland straddles the **Himachal-Uttarakhand border in the basin of the Giri and Tons rivers**, both tributaries of the Yamuna.
  - The Tons marks the border between the two states.
- **Population**: According to the 2011 Census of India, the total tribal population of Himachal Pradesh is 3,92,126, which is 5.7% of the total population of the state.
- **Economy**: The members of this community haven't been mainstreamed and **most are dependent on animal rearing and agriculture.**

BUSINESS STANDARD

Page 4

FOREIGN EXCHANGE RESERVES

(Syllabus: GS Paper 3 - Economy)

Fx reserves fall to $524.5 bn, lowest since July 2020

BHASKAR DUTTA
Mumbai, 28 October

The Reserve Bank of India's (RBI's) foreign exchange reserves declined $3.8 billion to $524.52 billion in the week ended October 21, the latest data showed. The current level of reserves is the lowest since July 24, 2020.

The decline in reserves is largely on account of a drop in the RBI's foreign currency assets, which fell $3.6 billion to $465.08 billion in the week ended October 21.

According to analysts, the drop in reserves in the previous week was largely attributable to the RBI's intervention in the currency market to support rupee.

"It was the week in which the rupee touched a record low of 83.29 a dollar following weakness in the Asian currencies," HDFC Securities research analyst Dilip Parmar said. In the week ended October 21, the rupee depreciated 0.4 per cent versus the US dollar.

The US dollar index, which measures the US currency against six major currencies, strengthened 0.6 per cent over the same period. So far in 2022, the Indian currency has weakened 9.9 per cent against the US dollar.

The RBI's foreign exchange reserves have declined by more than $100 billion since Russia invaded Ukraine in late February. As on February 25, the reserves were at $631.53 billion.

Last month, RBI Governor Shaktikanta Das had said 67 per cent of the fall in reserves so far in the current fiscal year was due to revaluation in the face of a stronger dollar. The latest RBI data showed that the central bank had net sold $4.2 billion in the foreign exchange market in August, following sales of $19 billion in July. The RBI had net sold $3.7 billion in the market in June.

In April, the central bank had net bought $1.9 billion in the currency market, followed by purchases of $2.0 billion in May.

The current level of reserves represents an import cover of close to nine months. The level of reserves in September 2021 accounted for almost 15 months of imports.

DOWN BY $3.8 BN IN A WEEK



Source:RBI
Compiled by BS Research Bureau

THE DROP IN FOREX RESERVES IS LARGELY ON ACCOUNT OF A FALL IN RBI'S FOREIGN CURRENCY ASSETS, WHICH DECLINED $3.6 BILLION TO $465.08 BILLION

Context The Reserve Bank of India´s (RBI´s) foreign exchange reserves declined $3.8 billion to $524.52 billion in the week ended October 21, the latest data showed.

Foreign exchange reserves

- **About:** Forex reserves are assets held on reserve by a central bank in foreign currencies, which can include bonds, treasury bills and other government securities.
- **Components**:
  - **Foreign Currency Assets**: assets that are **valued based on a currency other than the country's own currency**.
    - It is the **largest component of the forex reserve** which is expressed in dollar terms.
    - It **includes the effect of appreciation or depreciation of non-US units** like the euro, pound and yen held in the foreign exchange reserves.
  - **Gold reserves:** Monetary gold is not covered in the foreign exchange reserves.
  - **Special Drawing Rights**: an international reserve asset, **created by the IMF in 1969** to supplement its member countries' official reserves.
    - It is **neither a currency nor a claim on the IMF**. Rather, it is a potential claim on the freely usable currencies of IMF members. SDRs can be exchanged for these currencies.
    - The value of the SDR is calculated from a **weighted basket of major currencies**, including the US dollar, the euro, the Japanese yen, the Chinese yuan, and the British pound.
    - The **interest rate on SDRs or (SDRi) is the interest paid to members** on their SDR holdings.
  - **Reserve position with the International Monetary Fund (IMF):** A country's Reserve Tranche Position is the difference between the IMF's holdings of that country's currency and the country's IMF-designated quota.
- **Factors Affecting Exchange Rates:**
  - **Inflation Rates**: Changes in market inflation cause changes in currency exchange rates.
  - **Government Debt**: A country with large government debt is less likely to acquire foreign capital, leading to inflation.
  - **Balance of Payments:** A deficit in the current account due to spending more of its Forex on importing products than it is earning through the sale of exports causes depreciation, and it further fluctuates the exchange rate of its domestic currency.
- **Country that has highest forex reserves**: China followed by Japan, Switzerland, India and Russia.

INDIAN EXPRESS

Page 1

DISQUALIFICATION OF MLAs

(Syllabus: GS Paper 2 - Polity & Governance)

Azam disqualified as MLA, seat now vacant

EXPRESS NEWS SERVICE
LUCKNOW, OCTOBER 28



He has been convicted in a hate speech case

SENIOR SAMAJWADI Party leader Azam Khan has lost his state Assembly membership after his conviction Thursday in a hate speech case. On Friday, the Principal Secretary, Vidhan Sabha, issued a letter declaring Khan's Rampur Sadar seat "vacant".

Confirming the move, sources in the Assembly said Khan automatically stood disqualified upon being sentenced for more than two years. "The Election Commission has been informed about the vacancy as well," an official said.

Khan was convicted in a hate speech case lodged in the run-up to the 2019 Lok Sabha elections and sentenced to three years in prison. He was later

CONTINUED ON PAGE 2

Context: Samajwadi Party leader was disqualified as a member of the Uttar Pradesh Legislative Assembly after his conviction by an MP-MLA court in a 2019 hate speech case.

Disqualification of a MLA

- **Constitutional provisions:**
  - According to the constitution, a person shall be disqualified as Member of Legislative Assembly (MLA) or Member of Legislative Council (MLC) if:
    - If he/she holds any **office of profit** under the Union or state government (except that of a minister or any other office exempted by state legislature),
      - An MP or an MLA (or an MLC) is barred from holding any office of profit under the Central or State government under **Article 102 (1) and Article 191 (1) of the Constitution.**
      - The **term office of profit has not been defined in the Constitution.**
    - If he/she is of **unsound mind** and stands so declared by a court,
    - If he/she is an **undischarged insolvent**,
    - If he/she is **not a citizen of India** or has voluntarily acquired the citizenship of a foreign state or is under any acknowledgement of allegiance to a foreign state, and
    - If he/she is so **disqualified under any law made by Parliament.**
  - **Article 327 and 328 of the Constitution** confers the p**ower on parliament and state legislature** respectively to make rules for election to Parliament and state legislature.
- **Representation of People Act (1951)**
  - Apart from these, the Parliament has prescribed several additional disqualifications in the Representation of People Act (1951). These include,
    - He/she must **not have been found guilty of certain election offences or corrupt practices** in the elections.
    - He/she must **not have been convicted for any offence** resulting in imprisonment for two or more years. But, the detention of a person under a preventive detention law is not a disqualification.
    - He/she must **not have failed to lodge an account of his election expenses** within the time.
    - He/she must **not have any interest in government contracts, works, or services.**
    - He/she must **not have been dismissed from government service for corruption or disloyalty** to the state.
  - In such case of Disqualification, **it is decided by the President/ Governor for MP and MLA respectively and his decision is final.**
    - However, he/she **should obtain the opinion of the Election Commission** and act accordingly.

Schedule 10 (Anti-Defection Act)

- According to Schedule 10 (Anti-Defection Act), a person shall be disqualified as Member of Legislative Assembly (MLA) or Member of Legislative Council (MLC):
  - If an elected member **voluntarily gives up his membership of a political party.**
  - If he **votes or abstains from voting** in such House contrary to any direction issued by his political party or anyone authorized to do so, without obtaining prior permission.
  - If **any independently elected member joins any political party.**
  - If **any nominated member joins any political party after the expiry of six months.**
- The d**ecision on questions as to disqualification on ground of defection** are referred to the Chairman or the Speaker of such House, which is **subject to 'Judicial review'**.

LIVEMINT Page 14

SWINE INFLUENZA
(Syllabus: GS Paper 3 - Sci & Tech)

India's swine flu cases, deaths jump

Priyanka Sharma
priyanka.sharma@livemint.com
NEW DELHI

The number of swine flu cases across the country has seen a 15-fold rise from last year with 11,450 cases reported this year so far against 778 cases in 2021. More importantly, 321 people have been killed by the virus this year till 30 September compared with 12 last year—a massive 27-fold increase.

Top scientists at the Indian Council of Medical Research have detected a change in the influenza strain circulating in India this year and warned people to follow all preventive measures.

Top scientists at Indian Council of Medical Research have detected a change in the influenza strain this year

Swine flu is a respiratory illness caused by influenza strains. It started in pigs, but is now transmitted by humans through coughs and sneezes.

The early symptoms are fever, cough, sore throat, body aches and chills.

"Last year, it was H3N2 influenza strain circulating and this year it is H1N1. People should cover their nose and mouth while sneezing and coughing, follow hand hygiene and isolate themselves if they have symptoms like fever, cough, breathlessness and contact their doctor immediately," said a senior scientist at ICMR.

Dr. Raman Gangakhedkar, former head of epidemiology and communicable diseases at ICMR said, "Influenza is a vaccine-preventable infection. Hence, people with chronic diseases and elderly should get the influenza shot and also take covid booster dose to avoid health complications."

According to a latest report on swine flu (H1N1) released by the health ministry's Integrated Disease Surveillance Programme (IDPS), the worst-hit state is Maharashtra with 3,513 cases and 191 deaths, followed by Tamil Nadu (2,036 cases, 22 deaths) and Gujarat (2,031 cases, 58 deaths).

Context: The number of swine flu cases across the country has seen a 15-fold rise from last year with 11,450 cases reported this year so far against 778 cases in 2021.

Swine Influenza

- **About:** Swine Influenza (swine flu) is a **respiratory disease of pigs caused by type A influenza virus** that regularly causes outbreaks of influenza in pigs.
- **Symptoms:** Signs of swine flu in pigs can include fever, depression, coughing (barking), discharge from the nose or eyes, sneezing, breathing difficulties, eye redness or inflammation, and going off feed.
    - Swine influenza viruses can circulate among swine throughout the year, but most outbreaks occur during the late fall and winter months similar to outbreaks in humans.
- **Spread**: Swine flu viruses are t**hought to be spread among pigs** mostly through close contact and possibly from contaminated objects moving between infected and uninfected pigs.
- **Infection in humans**: Swine flu viruses do not usually infect humans, but **rare human infections have occurred.**
- **Treatment**: Just as there are influenza vaccines for people, there are **specific swine influenza vaccines available for pigs.**

4 Types of influenza viruses

- **Type A and B viruses**: Both influenza A and B are extremely contagious and cause the same type of illness and symptoms.
    - Type A is classified based on two proteins on their surfaces - **Hemagglutinin (HA) and Neuraminidase (NA).**
    - Several combinations of these two proteins are possible e.g., H5N1, H7N2, H9N6, H17N10, H18N11 etc.
- **Type C viruses**: Influenza C mainly occurs in humans, but has been known to also occur in animals.
- **Type D viruses**: Influenza D is found mainly in cattles.

ECONOMIC TIMES

Page 7

UN CONFERENCE ON TRADE AND DEVELOPMENT (UNCTAD)

(Syllabus: GS Paper 2 - International Organisations)

UNCTAD Sees Cross-border Climate Funding Drop in '22

Report cites bleak outlook for global foreign direct investments

Our Bureau

New Delhi: Ahead of the crucial United Nations climate change conference COP27 next month, the UN Conference on Trade and Development (UNCTAD) has warned of a decline in cross-border investments in climate change mitigation and adaptation in 2022 amid a global investment downturn.

Citing a bleak outlook for global foreign direct investment (FDI) in 2022, UNCTAD in a report said the number of new investment projects across most industries have declined, notably those tackling climate change. "Between January and September 2022, climate mitigation and adaptation sectors had, respectively, 7% and 12% fewer new projects announced, in stark contrast to the previous year's strong acceleration," it said.

Cloudy Future

Climate change	Adaptation	Steepest
mitigation new projects decline	sector projects down	decline in low carbon transport at
7% in Jan-Sept'22	12%	25%

Bleak FDI outlook to hit green investments



Among mitigation measures, low carbon transport witnessed the steepest decline of 25%, while in adaptation actions, water management contracted 19%.

"The shift from fossil fuel to green investments to support the energy transition risks a setback, due to the loss of momentum in renewables and high oil and gas prices," UNCTAD said.

For now, the downward trend in investment is also affecting extractive industries and fossil fuel-based energy generation where project numbers dipped by about 16% in first three quarters of 2022, it said.

However, the report warned that high profits of MNCs in these sectors, combined with the current energy crisis, could lead to a renewed push for investments in fossil fuel-based energy whose production exacerbates climate change.

For full report, go to www.economictimes.com

Context: The UN Conference on Trade and Development (UNCTAD) has forecast a decline in cross-border investment in climate change mitigation and adaptation in 2022 amid a global investment downturn.

UN Conference on Trade and Development (UNCTAD)

- **About:** It is a permanent intergovernmental body of the United Nations.
- **Origin**: established in 1964 to promote development-friendly integration of developing countries into the world economy.
- **Parent organisation of the UNCTAD:** United Nations General Assembly.
- **Members**: Currently, UNCTAD has 195 member states and is headquartered in **Geneva, Switzerland.**
  - India is a member of the UNCTAD.
- **Reports published by UNCTAD:**
  - Trade and Development Report
  - World Investment Report
  - The Least Developed Countries Report
  - Information and Economy Report
  - Technology and Innovation Report
  - Commodities and Development Report

India's Initiatives regarding Climate Finance

- **National Adaptation Fund for Climate Change (NAFCC)**: It was established in 2015 to meet the cost of adaptation to climate change for the State and Union Territories of India that are particularly vulnerable to the adverse effects of climate change.
- **National Clean Energy Fund:** The Fund was created to promote clean energy, and funded through an initial carbon tax on the use of coal by industries.
- **National Adaptation Fund**: The fund was established in 2014 with a corpus of Rs. 100 crores with the aim of bridging the gap between the need and the available funds.

TIMES OF INDIA

Page 16

INFORMATION TECHNOLOGY RULES, 2021

(Syllabus: GS Paper 3 - internal Security)

Social media users can now contest action by cos in grievance panels

▶ Continued from P 1

As per the new guidelines, the central government now gets powers to establish one or more Grievance Appellate Committees (GAC) within three months and these shall consist of a chairperson and two whole-time members. The appointments will be done by the government: one shall be a member ex officio and two shall be independent members. "The focus of the amendment of intermediary guidelines is on the protection of online users," IT minister Ashwini Vaishnav said on Twitter.

Henceforth, any person whose social media account has faced action from a company but has failed to get any satisfactory redressal from its grievance officer can file an appeal with the GAC within 30 days. The GAC will deal with the appeals "expeditiously and attempt to resolve it within 30 calendar days", the new Rules say.

"Every order passed by the Grievance Appellate Committee shall be complied with by the intermediary (social media platforms) concerned and a report to that effect shall be uploaded on its website," the rules stipulate.

The rules also say while dealing with the appeal, the GAC may seek assistance from any person having requisite qualification, experience and expertise in the subject matter. "The GAC shall adopt an online dispute resolution mechanism wherein the entire appeal process, from filing of appeal to the decision thereof, shall be conducted through digital mode."

The rules also state that social media platforms should inform their rules and regulations, privacy policy and user agreement to subscribers in English or any language specified in the Eighth Schedule to the Constitution. Also, the rules advocate against any arbitrary decisions by the companies against user accounts.

Context: The government gave itself powers to order social media giants to overturn decisions such as suspending, blocking or removing user accounts over various violations, a move being seen as a blow to their self-designed content moderation practices.

Information Technology Rules, 2021

- **Origin**: The Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules, 2021 (IT Rules, 2021) was notified in February 2021.
- **Key Provisions:**
  - **Categories of Social Media Intermediaries**: Based on the number of users, on the social media platform intermediaries have been divided in **two groups:** Social media intermediaries and Significant social media intermediaries.
  - **Due Diligence to be Followed by Intermediaries**: In case, due diligence is not followed by the intermediary, **safe harbour(defined under Section 79 of the IT Act) provisions will not apply to them.**
  - **Mandatory Grievance Redressal Mechanism**: Intermediaries shall **appoint a Grievance Officer** to deal with complaints and share the name and contact details of such officers.
  - **Ensuring Online Safety and Dignity of Users**: Intermediaries shall **remove or disable access** within 24 hours of receipt of complaints of contents that exposes the private areas of individuals, show such individuals in full or partial nudity or in sexual act or is in the nature of impersonation including morphed images etc.
  - **Additional Due Diligence for the Significant Social Media Intermediaries**: **Need to appoint Chief Compliance Officer**, a Nodal Contact Person and a Resident Grievance Officer, all of whom should be resident in India.
  - **Removal of Unlawful Information**: An intermediary upon receiving actual knowledge in the form of an order by a court or being notified by the Appropriate Govt. or its agencies through authorized officer should not host or publish any information which is **prohibited under any law in relation to the interest of the sovereignty and integrity of India, public order, friendly relations with foreign countries etc.**

SOCIAL MEDIA

- Identify 'first originator' of content that authorities consider anti-national
- Appoint grievance officer, resolve complaints in 15 days
- File monthly compliance report on complaints received, action taken

DIGITAL NEWS

- Follow Press Council of India, Cable TV Networks (Regulation) Act norms.
- Self-regulatory bodies to oversee adherence to Code of Ethics
- I&B Ministry to form panel, oversight mechanism

OTT PLATFORMS

- Self-classify content into five age-based categories: U (universal), U/A 7+ (years), U/A 13+, U/A 16+, and A.
- Parental locks for any content classified as U/A 13+ or above.
- Age verification mechanism for content classified as 'A' (adult)

PIB

Oct 29

INVESTOR EDUCATION AND PROTECTION FUND AUTHORITY (IEPFA)

(Syllabus: GS Paper 2 - Government Policies and Interventions)

IEPFA organises an Investor Education, Awareness and Protection Conference in Srinagar, Jammu & Kashmir

Context: The Investor Education and Protection Fund Authority (IEPFA) under the aegis of Ministry of Corporate Affairs (MCA) organised an Investor Education, Awareness and Protection Conference in Srinagar, Jammu & Kashmir today at Kashmir International Conference.

various major initiatives of IEPF Authority and MCA

- **IEPFA Mascot Fundoo**: The mascot is conceptualised with an idea symbolizing IEPFA's vision of taking investor awareness to the last mile with the objective of making it easier to connect with its message, mandate and initiatives.
- **Niveshak Didi:** a unique endeavour of IEPF Authority with India Post Payment Bank wherein Investor Education will be promoted in **"By the women, for the women"** concept.
- **Niveshak Sarathi**: an initiative by IEPFA to promote financial literacy among people in far-flung areas by spreading knowledge through dedicated audio-visual and print material & a specially designed van equipped with a TV display, public announcement system, internet connectivity etc.
- **Investors' Handbook**: a concise compilation of information on savings, budgeting, and investments and provide a vast knowledge of financial instruments in capsule form thereby enabling them to make informed and sensible financial decisions.

Investor Education and Protection Fund Authority (IEPFA)

- **About**: IEPF Authority has been established under sub-section (5) of section 125 of **Companies Act, 2013** with the objective of promoting Investor Education, Awareness and Protection and for administration of the IEPF fund.

Investor Education and Protection Fund (IEPF)

- **About**: established under provision of the Companies Act, 2013.
- **Functions**: The amounts such as dividends, applications money, matured deposits etc, which have remained unpaid or unclaimed for a period of 7 years are required to be transferred to the IEPF.
    - The Amounts credited to IEPF are **maintained under the Consolidated Fund of India (Article 266 of the Constitution).**
- **Objectives**: The fund is utilized for promoting investor awareness and protection of investor interests.

DST

Oct 29

CRISPR GENE-EDITING TECHNOLOGY

(Syllabus: GS Paper 3 - Science & Technology)

Home >> CRISPR gene-editing possible in temperature sensitive organisms, plants & crop varieties

CRISPR gene-editing possible in temperature sensitive organisms, plants & crop varieties

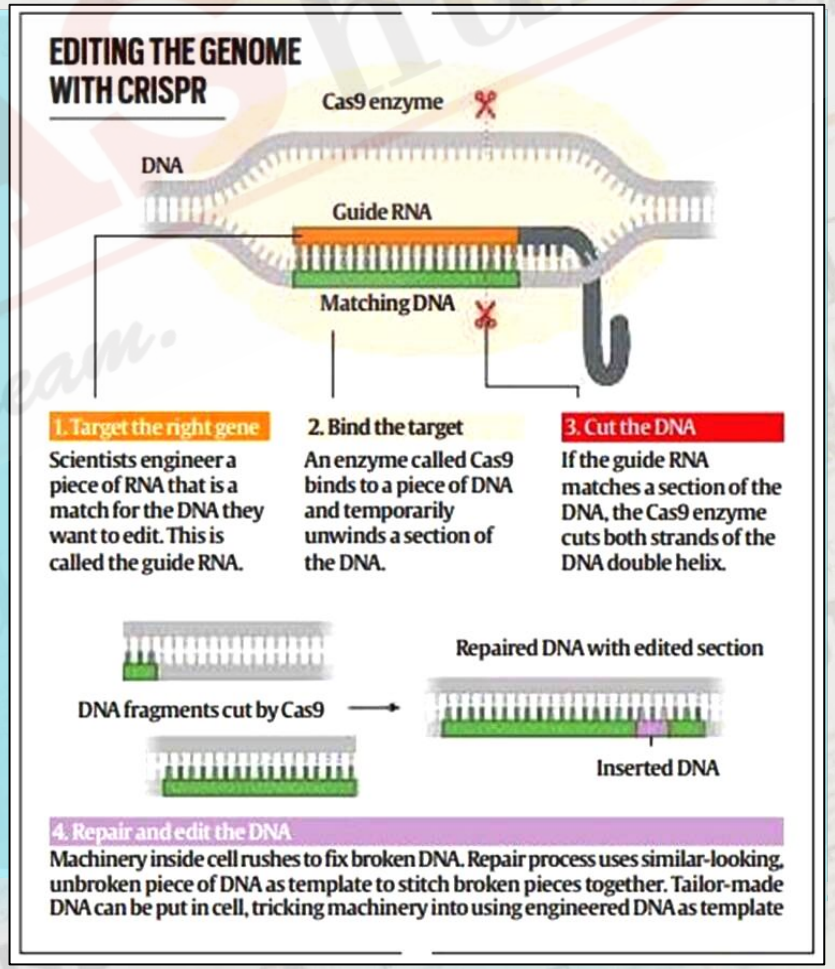
Context: Indian scientists have demonstrated for the first time that the associated Cas9 enzyme, which acts as molecular scissors to cut DNA at a location specified by a guide RNA, can bind to and cut the target DNA at very low temperatures.

Key points

- Scientists have **explored temperature-dependent binding and release of cleaved products** by the Cas9 enzyme.
- They have demonstrated that the **Cas9 enzymes strongly bind to the target at very low temperatures** and remains bound to the cleaved DNA products even after the enzyme has done its job.
- The results on Cas9-DNA binding and release mechanics **will provide valuable insights for developing temperature-dependent applications of the CRISPR-Cas9 technology.**

Clustered Regularly Interspaced Short Palindromic Repeats (CRISPR) Technology

- **About**: a **gene editing technology**, which **replicates natural defence mechanism in bacteria to fight virus attacks**, using a special protein called Cas9.
  - CRISPR are **short DNA sequences found in the genome of prokaryotic organisms** such as bacteria, which are reminders of previous bacteriophage (viruses) attacks that the bacteria successfully defended against.
  - It **usually involves the introduction of a new gene, or suppression of an existing gene,** through a process described as genetic engineering.
  - CRISPR technology **does not involve the introduction of any new gene from the outside.**
- **Mechanism**: Is often **described as 'Genetic Scissors'.**
  - Its mechanism is often compared to the **'cut-copy-paste', or 'find-replace' functionalities** in common computer programmes.
  - A bad stretch in the DNA sequence, which is the cause of disease or disorder, is **located, cut, and removed and then replaced with a 'correct' sequence.**
  - The tools used to achieve this are biochemical i.e., **specific protein and RNA molecules.**



DTE

Oct 29

MORE CYCLONE IN THE ARABIAN SEA

(Syllabus: GS Paper 1 - Geographical Phenomena)

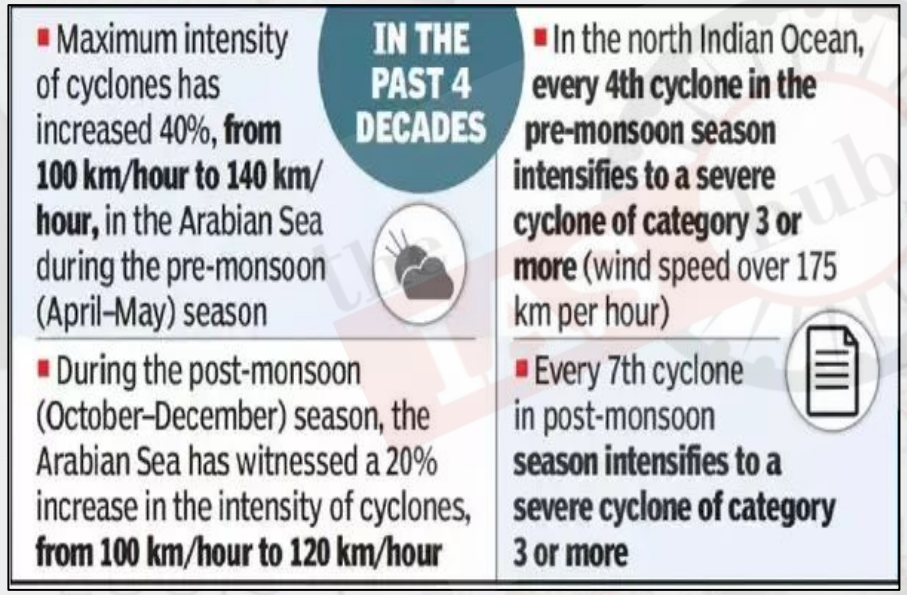


NATURAL DISASTERS

Fewer cyclones in Bay of Bengal but frequency increased in Arabian Sea: Report

The trend can be attributed to global warming, say researchers

By Seema Prasad
Published: Friday 28 October 2022



Context: While the global trend reflects a decrease in cyclones, there has been an increase in cyclones over certain parts of the world, including the Northern Indian Ocean (Arabian sea).

Key points

- The India Meteorological Data (IMD)'s data found **an average of 50.5 tropical cyclones per decade** over the region comprising the Bay of Bengal in the East and the Arabian Sea in the West.
- The Arabian Sea side of the north Indian Ocean saw **a 52 per cent increase in cyclonic storms (63-88 km per hour) from 2001 -2019**
- With the greenhouse gases increasing and the earth warming, not only does temperature and humidity increase but also **winds change and become weaker simultaneously.**
- One thing in the atmosphere that **inhibits the growth** of cyclones is called the **vertical shear,** which refers to how strongly the winds can change from the surface to the top of the atmosphere, for up to 10 kilometres or so.
    - It determines if the cyclone, which is trying to grow like a tunnel, gets chopped off or not. If it does, then its energy gets taken away and it doesn't grow into a strong cyclone
- El Nino Southern Oscillation (ENSO) years reported more tropical cyclonic activity over the Bay of Bengal region.

Factors responsible for More Cyclones in the Arabian Sea:

- **Increase in temperature**: Surface temperatures in the Arabian Sea have increased rapidly during the past century due to global warming.
    - Temperature now is 1.2–1.4 °C higher than the temperature witnessed four decades ago.
    - These warmer temperatures support active convection, heavy rainfall, and intense cyclones.
    - The rising temperature is also enabling the Arabian Sea to supply ample energy for the intensification of cyclones.
- **Wind Shear**: The Arabian Sea is also **providing conducive wind shear for cyclones.**
    - For instance, a higher level easterly wind drove the depression of **Cyclone Ockhi** from the Bay of Bengal to the Arabian Sea.
- **Greater occurrence of El Niño Modoki:** It is a climate phenomenon that creates conditions that are not conducive for cyclogenesis in the Bay of Bengal.
    - However, this condition is conducive for the formation of cyclones in the Arabian Sea.

DTE

Oct 29

NATIONAL GREEN TRIBUNAL

(Syllabus: GS Paper 3 - Env & Eco)



ENVIRONMENT

States fined thousands of crores over waste — but how did NGT calculate the penalty amount?

Fine determined on polluter pays principle, equated to environmental compensation and cost of restoration

NEXT NEWS >

By Vivek Mishra

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The NGT deals with civil cases under the seven laws related to the environment, these include:

- The Water (Prevention and Control of Pollution) Act, 1974,
- The Water (Prevention and Control of Pollution) Cess Act, 1977,
- The Forest (Conservation) Act, 1980,
- The Air (Prevention and Control of Pollution) Act, 1981,
- The Environment (Protection) Act, 1986,
- The Public Liability Insurance Act, 1991 and
- The Biological Diversity Act, 2002.

Context: The National Green Tribunal has slapped thousands of crores of fines on seven states on Supreme Court directions, totalling around Rs 28,180 crore and about Rs 2,000 crore in other cases.

National Green Tribunal

- **Statutory body**: Established in October, 2010 **under the National Green Tribunal Act 2010.**
  - With the establishment of the NGT, **India became the third country** in the world to set up a specialised environmental tribunal, only after Australia and New Zealand, and the first developing country to do so.
  - **New Delhi** is the Principal Place of Sitting of the Tribunal and Bhopal, Pune, Kolkata and Chennai shall be the other four places of sitting of the Tribunal.
- **Objectives**: Established for effective and expeditious disposal of cases relating to environmental protection and conservation of forests and other natural resources.
- **Guided by principles of natural justice**: The Tribunal is **not bound by the procedure laid down under the Code of Civil Procedure, 1908**, but shall be guided by principles of natural justice.
- **Polluter pays principle**: The NGT has **equated the amount of penalty fixed** on the states based on the "polluter pays principle" to environmental compensation and the cost of restoration.
- **Mandate**: NGT is mandated to make **disposal of applications or appeals finally within 6 months** of filing of the same.
- **Total Members**: The NGT act allows for up to 40 members (20 expert members and 20 judicial members).
- **Selection of Members:**
  - **Chairman**: is the administrative head of the tribunal, also serves as a judicial member and is required to be a serving or retired Chief Justice of a High Court or a judge of the Supreme Court of India.
  - **Members are chosen by a selection committee** (headed by a sitting judge of the Supreme Court of India) that reviews their applications and conducts interviews.
    - **The Judicial member**s are chosen from applicants who are serving or retired judges of High Courts.
    - **Expert members** are chosen from applicants who are either serving or retired bureaucrats not below the rank of an Additional Secretary to the Government of India (not below the rank of Principal Secretary if serving under a state government) with a minimum administrative experience of five years in dealing with environmental matters. Or, the expert members must have a doctorate in a related field.

THANK YOU!

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