SIVARAJAVEL IAS ACADEMY
FOUNDER - DIRECTOR OF SMART LEADERS IAS

# the CATALYST

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# The CATALYST

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The CATALYST is a monthly magazine for current affairs which tries to give aspirants an in-depth comprehension of certain topics which appeared in different sources over the month. The Magazine has been designed in such a way that the reading experience is enriching and insightful for the readers.

The contents have been grouped into a thematic structure to help aspirants focus on the overall GS syllabus.

Section I contains theme based Current affairs Analysis:

I. Within the Sub themes first few topics will be Prelims oriented followed by indepth coverage of Mains Topics.

II. A Section with an Essay Topic is also added.

III. The last section will have Questions for practice*.

IV. Fact Sheet and Quotes have also been provided

**New sections will be added or removed based on the new updates we include in the forthcoming issues.*

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the CATALYST

# From the Editor's Desk

**Dear Readers,**

2022 is ending and 2023 is almost around the corner.

Every time at this point we all come to terms with how time is the most precious resource we have. An aspirants will have to always value time more than anything else in her life. Every time we need to remind ourselves that we only have limited time. We may have regrets that we have'nt used our time properly but also remember that

*"You can't have a better tomorrow if you are thinking about yesterday all the time."*

In this New year, like every year let us resolve to utilise time efficiently.

In this NOVEMBER Issue (From November 1 to November 30, 2022, Current Affairs), we have covered a range of topics with special emphasis on **Doctrine of Pleasure, EWS Quota, COP-27,International Year of Millets,etc**

**I also extend my thanks to Mr. Deepak for also providing a book summary on Atomic Habits by James Clear. This can help you enrich your essays.**

*If there are any such book summaries that you can contribute to, kindly send them to our mail or contact us.*

We are constantly motivated by the reception given by our dear readers. We aspire to enrich the forthcoming issues. All feedback is welcome and suggestions to improve the magazine can be sent to sivarajaveliasacademy@gmail.com.

Sincerely,
P.Mohan

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# POLITY AND GOVERNANCE

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# FIRST AMENDMENT TO CONSTITUTION CHALLENGED

The Supreme Court recently agreed to examine a plea challenging the expansion of restrictions to the fundamental right to freedom of speech and expression that was made by the first amendment to the Constitution.

The petitioner, who has challenged the law nearly seven decades after it came into force, argued that the amendment damages the basic structure doctrine.

## What was the first amendment to the Constitution?

Just over a year into the working of the Constitution, then Prime Minister Jawaharlal Nehru introduced a Bill to amend the Constitution. On May 18, 1951, the amendment Bill was referred to a Select Committee which considered the issue for six days. The amendment officially came into effect on June 18, 1951.

The Constitution (First Amendment) Bill sought to make several consequential changes — from exempting land reforms from scrutiny to providing protections for backward classes in the Constitution. Notably, it also expanded on the scope of the restrictions on the right to free speech.

## Thus, the first amendment made two key changes:

First, it introduced the qualification "reasonable" to the restrictions that Article 19(2) imposed. In a 2015 paper, legal scholar Gautam Bhatia placed this term in context, and traced its origins to debates in the Constituent Assembly. The insertion of the term "reasonable", he argued, keeps the door open for the courts to step in and examine the legitimacy of the restrictions imposed by Parliament.

Second, the amendment introduced into the Constitution the specific terms "public order" and "incitement to an offence". This set of new, narrower terms in the provision were necessitated by two Supreme Court rulings in 1950, that went against the state's power to curb free speech.

## What were these two verdicts passed by the Supreme Court?

Both these verdicts involved the press: Brij Bhushan v State of Delhi (March 1950), and Romesh Thappar v State of Madras (May 1950). It was the verdicts in these cases that essentially promoted the first amendment.

## Romesh Thappar Case

In 1949, the Madras government (Tamil Nadu had not been created then) had banned 'Cross Roads', a left-leaning magazine, for its criticism of the government's foreign policy. This led to the first significant free speech ruling by the Supreme Court in Romesh Thappar v State of Madras.

The petitioner had challenged Section 9(1-A) of the Madras Maintenance of Public Order Act, 1949 as unconstitutional. This provision authorised the government to impose restrictions for the wider purpose of securing "public safety" or the "maintenance of public order".

The court had to define the terms "public safety" and "public order", and examine if they fell within the scope of the restrictions allowed in Article 19(2). The government argued that the words "undermining the security of the State" in Article 19(2) could be equated with "public safety" and "maintenance of public order."

In its majority opinion in the case, the court disagreed with the government and struck down the provision as unconstitutional. The court found a vast difference in degrees between the two provisions.

Justice Fazal Ali dissented from the majority view and said that disrupting public order is a means to undermine the security of the State.

Brij Bhushan Case

In 1950, the Chief Commissioner of Delhi

issued a "pre-censorship order" on the RSS mouthpiece 'Organiser' which too was critical of the government. Its publisher Brij Bhushan challenged Section 7(1)(c) of the East Punjab Public Safety Act, which allowed pre-publication scrutiny of material "prejudicial to public safety or the maintenance of public order".

The issue in this case was essentially the same as the one in Romesh Thappar. And the verdict of the Supreme Court followed the same pattern as in the earlier case.

# 22ND LAW COMMISSION

## Why in news?

After two and a half years, the 22nd Law Commission of India has been constituted with **Justice (retd) Rituraj Awasthi** as its head.

## About

The Law Ministry describes the Law Commission of India as a non-statutory body that is constituted by a notification of the Government of India, with definite terms of reference to carry out research in the field of law. The Commission makes recommendations to the Government (in the form of Reports) as per its terms of reference.

The first Law Commission was established during the British Raj era in 1834 by the Charter Act of 1833 and was chaired by Lord Macaulay. The Law Commission was first constituted in 1955 with the then Attorney-General of India, Mr. M. C. Setalvad, as its Chairman in independent India , and has so far submitted 277 reports. According to the Law Ministry's website, the "Law Commission of India provides excellent thought provoking and vital review of the laws in India".

It works as an advisory body to the Ministry of Law and Justice.The reports and recommendations made by the Law Commission are non-binding, that is, it is upto the Government to accept or reject the recommendations made by the Commission in its report.

t's not a permanent body. It is formed on an ad hoc basis, that is, on a temporary basis. The tenure of one Law Commission is usually three years.

## Composition

The Law Commission mainly contains:

1. One Chairman, who is mainly the retired judge of the Supreme Court
2. One Member Secratory
3. One Permanent Member, who is also usually the retired judge of either Supreme Court or High Court
4. Two Part-time members, and
5. Two Ex-officio members.

## Roles and Functions

It has many important roles and functions assigned to it. Some of them are as follows:

It is required to undertake extensive research and study deeply the various matters related to the law given to it either by Central Government or suo-motu.

Review the existing laws in the country for their improvement and suggest Government reforms on those matters for their productive results.

Study and research various matters related to the country and problems faced by it and put forward the results before the Government for enacting new legislation.

To continuously make reform for reducing the high cost of litigation incurred by people and state, eliminating long time taken delivering justice and to make procedures easier to shorten the time taken.

# UNITED NATIONS CONVENTION ON THE RIGHTS OF THE CHILD

## Why in news?

The international forum on drug-free childhood to be held here from November 16 to 18 will formulate a strategy for effectively advocating with governments for necessary policy and legislative interventions based on Article 33 of the United Nations Convention on the Rights of the Child (UNCRC)

## About UNCRC

The United Nations Convention on the Rights of the Child (commonly abbreviated as the CRC or UNCRC) is an international human rights treaty which sets out the civil, political, economic, social, health and cultural rights of children.

This Convention establishes 4 principles that must govern the implementation of all the rights it advocates:

1. Non-discrimination
2. Best interest of the child
3. Right to life, survival and development
4. Respect for the views of the child

The Convention is the first legally binding international instrument of Children's Rights protection. That means that it establishes an obligatory force to the body of all the rights it stipulates.

The Convention defines a child as any human being under the age of eighteen, unless the age of majority is attained earlier under national legislation

The UN General Assembly adopted the Convention and opened it for signature on 20 November 1989 (the 30th anniversary of its Declaration of the Rights of the Child). It came into force on 2 September 1990, after it was ratified by the required number of nations.

As of 14 November 2022, 196 countries are party to it, including every member of the United Nations except the United States.

The Convention advocates, in part II, that its implementation be monitored by a committee of experts. It is the Committee on the Rights of the Child which oversees that all participating States respect the Convention as well as the two additional Protocols.

## International Forum on 'Right to Drug-free Childhood'

It is organised by Fourth Wave Foundation (FWF) in partnership with United Nations Office on Drugs and Crime (UNODC) and World Federation Against Drugs (WFAD).

Theme: 'Children Matter-Right to a Drug-Free Childhood' is the central theme of the meet.

## Iceland model

The Iceland model is an environmental approach in which parenting, parental supervision and organised leisure time activities, together with increased normative pressure (curfew hours and encouragement of joint family dinners) play a central role in **reducing alcohol and drug consumption among young people**

# MOTHER TONGUE SURVEY OF INDIA

## Why in news?

The Ministry of Home Affairs (MHA) has completed the Mother Tongue Survey of India (MTSI) with field videography of the country's 576 languages.

## About

The Linguistic Survey of India (LSI) is a comprehensive survey of the languages of British India, describing 364 languages and dialects.The Survey was first proposed by George Abraham Grierson, a member of the Indian Civil Service and a linguist

A second Linguistic Survey of India project was initiated by the Language Division of Office of the Registrar General & Census Commissioner of India in 1984.

The Government of India then announced an ambitious project to expand and revise the Linguistic Survey of India. In the Eleventh Five-Year Plan (2007–12) Rs. 2.8 billion was sanctioned for the project.

## Mother Tongue Survey of India

The Mother Tongue Survey of India is a project that "surveys the mother tongues, which are returned consistently across two and more Census decades". It also documents the linguistic features of the selected languages

The NIC and the National Film Development Corporation (NFDC) will be documenting and preserving the linguistic data of the surveyed mother tongues in audio-video files. Video-graphed speech data of Mother Tongues will also be uploaded on the NIC survey for archiving purposes.

## Mother Tongues in India

As per an analysis of 2011 linguistic census data in 2018, more than 19,500 languages or dialects are spoken in India as mother tongues

According to the 2011 linguistic census, Hindi is the most widely spoken mother tongue, with 52.8 crore people or 43.6 per cent of the population declaring it as the mother tongue. The next highest is Bengali, mother tongue for 9.7 crore individuals, and accounting for 8 per cent of the population.

## Registrar General and Census Commissioner of India

Registrar General and Census Commissioner of India, founded in 1961 by Government of India Ministry of Home Affairs, for arranging, conducting and analysing the results of the demographic surveys of India including Census of India and Linguistic Survey of India. The position of Registrar is usually held by a civil servant holding the rank of Joint Secretary.

# EWS VERDICT

In a landmark ruling, the Supreme Court upheld by a 3-2 majority the Constitution (One Hundred and Third Amendment) Act, 2019 introducing 10 percent reservation for the economically weaker sections (EWS) among the unreserved categories in admissions and government jobs.

The majority view, as enunciated by one of the five judges of the Constitution Bench, described reservation as "an instrument not only for inclusion of socially and educationally backward classes to the mainstream of society, but also for the inclusion of any class or section so disadvantaged"

While Justices Dinesh Maheshwari, Bela M Trivedi and J B Pardiwala agreed that the amendment does not violate the basic structure of the Constitution, Chief Justice of India U U Lalit, and Justice S Ravindra Bhat dissented, saying the EWS quota is "contradictory to the essence of equal opportunity" and "strikes at the heart of the equality code".

The dissenting judges were of the view that "while the 'economic criteria' per se is permissible in relation to access of public goods (under Article 15), the same is not true for Article 16, the goal of which is empowerment, through representation of the community"

The five judges agreed that the provision gives the State the power to make special provisions in relation to admissions to private unaided institutions.

Justices Trivedi and Pardiwala also touched upon the concept of reservation as originally envisaged for a limited period and underlined the need to revisit and fine-tune it with the realities of the day.

Reservation," said Justice Pardiwala, "should not be allowed to become a vested interest"

Justice Maheshwari said, "Reservation is an instrument of affirmative action by the State to ensure an all-inclusive march towards the goals of an egalitarian society while counteracting inequalities; it is an instrument not only for inclusion of socially and educationally backward classes to the mainstream of society, but also for the inclusion of any class or section so disadvantaged as to be answering the description of a weaker section.

In this background, reservation structured singularly on economic background does not violate any essential feature of the Constitution of India and does not cause any damage to the basic structure of the Constitution of India."

Exclusion of the classes covered by Articles 15(4), 15(5) and 16(4)" – the Socially and Educationally Backward Classes (SEBC), Other Backward Classes (OBCs), Scheduled Castes (SCs) and Scheduled Tribes (STs) – "from getting the benefit of reservation as economically weaker sections, being in the nature of balancing the requirements of non-discrimination and compensatory discrimination, does not violate the equality code and does not in any manner cause damage to the basic structure of the Constitution of India"

Justice Maheshwari rejected the argument that providing the EWS quota over and above the 50 percent ceiling fixed by the Mandal Commission case will violate the basic structure, saying "that ceiling limit is not inflexible and in any case only applies to the reservations envisaged" for the already reserved categories "by Articles 15(4), 15(5) and 16(4) of the Constitution".

103rd amendment "cannot be said to breach the basic structure of the Constitution by permitting the State to make special provisions, including reservation, based on economic criteria

# INDIA'S DRAFT DIGITAL PRIVACY LAW

*GS II: Government Policies and Interventions for Development in various sectors and Issues arising out of their Design and Implementation.*

The new Digital Personal Data Protection Bill, 2022 released on (November 18) is focused on personal data, as compared to an earlier unwieldy draft. The reworked version of the legislation incorporates hefty penalties for non-compliance, but which are capped without any link to the turnover of the entity in question.

It has also relaxed rules on cross-border data flows that could bring relief to the big tech companies, alongside a provision for easier compliance requirements for start-ups.

There could be two potentially significant red flags: a near blanket exemption for government agencies from complying with some of the moreonerous requirements under the Bill, and a dilution of the remit of the proposed Data Protection Board, which is mandated to oversee the provisions of the proposed legislation.

Officials at the Ministry of Electronics and IT (MeitY) have said the new draft strikes a delicate balance and factors in learning from global approaches, while staying aligned to the Supreme Court's ruling on privacy as a fundamental right, but within reasonable restrictions.

While comparisons have been drawn with the EU's landmark General Data Protection Regulation or GDPR — which, according to Graham Greenleaf, professor of Law & Information Systems at the University of New South Wales, has substantially influenced legislation in nearly 160 countries — the Government of India's view sees its version of the Data Protection Bill as only one of the pieces that form part of its larger policy vision for the entire digital economy.

This larger policy includes a comprehensive digital India Act that would eventually replace the existing IT Act, the new data protection Bill that has just been unveiled, and the new telecom Bill that was put in the public domain last month.

In contrast, the landmark GDPR, in force since May 2018, is clearly focused on privacy and requires individuals to give explicit consent before their data can be processed.

A pair of sub-legislation — the Digital Services Act (DSA) and the Digital Markets Act (DMA) — take off from the GDPR's overarching focus on the individual's right over her data.

The DSA focuses on issues such as regulating hate speech, counterfeit goods etc. while the DMA defines a new category of "dominant gatekeeper" platforms, and is focused on uncompetitive practices and the abuse of dominance by these players

## Data protection laws in other geographies

An estimated 137 out of 194 countries have put in place legislation to secure the protection of data and privacy, with Africa and Asia showing 61% (33 countries out of 54) and 57% adoption respectively, according to data from the United Nations Conference on Trade and Development (UNCTAD), an intergovernmental organisation within the United Nations Secretariat. Only 48% of Least Developed Countries (22 out of 46) have data protection and privacy laws.

## India's draft Bill and the red flags

Wide-ranging exemptions to the Centre and its agencies with little to no safeguards, and reduced independence of the proposed Data Protection Board are among the key concerns flagged by experts.

It is also worth noting that the new Bill has just 30 clauses compared to the more than 90 in the previous one, mainly because a lot of operational details have been left to subsequent rule-making.

The central government can issue notifications to exempt its agencies from

adhering to provisions of the draft law for national security reasons. In an explanatory note accompanying the proposed legislation, the government argued that "national and public interest is at times greater than the interest of an individual", while justifying the need for such exemptions.

The draft law leaves the appointment of the chairperson and members of the Data Protection Board entirely to the discretion of the central government.

While the Data Protection Authority was earlier envisaged to be a statutory authority (under the 2019 Bill), the Data Protection Board is now a central government set up board. The government continues to have a say in the composition of the board, terms of service.

Minister of State for Electronics and IT Rajeev Chandrasekhar has said the new draft puts India in a position where the entire digital economy can be viewed through the prism of "trust and protection", and will help the government "move towards more data-led governance where we can create analytical models to figure out where the gaps are and then plug them".

The DPDP Bill, 2022 applies to all processing of personal data that is carried out digitally.

This would include both personal data collected online and personal data collected offline but is digitised for processing.

In effect, by being completely inapplicable to data processed manually, this provides for a somewhat lower degree of protection as the earlier drafts only excluded data processed manually specifically by "small entities" and not generally.

Furthermore, as far as the territorial application of the law is concerned, the Bill covers processing of personal data which is collected by data fiduciaries within the territory of India and which is processed to offer goods and services within India.

The current phrasing, inadvertently, seems to exclude data processing by Indian data fiduciaries that collect and process personal data outside India, of data principals who are not located in India.

This would impact statutory protections available for clients of Indian start-ups operating overseas, thereby impacting their competitiveness.

This position further seems to be emphasised with the DPDP Bill, 2022 exempting application of most of its protections to personal data processing of non-residents of India by data fiduciaries in India.

# SHOULD CHIEF MINISTERS HAVE A SAY IN THE APPOINTMENT OF GOVERNORS?

*GS II: Appointment to various Constitutional Posts, Powers, Functions and Responsibilities of various Constitutional Bodies.*

## Why in news?

With the rise in instances of tension, and even stand-offs, between State governments and Governors, there is once again a debate on the role of the Raj Bhavan.

## About Governor

Governor is a nominal executive head of the state. He forms an important part of the state executive where he acts as the chief executive head. He acts as a bridge between the Centre and the States and is considered as one of the pivotal parts of cooperative governance.

We are a federal country, which has a clear design that there will be constituent States who elect their own governments, and a Union of States. So, there is a need to ensure unity and some level of uniformity across the Union. This creates its own tension. One of the designs of the Constitution, to supposedly manage this tension, is the post of Governor as a link between the Centre and the States.

One can argue that the post of Governor has added to the tension at various times instead of resolving it.

## Issues Related to the Post of Governor in India:

There is no criteria, no minimum qualifications laid out for the appointment of a Governor. These are often retirement perks or rewards for loyalty to a particular party. Governors cannot be called before a court of law

Article 160 says that the president may confer on a Governor functions in any contingency not provided in the constitution. Further, Apprehensions exist that he will follow instructions given by the Union Council of Ministers in normal circumstances too. This goes against the constitutionally mandated neutral seat and has resulted in bias.

Discretionary powers used without the backing of objectivity and rationality usually create controverses and creates a tussle between the post of Governor and the Chief Minister

The constitutional mandate to act on the advice of the council of ministers is not clearly distinguished from the statutory authority as chancellor. For Ex, there was a recent appointment of a Vice Chancellor in a university by the Kerala Governor, bypassing government nominations

The appointments, transfers and removal of the governors are made arbitrarily with no or lack of written grounds.

There are no guidelines for the exercise of the governor's powers in case of the appointment of a Chief Minister or the dissolving of the Assembly. Also, there is no limit set for how long a Governor can withhold assent to a Bill.

These conflicts become controversies when there is a lack of mutual understanding and clear demarcation of powers between the Chief minister and the governor. There are two conventions regarding appointment of Governor.

The governor appointed should not belong to the state where he is appointed.This is to ensure that he is not part of the local politics

While appointing the governor, the president is required to consult the chief minister of the state concerned, so that the smooth functioning of the constitutional machinery in the state is ensured

But these conventions are usually overlooked resulting in the conflicts.

## Recommendations of various commissions on the appointment of Governor

1. Rajamannar Committee
2. Anandpur Sahib Resolution
3. West Beneal Memorandum
4. Sarkaria commission
5. MM Punchhi Commission
6. ARC I
7. ARC II

## Recommendations by Sarkaria Commission

The Sarkaria Commission, set up in 1983 to examine the Centre-State relationship on various points.

Many times, Governors take decisions as directed by the Union Home Ministry and the Central government. They have shown little regard for the Assembly or the State and changed governments at their will.

The Governor is supposed to be an independent, non-partisan person. He/she is supposed to keep the interests of the State in mind. The relationship between the Governor and the Chief

Minister is what determines smooth functioning.

The Chief Minister should be consulted before appointing the Governor, for proper working of the parliamentary system.

## Recommendations by NCRWC

The National Commission to Review the Working of the Constitution said, "It would be appropriate to suggest a committee comprising the Prime Minister, Vice President, the Home Minister, the Speaker of the Lok Sabha and the Chief Minister of the State concerned to select a Governor

## Recommendations of Punchhi Commission:

The impeachment procedure for the President can be adapted to impeach governors as well. The Convention of Governors serving as Chancellors of Universities and holding

Other statutory positions should be abolished because it opens their office to controversies and public criticism.

## Recommendations of Rajamannar Committee

It emphasized that the governor of the state should not consider himself an agent of the center but play his role as the constitutional head of the State.

## Recommendations of 2nd Administrative Reforms Commission:

The Inter-State Council should formulate guidelines on how governors should exercise a discretionary power.

## Opinion of Experts to further reform the post of governor

Total composition of the committee recommended for the appointment is of the ruling party at the Centre. It should be the Vice-President, the Speaker of the Lok Sabha, the Leader of the Opposition, and maybe the Chief Minister of the State.

Getting the Chief Minister involved in the process of selection is not right. The Governor cannot be made to feel that the Chief Minister was one of those responsible for his selection; the Governor has to be above the Chief Minister, be independent, be able to function in a nonpartisan manner, and not be beholden to the ruling party or to the Chief Minister.

Minimum qualification to be the governor: we have no criteria, no minimum qualifications laid out for a Governor. These are often retirement perks or rewards for unstinting loyalty to a particular party. Governors cannot be called before a court of law. These are things which have to be kept in mind.

The Governor is supposed to be a friend, philosopher and guide, helping from the back, sorting out issues and resolving disputes, even between political parties. The Governor has to at times advise the Centre on what is happening and what needs to be done. That brings the Centre and the State together.

## Way Forward-

Therefore, there has to be cooperation and coordination between the State government and the Governor, irrespective of their political loyalties.

# INTERNATIONAL RELATIONS

## What's Inside?


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2. WHAT IS THE MANGROVE ALLIANCE FOR CLIMATE
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# UNESCO ASIA-PACIFIC AWARDS

Recently, the United Nations Educational, Scientific and Cultural Organization (UNESCO) Asia-Pacific Awards for Cultural Heritage Conservation 2022 has been announced which included four winners from India.

Thirteen projects from six countries that have been acknowledged for awards were Afghanistan, China, India, Iran, Nepal and Thailand.

## India's Performance

Award of Excellence: Chhatrapati Shivaji Maharaj Vastu Sangrahalaya, Mumbai

Award of Distinction: Stepwells of Golconda, Hyderabad

Award of Merit: Domakonda Fort, Telangana, and Byculla Station, Mumbai

## Note

**Chhatrapati Shivaji Maharaj Vastu Sangrahalaya, Mumbai:** The museum is a part of the Victorian Gothic and Art Deco Ensembles of Mumbai's world heritage property. It was established as the Prince of Wales Museum of Western India in 1922.

**Byculla Station, Mumbai:** The station was built in 1853. The first train of the country passed through Byculla station almost one-and-a-half centuries ago. It has been restored to its original Gothic, heritage, and architectural glory.

**Domakonda Fort, Telangana:** The Domakonda Fort is private property and was built in the 18th century with an amalgam of styles including stucco work, arched pillars, a flat ceiling, and a courtyard with a water garden pond.

## About UNESCO Asia-Pacific Awards for Cultural Heritage Conservation

Since 2000, the UNESCO Asia-Pacific Awards for Cultural Heritage Conservation programme has recognised the efforts of private individuals and organisations in restoring, conserving and transforming structures and buildings of heritage value in the region.

It encourages other property owners to undertake conservation projects within their communities, either independently or by public-private partnerships.

The awards give people a sense of pride and a sense of ownership of their own heritage.

# WHAT IS THE MANGROVE ALLIANCE FOR CLIMATE

At the 27th Session of Conference of Parties (COP27), this year's UN climate summit, the Mangrove Alliance for Climate (MAC) was launched with India as a partner .

The move, in line with India's goal to increase its carbon sink, will see New Delhi collaborating with Sri Lanka, Indonesia and other countries to preserve and restore the mangrove forests in the region.

Attending the event in Sharm El-Sheikh, Egypt on Tuesday, Union Minister for Environment Forest and Climate Change Bhupender Yadav said that India is home to one of the largest remaining areas of mangroves in the world — the Sundarbans — and has years of expertise in restoration of mangrove cover that can be used to aid global measures in this direction.

An initiative led by the United Arab Emirates (UAE) and Indonesia, the Mangrove Alliance for Climate (MAC) includes India, Sri Lanka, Australia, Japan, and Spain.

It seeks to educate and spread awareness worldwide on the role of mangroves in curbing global warming and its potential as a solution for climate change.

Mariam bint Mohammed Almheiri, UAE's Minister of Climate Change and the Environment, while launching the alliance, said that her country intends to plant 3 million mangroves in the next two months, in keeping with UAE's COP26 pledge of planting 100 million mangroves by 2030.

However, the intergovernmental alliance works on a voluntary basis which means that there are no real checks and balances to hold members accountable. Instead, the parties will decide their own commitments and deadlines regarding planting and restoring mangroves.

The members will also share expertise and support each other in researching, managing and protecting coastal areas.

## The significance of mangroves

Mangroves have been the focus of conservationists for years and it is difficult to overstate their importance in the global climate context. Mangrove forests — consisting of trees and shrub that live in intertidal water in coastal areas — host diverse marine life.

They also support a rich food web, with molluscs and algae-filled substrate acting as a breeding ground for small fish, mud crabs and shrimps, thus providing a livelihood to local artisanal fishers.

Equally importantly, they act as effective carbon stores, holding up to four times the amount of carbon as other forested ecosystems.

Mangrove forests capture vast amounts of carbon dioxide from the atmosphere and their preservation can both aid in removal of carbon from the atmosphere and prevent the release of the same upon their destruction.

# EXTRADITION

## Why in news?

The High Court in London rejected the appeal of fugitive diamond merchant Nirav Modi and ordered his extradition to India.

## About

Extradition is the formal process of one state surrendering an individual to another state for prosecution or punishment for crimes committed in the requesting country's jurisdiction. It typically is enabled by a bilateral or multilateral treaty. Some states will extradite without a treaty, but those cases are rare.

## Extradition treaties

No country in the world has an extradition treaty with all other countries; for example, the United States lacks extradition treaties with China, Russia, Namibia, the United Arab Emirates, North Korea, Bahrain, and many other countries

There are two types of extradition treaties: list and dual criminality treaties. The most common and traditional is the list treaty, which contains a list of crimes for which a suspect will be extradited. Dual criminality treaties generally allow for extradition of a criminal suspect if the punishment is more than one year imprisonment in both countries

The extradition proceedings in India are covered by both domestic legislation and bilateral treaties. The domestic legislation governing the extradition process is the Extradition Act 1962 (the Extradition Act). The Extradition Act, together with the applicable bilateral treaties, arrangements and international covenants govern the process, terms and conditions of extradition. The Extradition Act provides for extradition of fugitive criminals to foreign states or extradition of fugitive criminals from foreign states with extradition arrangements or treaties with India. In the case of foreign states without any express extradition arrangements or treaties with India, the extradition process is governed by the Extradition Act.

India has extradition treaties with 47 countries, including the US, the UK, Germany, France, and

Portugal, according to the Ministry of External Affairs. In addition, it has 'extradition agreements' with 11 other countries, including Peru, Singapore, and Sri Lanka.. These arrangements have been entered into pursuant to section 3(4) of the Extradition Act, which provides that in the absence of a bilateral extradition treaty,the central government may, by notified order, treat any Convention to which India and a foreign state are parties, as an extradition treaty made by India with that foreign state, providing for extradition in respect of the offences specified in that Convention.

India have neither treaty nor arrangement for extradition from Pakistan, China, Myanmar

## Restrictions to extradition

Failure to fulfil dual criminality – if the act for which the criminal's extradition is requested is not a crime in the requested state, then the state can refuse extradition.

Political crimes – most nations refuse the extradition of political criminal suspects. This excludes terrorist offences and violent crimes.

The possibility of certain forms of punishment – if the accused is likely to receive capital punishment or torture in the requesting State, the requested state can refuse extradition.

Jurisdiction – jurisdiction over a crime can be invoked to refuse extradition.

The absence of an extradition treaty.

# EAST ASIA SUMMIT

## Why in news?

Vice President Jagdeep Dhankhar on November 13 addressed the East Asia Summit on the last day of his visit to Cambodia, as the three-day Association of South East Asian Nations (ASEAN) summit concluded.

## About

The East Asia Summit (EAS) is the **Indo-Pacific's premier forum** for strategic dialogue. It is the only leader-led forum at which all key Indo-Pacific partners meet to discuss political, security and economic challenges facing the region, and has an important role to play in advancing closer regional cooperation.

ASEAN leads the forum, and the chair position rotates between ASEAN Member States annually

Established in 2005 **Members : 18 countries** - the ten ASEAN countries (Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, the Philippines, Singapore, Thailand, Vietnam) along with Australia, China, India, Japan, New Zealand, the Republic of Korea, Russia and the United States.

There are **six priority areas** of regional cooperation within the framework of the EAS. These are – Environment and Energy, Education, Finance, Global Health Issues and Pandemic Diseases, Natural Disaster Management, and ASEAN Connectivity. India endorses regional collaboration in all six priority areas.

At the 7th EAS in November 2012, the Leaders of 16 EAS participating countries launched the **Regional Comprehensive Economic Partnership (RCEP)**. ASEAN and the 6 FTA Partners of ASEAN, which includes India, are the RCEP participating countries.

# 60TH ANNIVERSARY OF INDO CHINA WAR

## Why in news?

The 60th anniversary of two iconic battles in the India-China war was observed this week: the Battle of Walong, in the eastern sector, on November 16 and the Battle of Rezang La in eastern Ladakh on November 18.

## About-

The Sino-Indian War took place between China and India from October to November 1962, as a major flare-up of the Sino-Indian border dispute. There had been a series of violent border skirmishes between the two countries after the 1959 Tibetan uprising, when India granted asylum to the Dalai Lama. Chinese military action grew increasingly aggressive after India rejected proposed

The main cause of the war was a dispute over the sovereignty of the widely separated Aksai Chin and Arunachal Pradesh border regions. Aksai Chin, claimed by India to belong to Ladakh and by China to be part of Xinjiang, contains an important road link that connects the Chinese regions of Tibet and Xinjiang. China's construction of this road was one of the triggers of the conflict.

China abandoned all attempts towards a peaceful resolution on 20 October 1962, invading disputed territory along the 3,225-kilometre (2,004 mi) border in Ladakh and across the McMahon Line in the northeastern frontier The conflict ended when China unilaterally declared a ceasefire on 20 November 1962, and simultaneously announced its withdrawal to its claimed "Line of Actual Control" (i.e., the effective China–India border).

## Battle of Rezang La

The brightest of the bright spots in the pervasive darkness of 1962 was the Battle of Rezang La in the high Himalayas in **Ladakh**. The place is a massive **16,000-foot-high** feature in the narrow gap between the even higher mountains surrounding the strategic village of **Chushul and the Spanggur Lake** that stretches across both Indian and Chinese territories. Rezang La is, therefore, vital for the defence of the crucially important Chushul. Any invader reaching there would have had a free run to Leh.

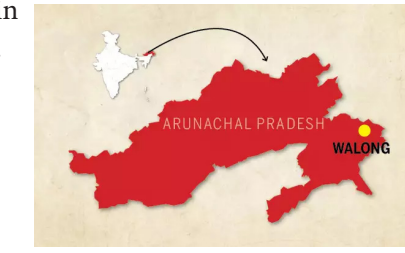
In the action on 18 November 1962, 114 Indian soldiers out of a total of 120 were killed and more than 1000 Chinese troops were killed. This battle was also important as China declared a ceasefire after watching the bravery of Indian soldiers in this battle.

## Battle of Walong

Walong is an administrative town and the headquarters of eponymous circle in the Anjaw district in eastern-most part of Arunachal Pradesh state in India

In autumn of 1962, during the Sino-Indian War, Walong was the scene of the Battle of Walong, where the Indian Army battled the Chinese advances.

The killed and wounded numbered 642 Indians and 752 Chinese.Indians were defeated at Walong, however the Chinese withdrawal allowed India to regain the territory.



# COP 27

*GS II: Important International Institutions, agencies and fora - their Structure, Mandate.*

Representatives from the world's nations meet in Sharm el-Sheikh, Egypt, on Nov. 6-18 to flesh out the rules of a new global climate pact.

Decades of climate talks have spawned a host of acronyms and jargon. Here is a guide.

## GLASGOW PACT

Reached at the 2021 U.N. climate summit in Glasgow, Scotland, the Glasgow Pact marked the first time a U.N. climate agreement mentioned the goal of reducing fossil fuel use.

The pact marked a breakthrough in efforts to resolve rules guiding the international trade of carbon markets to offset emissions.

With time running out for steep emissions cuts, the pact also urges nations to come up with more ambitious climate plans.

## PARIS AGREEMENT

Successor to the Kyoto Protocol, the international climate treaty that expired in 2020. Agreed in December 2015, the Paris Agreement aims to limit the rise in the average global surface temperature.

To do this, countries that signed the accord set national pledges to reduce humanity's effect on the climate that are meant to become more ambitious over time.

## GREENHOUSE GASES

The carbon dioxide (CO2) emitted by the burning of fossil fuels such as coal, diesel, gasoline or petrol, kerosene and natural gas is the main "greenhouse gas" responsible for warming the Earth's atmosphere.

But there are others such as methane, which is produced by cows and waste dumps, that are much more potent than CO2 but much shorter-lived in the atmosphere.

1.5 DEGREES

The Paris accord legally bound its signatories collectively to limit greenhouse gas emissions to keep the temperature rise "well below" 2.0 degrees Celsius (3.6 Fahrenheit) this century.

But the countries also promised to "pursue efforts" to keep the rise below 1.5C (2.7F), which scientists say would help to avert some of the most catastrophic effects.

Soberingly, the world has already heated up by just over 1C since the start of the Industrial Revolution.

Even if all the pledges made so far are delivered, it is still on track for an average rise of 2.7C this century, a United Nations report said

## COP27

The Conference of the Parties (COP) is the supreme body of the United Nations Framework Convention on Climate Change (UNFCCC), made up of representatives from each country that signed the Paris Agreement and which meets every year.

COP27, the 27th annual meeting, is being held under an Egyptian presidency in the Red Sea resort town of Sharm el-Sheikh.

## NATIONALLY DETERMINED CONTRIBUTIONS

NDCs are the pledges that each country makes to reduce its emissions and adapt to climate change from 2020 onward.

Countries have to update and expand their NDCs every five years. All signatories have submitted new pledges for Glasgow.

In sum, they are nowhere near enough, and a main aim of the conference is to use the negotiation process to increase them

## JUST TRANSITION'

The term used to describe a shift to a low-carbon economy that keeps the social and economic disruption of moving away from fossil fuels to a minimum while maximising the benefits for workers, communities and consumers.

## CLIMATE FINANCE

Richer countries agreed in 2009 to contribute $100 billion together each year by 2020 to help poorer countries adapt their economies and lessen the impact of rising seas, or more severe and frequent storms and droughts.

In 2015 they agreed to extend this goal through to 2025, but the target has yet to be met.

To put things in perspective, a U.S. Energy Department official estimated that the United States alone needs to invest $1 trillion a year to meet its new climate targets.

## CBDR

The principle of "common but differentiated responsibilities" (CBDR), was enshrined in the Kyoto accord.

It says that developed countries, which produced more emissions in the past as they built their economies, should take the lead in fighting climate change.

The issue is always one of the most thorny in climate talks.

The Paris Agreement sought to bind major rapidly developing economies such as China and Brazil into the global effort to cut emissions, adding the words "in light of different national circumstances".

It does not, however, require them to make any immediate pledges to cut their emissions.

## 'LOSS AND DAMAGE'

Although richer countries have agreed to provide them with funding to address the impact of climate change, poorer countries continue to press for an agreed basis to assess liability for the losses and damage caused by climate change, and calculate compensation.

As the UN climate summit in Egypt created history by deciding to establish a fund to address loss and damage, experts in India welcomed it is a testament to the tenacity of climate vulnerable countries and a warning shot to polluters that they can no longer go scot-free with their climate destruction.

India engaged constructively and actively on the subject of loss and damage, which refers to destruction caused by climate change-induced disasters, during the course of discussions at COP27.

The decision was approved at the COP27 closing plenary that started around 7:45 am (India time) after negotiators debated the updated drafts of the deal throughout the night.

The success of the talks hinged on a fund to address loss and damage fund, which was proposed by the G77 and China (India is part of this group), least developed countries and small island states.

Vulnerable countries had said that they would not leave COP27 without a loss and damage finance facility.

Financing or a new fund to deal with loss and damage — for example money needed for relocating people displaced by floods — was a long-pending demand of poor and developing countries, including India.

Developed nations, particularly the US, had opposed this new fund over fears that it would hold them legally liable for massive damages caused by climate change.

The path to the most significant outcome of the UNFCCC 27th Conference of Parties (COP27) was laid out on the first day of the two-week long meet.

On November 6, the delegates assembled at Sharm El-Sheikh in Egypt agreed to expand the COP's agenda to include the demand to compensate countries that suffer climate change-related loss and damages.

The summit concluded with the members agreeing to set up a global fund for the purpose. This is a major breakthrough.

Though the idea of loss and damage reparations is nearly as old as global climate change negotiations, mitigation and adaptation dominated COPs for nearly three decades.

There was a growing feeling amongst countries with the highest vulnerability to climate change, but with a minuscule GHG (greenhouse gases) footprint, that their concerns were not being addressed. The devastating floods in

Pakistan, this year, led to the amplification of the demands for climate reparations.

After its inclusion in the Sharm El-Sheikh agenda, "loss and damages" got embroiled in the perennial source of strife in climate negotiations — funding.

For more than 10 days, the US and the EU resisted all attempts to create a separate corpus, arguing, instead, that a chunk of the existing funds — by all accounts inadequate — be diverted for the reparations.

Then on November 18 — the scheduled day of the COP's closure — the EU agreed to create a new fund on the condition that developing countries that are big emitters should not be included as recipients.

Instead, a way should be found to include them as potential donors. Developing countries saw this as a tactic to create a rift amongst them, and rightly criticised it as another prevarication ploy of the rich nations.

Another day went in sorting out a compromise, according to which the "most vulnerable" countries will be prioritised and the door will be open for contributions by big emitters, still categorised as developing countries.

After working 36 hours overtime, the climate negotiators may have just about saved UNFCCC the blushes.

COP27 was a disappointment even by the none-too-high standards of the annual UNFCCC gathering after the high in Paris, seven years ago.

At the last COP in Glasgow, countries had agreed to "phase-down" the use of coal.

At Sharm El-Sheikh, a proposal by India and other developing countries to inject more ambition into the fossil-fuel reduction strategy did not make it to the final agreement.

This was expected given the turn to coal in many countries in the aftermath of the Ukraine war. But the lack of progress after Glasgow speaks poorly about global intent, especially that of the rich countries, on arresting climate change.

The Sharm El-Sheikh agreement does mention that $4 trillion will be required every year to meet the renewable energy targets till 2030.

Yet, the rich countries are nowhere close to delivering on their commitment to provide $100 billion every year.

COP27 was yet another opportunity missed in pushing them to fulfil this promise.

# G20 SUMMIT 2022

*GS II: Bilateral, Regional and Global Groupings and Agreements involving India and/or affecting India's interests.*

## Context

G20 Presidency is not merely a diplomatic meeting for India, it is a new responsibility and a measure of the world's trust in India. As India gets ready for G20 presidency, it is highly important to know the key issues of G20 meet at Indonesia and how important is the presidency for India.

## Priority issues:

Global Health Architecture- This involves deliberations towards strengthening global health resilience and making the global health system more inclusive, equitable, and responsive to crises.

Sustainable Energy Transition- Deliberations here have centred on achieving the full potential of rapid digitalisation of the global economy by creating a new landscape of cooperation among nations.

Digital Transformation- Under this rubric, the discussions have focussed on ways to accelerate the transition towards cleaner energy sources. In particular, since any such transition requires substantial investments, the efforts have been focussed on finding a platform for such investments.

## Key Takeaways

Theme: Recover Together Recover Stronger

The joint statement includes India's message to Russia: "Today's era must not be of war" this is a message, which is the result of India's constructive, cooperative and consensus-building approach, which helped bridge the gap between Russia and the Western countries.

India got the presidency of the G20, 2023: This is the first time the country will be holding (in New Delhi from September 9 and 10, 2023) an international summit of this scale.

The Indian Prime Minister stated that India's presidency will be inclusive, ambitious, decisive and action-oriented, as represented by India's G20 chairmanship theme "One Earth, One Family, One Future."

Meeting of the world's two most powerful economies – US and China: At a time when the ties between their countries have been strained, their meeting is seen as an incremental step towards rebuilding the fractured relationship.

The divide between Russia and the West is evident: Especially after news of the "Russian-built" missile landing in Poland – a NATO member country.

Meeting of Indian PM and Chinese President: This was their first public meeting since the India-China border standoff began in 2020.

## India's G20 Presidency

India assumed the G20 presidency from the current chair Indonesia on December 1.

Prime Minister Narendra Modi unveiled the logo, theme and website of India's G20 presidency.

The logo bears a lotus and the message of *'Vasudhaiva Kutumbakam — One Earth, One Family, One Future.*

## G20 presidency as an opportunity for India to represent global south and developing countries

India's opportunity to take on the role of peace-maker on behalf of the South.

India is also readying to push for global consensus on maintaining stable supply chains for food and fertilisers to build food security globally, and for stable supplies of energy.

Modi's reference to India's development of Unified Payment Interface as having brought about a "digital revolution", and the digital divide in the developing world indicated another likely big idea during India's presidency: a lead role for India in transferring this technology to other countries.

India's leadership of the G20 will be "inclusive, ambitious, decisive, and action-oriented", hinting that Delhi is planning to push a global campaign for a sustainable lifestyle, LiFE (Lifestyle for Environment).

## About G20

The G20 was formed in 1999 in the backdrop of the financial crisis of the late 1990s that hit East Asia and Southeast Asia in particular. Its aim was to secure global financial stability by involving middle-income countries.

The members of the G20 are Argentina, Australia, Brazil, Canada, China, France, Germany, India, Indonesia, Italy, Japan, Republic of Korea, Mexico, Russia, Saudi Arabia, South Africa, Turkey, the United Kingdom, the United States, and the European Union. Spain is invited as a permanent guest.

The presidency of the G20 rotates every year among members, and the country holding the presidency, together with the previous and next presidency-holder, forms the **'Troika'** to ensure continuity of the G20 agenda. Italy, Indonesia, and India are the Troika countries right now.

# SOCIAL JUSTICE

What's Inside?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2. FRAMEWORK TO CURB FAKE REVIEWS ON E-COMMERCE SITES
3. PRIORITY PATHOGENS LIST
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OLD PENSION - NEW PENSION SCHEME

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CHILD MARRIAGE

*GS II: Issues Relating to Development and Management of Social Sector/ Services relating to Health, Education, Human Resources.*

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# NATIONAL SUICIDE PREVENTION STRATEGY

## Why in news?

The Ministry of Health and Family Welfare on Monday (November 21) unveiled the National Suicide Prevention Strategy — the first-of-its-kind policy formulated by the government to prevent suicides as a public health priority.

## About

## Suicide

Suicide is the act of intentionally causing one's own death.Mental disorders (including depression, bipolar disorder, schizophrenia, personality disorders, anxiety disorders), physical disorders (such as chronic fatigue syndrome), and substance abuse (including alcoholism and the use of and withdrawal from benzodiazepines) are risk factors.

## Laws and Policies in India

Attempt to commit **suicide is no more a crime** under **section 309 of IPC** in India. Article 21 of the constitution states that to quote "No person shall be deprived of his life or personal liberty except according to procedure established by law". Article 21 does talk about right to life but no article talks about "Right to die".

Suicide prevention and intervention efforts in India are in the nascent stage.According to the World Health Organization (WHO), suicide in India is a serious public health issue but it can be prevented with timely interventions that are based on evidence.

Suicide prevention is also one of the United Nations Sustainable Development Goals **(SDG3.4.2)** under **"Good Health and Well-being"** wherein they have asked member countries to work towards **reduce global suicide rates by one third by 2030**.

Notable steps taken by the Government of India include the decriminalization of suicide in the **Mental HealthCare Act of 2017** and launching of India's first **mental health toll free helpline KIRAN.**

## Suicides in India: What's the current scenario?

According to the annual report of the National Crime Records Bureau (NCRB), released in August, 1.64 lakh people died by suicide in 2021 — an increase of 7.2 per cent from 2020. This is 10 per cent higher than the COVID deaths (1.48 lakh) in India in 2020, and 6.8 times the maternal deaths (23,800) in the same year.

The NCRB report also stated that more than 1,00,000 people die by suicide in the country every year. A total of 25,891 suicides were reported in the 53 megacities of the country during 2021, with the highest in Delhi.

In the past three years, the suicide rate in the country has increased from 10.2 to 11.3 per 1,00,000 population. Most suicides in India are by youth and middle-aged adults — with 65 per cent of the suicides in 2020 being reported in the age group of 18-45 years.

## The Strategy

The policy that will set the stage for promotion of mental health and prevention of suicides in the coming decade.

The goal of the strategy is **to reduce suicide mortality in the country by 10 per cent by 2023**. The strategy provides a framework for multiple stakeholders to implement activities for prevention of suicides in the country.

## Objectives

There are three main objectives of the strategy.

It seeks to establish **effective surveillance mechanisms for suicide** within the next three years.

It seeks to establish **psychiatric outpatient departments** that will provide suicide prevention services through the District Mental Health Programme in all districts within the next five years.

It aims to integrate a mental well-being curriculum in all educational institutions within the next eight years.

It aims to strengthen surveillance of suicide and further generation of evidence through evaluation, that will ensure improvement in the programme quality.

# FRAMEWORK TO CURB FAKE REVIEWS ON E-COMMERCE SITES

The Department of Consumer Affairs has unveiled the new standard – Indian Standard (IS) 19000:2022 on "Online Consumer Reviews" and Ratings.

Indian Standard (IS) 19000:2022 on "Online Consumer Reviews" and Ratings

It is prepared by Bureau of Indian Standards (BIS) to protect consumer interest from fake and deceptive reviews on e-commerce platforms.

The standards will be applicable to every online platform which publishes consumer reviews.

## Key Provisions

- Guiding principles: integrity, accuracy, privacy, security, transparency, accessibility and responsiveness.

The standard will initially be voluntary for compliance by all e-commerce platforms. BIS will also develop a Conformity Assessment Scheme for the standard to assess compliance.

The standard *prescribes specific responsibilities* for the review author and the review administrator.

For review author, these include confirming acceptance of terms and conditions, providing contact information.

For review administrators, these include safeguarding personal information and training of staff.

The standard provides for methods for verification of the review author through email address, identification by telephone call or SMS, confirming registration by clicking on a link, using captcha system to check traceability and genuineness of the review author

With respect to moderation, the standard provides for both automated and manual moderation and provides checks for analyzing the review content.

# PRIORITY PATHOGENS LIST

## Why in news?

The World Health Organization (WHO) is working to compile an updated list of priority pathogens that can cause future outbreaks or pandemics

## About

The priority pathogens list was first published in 2017 and includes COVID-19, Ebola virus disease, Lassa fever, Middle East respiratory syndrome (MERS), Severe Acute Respiratory Syndrome (SARS), Rift Valley fever, Zika, and "Disease X". This was drawn by WHO.

According to WHO, the most critical group of all includes multidrug resistant bacteria that pose a particular threat in hospitals, nursing homes, and among patients whose care requires devices such as ventilators and blood catheters.

The priority pathogen list is not exhaustive, nor does it make any claims about which pathogen will cause the public health emergency of international concern

Targeting priority pathogens and virus families for research and development of countermeasures is essential for a fast and effective epidemic and pandemic response

Scientific relevance, public health concerns, socio economic impact, access and equity are being considered as the criteria to identify which pathogen will make the list.

The process of drawing up the new list was started in 2017 and the revised list is expected to be out by the first quarter of 2023.

Scientists will go over 25 virus families, bacteria and diseases X — where 'Disease X' is a moniker for unidentified pathogens that have the potential to become a public health crisis.

## Fungal priority pathogen list

The WHO fungal priority pathogens list (WHO FPPL) is the first global effort to systematically prioritize fungal pathogens, considering their unmet research and development (R&D) needs and perceived public health importance.

The WHO FPPL aims to focus and drive further research and policy interventions to strengthen the global response to fungal infections and antifungal resistance. The WHO FPPL list is divided into three categories: critical, high and medium priority.

**Criteria** - Deaths, annual incidence,Current global distribution,Complications and sequelae, Antifungal resistance ,Evidence-based treatments

Table 3. WHO fungal priority pathogens list

| Critical group | High group | Medium group |
|---|---|---|
| *Cryptococcus neoformans* | *Nakaseomyces glabrata (Candida glabrata)* | *Scedosporium* spp. |
| *Candida auris* | *Histoplasma* spp. | *Lomentospora prolificans* |
| *Aspergillus fumigatus* | Eumycetoma causative agents | *Coccidioides* spp. |
| *Candida albicans* | Mucorales | *Pichia kudriavzeveii (Candida krusei)* |
| | *Fusarium* spp. | *Cryptococcus gattii* |
| | *Candida tropicalis* | *Talaromyces marneffei* |
| | *Candida parapsilosis* | *Pneumocystis jirovecii* |
| | | *Paracoccidioides* spp. |

# LEPTOSPIROSIS

## Why in news?

Tamilnadu Health Minister inaugurated the Regional Leptospirosis Diagnostic Laboratory at the State Public Health Laboratory

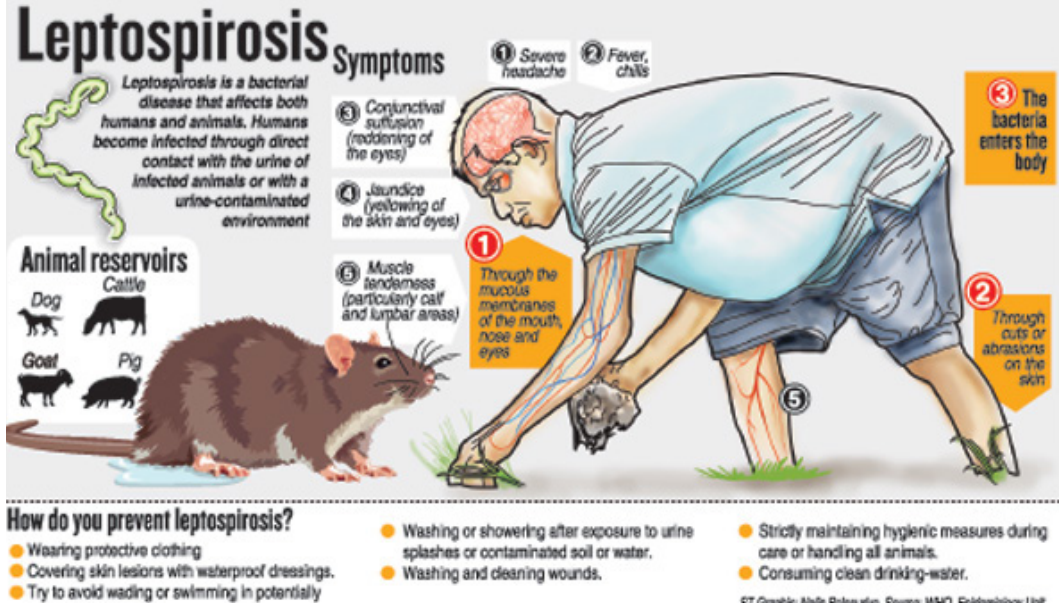
## About

## Leptospirosis

Leptospirosis is a bacterial disease that affects humans and animals. It is caused by bacteria of the genus Leptospira. In humans, it can cause a wide range of symptoms, some of which may be mistaken for other diseases. Some infected persons, however, may have no symptoms at all.

Without treatment, Leptospirosis can lead to kidney damage, meningitis (inflammation of the membrane around the brain and spinal cord), liver failure, respiratory distress, and even death.

The bacteria that cause leptospirosis are spread through the urine of infected animals, which can get into water or soil and can survive there for weeks to months. Many different kinds of wild and domestic animals carry the bacterium.




Leptospirosis occurs worldwide, but is most common in temperate or tropical climates. It is an occupational hazard for many people who work outdoors or with animals

## Prevention

The risk of acquiring leptospirosis can be greatly reduced by not swimming or wading in water that might be contaminated with animal urine, or eliminating contact with potentially infected animals.

Protective clothing or footwear should be worn by those exposed to contaminated water or soil because of their job or recreational activities.

## Treatment

Leptospirosis is treated with antibiotics, such as doxycycline or penicillin, which should be given early in the course of the disease.

Intravenous antibiotics may be required for persons with more severe symptoms. Persons with symptoms suggestive of leptospirosis should contact a health care provider.

## National Programme for Prevention and Control of Leptospirosis (NPPCL)

The government of India launched the National Programme for Prevention and Control of Leptospirosis (NPPCL) in 2015 in the endemic states of India (Gujarat, Kerala, Tamil Nadu, Maharashtra, Karnataka and Andaman & Nicobar

Islands), intending to reduce the morbidity and mortality associated with leptospirosis.

Several preventive, management and control measures such as limiting exposure to stagnant water, contamination-free drinking water, chemoprophylaxis for high-risk groups, and awareness activities were being implemented through this programme.

Even after being in its growing stage, the programme has been strongly recognized by the states. The surveillance of the disease is being done through the Integrated Diseases Surveillance Programme Portal.

**Diagnostic Tests** -Polymerase Chain Reaction (PCR), Microscopic Agglutination Test (MAT), IgM ELISA, Dark Field Microscopy (DFM)

# MEASLES OUTBREAK

## Why in news?

Over 200 cases of measles have been recorded in Mumbai with 13 deaths. Maharashtra Chief Minister Eknath Shinde has blamed the lack of vaccination behind the ongoing outbreak.

## About

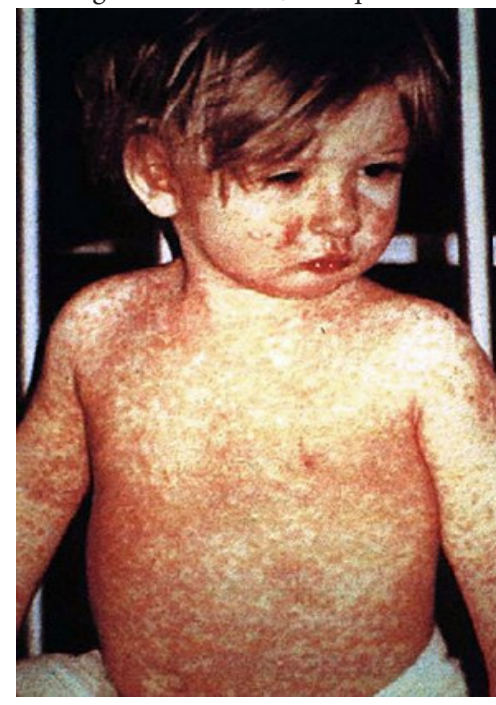
Measles is caused by a single-stranded, enveloped RNA virus It is classified as a member of the genus Morbillivirus in the Paramyxoviridae family. Humans are the only natural hosts of measles virus.Measles is of zoonotic origin, having evolved from rinderpest, which infects cattle.

The virus is transmitted by direct contact with infectious droplets or by airborne spread when an infected person breathes, coughs, or sneezes. Measles virus can remain infectious in the air for up to two hours after an infected person leaves an area.

Measles is an acute viral respiratory illness. It is characterized by a prodrome of fever (as high as 105°F) and malaise, cough, coryza, and conjunctivitis followed by rashes. In rare cases, it can also lead to **Subacute Sclerosing Panencephalitis (SSPE)**, a fatal disease of the central nervous system. Typically, SSPE develops seven to ten years after a child has had measles and recovered.

The rash usually appears about 14 days after a person is exposed. The rash spreads from the head to the trunk to the lower extremities. Patients are considered to be contagious from 4 days before to 4 days after the rash appears. Of note, sometimes immunocompromised patients do not develop the rash.

No specific antiviral treatment exists for measles virus.Severe complications from measles can be reduced through supportive care that ensures good nutrition, adequate fluid intake



and treatment of dehydration with WHO-recommended oral rehydration solution

## Vaccine

Measles can be prevented with measles-containing vaccine, which is primarily administered as the combination **measles-mumps-rubella (MMR) vaccine**.Measles/ MR vaccine

First dose of Measles or MR vaccine is given

at 9 completed months to12 months (vaccine can be given up to 5 years if not given at 9-12 months age) and second dose is given at 16-24 months. Post-vaccination, it takes at least four weeks to develop antibodies.

## Mumbai Outbreak

Poverty, poor hygiene practices, poor quality of nutrition and lack of vaccination in children have all contributed to the spiralling cases in Mumbai. Most cases have been reported from Bhiwandi (Thane) and Malegaon (Nashik) which lack vaccination coverage, especially among children. Some families didn't immunise their children because of religious and cultural backgrounds. Many lives could have been saved had the children been vaccinated on time and in more significant numbers

# OLD PENSION - NEW PENSION SCHEME

*GS II: Development Processes and the Development Industry — the Role of NGOs, SHGs, various groups and associations, donors, charities, institutional and other stakeholders.*

## Why in news?

For three months between August and October, employees in Himachal, organising themselves under the New Pension Scheme Employees' Association, were on a hunger strike demanding the restoration of the old system.

## About

Old Pension Scheme

Pension to government employees at the Centre as well as states was fixed at 50 per cent of the last drawn basic pay. It was hence described as a 'Defined Benefit Scheme'. The Government bears the expenditure incurred on the pension. The scheme was discontinued in 2004.

No tax benefits are applicable to the employees. Income under the old pension scheme doesn't attract tax.

To illustrate, if a government employee's basic monthly salary at the time of retirement was Rs 10,000, she would be assured of a pension of Rs 5,000. Also, like the salaries of government employees, the monthly payouts of pensioners also increased with hikes in dearness allowance or DA (to make up for the steady increase in the cost of living.) announced by the government for serving employees.

Moreover, under the OPS, there was the provision of the General Provident Fund (GPF).

GPF is available only for all the government employees in India. Basically, it allows all the government employees to contribute a certain percentage of their salary to the GPF. And the total amount that is accumulated throughout the employment term is paid to the employee at the time of retirement.

## Concerns

There is no corpus fund specifically for pensions.

The 'pay-as-you-go' scheme created inter-generational equity issues

Unsustainable - pension liabilities would keep climbing since pensioners' benefits increased every year with pensions being indexed with inflation as Dearness Allowances and the life expectancy increasing , thus making the system unsustainable.

## Old Age Social and Income Security (OASIS) project Report

In 1998, the Union Ministry of Social Justice and Empowerment commissioned

a report for an Old Age Social and Income Security (OASIS) project. An expert committee submitted the report in January 2000.

The primary objective of OASIS was targeted at unorganised sector workers who had no old age income security.The basic mandate of the Project is to make concrete recommendations for actions which the Government of India can take today, so that every young person can genuinely build up a stock of wealth through his or her working life, which would serve as a shield against poverty in old age.

The OASIS report recommended individuals could invest in three types of funds — safe, balanced, and growth — to be floated by six fund managers.

The OASIS report became the basis for the New Pension Scheme, which was notified in December 2003 and what was originally conceived for unorganised sector workers, was adopted by the government for its own employees.

## New Pension Scheme/ National Pension Scheme

The New Pension Scheme (NPS)- (Contribution based Pension Scheme) for Central government employees was notified on December 22, 2003. Unlike some other countries, the NPS was for prospective

employees, it was made mandatory for all new recruits joining government service from January 1, 2004.

The defined contribution comprised 10 per cent of the basic salary and dearness allowance by the employee and a matching contribution by the government — this was Tier 1, with contributions being mandatory. In January 2019, the government increased its contribution to 14 per cent of the basic salary and dearness allowance.Private sector employees can also join NPS.

Individuals can choose from a range of schemes from low risk to high risk, and pension fund managers promoted by public sector banks and financial institutions, as well as private companies.

After retirement, an employee can withdraw a part of the pension amount in a lumpsum. As per the rule, 60 percent of the corpus on maturity is tax-free, while the remaining 40 per cent is taxable and must be invested in annuities for a regular income or pension.

The National Pension System (NPS) is being administered and regulated by Pension Fund Regulatory and Development Authority (PFRDA) set up under PFRDA Act, 2013.

## Models of NPS

NPS platform offers different models to suit the different segments of users. These include :

Government model - The Government model for the Central and State Government EmployeesNPS is mandatorily applicable on Central Government employees (except Armed Forces) recruited on or after 01.01.2004. Subsequently, all State Governments excluding West Bengal have also adopted NPS for their employees.

The Corporate Model - Companies can adopt NPS for their employees with contribution rates as per the employment conditions.

The All Citizens Model - The All Citizens Model of the NPS allows all citizens of India aged between 18 - 65 years to join NPS on voluntary basis.

Over the last eight years, the NPS has built a robust subscriber base, and its assets under management have increased. As on October 31, 2022, the Central government had 23,32,774 subscribers, and states had 58,99,162 subscribers. The corporate sector had 15,92,134 subscribers, and the unorganized sector 25,45,771. There were 41,77,978 subscribers under the NPS Swavalamban scheme

## Benefits of NPS

*Flexible* - NPS offers a range of investment options and choice of Pension Funds (PFs) for planning the growth of the investments in a reasonable manner and monitor the growth of the pension corpus. Subscribers can switch over from one investment option to another or from one fund manager to another.

*Simple* – Opening an account with NPS provides a Permanent Retirement Account Number (PRAN), which is a unique number and it remains with the subscriber throughout his lifetime.

*Portable*- NPS provides seamless portability across jobs and across locations. It would provide hassle-free arrangement for the individual subscribers while he/she shifts to the new job/location

*Well Regulated*- NPS is regulated with transparent investment norms, regular monitoring and performance review of fund managers by NPS Trust.

*Dual benefit* of Low Cost and Power of compounding: The account maintenance costs under NPS are the lowest as compared to similar pension products across the globe

Till the retirement, pension wealth accumulation grows over the period of time with a compounding effect. The account maintenance charges being low, the benefit of accumulated pension wealth to the subscriber eventually become large.

*Ease of Access*: The NPS account is manageable online. An NPS account can be opened through the eNPS portal.

## Concerns

Unlike OPS, the NPS requires employees to deposit 10% of the basic pay, along with the dearness allowance.

There is no GPF advantage and the amount of pension is not fixed.

The major issue with the scheme is that it is market-linked and return-based. In simple terms, the payout is uncertain.

# CHILD MARRIAGE

*GS II: Issues Relating to Development and Management of Social Sector/Services relating to Health, Education, Human Resources.*

## Why in news?

The UNFPA-UNICEF Global Programme to End Child Marriage is the first United Nations-led joint initiative designed with a focus on promoting the rights of adolescents to delay marriage. A team of the steering committee of the UNFPA-UNICEF joint programme to end child marriage has visited the country for the country

## About Child Marriage

Child marriage refers to any formal marriage or informal union between a child under the age of 18 and an adult or another child.

While the prevalence of child marriage has decreased worldwide – from one in four girls married a decade ago to approximately one in five today – the practice remains widespread.

Child marriage is often the result of entrenched gender inequality, making girls disproportionately affected by the practice. Globally, the prevalence of child marriage among boys is just one sixth that among girls

## Impact of child marriage

1. Vulnerable to domestic violence
2. Increase in school dropout rate
3. Complications during pregnancy and childbirth
4. Lack of education leading to Intergenerational poverty cycle
5. Increase in female infanticide
6. Higher fertility rates due to unwanted pregnancies
7. Increased economic burden on households - decrease in investment

## Status of Child marriage in India

In India, child marriage reduced from 47.4% in 2005-06 to 26.8% in 2015-16, registering a decline of 21% points during the decade. In the last five years, it declined by 3.5% points to reach **23.3%** ( Urban 14.7% Rural - 27%) **in 2020-21,** according to the latest National Family Health Survey-5 data. .

- Men aged 25-29 years married before age 21 years is 17%.
- Women aged 15-19 years who were already mothers or pregnant is 6.8% during NFHS 5 survey.
- Eight States have a higher prevalence of child marriage than the national average
- West Bengal, Bihar and Tripura top the list with more than 40% of women aged 20-24 years married below 18, according to NFHS data.
- States with a large population of tribal poor have a higher prevalence of child marriage. Jharkhand, 32.2% Assam - 31.8%
- Some States have shown a reduction in child

marriages - Madhya Pradesh (23.1% in 2020-21 from 32.4% in 2015-16), Rajasthan (25.4% from 35.4%) and Haryana.

- Several States are pegged just below the national average - Odisha, 20.5%
- States with high literacy levels and better health and social indices have fared much better on this score. Kerala - 6.3% Tamil Nadu 12.8%

## Reasons for child marriage

In March 2020, the Minister of Women and Child Development informed Lok Sabha that the practice of child marriages is largely due to the prevailing social customs, tradition, illiteracy, poverty, low status of women in society, and lack of awareness

According to UNICEF, while the roots of the practice of child marriage vary across countries and cultures, poverty, lack of educational opportunities, limited access to health care, and poverty perpetuate it.

## Effect of Pandemic on child marriage

The risk of child marriage increases due to child marriage through various pathways, including economic shocks, school closures and interruptions in services. It is well known, for example, that economic insecurity can lead to child marriage as a way to relieve financial pressure on a family.

Over the next decade, up to 10 million more girls will be at risk of becoming child brides as a result of the pandemic

## Laws Against Child marriage in India:

The Child Marriage Restraint Act of 1929

The Prohibition of Child Marriage Act of 2006

As per the 1929 Act, marriage of girls below the age of 14 years and boys below the age of 18 years was prohibited. This Act was amended in 1978 to increase the minimum age to 18 years for females, and 21 years for men. The Prohibition of Child Marriage Act, 2006 replaced the 1929 Act, with the same minimum age limits.

The Prohibition of Child Marriage (Amendment) Bill, 2021 seeks to increase the minimum age of marriage for females to 21 years. The Bill was referred to the Standing Committee on Education, Women, Children, Youth, and Sports on December 21, 2021.

## Schemes to tackle child marriage

The Ministry of Women and Child Development implements the 'Beti Bachao Beti Padhao (BBBP)' scheme, wherein women and society at large are made aware about gender equality and ill effects of child marriages.

States have launched many initiatives to improve the factors linked to child marriage, from education to health care and awareness programmes.

For instance, West Bengal's Kanyashree scheme offers financial aid to girls wanting to pursue higher studies

The various welfare schemes implemented by Tamil Nadu Government focus towards the education of girl children and the marriage assistance schemes have been designed in such a manner that the benefits reach the girl who has completed 18 years of age, with the aim of eradicating child marriages.

## Convention on the Elimination of all Forms of Discrimination Against Women

The Convention on the Elimination of all Forms of Discrimination Against Women (CEDAW) is an international treaty adopted in 1979 by the United Nations General Assembly.

Described as an international bill of rights for women, it was instituted on 3 September 1981 and has been ratified by 189 states

India signed CEDAW on July 39, 1980 and ratified it on July 9, 1993, with certain reservations. India has not yet ratified the Optional Protocol to CEDAW.By accepting the Convention, States commit themselves to undertake a series of measures to end discrimination against women in all forms

## SDG on Gender equality

The importance of ending child marriage has been recognized by the international community through its inclusion in **Sustainable Development Goal (SDG) 5: Achieve gender equality and empower all women and girls.** Target 5.3 seeks to end child, early and forced marriage by 2030. Child marriage also hinders the realization of many other SDGs, especially those related to education and health.

## UNPA-UNICEF Global Programme to End Child Marriage

In 2016, UNICEF, together with UNFPA, launched a global programme to tackle child marriage in 12 of the most high-prevalence or high-burden countries: Bangladesh, Burkina Faso, Ethiopia, Ghana, India, Mozambique, Nepal, Niger, Sierra Leone, Uganda, Yemen and Zambia.

The UNFPA-UNICEF Global Programme to End Child Marriage promotes the rights of adolescent girls to avert marriage and pregnancy, and enables them to achieve their aspirations through education and alternative pathways. The Global Programme supports households in demonstrating positive attitudes, empowers girls to direct their own futures, and strengthens the services that allow them to do so, including sexual and reproductive health and social protection programmes

## Measures needed-

Mere legislative measures cannot tackle the child marriage problem in India because it is a very complex and requires multi pronged approach

Social protection programmes and poverty alleviation strategies are central to preventing child marriage and improving the economic and social conditions that make girls more vulnerable.

Evidence suggests that conditional cash transfers are the most successful intervention for improving girls' retention or progress in school and delaying child marriage. Cash or in-kind transfers with delayed marriage as a condition have as much as a 50 per cent success rate in forestalling child marriage

# Economic Development & Agriculture

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# ONE NATION, ONE ITR FORM

The Central Board of Direct Taxes (CBDT) has proposed a single income tax return (ITR) form for all taxpayers.

There are seven kinds of ITR forms, which are used by different categories of taxpayers.

They are,

1. ITR Form 1, called 'Sahaj', is for small and medium taxpayers. Sahaj forms can be filed by individuals who have an income up to Rs 50 lakh, with earnings from salary, one house property/ other sources (interest etc).
2. ITR-2 is filed by people with income from residential property.
3. ITR-3 is intended for people who have income as profits from business/ profession
4. ITR-4 (Sugam) can be filed by individuals, Hindu Undivided Families (HUFs) and firms with total income up to Rs 50 lakh from business and profession.
5. ITR-5 and 6 are for limited liability partnerships (LLPs) and businesses respectively.
6. ITR-7 is filed by trusts and non-profit organisations.

## Change proposed

According to the proposal, all taxpayers, barring trusts and non-profit organisations (ITR-7), will be able to use a common ITR form, which will include a separate head for disclosure of income from virtual digital assets.

The proposed draft ITR proposes to introduce a common ITR by merging all the existing returns of income except ITR-7. The current ITR-1 and ITR-4 will continue.

This will give an option to such taxpayers to file the return either in the existing form (ITR-1 or ITR-4), or the proposed common ITR, at their convenience.

Taxpayers filing ITR-2, ITR-3, ITR-5 and ITR-6 would not have the option to file the old forms.

# INTEREST-FREE BANKING

Pakistan announced that the government would introduce interest-free banking in the country.

"Interest-Free Banking" is a fundamental concept derived from the Islamic form of banking. It operates with primitive professional and ethical standards that exclude the "Muslims" from paying or receiving any kind of interest.

Interest-Free Banking was introduced in Muhammad Zia-ul-Haq regime in the 80s. Since then, it has developed very rapidly.

Riba is the Islamic term for interest charges on loans, and according to the current interpretation, covers all interest — not just excessive interest. Under Islamic law, a Muslim is prohibited from paying and accepting interest on a predetermined rate.

As per Islamic banking, money can only be parked in a bank without interest and cannot be used for speculative trading, gambling, or trading in prohibited commodities such as alcohol or pork.

This theory is based on the knowledge and application of the injunctions of Sharia which prevent injustice.

Interest-free financial system permits return obtained in the form of profit by investment and business activities that actually produce wealth. It also circulates this wealth in society as widely as possible. The system forbids interest which concentrates wealth in a few hands.

## Interest-free banking in India

In a report submitted to the government in 2008, a committee headed by Raghuram Rajan had, without naming Sharia banking, suggested the

need to have interest-free banking in India.

The Reserve Bank of India (RBI) suggested that given the complexities of Islamic finance and various regulatory challenges involved, Islamic banking could be gradually introduced through the opening of an "Islamic window" in conventional banks.

While interest-free deposits strengthen banks' financial arm, high inflation can erode the value of the depositors' money since they are not earning interest.

# FINMIN CLEARS FRAMEWORK FOR SOVEREIGN GREEN BONDS

The government gave nod to the final sovereign green bonds framework in line with the Budget announcement.

The issuance of green bonds, which are intended to raise funds for public sector projects to help in reducing carbon intensity of the economy, will be for Rs 16,000 crore in the second half of this financial year.

The proceeds from the green bonds, which are a part of the scheduled borrowing plan of the government, would be used to fund renewable energy, energy efficiency, clean transportation, water and waste management, pollution prevention and control and green buildings among others.

Nuclear power generation, landfill projects, alcohol/weapons/tobacco/gaming/palm oil industries and hydropower plants larger than 25 MW have been excluded from the framework

All eligible 'green expenditures will include public expenditure by the government in the form of investment, subsidies, grant-in-aids, or tax foregone or select operational expenditures, R&D expenditures in public sector projects that help in reducing the carbon intensity of the economy.

Equity is allowed only in the sole case of metro projects under the 'Clean Transportation' category, the framework said.

The Ministry of Finance has constituted a Green Finance Working Committee (GFWC) including members from relevant line ministries and chaired by the Chief Economic Advisor.

The GFWC will meet at least twice a year to support the Ministry of Finance with selection and evaluation of projects

Initial evaluation of the project will be the responsibility of the concerned Ministry/ Department in consultation with experts.

The allocation of the proceeds will be reviewed in a time-bound manner by the GFWC to ensure that the allocation of proceeds is completed within 24 months from the date of issuance.

It will also bring out an annual report on the allocation of proceeds to the eligible projects along with details of projects financed, status of implementation, and unallocated proceeds.

For every year, GFWC will meet to identify a fresh set of eligible expenditures in line with the framework in consultation with line Ministries.

Once the Finance Bill is passed, Ministry of Finance will inform Reserve Bank of India (RBI) regarding the amount of eligible green expenditures for which proceeds from green bonds can be utilised.

The proceeds will be deposited to the Consolidated Fund of India (CFI) in line with the regular treasury policy, and then funds from the CFI will be made available for eligible green projects, the framework said.

This Green Bond Framework has been reviewed by CICERO, a provider of second opinions on green bond frameworks.

Finance Minister Nirmala Sitharaman in her Budget Speech this year announced that the government proposes to issue sovereign green bonds to mobilise resources for green infrastructure.

The proceeds will be deployed in public sector projects, which help in reducing the carbon intensity of the economy.

# REGULATORY FRAMEWORK FOR ONLINE BOND PLATFORMS

Capital markets regulator Securities and Exchange Board of India (SEBI) has introduced a regulatory framework to facilitate providers of online bond platforms that are selling listed debt securities.

SEBI has defined online bond platform as any electronic system, other than a recognised stock exchange or an electronic book provider platform, on which the debt securities which are listed or proposed to be listed, are offered and transacted. Further, online bond platform provider means any person operating or providing such a platform.

During the past few years, there has been an increase in the number of OBPPs offering debt securities to non-institutional investors. Most of them are fintech companies or are backed by stock brokers.

There has been a significant increase in the number of registered users who have transacted through them. And the operations of OBPs were outside SEBI's regulatory purview.

## New Rules

Under the new rules, no person would act as an online bond platform provider without obtaining registration certificate as a stock broker from SEBI

After obtaining registration as a stock broker in the debt segment of a stock exchange, an entity would have to apply to the bourse to act as an OBPP.

*The new rules mandate registration certificate as a stock broker from SEBI to act as an online bond platform provider.*

Those acting as an online bond platform provider without registration certificate provider prior to 9th november 2022 continue to do so for a period of three months.

The move will also enhance the confidence among investors, particularly non-institutional investors, as the platforms would be provided by SEBI-regulated intermediaries.

A person acting as an online bond platform provider without registration certificate prior to the date of this regulation coming into force can continue to do so for a period of three months.

To this effect, SEBI has amended NCS (Issue and Listing of Non-Convertible Securities) Regulations. The new norm has become effective from November 9.

## Bonds

Bonds are units of corporate debt issued by companies and securitized as tradeable assets.

A bond is referred to as a fixed-income instrument since bonds traditionally paid a fixed interest rate (coupon) to debtholders.

Variable or floating interest rates are also now quite common.

Bond prices are inversely correlated with interest rates: when rates go up, bond prices fall and vice-versa.

# CDSL- CENTRAL DEPOSITORIES SERVICES INDIA LTD

## Why in news?

Certain services at CDSL were disrupted due to a suspected cyber attack

## About

CDSL, or Central Depositories Services India Ltd, is a government-registered share depository, alongside its other state-owned counterpart National Securities Depository Ltd (NSDL).

Share depositories hold shares in an electronic or dematerialised form and are an enabler for

securities transactions, playing a somewhat similar role to what banks play in handling cash and fixed deposits. While banks help customers keep their cash in electronic form, share depositories help consumers store shares in a dematerialised form.

CDSL was founded in 1999. It is a Market Infrastructure Institution or MII that is deemed as a crucial part of the capital market structure, providing services to all market participants, including exchanges, clearing corporations, depository participants, issuers and investors.

On its website, CDSL describes its foundational goal as "convenient, dependable and secured depository services", and says that all its activities over the last two decades have been in support of that goal, at an affordable cost.

## Functions of CDSL

CDSL facilitates holding and transacting in securities in the electronic form and facilitates settlement of trades done on stock exchanges.

These securities include equities, debentures, bonds, Exchange traded Funds (ETFs), units of mutual funds, units of Alternate Investment Funds (AIFs), Certificates of deposit (CDs), commercial papers (CPs), Government Securities (G-Secs), etc.

## National Securities Depository Limited

NSDL, one of the largest Depositories in the World, established in August 1996 has established a state-of-the-art infrastructure that handles most of the securities held and settled in dematerialized form in the Indian capital market. Although India had a vibrant capital market which is more than a century old, the paper-based settlement of trades caused substantial problems like bad delivery and delayed transfer of title, etc. The enactment of Depositories Act in August 1996 paved the way for establishment of NSDL.

# CBDC

## Why in news?

The Reserve Bank of India (RBI) launched the Central Bank Digital Currency (CBDC) — digital rupee or e-rupee (e₹) — for the retail and wholesale categories.

## About

CBDC is a legal tender issued by the RBI in digital form. It is the same as the fiat currency, and is exchangeable one-to-one with the fiat currency. Only its form is different — it is not paper (or polymer) like physical cash. It is a fungible legal tender, for which holders need not have a bank account. CBDC will appear as 'liability' (currency in circulation) on the RBI's balance sheet.

The e-rupee will be in the form of a digital token representing a claim on the central bank, and will effectively function as the digital equivalent of a banknote that can be transferred electronically from one holder to another. A token CBDC is a "bearer-instrument" like a banknote, meaning whoever 'holds' the tokens at a given point in time will be presumed to own them.

## Need for CBDC

- Reduction in cost associated with physical cash management
- To further the cause of digitisation to achieve a less cash economy.
- Supporting competition, efficiency, and innovation in payments
- To explore the use of CBDC for improvement in cross-border transactions
- Support financial inclusion
- Safeguard the trust of the common man in the national currency vis-à-vis proliferation of crypto assets
- Leveraging blockchain technology for the e-rupee is a stepping stone for India becoming a $1 trillion digital economy

## Types of CBDC

Based on usage and the functions performed by the digital rupee, and considering different levels of accessibility, the RBI has demarcated the digital rupee into retail and wholesale categories.

**Retail e-rupee** - (token based) is an electronic version of cash primarily meant for retail transactions, which can potentially be used by almost everyone, and can provide access to safe money for payment and settlements.

**Wholesale CBDC**- (account-based) is designed for restricted access to select financial institutions. It has the potential to transform the settlement systems for financial transactions undertaken by banks in the government securities (G-Sec) segment and inter-bank market, and make the capital market more efficient and secure in terms of operational costs, use of collateral, and liquidity management.

## CBDC vs. Cryptos

Cryptocurrencies are not commodities or claims on commodities as they have no intrinsic value; claims that they are akin to gold seem opportunistic.They do not represent any person's debt or liabilities. There is no issuer. They are not money — certainly not currency — as the word has come to be understood historically.Cryptos are not backed by the central bank; in fact, the RBI wants the government to ban cryptocurrencies in India. The inherent design of cryptocurrencies is more geared to bypass the established and regulated intermediation and control arrangements that play the crucial role of ensuring integrity and stability of the monetary and financial ecosystem, says the RBI's concept note on digital rupee

## Risks in CBDCs

- **Disintermediating banks**: if sufficiently large and broad-based, the shift to CBDC can impinge upon the bank's ability to plough back funds into credit intermediation.
- **Elevated cyber security risks**, vulnerability testing and costs of protecting the firewalls.
- **Operational burden and costs** for the central bank in managing CBDC.
- **Reduced privacy** relative to physical cash as the CBDC holdings could be tracked and accounted for.
- **Data privacy threats** and compromise of credentials.
- **Faster obsolescence of technology** could pose threat to CBDC ecosystem calling for higher costs of upgradation.
- **Operational risks of intermediaries** as the staff have to be retrained and groomed to work in CBDC environment.

# WHY IS IT ESSENTIAL TO CONTAIN DOMESTIC INFLATION?

*GS III: Indian Economy and issues relating to Planning, Mobilization of Resources, Growth, Development and Employment.*

## Context

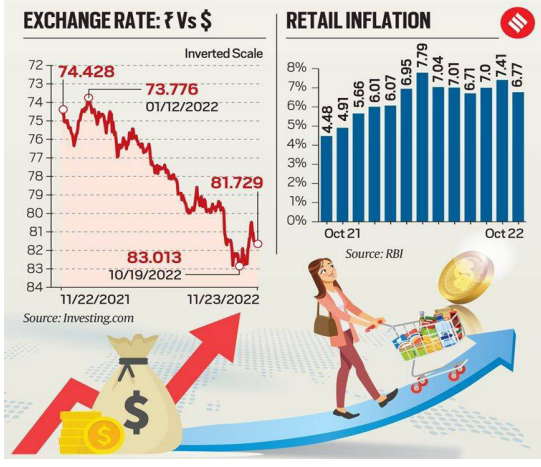
According to former RBI Governor C Rangarajan, containing domestic inflation is critical to halting the rupee depreciation.

*Inflation:* It is a rise in prices, which can be translated as the decline of purchasing power over time.

*Depreciation:* It reduces the value of a country's currency when compared with the currency of other countries (say $, measured by an exchange rate of the local currency with respect to $).

## Value of the currency and its depreciation

The current account (export and import of goods and services) and capital account (inflow and outflow of funds) in the balance of payments are important elements to determine the value of the currency.




The value of a currency can be strong despite the high current account deficit because there is enough capital flowing from outside into the country.

Therefore, the supply of foreign currency increases not because of trade but because of the decision to invest or because of the decision to keep deposits in the country.

The main reason for the rupee depreciating in its value (against the dollar) is because of the capital account – the outflow of funds and the lack of funds coming from outside.

That is because the US Fed, with a view to controlling inflation in the US, really raised the rate of interest. Therefore, investors find the US more attractive.

## Impact of Depreciation

An undervalued currency is better because it is more attractive for exports and reduces the current account deficit.

It discourages imports because the imported goods become more expensive (due to the reduction in the value of the rupee) and which leads to rising inflation.

Because India imports more than exports, the steady deterioration in the value of the rupee is not helping the economy.

So long as inflation in India is higher than the inflation in other countries, the value of the rupee will continue to depreciate.

## Steps to be taken to stabilise the rupee's exchange rate

The RBI and the government must work together to keep the inflation rate in the margins set under the inflation targeting scheme (4+/-2%).

It helps to control inflation while also having an impact on the value of the rupee.

## Challenges ahead for India

This is mainly due to the global slowdown driven by the confluence of stubbornly high inflation, rising borrowing costs and geopolitical tensions.

Stagflation is a period when slow economic growth and joblessness coincide with rising inflation.

# GEOGRAPHY, ENVIRONMENT, BIODIVERSITY AND DISASTER MANAGEMENT

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*GS III: Conservation, Environmental Pollution and Degradation, Environmental Impact Assessment.*

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CLIMATE CHANGE & POPULATION GROWTH: CHALLENGES

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# HIMALAYAN YAK

The Himalayan yak has recently earned the food animal tag from the FSSAI. The categorisation is expected to help check the decline in the population of high-altitude bovine by making it a part of the conventional milk and meat industry.

## About

Yaks belong to the genus Bos and are therefore related to cattle (Bos primigenius species).

Domestic Yak (Bos Grunniens) descended from the wild yak (Bos mutus).

Yak is found throughout the Himalayan region i.e., Arunachal Pradesh, Sikkim, North Bengal, Uttarakhand, Himachal Pradesh, Ladakh and Jammu and Kashmir; while wild Yak is found in Tibet. It is also found as far north as Mongolia and Russia.

The Government of India established the ICAR-National Research Centre on Yak, in 1989 at Dirang, Arunachal Pradesh as a dedicated centre for research into yak husbandry.

According to a census carried out in 2019, India has some 58,000 yaks – a drop of about 25% from the livestock census of 2012.

The drastic decline could be attributed to less remuneration from the bovid and discouraging the younger generations from continuing with nomadic yak rearing.

The sale of yak milk and meat is limited to local consumers.

Protection Status of Wild Yak (Bos mutus):

IUCN Red list status: Vulnerable

CITES: Appendix I

Indian WildLife (Protection) Act of 1972: Schedule I

# CARBON BORDER TAX

Recently, a consortium of countries that includes India has jointly opposed the Carbon Border Taxes proposed by the European Union (EU) at 27th edition of the Conference of Parties (COP) in Sharm El Sheikh, Egypt.

## About Carbon Border Tax

A carbon border adjustment tax is a duty on imports based on the amount of carbon emissions resulting from the production of the product in question. As a price on carbon, it discourages emissions. As a trade-related measure, it affects production and exports.

The proposal is part of the European Commission's European Green Deal that endeavours to make Europe the first climate-neutral continent by 2050.

A carbon border tax is arguably an improvement from a national carbon tax.

A national carbon tax is a fee that a government imposes on any company within the country that burns fossil fuels.

## Causes Behind Imposing Carbon Tax

The EU has declared to cut its carbon emissions by at least 55% by 2030 compared to 1990 levels. Till date, these levels have fallen by 24%.

However, emissions from imports contributing to 20% of the EU's CO2 emissions are increasing.

Such a carbon tax would incentivise other countries to reduce GHG emissions and further shrink the EU's carbon footprint.

The Emissions Trading System of the EU makes operating within the region expensive for certain businesses.

The EU authorities fear that these businesses might prefer to relocate to countries that have more relaxed or no emission limits.

This is known as 'carbon leakage' and it increases the total emissions in the world.

# FLAME LILY

Flame lily occupies a special place in Tamil literature. The Sangam-era poet, Kapilar, refers to it in his Kurinchipattu that describes the landscape of the mountainous terrain. When the State of Tamil Nadu was formed in 1956, flame lily was named as its official flower.

However, it is not the best of times for farmers raising Gloriosa superba, also referred to as 'Kanvali kizhangu' 'Karthigaipoo', and 'Senkanthalpoo'. Falling prices and lack of marketing support are affecting them.

Commercial cultivation of the flame lily had attracted many in Tamil Nadu since the 1980s as a kilogram of the seeds of the flower, with its therapeutic properties, fetched up to ₹8,000 in a pharmaceutical-driven market. That's no longer the case.

"Flame lily is used by pharmaceutical companies, but the farmers are excluded from the actual process once they harvest the seeds. This allowed middlemen to manipulate the market," Pala Raghupathy, organiser, Tamil Nadu Kanvali Kizhangu Vivasayigal Sangam (TNKKVS), told The Hindu.

Based out of Mulanur in Tiruppur district, the 15-year-old flame lily farmers' association has 2,100 members, and has been lobbying for greater transparency in the way the sector works.

## Medicinal value

Growing from a fleshy rhizome, this herbaceous climber with vividly coloured flowers is commonly found in scrubland, forests, thickets and even sand dunes. Both the roots and the seeds are important pharmaceutical ingredients in indigenous Indian and African medicine.

For several decades, they have been part of therapies to treat or manage ailments such as cancer, gout, arthritis, leprosy and dyspepsia.

Among the 24 alkaloids present in flame lily are colchicine and colchicoside, used in anti-cancer medication, besides 10 non-alkaloidal medicinal compounds, including B-sitosterol, chelidonic acid, luteolin and stigmasterol.

## Market

Approximately 80% of the export-quality seeds are procured from farms based in Thoppampatty and Ottanchattram (Dindigul district), Mulanur and Dharapuram (Tiruppur district) and Aravakurichi (Karur district) of Tamil Nadu.

## Difficult to sell

Where once whole seeds were being exported to countries such as the United States, China, Italy, Germany and Sweden, companies have started sending the extract instead. Approximately 100 kg of seeds can yield 16% liquid extract.

This is a very specific product for a specific market. Moringa can fetch a minimum of at least one rupee at its lowest, but flame lily cannot be sold easily. Marketing agencies do not want to hold its seed stock and sell.

# BEAVER BLOOD MOON

Recently occurred 'Beaver blood moon' – a total lunar eclipse from the East Asia to North America, offers world's last total lunar eclipse until 2025.

## Total Lunar Eclipse

A total lunar eclipse occurs when the Earth casts its shadow completely over a full moon, blocking reflection of all direct sunlight from the lunar orb and dimming the color of the moon to a reddish hue, hence the term "blood moon."

This is only possible when the orbits of the Earth, moon and sun align so that the moon is directly behind Earth relative to the sun. Otherwise, the moon passes above or below Earth's shadow because its orbit around Earth is usually tilted relative to Earth's orbit about the sun.

## Why red?

The reddish appearance of the lunar surface — the moon does not entirely disappear from view is caused by rays of sunlight around the outer edge of the eclipse shadow, or umbra, being filtered and refracted as it passes through Earth's atmosphere, bathing the moon indirectly in a dim copper glow.

The degree of redness depends on atmospheric conditions that vary with levels of air pollution, dust storms, wildfire smoke and even volcanic ash.

# INDIAN BLACK HONEYBEE

A new species of endemic honeybee has been discovered in the Western Ghats. The new species has been named *Apis karinjodian* and given the common name *Indian black honeybee.*

## The Findings

A new species of honeybee has been spotted from the Western Ghats after a gap of more than 200 years.

The last honeybee described from India was *Apis indica* in 1798 by Fabricius.

Although Fabricius named the Indian bee Apis indica, it was not considered a valid species till now. The research team restored the status of Apis indica based on a new measure for species discrimination in honeybees termed 'Radio-Medial Index (RMI).'

*Apis karinjodian* has evolved from Apis cerana morphotypes that got acclimatised to the hot and humid environment of the Western Ghats.

The distribution of *Apis karinjodian* ranges from the central Western Ghats and Nilgiris to the southern Western Ghats, covering the States of Goa, Karnataka, Kerala and parts of Tamil Nadu.

The species has been classified as **near threatened** (NT) in the State based on the **IUCN Red List** Categories and Criteria.

The research has given a new direction to

apiculture in the country by proving that it has three species of cavity nesting honey bees viz., Apis indica, Apis cerana, and Apis karinjodian, the last being visibly dark in appearance.

The ability of the Indian black honeybee to produce higher quantities of honey, which is thicker in consistency, opens up new avenues for increasing honey production.

The new find has increased the species of honeybees in the world to 11.

## Sweet Revolution

It is an ambitious initiative of the Government of India for promoting apiculture, popularly known as 'beekeeping'.

To provide a booster shot to Sweet Revolution, the government launched the National Beekeeping and Honey Mission in 2020 (under the Ministry of Agriculture and Farmers Welfare).

India is the sixth major natural honey exporting country.

# ETHANOL BLENDING PROGRAM

The Cabinet Committee on Economic Affairs, CCEA approved the mechanism for ethanol procurement by public sector oil marketing companies under the Ethanol Blended Petrol program.

It has approved a higher Ethanol price derived from different sugarcane-based raw materials under the program for the forthcoming sugar season.

All distilleries will be able to take benefit of the scheme and large number of them are expected to supply ethanol for the EBP programme. Remunerative price to ethanol suppliers will help in early payment to cane farmers, in the process contributing to minimize difficulty of sugarcane farmers.

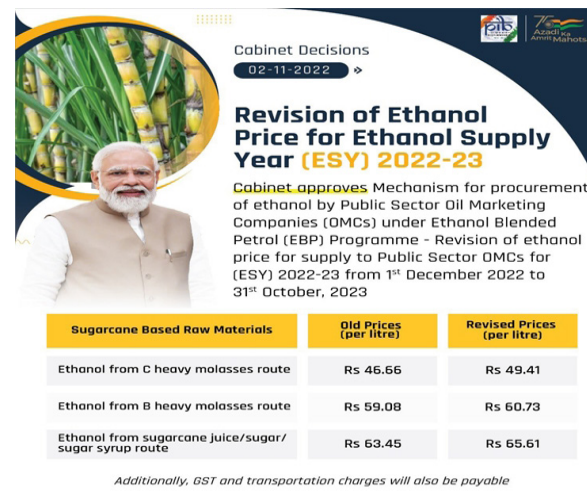
## Ethanol Blended Petrol (EBP) Programme

Government has been implementing Ethanol Blended Petrol (EBP) Programme wherein OMCs sell petrol blended with ethanol up to 10%.

This programme has been extended to whole of India except Union Territories of Andaman Nicobar and Lakshadweep islands with effect from 01st April, 2019 to promote the use of alternative and environment friendly fuels.

This intervention also seeks to reduce import dependence for energy requirements and give boost to agriculture sector.

Government has advanced the target of 20% ethanol blending in petrol from earlier 2030 to ESY 2025-26 and a "Roadmap for ethanol blending in India 2020-25" has been put in public domain.




Ethanol is an agro-based product, mainly produced from a by-product of the sugar industry, namely molasses. In years of surplus production of sugarcane, when prices are depressed, the sugar industry is unable to make timely payment of cane price to farmers.

The Ethanol Blending Programme (EBP) seeks to achieve blending of Ethanol with motor sprit with a view to reducing pollution, conserve foreign exchange and increase value addition in the sugar industry enabling them to clear cane price arrears of farmers.

# GREEN AMMONIA

Prime Minister launched the National Hydrogen Mission on India's 75th Independence Day (i.e. 15th August, 2021).

The Mission aims to aid the government in meeting its climate targets and making India a green hydrogen hub.

This will help in meeting the target of production of 5 million tonnes of Green hydrogen by 2030 and the related development of renewable energy capacity.

Hydrogen and Ammonia are envisaged to be the future fuels to replace fossil fuels. Production of these fuels by using power from renewable energy, termed as green hydrogen and green ammonia, is one of the major requirements towards environmentally sustainable energy security of the nation.

Government of India is taking various measures to facilitate the transition from fossil fuel / fossil fuel based feed stocks to green hydrogen / green ammonia.

## What is green ammonia?

Ammonia is a pungent gas that is widely used to make agricultural fertilisers. Green ammonia production is where the process of making ammonia is 100% renewable and carbon-free.

One way of making green ammonia is by using hydrogen from water electrolysis and nitrogen separated from the air.

These are then fed into the Haber process (also known as Haber-Bosch), all powered by sustainable electricity.

In the Haber process, hydrogen and nitrogen are reacted together at high temperatures and pressures to produce ammonia, NH3.

However, the process of making ammonia is currently not a "green" process. It is most commonly made from methane, water and air, using steam methane reforming (SMR) (to produce the hydrogen) and the Haber process. Approximately 90% of the carbon dioxide produced is from the SMR process.

This process consumes a lot of energy and produces around 1.8% of global carbon dioxide emissions.

# RED PLANET DAY: THE MANY MISSIONS THAT BROUGHT HUMANS CLOSER TO MARS

Commemorating the day one of the most significant space missions to Mars was launched, November 28 is marked as Red Planet Day.

On this day in 1964, the United States launched the space probe Mariner 4 on a course towards Mars, which it flew past in July 1965, sending back pictures of the red planet.

This was the first time that a spacecraft undertook the first flyby of the red planet, becoming the first-ever spacecraft to take close-up photographs of another planet.

Subsequently, considerable interest has been sparked around Mars, and missions have been launched, to the point that at present, the idea of settling a colony of humans on Mars (as suggested enthusiastically by billionaire Elon Musk) has also been put forth.

## Early 19th century

In one of the earliest known cases of a fascination with the planet, NASA's website notes how in the late 19th century, Italian astronomer Giovanni Schiaparelli claimed to have observed linear patterns on the surface of the planet that he called canali.

This was mistranslated into English as canals, leading some to believe canals were built by intelligent beings on Mars — an early instance of Mars being thought to have life, similar to Earth.

Although that idea fell out of favour among scientists by the early 20th century, it did permeate into science fiction as well as popular culture, says NASA, helped by the fact that Mars was at a similar distance from the sun as the earth was and thus, shared certain structural characteristics.

## 1964: Mariner 4

After an eight-month voyage to Mars, the Mariner 4 helped humans see images showing lunar-type impact craters, some of them touched with frost. A television camera onboard took 22 pictures, covering about 1% of the planet. These photos were transmitted to Earth in four days.

## Viking missions of the 1970s and the 1980s

The Viking missions in the mid-seventies carried out the first chemical analysis of Martian soil, as well as four biology experiments to detect biological activity, wrote Dr Amitabha Ghosh, a NASA Planetary Scientist based in Washington DC.

In the early 1980s, scientists hypothesised, based on mineralogic composition and rock texture, that certain meteorites might have a source region in Mars. In 1984, a study showed that the isotopic composition of rare gases (Xenon, Krypton, Neon and Argon) matched the isotopic ratios of the Martian atmosphere measured by the Viking spacecraft.

This discovery provided a way for geochemists to study Martian samples – and provided a huge boost to our understanding of the geochemical evolution of Mars.

## Odyssey, 2001 and water on Mars

In 2001, the Gamma Ray Spectrometer on board the Mars Odyssey spacecraft detected a fascinating hydrogen signature that seemed to indicate the presence of water ice. But there was ambiguity – this was because hydrogen can be part of many other compounds as well.

## Beyond the West

After the Cold War, which saw intense competition between the USSR and the US in terms of deepening their forays into space, other countries also launched their explorations.

NASA has a lander (Mars Insight), a rover (Curiosity), and three orbiters (Mars Reconnaissance Orbiter, Mars Odyssey, MAVEN); India has an orbiter (Mangalyaan-1); the EU has 2 orbiters (Mars Express and ExoMars Trace Gas Orbiter); and China and UAE will have an orbiter each (Hope and Tianwen-1 respectively).

The UAE mission will study the Martian atmosphere and will seek to address the billion-dollar question of how and why Mars lost its atmosphere.

India's Mars Orbiter Mission — a technology demonstration venture — carried five scientific payloads (total 15 kg) collecting data on surface geology, morphology, atmospheric processes, surface temperature and atmospheric escape process.

# UNDP PLASTIC WASTE MANAGEMENT PROJECT

## Why in news?

The United Nations Development Programme (UNDP) is helping workers in the waste segregation industry in India to move into the formal economy, by helping them access government welfare programmes.

## About

United Nations Development Programme (UNDP) India, in partnership with Hindustan Coca-Cola Beverages Private Limited (HCCBPL), Hindustan Unilever Limited (HUL), HDFC Bank & Coca Cola India Foundation (CCIF) is building on existing systems to reduce the impact of plastic waste on environment in India.

The partnership promotes collection, segregation and recycling of all kinds of plastics to move towards a circular economy.

## This project aims to

1. Create a socio-technical model for taking plastic waste management from informal to formal economy

2. Establish Material Recovery Centres for sustained practices in waste management
3. Institutionalize Swachhta Kendras within governance framework structures and improved socio-economic conditions of waste pickers.
4. Develop technology-supported knowledge management: Promote
5. Cloud-based traceability, accountability and digital governance along waste value chain through our technical partner Mindtree through field implementing partners.

With a strong approach towards providing social security to the Safai Sathis, Utthaan, a social protection programme was launched to help 9000 safai sathsi on with regular workshops organised for them at Swachhta Kendras, where they are given assistance with **opening bank accounts**, enrolling for Aadhar cards, availing health check-up, and several other personal training sessions.

As part of the initiative, the UNDP will distribute the `Jan Dhan' account kits to waste segregation workers.

# CCUS POLICY FRAMEWORK

## Why in news?

NITI Aayog releases study report on 'Carbon Capture, Utilisation, and Storage (CCUS) Policy Framework and its Deployment Mechanism in India'

## About CCUS

The International Energy Agency (IEA) defines Carbon Capture, Utilization and Storage (CCUS) as a group of technologies for capturing of $CO_2$ from large and stationary $CO_2$ emitting sources, such as fossil fuel-based power plants and other industries.

CCUS also involves the transport of the captured $CO_2$ (typically by pipeline and in certain situations by through shipping, rail or trucks also) to sites, either for utilization in different applications or injection into geological formations or depleted oil & gas fields for permanent storage and trapping of the $CO_2$

CCUS also includes Direct Air Capture (DAC), which involves the capture of $CO_2$ directly from the atmosphere. DAC is still in its early stages.

There are around 35 commercial facilities applying CCUS to industrial processes, fuel transformation and power generation

## Types of commercial-scale carbon capture technologies

- Chemical solvent-based $CO_2$ capture technologies
- Physical solvent-based $CO_2$ capture technologies
- Adsorption-based $CO_2$ capture
- Cryogenic $CO_2$ capture

## Value Added Products from Captured $CO_2$

- Green urea
- Food & Beverages applications such as carbonated drinks, dry ice,and modified atmosphere packing
- Building materials (concrete and aggregates)
- Chemicals (methanol and ethanol)
- Polymers (including bio-plastics)
- Enhanced Oil Recovery (EOR)

## CCUS in India

Presently carbon capture in India is confined to certain industries/applications where the carbon capture is part of the process, viz., the manufacture of urea, gas conditioning process in the gasifiers in oil production

There are no commercial-scale dedicated CCUS projects in India

## Challenges associated with CCUS

Carbon capture involves the development of sorbents that can effectively bind to the $CO_2$ present in flue gas or the atmosphere, which is

expensive.

Converting $CO_2$ into useful chemicals of commercial importance, or utilizing $CO_2$ for oil extraction or remediation of alkaline industrial wastes, would add economic value to this greenhouse gas.

However, the demand for $CO_2$ is limited compared to the vast amount of $CO_2$ that needs to be removed from the atmosphere, to reduce the detrimental environmental impacts of climate change.

# SHIVELUCH VOLCANO

## Why in news?

The Shiveluch volcano in Russia's far eastern Kamchatka peninsula may be gearing up for its first powerful eruption in 15 years, scientists say.

## About

Shiveluch is the northernmost active volcano in Kamchatka Krai, Russia. It and Karymsky are Kamchatka's largest, most active and most continuously erupting volcanoes.

It has two main parts: Old Shiveluch, which tops 3,283 metres (10,771 ft), and Young Shiveluch – a smaller, 2,800-metre peak protruding from its side.

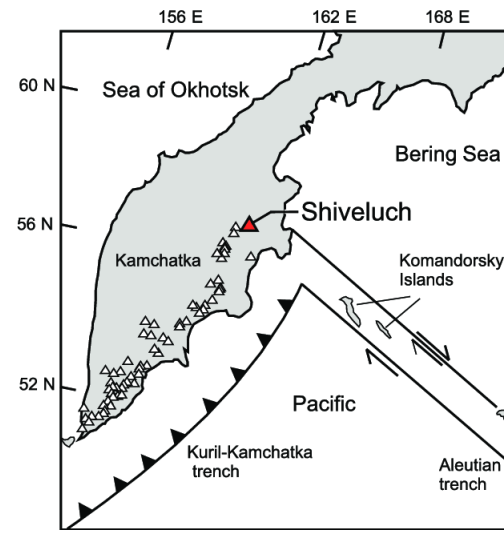
It is a stratovolcano composed of alternating layers of solidified ash, hardened lava and volcanic rocks

Young Shiveluch lies within an ancient caldera – a large crater-like basin that likely formed when the older part underwent a catastrophic eruption at least 10,000 years ago.

It is this part that has become extremely active

The volcano has been continuously erupting since August 1999, but occasionally undergoes powerful explosive events, including in 2007

The volcano's lava dome continues to grow and that stronger "fumarole activity". Domes




are mounds that form from accumulating lava, and fumaroles are openings through which hot sulphurous gases emerge.

The dome glows at night from nearly all sides. Red-hot avalanches with a temperature of 1,000 degrees Celsius (1,832°F) roll down the slopes

# GLOBAL SHIELD FINANCING FACILITY

## Why in news?

The World Bank Group has announced a Global Shield Financing Facility to help developing countries access more financing for recovery from natural disasters and climate shocks.

## About

## Global Shield Against Climate Risks initiative

The Global Shield Against Climate Risks initiative was launched on November 14, 2022 by the Vulnerable Twenty (V20) countries and G7 countries. While V20 countries represent 58 countries that are vulnerable to climate change, the G7 represent seven of the world's most industrialized countries.

It is a social protection and insurance-based finance mechanism for loss and damage outside the UNFCCC process.

The Global Shield is not the only measure needed to tackle loss and damage – but it should aim to make significant and effective progress in providing and facilitating more and better pre-arranged protection against climate- and disaster-related risks, e.g., by making money available for protection measures at an early stage.

## Global Shield Financing Facility

Global Shield Financing Facility will support the Global Shield Against Climate Risks, a joint initiative launched at UNFCCC COP27 by the G7 and V20 to better protect poor and vulnerable people from disasters by pre-arranging more financing before disasters strike.

The Global Shield Financing Facility will channel grants to developing countries through World Bank projects or through projects prepared by other participating partners, including UN agencies and multilateral development banks. It will also work closely with key stakeholders, such as civil society organizations, risk pools, private sector, and humanitarian partners.

The Global Shield Financing Facility will finance integrated financial protection packages that offer coordinated and consolidated financial support to those vulnerable to climate shocks and disasters

The Global Shield Financing Facility builds on the earlier Global Risk Financing Facility, established in 2018, which has supported country operations in Africa, Asia, and Small Island Developing States.

# GREENHOUSE GAS EMISSION INVENTORY

## Why in news?

Tamil Nadu is developing its own greenhouse gas emission inventory

## About

## Greenhouse gas emission inventory

A greenhouse gas (GHG) inventory is a list of emission sources and the associated emissions quantified using standardized methods. Organizations develop GHG inventories for a variety of reasons, including:

- Managing GHG risks and identifying reduction opportunities
- Participating in voluntary or mandatory GHG programs
- Participating in GHG markets
- Achieving recognition for early voluntary action

The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (GHG Protocol Corporate Standard) developed by the World Resources Institute (WRI) and the World Business Council for Sustainable Development (WBCSD), is the global standard for calculating corporate GHG emissions.

Policy makers use inventories to develop strategies and policies for emissions reductions and to track the progress of those policies.Regulatory agencies and corporations also rely on inventories to establish compliance records with allowable emission rates. Businesses, the public, and other interest groups use inventories to better understand the sources and trends in emissions.

Unlike some other air emission inventories, greenhouse gas inventories include not only emissions from source categories, but also removals by carbon sinks. These removals are typically referred to as carbon sequestration.

Greenhouse gas inventories typically use Global warming potential (GWP) values to

combine emissions of various greenhouse gases into a single weighted value of emissions.

## Examples of Greenhouse gas inventories

All Annex I countries are required to report **annual emissions and sinks of greenhouse gases** under the United Nations Framework Convention on Climate Change (UNFCCC)

National governments that are Parties to the **UNFCCC and/or the Kyoto Protocol** are required to submit **annual inventories of all anthropogenic greenhouse gas emissions** from sources and removals from sinks.

The US GHG inventory is published annually (since 1990) by the sole responsible agency —the Environment Protection Agency or EPA.

## Greenhouse gas Inventories of India

India's first updated numbers were made available in a 2010 inventory published by the Union Ministry of Environment, Forest and Climate Change (MoEF&CC). It showed trends in GHG emissions for the years 1994-2007.

India submitted its first Biennial Update Report (BUR) in 2015.

# CAUVERY SOUTH WILDLIFE SANCTUARY

## Why in news?

The Tamil Nadu government has notified the Cauvery South Wildlife Sanctuary on 68,640 hectares as the state's 17th wildlife sanctuary

## About

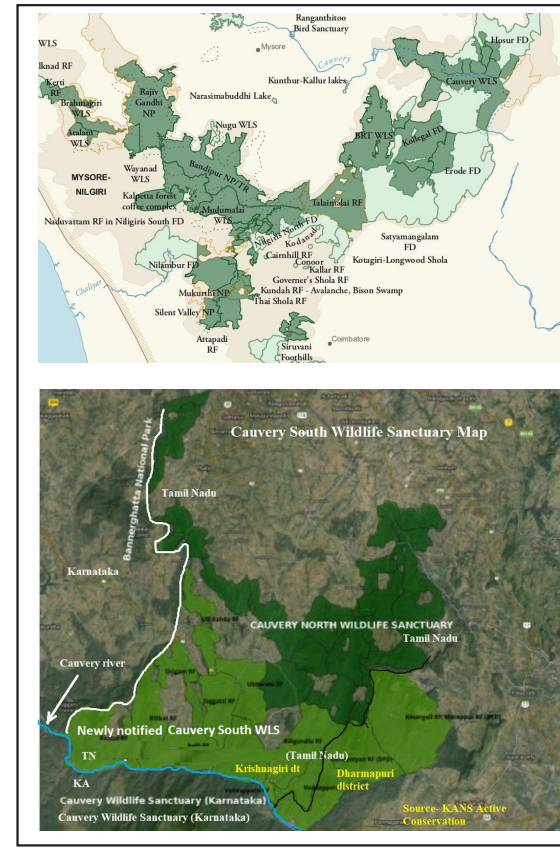
The sanctuary covers reserve forest areas in Krishnagiri and Dharmapuri districts, It will connect Cauvery North Wildlife Sanctuary of Tamil Nadu with the Cauvery Wildlife Sanctuary in neighbouring Karnataka thereby forming a large, contiguous network of protected areas for wildlife.

This landscape maintains further continuity to the Nilgiri Biosphere through Malai Mahadeshwara Wildlife Sanctuary, Billigiri Rangaswamy Temple (BRT) Tiger Reserve in Karnataka and Sathyamangalam Tiger Reserve and Erode District. This provides sufficient area for the conservation of the varied and rich biodiversity of the region.

Two important and large elephant corridors namely, the Nandimangalam-Ulibanda Corridor and the Kovaipallam-Anebiddahalla Corridor fall in this area.

It is home to 35 species of mammals, 238 species of birds, Leith's soft shelled turtles, smooth coated otters, marsh crocodile and four horned antelopes,Grizzled giant squirrel, four-horned antelope, and Lesser Fish Eagle which are exclusively dependent on the Cauvery river and its riverine forest ecosystem, are also found here. These are also red-listed and in urgent need for focused conservation and protection of their habitat.

The Cauvery South Wildlife Sanctuary is also seeing a spill-over effects of tiger conservation in the adjacent contiguous areas, and habitat improvement will help recover prey base and



support tigers that once inhabited this landscape in the past

The sanctuary was notified under Section 26-A of the Wild Life (Protection) Act, 1972. Already, the government has notified Kazhuveli Bird Sanctuary in Villupuram and Cuddalore districts, Nanjarayan Bird Sanctuary in Tiruppur district, Kadavur Slender Loris Sanctuary in Karur and Dindigul districts and Dugong Conservation Reserve in Palk Bay.

# HIMALAYAN GRAY LANGUR

## Why in news?

Differences in altitude make the primate species in the Himalayan habitat choose between flowers and fruits as food options beyond their staple menu of leaves, a new study has revealed.

## About

The Himalayan grey langur (Semnopithecus ajax) is a colobine (leaf-eating monkey) Morphological and behavioural studies indicate its occurrence is restricted only to the Chamba Valley in Himachal-Pradesh and Kishtwar Valley in Jammu-Kashmir.

It is also reported from Pakistan and Nepal.

Semnopithecus ajax is listed as **Endangered**

**species** under IUCN Red list.

The langur has a narrow occupancy range spanning just about 200 km2 and a dwindling population of 250 mature individuals and 500 individuals in total. Fragmentation, deforestation, persecution and retaliatory killing due to crop raiding, and commercial horticulture expansion are threats of serious concern confronting the Himalayan grey langurs

Generally, the Himalayan Grey Langur is known to be dependent on agricultural land, particularly in the Khajjiar area during the harvesting season. Their mode of raiding

agriculture fields is different from monkeys that are very violent and aggressive in nature. The Himalayan Grey Langur raids crops in a silent way.

## Kalatop Khajjiar Sanctuary

Kalatop Khajjiar Sanctuary, or simply Kalatop Sanctuary, is a 30.69 km² animal sanctuary at Kalatop and Khajjiar in the Chamba district of Himachal Pradesh, India. The sanctuary area is well laid out for trekking trails both at Kalatop and Khajjiar. The sanctuary lies in the path of the Ravi River, and is surrounded by coniferous and oak forests.

The study was conducted in **Kalatop Khajjiar Sanctuary**

# GLACIER ICE LOSSES IN WORLD HERITAGE SITES

## Why in news?

A third of the glaciers on the UNESCO World Heritage list are under threat, regardless of efforts to limit temperature increases, a study conducted by the UN body has found.

## About

New UNESCO data highlight the accelerated melting of glaciers in World Heritage sites, with glaciers in a third of sites set to disappear by 2050. But it is still possible to save the other two thirds, if the rise in global temperatures does not exceed 1.5°C compared to the pre-industrial period. This will be a major challenge for COP27.

50 UNESCO World Heritage sites are home to glaciers (A total of 18,600 glaciers have been identified in these 50 sites, covering around 66,000 km2), representing almost 10% of the Earth's total glacierized area. They include the highest (next to Mt. Everest), the longest (in Alaska), and the last remaining glaciers in Africa, amongst others, giving a representative overview of the general situation of glaciers in the world.

## Examples of endangered glaciers by region

**Africa:** Kilimanjaro National Park and Mount Kenya

**Asia:** Glaciers in Three Parallel Rivers of Yunnan Protected Areas (China), Glaciers in Western Tien-Shan (Kazakhstan, Kyrgyzstan, Uzbekistan)

**Europe:** Glaciers in Pyrenees Mont Perdu (France, Spain), Glaciers in The Dolomites (Italy)

**Latin America:** Glaciers in Los Alerces National Park (Argentina) , Glaciers in Huascaran National Park (Peru)

**North America:** Glacierized patches in Yellowstone National Park (United States of America) , Glaciers in Yosemite National Park (United States of America), Glaciers in Waterton Glacier International Peace Park (Canada, United States of America)

**Oceania:**Glaciers in Te Wahipounamu - South West New Zealand (New Zealand)

In India, glaciers in **Khangchendzonga national park and Nanda Devi national park** were found on the list

## World Heritage Sites

UNESCO is celebrating the 50th anniversary of the World Heritage Convention, the text which launched the list of World Heritage sites.

The World Heritage Convention, more accurately the Convention Concerning the Protection of the World Cultural and Natural Heritage, was adopted in 1972 at the UNESCO General Conference in Paris, France. It came into force in 1975. India ratified the convention in 1977.

The convention aims to promote cooperation among countries to protect heritage all over the world that is of such outstanding universal value that its conservation is important for current and future generations.

Currently, there are 194 State Parties to the convention. State Parties identify and nominate properties located in their countries to be considered for inscription on the World Heritage List.

# CITES COP 19

## Why in news?

An international conference on trade in endangered species ended in Panama, with protections established for over 500 species.

## About

## CITES

CITES (the Convention on International Trade in Endangered Species of Wild Fauna and Flora) is an **international agreement** between governments. Its aim is to ensure that international trade in specimens of wild animals and plants does not threaten the survival of the species.

The convention was opened for signature in 1973 and CITES entered into force on 1 July 1975.

States that have agreed to be bound by the Convention ('joined' CITES) are known as Parties. Although **CITES is legally binding on the Parties** – in other words, they have to implement the Convention – it does not take the place of national laws. Rather it provides a framework to be respected by each Party, which has to adopt its own domestic legislation to ensure that CITES is implemented at the national level.

The **Conference of the Parties (CoP)** is held once every three years. COP 19 (2022) was held in Panama.

The CITES Committees (Animals Committee, Plants Committee, and Standing Committee) hold meetings during each year that do not have a CoP, while the Standing committee meets also in years with a CoP. The Committee meetings take place in Geneva, Switzerland.

The Secretariat of the CITES Convention is located in **Geneva**. The Secretariat is administered by **UNEP(United Nation Environment Programme).**

## Appendicest

CITES parties regulate wildlife trade through controls and regulations on species listed in three appendices.

**Appendix I** lists species endangered due to international trade, permitting such trade only in exceptional circumstances.

**Appendix-II** species are those that may become endangered if their trade is not regulated, thus they require controls , aimed at preventing unsustainable use, maintaining ecosystems, and preventing species from entering Appendix I.

**Appendix-III** species are those subject to domestic regulation by a party requesting the cooperation of other parties to control international trade in these species.

## COP 19

## Zoonotic illnesses

International trade in wildlife is one contributing factor to zoonotic disease risk. Seventy-five percent of all new, emerging infectious diseases are zoonotic, of which the majority have their origins in wildlife

The directives of COP 19 have been drawn against the backdrop of disease emergence associated with international wildlife trade. The COVID-19, which became a pandemic, is a zoonotic disease that was transferred from animals to humans.

Consultations with parties such as the Convention on Biological Diversity and other

relevant biodiversity-related agreements, the Food and Agriculture Organization of the United Nations (FAO), the World Health Organization (WHO) and the International Consortium on Combating Wildlife Crime were recommended by CITES.

The aim was to identify possible emerging threats and reduce the risks of spreading pathogens, their spillover and transmission of zoonotic diseases via international wildlife trade supply chains.

## Ivory Trade

The proposal, to allow a regular form of controlled trade in ivory from Namibia, Botswana, South Africa, and Zimbabwe, was defeated. India chose to abstain and not vote against it.

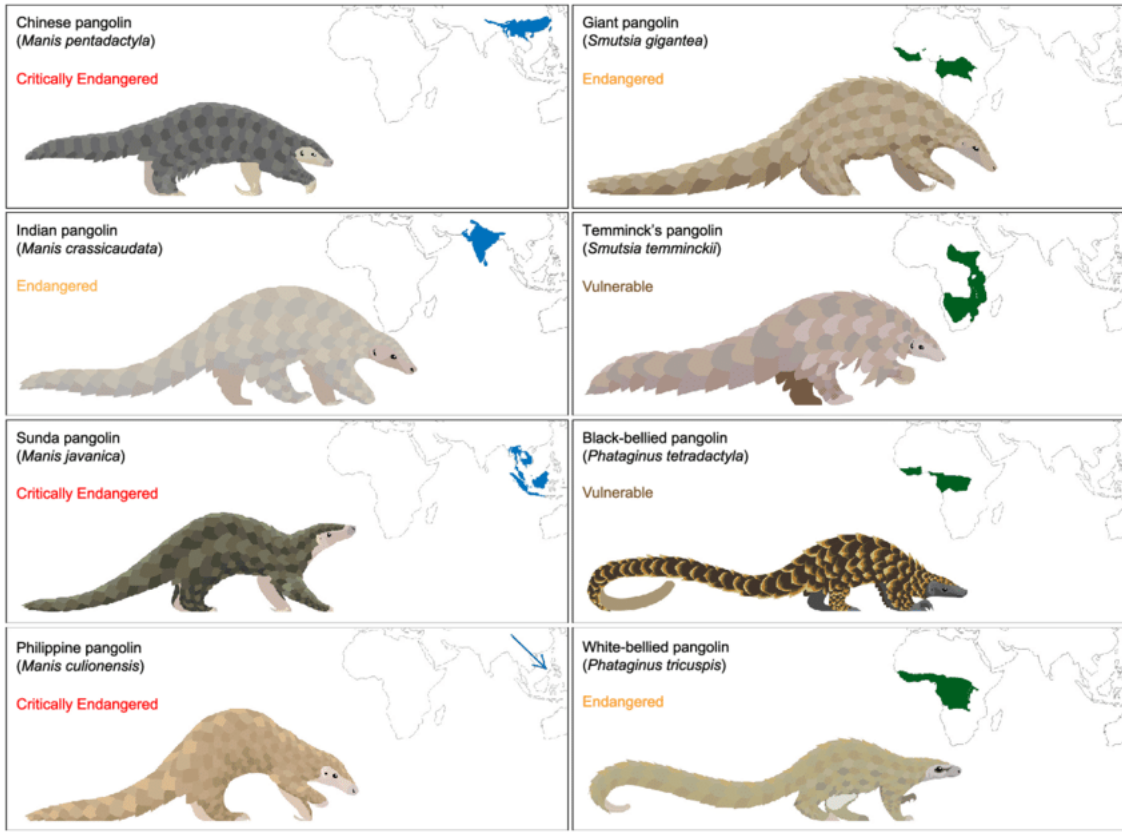
The international ivory trade was globally banned in 1989 when all African elephant populations were put in CITES Appendix I. However, the populations of Namibia, Botswana, and Zimbabwe were transferred to Appendix II in 1997, and South Africa's in 2000 to allow two "one-off sales" in 1999 and 2008 of ivory stockpiled from natural elephant deaths and seizures from poachers.

Subsequently, Namibia's proposal for allowing a regular form of controlled trade in ivory by delisting the elephant populations of the four countries from Appendix II was rejected at CoP17 (2016) and CoP18 (2019). At the ongoing CoP19, the proposal was moved by Zimbabwe but met the same fate.

The **endangered Asian elephant** was included in CITES Appendix I in 1975, which banned the export of ivory from the Asian range countries. In 1986, India amended The Wild Life (Protection) Act, 1972 to ban even domestic sales of ivory. After the ivory trade was globally banned, India again amended the law to ban the import of African ivory in 1991.

## Pangolin Trade

CITES COP19 urged parties to **remove references to pangolins from 'official pharmacopeia'**.COP19 suggested countries to replace these references with acceptable substitute products that do not threaten the existence of another wild species. The pangolin is 'the most trafficked animal in the world'.



COP19 also urged parties and non-parties alike to adopt and implement **comprehensive national legislation** and review existing ones that will serve deterrent penalties targeting illegal trade in specimens of native and non-native pangolin species.

Most pangolins in illicit, international trade end up in China and Vietnam. Here the meat of the animals is consumed as a delicacy, but it is also believed to impart health benefits such as nourishing the kidneys. Despite a lack of evidence suggesting they're effective, pangolin scales are used as an ingredient in traditional Asian medicine to help breast feeding women lactate milk, to cure ailments ranging from asthma and psoriasis to cancer, and to improve blood circulation.

## Turtle Trade

## Red-crowned roofed turtle

India has put forward a proposal to better protect a species of freshwater reptile called the red-crowned roofed turtle (Batagur kachuga) under the Convention on International Trade in Endangered Species (CITES). The turtle, native to India and Bangladesh, is at a high risk of extinction

The red-crowned roofed turtle or Bengal roof turtle. (Batagur kachuga) is a species of freshwater turtle endemic to South Asia.The National Chambal Sanctuary portion of the Chambal River has received moderate protection since 1979 as India's only protected riverine habitat.

IUCN Red List : Critically Endangered

## Leith's Softshell Turtle (Nilssonia leithi)

India's proposal for transferring Leith's Softshell Turtle (Nilssonia leithi) from Appendix II to Appendix I of the Convention on International Trade in Endangered Species of wild fauna and flora (CITES) has been adopted by the Conference of Parties (CoP) to CITES in its 19th Meeting at Panama.

Leith's Softshell Turtle is a large fresh water soft-shelled turtle which is **endemic to peninsular India** and it inhabits rivers and reservoirs. It is found in peninsular Indian rivers including the Bhavani, Godavari, and Moyariii Rivers

The species has been subject to intensive exploitation over the past 30 years. It has been poached and illegally consumed within India. It has also been illegally traded abroad for meat and for its calipee.

The population of this turtle species is estimated to have declined by 90% over the past 30 years such that the species is now difficult to find. It is classified as **'Critically Endangered'** by the IUCN.The species is listed on **Schedule IV of the Wild Life (Protection) Act, 1972,**

## Jeypore Hill Gecko (Cyrtodactylus jeyporensis)

A reptile endemic to India, the Jeypore Ground Gecko (Cyrtodactylus jeyporensis), has been included in Appendix II of the Convention on International Trade in Endangered Species (CITES).

The wild reptile species is found in the **Eastern Ghats** (endemic) and is known to be present in **four locations** including southern Odisha and northern Andhra Pradesh. (Patinghe hills (Odisha) and Galikonda (Andhra Pradesh))

Its occurrence is estimated in **less than 5,000 square kilometres of fragmented geographical area**. The species resides below rock boulders in high forested hills at an altitude of 1,100-1,400 metres.

Moreover, the species **does not occur in the protected areas** described under the Wild Life (Protection) Act, 1972, thereby making it **highly vulnerable** to habitat loss and poaching for domestic and international trade.

This species is listed as **Critically Endangered** in the IUCN Red List of Threatened Species

## Shark Fin Trade

An estimated 37% of sharks, rays, and chimaeras are considered threatened with extinction. Over the last decades, the fin trade has been a major driver of shark fisheries globally and this has led to drastic population declines for many species. CITES listings have attempted to regulate the trade of some of these species because they meet CITES Appendix II criteria.

## Hammerhead Sharks

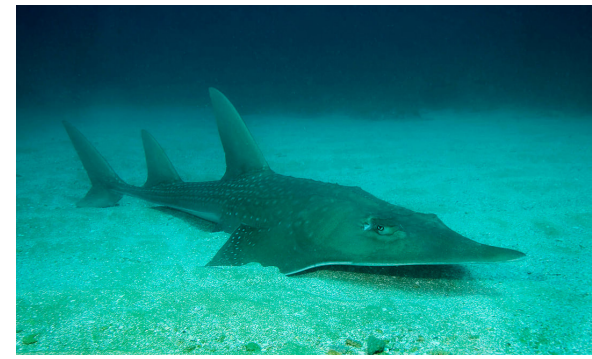
Three species are currently listed in **Appendix II**: Great Hammerhead (Sphyrna mokarran), Scalloped Hammerhead (S. lewin), and Smooth Hammerhead (S. zygaena).

The remaining six species in the family are proposed for inclusion: Bonnethead Shark (S. tiburo), Scalloped Bonnethead (S. corona), Carolina hammerhead (S. gilbert). Scoophead Shark (S. media), Smalleye Hammerhead (S. tudes), and Winghead shark

## Guitarfish

The guitarfish are a family, Rhinobatidae, of **rays**. The guitarfish are known for an elongated body with a flattened head and trunk and small, ray-like wings. The combined range of the various species is tropical, subtropical, and warm temperate waters worldwide.**It is listed in appendix II of CITES**

There have been no guitarfish species of the Family Rhinobatidae listed on CITES appendices. All 37 species in the family are now included in



the lists

## Rhino

In a major setback to rhino conservation in Africa, the proposal to downgrade the status of **southern white rhino** from Appendix I to **Appendix II** was accepted at the 19th Conference of Parties (COP19).

The decision does not reopen the international trade in rhino horn. However, the downgrading of the classification will be perceived as decreased protection to the species among smuggling

channels in countries where poaching is rampant.

## CITES RST Tracking and Management System

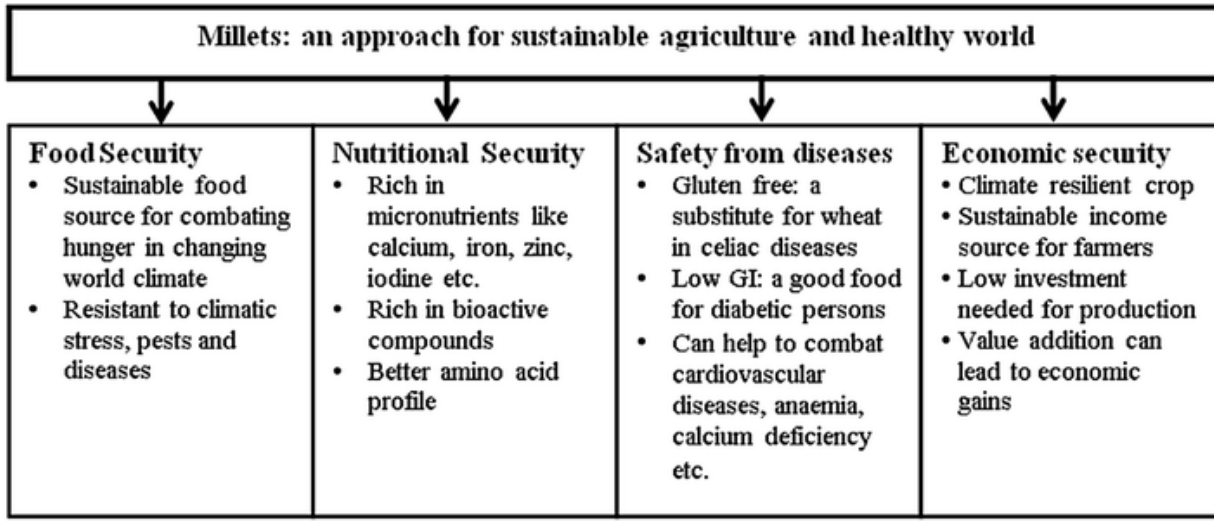
A new tool has been launched by the CITES Secretariat to monitor and track the trade in some of our most threatened species of animals and plants. The Review of Significant Trade (RST) Management System works on those cases within CITES where there is concern that trade could be affecting the viability of a specific species from a specific country.

RST is a review of significant trade. It was designed to identify species that may be subject to unsustainable levels of international trade, and to identify problems and solutions concerning effective implementation of the Convention.

# INTERNATIONAL YEAR OF MILLETS 2023

## Why in news?

India has signalled the beginning of preparations for the International Year of Millets 2023, designated last year by the UNGA following an initiative by New Delhi. The government has been hard-selling millets as nutri-cereals; however, its push is yet to gain widespread traction.




## About Millets, the crop

The word millets is used to describe **small-grained cereals** like sorghum (jowar), pearl millet (bajra), foxtail millet (kangni/ Italian millet), little millet (kutki), kodo millet, finger millet (ragi/ mandua), proso millet (cheena/ common millet), barnyard millet (sawa/ sanwa/ jhangora), and brown top millet (korale).

Millets were among the first crops to be domesticated. There is evidence for consumption of millets by the **Indus valley people (3,000 BC)**, and several varieties that are now grown around the world were first cultivated in India. **West Africa, China, and Japan** are home to indigenous varieties of the crop.

Millets are now grown in more than 130 countries, and are the traditional food for more than half a billion people in Asia and Africa. **They require much less water** than rice and wheat, and are mainly **grown in rainfed areas**.Millets have a short shelf life depending on humidity, temperature, and small market size.

Growing millet has many advantages: Being a rain-fed crop with minimal use of fertilisers; no pesticide as they are less vulnerable to insect attack; seeds of millet can be stored for years making it advantageous in drought-prone areas. Millets can thrive at relatively high temperatures **(thermophilic)** and reproduce in limited water supply **(xerophilic).**

Millets convert more carbon dioxide to oxygen, contributing in mitigating climate change. Millets can endure extremely high temperatures to drought to salinity making it a climate resilient crop.

Globally, **sorghum (jowar) is the biggest millet crop**. The major producers of jowar are the United States, China, Australia, India, Argentina, Nigeria, and Sudan. Bajra is another major millet crop; India and some African countries are major producers.In India, millets are mainly a kharif crop.

Millets are considered to be **"powerhouses of nutrition"**. On April 10, 2018, the Agriculture Ministry declared millets as **"Nutri Cereals"**. (2018 - National Year of Millets)

## International Year of Millets

On March 3, 2021, the United Nations General Assembly (UNGA) adopted a resolution to declare **2023 as the International Year of Millets**. The proposal was moved by India, and was supported by 72 countries.

Millets have the potential to help achieve the sustainable development goals (SDGs)—mainly SDG 2 (Zero Hunger), SDG3 (Good Health and Well-being), SDG 12 (Sustainable Consumption and Production), and SDG 13 (Climate Action)

In declaring 2023 the International Year of Millets, the resolution calls on all stakeholders to provide support to "activities aimed at **raising awareness** of and directing policy attention to the nutritional and health benefits of millet consumption, and their **suitability for cultivation** under adverse and changing climatic conditions, while also **directing policy attention** to improving value chain efficiencies."

## Millets under PDS

Under the National Food Security Act (NFSA), 2013, eligible households are entitled to get rice, wheat, and coarse grain at Rs 3, Rs 2, and Re 1 per kg respectively. While the Act does not mention millets, coarse grains are included in the definition of "foodgrains" under Section 2(5) of the NFSA. However, the quantity of coarse grains procured for the Central Pool and distributed under the NFSA has been negligible

**MSP for millets** -The government declares a Minimum Support Price (MSP) for jowar, bajra, and ragi only.

## Millet growing states

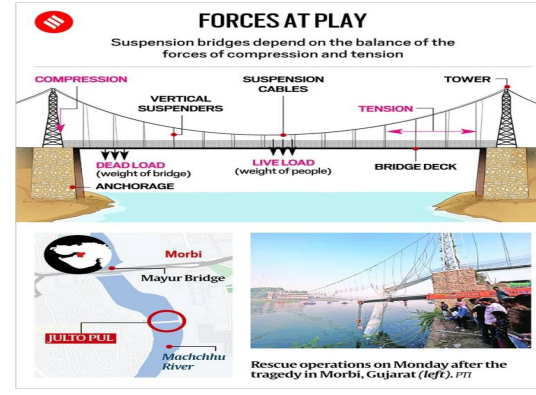
Jowar is mainly grown in Maharashtra, Karnataka, Rajasthan, Tamil Nadu, Andhra Pradesh, Uttar Pradesh, Telangana, and Madhya Pradesh.Bajra is mainly grown in Rajasthan, Uttar Pradesh, Haryana, Gujarat, Madhya Pradesh, Maharashtra and Karnataka.

| Top 5 States | Millet Crops |
|---|---|
| Rajasthan | Bajra/Sorghum |
| Karnataka | Jowar/Ragi |
| Maharashtra | Ragi/Jowar |
| Uttar Pradesh | Bajra |
| Haryana | Bajra |

# MORBI BRIDGE COLLAPSE

## Why in news?

On 30 October 2022 a pedestrian suspension bridge over the Machchhu River in the city of Morbi in Gujarat, India, collapsed, causing the deaths of at least 135 people and injuries to more than 180 others.




## About

## Suspension Bridges

A suspension bridge is a type of bridge in

which the deck is hung below suspension cables on vertical suspenders.

The basic structural components of a suspension bridge system include stiffening girders, two or more main suspension cables, and towers and anchorages for cables at either end of the bridge.

The main cables are suspended between the towers and are connected to the anchorage or the bridge itself. The vertical suspenders carry the weight of the deck and the commuter load on it.

Suspension bridges are aesthetic, light, strong, and may span distances from 2,000 to 7,000 feet; much longer than other may will kinds of bridges. They additionally tend to be the foremost costly to create.

The Golden Gate Bridge and Brooklyn Bridge in the US are examples of suspension bridges. India's longest single-lane motorable suspension bridge — the 725-metre Dobra-Chanti suspension bridge built over the Tehri lake — was inaugurated in November 2020.

# MACHCHHU RIVER

Machchhu River originates from Madla hills(Jasdan) and meets in little rann of kuchchh

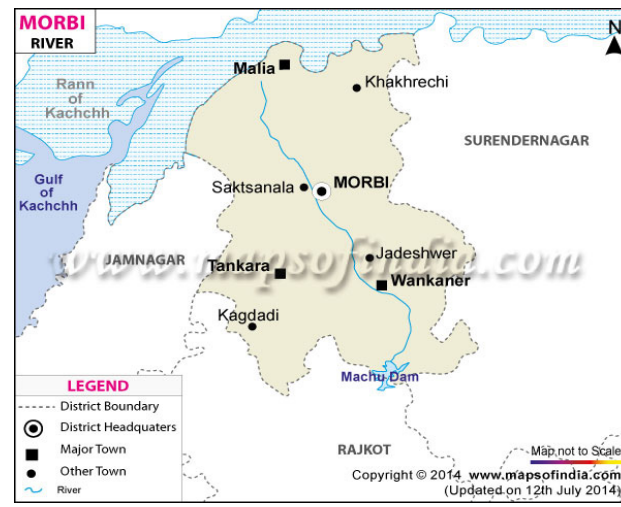
**Right bank tributaries** : Jamburee, Benia, Machchhori, Maha

**Left bank tributaries** : Betti and Asoi

This is one of the North flowing rivers of Saurashtra in Gujarat state

The river fertilise Malia, Morbi, Wankaner, Jasdan and Rajkot taluks of Rajkot district and part of Chotila talum kin Surendranagar district

Morvi State, also spelled as Morvee State or Morbi State, was a princely salute state




# RANIPUR TIGER RESERVE

## Why in news?

Ranipur Tiger Reserve in Uttar Pradesh has become the 54th tiger reserve of India

## About

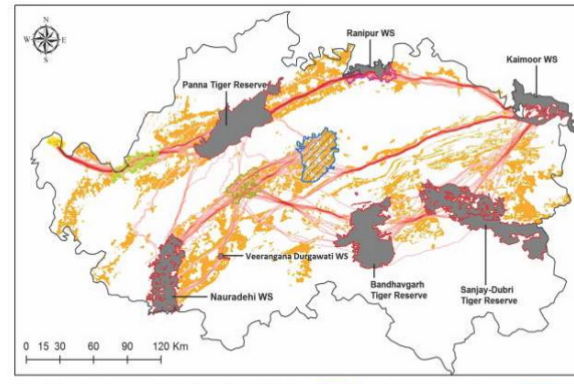
## Ranipur Tiger Reserve

'Ranipur Tiger Reserve' is situated in the Chitrakoot District of Uttar Pradesh

Ranipur Tiger Reserve will be the fourth tiger reserve in UP, after Dudhwa, Pilibhit and Amangarh (buffer of Corbett Tiger Reserve).

It will also be the first in the Bundelkhand region of the state.

The Ranipur Tiger Reserve has tropical dry deciduous forests and is home to fauna such as tigers, leopards, sloth bears, spotted deer, sambhar, chinkara and a number of birds and reptiles.



## Procedure to notify Tiger Reserve

The National Tiger Conservation Authority, Ministry of Environment, Forest and

Climate Change,has given its recommendation for bringing the protected area in the landscape of Ranipur Wildlife, Sanctuary, Uttar Pradesh under Project Tiger on August 22, 2016

In exercise of the powers conferred under section 38-V of the Wildlife (Protection) Act, 1972 the Governor, has notified the area as a Tiger Reserve

**Section 38V in The Wild Life (Protection) Act** - The State Government shall, on the recommendation of the Tiger Conservation Authority, notify an area as a tiger reserve.

## Critical Tiger habitat vs. Critical Wildlife habitat

A tiger reserve includes two parts:

1. Core or critical tiger habitat (National Park or Sanctuary status).
2. Buffer or peripheral area.

The phrase 'core or critical tiger habitat' is mentioned only in the Wildlife (Protection) Act, 1972, as a sequel to amendment made to the said Act in 2006. The phrase 'critical wildlife habitat' is defined only in the Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006,

'Core or critical tiger habitat' is different from the 'critical wildlife habitat'. Since tigers are territorial big cats, hence considering their social land tenure dynamics, the 'core / critical tiger habitat' has been viewed separately from the 'critical wildlife habitat', which is applicable to other wild animal species.

# PEOPLE'S BIODIVERSITY REGISTER (PBR)

## Why in news?

A decade after the preparation of People's Biodiversity Register (PBR), local bodies of Kerala are moving towards updating the document and formulating biodiversity-based local action plans.

## About

Peoples' Biodiversity Register is a document which contains comprehensive information on locally available Bio-resources including landscape and demography of a particular area or village.

Bio-resources mean plants, animals and micro organisms or parts thereof, their genetic material and by-products (excluding value added products) with actual or potential use or value but does not include human genetic material.

The National Biodiversity Authority and the State Biodiversity Boards shall provide guidance and technical support to the Biodiversity Management Committees for preparing People's Biodiversity Registers.

The Peoples' Biodiversity Registers shall be maintained and validated by the Biodiversity Management Committees.

The Committee shall also maintain a Register giving information about the details of the access to biological resources and traditional knowledge granted, details of the collection fee imposed and details of the benefits derived and the mode of their sharing.

Every local body shall constitute a Biodiversity Management Committee ( under Biodiversity Act 2002) within its area for the purpose of promoting conservation, sustainable use and documentation of biological diversity including preservation of habitats, conservation of land races, folk varieties and cultivars, domesticated stocks and breeds of animals and microorganisms and chronicling of knowledge relating to biological diversity.

# BARREN ISLAND

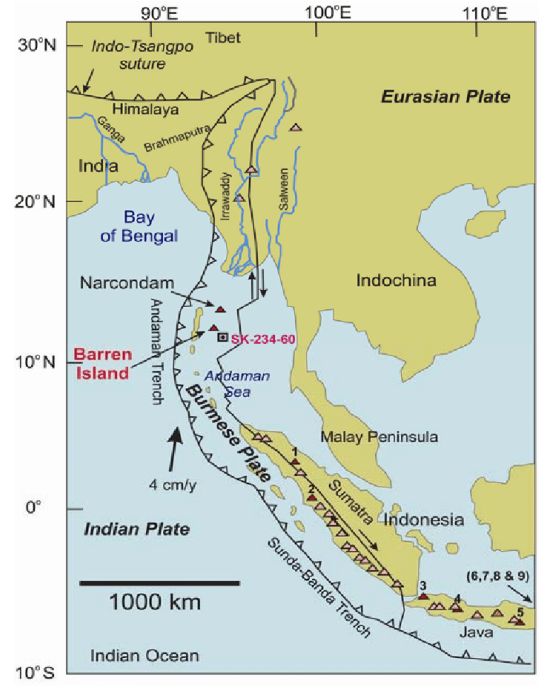
## Why in news?

The volcano on the Barren Island of the Andaman & Nicobar Islands is being closely watched to check for signs of an eruption that could lead to a tsunami or a monstrous undersea landslide akin to what happened in Indonesia in 2018. The monitoring is being carried out by the Indian National Centre for Ocean Information Services (INCOIS), which houses the Indian Tsunami Early Warning Centre (ITEWC) here.

## About

Barren Island is an island located in the **Andaman Sea**. It is the only confirmed **active volcano** in the Indian subcontinent, and the only active volcano along a chain of volcanoes from Sumatra to Myanmar. It is a part of the Indian Union territory of Andaman and Nicobar Islands, and lies about 138 km (86 mi) northeast of the territory's capital, Port Blair.

This volcanic island stands in the midst of a volcanic belt on the edge of the **Indian and Burmese tectonic plates**. Narcondam Island is a dormant volcano in the area, apart from volcanic seamounts like Alcock and Sewell.




The Barren Island is part of the Neogene Inner Volcanic Arc which extends from Mt Popa and Mt Wuntho (extinct volcanoes) in Myanmar in the north to Sumatra and Java in the southeast and intersects at the Pacific Ring of Fire

# GREAT KNOT

## Why in news?

Unveiling yet another mystery of avian migrations, a great knot from Russia, belonging to the endangered Calidris tenuirostris (Horsfield, 1821), has found its way to Kerala's coast, flying over 9,000 km for a winter sojourn.

## About

The Great Knot is a medium-sized shorebird with a straight, slender bill of medium length and a heavily streaked head and neck.

## Distribution

This species breeds in north-east Siberia, Russia, wintering mainly in Australia, but also throughout the coastline of South-East Asia and on the coasts of India, Bangladesh, Pakistan,

and the eastern coast of the Arabian Peninsula. The Yellow Sea of North Korea, South Korea and China is a particularly important stop-over site

on migration in both spring and autumn

In Australia, Great Knots inhabit intertidal mudflats and sandflats in sheltered coasts, including bays harbours and estuaries. They forage on the moist mud, and they often roost on beaches or in nearby low vegetation, such as mangroves or dune vegetation.

It is known or thought to visit regularly during the non-breeding season in India.

## Threats

Loss of intertidal stopover habitats in the Yellow Sea region is thought to be a key driver in population declines of shorebirds.

Up to 65% of intertidal habitat in the Yellow Sea has been lost over the past 50 years with habitat loss estimated at a rate of >1% annually

Losses are attributed to reclamation for agriculture, aquaculture, and other development and are expected to continue or accelerate owing to population growth around the Yellow Sea. Degradation and loss of wetland habitats in the Yellow Sea region are also attributed to environmental pollution such as reduced river flows and human disturbance.

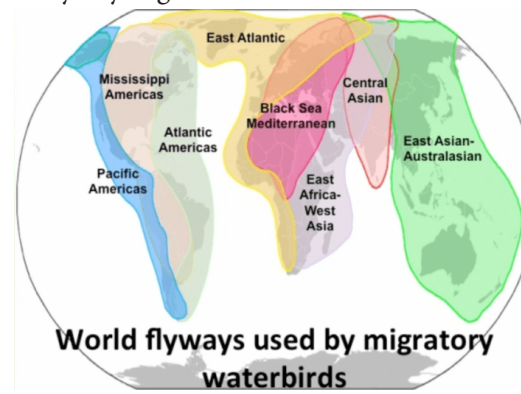
## Conservation Status

**IUCN Red List of Threatened Species:** Endangered

The Red Knot is slightly smaller with a shorter, more slender bill and a more prominent eyebrow, smaller spots on the underparts, and shorter wings. The Curlew Sandpiper is smaller and has a downcurved bill.

## Central Asian Flyway (CAF)

The Central Asian Flyway (CAF) covers a large continental area of Eurasia between the Arctic and Indian Oceans and the associated island chains. The Flyway comprises several important migration routes of waterbirds, most of which extend from the northernmost breeding grounds in the Russian Federation (Siberia) to the southernmost non-breeding (wintering) grounds in West and South Asia, the Maldives and the British Indian Ocean Territory. The birds on their annual migration cross the borders of several countries. Geographically the flyway region covers 30 countries of North,




Central and South Asia and Trans-Caucasus.

India is the core country of the CAF and supports 257 species of water birds. Of these, 81 species are migratory birds of CAF conservation concern, including three critically endangered species, six endangered species and 13 near threatened species. The Ministry of Environment and Forests is the nodal agency for developing strategy and action plans and managing national, regional and international programmes on water birds and wetlands conservation.

CAF is among the nine flyways in the world and three of the nine flyways that pass through the Indian Subcontinent. The other two are:- East Asian Australasian Flyway (EAAF) and Asian East African Flyway (AEAF).

# 50TH ANNIVERSARY OF MAN AND THE BIOSPHERE (MAB) PROGRAMME - INTERNATIONAL DAY FOR BIOSPHERE RESERVES

*GS III: Conservation, Environmental Pollution and Degradation, Environmental Impact Assessment.*

## Why in news?

The International Day for Biosphere Reserves is an invitation to take inspiration from the solutions already implemented in these spaces to build genuinely sustainable development everywhere, with full respect for nature and for the living world.

It was proclaimed by the UNESCO General Conference in its 41st session.November 3 will be the first 'The International Day for Biosphere Reserves', to be celebrated beginning in 2022.

## Biosphere Reserves

Biosphere reserves are 'learning places for sustainable development'. They are sites for testing interdisciplinary approaches to understanding and managing changes and interactions between social and ecological systems, including conflict prevention and management of biodiversity.

They are places that provide local solutions to global challenges. Biosphere reserves

include terrestrial, marine and coastal ecosystems. Each site promotes solutions reconciling the conservation of biodiversity with its sustainable use.

Biosphere reserves are nominated by national governments and remain under the sovereign jurisdiction of the states where they are located. Biosphere Reserves are designated under the intergovernmental MAB Programme

## Functions of Biosphere Reserve

Biosphere Reserves involve local communities and all interested stakeholders in planning and management. They integrate three main "functions" through three zones-

Conservation of biodiversity and cultural diversity

Economic development that is socio-culturally and environmentally sustainable

Logistic support, underpinning development through research, monitoring,

education and training.

## Biosphere reserves in South Asia

In South Asia, over 30 biosphere reserves have been established.

The first one was the Hurulu Biosphere Reserve, in Sri Lanka, with 25,500 hectares of tropical dry evergreen forest.

Bangladesh, Bhutan, and Nepal do not have biospheres as yet, but help is on its way: The 'South and Central Asia MAB Reserve' Networking Meeting is planned for 2023, to advance biosphere reserve establishment, and management.

The existence of the new World Network of Mountain Biosphere Reserves provides a welcome opportunity for Bhutan and Nepal to establish their first biosphere reserves and participate in the world network.

In India, the first biosphere reserve was designated by UNESCO in 2000, namely, the blue mountains of the Nilgiris stretching over Tamil Nadu, Karnataka, and Kerala.

In the wake of the current scenario and considering the massive long-term threats to human survivability (besides

pandemics and armed conflicts), such as biodiversity loss, climate change, pollution, and population dynamics, accelerated by the blind belief in technological solutions for all problems, the world needs many more biosphere reserves globally.

In the context of this, South Asia offers countless options.

## Opportunities in India

India is a vast sub-continent, an emerging superpower of unlimited opportunities.It has become an important global player in environmental sustainability issues.

India is likely to become the world's most populated country in 2023.

Spain is one of the leading participating WNBR countries globally, with 53 sites.

In a comparison with the surface size of Spain to India (ca. 3.3 million km 2), and India's human population of ca. 1.4 billion people, it appears a good idea to carry out a potentiality analysis of biosphere reserves in India, with a focus on the seven sisters in north-east India.

## Man and Biosphere Programme

Man and the Biosphere Programme (MAB) is an intergovernmental scientific program, launched in 1971 by UNESCO, that aims to establish a scientific basis for the improvement of relationships between people and their environments.

It forecasts the effects of today's actions on the world of tomorrow, increasing people's ability to manage natural resources efficiently for the well-being of both human populations and the environment.

The MAB Programme is governed globally by its International Coordinating Council (ICC), which reports to the UNESCO General Conference and its Executive Board.

## World Network of Biosphere Reserves (WNBR)

The World Network of Biosphere Reserves (WNBR) was formed in 1971. As a backbone for biodiversity conservation, ecosystem restoration, and living in harmony with nature. There are now 738 properties in 134 countries, including 12 in India, four in Sri Lanka, and three in the Maldives. Bangladesh, Bhutan, and Nepal do not have biospheres as yet.

## Way Forward

More financial support from the richer nations and the private sector would be desirable to advance biosphere reserves in some of the South Asian countries. With at least one biosphere reserve per country in Bangladesh, Bhutan and Nepal until 2025 (with additional biosphere reserves in India's North-East and along the coasts) it will give realization to millions of people that a better future is truly possible — one where people will truly live in harmony with nature.

# CLIMATE CHANGE & POPULATION GROWTH: CHALLENGES

*GS III: Conservation, Environmental Pollution and Degradation, Environmental Impact Assessment. Disaster and Disaster Management.*

## Context

The number of people on Earth passed 8 billion this week, according to the United Nation's World Population Prospects 2022 report that is double the population of just 48 years ago.

Will we have enough food for a growing global population? How will we take care of more people in the next pandemic? What will heat do to millions with hypertension? Will countries wage water wars because of increasing droughts? These risks all have three things in common: health, climate change and a growing population.

## Infectious diseases

Researchers have found that over half of all human infectious diseases can be worsened by climate change. Flooding, for example, can affect water quality and the habitats where dangerous bacteria and vectors like mosquitoes can breed and transmit infectious diseases to people.

Dengue, a painful mosquito-borne viral disease that sickens about 100 million people a year, becomes more common in warm, wet environments. Its R0, or basic reproduction number – a gauge of how quickly it spreads – increased by about 12% from the 1950s to the average in 2012-2021, according to the 2022 Lancet Countdown report.

Malaria's season expanded by 31% in highland areas of Latin America and nearly 14% in Africa's highlands as temperatures rose over the same period.

Flooding can also spread waterborne organisms that cause hepatitis and diarrheal diseases, such as cholera, particularly when large numbers of people are displaced by disasters and living in areas with poor water quality for drinking or washing.

Droughts, too, can degrade drinking water quality. As a result, more rodent populations enter into human communities in search of food, increasing the potential to spread hantavirus.

## Extreme heat

Another serious health risk is rising temperatures.

Excessive heat can exacerbate existing health problems, such as cardiovascular and respiratory diseases. And when heat stress becomes heat stroke, it can damage the heart, brain and kidneys and become lethal.

Today, about 30% of the global population is exposed to potentially deadly heat stress each year.

The Intergovernmental Panel on Climate Change estimates that percentage will rise to at least 48% and as high as 76% by the end of this century.

In addition to lives lost, heat exposure was projected to have resulted in 470 billion potential work hours lost globally in 2021, with associated income losses totalling up to USD 669 billion.

As populations grow and heat rises, more people will be relying on air conditioning powered by fossil fuels, which further contributes to climate change.

## Food and water security

Heat also affects food and water security for a growing population.

The Lancet review found that high temperatures in 2021 shortened the growing season by about 9.3 days on average for corn, or maize, and six days for wheat compared with the 1981-2020 average.

Warming oceans, meanwhile, can kill shellfish and shift fisheries that coastal communities rely on.

Heat waves in 2020 alone resulted in 98 million more people facing food insecurity compared with the 1981-2010 average.

Rising temperatures also affect fresh water supplies through evaporation and by shrinking mountain glaciers and snowpack that historically have kept water flowing through the summer months.

Water scarcity and drought have the potential to displace almost 700 million people by 2030, according to UN estimates.

Combined with population growth and growing energy needs, they can also fuel geopolitical conflicts as countries face food shortages and compete for water.

## Poor air quality

Air pollution can be exacerbated by the drivers of climate change. Hot weather and the same fossil fuel gases warming the planet contribute to ground-level ozone, a key component of smog.

That can exacerbate allergies, asthma and other respiratory problems, as well as cardiovascular disease.

Wildfires fueled by hot, dry landscapes add to the air pollution health risk. Wildfire

smoke is laden with tiny particles that can travel deep into the lungs, causing heart and respiratory problems.

## Way Ahead

Adaptation assessments can help high-risk countries prepare for the effects of climate change. Development groups are also leading projects to expand the cultivation of crops that can thrive in dry conditions.

The Pan American Health Organisation, which focuses on the Caribbean, is an example of how countries are working to reduce communicable diseases and advance regional capacity to counter the impact of climate change.

# MIGRATION OF GREAT INDIAN BUSTARDS

*GS III: Conservation, Environmental Pollution and Degradation, Environmental Impact Assessment.*

## Context

The recent sighting of three Great Indian Bustards (GIBs) deep in Pakistan's Cholistan desert has given rise to speculation that the endangered birds might have flown across the international border from India's Desert National Park (DNP). GIBs are critically endangered in Pakistan because of lack of protection and rampant hunting.

## About Great Indian Bustards

The GIB, which is the State bird of Rajasthan, is also considered India's most **critically endangered bird** and is protected under **the Wildlife Protection Act**.

Its population of about 150 in Rajasthan accounts for 95% of its total world population.

The captive breeding of GIBs was taken up in the DNP through a project executed by the Dehradun-based Wildlife Institute of India in 2019.

As many as 24 GIB chicks are in hands now and are being reared in DNP by a team technically supported by the International Fund for Houbara Conservation of United Arab Emirates.

As Rajasthan shares the international border with Pakistan's Sindh and Punjab provinces, it is suspected that the GIBs might have flown across to the neighbouring country's desert amid fears that they could become easy prey for the poachers there.

The GIBs in Thar desert have been facing threat to their survival because of intensive agricultural practices, laying of power lines and industrialisation.

Experts have observed that the endangered birds have raised their families within the DNP and outside in the rural pockets, where the feed and grassland habitat is available.

They also move in the crop fields to pick up insects and lizards and like to hide there.

## What can be done to protect Great Indian Bustards (GIB)?

India and Pakistan can collaborate on the conservation of GIBs by developing a protocol through diplomatic channels. Pakistan could be given a demonstrative example of India's ex-situ breeding project for GIBs in the Desert

National Park(DNP).

GIB was added to the world list of protected species of the 'Convention on the Conservation of Migratory Species of Wild Animals' during its 13th conference in Gandhinagar in 2020. Pakistan is a signatory to the Conference of the Parties(COP) of the convention.

# GREENWASHING

*GS III: Conservation, Environmental Pollution and Degradation, Environmental Impact Assessment.*

The use of unfair practices in climate action is not new. Corporations, and sometimes even countries, attempt to exaggerate the actions they are taking to help the fight against climate change, and also the impacts of these actions.

In the process, they provide misleading information, make unverifiable claims, and sometimes plainly lie about their products or processes.

In the first official acknowledgment of 'greenwashing', UN Secretary General Antonio Guterres warned private corporations to desist from such practices and mend their ways within a year.

There will be zero tolerance for greenwashing, he said at the ongoing climate meeting in Sharm el-Shaikh.

## Greenwashing

There is a growing tendency among firms and governments to mark all kinds of activities as climate-friendly, as something that would lead to emissions reduction, or avoidance of emissions.

Many of these claims are unverifiable, misleading, or dubious. While they help in boosting the image of the entity, sometimes even helping them garner benefits, they do nothing in the fight against climate change.

While Guterres spoke against greenwashing in the context of net-zero targets being pursued by many corporations and sub-national governments, greenwashing is prevalent across a whole range of environmental activities.

Developed countries, for example, are often accused of greenwashing their normal business investments in developing countries, or their bilateral aid, by highlighting climate co-benefits of the financial flows, sometimes with very little justification.

The Volkswagen scandal, in which the German car company was found to have been cheating in emissions testing of its supposedly green diesel vehicles, was a case of greenwashing.

Several other multinational corporations, including oil giants like Shell and BP, and Coca Cola have faced accusations of greenwashing.

Greenwashing presents a false picture of the progress being made on the climate change front, thereby pushing the world towards disaster, while at the same time rewarding entities for irresponsible behaviour.

The processes and products that can potentially cut emissions are so many that it is practically impossible to monitor and verify all.

There is lack of regulation and standardisation in most of these spaces. The processes, methodologies and institutions to measure, report, create standards, verify claims and grant certifications are still being set up.

In the meanwhile, large number of organisations have sprung up claiming expertise in these areas and offering their services for a fee.

Many of these organisations lack integrity and robustness, but their services are still availed by corporations because it makes them look good.

## Credits and offsets

The trade in carbon credits comes under the scanner in any discussion on greenwashing. Carbon trade is a legitimate exercise.

In fact, it is officially encouraged. Countries or firms that reduce emissions beyond their mandate are granted carbon credits, which can then be bought for money by

entities that need it to achieve their targets.

There was a carbon market under the Kyoto Protocol, and a new one is being created under the Paris Agreement as well.

But the scope of carbon markets has increased manifold since it was first conceptualised. Informal carbon markets also exist.

There are now credits available for all kinds of activities — for growing trees, for planting a certain kind of crop, for installing energy-efficient equipment in office buildings.

Basically, any activity that has the potential to reduce or avoid emissions can earn credits. The credits are often certified by unofficial third-party companies and sold to others.

Such transactions, particularly in informal, bilateral or voluntary markets, have been flagged for lack of integrity and double counting.

Even the official market is not immune to charges of double counting and greenwashing.

Countries like India or Brazil had accumulated huge carbon credits under the Kyoto Protocol and wanted these to be transitioned to the new market being set up under the Paris Agreement.

But many developed countries resisted this, questioning the integrity of the credits and claiming they did not accurately represent reductions in emissions. Carbon offsets from forests are one of the most controversial.

## The way forward

An expert group formed by the UN Secretary General last year to suggest remedial actions on this front submitted its report.

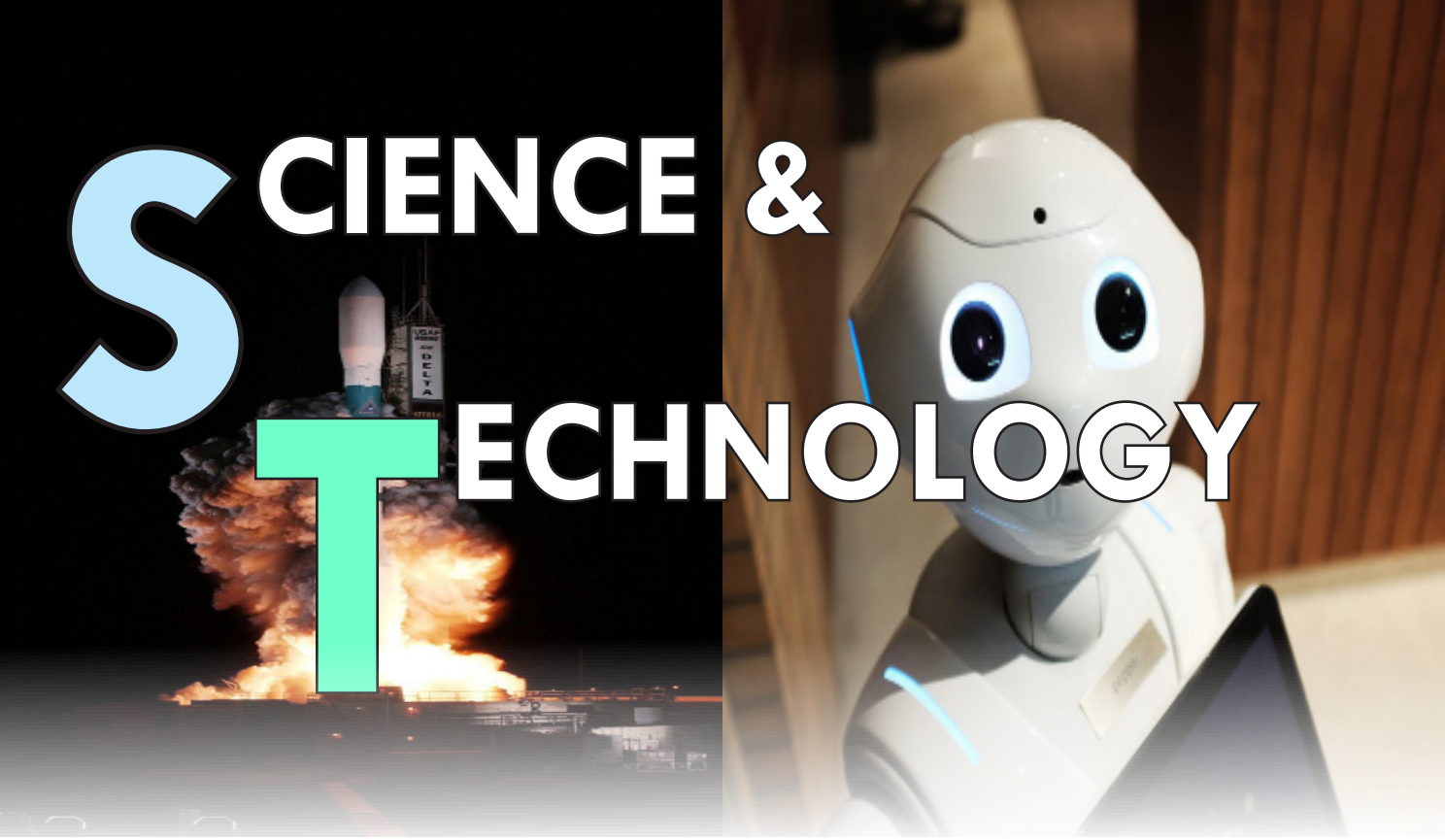
Among other things, it recommended that corporations pursuing net zero targets must not be allowed to make fresh investments in fossil fuels, must be asked to present short-term emission reduction goals on the path to achieving net zero, and must bring an end to all activities that lead to deforestation.

In addition, the corporations have been advised not to use offset mechanisms at the start of their journey to net-zero status.

The expert group has also recommended the creation of regulatory structures and standards as soon as possible.

While the measures are likely to curb these activities to some extent, it is also true that the entire architecture of global fight against climate change is based on trust.

There are elements of measurement, reporting and verification, but as mentioned earlier, the vast array of activities makes it extremely difficult, if not entirely impossible, to police every process and product.



# SCIENCE & TECHNOLOGY

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# NEW MATERIAL FOR MORE EFFICIENT LITHIUM-ION BATTERIES

Indian researchers have discovered a new anode material, which could be helpful in ensuring the life and fast charging of lithium-ion batteries (LIBs).

This discovery could help charge battery-based devices and electric vehicles (EVs) at ultra-fast speeds.

The new two-dimensional (2D) anode material is developed using Nano sheets derived from titanium diboride (TiB2).

LIBs have the anode material as the negative electrode, which is attached to the cathode material in the Li-ion battery cell.

The anode materials in a lithium-ion cell act as the host, enabling lithium-ion intercalation/ de-intercalation during the battery's charge or discharge cycle.

LIBs with Graphite anode, extremely energy dense, can power an electric vehicle for hundreds of kilometres on a single charge.

However, it has its challenges on the safety front as they are prone to fire hazards.

Lithium Titanate anodes are safer and more preferred alternatives, and they also facilitate fast charging.

But they have a lower energy density, so they would need more frequent recharging.

Li-Ion batteries enabled by nanosheet-based anode material have an edge as they offer ultra-fast charging time, and a long life cycle, and nanosheets used to prepare the anode to have a high density of pores.

## About lithium-ion battery

A lithium-ion (Li-ion) battery is an advanced battery technology that uses lithium ions as a key component of its electrochemistry.

Li-ion batteries can use a number of different materials as electrodes.

The most common combination is that of lithium cobalt oxide (cathode) and graphite (anode), which is most commonly found in portable electronic devices such as cell phones and laptops.

Other cathode materials include lithium manganese oxide (used in hybrid electric and electric automobiles) and lithium iron phosphate.

Li-ion batteries typically use ether (a class of organic compounds) as an electrolyte.

# LVM3 CRYOGENIC ENGINE

The flight acceptance hot test of a CE-20 engine is successfully carried out for a duration of 25 s in the High Altitude Test facility of ISRO Propulsion Complex at Mahendragiri on October 28, 2022.

This engine is earmarked for the LVM3-M3 mission identified for the launch of the next set of 36 numbers of OneWeb India-1 satellites.

The cryogenic upper stage of the LVM3 vehicle (C25 stage) is powered by a CE-20 engine working with the LOX-LH2 propellants combination.

This engine develops a nominal thrust of 186.36 kN in vacuum.

The major objectives of the flight acceptance test were to confirm the integrity of the hardware, assessment of subsystems' performance and tune the engine for meeting the mission requirements parameters for engine tuning for flight operation.

Analysis of test data confirmed the satisfactory performance of the engine systems.

This engine will be assembled to the C25 flight stage being integrated for the LVM3 M3 vehicle.

# INDIAN BIOLOGICAL DATA CENTRE (IBDC)

## Why in news?

Union Minister of state for Science and Technology, Jitendra Singh dedicated India's first national repository for life science data 'Indian Biological Data Center' (IBDC) to the nation at Faridabad.

## About

The 'Indian Biological Data Centre (IBDC)' is the **first national repository for life science data** in India. IBDC is mandated to archive all life science data generated from publicly funded research in India.

The data center is supported by the Government of India (GOI) through the **Department of Biotechnology (DBT)**. It is being established at the Regional Centre of Biotechnology (RCB), Faridabad in the national capital region in collaboration with the National Informatics Centre (NIC), India.

In times to come, IBDC is envisaged to emerge as a major data repository for all life science data emerging from India.The digitised data will be stored on a four-petabyte **supercomputer called 'Brahm**'. A petabyte equals 10,00,000 gigabytes (gb).

Further, besides archiving life science data, IBDC shall also develop highly curated data sets in order to facilitate knowledge discovery in various domains of life sciences. It would also provide infrastructure and expertise for biological data analysis.

The biobank also has a backup data **'Disaster Recovery' site** at National Informatics Centre (NIC)-Bhubaneshwar.

Life science data is highly complex and heterogeneous. Consequently, IBDC is being developed in a modular fashion wherein different sections would handle different types of data sets. Currently, two sections have been developed.

These include:

1. INDIAN NUCLEOTIDE DATA ARCHIVE (INDA)

2. INDIAN NUCLEOTIDE DATA ARCHIVE – CONTROLLED ACCESS (INDA-CA)

## Significance:

At present, most Indian researchers depend on the European Molecular Biology Laboratory (EMBL) and National Center for Biotechnology Information databases for storing biological data. There are other smaller datasets available with some institutes, but those are not accessible to all.It will reduce the dependency of Indian researchers on American and European data banks.

It will not only provide a platform to researchers to securely store their data within the country, it will also provide access to a large database of indigenous sequences for analyses.

Such databases have traditionally played a key role in determining the genetic basis of various diseases and finding targets for vaccines and therapeutics.

# POLYGRAPH TEST

## Why in news?

Days after a Delhi court agreed to a narco test, the Delhi Police approached a court to conduct a polygraph test on Aaftab Poonawala, suspected of killing his partner Shraddha Walkar, to help investigators find the missing weapon and other evidence in the murder case.

## About

## Polygraph Test

Polygraph is a device or procedure that measures and records several physiological indicators such as blood pressure, pulse, respiration, and skin conductivity while a person is asked and answers a series of questions.

A polygraph test is based on the assumption that physiological responses (heartbeat, changes in breathing, sweating, etc.) triggered when a person is lying are different from what they would be otherwise. Instruments like cardio-cuffs or sensitive electrodes are attached to the person, and variables such as blood pressure, pulse, blood flow, etc., are measured as questions are put to them. A numerical value is assigned to each response to conclude whether the person is telling the truth, is deceiving, or is uncertain.

The results of the tests cannot be considered to be "confessions". However, any information or material subsequently discovered with the help of such a voluntarily-taken test can be admitted as evidence, the Supreme Court said, in 'Selvi & Ors vs State of Karnataka & Anr' (2010).

The Supreme Court Bench comprising then Chief Justice of India K G Balakrishnan and Justices R V Raveendran and J M Panchal in the 2010 case ruled that no lie detector tests should be administered "except on the basis of consent of the accused".

## Narco Test

In a 'narco' or narcoanalysis test, a drug called **sodium pentothal** is injected into the body of the accused, which transports them to a hypnotic or **sedated state**, in which their imagination is neutralised. In this hypnotic state, the accused is understood as being incapable of lying, and is expected to divulge information that is true.

Sodium pentothal or sodium thiopental is a **fast-acting, short duration anaesthetic**, which is used in larger doses to sedate patients during surgery. It belongs to the **barbiturate class of drugs** that act on the central nervous system as depressants.

# AGNI - 3

## Why in news?

India carried out a successful training launch of the nuclear capable Intermediate Range Ballistic Missile (IRBM) Agni-3 from APJ Abdul Kalam Island, Odisha, as part of routine user training launches conducted by the Strategic Forces Command

## About

It is a Two-stage solid propellent powered, nuclear capable, Intermediate range ballistic missile (IRBM)

It is 16-meter-long, weighing more than 48 tonnes, has a range of over 3000 kilometres and can carry a payload of over 1.5 tonnes.

It was subsequently successfully flight tested in 2007.

It is under operational purview of the Strategic Forces Command, which is part of India's Nuclear Command Authority.

The Agni-3 test comes over a month after India's Strategic Strike Nuclear Submarine,

INS Arihant, carried out a successful launch of a Submarine Launched Ballistic Missile (SLBM).

The launch is significant to prove crew competency and validate the SSBN programme, a key element of India's nuclear deterrence capability.

A robust, survivable and assured retaliatory capability is in keeping with India's policy to have 'Credible Minimum Deterrence' that underpins its 'No First Use' commitment.

# HYPERSCALE DATA CENTRE

## Why in the news?

Uttar Pradesh Chief Minister Yogi Adityanath recently inaugurated Yotta D1 – India's second and North India's first hyper-scale data centre – in Greater Noida.

## About

A hyperscale data center is a facility which houses critical computer and network infrastructure.

The hyperscale data centers are massive facilities built by companies with vast data processing and storage needs. These firms may derive their income directly from the applications or websites the equipment supports, or sell technology management services to third parties.

There's no official definition, but a hyperscale facility typically has at least 5,000 servers and is 10,000 square feet or more in size.

Another distinguishing factor of a hyperscale facility is its ability to scale — meeting higher workloads by increasing computing resources.

Companies can scale their data centers in two ways:

Horizontally: Scaling horizontally means adding more machines to your network infrastructure. This allows you to share the processing load across more machines. If a business application can no longer handle additional traffic, adding new servers can handle the extra workload.

Vertically: Scaling vertically means adding more computing resources like CPU and RAM to your existing infrastructure. This allows you to increase the processing power on a machine without having to change its code. Scaling vertically is easier to implement, but the ability to scale will depend on the machine's specifications.

## Yotta D1

Yotta D1 is the first of the 6 data centre buildings currently being built in the Greater Noida data centre park. The first data centre was operationalized in just 20 months with an investment of around Rs.1,500 crore.

The hyperscale data centre was developed by Yotta Infrastructure – an arm of the Hiranandani Group. It is situated at a strategic location close to important business hubs of India's National Capital Region. This provides a major boost for the region's digital economy.

Other hyperscale data centre in India- Data Samudra in Bangalore

# ESSO-INCOIS (INDIAN NATIONAL CENTRE FOR OCEAN INFORMATION SERVICES)

ESSO-INCOIS was established as an autonomous body in 1999 under the **Ministry of Earth Sciences (MoES)** and is a unit of the Earth System Science Organization (ESSO).

ESSO- INCOIS is mandated to provide the best possible ocean information and advisory services to society, industry, government agencies and the scientific community through sustained ocean observations and constant improvements through systematic and focussed research.

It provides round-the-clock monitoring and warning services for the coastal population on tsunamis, storm surges, high waves, etc. through the in-house Indian Tsunami Early Warning Centre

(ITEWC). The Intergovernmental Oceanographic Commission (IOC) of UNESCO designated ITEWC as a Regional Tsunami Service Provider (RTSP) to provide tsunami warnings to countries on the Indian Ocean Rim.

ESSO-INCOIS has a prominent international presence, being **a permanent member of the Indian delegation to IOC of UNESCO** and a founding member of the Indian Ocean Global Ocean Observing System (IOGOOS) and the Partnership for Observing the Oceans (POGO)

# NUNO FELTING TECHNOLOGY

## Why in news?

Farooq Ahmed, an expert craftsman of Srinagar, has breathed new life into the sector by aligning the industry with modern technology. He has combined the Australia-based "Nano Felting Technique" with traditional handicrafts to create a new craft that is unmatched in the world.

## About

Basically, felting is the process of turning a protein fiber (meaning animal fiber) such as sheep wool, alpaca, mohair, yak, etc. into a piece of fabric by connecting the individual fibers.

Nuno felting is a fabric felting technique used to press loose fibres, usually sheep's wool, into soft fabrics such as silk. It was developed in Australia decades ago

The Nuno felting process is particularly suitable for creating lightweight fabrics used to make clothing. The use of silk or other stable fabric in the felt creates a fabric that will not stretch out of shape. Fabrics such as nylon, muslin, or other open weaves can be used as the felting background, which results in varying textures and colors.

Nuno felting creates a highly versatile fabric. It can be made in many weights to accommodate many different uses. It can be made much lighter in weight than traditional all-wool felt, accounting for its movement and drape. Because of the range of weights possible with the cloth very diverse garments can be made.

A lightweight Nuno fabric is made by laying one layer of loose fiber onto an open weave fabric base, creating a lightweight material. A much heavier Nuno fabric results from applying 3-4 layers of loose fibers onto an open weave base creating fabric ideal for a winter coat. A pair of boots could be made using even more layers of fibers.

# BLUEBUGGING

Several smartphones have their Bluetooth settings on discovery mode as it is a default setting, making it easy for hackers to access the phones when they are within 10 metres from the device. This is done through a process called Bluebugging.

Bluebugging is a form of hacking that lets attackers access a device through its discoverable Bluetooth connection. Once a device or phone is bluebugged, a hacker can listen to the calls, read and send messages and steal and modify contacts. It started out as a threat to laptops with Bluetooth capability. Later hackers used the technique to target mobile phones and other devices.

## How does Bluebugging work?

Bluebugging attacks by exploiting Bluetooth-enabled devices. The device's Bluetooth must be in discoverable mode, which is the default setting on most devices. The bluetooth enabled device must also be within a 10-metre radius of the hacker. The hacker then tries to pair with the device via Bluetooth. Once a connection is established, hackers can use brute force attacks to bypass authentication. They can install the malware in the compromised device to gain unauthorized access to it.

Any Bluetooth-enabled device can be bluebugged. Wireless earbuds are also susceptible to such hacks. Apps that enable users to connect to their TWS (True Wireless Stereo) devices or earbuds can record conversations.

## Preventive Measures:

- Turning off Bluetooth and disconnecting paired Bluetooth devices when not in use.
- Making Bluetooth devices undiscoverable from Bluetooth settings.
- Updating the device's system software to the latest version.
- Limited use of public Wi-Fi.
- Watch out for suspicious activities on your device.
- Monitoring of sudden spikes in data usage.
- Usage of modern anti-virus software.

# SECURITY

## What's Inside?


1. CIVIL AVIATION MINISTRY NOTIFIES DRAFT AIRCRAFT SECURITY RULES, 2022
2. VIKRAM S
3. BIOLOGICAL WEAPON CONVENTION
4. MAKE 2 PROJECT

*CONTOURS AND DIMENSIONS OF CYBER ATTACKS*

*GS-III role of media and social networking sites in internal security challenges, basics of cyber security*

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# CIVIL AVIATION MINISTRY NOTIFIES DRAFT AIRCRAFT SECURITY RULES, 2022

The Ministry of Civil Aviation has notified the draft Aircraft Security Rules, 2022 which enable the aviation security regulator, Bureau of Civil Aviation Security (BCAS) to impose penalties upto ₹1 crore on airports and airlines for violation of security measures.

Once the draft Rules are finalised, the BCAS can impose a fine of ₹50 lakh to ₹1 crore (depending on the size of the company) on airports and airlines if they fail to prepare and implement a security programme, or if they commence operations without seeking a security clearance.

Large airports can also face a penalty of ₹1 crore if they fail to plan the design and layout of the airport in accordance with the National Civil AviationSecurity Programme.

Individuals will also face penalties ranging from ₹1 lakh to ₹25 lakh depending on the nature of offence.

According to the proposed rules, the BCAS will also be able to suspend or cancel an entity's airport security clearance and security programme.

In order to deal with cyber security threats, the rules also require each entity to protect its information and communication technology systems against unauthorised use and prohibit disclosure of sensitive aviation security information.

The draft rules now authorise airports to engage private security agents instead of CISF personnel at "non-core areas" and assign security duties as per the recommendation of the National Civil Aviation Policy, 2016.

The rules will supersede Aircraft Security Rules, 2011 and were necessary after Parliament passed Aircraft Amendment Act, 2020 in September 2020, giving statutory powers to BCAS, along with the Director General of Civil Aviation and Aircraft Accident Investigation Bureau.

These allow them to impose penalties which could only be imposed by courts earlier. The Act also raised the maximum penalty from ₹10 lakh to ₹1 crore.

The amendment in Parliament was required after the United Nation's aviation watchdog, International Civil Aviation Organisation (ICAO), raised questions about the three regulators functioning without statutory powers.

# VIKRAM S

## Why in news?

India's first privately developed launch vehicle is set to make its maiden flight from Indian Space Research Organisation's (ISRO) launchpad at Sriharikota on November 15.

## About

**India's first private rocket, Vikram-S**, is developed by a Hyderabad-based startup Skyroot Aerospace. The rocket will be launched on a **sub-orbital mission**, named as **Prarambh**, with three payloads.

The successful launch of the mission will make Skyroot the first private space company to

launch a rocket in space from India. This will pave way for the growth of India's private space sector which was opened in 2020. Since then, the country has been trying to attract private space companies to launch rockets from India.

## Suborbital spaceflight:

A suborbital spaceflight refers to a height of around 100km from the Earth's surface, and is done at a lower altitude than an orbital flight, which reaches at least a low-Earth orbit — between around 200km to 2,000km from Earth.

Suborbital flights are known to be important for conducting tests of space missions, before final commercial missions take place.

## Indian National Space Promotion and Authorization Center (IN-SPACe)

IN-SPACe is an autonomous and single window nodal agency in the Department of Space for the promotion, encouragement and regulation of space activities of both government and private entities.

IN-SPACe will act as a single window, independent nodal agency to take care of all the needs of the private sector.

It also facilitates the usage of ISRO facilities by private entities.

The establishment of IN-SPACe was announced in June 2020.

# BIOLOGICAL WEAPON CONVENTION

## Historical context

The Geneva Protocol (formally known as the Protocol for the Prohibition of the Use in War of Asphyxiating, Poisonous or other Gases, and of Bacteriological Methods of Warfare), was signed in Geneva in June 1925 and entered into force in February 1928.

It represented the first important milestone towards a comprehensive ban on biological weapons by prohibiting their use.

However, several States ratified the Protocol with reservations, both with respect to the Protocol's applicability and regarding the use of chemical or biological weapons in retaliation.

These reservations effectively rendered the Geneva Protocol a no-first-use agreement only.

Disarmament talks after the Second World War originally addressed biological and chemical weapons together.

However, these discussions remained inconclusive for many years.

Soon after States finalized the negotiations of the Nuclear Non-Proliferation Treaty (NPT) in 1968, a UK initiative helped pave the way to overcome the impasse in the discussions on chemical and biological weapons.

The UK submitted a working paper, which proposed to separate consideration of biological weapons from chemical weapons and to concentrate first on the former.

## Negotiating the BWC

The BWC was negotiated in Geneva, Switzerland, within the Eighteen Nation Committee on Disarmament (ENDC) and the Conference of the Committee on Disarmament (CCD) from 1969 until 1971.

On 5 August 1971, the USA and USSR tabled separate but identical versions of a draft BWC in the CCD.

Agreement between the two superpowers marked the final stage of the negotiation of the Convention.

The negotiation of the BWC was concluded by the CCD on 28 September 1971. The Convention was commended by the United Nations General Assembly on 16 December 1971.

The BWC was then opened for signature at ceremonies in London, Moscow and Washington on 10 April 1972.

# MAKE 2 PROJECT

Indian Army is spearheading actions to provide impetus to "Make Projects" as the prime drivers of infusion of niche technologies through indigenous development.

To give a further boost to the ongoing projects, Indian Army has now approved Project Sanction Orders (PSOs) of five Make II projects.

Make II projects are essentially Industry funded projects involving design, development and innovative solutions by Indian vendors for development of prototypes.

An assurance of order is given after successful prototype development.

Following are the projects whose PSOs have been approved:-

## High Frequency Man Packed Software Defined Radio (HFSDR).

Project Sanction Order (PSO) for development of prototype of Frequency Man Packed Software Defined Radio (HFSDR) under Make II scheme has been issued to 14 Developing Agencies (DAs).

300 HFSDRs are planned to be procured by the Indian Army, on successful development of the prototype.

State of the art, light weight HFSDR will provide long distance radio communication through enhanced data capability and band width coupled with enhanced security.

It will facilitate blue force tracking with map based navigation using GIS, thereby increasing real time situational awareness.

These radio sets will replace the existing HF radio sets in the inventory, which have limited data handling capability and obsolete technology.

## Drone Kill System

RPAS/ s have greatly impacted the modern battlefield even though drone related technologies are constantly evolving.

The indigenous industry has adequate expertise to develop world class products in this field.

As part of efforts to further encourage the indigenous anti-drone ecosystem, the Indian Army has approved Project Sanction Order (PSO) to 18 Developing Agencies (DAs) for procurement of 35 sets of Drone Kill Systems under the Make II scheme, post successful development of Prototype. The project is reserved for MSMEs/Start-ups.

Drone Kill System is a hard kill anti drone system against low Radio Cross Section (RCS) Drone/ unmanned Aerial System (UAS), being developed to function in all types of terrains, both during day and night.

## Infantry Training Weapon Simulator (IWTS)

Project Sanction Order (PSO) has been issued to four Developing Agencies (DAs) to develop the prototype for subsequent procurement of 125 sets of IWTS under the Make II procedure. The IWTS is the first tri service Make II project with the Indian Army as the lead service.

The project is reserved for MSMEs/ Start ups. IWTS will be utilised to augment marksmanship skills of young soldiers on variety of weapons used by the , providing user friendly graphics to simulate battle scenarios.

IWTS is a modern training aid, which will reduce recurrent expenditures on live ammunition, besides obviating the challenges of availability of firing ranges and inclement weather.

Each IWTS will facilitate training of 10 personnel at any one point of time.

## 155mm Terminally Guided Munitions (TGM)

Project Sanction Order has been issued to six Developing Agencies (DAs) for development of 155 mm

Terminally Guided Munition (TGM) under Make II scheme.

Variants of ammunition were held in the

inventory of the IA, sans, the precision strike capability.

The IA therefore plans to procure approximately 2000 rounds of 155mm TGM against High Value Targets with assured Precision and Lethality for mission accomplishment and minimum collateral damage.

Medium Range Precision Kill System (MRPKS). Project Sanction Order has been issued to 15 Developing Agencies (DAs) for developing a prototype ofvMRPKS under the Make-II category of DAP 2020.

Post successful development of this prototype, the IA will procure 10 Sets of MRPKS. The Medium Range Precision Kill System (MRPKS), once launched

can 'Loiter' in the air for upto two hours and can acquire, designate and engage real time high value targets upto 40 km.

In times to come we see our country transforming as "AtmaNirbhaar" in Loitering Munition Technology.

The Indian Army is already progressing 43 ongoing projects under the Make II procedure of Capital Acquisition. 17 out of 43 projects have been initiated through suo-moto proposals received from the industry, which has generated enthusiasm and confidence in the Indian defence industry for participation in the "Make procedure".

Make II procurement scheme has given an impetus to increase the Design & Development in the defence industry to achieve indigenisation of high end technology systems in various types of weapon systems, ammunition and modern training systems, which are currently not available in the country.

Multiple measures to expedite the ongoing Make II projects have resulted in tangible outcomes. 22 out of 43 Make II projects are now in prototype development stage, which is 66 % of projects by cost (Rs 18,000 Crores out of 27,000 Crores).

# INTERSTATE BORDER ISSUES IN NORTHEAST INDIA

*GS III: Role of External State and Non-state Actors in creating challenges to Internal Security.*

## Why in news?

On November 22, five villagers from Meghalaya and an Assam forest guard were killed and two others were seriously injured in a firing incident along the boundary between the two States.

## About

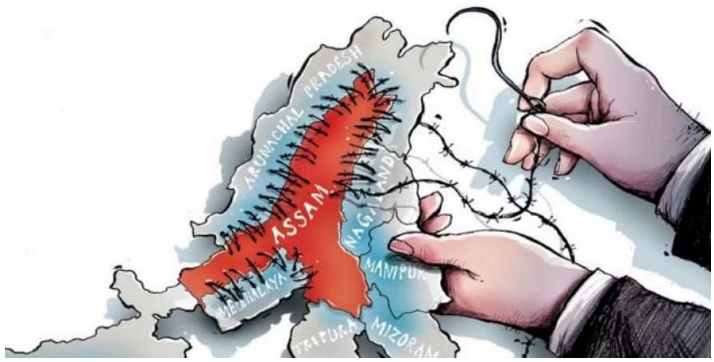
Border disputes between various states in Northeast India have been recurring since the 1960s. These disputes emerged after states such as Nagaland, Meghalaya, Arunachal Pradesh and Mizoram were carved out of undivided Assam.

However, almost all these border disputes have their origins in colonial times and reflect the **consequences of the British policy** of creating and recreating boundaries for administrative convenience based on annexation and exploration of territories in the region. The Union government has made efforts to resolve these disputes, however, not much success has been achieved as one or the other state remained non-cooperative.

## Origin of Northeast States

At the time that India gained its independence in 1947, there were only 3 states - Assam, and the princely states of Manipur and Tripura. Arunachal Pradesh, Meghalaya, Mizoram, and Nagaland were part of the larger territory of Assam. Eventually, they got separated to form their own distinct states.

Assam was the first to gain statehood with the rest of the country in 1947. This was followed by Nagaland in 1963, Meghalaya, Tripura and Manipur in 1972, Arunachal Pradesh in 1975 and Mizoram in 1987. Sikkim was added as a state of India in 1975 and finally integrated with other northeastern states in 2002.




Unlike the process of state formation in the mainland, which took place primarily on a linguistic basis, the northeastern states were formed on the basis of ethnic and tribal identities.

## Assam–Meghalaya Border

Assam shares an 884.9 km long border with Meghalaya. The border dispute stems from the Meghalaya government's refusal to accept the **Assam Reorganisation (Meghalaya) Act of 1969**. There are at present 12 points of dispute along the Meghalaya–Assam border

In April 1951, on the recommendations of the **Bordoloi Committee**, Blocks I and II of Jaintia Hills were transferred to the Mikir Hill (Karbi Anglong) District of Assam and areas in Garo Hills to Goalpara District of Assam. The contiguous areas in Ri Bhoi District were also transferred to the Kamrup District of Assam. The 1969 Reorganisation Act reiterates these transfers and accordingly defines the boundary of Meghalaya.

Meghalaya claims that these areas originally belong

to the Khasi–Jaintia Hills and that the inhabitants belong to the **Khasi Pnar tribe**, therefore, these areas should belong to Meghalaya. It also claims that some of these territories were also lost to the British by the Khasi chieftains. The Assam government on the other hand asserts that Meghalaya Archives does not have the documents to prove that these areas historically belonged to Meghalaya. And that it will adhere to the maps which were created in 1979–80.

The border disputes persist with occasional flaring up of violent incidents as both civilians and governments attempt to encroach upon areas and build structures for residential or official purposes. Till date, the situation has been under control through an effective dialogue between the governments at various levels.

## Assam–Arunachal Border Dispute

Arunachal shares an 804.1 km long boundary with Assam. The boundary dispute between the two states came to the fore after the establishment of Arunachal Pradesh as a Union Territory in 1972. a number of anomalies and disputes regarding the border surfaced during the survey for demarcation . As a result, the process of demarcation had to be suspended.

The border dispute between the two states arose when Arunachal Pradesh refused to accept the **1951 notification** as the basis of boundary delineation. In April 1951, on the recommendations of the **Bordoloi Committee**, a total of 3,648 sq. km of the plain area comprising the present-day **Darrang, Dhemaji and Jonoi districts** was transferred to Assam.

Arunachal argues that the plain area was transferred to Assam without the consent of its people. It claims that the people of Arunachal Pradesh have **traditional and customary rights over these lands** which were also recognised by the British as well as the Ahom rulers through the payment of posa. The Assam government, however, argues that the boundary is constitutional and cannot be altered

## Bordoloi Committee

Passed by the Constituent Assembly in 1949, the Sixth Schedule was formulated to provide the limited autonomy to the tribal regions of North-East.

It was based on the reports of Bardoloi Committee formed by the Constituent Assembly.

The committee report stated that there was a need for a system of administration that would allow tribal areas to become developed.

The report also called for the protection of these tribal areas from exploitation by the people in the plains and preserving their distinct social customs.

## Assam–Mizoram Border Dispute

Mizoram was carved out of Assam and established as a Union Territory in 1972 and as a full-fledged state in 1987. The two states share a 164.6 km-long border. The boundary between the two states is defined in the **North-Eastern Areas (Reorganisation) Act of 1971**.

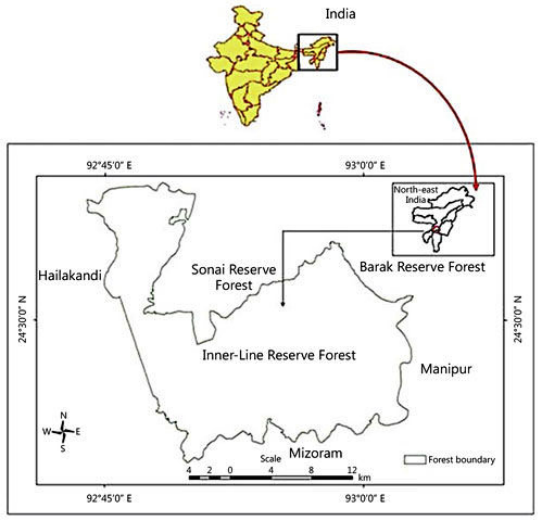
The dispute between Assam and Mizoram stems from the latter's refusal to accept the present boundary with Assam as notified in 1933 arguing that it was a decision imposed upon them by the British.

Mizoram suggests that the **Inner Line Reserved Forest,** as described in the **1875 notification under the Bengal Eastern Frontier Regulation Act of 1873**, should be the basis for delineating the border.

Assam government's contention is that the 1875 notification mentioned the Inner Line, which was only a line limiting the administrative extent of the Assam government and was never meant as a boundary line between **Cachar and Lushai Hills.**

At present, the situation remains tense along the border. Central forces are deployed along the border—Sashastra Seema Bal (SSB) and Central Reserve Police Force (CRPF) on Assam side and the Border Security Force (BSF) on Mizoram side of the border—to

act as a buffer between the state police forces. Efforts are being made to diffuse the tension.




## Assam–Nagaland Border Dispute

Assam and Nagaland share a 434 km-long border. While the border dispute between the two states began right after Nagaland attained statehood in 1963, it is important to note that even before India gained independence, the Naga National Council (NNC) had demanded the return of the territories which formed part of Naga Hills District.

This demand was included in the **Nine Point Agreement** signed between Governor of Assam Sir Akbar Hydari and the NNC in June 1947. The Agreement deals with the transfer of **Sibsagar and Nowgong (Nagaon)** districts as well as all the Naga-inhabited contiguous areas to Naga Hills District.

The restoration of the "Naga areas" was raised again and placed on record under in the **16-Point Agreement** signed between the Union government and the Naga People's Convention (NPC) in 1960.10 As is evident, the Government of India did not take any action on this demand but decided to confer statehood to the Nagas to achieve their political aspirations.

Accordingly, **the State of Nagaland Act, 1962** was enacted which defined its borders based on the **1925 notification**.The government of the newly formed state of Nagaland, however, did not accept the boundary delineation and demanded that Nagaland should comprise the erstwhile Naga Hills and all Naga-dominated areas in North Cachar and Nowgong (Nagaon) districts, which were part of the Naga territory in 1866. In all, Nagaland demands 12,488 sq. km of Assamese territory, all of which comprise 10 Reserve Forests.

The refusal of Nagas to accept the notified boundary saw **large forested tracts of Assam encroached upon by the Naga rebels** in the 1960s, which were used as hideouts. These insurgent groups were followed by the common Naga people who started settling in these forested areas with the encouragement of the Nagaland government and were protected by the Naga rebels.

As encroachments increased, tensions between Assam and Nagaland flared up resulting in the first border clashes in 1965. Since then, violent clashes along the Assam–Nagaland border have become a regular feature, with major armed conflicts reported in 1968, 1979, 1985 and the latest in 2014.

The first substantive attempt at resolution of the border dispute was taken by the Union government after the 1968 clashes when it constituted the **Sundaram Committee** in 1971, with the mandate to determine the boundary between Assam and Nagaland

In 1997, the Union government constituted **a commission under J.K. Pillai** to resolve the issue. However, the Assam government rejected the commission's report

In 2006, the **Local Commission under Justice S.N. Variava** was constituted. However, as Variava expressed his inability to continue, Justice Tarun Chatterjee was appointed in his stead. The Local Commission was mandated to identify the **boundaries of Assam by taking into account legal, historical and other aspects.**

## Other interstate Border issues in the country

Karnataka - Maharashtra over Belgaum region- on

linguistic grounds (Marathi - Kannada speaking populations) Area came under Karnataka in 1956 and till then it was under the Bombay presidency.

Haryana-Himachal Pradesh over the region of Parwanoo

Ladakh - Himachal Pradesh over the region of Sarchu

## Way Forward

The inter-state border disputes in the Northeast have persisted for long. Several attempts at resolving these disputes have been unsuccessful indicating the collective failure of Union and state governments.

The recommendations of various commissions were not binding upon the states, one or the other state government rejected the reports if its claim was not favoured. The appointment of commissions itself can be seen as a delaying tactic by the governments rather than searching for solutions

it is incumbent on the political leaders in the region to cool raging tempers and spread awareness about the benefits of settled and peaceful borders in terms of better infrastructure, connectivity and the realisation of the full potential of India's Act East Policy.At the same time, efforts should be redoubled to find a political solution, mediated by the Union government, which is binding on all the states concerned in the Northeast.

# NO MONEY FOR TERROR CONFERENCE

*GS III: Challenges to Internal Security through Communication Networks, Role of Media and Social Networking Sites in Internal Security Challenges, Basics of Cyber Security; Money-Laundering and its prevention.*

## Why in news?

Third ministerial 'No Money for Terror (NMFT)' conference was held on November 18 and 19. It was hosted by the Ministry of Home Affairs. The NMFT started in 2018 as an initiative of the French government which had, in 1989, laid the foundation of the Financial Action Task Force (FATF), the international body at the forefront of combating money laundering and terrorist financing.

## About Terrorism

Terrorism is **not legally defined** in all jurisdictions; the statutes that do exist, however, generally share some common elements.

Terrorism involves the **use or threat of violence and seeks to create fea**r, not just within the **direct victims** but among **a wide audience**. The degree to which it relies on fear distinguishes terrorism from both conventional and guerrilla warfare.

## Terrorist Financing

Terrorists require financing to recruit and support members, maintain logistics hubs, and conduct operations. Thus, preventing terrorists from accessing financial resources is crucial to successfully counter the threat of terrorism

Terrorist financing encompasses the means and methods used by terrorist organizations to finance their activities. The primary goal of individuals or entities involved in the financing of terrorism is therefore not necessarily to conceal the sources of the money but to conceal both, the financing and the nature of the financed activity.

The funding of terrorist activities often requires funds to be moved within or across

jurisdictions. This might be done through official channels of the financial market and money remittances, through unregulated channels or with the use of cash couriers.

A clear similarity can be identified between terrorist financing and money laundering, as in both cases efforts are made to hide the funds from the scrutiny of state authorities. The techniques to do so are also often similar.

## Sources of terrorist financing

The global flow of funds for nefarious purposes has three **traditional channels**. First, direct smuggling of cash through international borders. Second, the use of hawala networks. Third, banking networks including SWIFT and other international channels.

But now, swift **technological developments** in areas of blockchain or cryptocurrencies which transcend national boundaries and international currency systems have emerged as a new channel for financing terrorist and other illegal activities.India has evidence of social media platforms using crowdfunding measures to fund terror activities

The sources of terrorist funding vary. Firstly, they may originate from illegal activities, ranging from low-scale criminality to organised crime (e.g. trafficking in drugs, weapons or human beings.) The origin of the funds might, however, also be legitimate, being provided for example by the members of the organisation (usually the newcomers) or obtained through the abuse of non-profit organisations.

## International Efforts to tackle terrorist financing

The international efforts to tackle the menace of terror financing began way back in 1989 when the Financial Action Task Force (FATF) was formed as a means of bringing order and implementing standards to the monetary system in the world with regard to terror finance and money laundering.

## Financial Action Task Force

The Financial Action Task Force (FATF) is the **global money laundering and terrorist financing watchdog**. The inter-governmental body sets **international standards** that aim to prevent these illegal activities and the harm they cause to society.

As a policy-making body, the FATF works to generate the necessary political will to bring about national legislative and regulatory reforms in these areas. It was established in 1989 during the G7 Summit in Paris.

The UNSCR (UN Security Council) resolution 1267 in 1999 and UNSCR resolution 1373 in 2001

**The Terrorism Prevention Branch (TPB) of the United Nations Office on Drugs and Crime (UNODC)** works on the legal aspects of countering the financing of terrorism, including promoting the ratification of the relevant universal legal instruments, in particular the International Convention for the Suppression of the Financing of Terrorism (1999), and the implementation of these international standards.

The **United Nations Office of Counter-Terrorism (UNOCT)** leads and coordinates an all-of-UN approach to prevent and counter terrorism and violent extremism.

## India's Actions against Terrorist Financing

The **Prevention of Money Laundering Act, 2002** (PMLA) came into force in 2005 and was amended in 2009. The **Unlawful Activities (Prevention) Act, 1967** (UAPA) was amended in 2004 to criminalise, inter alia, terrorist financing.

The UAPA was further amended in December 2008 to broaden its scope and to bring the legislation more in line with the requirements of the **United Nations Convention for the Suppression of the Financing of Terrorism** (FT Convention).

India has criminalised money laundering under the **Narcotic Drugs and Psychotropic Substances Act, 1985** (NDPS Act), as amended in 2001. Narcotics is an important player in the terrorist financing.

Government of India

established the **Financial Intelligence Unit - India (FIU-IND)**, as an independent body reporting directly to the Economic Intelligence Council (EIC). FIU-IND is also responsible for co-ordinating and strengthening efforts of national and international intelligence, investigation and enforcement agencies in pursuing the global effort against money laundering, terrorist financing and related crimes.

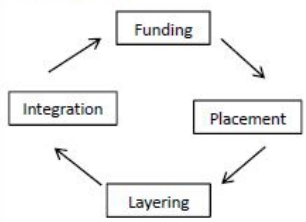
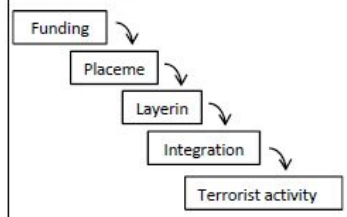
India has proposed permanent secretariat of NMFT to coordinate bid to fight terror funding

## NO MONEY FOR TERROR CONFERENCE

The "No Money for Terror" conference was started in 2018, as an initiative of the French government, to specifically focus on cooperation between countries to choke terror funding.

In 2019, the conference was held in Australia.

It was to be held in India in 2020 but was postponed due to the Covid-19 pandemic.

| Comparison | Money Laundering | Terrorist Financing |
|---|---|---|
| **Motivation** | Profit-seeking | Ideological |
| **Intention** | To clean ill-gotten gains or dirty money so that they appear to be proceeds from legal activities. | To intimidate a population or to compel a government or an international organization to do or abstain from doing any specific act through the threat of violence. |
| **Source of funding** | • Unlawful sources<br>- Extortion, kidnapping, narcotics trafficking, smuggling, fraud, theft, robbery, identity theft, improper use of charitable or relief funds. | • Unlawful sources<br>- Extortion, kidnapping, narcotics trafficking, smuggling, fraud, theft, robbery, identity theft, improper use of charitable or relief funds and donors many have no knowledge that their donations have been diverted to support terrorist causes.<br>• Legitimate sources<br>- Charitable donations, foreign government sponsors, business ownership and personal employment. |
| **Methods** | Placement – Layering - Integration | The same as or similar to those methods used by other criminals that launder funds. |
| **Life circle** | Circular life circle<br>  | Linear life circle<br>  |

## 2018 Conference

The conference agreed on **"fully criminalising terrorism financing**.

It made a commitment to "**implement the FATF standards** as they apply to **crypto-assets"**, urging the FATF "to advance global implementation".

It discussed **"traceability and transparency of non-profit organisations (NPOs) and charitable funds**",

## 2019 Conference

The conference identified **"kidnapping for ransom"** and **"emerging technologies"** such as digital and cryptocurrencies, stored value cards, online payment systems and **crowdfunding platforms** as new channels through which terrorism may be financed.

It recognised "**the critical role played by the private sector** to detect and prevent misuse of financial systems by terrorists"

India has articulated its **"zero tolerance approach"** towards terrorism

## 2022 Conference

During the Conference, deliberations were held in four sessions with focus on:

Global Trends in Terrorism and Terrorist Financing.

Use of Formal and Informal Channels of Funds for Terrorism.

Emerging Technologies and Terrorist Financing.

International Co-operation to Address Challenges in Combating Terrorist Financing.

Further India proposed a six pillar strategy in tackling the terrorist financing.

India's strategy against the financing of terrorism is based on these six pillars:

1. Strengthening the Legislative and Technological Framework
2. Creation of a Comprehensive Monitoring Framework
3. Actionable intelligence sharing mechanism and strengthening of the investigation and police operations
4. Provision for confiscation of property
5. Prevent misuse of legal entities and new technologies, and,
6. Establishing international cooperation and coordination

To achieve the goal of "No Money for Terror", the global community must understand the "Mode - Medium - Method" of Terror Financing and adopt the principle of 'One Mind, One Approach' in cracking down on them.

# HISTORY

# ART & CULTURE

## What's Inside?


1. PASHMINA SHAWL
2. NICOBARI HODI CRAFT
3. KUTIA KONDH TRIBE-BURLANG YATRA
4. LACHIT BORPHUKAN
5. MANGARH DHAM
6. AFZAL KHAN TOMB
7. ARITTAPATTI: TAMIL NADU'S FIRST BIODIVERSITY HERITAGE SITE
8. NYINGMA SECT OF BUDDHISM

# PASHMINA SHAWL

Recently, Custom officials complained about the presence of 'Shahtoosh' guard hair in the Pashmina shawl, which is obtained from endangered Tibetan antelopes in many of their export consignments.

## About Pashmina

Pashmina is one of the finest and highest quality wool in the whole world.

It is a Geographical Indication (GI) certified wool that has its origin in the Kashmir region of India.

Originally Kashmiri people used Pashmina shawls to keep themselves warm during the winter season.

The term 'Pashmina' has been derived from the Persian word "Pashm" meaning a wearable fibre precisely wool.

Pashmina Shawls are very costly due to their fine quality of wool and the hard work involved in making one single piece. Its high demand boosted the local economy.

Weaving a single Pashmina Shawl takes a long time depending on the type of work involved. It generally takes around 72 hours or more to complete one shawl.

The wool that is used in weaving the Pashmina Shawl is obtained from the Changthangi goats (Capra Hircus) domesticated in the Ladakh.

The raw Pashm is harvested by the Changpa tribes of Ladakh who herd the Changthangi goats.

The Changpa are a semi-nomadic community which inhabits Changthang (which is spread across Ladakh and Tibet Autonomous Region) or other regions of Ladakh.

As of 2001, the Changpa were classified as a Scheduled Tribe under the Indian Government's reservation program of affirmative action.

Due to restricted availability and high prices, adulteration of Pashmina with sheep wool/ ultra-fine merino wool is a common practice by manufacturers.

In 2019, the Bureau of Indian Standards (BIS) published an Indian Standard for identification, marking and labelling of Pashmina products to certify their purity.

## About Shahtoosh

Shahtoosh is the fine undercoat fibre obtained from the Tibetan Antelope, known locally as 'Chiru', a species living mainly in the northern parts of the Changthang Plateau in Tibet.

As per the International Union for Conservation of Nature (IUCN) Red list, Chiru has been classified as 'Near Threatened'.

As they offer high levels of smoothness and warmth, Shahtoosh shawls became a highly expensive commodity.

Unfortunately, due to commercial poaching of the animal, their population declined dramatically.

Convention on International Trade in Endangered Species of Wild Fauna & Flora (CITES) included the Tibetan Antelope in 1979 leading to prohibition in sale and trade of Shahtoosh shawls and scarves.

# NICOBARI HODI CRAFT

The Geographical Indications Registry at Guindy, Chennai, has received an application from the Tribal Development Council, Andaman & Nicobar Islands, seeking the Geographical Indication (GI) tag for the Nicobari hodi craft.

This is the first application from the Union Territory seeking a tag for one its products.

## Nicobari hodi

The hodi is the Nicobari tribe's traditional craft. It is an outrigger canoe, very commonly operated in the Nicobar group of islands.

The technical skills for building a hodi are based on indigenous knowledge inherited by the Nicobarese from their forefathers.

The hodi is built using either locally available trees or from nearby islands, and its design varies slightly from island to island.

Considerations to be taken into account include the length of the finished canoe, which has to be 12 times that of its width, while the length of the undressed tree trunk has to be 15 times this width.

Hodis are used for transporting people and goods from one island to another, for sending coconuts, for fishing and racing purposes.

The tuhet, a group of families under a headman, consider the hodi an asset. Hodi races are held between islands and villages.

# KUTIA KONDH TRIBE-BURLANG YATRA

## Staple to subsistence crop

In the past, millets used to be the staple food for tribals in Odisha. When paddy and other foods reached their doorstep through the public distribution system and the expanding consumer market, tribals started treating millets as a subsistence crop which they grew to use or eat themselves, rather than to sell.

Some millets started to disappear from the tribal food basket

The reasons behind millets losing its significance were many.

Tribals, especially from the younger generation, felt that they were looked down upon for consuming millets, which is perceived as the poor man's food.

Moreover, it was not easy to harvest the crop.

The de-husking of millet involved strenuous labour. Since there was no market available for the crop, people did not produce more than what they required for their own consumption.

Volunteers identified the Burlang Yatra as the occasion around which they could strategise the revival of millets.

The Burlang Yatra is a traditional annual festival of the Kutia Kondh tribe where the community, especially the women, worship and exchange seeds through a celebratory mode of songs and dances at the village level.

## Festive promotion

NIRMAN, in collaboration with Millet Network of India (MINI), a forum founded for promotion of millet, started celebrating the Burlang Yatra on a large scale in order to increase awareness about millets and get rid of the inferiority complex prevailing among young tribals.

Millets had never been completely lost. They continued to exist in miniscule form in different villages.

It was the traditional wisdom of tribals, who grow interdependent crops in a single field and harvest them one after another, that helped millets and other crops survive.

Through this little-known movement, the tribals also managed to revive pulses, oilseed and tubers which are regarded as companion crops. Now, the community has discovered four to five varieties of each crop from different villages.

Incidentally, two species of the mint family, supposed to belong to the Himalayan belt, have also been identified as traditional crops cultivated by tribals of Kandhamal district, said Bikash Rath, researcher and technical advisor to NIRMAN.

In 2017, the Odisha government realised the importance of highly nutritious and climate resilient millets in tribal society.

The government launched Millet Mission in 2017 and the programme was expanded with additional investment of over ₹2,800 crore in 2022.

This year, almost two lakh farmers in 19 districts are involved in millet cultivation.

About 3.23 lakh quintals of millets have been procured. On its part, the Odisha government has also started celebrating Mandia Dibas (Millet Day) on November 10 to popularise the crop.

# LACHIT BORPHUKAN

## Why in news?

Assam Chief Minister Himanta Biswa Sarma released a theme song composed by singer Zubin Garg as part of its ongoing celebration of the 400th birth anniversary of the Ahom general, Lachit Borphukan

The 400th birth anniversary of Assam's legendary war hero Lachit Borphukan was celebrated in the national capital from November 23 to 25 with Prime Minister Narendra Modi's attendance at the valedictory function.

## About

Lachit was a **brilliant military commander** who knew the terrain of the Brahmaputra valley and the surrounding hills like the back of his hand. He was chosen as one of the five Borphukans of the Ahom kingdom by king **Charadhwaj Singha**, and given administrative, judicial, and military responsibilities.

Unlike the Mughals who preferred battles in the open with their massive armies, Borphukan preferred **guerrilla tactics** which provided an edge to his smaller, but fast moving and capable forces. Much like Shivaji's encounters with the Mughals in Marathwada, Lachit **inflicted damage on the large Mughal camps** and static positions.

He is known for his leadership in the **Battle of Saraighat** that thwarted an invasion by Mughal forces under the command of Ramsingh I.The

battle of Saraighat was fought on the banks of the Brahmaputra in Guwahati in 1671.

He was the inspiration behind strengthening India's naval force and revitalising inland water transport and creating infrastructure associated with it due to his great naval strategies.The **Lachit Borphukan gold medal** is awarded to the best cadet from the National Defence Academy.

## Ahom Kingdom

The Ahom kings ruled large parts of what is now known as Assam for nearly 600 years, from the early 13th century to the early 19th century. This was a prosperous, multi-ethnic kingdom which spread across the upper and lower reaches of the Brahmaputra valley, surviving on rice cultivation in its fertile lands.

The dynasty was established by Sukaphaa, a Shan prince of Mong Mao (present-day Yunnan, China) who came to Assam after crossing the Patkai mountains

# MANGARH DHAM

## Why in news?

On November 1, 2022, Prime Minister visited Rajasthan's Banswara district, where he attended a public programme 'Mangarh Dham ki Gaurav Gatha' at Mangarh Hill, Banswara, Rajasthan, to pay homage to the sacrifices of the unsung tribal heroes and martyrs of the freedom struggle.

## About

Mangarh Dham in the Banswara District of Rajasthan was declared as a National Monument.

The Mangarh massacre occurred on 17 November 1913, when British and Indian troops attacked the stronghold of Govindgiri at the end of the Bhil Revolt.It occurred on a hillock in the Mangarh Hills of Rajasthan. There are no accurate figures for the number of Bhil who were killed, but estimates range from "several Bhils died" to the oral tradition that 1,500 tribals were killed.

At the time of the Mangarh massacre little note was made of it, in part because the victims were mere tribesmen, and details only appeared in local or regional documents.However as Indian nationalism grew, so did interest in past injustices,with the 1919 Jallianwala Bagh massacre taking center stage.As a result, the Mangarh massacre was often referred to as the **Adivasi Jallianwala Bagh** or the **Jallianwala Bagh of Vagad** in reference to the better known one.

## The Importance of Mangarh Hill:

A monument was built on the hillock

honouring the victims of the massacre.In November 2022, it was declared a national monument.In 2017, plans were begun to put a Tribal Freedom Struggle Museum there as well.

## Bhil Revolt

The Bhil revolt of 1818, one of the first uprisings undertaken by a tribal group in the country. The reason for the uprising was the brutal treatment of the Bhils at the hands of the East India Company who denied them their traditional forest rights and exploited them.Govindgiri, also known as Govind Guru, (1858–1931) was a social and religious reformer in the early 1900s in the Adivasi-dominated border areas of present-day Rajasthan and Gujarat states in India. He is seen as having popularized the Bhagat movement, which was first started in the 18th century.

Govind Guru Samadhi Mandir, a memorial shrine at Kamboi, is visited by his followers.Govind Guru Smriti Van, a botanical garden named after

him, was opened by the Government of Gujarat on 31 July 2012. His grandson Man Singh was felicitated by the Chief Minister of Gujarat Narendra Modi in presence of more than 80,000 tribals.Shri Govind Guru University in Godhra, established in 2015, is named after him.

# AFZAL KHAN TOMB

## Why in news?

The Supreme Court on Friday (November 11) sought reports from the district collector and the deputy conservator of forests of Satara district in Maharashtra, on the demolition drive conducted around the tomb of Afzal Khan, a 17th-century commander of the Adil Shahi dynasty of Bijapur.

## About

## Afzal khan

Afzal Khan was a general in the Bijapur Adil Shahi empire.

Bijapur Ali Adil Shah II was a minor whose mother had been the de facto ruler since the mid-1640s, when his father had fallen seriously ill. The decision of sending Afzal Khan against Shivaji was probably taken by his mother

He was tasked with carrying out a military campaign against Maratha warrior-king Chhatrapati Shivaji Maharaj. He was killed at a truce negotiation meeting with Chatrapati Shivaji Maharaj, and his army was defeated at the Battle of Pratapgad.

He played an important role in the southern expansion of the Bijapur Sultanate by subjugating the Nayaka chiefs who had taken control of the former Vijayanagara territory.

The sword of Afzul Khan was preserved as a valued trophy in the armoury of Shivaji and his descendants.

## The tomb 'Afzul Buruj' at Pratapgarh

As per Maratha sources, Khan's remains were buried at the fort and a tomb was constructed on Shivajij's orders.

## Adil Shahi Dynasty

The founder of the dynasty, was Yusuf Adil Shah

The Bijapur Sultanate's borders changed considerably throughout its history. Its northern boundary remained relatively stable, straddling

contemporary Southern Maharashtra and Northern Karnataka. The Sultanate expanded southward, first with the conquest of the Raichur Doab following the defeat of the Vijayanagar empire at the Battle of Talikota in 1565. Later campaigns, notably during the reign of Mohammed Adil Shah (1627–1657), extended Bijapur's formal borders and nominal authority as far south as Bangalore. Bijapur was bounded on the West by the Portuguese state of Goa and on the East by the Sultanate of Golconda, ruled by the Qutb Shahi dynasty.

# ARITTAPATTI: TAMIL NADU'S FIRST BIODIVERSITY HERITAGE SITE

Recently, the Tamil Nadu Government issued a notification declaring Arittapatti in Melur block, Madurai district, a Biodiversity Heritage Site (BHS). It is Tamil Nadu's first and India's 35th Biodiversity Heritage Site.

Arittapatti village is rich in ecological and historical significance, it houses around 250 species of birds including three important raptors, birds of prey namely: Laggar Falcon; Shaheen Falcon; Bonelli's Eagle. It is also home to wildlife such as the Indian Pangolin, Slender Loris and Pythons.

The biodiversity-rich area is surrounded by a chain of seven hillocks or inselbergs that serve as a watershed, charging '72 lakes, 200 natural springs and three check dams.' The Anaikondan Lake, built during the reign of Pandiyan kings in the 16th century is one among them. Several megalithic structures, rock-cut temples, Tamil Brahmi inscriptions and Jain beds add to the historical significance of the region.

## Biodiversity Heritage Site:

Biodiversity heritage sites are well-defined areas that are unique, ecologically fragile ecosystems with high diversity of wild and domesticated species, presence of rare and threatened species, and keystone species.

As per provision under Section 37(1) of 'Biological Diversity Act, 2002', The State Government may, from time to time in consultation with the local bodies, notify in the Official Gazette, areas of biodiversity importance as under this Act. Creation of BHS may not put any restriction on the prevailing practices and usages of the local communities, other than those voluntarily decided by them. The purpose is to enhance the quality of life of the local communities through conservation measures.

Nallur Tamarind Grove in Bengaluru, Karnataka was the first Biodiversity Heritage Site of India, declared in 2007.

# NYINGMA SECT OF BUDDHISM

Recently, the Nyingma sect has identified a boy from Spiti in Himachal Pradesh as the reincarnation of the late Taklung Setrung Rinpoche, a scholar known for his knowledge of Tibetan Tantric school.

The Nyingma sect of Tibetan Buddhism is the oldest amongst the four schools and the second largest after Gelugpa sect. Nyingma in Tibetan means "ancient" and has roots going back to the 8th century when the indigenous Bon religion was strongly adhered to by Tibetans. The Nyingma sect is also known as the Red Hat sect because its Lamas wear red robes and hats. Its teachings are mainly based on those of Padmasambhava, called Guru Rinpoche and Shantarakshita who were brought to Tibet through the rule of the Emperor Trisong Detsen from 742 to 797 CE.

Taklung Setrung Rinpoche was a profound scholar renowned for his expertise in Tibetan Tantric school. In the 7th century, Buddhism found its way to Tibet when the Tibetan King, Songtsen Gampo, married the Chinese Princess, Wen Cheng. The Princess had brought along her Buddha statue which is today preserved at Jokhang Temple in Lhasa.

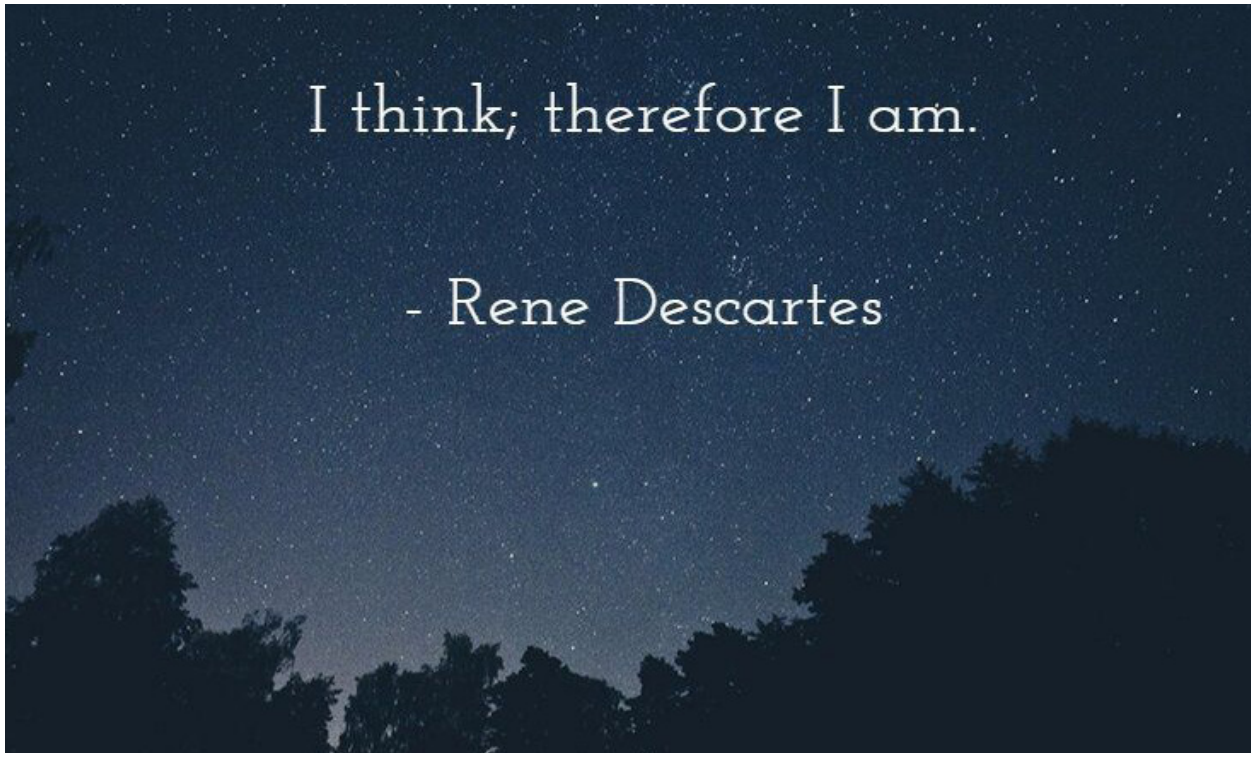
Later on in the 8th century, when Tibetans preferred their Bon religion, the King, on advice of the scholar-monk Master Shantarakshita, brought the great Padmasambhava to drive away the demons hampering the introduction of Buddhism in Tibet. By the middle of the 9th century, Buddhism was widely spread in the region.

A large collection of Buddhist scriptures were translated into Tibetan and the Samye Monastery was built around 779 CE. Up to the 11th century, Nyingma was the sole sect of Buddhism in Tibet. It is the only sect in Tibetan Buddhism that did not assume political power.

## Teachings of the Nyingma Sect:

Buddhist teachings are classified into nine yanas with 'Dzogchen' being most important. Dzogchen (Great Perfection) philosophy revolves around pure awareness which can be achieved through meditation and learned from a Dzogchen master. This Vajrayana tradition involves use of ritual, symbols and tantric practices to achieve nirvana. Therefore Nyingma stresses on teachings attributed to Padmasambhava, the Dzogchen doctrines as well as Tantric practices. The Nyingma School is also associated with Termas (hidden treasures). When Buddhism was declining during the rule of king Langdarma, Padmasambhava and his disciples hid numerous scriptures, ritual objects and relics in caves and rocks on mountains. Over time, when they were discovered by Tertons (treasure revealers) either physically or revealed to their mind (Mind Terma), the teachings were compiled into Rinchen Terdzo, a multi-volume book.

# HISTORY IS A SERIES OF VICTORIES WON BY THE SCIENTIFIC MAN OVER THE ROMANTIC MAN




" I think, therefore I am"

-Descartes

Late in the movie Troy, in the course of war between the Troy army and Greek army, the Greek army places a huge Trojan horse as a sign of peacekeeping (which was packed by Greek soldiers to infiltrate troy city). When the prince of troy Paris advised his father to burn the Trojan horse, the king Priam rejects his advice and ordered his troops to bring Trojan horse inside the city which later become lethal for Troy city as it helped Greek to ransack the troy city.

The above anecdote clearly presents us that how scientific man won over the romantic man; as the two choices had different results. Greeks, who had the ferocious warrior Achilles in their clan did not romanticize their strength rather went by their strategy to place themselves in the victory pages. On other hand, Priam who thought that the Trojan horse was a token of gift romanticize it fell in the trap of Greek.

But this case also rises a series of question like:

1. Does romanticization of thoughts always leads to failure?
2. Can a scientific man always be in the pages of victories?
3. And how these victories in history were scripted?

We would explore the questions through this essay.

***"History is written by the victors"***

According to Aristotle, history is of triumphs and failures of an individual. Mostly history either dealt with victories or glorify the victors at the cost of others' failures. History always speaks truth, but let us not forget that history was well-drafted by victors.

**Thinking a key for victory:**

The accounts of victors shows that success depends upon the way a human thinks. From the evolution of human beings, human mind constantly dives into the process of thinking, which triggers action and that action determines the success and failures

Human thoughts were controlled by externals each different resulting in individuals to think differently. A romantic man could be termed as faith-centered. On other hand an individual who is a result oriented is guided by scientific ideas are often praised as scientific man.

Romantic man's victory: From the transition of prehistoric period to ancient history, humans were socialized and they prefer to live in a clan. However, there was no social order established at that time. Early history has been won by romantic man over scientific man with his ideology of divine theory of kingship and to make social stability, varnashrama dharma was practiced in societies like India, and elite theory was practiced in western societies.

But in the later period, mankind was under the iron Cage of romantic ideas. The romantic institutions like caste system and religious centers propagate religious dogmas and superstitious all over the society, which curbs the liberal thinking of humans.

**The era scientific man:**

When too much of romantic ideas create friction in the society it affects the prevailing social order, hence philosophers like Socrates, Plato and Aristotle questions the then prevailing social order. Socrates encouraged people to raise questions against the religious dogmas with his concept of dialectics. Therefore he was tried in court and was given the choice to leave his scientific ideologies or to drink poison. Socrates preferred poison rather than going by the virtues of a romantic man.

***"An unexamined life is not worth living"-Socrates***

The seed sown by Socrates had emerged as a tree during the period of 14th century in the name of renaissance. Renaissance has established scientific temperament among human beings. Scientific temperance enables a person to collect empirical evidences and draw a logical conclusion. Such decisions have high chance of victories. Pieces of evidence doesn't overestimate one's

strength and underestimates others. A transparent analysis aids in winning any situation at hand.

**Victories of scientific temperance:**

This scientific temperance made thinkers like Copernicus to question Ptolemy's geocentric theory and replaced with his heliocentric theory. In next time period it paced way for Kepler to propose Kepler's law. This endeavor resulted in a chain of discoveries and finally Galileo made a history of victories. Though they faced resistance from romantic men they stood by their rational ideas and win over the former.

Further the cloak of French revolution gave birth to political modernity which laid the foundations of equality, justice and liberty, this helps to change the social order from Monocracy (a romantic idea) to Democracy (a scientific idea).

Thus, scientific temperance and political modernity works in tandem. This culminated in industrial revolution which broke the shackles of feudalism. Now capitalism as a new world order, provides opportunities to every section in the nook and corner of society. These approaches of the scientific man-made America emerge as an economic superpower in the mid of 19th century.

"Too much of anything is good for nothing"- though capitalism provided opportunities based on merit, it's extreme form hailed the tag of exploitation. The scientific man who is result oriented had romanticized the capitalist ideology and started to exploit society.

Being a romantic Karl Marx opposed capitalism in his Communist manifesto and argued that **"The history of all hitherto existing society is the history of class conflict"**, hence Karl Marx deliberately made a romantic idea of communism (a utopian concept) to blow a death knell to capitalism. But both these ideologies only routed to the cold war.

The exploitative capitalism fell during the time of great depression 1929, and the utopian concept of communism fell during the end of cold war with the disintegration of USSR. Hence these ideologies were short lived. However capitalism under the guidance of J.M. Keynes, self examined itself and put off its extremities. This transformed into welfare capitalism in the line of Madhyamargh.

**The middle path:**

In Buddha's dharma Madhyamargh is the middle path one should follow rather clinging to the extremities. Holding to position of scientific man or romantic man is akin to be under the damocle sword, so one should be a blend of both romantic and scientific man.

The history of India is a embodiment of a middle path. In course of history India being a romantic man in ancient and medieval time had witnessed numerous foreign invasions till the earlier part of our freedom struggle. both moderates and extremists romanticized their way of struggle but this ended in Surat split. However, the scenario started to change with the advent of Gandhi. Though Gandhi also romanticized freedom as an end goal, he devised a scientific approach of satyagraha and nonviolence as a means to attain the goal. This makes a historical victory for Gandhi in transforming colonial British India into an Independent India.

Rather than preferring other leaders Gandhi placed Nehru as his political successor. This proves Gandhi believed in Pandit Nehru, as a blend of both scientific man and romantic man who constructed modern India in the lines of

scientific temperance and romantic cultural values. Thus Nehru constructed dams and proclaimed it to be a temples of modern India, and established numerous scientific institutions like IITs and PSUs.

However inspired by the ideologies of socialism, his conservative policy of license raj results in Hindu growth rate and his romantic idea of Vasudhaiva Kudumbakam provided asylum to Dalai Lama which later invites Indo-Sino war.

By learning from the past, India rejuvenate itself as a pragmatic man and came up with the economic reform in 1991 which allowed room for both scientific man (LPG) and romantic man (socialism).

India also followed realism in its foreign policy, and as a nation we Indians believe that national good and global good should work in harmony. This led us to supply vaccines to over 100 nations under Mission Maitri, and our evacuation operations during situations also include other nationals too. We offered partnership to our brothers and sisters all around the globe by not only focusing on our needs but also their priorities.

In spite of being an embodiment of scientific man, India executes its cultural ideologies in international forums and has been as a front-runner in the multi-polar world. This made India start to etch its name in victory pages of history as a reward of a balanced approach to the situational demands.

In conclusion one can quote Richard Nixon who roared **"Idealism without pragmatism is impotent, Pragmatism without idealism is meaningless.** The key to effective leadership is pragmatic idealism". Hence Nixon in his 5 years term in the white house saw a reduction of US involvement in the Vietnam war. Even in the midst of the cold war, he had smooth bilateral talks with USSR and China. He had a series of victories by applying the scientific temperance of the US from the first manned landing on the moon up to establishing the Environmental protection agency in 1970 even before the commencement of the Stockholm conference. Hence Nixon's pragmatic idealism makes him a successful leader in the history of USA.

Therefore, for a successful man, one has to be a blend of both a scientific man and a romantic man. These two psyches should not be seen as a watertight compartment rather they should be seen as two sides of the same coin. Now the coin is in our hands, let's spin it in such a way that has the probability and combination of both romantic and scientific man. Now there are two options laid before us one to read history or make history let us decide.

***By,***

***M.VIGNESH***

# "ATOMIC HABITS" - JAMES CLEAR

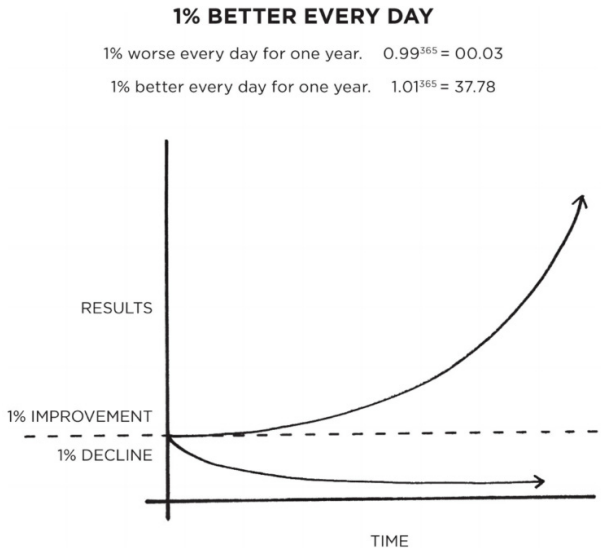
An atomic habit is a regular practice or routine that is not only small and easy to do but is also the source of incredible power.

Habits are the compound interest of self-improvement.

Environment is the invisible hand that shapes human behaviour.

Success is the product of daily habits—not once-in-a-lifetime transformations.

You should be far more concerned with your current trajectory than with your current results. If you want to predict where you'll end up in life, all you have to do is follow the curve of tiny gains or tiny losses, and see how your daily choices will compound ten or twenty years down the line.

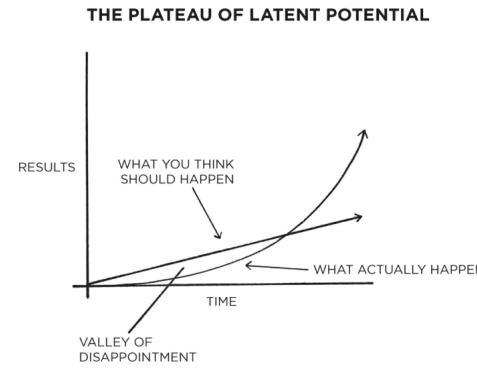



**"Plateau of Latent Potential"** => Your work was not wasted; it's just being stored.

Example: Look at a stonecutter hammering away at his rock, perhaps 100 times without as much as a crack showing in it. Yet at the 101st blow, it will split in two, and it was not that last blow that did it—but all that had gone before.

The purpose of setting goals is to win the game. The purpose of building systems is to continue playing the game. True long-term thinking is goal-less thinking. It is about the cycle of endless refinement and continuous improvement.

Habits are a double-edged sword. They can work for you or against you.




Identity is about what you believe. Processes are about what you do. Outcomes are about what you get.

With outcome-based habits, the focus is on what you want to achieve. With identity-based habits, the focus is on who you wish to become.

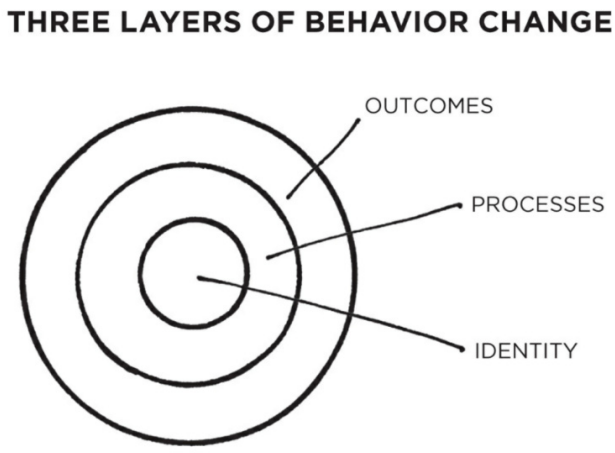
Your identity emerges out of your habits. Ask yourself: 'Does this habit cast a vote for or against my desired identity?'

The ultimate form of intrinsic motivation is when a habit becomes part of your identity. Ex: I had to change my thinking regarding eating healthy. Earlier, I was thinking that if I want to reduce my belly fat, I must follow a Slow-Carb diet which will make me a healthy person (outcome -> identity). But a correct identity-based approach would be for me to think that I'm a healthy person therefore, as a healthy person, I'll eat wholesome food and exercise regularly which will then lead to reduced belly fat (identity -> outcome).

Any habit can be broken down into a feedback loop that involves four steps: cue, craving, response, and reward. If you want to build a good habit, complete the cycle; if you want to quit a bad habit, break the cycle.

Progress requires unlearning. Becoming the best version of yourself requires you to continuously edit your beliefs, and upgrade and expand your identity.

**Pointing-and-Calling** raises your level of awareness from a nonconscious habit to a more conscious level by verbalizing your actions. Ex: Japan -> more than 85% of human errors and 30% of train accidents are prevented -> by voice instructions to the drivers.




**Diderot Effect** states that obtaining a new possession often creates a spiral of consumption that leads to additional purchases.

Self-control is a short-term strategy, not a long-term one. It's easier to avoid temptation than resist it.

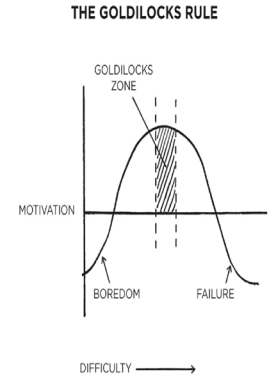
We tend to imitate the habits of three social groups: the close (family and friends), the many (the tribe), and the powerful (those with status and prestige).

The normal behaviour of the tribe often overpowers the desired behaviour of the individual. Most days, we'd rather be wrong with the crowd than be right by ourselves.

The most effective form of learning is practice, not planning. Focus on taking action, not being in motion.

Human behaviour follows the **Law of Least Effort**. Create an environment where doing the right thing is as easy as possible. Reduce the friction associated with good behaviours. When friction is low, habits are easy. Increase the friction associated with bad behaviours. When friction is high, habits are difficult.

**Cardinal Rule of Behaviour Change**: What is immediately rewarded is repeated. What is immediately punished is avoided.




To get a habit to stick you need to feel immediately successful—even if it's in a small way.

Genes cannot be easily changed, which means they provide a powerful advantage in favourable circumstances and a serious disadvantage in unfavourable circumstances.

**Goldilocks Rule** states that humans experience peak motivation when working on tasks that are right on the edge of their current abilities.

The greatest threat to success is not failure but boredom.

Anyone can work hard when they feel motivated. It's the ability to keep going when work isn't exciting that makes the difference.

Professionals stick to the schedule; amateurs let life get in the way.

"Habits + Deliberate Practice = Mastery"

Reflection and review are a process that allows you to remain conscious of your performance over time.

# PRACTICE QUESTIONS

1. Arrange the following African nations from north to south

   1) Mozambique

   2) Tanzania

   3) Zimbabwe

   Select the correct answer using the code given below:

   a) 1-2-3

   b) 2-1-3

   c) 3-1-2

   d) 1-3-2

2. With respect to C295 aircraft, which of the following statements is/are correct?

   1) The C295 was originally produced by a French aircraft manufacturer named Construccionaes Aeronauticcas SA.

   2) The C295MW is a transport aircraft with 5 to 10-tonne capacity and a maximum speed of 480 kmph.

   Select the correct answer using the code given below:

   a) 1 only

   b) 2 only

   c) Both

   d) None

3. With reference to the expenditure made by an organisation or a company, which of the following statements is/are correct?

   1) Acquiring new technology is capital expenditure.

   2) Debt financing is considered capital expenditure, while equity financing is considered revenue expenditure.

   Select the correct answer using the code given below:

   a) 1 only

   b) 2 only

   c) Both 1 and 2 only

   d) Neither 1 nor 2

4. IMT TRILAT is a joint exercise involving India and which other countries?

   a) Mauritius and Tuvalu

   b) Malaysia and Thailand

   c) Mozambique and Tanzania

   d) Madagascar and Tuvalu

5. With respect to Myositis, which of the following statements is/are correct?

   1) Myositis is a rare disease that involves inflammation of the muscles.

   2) Myositis can affect both children and adults.

   Select the correct answer using the

code given below:

a) 1 only

b) 2 only

c) Both 1 and 2

d) None

6. With reference to Coronal holes consider the following statements

1) Coronal holes can be seen in infrared light and invisible to human eye

2) Geo magnetic storm can relate to earth magnetic field

3) Geo magnetic storm can cause changes in Exosphere

*Select the correct answer*

a) 1 only
b) 2 only
c) 1 and 3 only
d) 2 and 3 only

7. India's first inter-state tiger translocation project was initiated in which of the following states

a) Maharashtra-Madhya Pradesh
b) Madhya Pradesh-Chhattisgarh
c) Odisha-Madhya Pradesh
d) Karnataka-Maharashtra

8. 'Deinococcus Radiodurans' a bacterium recently seen in the news finds usage in

1) Bio-remediation

2) Synthesis of precious metals

3) Nitrification

4) Vaccine development

5) Space research

Select the correct option

a) 1, 2 and 4 only
b) 1, 3 and 4 only
c) 1, 2 and 5 only
d) All the above

9. Machchhu River, recently seen in the news, is located in which of the following states?

a) Rajasthan
b) Madhya Pradesh
c) Gujarat
d) Uttar Pradesh

10. Consider the following statements with respect to 'Electronic Negotiable Warehouse Receipt (e-NWR)'

1) e-NWRS can be traded through off-market or on-market Commodity Exchanges platforms.

2) The Food Corporation of India (FCI) regulates the entire operation under NWR.

Select the correct statement(s)

a) 1 only
b) 2 only
c) Both 1 and 2
d) Neither 1 nor 2

11. Yotta D1, which is sometimes seen in the news, is related to which of the following?

a) It is a new spacecraft launched to study Venus.
b) It is a satellite launched by Pakistan to counter the Navic satellites of India.
c) It is North Indiau2019s first hyperscale data centre.
d) It is a potentially hazardous asteroid.

12. Consider the following statements

1) India occupies the largest area of cultivation of saffron

2) Saffron heritage and cultivation of Kashmir Valley has been recognised as Global Agricultural Heritage Systems of FAO.

Which of the above statement/s is/ are correct?

a) 1 only
b) 2 only
c) Both 1 and 2
d) Neither 1 nor 2

13. Consider the following statements

1) India's longest single-lane motorable suspension bridge — the 725-metre Dobra-Chanti suspension bridge is built over the Tehri lake

2) Suspension bridges can effectively cross a distance of more than 2000 meters.

Which of the above statement/s is/ are correct

a) 1 only
b) 2only
c) Both 1 and 2
d) Neither 1 nor 2

14. Consider the following statements regarding the Mangarh massacre

1) It is also known as Adivasi Jallianwala
2) It took place on the Bhagat movement led by Goving Guru

Which of the above statement/s is/ are correct

a) 1 only
b) 2only
c) Both 1 and 2
d) Neither 1 nor 2

15. Consider the following statements regarding Nutrient based subsidy scheme

1) It is Introduced in 2010, in continuation of erstwhile Concession Scheme (1992)
2) It covers fertilizers with primary nutrients - N, P, K and S as well as any variant of fertilizers with secondary and micronutrients except Sulphur

Which of the above statement/s is/ are correct?

a) 1 only
b) 2 only
c) Both 1 and 2
d) Neither 1 nor 2

16. Consider the following pairs

| Volcanoes | Country |
|---|---|
| 1) Mt.St. Helens | United States |
| 2) Mt. Cotopaxi | Ecuador |
| 3) Mt. Vesuvius | Italy |
| 4) Mt. Krakatoa | Indonesia |

How many of the given pairs are correctly matched?

a) Only one pair

b) Only two pairs

c) Only three pairs

d) All four pairs

17. Consider the following statements regarding Amur Falcon

1) They are the world's longest travelling raptors

2) Nagaland is known as the Falcon Capital of the world.

3) These birds roosts in the Doyang reservoir of Nagaland during their stay

Which of the above statements are correct?

a) 1 only

b) 1 and 2 only

c) 2 and 3 only

d) 1, 2 and 3

18. Consider the following statements regarding Intercontinental Ballistic missiles

1) ICBM is a missile with a minimum range of 5,500 kilometres designed for nuclear weapons delivery (delivering one or more thermonuclear warheads).

2) India, Russia, the United States, North Korea, China, Israel, the United Kingdom and France are the only countries that have ICBMs.

3) Agni-V is an Indian nuclear capable intercontinental ballistic missile developed by the Defence Research and Development Organisation [DRDO].

Which of the above statements are correct?

a) 1 and 2 only

b) 1 and 3 only

c) 2 and 3 only

d) 1, 2 and 3

19. Consider the following statements about UDISE plus report:

1) It provides information on enrollment and dropout rates of school students, number of teachers in schools, other infrastructural facilities, etc.
2) It is released by the Ministry of Human Resource and Development.

Which of the statements given above is/are correct?

a) 1 only
b) 2 only
c) Both 1 and 2
d) Neither 1 nor 2

20. Recently, the Indian Space Research Organisation's (ISRO) RISAT (Radar Imaging Satellite)-2 satellite has made an uncontrolled re-entry into the Earth's atmosphere at the predicted impact point in the Indian Ocean near Jakarta. RISAT-2 is focused for which of the following agenda?
a) Communication satellite
b) Cartography
c) Reconnaissance and spying
d) Space exploration

21. Wangala, also known as the Festival of Hundred Drums celebrated with folk songs played on drums and primitive flute made of buffalo horns is by which tribe?
a) Garos
b) Todas
c) Bhils
d) Sandals

22. With respect to the Surrogacy (Regulation) Act, 2021, which of the below statements is/are correct?

1) The law allows single parents to go for surrogacy.

2) The Act prohibits commercial surrogacy.

Select the correct answer using the code given below:

a) 1 only
b) 2 only
c) Both 1 and 2
d) Neither 1 nor 2

23. Chornomorsk, Odesa and Yuzhny, recently seen in news, are

a) Art forms of North Eastern states of India

b) Major Ports of Ukraine

c) Islands in the Mediterranean Sea

d) Satellites to be used in the Chinese Space Station

24. With respect to Non-Fungible Tokens, which of the following statements is/are correct?

1) Artists can sign their artwork by including their signature in an NFT's metadata.

2) NFTs are transferable, can be traced and irreplaceable.

Select the correct answer using the code given below:

a) 1 only

b) 2 only

c) Both 1 and 2

d) Neither 1 nor 2

25. With reference to India, consider the following statements:
1. Government law officers and legal firms are recognized as advocates, but corporate lawyers and patent attorneys are excluded from rec-

ognition as advocates.

2. Bar Councils have the power to lay down the rules relating to legal education and recognition of law colleges.

Which of the statements given above is/are correct?

a) 1 only
b) 2 only
c) Both 1 and 2
d) Neither 1 nor 2

26. In which one of the following groups are all the four countries members of G20?

a) Argentina, Mexico, South Africa and Turkey
b) Australia, Canada, Malaysia and New Zealand
c) Brazil, Iran, Saudi Arabia and Vietnam
d) Indonesia, Japan, Singapore and South Korea.

27. With reference to Mangrove alliance for climate (MAC) consider the following statements

1) Mangrove alliance for climate initiative was launched in COP 26 Glasgow
2) Mangroves are distributed only in tropical and sub tropical region of world

Select the correct answer

a) 1 only
b) 2 only
c) Both 1 and 2
d) Neither 1 nor 2

28. With reference to India infrastructure project development fund scheme consider the following statements

1) IIPDF was launched by department of financial services
2) The new scheme is an addition to the currently operational Scheme for Financial Support to PPPs in Infrastructure (VGF Scheme), which was notified in December 2020
3) It provides funding for project sponsoring authorities both in the central and state governments

Select the correct answer

a) 1 and 3 only
b) 2 and 3 only
c) 1 and 2 only
d) 1, 2 and 3

29. He was one of the early leaders of communist party of India.He was first general secretary of communist party of India.He was editor of National front.He Was

a) C.P.Joshi
b) MN Roy
c) Jayaprakash Narayanan
d) Minoo masani

30. Consider the following pairs

1) Malai mahadeswara wildlife sanctuary -Andhra pradesh
2) Biligiri Rangaswamy wildlife sanctuary-Karnataka
3) South Cauvery wildlife sanctuary.

-Karnataka

4) Sathyamangalam tiger reserve. -Tamil Nadu

Select the correct answer

a) Only one pair correct
b) Only two pairs correct
c) Only three pairs correct
d) All Pairs are correct

31. With reference to mother tongue survey of India,consider the following statements

1) Mother tongue survey of India is conducted by ministry of Home affairs
2) Telugu is second highest spoken mother tongue in India

Select the following statements

a) 1 only
b) 2 only
c) Both 1 and 2
d) Neither 1 nor 2

32. Consider the following statements regarding "Lunar Eclipse":

1) A lunar eclipse can only take place during a full Moon.

2) During the Total Lunar Eclipse, the Moon travels through the Earth's penumbra.

Which of the statements given above is/are correct?

a) 1 only

b) 2 only

c) Both 1 and 2

d) Neither 1 nor 2

33. It is one of the great lakes of Africa and the world's largest tropical lake. It borders Uganda, Kenya and Tanzania and drains into White Nile. The lake is

a) Lake Tanganyika

b) Lake Malawi

c) Lake Faguibine

d) Lake Victoria

34. 'Pseudohelice Annamalai' which was recently seen in the news is a

a) Butterfly

b) Frog

c) Crab

d) Fern

35. Consider the following statements

1) Sovereign Green Bonds are usually issued by the government

2) India's First Green Bond was issued by Yes Bank Ltd in 2015.

Which of the above statements are correct?

a) 1 only

b) 2 only

c) Both 1 and 2

d) Neither 1 nor 2

36. Consider the following statements

1) Kendupatna copper-plate inscription reveals that Anantavarman Chodaganga built the Puri Jagganatha temple

2) The temple was closed in 1692 by Aurangazeb and was opened only after his death

Which of the above statements are correct?

a) 1 only

b) 2 only

c) Both 1 and 2

d) Neither 1 nor 2

37. Consider the following statements regarding extradition

1) Extradition is the formal process whereby a State requests from the requested State the return of a person accused or convicted of a crime to stand trial or serve a sentence in the requesting State

2) Ministry of External Affairs is central authority that handles all extradition requests

3) India has an extradition treaty with UK

Which of the above statements are correct?

a) 1 and 2 only

b) 1 and 3 only

c) 2 and 3 only

d) 1, 2 and 3

38. Consider the following statements:

1) Coal sector was nationalised by the Government of India under Indira Gandhi.
2) Now, coal blocks are allocated on lottery basis.
3) Till recently, India imported coal to meet the shortages of domestic supply, but now India is self-sufficient in coal production.

Which of the statements given above is/are correct?

a) 1 only
b) 2 and 3 only
c) 3 only
d) 1, 2 and 3

39. In India, which one of the following is responsible for maintaining price stability by controlling inflation?

a) Department of Consumer Affairs
b) Expenditure Management Commission
c) Financial Stability and Development Council
d) Reserve Bank of India

40. With reference to Indian Elephants, consider the following statements:

1) The leader of an elephant group is a female.

2) The maximum gestation period can be 22 months.

3) An elephant can normally go on calving till the age of 40 years only.

4) Among the States in India, the highest population is in Kerala.

Which of the statements given above is/are correct?

a) 1 and 2 only

b) 2 and 4 only

c) 3 only

d) 1, 3 and 4 only

41. The term 'Intended Nationally Determined Contributions' is sometimes seen in the news in the context of;

a) Pledges made by the European countries to rehabilitate refugees from the war-affected Middle East

b) Plan of action outlined by the countries of the world to combat climate change.

c) Capital contributed by the member countries in the establishment of Asian Infrastructure Investment Bank.

d) Plan of action outlined by the countries of the world regarding Sustainable Development Goals

42. Consider the following statements about Diarrhoea

1) It is the top leading cause of death in children under five years.

2) It can be caused by both bacteria and virus.

Which of the statements given above is/are correct?

a) 1 only

b) 2 only

c) Both 1 and 2

d) Neither 1 nor 2

43. Which of the following countries is/are ASEAN members?

1) Bangladesh

2) Laos

3) Vietnam

4) Maldives

5) Malaysia

Select the correct answer using the code given below:

a) 5 only

b) 2, 3 and 5 only

c) 1, 2, 3, 4 and 5 only

d) 2, 3, 4 and 5 only

44. Consider the following statements:

1) India is world's largest fish producing country

2) India's all major fishing harbours are located on its east coast.

Which of the statements given above is /are correct?

a) 1 only

b) 2 only

c) Both 1 and 2

d) Neither 1 nor 2

45. MARS initiative recently seen in news is related to which of the following?

a) Space exploration

b) Maritime security

c) Methane emissions

d) Nuclear proliferation

46. In COP 27, India launched leadIT summit for low carbon transition with which of the following country

a) Norway
b) Denmark
c) Sweden
d) Finland

47. Recently in COP27 "Climate Smart Urban Development: An Ecosystem-based Adaptation (EbA) for Enhancing Climate Resilience in India" hosted by which of the following organisation

a) World resource institute
b) global environment facility
c) The nature conservancy
d) Global green growth institute

48. Recently state of climate Asia report released by which of the following organisations

a) World meteorological organisation
b) United nation environment programme
c) World resource institute
d) UNESCO

49. With reference to Global shield against climate risk initiative consider the following statements

1) The Global Shield Against Climate Risks initiative was launched on November 2021 G20 summit in Rome
2) It is a social protection and insurance-based finance mechanism for loss and damage outside the UNFCCC process.

Select the correct answer

a) 1 only
b) 2 only
c) Both 1 and 2
d) Neither 1 nor 2

50. Which of the following statements is correct with respect to the general trend in India's foreign trade in the recent past?

1) In goods, India imports more than it exports in terms of value and in services, India exports more than it imports in terms of value.

2) Generally, the trade surplus from the services covers the trade deficit in the goods which results in a net trade surplus for India.

Select the correct statements:

a) 1 only

b) 2 only

c) Both 1 and 2

d) Neither 1 nor 2

## Answers:

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. | B | 2. | A | 3. | A | 4. | C | 5. | C | 6. | B | 7. | C | 8. | C | 9. | C | 10. | A |
| 11. | C | 12. | B | 13. | C | 14. | C | 15. | C | 16. | D | 17. | D | 18. | D | 19. | A | 20. | C |
| 21. | A | 22. | B | 23. | B | 24. | C | 25. | B | 26. | A | 27. | B | 28. | B | 29. | A | 30. | B |
| 31. | A | 32. | A | 33. | D | 34. | C | 35. | C | 36. | C | 37. | D | 38. | A | 39. | D | 40. | A |
| 41. | B | 42. | B | 43. | F | 44. | B | 45. | C | 46. | C | 47. | C | 48. | A | 49. | B | 50. | A |

# FACT SHEET

## GENERAL STUDIES – I

### SOCIETY

### POPULATION

- India with close to 1.35 crore non-resident Indians (NRIs) living across the globe -> one of the largest diaspora populations in the world.
- India => 40 cities -> has more than 1 million population; 396 cities -> 1 lakh to 1 million population; 2500 cities -> 10,000 to 1 lakh population.
- 'Elderlies' are persons aged 65 and older as per WHO and OECD. National policy for older persons, 1999, considers 'senior citizens' as aged 60 or more.

## GENERAL STUDIES – II

### SOCIAL ISSUES

### HUNGER

- India's ranking in Global Hunger Index 2022 is 107 (slipped from the 2021 index of 101) out of 121 countries.
- India's National Family Health Survey (NFHS-5) from 2019-21 reported that in children below the age of five years, 35.5% were stunted, 19.3% showed wasting, and 32.1% were underweight and every second Indian woman is anaemic.
- According to the FAO Food Security Report for 2021, India has a 15.3% undernourished population, the highest proportion of stunted children (30%), and wasted children (17.3%).
- The Global Nutrition Report 2021 shows that stunting among children in India is significantly higher than the Asian average of 21.8%.
- Iron deficiency anaemia is responsible for 3.6% of disability-adjusted life years or DALYs (years of life lost due to premature mortality and years lived with disability) according to the WHO i.e., a loss of 47 million DALYs, or years of healthy life lost due to illness, disability, or premature death.
- According to NITI Aayog, a rice fortification budget of around ₹2,800 crores per year can save 35% of the total or 16.6 million DALYs per year with no known risk of toxicity.
- Rice fortification, which costs less than 1% of the food subsidy bill (2018-19), has the potential to prevent 94.1 million anaemia cases, saving ₹8,098 crore over a five-year period.

## HEALTH

- The 2022 Lancet Countdown on Health and Climate Change: Health at the Mercy of Fossil Fuels report => Global reliance on fossil fuels will increase the risk of diseases, food insecurity and other heat-related illnesses. Rapidly increasing temperatures due to climate change have exposed people, particularly the vulnerable populations (adults above 65 years old and children below one year) to nearly 3.7 billion more heatwave days in 2021 than annually in 1986–2005.
- As the coastal waters have become more suited for the transmission of Vibrio pathogens, the number of months suitable for malaria transmission has also increased in several highland areas of America and Africa.
- According to WHO, climate change is expected to result in about 2,50,000 additional deaths per year due to malnutrition, malaria, diarrhoea and heat stress between 2030 and 2050.
- Undernourishment has increased significantly due to the COVID-19 pandemic, as about 161 million more people face hunger in 2020 than in 2019. This situation has been further aggravated by the Russia-Ukraine war.
- The Global Dashboard for Vaccine Equity has highlighted that only one in four people has been vaccinated with at least one dose in low and middle-income countries (as of November 2022). However, 3 in 4 people have received at least one dose of the vaccine in high-income countries.

## CHILDREN

- According to UNFPA-UNICEF, nearly 10 million children globally would have become child brides as a consequence of the COVID-19 pandemic.
- Child marriages reduced in India from 47% in 2005-06 to 27% in 2015-16 (a decrease of around 20% in a decade). As per National Family Health Survey 5 (NFHS-5), child marriages further reduced to 23% in 2020-21. Even though India is witnessing a declining trend, 23.3% is still a high percentage in a country with a population of approximately 141 crores.
- As per UNICEF, approximately 12 million girls globally are married in childhood every year. And if accelerated efforts are not made, nearly 150 million more girls would be married before attaining the age of 18 by the year 2030.
- Study by an India-based non-profit Child Rights and You (CRY) => the practice of child marriage is regarded as an important custom for over half the parents and parents-in-law in India -> results, 3/5 child brides report teenage pregnancies.
- At least 1.5 million girls under 18 get married in India, according to UNICEF. The prevalence of child marriage among girls is likely to be 6 times higher than the prevalence of child marriage among boys.

## WOMEN

- The Gender Parity Index (GPI) which indicates the number of girls in school with respect to their population in the corresponding age group, was seen to be favourable to girls with a GPI

value of 1.

# GENERAL STUDIES – III

## ECONOMY

- According to experts, India can save around $25 billion annually in foreign exchange if government incentives encourage private firms to develop the local shipping industry. The cost of ship making was about 20% lower in India compared with Indonesia and the Philippines.
- According to International Labour Organization (ILO) data, youth unemployment in India (for the age group 15 – 24 years) is at 28.3%. This places India in the group of troubled West Asian countries like Iran (27.2%), Egypt (24.3%), and Syria (26.2%).
- As per the report of the World Bank named "Financing India's Urban Infrastructure Needs: Constraints to Commercial Financing and Prospects for Policy Action", India would need to invest about $840 billion in the next 15 years (an average of $55 billion per year), to meet the demands of India's rapidly growing urban population.

## AGRICULTURE

- India still imports about 55-60% of its domestic edible-oil requirement.
- According to National Academy of Agricultural Sciences => About 13 million tonnes of edible oil were imported -> costing around ₹1.17 lakh crores in 2020-21 on account of low productivity.
- State of Food and Agriculture Report 2022, by FAO => Lack of access to automation for small & marginal farmers -> lead to widening of inequalities in society.

## ENVIRONMENT

- World Bank report titled "Climate investment opportunities in India's cooling sector": Findings:
- From 2030 about 16 to 20 crore people would be exposed to lethal heatwaves in India every year, and close to 3.4 crore people in the country will experience job losses due to heat stress-related productivity decline.
- By 2037 -> demand for cooling through air-conditioners would likely be 8 times more than the current level -> result in a rise of annual greenhouse gas emissions by over 435% in next 20 years. "District cooling technologies" refer to generation of chilled water in a central plant -> distributed to buildings through underground insulated pipes -> can save up to 20-30% of power than the most efficient conventional cooling solutions.
- India should deploy alternative and innovative energy-efficient technologies for keeping spaces cold as this move can unlock an investment opportunity of $1.6 trillion by 2040, reduce greenhouse gas emissions and help generate over 37 lakh jobs.

- As per a study by UrbanEmissions.Info on PM2.5 concentration from 1998 to 2020 at a pan-India level, Delhi was found to be the most polluted of all States/ UTs each year (a rose of about 40% from 80 g/m3 to 111 g/m3).
- Study by the U.S-based Health Effects Institute which analysed data between 2010 and 2019, said that Delhi was the most polluted city in the world in terms of PM2.5 levels.
- During the winter season of 2016, Delhi experienced one of its worst-ever pollution-induced smog, with PM2.5 and PM10 levels crossing the 999 ug/m3 in a few areas of Delhi.
- [As per the revised NAAQS, the acceptable annual limit for PM2.5 is 40 micrograms/cubic metre (ug/m3) and 60 ug/m3 for PM10. However, the WHO standards prescribe an accepted annual average of 5 ug/m3 for PM2.5 and 15 ug/m3 for PM10.]
- The 2022 State of World's Mangroves Report, prepared by the Global Mangrove Alliance, finds that mangroves prevent more than $65 billion in property damages and reduce flood risk to some 15 million people every year.
- According to the IPCC, we must cut methane emissions by at least 30% by 2030 (goal of Global Methane Pledge) -> to keep the 1.5°C temperature limit.
- As per the assessment made by the Central Ground Water Board (CGWB), groundwater extraction in the country has seen an 18-year decline. Further, an overall decrease in the number of over-exploited units & decrease in the stage of groundwater extraction level has also been reported.
- Indian Railways is attempting to reduce its carbon footprint gradually and aims to become a Net Zero Carbon Emitter by 2030 by sourcing its energy needs from renewable sources. Indian Railways => 4th largest rail network in the world. The Indian transport sector accounts for 12% of total greenhouse gas emissions (railway industry accounting for 4%). Railway energy consumption is expected to triple to 72 billion units by 2029-30 -> a shift to renewable energy sources by 2030 will help offset 60 million tonnes of CO2 emissions when compared to non-renewable sources.

# SECURITY

## INSTANCES OF RANSOMWARE ATTACKS

- Recent cyber-attacks on AIIMS networks reveal that data of over 3 crore patients were compromised. In 2022, a cyber-attack on Spicejet led to the cancellation of several flights. Oil India (OIL) was targeted in 2022 in Assam and the attackers demanded ₹57 crores as ransom. IT firm Tech Mahindra was also impacted by a ransomware attack that caused losses of about ₹5 crores in 2021. Cybercriminals used Robinhood ransomware to attack the systems of power distribution companies in Telangana and Andhra Pradesh in 2019. This attack endangered the data of over 3.5 lakh individuals.
- As per Interpol's first-ever Global Crime Trend report, ransomware at 66% was ranked as the second highest threat after money laundering and is also expected to increase the most.

1. *PM Narendra Modi recently inaugurated 'Donyi Polo Airport' at Itanagar which is the 1st Greenfield airport in Arunachal Pradesh (total airport count in the North-East region rose to 16). It is equipped with a modern building that uses renewable energy, promotes energy efficiency and recycles resources used in the installation.*
2. *'Debo Na, Nebo Na,' means "Won't Give, Won't Take", an anti-corruption movement launched in 2017. It aims to ensure that there is no absence of facilities to communicate about a corrupt practice. Drop-boxes are in place outside the offices of all government departments in the districts.*
3. *BCCI declares equal pay for men and women cricketers across all three formats for the 1st time in India. The first country to do so was New Zealand. Similarly, the Table Tennis Federation of India, said that it would offer equal prize money for men and women in all the national zonal tournaments.*
4. *The Border Security Force (BSF) Director-General has said that BSF has struck down about 16 drones in areas bordering Pakistan in 2022. According to him, drones have emerged as one of the key challenges for the defence forces and there is still a lack of any foolproof anti-drone technologies in the country.*
5. *Hundreds of elephants, wildebeests, and zebras have died across Kenya amid the nation's longest drought in decades.*
6. *Google's Free Space Optical Communication (FSOC) has enabled the remote tribal villages located in the East Godavari district of Andhra Pradesh to get connected with the outside world under the initiative of 'Digital Connectivity through FSOC'. It provides services like mobile connectivity, internet, and wireless landline connectivity to the villages. It has made facilities like telemedicine, public grievances redressal, online education etc. accessible for remote villages which will further help to eradicate Left Wing Extremism in this region.*
7. *An 8-member team from Chinnakkanal under the Munnar forest division, which has played a significant role in reducing the incidents of man-animal conflict in the region, was selected for the Wildlife Trust of India award.*
8. *Sexual harassment in ashram schools is a common occurrence and is underreported. To address this issue the 'Jivhala' (affection) program was rolled out in the state of Maharashtra, providing training and orientation to all stakeholders and also providing video and reading material. The boys and girls are now speaking out openly about these sensitive issues. It empowers children and sensitises the school administration about their responsibilities.*
9. *An invasive species named Senna spectabilis with bright yellow flowers have taken over 800 to 1,200 hectares of the buffer zones of the Mudumalai Tiger Reserve in Tamil Nadu. As per conservationists, the invasive plant will have adverse effects on local biodiversity as it crowds out native species and limits food availability for wildlife.*
10. *Under the Kaushal Godavari Skill Development and Entrepreneurship Promotion Project, the East Godavari district administration of Andhra Pradesh is arranging for*

*skill development, skill enhancement, job placements and aiding private companies in recruitment. The programme is so successful that nearly 16,000 youths have found jobs by 2019.*

11. *Elaben Bhatt, a legendary figure in post-Independent India passed away recently. SEWA (Self Employed Women's Association) pioneered by her was one of the most innovative and successful experiments in India in the field of social development. It empowered women in India and simultaneously provided employment to women and promoted cooperative production, consumption and marketing of textiles which constituted the core of India's industrialisation. It also decisively influenced the course of trade unionism and the labour movement in India.*
12. *Under the District Administration Adopted Village (DAAV) scheme in Sikkim, 6 schools were selected and the infrastructure was enhanced and locals were trained to undertake maintenance of the establishments.*
13. *To reduce work pendency and increase cleanliness, the government of India has announced a month-long 'Special Campaign 2.0' to cover different departments such as Post-Offices, Overseas Mission/Posts, Railway Stations etc. Under it, the Ministry of Railways has decided to switch over to completely paperless working from 1st November by digitalizing all business processes and file work through the e-office system.*
14. *In Gujarat, an 8-month-long study on multiple micronutrient-fortified rice intervention for schoolchildren (6-12 years) in 2018-2019, as part of the Midday Meal Scheme, found increased haemoglobin concentration (10% reduction in anaemia prevalence) & improved average cognitive scores (by 11%).*
15. *US, Japan and other partners announced that they would mobilise around $20 billion of public & private finance to help Indonesia shut down coal power plants.*
16. *The Manthan platform won NSEIT the 'Best Tech Initiative of the Year' at the Dun & Bradstreet Business Excellence Awards 2022. The Manthan platform was conceptualized and implemented by the Office of the Principal Scientific Adviser (PSA) to promote collaboration between industry & scientific R&D ecosystem. It empowers multiple stakeholders to create solutions aligned with the UN Sustainable Development Goals (SDGs) & our national scientific missions.*
17. *UNDP is helping the people working in the waste segregation industry in India to move into the formal economy. It distributes the 'Jan Dhan' account kits to waste segregation workers under the UNDP's plastic waste management programme. It also ensures the well-being and financial inclusion of the 'Safai Sathis' or waste-pickers, by linking them to the social protection schemes. It helps to move towards a circular economy by 'Swachhta Kendra' or material recovery facilities.*
18. *Tokhü Emong Bird Count (TEBC) took place in Nagaland. It involves people watching and counting birds (between November 4-7) from anywhere in Nagaland. They have to then upload the names of the word on a bird recording platform called 'eBird.' It intends to*

*encourage the community to celebrate the festival with birds. It was named so because it takes place during the post-harvest Tokhü Emong festival of Wokha district, Nagaland. Wokha is the most preferred stopover of the Amur falcons while travelling from east Asia to southern Africa.*

19. *The Indira Gandhi Prize for Peace, Disarmament and Development of 2021 was awarded to 'Pratham,' an NGO functioning in the field of education. It is in recognition of Pratham's work in ensuring quality education for children of the country, particularly during the COVID-19 pandemic.*
20. *Scientists from Central Institute for Research on Buffaloes Haryana recently developed a feed supplement that can reduce Methane (CH4) gas belched out by stock animals such as cattle, goats, and sheep. According to estimates, livestock is responsible for up to 14% of all human-induced greenhouse gas emissions.*
21. *Kerala will shortly have over 142 full-fledged child-friendly police stations (CFPS), giving it a head start over the rest of the country in child-centric policing (also Odisha). Extensive training has been designed in association with UNICEF for enhancing skill sets and bringing about attitudinal and mindset changes in officers entrusted with managing the stations.*
22. *"The University of Life" is a brainchild of Sachin Desai and his wife where the processes of self-designed organic learning are run by the residents of the Syamantak community. It is an unconventional school that has no fixed curriculum and exams; just as there is no set pattern to life, the school aims to make its students ready for any challenge life throws their way. The school also has an entrepreneurial venture called 'Swayam,' where students make natural and preservative-free products like wood apple syrup, raw jackfruit pickle, turmeric powder, and soap made out of natural ingredients.*
23. *Uttejam is an initiative started by a district collector of Jagtial, Telangana Dr A. Sharath to improve the quality of education; for which he was awarded the Excellence award in 2019. It helps in motivating SSC students and teachers to enhance their performance. Students who are weak in subjects receive extra classes for one hour before school starts and one hour after school hours along with some nutritious snacks.*
24. *To address the issue of traffic jams near school premises in the mornings and evenings, the traffic top officials plan to revive the 'Safe Route to School' (SRTS) project. It has 3 main points of action => To start classes before 8.30 a.m. and finish before 3.30 p.m. to avoid clashing with office timings; to encourage parents to opt for public transport as the mode of transport to school for their children; deploying officers with special 'school duties' during the beginning and finishing of schools for the enforcement and safety of children.*
25. *The Initiative named 'E-Megh' in the district of Valsad (Gujarat) provides an effective and efficient Early Flood Warning System. It enhances the coordination between the officials & beneficiaries by using Communication tools like Auto-generated calls & SMS to the authorities. It also comes up with the flood maps to co-relate threats to various towns and villages.*

# VALUE ADDITION

## TERMS IN NEWS

1. *Food fortification => Food fortification is the process of adding nutrients to food. For instance, rice and wheat are fortified with iron, folic acid and vitamin B12, and salt is fortified with iron and iodine. Since the 1920s, developed countries and high-income countries have successfully tackled the issue of malnutrition through food fortification. Of late, the low-and middle-income countries, such as India, have pursued food fortification as one of the strategies to tackle micronutrient malnutrition.*
2. *Blue Economy => According to the World Bank, the blue economy is defined as "sustainable development of ocean resources for economic growth, improved livelihoods and jobs while preserving the health of the ocean ecosystem."*
3. *Permacrisis => The Collins Dictionary's word of the year for 2022 is "Permacrisis"; which was most widely understood as a combination of "permanent" and "crisis". It has been in use for a little longer from the COVID crisis to the Russia-Ukraine war.*

## RELEVANT QUOTES

1. *"Learning is not compulsory… Neither is survival." W. Edwards Demin.*
2. *"The purification required is not of untouchables but of the so-called superior castes." Mahatma Gandhi.*
3. *"As more and more artificial intelligence is entering into the world, more and more emotional intelligence must enter into leadership." Amit Ray.*
4. *"When a happy person comes into the room, it is as if another candle has been lit." Ralph Waldo Emerson.*
5. *"Relativity applies to physics, not ethics." Einstein.*