



SIVARAJAVEL IAS ACADEMY
AN IDEAL INSTITUTE FOR CIVIL SERVICE EXAMS

the **CATALYST**

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The **CATALYST**

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Sivarajavel IAS Academy

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.

Inside The Catalyst Magazine

- I. Special Coverage
- II. Within the Sub themes first few topics will be Prelims oriented followed by indepth coverage of Mains Topics.
- III. Book Summary Relevant for UPSC Exam.
- 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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SIVARAJAVEL IAS ACADEMY

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the **CATALYST**

From the Editor's Desk

Dear Readers,

In this month's book review, we have chosen the book Freedom from the Known by J. Krishnamurthi. It conveys a profound and thought-provoking philosophy of how we ought to attain freedom from our chains of experience and acquired knowledge. The prejudices and the worldviews taught to us by others sometimes hinder us from attaining self-awareness.

UPSC preparation is not just to observe, reflect, and analyze the events that happen around us but also to grow each day toward understanding our own selves better. You may be guided by teachers, mentors, peers, and other toppers but always carve out your own path and strategy. Don't blindly follow others.

This month whole nation cheered as the Chandrayaan 3 successfully landed on the moon. This was India's third Chandrayaan mission; the second one had failed partially, but that didn't deter India from forging ahead with its space exploration program. The endurance, long-term vision, and persistence in this mission are remarkable. We also need such qualities if we need to achieve our goals.

We are happy to announce our Prelims Test Series (**Called PRE-CAST**) from 17th September. The details of the Test can be found on our website. Admissions are open for BATCH-1. We have decided to keep the fee @ Rs. 4999 only. Kindly, make use of the tests effectively.

For this Edition (July 1 to July 30), we have covered a wide range of topics such as the Legality of the Delhi ordinance and amendment Act, NATO+, Maputo Protocol, Rice Export Ban, Global Carbon Stocktake, etc

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 & GOVERNANCE

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ENFORCEMENT DIRECTORATE (ED)

Why in the News?

The Supreme Court allowed Sanjay Kumar Mishra to continue as the director of the Enforcement Directorate (ED) over the deadline in “larger public interest”.

About Enforcement Directorate (ED)

The Directorate of Enforcement (ED) is a multi-disciplinary organisation mandated with investigation of the offence of *money laundering and violations of foreign exchange laws*. It is part of the **Department of Revenue**, Ministry of Finance, Government of India.

The **statutory functions** of the Directorate include enforcement of following Acts:

- The Prevention of Money Laundering Act, 2002 (PMLA)
- The Foreign Exchange Management Act, 1999 (FEMA)
- The Fugitive Economic Offenders Act, 2018 (FEOA)

Appointment of Director of ED

The ED Director is appointed by the central government on the recommendation of a committee which is chaired by the **Central Vigilance Commissioner and members including Vigilance Commissioners, Home Secretary, Secretary DOPT and Revenue Secretary**.

Powers of ED

The PMLA gives the ED the authority to **detain those who are accused of committing economic crimes**.

The ED has the authority to **conduct searches and seizures of assets and real estate that have been obtained unlawfully**.

Individuals and organisations whose bank accounts are suspected of being used for money laundering or other economic crimes may **have their accounts frozen by the ED**.

Properties and assets that were acquired

illegally may be seized by the ED.

ED is ‘Not a Police’: Madras HC Ruling

Section 19 of the PMLA, which permits superior ED authorities to arrest any person for custodial interrogation whom they have “reason to believe” is guilty of money laundering based on the material in their possession.

Section 50 of the PMLA provides powers of a civil court to the ED authorities for summoning persons suspected of money laundering and recording statements.

The court accepted the argument that **ED officials are not police officers** as per the law laid down by the SC in Vijay Madanlal Choudhary v. Union of India (2022).

This is only because the statements given to them in any criminal case would not be admissible in evidence before the trial court under the CrPC.

Whereas statements given to the ED were admissible in evidence under the PMLA.

Therefore, the argument could not be stretched to the extent of denying ED an opportunity to investigate the offence of money laundering effectively.

Difference between ED and Police

First Information Report (FIR) - The police are required to register a FIR for a cognisable offence before conducting an investigation, ED authorities are not required to follow this.

Accused statement as evidence- Any statement made by an accused to the police is inadmissible as evidence in court, whereas a statement made to an ED authority is admissible.

Accessibility of FIR- A copy of the FIR is accessible to the accused, whereas the Enforcement Case Information Report is seldom available.

Recent Developments - Tenure of ED director

The tenure of the chief of the Enforcement

Directorate (ED) is governed by the rules and regulations set forth in the Central Vigilance Commission (CVC) Act, 2003, and the Delhi Special Police Establishment Act (DSPE), 1946.

The DSPE Act, 1946 and CVC Act, 2003 have been amended to allow the extension of service ED and CBI chiefs for a period of three years beyond their two-year tenure by granting extensions of one-year each. (Maximum tenure of ED Director, now becomes 5 Years. The chiefs of the Central agencies currently have a fixed two-year tenure, but can now be given three annual extensions.

Issues with respect to Enforcement Directorate

Misuse of Power - Power has been misused, as even minor crimes have been brought under the purview PMLA.

Lack of Transparency - ED is often known to target Opposition parties, lacks transparency on How it selects cases for investigations.

Lacks adequate resources and manpower - ED has a sanctioned strength of 2,064 officers, but only 961 are in position as of March 2020. This means that there is a vacancy of more than 50% in the agency.

Low Conviction Rate - Convictions in cases by the ED are rare, but media trials have already ruined the accused's reputation. Between 2005 and 2013-14, there were zero convictions, and between 2014-15 and 2021-22, only 23 cases were under conviction out of 888 cases registered.

Political Bias - Allegations that political figures associated with the ruling party have been given favourable treatment by the ED. These allegations have raised concerns about potential

political bias and lack of independence in the ED's actions.

The ED also faces challenges in obtaining cooperation from foreign jurisdictions, accessing digital evidence, and dealing with new forms of financial crimes such as cryptocurrency and cyber fraud.

Way Forward

Strengthening the autonomy and oversight of the ED by creating a statutory body or a parliamentary committee to appoint and supervise its director and other senior officers, and to review its performance and budget.

Enhancing the professionalism and competence of the ED officers by providing them regular training, incentives, promotions and recognition, and ensuring their security and welfare.

Expanding the **infrastructure** and network of the ED by establishing more zonal and sub-zonal offices, creating specialised units for different types of cases, and upgrading its equipment and technology.

Improving the coordination and cooperation of the ED with other agencies such as CBI, RBI, SEBI, Income Tax Department, etc., as well as with foreign authorities, through information sharing, joint investigations, mutual legal assistance treaties, etc.

Streamlining the **legal framework and procedures for economic offences** by simplifying and consolidating various laws, reducing delays and pendency in courts, enhancing penalties and deterrents for offenders, etc.

SC SEEKS DATA ON ACTION TAKEN AGAINST LYNCHINGS

Why in the News?

The Supreme Court asked the Centre and at least six States to respond to a plea about lynchings and mob violence refusing to stop.

Mob Lynching: A Background

Concerns over Vigilantism: The 2018 Supreme Court bench, addressed the growing issues of vigilantism, mob lynching, communal violence, and hate crimes.

State Responsibility:

The court emphasized that states have the duty to prevent individuals or core groups from taking the law into their own hands,

The court also stressing that every citizen has the right to report law infractions to the police rather than resorting to vigilantism.

Affront to the Rule of Law: The court declared that lynching undermines the rule of law and the constitutional values, leading to anarchy and violence in society.

What is Mob Lynching?

It is a form of violence in which a mob, under the pretext of administering justice without trial, executes a presumed offender, often after inflicting torture and corporal mutilation.

The term lynch law refers to a self-constituted court that imposes sentence on a person without due process of law.

Supreme Court's Observations and directives to state:

The court stressed that authorities responsible for maintaining law and order must prevent vigilantism, including cow vigilantism, from occurring. Vigilante actions erode the legal institutions of the state and disrupt the constitutional order.

The court expressed concern over rising intolerance and growing polarization, fueled by incidents of mob violence, emphasizing that such acts should not become the normal state of law and order in the country.

The court highlighted the dangers posed by lynching and mob violence, which could escalate into widespread incidents influenced by intolerance, misinformation, and the circulation of fake news.

A Bench comprising Justices Sanjeev Khanna and Bela M. Trivedi has instructed State governments to compile comprehensive data on incidents of mob violence and lynchings.

The data should include information on complaints filed, FIRs registered, and challans

submitted to the courts, highlighting the progress made each year.

The court suggested that the Ministry of Home Affairs hold meetings with relevant department heads of the State governments to obtain updates on the measures taken in response to the court's 2018 judgment in the Tehseen Poonawala case.

The court had previously directed the formation of Special Task Forces by the States to gather intelligence on hate speeches, mob violence, and lynchings.

Lynching laws in India

There is no national law made on mob lynching. Mob lynching is not defined in IPC, CrPC, and nor defined in the constitution.

Though there are certain provisions in the IPC, for example-

Section 223 (a) of the Code of Criminal Procedure (CrPC), 1973 states that persons or a mob involved in the same offence in the same act can be tried together.

Sections 302 (murder)

Section 304 (culpable homicide not amounting to murder)

Section 307 (attempt to murder)

Impact of mob lynching

This act of people taking the law into their hands poses a serious threat to the Rule of Law and principles of Natural Justice.

Threat to minority groups by suppressing their basic rights

Economic loss by damaging the properties

In the short-term, lynching leads to death and injury for the victims whereas in the long-term it can lead to psychological and physiological effects on present and future generations.

Directive for Preventive and Remedial Measures

State governments must appoint senior police officers as Nodal Officers in each district to prevent incidents of mob violence and lynching.

State governments should identify areas where mob violence and lynching have been reported.

Police officers must disperse mobs using their authority under Section 129 of the CrPC, and FIRs must be promptly registered under Section 153A of the IPC.

Nodal Officers has the responsibility to personally monitor the investigation of such offenses and ensure effective implementation.

State governments should establish a compensation scheme for lynching and mob violence victims in line with Section 357A of the CrPC.

Special designated courts or fast-track courts should be established in each district to handle the cases related to lynching and mob violence.

States should be far more vigilant and proactive in flagging rumours using social media and other platforms. Some states are doing it, others need to emulate these examples.

More campaigns and awareness among people

Control on the spread of fake news

Case studies regarding mob lynching

Delhi: In 2017, a lynching case happened in

Delhi. It was based on the caste system prevailing that people belonging to lower case or backward classes of people need to suffer. In this case, a rickshaw driver stopped some of the college students as they were urinating on the public wall due to intoxication. The students who were intoxicated became furious and lynched the rickshaw driver.

Palghar mob Lynching case: On 16th April 2020 a driver and two Sadhus were lynched by an angry mob due to a rumour which was circulated on WhatsApp, wherein it was stated that there have been thieves operating in the village amidst the coronavirus lockdown. All the victims belonged to a village called Gadchinchale located in the Palghar district of Maharashtra. This unfortunate incident was fuelled by a

Conclusion

The Monitoring of preventive and remedial measures by Supreme Court for mob lynching demonstrates the commitment to address this issue. These measures seek to curb vigilantism, protect the rule of law, and ensure justice for victims of mob violence and lynchings.

SECTION 498-A OF IPC

Why in the News?

The High Court of Karnataka recently set aside the conviction of a 46-year-old man under Section 498A of the Indian Penal Code (IPC) as the complaint was by his 'second wife', which would make the marriage 'null and void'.

About Section 498A of IPC:

It deals with the criminal offense of "cruelty by husband or relatives of husband" towards a married woman.

This section was introduced in 1983 as an amendment to the IPC to address the growing concern of domestic violence and harassment faced by married women in India.

Under Section 498-A IPC, a husband or his

relatives can be sentenced to a jail term of three years for subjecting the wife to cruelty.

The section applies to **married women only**.

Section 498A of IPC reads as "Whoever, being the husband or the relative of the husband of a woman, subjects such woman to cruelty shall be punished with imprisonment for a term which may extend to three years and shall also be liable to fine".

For the purposes of this section, 'cruelty' means:

Any wilful conduct which is of such a nature as is likely to drive the woman to commit suicide or to cause grave injury or danger to life, limb or health (whether mental or physical) of the woman; or

Harassment of the woman where such harassment is with a view to coercing her or any person related to her to meet any unlawful demand for any property or valuable security or is on account of failure by her or any person related to her to meet such demand.”

The term “cruelty” is comprehensive, encompassing various forms of abuse that can be inflicted upon a married woman.

Bail under Section 498A:

Section 498A of the Indian Penal Code, enacted in 1860, is a non-compoundable and cognizable offence.

Bail under Section 498A can only be granted by the Magistrate once a First Information Report (FIR) has been registered by the police based on a complaint filed by the aggrieved party.

The Supreme Court has ruled that Section 498A should be used sparingly and only in cases where there is genuine evidence of cruelty.

The court has also ruled that the section should not be used as a tool to settle personal scores.

Laws to curb Violence against women

- Protection of Women from Domestic Violence Act, 2005 (PWDVA)
- Dowry Prohibition Act, 1961

- Sexual Harassment of Women at Workplace (Prevention, Prohibition, and Redressal) Act, 2013

Indian Penal Code (IPC)

Amendments:

Various amendments to the IPC have been made to address violence against women, including:

- **Section 376:** Dealing with punishment for rape, with stricter provisions for different types of rape offenses.
- **Section 354:** Addressing criminal assault or use of criminal force against women with intent to outrage her modesty.
- **Section 354A:** Dealing with sexual harassment and punishment for the same.
- **Section 354D:** Criminalizing stalking and providing punishment for the offense.
- **Section 509:** Dealing with words, gestures, or acts intended to insult the modesty of a woman.
- **Criminal Law (Amendment) Act, 2013:** This act was passed in response to the Nirbhaya case and brought significant changes to laws dealing with sexual offenses. It included provisions for stricter punishments for rape, gang rape, and acid attacks, among others.

GUJJARS, PAHARIS AND BAKERWALS

Why in the News?

Protest rallies by Gujjars and Bakerwals, who oppose inclusion of upper caste Paharis in the Schedule Tribe (ST) list, are gaining steam in J&K.

About

Gujjars:

Gujjar is an ethnic nomadic, agricultural and pastoral community,

Spread in: India, Pakistan, Kashmir and Afghanistan divided internally into various clan groups.

They are classified as Other Backward

Class (OBC) in 12 states. While in Jammu & Kashmir and some parts of Himachal Pradesh, they have Scheduled Tribe status.

Bakerwals:

They are a nomadic tribe who spread over a large part starting from Pir Panjal Range to Hindukush to Ladakh located in Himalayan mountains of South Asia.

They are shepherds and goatherders at large and seasonally migrate from one place to another with their herds.

They are found in the Jammu and Kashmir state of north India.

Gujjars and Bakerwals who were included in ST list in 1991, constitute 14% of J&K population.

Paharis:

Paharis are classified as a linguistic minority who speak Pahari language.

Paharis is an ambiguous term used to describe

a variety of Northern Indo-Aryan Northern Indo-Aryan languages, most of which are found in the lower Himalayas.

They are heterogeneous communities inhabiting the Indian regions of Jammu and Kashmir, Uttarakhand and Himachal Pradesh.

A THREAT TO FISCAL FEDERALISM IN INDIA

Why in the News?

The States continue to rely heavily on the Union government for revenue. This dependence creates vulnerabilities for the States as well as the Union.

Revenue Receipts and Dependence

Total revenue receipts of small States have increased, primarily driven by Union transfers.

Mizoram, Sikkim, and Tripura show slower revenue receipt growth compared to State GSDP, indicating limited fiscal space.

Union transfers constitute a significant share of revenue receipts for small States, with the Union's share exceeding 60% in all states except Goa.

Challenges in Revenue Mobilization

The limited capacity of small States to raise their own taxes, as reflected in the OTR ((own tax revenue)-GSDP (gross state domestic product) ratio.

Economic restrictions hinder tax revenue generation, resulting in heavy reliance on the Union government.

Small States perform better in mobilizing ONTR (own non tax revenue), with six states

surpassing the all-State average.

Vulnerabilities and Implications

Dependence on the Union government relies on political goodwill and can lead to sudden declines in transfers.

Tied funds restrict fiscal freedom and flexibility in expenditure for small States.

Lack of own revenues weakens State capacity and impacts the delivery of social and economic services, critical for states sharing international borders.

Mitigating Vulnerabilities and Improving Revenue Generation

Small States need to identify new sources of tax revenue and leverage existing ones effectively.

Examples of liquor prohibition policies and land transactions as potential revenue sources.

Improved tax administration, collection efficiency, and revision of charges and rates for services.

Revitalizing and corporatizing state public sector enterprises to enhance revenue performance.

KUKI GROUPS SEEK SEPARATION FROM MANIPUR

Kuki Inpi Manipur (KIM), the apex body of Kuki tribes, issued a statement calling for a separate state under Article 3 of the Constitution.

Manipur violence: A quick recap

The ethnic conflict in Manipur originated on May 3 between the Meitei people (valley-based)

and the Kuki-Zomi people (hills-based Scheduled Tribe groups).

The violence resulted in the forced migration of the two populations, prompting Kuki-Zomi MLAs and various groups to call for separation.

What is Article 3 of the Indian

Constitution?

Article 3 grants the Parliament the authority to create new states, modify boundaries, and rename existing states in India.

Here is the text of Article 3: Parliament may by law—

- Form a new State by separation of territory from any State or by uniting two or more States or parts of States or by uniting any territory to a part of any State
- Increase the area of any State
- Diminish the area of any State
- Alter the boundaries of any State
- Alter the name of any State

Procedural Requirements for changes under Article 3:

No Bill pertaining to these matters can be introduced in Parliament without the recommendation of the President.

If a proposed bill affects the area, boundaries, or name of any state, it must be referred by the President to the concerned state legislature.

The state legislature is given a specific period to express its views on the proposed changes. Additional time may be granted by the President, if necessary.

Significance of Article 3:

Article 3 provides a mechanism to adapt the political boundaries of states in India as per the evolving needs of the nation.

Parliament holds the authority to initiate state reorganization, with the consultation of the state legislature ensures a democratic process and considers the views of the affected state.

Article 3 acknowledges the various regional aspirations by allowing the formation of new states, thereby promoting regional development and administration.

The provision for altering state boundaries enables the government to address demographic changes, regional imbalances, and administrative efficiency.

Why is the demand by Kuki community not feasible?

The consideration of endorsing separate administrative setups or a greater Mizoram based on ethnic lines raises concerns about social and political cohesion in Manipur.

Tensions between the Kuki and Naga communities in Manipur complicate the situation and have the potential to escalate conflicts.

The demand for a separate homeland for the Chin-Kuki-Mizo community requires careful evaluation due to its unique cross-border presence and potential for Pan-Nationalism.

Recognition of a separate homeland would impact the regional stability between Myanmar and Bangladesh,

Conclusion

The Indian government must navigate the complexities by considering the broader implications on Manipur's stability, cross-border relations, and the risk of future conflicts stemming from ethnic separatism. Inclusive dialogue, addressing grievances, and promoting peace and unity among all ethnic communities involved are crucial for long-term stability and harmonious coexistence.

MADRAS HC TO QUASH CRIMINAL CASES AGAINST MINOR BOYS

The Madras High Court has said it can exercise its jurisdiction and quash proceedings against minor children for consensual relationship if the court actions are ultimately going to be against the interest and future of the children involved. Justices N. Anand Venkatesh and Sunder Mohan have also decided to put an end to the two-finger test conducted on victims of sexual offences and the archaic potency test conducted on the suspects by collecting their sperm.

What is POCSO Act?

The POCSO Act 2012 was an important step toward creating a safer environment for the children of our country. It was adopted to protect children from sexual offences like acts of sexual harassment and assault and child pornography.

Objectives

To safeguard the rights and dignity of children who are victims of sexual abuse and exploitation.

Establishment of special courts, special public prosecutors, special juvenile police units and child welfare committees to ensure a speedy and child-friendly justice delivery system.

Features:

Gender-Neutral Nature:

The Act recognizes that both girls and boys can be victims of sexual abuse and that such abuse is a crime regardless of the gender of the victim.

This is in line with the principle that all children have the right to protection from sexual abuse and exploitation, and that laws should not discriminate based on gender.

Ease in Reporting Cases:

There is sufficient general awareness now to report cases of sexual exploitation of children not only by individuals but also by institutions as non-reporting has been made a specific offence under the POCSO Act. This has made it comparatively difficult to hide offences against children.

Explicit Definition of Terms:

The storage of child pornography material has been made a new offence.

Further, the offence of 'sexual assault' has been defined in explicit terms (with increased minimum punishment) unlike an abstract definition of 'outraging modesty of a woman' in the Indian Penal Code.

POCSO Rules, 2020

Some of the significant additions in the new rules include provision of mandatory police verification of staff in schools and care homes, procedures to report sexual abuse material (pornography), imparting age-appropriate child rights education among others.

For crackdown on child pornography, any person who has received any pornographic material involving a child or any information regarding such pornographic material shall report the contents to the Special Juvenile Police Unit (SJPU) or police, or the cybercrime portal.

Under the rules, the State Governments have been asked to formulate a child protection policy.

The Central Government and every State Government shall provide periodic training including orientation programmes, sensitization workshops and refresher courses to all persons coming in contact with the children, to sensitize them about child safety and protection.

Any institution housing children or coming in regular contact with children, including schools, creches, sports academies or any other facility for children must ensure a police verification and background check on periodic basis of every staff.

POCSO Act's performance in comparison to global standards:

A 2019 Economist Intelligence Unit report ranked India's legal system for safeguarding children from sexual abuse and exploitation as

the best of the countries surveyed.

On this metric, India outranked the United Kingdom, Sweden and Australia.

Concerns

Despite the existence of such comprehensive child sexual abuse law, the scale of such abuse is staggering.

According to a recent survey, one in every two children is a victim of sexual abuse in India.

Furthermore, in the vast majority of cases, the perpetrators are known to the victim, causing the victim to hesitate to approach authorities for redress.

Incidents of child abuse have also risen exponentially since the Covid-19 pandemic, with the emergence of new forms of cybercrime.

The general level of awareness or knowledge on the part of minor girls and boys of the POCSO Act remains severely inadequate in the country.

Child marriage is common among certain tribal groups in the country, resulting in the criminalisation of 17-18 years old youths due to a lack of knowledge of the POCSO Act.

Steps to be taken

Creating awareness and sensitization among children, parents, teachers, community members etc... about the provisions and objectives of the POCSO Act, as well as the signs and symptoms of child sexual abuse and how to report it.

Enhancing the capacity and training of the police, judiciary, medical professionals, social workers and other functionaries involved in the implementation of the POCSO Act, to ensure that they follow the child-friendly procedures and guidelines prescribed by the Act and respect the best interests of the child at every stage.

Strengthening the coordination and collaboration among different agencies and

departments such as Women and Child Development, Health, Education, Home Affairs, Law and Justice, etc., to ensure a holistic and integrated approach towards addressing child sexual abuse cases.

Providing adequate infrastructure, human resources and financial support to the Special Courts, Child Welfare Committees, Special Public Prosecutors and Special Juvenile Police Units established under the POCSO Act.

Ensuring timely registration, investigation, prosecution and disposal of child sexual abuse cases by adhering to the time-bound procedures laid down by the POCSO Act.

Providing adequate medical, psychological, legal and social support to the child victims and their families throughout the process of justice delivery and rehabilitation, as well as ensuring their safety and confidentiality.

Monitoring and evaluating the implementation of the POCSO Act regularly by collecting data, conducting audits, reviewing judgments and orders, etc., and taking corrective measures wherever required.

Conclusion

The POCSO Act is a crucial instrument for protecting children from sexual offences and ensuring their best interests. However, it is not enough to have a strong law on paper; it is equally important to have a strong will and commitment to implement it effectively on the ground. Therefore, there is a need for concerted efforts by all concerned parties to create a conducive environment for the prevention, detection, reporting and prosecution of such cases. Only then can we ensure that every child enjoys his or her right to a safe, secure and dignified childhood.

THE LEGALITY OF THE DELHI ORDINANCE

The Government of National Capital Territory of Delhi (Amendment) Ordinance, 2023 was promulgated by the President in May 2023 to provide for a comprehensive scheme of administration of services in Delhi.

The ordinance came after the Supreme Court handed over the control of services in Delhi, excluding police, public order and land, to the elected government.

The ordinance seeks to set up a National Capital Civil Service Authority (NCCSA) for the transfer of and disciplinary proceedings against Group-A officers from services in the National Capital Territory (NCT) of Delhi.

The issuance of the Ordinance empowers the Lieutenant Governor of Delhi with control over services, thereby challenging the elected government's authority in matters of officials' transfer and posting.

This development raises significant constitutional apprehensions regarding the delicate balance of power between the elected government and the Lieutenant Governor.

National Capital Territory of Delhi (Amendment) Ordinance, 2023: Key Highlights

Creation of National Capital Civil Service Authority (NCCSA)

NCCSA will be headed by the Chief Minister of Delhi, with the Chief Secretary and Principal Home Secretary of Delhi being the other two members.

The NCCSA will make recommendations to the LG regarding transfer, posting, vigilance and other incidental matters.

All matters required to be decided by the NCCSA shall be decided by majority of votes of the members present and voting.

This means, that in effect, the decision of the elected CM can be overruled by the two senior bureaucrats.

Role of Lieutenant Governor (L-G)

The ordinance stated that the L-G will pass orders to give effect to the recommendations passed by the NCCSA.

However, L-G can ask for the relevant material about officers belonging to All India Services and DANICS serving the Delhi government.

In case the L-G differs with the recommendation made, he/she may return the recommendation to the Authority for reconsideration by the Authority.

For this, reasons will have

to be recorded in writing.

However, as per the ordinance, the final decision will lie with the L-G of Delhi.

What are the provisions of National Capital Civil Service Authority (NCCSA)?

NCCSA consists of Chief Minister of Delhi, the Chief Secretary and the Principal Secretary of the Home department.

Decisions made by the NCCSA will be based on a majority vote, which means that the elected Chief Minister can be overruled by the two senior bureaucrats.

If the LG disagrees with the recommendations made by the NCCSA, NCCSA have the power to return the recommendations for reconsideration.

If a difference of opinion persists, the final decision will be made by the LG, effectively reversing the Supreme Court's verdict.

Positive aspects of the Delhi Services Ordinance:

Balancing of Interests:

The ordinance is necessary to balance the local and national interests of the people of Delhi with the democratic will of the entire nation

reflected through the President of India.

The ordinance ensures that the Centre has a say in the administration of services in the national capital, which is vital for maintaining public order, security and development.

The ordinance also respects the role of the elected Delhi government by giving it representation in the National Capital Civil Services Authority (NCCSA) which will decide on service-related matters by majority vote.

Constitutional Validity:

The ordinance is in line with Article 239AA of the Constitution, which gives special status to Delhi as a Union Territory with a legislative assembly and allows Parliament to make laws on matters that are normally within the exclusive domain of the States, such as services.

The ordinance does not violate the Supreme Court's judgment, which only held that the Delhi government has legislative and executive powers over services but did not bar Parliament from making laws on the same subject.

The ordinance is also consistent with Article 239AB of the Constitution, which empowers the President to make regulations for peace, progress and good government of Delhi.

Scope of Review:

The ordinance is within the

scope of review of the Supreme Court's judgment, which may have overlooked some aspects of Delhi's unique constitutional position as the national capital and the role of the Lieutenant Governor as an agent of the Centre.

The ordinance seeks to clarify and streamline the scheme of administration of services in Delhi, which has been a source of conflict and confusion for a long time.

The ordinance also provides an opportunity for the Supreme Court to reconsider its judgment and address any errors or anomalies that may have crept in.

What are the Issues with the Ordinance?

Issue of "Triple Chain of Accountability":

In May 2023, the Supreme Court explicitly recognised this by formulating the concept of the "triple chain of accountability".

The triple chain of accountability is integral to representative democracy and proceeds as follows:

Civil servants are accountable to the cabinet.

The cabinet is accountable to the legislature, or the Legislative Assembly.

The Legislative Assembly is (periodically) accountable to the electorate.

Any action that severs this "triple chain of accountability"

fundamentally undermines the core constitutional principle of representative government,

which is at the bedrock of our democracy.

Power Struggle:

The ordinance has led to a power struggle between the elected government and the Lieutenant Governor.

The elected government claims that the ordinance undermines their authority and violates the Constitution.

The Lieutenant Governor argues that the ordinance is necessary to ensure proper governance in Delhi.

Issues with Provisions of the Ordinance:

The ordinance gives the Lieutenant Governor the power to make appointments to key bureaucratic positions in Delhi.

It also gives the Lieutenant Governor the power to transfer and post officials, which was previously the sole responsibility of the elected government.

The ordinance also states that in case of any difference of opinion between the Lieutenant Governor and the elected government, the former's opinion will prevail.

Constitutional Issues:

The elected government claims that the ordinance violates the Constitution, which gives them the power to make

appointments and transfer officials.

The Lieutenant Governor's increased powers are a violation of the principle of federalism, which is enshrined in the Constitution.

Governance Issue:

The ordinance has created confusion and uncertainty among the civil service officers working in Delhi government departments. The ordinance has also affected the delivery of public services and welfare schemes in Delhi.

Issue with the Current Governance Model of Delhi

Erosion of Democratic Mandate:

The Lieutenant Governor (LG), who has the final say in governance, does not have to respect the laws or directions of the assembly, which represents the will of the people of Delhi.

Violation of Executive Responsibility:

The LG, who is the chief executive, does not have to answer to the assembly, which goes against the principle of executive responsibility.

Infringement of Legislative Privilege:

The assembly has the right to make its own rules for its functioning, which is a part of its legislative privilege.

Obstruction of Decision-Making:

The need for LG's consent

for many decisions has caused delays in decision-making, which has affected the

development and governance of the city.

Ambiguity of Accountability:

The split of duties between the elected government and the Lieutenant Governor has created problems in assigning responsibility for actions and decisions.

Contradiction of Cooperative Federalism:

The Act not only opposes cooperative federalism but also reverses the fundamental principles laid down by the Supreme Court in Government of NCT Delhi vs Union of India case (2018).

Does the Ordinance go against the Supreme Court judgment?

The Ordinance is based on the argument that the Supreme Court has itself acknowledged the superior authority of Parliament to make laws for the national capital.

The Parliament is Delhi's true legislature, the Centre has argued.

However, the May 11 judgment addresses this contention by acknowledging that though Delhi is not a full-fledged State, its Legislative Assembly is constitutionally entrusted with the power to legislate upon the subjects in the State List and Concurrent List.

Under the constitutional scheme envisaged in Article 239AA (3), NCTD was given legislative power which though limited, in many aspects is similar to States.

In that sense, with the addition of Article 239AA, the Constitution created an asymmetric federal model with the Union of India at the centre, and the NCTD at the regional level.

Way Forward

Expert Committee Formation:

An expert committee comprising legal, constitutional, and administrative experts can be formed to provide recommendations on resolving the issue.

This committee should thoroughly analyze the legal and administrative aspects, review precedents, and propose practical solutions that uphold democratic principles and maintain the delicate balance of power between the central government and the elected government of Delhi.

Dialogue and Negotiation:

Engaging in meaningful dialogue and negotiation between the central government and the Delhi government is crucial for resolving the issue.

Both parties should come together to discuss their respective concerns and interests, seeking a mutually agreeable solution that respects

the democratic principles and the unique status of Delhi as the national capital.

Respect for Constitutional Principles:

Throughout the resolution process, it is vital for all

stakeholders to demonstrate a commitment for upholding constitutional principles, including democratic governance, separation of powers, and the rights of elected representatives.

Respecting the constitutional framework will provide a solid foundation for resolving the issue in a fair and transparent manner.

A COMMON CIVIL CODE SPELLING EQUALITY FOR EVERY INDIAN

Recently, the 22nd Law Commission of India has called for responses regarding the implementation of a UCC, which would provide a single set of civil laws applicable to all citizens of India, regardless of their religious affiliation, gender, or sexual orientation.

India's Personal Law Structure:

Currently, India follows different personal laws for different religious communities, such as Hindu personal law, Muslim personal law, and Christian personal law.

These laws were formulated during the colonial era when the British government, without proper consultation with the Indian population, established separate laws for different religious communities.

Personal laws in India are categorized based on religion or social origins, leading to a segregated legal framework.

There is a patriarchal bias in these personal laws, which favours men and denies women equal rights and opportunities.

Under the Hindu law,

the Mitakshara branch of law denied to a Hindu daughter a right by birth in the joint family estate.

Islamic law prescribes that generally a man's share of the inheritance is double that of a woman in the same degree of relationship to the deceased.

Christian women could not obtain divorce on the grounds of adultery committed by the husband, it had to be coupled with cruelty, bestiality, and sodomy. On the other hand, Christian husbands could simply declare their wives as adulteresses and divorce them.

The existing personal laws do not address the needs and rights of marginalized groups, such as the LGBT community, who were disregarded during the colonial era and even faced criminalization for their consensual actions.

The current approach to personal laws, with their patriarchal core, hinders gender equality and poses a challenge to India's claim of being a true democracy.

The caste system, despite being ancient, was abolished in

the early years of independent India, suggesting that outdated and discriminatory practices can be changed through legislation.

The Governments are criticized for either overlooking or defending the existing personal laws without addressing their patriarchal nature and the denial of equal rights for women.

What is Uniform Civil Code (UCC)?

The UCC is a proposed legal framework that aims to provide a common set of laws governing personal matters such as marriage, divorce, inheritance, and adoption for all citizens, regardless of their religion which replace the existing personal laws that are based on religious customs and traditions.

Constitutional provision on UCC:

The Article 44 of the Indian constitution of 1950 states that "The State shall endeavor to secure the citizens a Uniform Civil Code (UCC) throughout the territory of India."

Current state of UCC in India:

At present, Goa is the only state in India with a uniform civil code.

The Portuguese Civil Code of 1867, is applicable to all the people having their domicile in Goa. There is no uniform civil code in the rest of the country.

Apart from the above the government has brought several legislations in line with the UCC such as the amendments to Hindu code bills which provide uniformity in legal provisions to all religions who are not Muslim, Parsi, Jews, and Christians) and the Special Marriage Act, 1954 (It provides a form of civil marriage to any citizen irrespective of religion).

The Cases regarding to Uniform Civil Code (UCC):

Shah Bano Case (1985): The Supreme Court held that Parliament should outline the contours of a common civil code as it is an instrument that facilitates national harmony and equality before law.

Jordan Diengdeh case (1985): The court opined and observed for the reformation of law of marriages by having a uniform law applicable to all people irrespective of religion and caste.

Sarla Mudgal Case (1995): The Supreme Court of India directed the Ministry of Law and Justice to reflect the steps taken and efforts made, by the

Government of India, towards securing a “uniform civil code” for the citizens of India.

John Vallamattom case (2003): The Supreme Court held “It is regrettable that Article 44 of the Constitution has not entered into force. A common civil code will help the cause of national integration by removing contradictions based on ideologies”.

Arguments in favour of UCC

A Uniform Civil Code would help towards providing equal status to all citizens irrespective of the community they belong to.

Almost all religions observed that men are granted top preferential status in matters of succession and inheritance which results in discrimination towards women. Thus, a Uniform civil code will do away with practices which undermine a woman’s right to equality.

During constituent assembly debates, Shri Alladi Krishnaswamy Ayyar had talked about the problems of having excessive cultural relativity. He believed that having separate personal laws would limit the scope of reform and breeds communalism. Single secular law on various personal matters would raise a sense of oneness and the national spirit.

The social attitude and aspiration of the young population is shaped by universal and global principles

of equality, humanity and modernity. Thus, the enactment of Uniform Civil Code will help in utilizing their full potential towards nation building.

The UCC will simplify the complex laws around marriage ceremonies, inheritance, succession, adoptions making them one for all. This will also help in reducing the burden on the Judiciary.

Personal laws can be implemented for specific period of time. Having UCC will help the society move forward based on the modern constitutional value system of liberty, equality and justice.

Arguments Against for UCC

Anti-Minority: Critics term the code as “anti-minority” as they believe that a law like UCC goes against the “values of unity in diversity” prevalent in India.

Against Fundamental Rights: It will go against Article 26(b), which upholds the right of each religious denomination to manage its own affairs in matters of religion, and it is against Article 29 which defines the right to conserve distinctive culture.

Diversity of North East: Most of the North Eastern States have been accorded special provisions under Article 371 in order to preserve their tribal culture.

For, example Article 371(A) states that no act of

Parliament shall apply to the State of Nagaland in respect of the religious or social practices of the Nagas, its customary law and procedure, administration of civil and criminal justice involving decisions according to Naga customary law and ownership and transfer of land and its resources.

Conclusion

Despite a number of challenges in implementing a UCC, the adoption of a Uniform Civil Code in India is a vital step toward achieving equality, justice, and social harmony. It upholds the principles of fairness, gender justice, and national integration, while also adapting to the needs of a changing society. A universal

civil code would be a step in that direction as Prime Minister Jawaharlal Nehru on Independence Day in 1947, in a message to the nation, stated that the task before India was to “create social, economic and political institutions which will ensure justice and fullness of life to every man and woman”. No social cleavage has been imagined in this vision.



INTERNATIONAL RELATIONS



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ARTEMIS ACCORD

CONTEXT:

On June 21, India became the 27th signatory to the Artemis Accords, a set of non-binding guidelines that underpin the Artemis programme, a U.S.-led project to return humans to the moon permanently.

Why do the Accords matter?

The Artemis programme includes plans for a base on the lunar surface, multiple spacecraft to ferry humans and cargo, an orbiting space station, and a constellation of satellites to help with navigation and communication.

The first Artemis crewed mission to the moon's surface is likely in 2026. The programme resembles a Chinese-Russian plan for an 'International Lunar Research Station'.

With Russia reeling under sanctions, China has taken the lead on the project, outlining similar plans for a permanent base and a lunar satellite constellation.

For leaders in the U.S. and China, lunar exploration embodies all that is good about their countries even as they are locked in a bitter rivalry.

Leaders are also betting that the incredible challenges of lunar exploration will spur technological innovation. A sign of power in international politics is the ability to set norms and build multinational collaborations.

The Accords support an America-friendly interpretation of space law. In return, member states get to participate in the Artemis programme, which can bring prestige and technological benefits.

Where do the Accords fit in space law?

Modern space law is erected on four international agreements that cover issues like the peaceful use of space, registration, and liability.

They were struck between 1967 and 1976, at the time of the first Space Race and Cold War

detente. The Accords' principles are consonant with these agreements.

A fifth treaty, the Moon Agreement, was introduced in 1979 but neither the U.S. nor the Soviet Union signed it. India signed it but didn't ratify it.

One provision in the Artemis Accords allows actors to extract and utilise space resources.

This could be at odds with the Moon Agreement, which asks for gains from commercial exploitation of lunar resources to be distributed.

This has not stopped countries like Australia and France which previously signed the Moon Agreement, from becoming Artemis signatories.

In reality, the provisions of the Accords and the Moon Agreement are vague enough for lawyers to play according to the rules of both.

Also, even if the Artemis programme succeeds and private enterprises set up settlements on the Moon, resource extraction will likely be restricted to using the lunar soil to build habitats and lunar ice for sustaining life.

Why didn't India sign the Accords earlier?

The Artemis Accords were drafted in 2020, just as India was opening up its own space sector to private players.

While being a signatory to the Moon Agreement may have initially given India pause, the cases of Australia and France are reassuring. India's own attitude has also evolved, with its new space policy allowing private players to mine any "space resource".

There is also a noticeable shift in India's diplomatic practice.

Previously, diplomats in Delhi were likely concerned that the Accords are an informal set of norms rather than a legally-binding instrument.

India has historically preferred the latter because it believes laws foster better compliance.

That India has now accepted a set of U.S.-led norms suggests a change in thinking.

Furthermore, the dramatic developments of the last three years have made it clear that divisions between the U.S. and China are too deep for them to agree on a complex new international law on the Moon until their ties improve.

Finally, ties between India and the U.S. have been on an upswing, and there is less hesitation in Delhi about joining an America-inspired international effort.

What must India do?

Signing the Artemis Accords alone has no financial implications for India but if the country wants to be a major player in the Artemis programme, ISRO will need a significant hike in

its annual budget, which stands at about ₹12,500 crore this year.

At present, ISRO's lunar exploration programme is impressive but modest. Its Chandrayaan-3 mission is scheduled to make India's first soft landing on the moon in the next few weeks.

It may also take three years or more before India independently sends humans into space as part of its Gaganyaan project.

India must overcome domestic resistance to collaboration with other space agencies, enable its private sector to work with other Artemis members, and develop legislation that encourages space activities.

STAPLED VISA

Why in news?

India withdrew its eight-athlete wushu contingent from the Summer World University Games beginning in Chengdu on July 28 after *China issued stapled visas to three athletes from the team who belong to Arunachal Pradesh*

About

Stapled visa is simply an unstamped piece of paper that is attached by a pin or staples to a page of the passport and can be torn off or detached at will.

This is different from a regular visa that is affixed to the passport by the issuing authority and stamped.

China has made it a practice to issue stapled visas to Indian nationals from Arunachal Pradesh and Jammu and Kashmir.

It says the visas are valid documents, but the Government of India has consistently refused to accept this position.

India's long-standing and consistent position is that there should be no discrimination or differential treatment based on domicile or ethnicity in the visa regime for Indian citizens holding valid India passports.

Why China is doing this?

Passports, visas, and other kinds of immigration controls reiterate the idea of a nation-state and its sovereignty which is inalienable and inviolable.

A passport is the certificate of its holder's identity and citizenship. Since nation-states reserve the right to control and regulate who enters or leaves their borders, a passport and visa entitle their holders to travel freely and under legal protection across international borders.

China disputes India's unequivocal and internationally accepted sovereignty over Arunachal Pradesh.

It challenges the legal status of the McMahon Line, the boundary between Tibet and British India that was agreed at the Convention Between Great Britain, China, and Tibet at the Simla Convention of 1914.

It is this disagreement that lies at the heart of Chinese claims over the position of the Line of Actual Control (LAC), and its repeated transgressions into Indian territory.

INDIA - JAPAN: TO STRENGTHEN 'PEACETIME CO-OPERATION'

Why in News?

Speaking at an event recently, India's External Affairs Minister Dr S Jaishankar said that India and Japan would rather work to strengthen their "peacetime cooperation".

About India-Japan Relationship:

History:

Japan and India signed a peace treaty and established diplomatic relations in April, 1952.

This treaty was one of the first peace treaties Japan signed after World War II.

Recent engagements:

PM Yoshiro Mori's visit to India in August 2000 provided the momentum to strengthen the Japan-India relationship.

Mori and Prime Minister Atal Bihari Vajpayee decided the establishment of "Global Partnership between Japan and India".

When Prime Minister Manmohan Singh visited Japan in December 2006, Japan-India relationship was elevated to the "Global and Strategic Partnership".

In September 2014, Prime Minister Narendra Modi paid an official visit to Japan and had a summit meeting with Prime Minister Shinzo Abe.

They concurred to upgrade the bilateral relationship to "Special Strategic and Global Partnership".

Cooperation in Security Fields:

During Prime Minister Singh's visit to Japan in October 2008, two leaders issued "Joint Declaration on Security Cooperation between Japan and India".

There are also various frameworks of security and defense dialogue between Japan and India including –

Foreign and Defense Ministerial Meeting ("2+2" meeting),

Annual Defense Ministerial Dialogue and Coast Guard-to-Coast Guard dialogue

In 2020, both signed the Agreement Concerning Reciprocal Provision of Supplies and Services between the Self-Defense Forces of Japan and the Indian Armed Forces (so-called ACSA).

Economic Relations:

India was the 18th largest trading partner for Japan, and Japan was the 13th largest trading partner for India in 2021.

Japan was the 5th largest investor for India in FY2021.

Japan's bilateral trade with India, totalled US\$ 17.63 billion in FY 2018-19.

Economic Assistance:

India has been the largest recipient of Japanese ODA loans for the past decades.

Delhi Metro is one of the most successful examples of Japanese cooperation through the utilization of ODA.

Besides, Japan and India had committed to build High-Speed Railway in India.

Japan continues to cooperate in supporting strategic connectivity linking India to Southeast Asia through the synergy between "Act East" policy and "Partnership for Quality Infrastructure".

Indian Diaspora in Japan: More than 40,000 Indians are residing in Japan.

He said that by strengthening "peace, stability and security" in the region, India and Japan could ensure that "many of the worst fears" would not be realised.

'CHIP WAR' BETWEEN US-CHINA

Context:

The US-China chips war has prompted India to position itself as a player in the semiconductor technology field through a significant partnership with the US.

What is the US-China chips war?

The US-China chips war revolves around the rivalry between the two economic powers for dominance in semiconductor technology.

The US has implemented restrictions to prevent China from gaining a technological advantage, while also investing in domestic chip manufacturing.

China, on the other hand, aims to achieve self-sufficiency in semiconductors through its "Made in China 2025" plan.

The war has disrupted global semiconductor supply chains and led to a shift in alliances and trade patterns. In this war, Semiconductors have emerged as the 'new oil'

What are Semiconductors?

A semiconductor is a material that has electrical conductivity between that of a conductor and an insulator. Semiconductors are used to create electronic circuits, such as transistors and diodes, which control the flow of electric current.

They are commonly made from materials like silicon or germanium and are essential for various applications, including computers, smartphones, Integrated Circuits, defence systems, and AI

India's initiatives:

Production-linked incentive (PLI) scheme for the semiconductor industry

Three entities (Vedanta-Foxconn, international consortium ISMC and Singapore-based IGSS Ventures) that had applied to build the chips

Semicon India Programme: Launched in 2021 with an outlay of Rs 76,000 crore, the programme seeks to support the development of the semiconductors and the display manufacturing ecosystem in India.

Fiscal support for a design-linked initiative (DLI) scheme to drive global and domestic investment related to design software, IP rights etc.

Global Initiatives for Semiconductors:

Semiconductor friend-shoring among the Quad members by USA, to building "resilient, diverse and secure supply chains of critical and emerging technologies".

US-led "Chip 4 Alliance" with Japan, South Korea and Taiwan to restrict Chinese access to chip tech.

Taiwan produces over 60% of the world's semiconductors and over 90% of the most advanced ones.

"Made in China 2025" plan: to get self-sufficiency in semiconductor

Challenges for India:

India is currently at least two decades behind in chip manufacturing

It lacks the necessary infrastructure, uninterrupted power and water supply, and a skilled workforce.

There is a need for the development of a comprehensive chip ecosystem and ancillary industries in India.

INDIA-JAPAN SEMICONDUCTOR DEAL

Why in news?

India has shaken hands with Japan on a new partnership that is aimed at bringing "resilience"

to the semiconductor supply chain.

India's Union Minister for Electronics and IT Ashwini Vaishnaw and Japan's Minister of

Economy, Trade and Industry Yasutoshi Nishimura signed a memorandum of understanding (MoU) last week for the joint development of the semiconductor ecosystem

India Japan MoU on Semiconductor Development

The deal aims to bolster the resilience of the global supply chain, particularly in the crucial semiconductor industry.

The MoU is on five fronts, viz.

1. Semiconductor design
2. Manufacturing
3. Equipment research
4. Talent development

5. Bringing resilience to the semiconductor supply chain

Under the MOU, an implementation organisation will be created, which will present opportunities for government-to-government and industry-to-industry collaborations.

Japan sees India as a partner where complementary strengths can be used.

Japan's Strength

Japan is a leader in silicon wafer and ingot manufacturing, raw materials such as gasses, display and equipment manufacturing.

Japan's prominence in the semiconductor industry cannot be understated. With approximately 100 semiconductor manufacturing plants, it stands among the top five countries with a robust semiconductor ecosystem.

As the semiconductor industry is projected to grow from USD 650 billion to a staggering USD 1 trillion, it necessitates significant talent growth across multiple locations worldwide.

Japan recognizes India's complementary strengths and envisions a mutually beneficial partnership.

India's Strength

India has over 50,000 design engineers.

Cost competitiveness of manufacturing in India, market and talent base

QUAD & Semiconductor Ecosystem

Japan has become the second Quad partner after the United States to sign an agreement with India for the joint development of the semiconductor ecosystem and maintain the resilience of its global supply chain

Under Initiative on Critical and Emerging Technologies (iCET), both India and USA are focusing on building a resilient semiconductor supply chain in-house.

These nations are enhancing bilateral collaboration on,

resilient semiconductor supply chains along with supporting the development of a semiconductor design, manufacturing, and fabrication ecosystem in India

leveraging complementary strengths, both countries intend to promote the development of a skilled workforce that will support global semiconductor supply chains

encourage the development of joint ventures and technology partnerships on mature technology nodes and packaging in India.

India-Japan Relations

There is an increased strategic synergy and improved technological cooperation between India and Japan.

The relationship was upgraded to 'Special Strategic and Global Partnership' in 2014.

The joint statement, 'Japan and India Vision 2025 Special Strategic and Global Partnership Working Together for Peace and Prosperity of the Indo-Pacific Region and the World', issued in December 2015, transformed it into a broad-based relationship.

Besides, both nations have signed key pacts — a memorandum of understanding (2013) between

the Indian Nuclear Society and the Japan Atomic Energy Society to promote peaceful uses of nuclear science and technology

An MoU (2016) between JAXA and ISRO to explore outer space; and the civil nuclear agreement of 2017.

In the MoU signed in 2021, India and Japan agreed to work on 5G and 6G, telecom security, submarine optical fibre cable and smart cities.

Japan's geopolitical necessities have played a significant role in strengthening the bilateral relationship.

INDIA-SRI LANKA ECONOMIC PARTNERSHIP VISION DOCUMENT

The President of Sri Lanka, Ranil Wickremesinghe, paid an official visit to India. This was President Wickremesinghe's first visit to India since assuming the current responsibilities.

He assumed the office a year ago after an economic crisis triggered widespread protests in Sri Lanka and forced his predecessor, Gotabaya Rajapaksa, to flee.

Background:

A vision document to deepen economic partnership was adopted. India's support of nearly \$4 billion between January and July last year was critical for Sri Lanka after it almost ran out of dollars and sank into a financial crisis that left it struggling to fund essential imports including fuel and medicine.

Key outcomes:

MoU/Agreements exchanged

Joint Declaration of Intent (JDI) in the field of Animal Husbandry and Dairying

MoU on cooperation in the field of renewable energy

Memorandum of Cooperation for economic development projects in Trincomalee district of Sri Lanka

Network to Network Agreement between NIPL and Lanka Pay for UPI application acceptance in Sri Lanka

Energy Permit for Sampur Solar Power Project

Adoption of vision document for a

deeper economic partnership

Both sides adopted the India-Sri Lanka Economic Partnership Vision document.

The vision document is aimed at accelerating "mutual cooperation in tourism, power, trade, higher education and skill development".

About the Vision Document:

The vision document has been called 'Promoting Connectivity, Catalysing Prosperity: India-Sri Lanka Economic Partnership Vision'. It aims to strengthen bilateral and economic partnership between India and Sri Lanka. The document is based on five pillars - maritime connectivity; air connectivity; energy and power connectivity; trade, economic and financial connectivity and people-to-people connectivity.

What are key features of the 5 Pillars?

Air connectivity

- At present, there's only one flight a day between Chennai and the northern Lankan city of Jaffna.
- The two countries agreed to expand this flight to Colombo as well as explore connectivity between Chennai and Trincomalee, Batticaloa and other destinations in Sri Lanka.

Energy and power connectivity

- The two countries have plans to establish a high-capacity power grid interconnection. This is to enable bidirectional electricity trade between Sri Lanka and other regional countries, including those of the BBIN (Bangladesh, Bhutan, India, Nepal) initiative.

- The document also talks of expediting implementation of understanding reached on the Sampur Solar power project and LNG infrastructure and exploring cooperation in Green Hydrogen and Green Ammonia.
- The two countries will also be working on a multi-product petroleum pipeline from India's South to Sri Lanka.
- They will also undertake a mutually agreed joint exploration and production of hydrocarbons in Sri Lanka's offshore basins to develop Sri Lanka's upstream petroleum sector.

Maritime connectivity

- The document outlines cooperation in development of ports and logistics at Colombo, Trincomalee and Kankesanthurai, with an aim to consolidate regional logistics and shipping.
- It also talks of resumption of passenger ferry services between Nagapattinam in India and Kankesanthurai in Sri Lanka besides working towards early resumption of ferry services between Rameswaram and Talaimannar.

People-to-people connectivity

- The two countries have planned to promote awareness and popularize India's Buddhist circuit, and Ramayana trail as well as ancient places of Buddhist, Hindu and other religious worship in Sri Lanka for enhancing tourism.

Trade, economic and financial connectivity

- Both nations have decided to designate Indian Rupee as currency for trade settlements between the two countries.
- Both sides also agreed to operationalize UPI-based digital payments for further enhancing trade and transactions between businesses and common people.

Way Forward

Sri Lanka being an island nation within Indian ocean is an important strategic partner. India has offered necessary aid during Sri Lanka's economic crisis and forms crucial part of our 'Neighbourhood First' policy.

SCO SUMMIT

Why in the News?

The virtual summit of the Shanghai Cooperation Organisation (SCO), chaired by Mr Modi, addressed the importance of establishing a "more representative" and multipolar world order. The summit witnessed the induction of Iran as the ninth member of the SCO.

About

The grouping came into existence in Shanghai in 2001 with six members, minus India and Pakistan. Its primary objective was to enhance regional cooperation for efforts to curb terrorism, separatism, and extremism in the Central Asian region.

The SCO now consists of China, India, Iran, Kazakhstan, Kyrgyzstan, Pakistan, Russia, Tajikistan, and Uzbekistan. Iran's induction as the latest member reflects the SCO's commitment to

broadening its representation.

India is chairing the SCO for the first time since it became a full member of the grouping, along with Pakistan, in 2017.

The theme of India's chairpersonship of SCO is 'Towards a SECURE SCO', which is derived from the acronym coined by the Indian PM at the 2018 SCO Qingdao Summit.

SECURE stands for: S: Security, E: Economic development, C: Connectivity, U: Unity, R: Respect for sovereignty and territorial integrity, E: Environmental protection.

India has created five new pillars and focus area for cooperation in the SCO, which include,

Startups and Innovation

Traditional Medicine

Youth Empowerment

Digital Inclusion

Shared Buddhist Heritage

What are the Outcomes of the Summit?

The New Delhi Declaration: Outlined areas of cooperation between SCO countries.

Joint Statement on Countering Radicalisation: Addressed the need to combat radicalisation and promote stability.

Joint Statement on Digital Transformation: India offered expertise on digital payment interfaces for sharing within the SCO.

Issues

India's stance on China's Belt and Road Initiative (BRI): India abstained from supporting the BRI paragraphs in the joint statement due to its inclusion of projects in Pakistan-occupied Kashmir.

India's absence from the SCO Economic Development Strategy 2030: India's refusal to participate in the joint statement suggests a lack of consensus within the group.

SCO's Stance on Sanctions and Currency Use:

Joint criticism of non-UN sanctions: SCO members expressed opposition to sanctions on Russia and Iran, considering them incompatible with international law and negatively impacting other countries.

Exploring the use of national currencies: SCO members agreed to explore the use of national currencies for payments within the group to bypass dollar-based international transactions.

Commitment to a multipolar world order

The Delhi Declaration acknowledged global challenges such as conflicts, market turbulence, supply chain instability, climate change, and the

COVID-19 pandemic.

The member states reaffirmed their commitment to a more representative, democratic, just, and multipolar world order based on international law, multilateralism, and equal cooperation, with the UN playing a central coordinating role.

Iran, as a New Member

Iran's formal entry into the Shanghai Cooperation Organization (SCO) holds significant implications for both the regional alliance itself and for India. The inclusion of Iran enhances the SCO's geopolitical reach, energy cooperation, economic integration, security collaboration, cultural exchanges, and diplomatic ties. These implications present various opportunities for India as well.

Implications for India

Energy Cooperation: Iran's SCO membership offers India avenues for diversified energy sources, enhancing energy security through increased oil and gas imports.

Trade and Economic Opportunities: Iran's SCO inclusion facilitates stronger economic ties, boosting trade, investment, and business collaborations, benefiting India's economic growth.

Connectivity and Transport Corridors: India can benefit from Iran's role in developing transport corridors, like the International North-South Transport Corridor, improving trade routes and connectivity with SCO members.

Regional Security: Iran's participation strengthens regional security cooperation, assisting India in addressing common security challenges and safeguarding its interests.

Counterterrorism Efforts: Iran's SCO involvement enhances collaborative counterterrorism efforts, aiding India in combating cross-border terrorism and bolstering its security landscape.

Geopolitical Balance: Iran's SCO membership reshapes regional dynamics, fostering dialogue and cooperation between countries with varying

strategic interests like India, China, and Iran.

Engagement and Influence: India's engagement with Iran through the SCO allows it to actively

shape the organization's agenda and contribute to regional and global discussions.

ASEAN, A PERSISTENCE WITH DIALOGUE, ON A TRODDEN PATH

Recently, the 56th Foreign Ministers Meeting of the Association of Southeast Asian Nations, the post-ministerial conferences and other related regional meetings, held in Jakarta, Indonesia.

About Association of Southeast Asian Nations (ASEAN)

The ASEAN was established on 8 August 1967 in Bangkok, Thailand, with the signing of the ASEAN Declaration (Bangkok Declaration)

It is a political and economic union of 10 member states in Southeast Asia.

Founding Fathers of ASEAN: Indonesia, Malaysia, Philippines, Singapore and Thailand.

The motto of ASEAN is "One Vision, One Identity, One Community".

August 8th is observed as ASEAN Day.

ASEAN Secretariat: Indonesia, Jakarta.

Fundamental Principles of ASEAN:

The ASEAN fundamental principles, as contained in the Treaty of Amity and Cooperation in Southeast Asia (TAC) of 1976

Mutual respect for the independence, sovereignty, equality, territorial integrity, and national identity of all nations.

The right of every State to lead its national existence free from external interference, subversion or coercion.

Non-interference in the internal affairs of one another.

Settlement of differences or disputes in a peaceful manner.

Renunciation of the threat or use of force.

Effective cooperation among themselves.

What is the vision of ASEAN?

Political community that ensures regional peace and a just, democratic and harmonious environment.

Economic community focused on achieving a well-integrated and connected regional economy within the global economic system.

Socio-cultural community to enhance the quality of life of ASEAN's citizens as well as sustainable development of the region.

ASEAN prefers to promote the ASEAN Outlook on the Indo-Pacific (AOIP):

Its four identified areas:

maritime cooperation

connectivity

UN Sustainable Development Goals 2030

economic cooperation

What are the challenges faced by ASEAN?

China has close political and economic ties with ASEAN member states. Laos, Cambodia, and Myanmar are considered as virtual dependencies.

But, the Philippines has recently become more assertive in its claims in the South China Sea.

Indonesia, Malaysia, Singapore, and Thailand hold favourable attitudes towards Beijing. None of these countries raises objections to China's delaying tactics in negotiating an enforceable code of conduct for the South China Sea.

The strained relationship between the U.S. and China is a cause of worry for ASEAN.

As per China, the U.S. is solely responsible for poor relations. It is not willing to accept and accommodate itself to China's 'peaceful rise'. The U.S is against the Chinese aggressiveness and coercion in the Indo-Pacific and beyond.

ASEAN prefers the ASEAN Outlook on the Indo-Pacific (AOIP). Its four identified areas are maritime cooperation, connectivity, UN Sustainable Development Goals 2030 and economic cooperation. But, its actual implementation remains a worry.

ASEAN does not have a united position on the Myanmar situation. ASEAN has barred Myanmar from all its political-level discussions. But, Thailand has its own political dialogue with the military government.

What shows the importance of ASEAN for India?

The significance of the ASEAN meetings for India emphasized the importance of a "strong and unified" ASEAN in the emerging Indo-Pacific dynamics and the alignment between the AOIP and India's Indo-Pacific Oceans Initiative.

The External Affairs Minister has proposed exploring "newer areas such as cyber, financial, and maritime security domains to enhance the comprehensive strategic partnership between India and ASEAN.

Way Forward

Institutional architecture created by ASEAN has become an inclusive platform.

It draws nations from near and far, as also all major players (the United States, China, India, Japan and Russia) engaged in shaping the strategic contestation in a vast region stretching from east Africa to the South Pacific.

The disunity could not be concealed by a routine reaffirmation of the Five-Point Consensus (5PC) forged in April 2021.

Without unity, ASEAN centrality loses much of its credibility.

Though it appeared that ASEAN did not make much progress, and no new ground was broken, its persistence with dialogue, internally and externally, prevented geopolitical temperatures from rising.

WTO DISPUTE SETTLEMENT METHOD

The U.S and India decided to end their six long-standing trade disputes at the World Trade Organization (WTO) through deals, a move which is unprecedented.

World Trade Organization (WTO)

The World Trade Organization (WTO) is the only global international organization dealing with the rules of trade between nations.

At its heart are the WTO agreements, negotiated and signed by the bulk of the world's trading nations and ratified in their parliaments.

The goal is to ensure that trade flows as smoothly, predictably and freely as possible.

The Issue of Precedents:

The US criticizes the appellate body for judicial overreach and exceeding its institutional mandate, particularly in creating binding precedents through its decisions. However, it is important to note that

international law does not adhere to the principle of stare decisis or precedent.

The WTO's dispute settlement understanding (DSU) explicitly states that the appellate body's rulings cannot alter member countries' rights and obligations. While ensuring consistency in interpreting and applying WTO agreements, the appellate body has encouraged reliance on previous interpretations without creating binding precedents.

It allows for departures from previous rulings and reasoning under "cogent reasons." Comparatively, other international courts, such as the International Court of Justice and the International Tribunal for the Law of the Sea, also follow their past decisions unless valid reasons exist not to do so. Proposals have been made to adopt a statement clarifying that appellate body rulings do not establish precedents, but the US

remains unsatisfied.

What is the issue with WTO's dispute settlement system?

WTO's dispute settlement system (DSS) is called its 'crown jewel'.

The dispute settlement system (DSS) is a two-tiered system where the appellate body is the second tier.

The appellate body hears appeals from WTO panels.

The appellate body, from 1995-2019, has upheld the international rule of law by holding powerful countries accountable for international law breaches.

Issue - The WTO Appellate Body has been redundant since 2019.

There is a continued impasse in the appointment of 'judges' to the appellate body.

Disputes filed into the 'void' will not be considered for adoption leaving the appealed cases unresolved.

In June 2022, at the Geneva ministerial conference, the members signed a deal on resurrecting the WTO's dispute settlement system (DSS) by 2024.

De-judicialization of Trade Multilateralism:

The US's opposition to the appellate body's functioning is part of a broader strategy to de-judicialize trade multilateralism.

The WTO was established during a period of neoliberal consensus, where the "visible hand" of the law was seen as essential to complement the market's "invisible hand." The WTO served as this "visible hand" to regulate global trade.

However, the US aims to reduce the influence of international courts, including the appellate

body, to regain decision-making power. This de-judicialization, distinct from exerting political oversight over the appellate body, reflects a desire to assert full control over trade policies, particularly in the face of rising challenges from China.

While the US has identified issues with the DSS, it has provided few constructive suggestions for improvement.

The Challenge of Voting:

Negotiating with the US to restore the appellate body appears futile. One alternative proposed by Henry Gao is to elect appellate body members through voting at the WTO's General Council meeting.

However, this approach is likely to antagonize the US. The question arises as to whether countries are willing to pursue this route despite potential backlash.

What are the other cases solved?

India's National Solar Mission - A challenge of the domestic content requirements under India's National Solar Mission was also resolved.

Disagreements persisted regarding India's compliance with the WTO treaty obligations, with the U.S. seeking authorisation from the WTO's Dispute Settlement Body for trade retaliation.

Special Economic Zone (SEZ) - Certain corporate tax deductions provided under the SEZ scheme faced an uncertain future.

India resisted to appeal to the Appellate body and had voluntarily removed some controversial schemes.

India also initiated a comprehensive process to reform its SEZ law.

India's contest - India challenged certain sub-federal programmes implemented in the U.S. in the renewable energy sector and won the case.

INDIA SHOULD REFUSE AMERICA'S 'NATO PLUS' BAIT

The article highlights that the United States Permanent Representative to NATO's statement that NATO is open to further engage with India if India expresses its interest.

Additionally, the U.S. House Select Committee on the Strategic Competition between the United States and the Chinese Communist Party recommended including India in the NATO-Plus framework, which aims to strengthen cooperation in countering China's influence. However, India's Ministry of External Affairs rejected the idea by stating that the NATO template does not apply to India.

This likely means that India has its own unique strategic interests and approaches that may not align with the NATO framework. If India become as a part of NATO-Plus, It could potentially impact India's independent decision-making and strategic autonomy in dealing with China and other regional issues

North Atlantic Treaty Organization (NATO):

Headquarters: Brussels, Belgium.

It is a military alliance established by the North Atlantic Treaty (also called the Washington Treaty) of April, 1949, by the United States, Canada, and several Western European nations to

provide collective security against the Soviet Union.

There are currently 30 member states (Finland 31st).

NATO's essential and enduring purpose is to safeguard the freedom and security of all its members by political and military means.

NATO has an integrated military command structure but very few forces or assets are exclusively its own.

Other Countries who recently Joined NATO before

Norway (1949)

Latvia (2004)

Estonia (2004)

Poland (1999)

Lithuania (2004)

Finland (2023)

NATO Plus:

It refers to a security arrangement of NATO and the five treaty allies of the U.S. — Australia, New Zealand, Japan, Israel, and South Korea as members.

Aim: To enhance "global defence cooperation" and win the "strategic competition with the Chinese Communist Party".

'NATO Plus' is not an officially recognised or established concept within NATO itself

It has been used in discussions and

debates regarding the potential expansion of the alliance.

The inclusion of these countries as members would require a complex process of negotiation and assessment of their compatibility with NATO's principles, obligations, and defence commitments.

The focus of NATO Plus is on containing China.

Therefore, considering its disputes with China, India remains a missing link in the framework.

About NATO Membership

Minimum requirements for acquiring NATO membership: Article 10 of the North Atlantic Treaty prescribes the following as requirements for joining NATO as a member:

New members must uphold democracy, including tolerating diversity.

New members must be making progress toward a market economy.

Their military forces must be under firm civilian control.

They must be good neighbors and respect sovereignty outside their borders.

They must be working toward compatibility with NATO forces.

Procedure for acquiring

membership: NATO membership normally involves a long process, and it requires unanimous approval, which equals the approval of all 31 existing allied countries.

Benefits of acquiring NATO membership for a country:

Security: NATO provides a collective defense system that can deter potential threats and protect member countries from aggression.

Enhanced military capabilities: NATO membership offers access to advanced military technology, training, and joint exercises with other member countries, which enhances a country's military capabilities and readiness.

Political influence: Being a NATO member can provide a country with a stronger voice on the international stage and a greater say in global security and defense matters.

Implications for India in joining NATO:

India's potential implications in joining the NATO framework, are as follows:

Impact on Russia and China:

Joining any NATO framework would likely strain India's relationships with Russia and China.

India has a robust strategic

partnership with Russia, which has been valuable in dealing with regional security challenges and influencing China's stance.

Aligning with NATO could jeopardise this partnership and potentially lead to geopolitical consequences for India.

Limitations on freedom of action:

Aligning with the U.S.-led alliance system, such as NATO, may limit India's freedom of action and hinder its ability to pursue an independent policy towards China.

India may find it challenging to maintain its own bilateral approach and strategy for the Indo-Pacific while being part of a military framework that aligns with U.S. objectives.

Complications in regional security:

Joining NATO Plus, especially considering the U.S. emphasis on Taiwan, could complicate India's security situation.

It may lead to increased tensions with China and the possibility of further military build-up along the India-China border, as well as frequent intrusions.

Strain on strategic autonomy:

India has traditionally valued its policy of strategic autonomy, allowing it to engage

with various nations and blocs based on its own interests.

Joining NATO would require aligning India's defence and security policies with the alliance's objectives and strategies, potentially undermining India's autonomy and limiting its flexibility in engaging with other regional powers.

India's Priorities:

India's priorities, primarily revolve around addressing its own regional dynamics and security challenges. These priorities include

Border disputes: India faces ongoing border disputes with neighbouring countries, particularly with China and Pakistan. Resolving and managing these border issues is a key priority for India's national security.

Terrorism: India has been a victim of terrorism, both domestically and from cross-border sources. Combating terrorism and ensuring the safety and security of its citizens is a significant priority for India.

Regional conflicts: India is situated in a region with multiple conflicts, such as the ongoing conflict in Afghanistan and instability in some neighbouring countries. Managing and mitigating regional conflicts is important for India's stability and security.

Quad cooperation: The

excerpt mentions India's posturing through the Quad, which refers to the Quadrilateral Security Dialogue between India, Japan, Australia, and the United States. India sees the Quad as a promising platform for addressing regional security challenges in the Indo-Pacific region, including concerns related to China's assertiveness.

Arguments favouring India-NATO alliance

Convergence of many issues such as China, terrorism, and Afghanistan, including Pakistan's role in Afghanistan in the perspectives of both India and NATO

India's refusal to join any

military bloc at the time of freedom was based on non-alignment, but after the end of the cold war during 1989-91 the situation changed. NATO has also built partnerships with many neutral and non-aligned.

NATO's collective defence mechanism would create deterrence for China and Pakistan to attack India.

India would derive military-strategic benefits from a partnership with the world's most powerful alliance.

Arguments against India-NATO alliance

India does not share a common ground with NATO

on Russia and the Taliban. Also, NATO's views on China are mixed.

By becoming a NATO member, India's long-standing and strong ties with Russia may get deteriorated.

An alliance with NATO might ask for the establishment of NATO bases on India's territory and it may even be considered an infringement of our sovereignty.

NATO members have often found divided on how to share the military burden. Further, NATO members have also been found to disagree on policies related to Russia, the Middle East, and China.

INDIA-FRANCE TIES

Recently, Prime Minister Narendra Modi visited France on the 25th anniversary of the India-France strategic partnership who invited as a Guest of Honour at France's Bastille Day parade in Paris.

Significance of the PM's visit to France:

Increasing investment: The visit will help diversify France and European economic ties away from China

Boosting regional security: The visit will help boost India's comprehensive national power and help India stabilise the balance of power in Asia

"Horizon 2047" agreement was signed. It included the strategic road map for the next

25 years. It has three pillars — 1) Partnership for security and sovereignty 2) Partnership for the planet and 3) Partnership for the people.

A roadmap to cooperate in the Indo-Pacific region was also released. The agreement includes military and naval exchanges and a trilateral development fund to help countries in the Indo-Pacific region.

Under defence cooperation, Safran, the French company and the DRDO (Defence Research and Development Organisation) will jointly develop jet engines for the advanced medium combat aircraft. Submarines are proposed to be jointly built by Mazagon Dock Shipbuilders and the Naval Group of France.

Current analysis of India-France relations:

Characteristics: The relationship between the two countries is characterized by strategic autonomy, independent foreign policies, and a shared vision of a multipolar world.

Security objectives prominent: Unlike Indo-German relations, which are focused on trade, India and France prioritize security objectives.

France has helped India diversify its pool of arms suppliers beyond Russia and the US, especially when sanctions were imposed on India in the past.

Balancing China: The

relationship aims to balance China's influence in the Indian Ocean and have a shared concern about Chinese expansionism.

Multi-dimensional: The partnership between India and France has seen advancements through joint strategic visions, logistic support agreements, and military exercises in recent times

Strategic Dialogue:

France is the first country with which we initiated a Strategic Dialogue after our 1998 nuclear tests when France refused to impose bilateral sanctions on us and displayed a far greater understanding of India's security compulsions compared to other countries.

Trade between two countries:

Bilateral trade with France has witnessed a steady rise in the last decade reaching USD 10.75 billion in 2020.

Nearly \$16 billion worth of agreements at the business summit were signed. There are nearly 1,000 French companies present while over a hundred Indian businesses have established a presence in France.

Brexit:

In the past, Indian companies saw the U.K. as the entry point for Europe; now with Brexit approaching, India can also look at France as its entry point for Europe.

Energy Sector:

An agreement was signed about a decade ago for building six EPR (European Pressurized Reactors) nuclear power reactors with a total capacity of 9.6 GW for which negotiations have been on-going between the Nuclear Power Corporation of India (NPCIL) and Areva.

On green energy:

The International Solar Alliance is set in motion jointly by India and France.

France offered an extra \$861.5 million by 2022 for solar projects in developing countries.

Maritime cooperation:

China's angle:

Like India, France has expressed concern about China's growing presence in the Indian Ocean Region.

French overseas territories in the Indian and the Pacific Oceans provide it with the second-largest exclusive economic zone globally. It has long maintained bases in Reunion Islands and Djibouti and established one in Abu Dhabi in 2009.

Strengthening cooperation with France, particularly in the western Indian Ocean Region makes eminent strategic sense even as India develops its presence in Oman (Duqm) and Seychelles (Assumption Island).

More synergy between the two navies in the Gulf area where France has a base (in Abu Dhabi) and better mutual understanding of the

implications of a Chinese base in Gwadar is important for India.

Space:

Earlier France assisted India to set up the Sriharikota launch site.

Today, it is a relationship of near equals and the 'vision statement' refers to world-class joint missions for space situational awareness, high resolution earth observation missions with applications in meteorology, oceanography and cartography.

Inter-planetary exploration and space transportation systems are cutting edge science and technology areas that have also been identified.

Collaboration for Mission Gaganyaan:

Space agencies of India and France inked an agreement for cooperation for the country's first human space mission Gaganyaan.

Education:

The most significant agreement was the focus on youth and student exchanges.

Currently, about 2,500 Indians go to France annually to pursue higher education, compared to more than 250,000 from China.

The agreement on mutual recognition of academic degrees and the follow-on Knowledge Summit, where 14 MoUs between educational and scientific institutions were signed.

Tourism:

While there are only about 20 flights a week between India and France, there are four times as many to Germany and 10 times as many to the U.K. So the number of flights between India and France have to be increased.

Post-COVID Agenda:

India and France will advance their shared post-COVID agenda through “close collaboration”.

There are immense opportunities for greater collaboration in diverse sectors such as trade and investments, defence and security, health, education, research and innovation, energy and climate change.

Environment:

India and France had launched the Indo-French Year of the Environment in January 2021 to strengthen cooperation

on these issues and ensure coordination ahead of these multilateral events.

Objective: To strengthen Indo-French cooperation in sustainable development, increase the effectiveness of actions in favour of global environment protection and give them greater visibility.

The Indo-French Year of the Environment over the period 2021-2022 would be based on five main themes:

Environmental protection;

Climate change;

Biodiversity conservation

Sustainable urban development;

Development of renewable energies and energy efficiency.

It is also a platform for engaging in discussions on critical areas of collaboration relating to the environment and allied areas.

Challenges in the relationship:

India and France don't have Free Trade Agreement, which limits the potential for increased trade and economic cooperation. Also, there is a trade imbalance in favour of France (France exporting more to India). Also, France has many times expressed concern on India's stance at WTO, Climate summit and on India's protection of intellectual property rights

Conclusion:

While military cooperation remains important, the Indo-French relationship could expand beyond arms sales. Initiatives like the International Solar Alliance and exploring unilateral and multilateral cooperation in the Indo-Pacific could bring additional dimensions to their partnership.

GLOBAL SOUTH: ORIGINS AND SIGNIFICANCE

The unwillingness of many leading countries in Africa, Asia and Latin America to stand with NATO over the war in Ukraine has brought to the fore once again the term “Global South.”

What is Global South?

The term “Global South” refers to countries that are often described as ‘developing’, ‘less developed’, or ‘underdeveloped’.

The phrase refers broadly to the regions of Latin America, Asia, Africa, and Oceania.

It is one of a family of terms, including “Third World” and “Periphery,” that denote regions outside Europe and North America, mostly (though not all) low-income and often politically or culturally marginalized.

The use of the phrase “Global South” marks a shift from a focus on development or cultural difference toward an emphasis on geopolitical power relations.

How did ‘Global South’

replace the term ‘Third World’?

The term ‘Global South’ was first used in 1969 by political activist Carl Oglesby. However, it only gained significant traction after the 1991 Soviet Union breakup.

Before that, ‘Third World’ was the widely used term for under-industrialized nations, coined by Alfred Sauvy in 1952.

After the Soviet Union's fall, the term ‘Third World’

became less popular, largely due to its negative associations with instability and poverty. The phrase 'Global South' emerged as a more neutral replacement, dissociating from the problematic narratives of 'developed' and 'underdeveloped' nations.

Features of the Global South

Lower-income Countries: The Global South primarily consists of lower-income countries located in Africa, Asia, and South America.

Geopolitical Background: Geopolitically, these nations have a history of imperialism and colonial rule.

Newly Industrialized Status: Many of these countries are in the process of industrialization and have been described as newly industrialized.

Prominent Countries: Prominent countries within the Global South include Brazil, China, India, Indonesia, and Mexico, known for their large populations and economies.

Significance of the Global South

Resource rich: 'Global South' is significant because of its large population, rich cultures, and abundant natural resources.

Growing Economic Might:

By 2030 it is projected that three of the four largest

economies will be from the Global South, with the order being China, India, the U.S. and Indonesia.

Already the GDP in terms of purchasing power of the Global South-dominated BRICS nations — Brazil, Russia, India, China and South Africa — surpasses that of the Global North's G-7 club. And there are now more billionaires in Beijing than in New York City.

Increasing Political Visibility: This economic shift has gone hand in hand with enhanced political visibility.

Countries in the Global South are increasingly asserting themselves on the global scene — be it China's brokering of Iran and Saudi Arabia's peace deal or Brazil's attempt to push a peace plan to end the war in Ukraine.

Challenges for Consolidation

Debate over Climate Reparations: The ongoing debate over climate reparations has triggered controversy, as some argue that China and India should contribute given their increasing industrialization and historical carbon emissions.

Impact of Russia-Ukraine War: The ongoing Russia-Ukraine war has impacted the least developed countries (LDCs) and prompted them to align more closely with China's Belt and Road Initiative.

Dominance of the US: Despite the shift to a multipolar world, the US

still dominates international affairs, posing challenges for the consolidation of the Global South.

Lack of Infrastructure: Many countries in the Global South lack basic infrastructure, such as roads, ports, and power, which can make it difficult to attract foreign investment and promote economic growth.

Limited Human Capacity: Lack of skilled human resources and lack of education is one of the main challenges for development in the global south.

Political Instability: Political instability in many countries in the Global South can make it difficult to implement long-term development plans and can also create a hostile environment for foreign investment.

Initiatives for the South-South Cooperation

BRICS Forum: BRICS is an association of five major emerging economies that includes Brazil, Russia, India, China, and South Africa. The forum promotes economic cooperation, political dialogue, and mutual support among its member countries.

India, Brazil, and South Africa (IBSA) Forum: It aims to promote cooperation in various areas, including agriculture, trade, investment, science and technology, education, and social development.

Group of 77 (G77): The

G77 is a coalition of developing countries at the United Nations. The group promotes the interests and priorities of its member countries, particularly those in the Global South.

International Day for South-South Cooperation: The United Nations observes the International Day for South-South Cooperation on September 12th each year. It commemorates the adoption of a plan of action by the United Nations General Assembly in 1978 to promote technical cooperation among developing countries.

India as the Voice of Global South

India's own history of colonialism and struggle for independence gives it a deep understanding of the challenges faced by countries in the Global South.

As one of the fastest-growing major economies, India's success story can serve as an inspiration for other developing countries.

India actively participates in various international forums,

including the United Nations, G20, BRICS, and IBSA, where it can articulate the concerns and priorities of the Global South.

India has been a strong proponent of South-South cooperation, emphasizing the importance of collaboration and mutual assistance among developing countries.

India's foreign policy objective of bridging the gap between the Global North and the Global South positions it as a potential mediator and facilitator of dialogue.

What are the Initiatives of India for Global South?

Indian Prime Minister announced five initiatives to support the development of other developing countries in "Voice of Global South Summit" hosted by India in January 2023.

The «Global South Centre of Excellence» will research development solutions and best practices which can be implemented in other developing countries.

The «Global South Science and Technology Initiative» aims to share Indian expertise in areas such as space technology and nuclear energy.

The «Aarogya Maitri» project will provide essential medical supplies to any developing country affected by natural disasters or humanitarian crises.

The «Global South Young Diplomats Forum» will connect young officers of foreign ministries,

The «Global South Scholarships» will provide higher education opportunities in India for students from developing countries.

Conclusion

The rise of the Global South as an economic and political force has challenged traditional power dynamics and brought attention to the changing global order. It reshapes geopolitics, heralding a new era where the Africa, Asia, and Latin America countries play significant roles in shaping the future of international relations.



SOCIETY &

SOCIAL JUSTICE

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MAPUTO PROTOCOL

Why in the News?

There has been some progress on gender equality in African countries thanks to the Maputo Protocol, according to a new report titled as “20 Years of the Maputo Protocol: Where are we now?”

About

The Protocol to the African Charter on Human and Peoples’ Rights on the Rights of Women in Africa, better known as the Maputo Protocol, is an international human rights instrument established by the African Union.

It guarantees comprehensive rights to women including the right to take part in the political process, to social and political equality with men, improved autonomy in their reproductive health decisions, and an end to female genital mutilation.

Adoption

It was adopted by the African Union in Maputo, Mozambique, in 2003 in the form of a protocol to the African Charter on Human and Peoples’ Rights (adopted in 1981, enacted in 1986). It went into effect in 2005.

Ratification

Of the 55 member states, 44 have ratified or acceded to the Protocol on gender equality, becoming one of the most ratified instruments in the AU.

Full domestication of the Protocol provisions into the national legislature has, in many cases, been slow or ineffective. Some African States are yet to ratify or accede to the Protocol.

Mandate:

The Protocol has a target of universal ratification in Africa by 2028. However, with just five years until the target year, there are still 12 countries that are yet to ratify this important legal instrument.

How the Maputo Protocol Advances African Women’s Rights?

The Protocol guarantees extensive rights to African women and girls and includes progressive provisions on:

1. Harmful traditional practices, e.g., child marriage and female genital mutilation (FGM).
2. Reproductive health and rights.
3. Roles in political processes.
4. Economic empowerment.
5. Ending violence against women.

There has been an improvement in women’s participation in the political and decision-making processes. In most of the AU states, women’s representation in Parliament has increased.

Challenges

In two decades (2003-2022), Women’s Labour Force Participation Rate (LFPR) in most African nations as compared to that of men remains low. In 24 countries, the share of women in the labour force has decreased. This means that the women and girls in those countries do not have the same rights as the other women and girls on the continent.

When 54 per cent of the AU states mandate equal remuneration for equal work or fair / just pay as per Article 13 of the Protocol, 46 per cent do not. These are: Botswana, Burkina Faso, Cabo Verde, Cameroon, Central African Republic and DR Congo.

Women’s economic rights and opportunities and access to social welfare and protection are significantly affected by external factors such as conflict, COVID-19, the pandemic and climate change.

Up to 10 million more girls are at risk of

becoming child brides by 2030.

NITI AAYOG REPORT SAYS 13.5-CR. PEOPLE LIFTED OUT OF MULTIDIMENSIONAL POVERTY

India has registered a significant decline of 9.89 percentage points in the number of multidimensionally poor, from 24.85% in 2015-16 to 14.96% in 2019-2021, says the “National multidimensional poverty index: a progress review, 2023”, released by NITI Aayog recently.

Findings of the report

A record 13.5 crore people moved out of multidimensional poverty between 2015-16 and 2019-21.

India has registered a significant decline of 9.89 percentage points in number of India's multidimensionally poor from 24.85% in 2015-16 to 14.96% in 2019-2021.

The rural areas witnessed the fastest decline in poverty from 32.59% to 19.28%. During the same period, the urban areas saw a reduction in poverty from 8.65% to 5.27%.

Uttar Pradesh registered the largest decline in number of poor with 3.43 crore people escaping multidimensional poverty.

Providing multidimensional poverty estimates for the 36 States and Union Territories and 707 Administrative Districts, the Report states that the fastest reduction in the proportion of multidimensional poor was observed in the States of Uttar Pradesh, Bihar, Madhya Pradesh, Odisha, and Rajasthan.

Between 2015-16 and 2019-21, the MPI value has nearly halved from 0.117 to 0.066 and the

intensity of poverty has reduced from 47% to 44%, thereby setting India on the path of achieving the SDG Target 1.2 (of reducing multidimensional poverty by at least half) much ahead of the stipulated timeline of 2030.

It demonstrates the Government's strategic focus on ensuring sustainable and equitable development and eradicating poverty by 2030, thereby adhering to its commitment towards the SDGs.

National Multidimensional Poverty Index (MPI)

The National MPI measures simultaneous deprivations across the three equally weighted dimensions of health, education, and standard of living that are represented by 12 SDG-aligned indicators.

These include nutrition, child and adolescent mortality, maternal health, years of schooling, school attendance, cooking fuel, sanitation, drinking water, electricity, housing, assets, and bank accounts. Marked improvement is witnessed across all the 12 indicators.

The Index is based on the latest National Family Health Survey [NFHS-5 (2019-21)].

It builds on the Baseline Report of India's National MPI launched in November 2021. The broad methodology followed is in consonance with the global methodology.

GUIDELINES FOR PALLIATIVE CARE

The government has recently issued a new set of operational guidelines for the prevention and control of non-communicable diseases (NCDs) in India. However, these guidelines have been criticized by some experts for neglecting the aspect of palliative care for people with chronic and life-limiting illnesses other than cancer.

Key Highlights of the guidelines

India is home to nearly 20% of the world's population, with the majority of its inhabitants living in rural regions.

Alongside a growing population, India has witnessed a significant increase in the prevalence

of lifestyle-related non-communicable ailments.

Each year, approximately 1.4 million individuals in India are diagnosed with cancer, while conditions like diabetes, hypertension, and respiratory diseases are also becoming more prevalent.

Consequently, these illnesses necessitate palliative care at some point during their progression.

What are the gaps in the guidelines?

Mention palliative care in synonymy with cancer only: However, the need for palliative care was higher for non-cancer illnesses.

Cancer is just one of 20 common health conditions that require palliative care.

No mention of home-based palliative care services: Since most patients who need palliative care are suffering from debilitating diseases, home-based care forms the ideal mode of healthcare delivery.

However, palliative care service delivery starts only from the district hospital in the revised guidelines.

No mention of paediatric palliative care: The guidelines skipped an opportunity to bring focus on children suffering from chronic diseases.

Linking of 11 programmes (including NPPC) to promote convergence: The mechanisms of the linkage with a programme (NPPC) that has not yet been fully implemented are unclear.

What is palliative care?

Palliative care is the branch of medicine focusing on improving the quality of life and preventing suffering among those with life-limiting illnesses like heart failure, kidney failure, certain neurological diseases, cancer, etc.

Often misinterpreted as end-of-life care, it focuses on the person as a whole, not just the disease.

Objectives of palliative care:

To identify patients at risk of over-medicalisation at the expense of quality of life

and financial burden on the family.

To address the physical, psychological, spiritual, and social domains of the health of people suffering from life-limiting diseases.

It also includes bereavement/grieving support for the caregivers in case of the death of the patient.

Need for Palliative Care:

Palliative care in India has largely been available at tertiary healthcare facilities in urban areas.

Due to this skewed availability of services, it is accessible to only 1-2% of the estimated 7-10 million people who require it in the country.

Despite post-independence India's significant endeavours to enhance the well-being of its populace, such as the implementation of a three-tier health system, various national health programs and schemes, and the introduction of the Ayushman Bharat Health Insurance Scheme, a substantial number of individuals continue to face financial hardships.

Each year, approximately 55 million people in India are pushed into poverty as a result of expenses related to healthcare.

Significance of palliative care:

It respects patient autonomy and preferences and requires end-of-life conversations to ascertain the wishes of the person who is dying and those of the family.

It provides holistic care that addresses the physical, psychological, social and spiritual aspects of suffering.

It involves a multidisciplinary team of professionals, including doctors, nurses, social workers, counsellors, volunteers and others.

It can be delivered in various settings, such as hospitals, hospices, home-based care, community-based care and mobile units.

It reduces the burden of suffering and improves the quality of life for millions of people who are living with incurable or chronic diseases.

It enhances the dignity and comfort of the dying and supports the bereaved families.

It reduces the unnecessary use of costly and futile interventions that may prolong suffering or cause harm.

It contributes to the development of a compassionate and humane society that values life and death.

Status of Palliative Care in India

Palliative care in India is primarily available in urban areas and at tertiary healthcare facilities. Only 1-2% of the estimated 7-10 million people in India who need palliative care have access to it.

Palliative Care Programme in India:

Although no separate budget is allocated for the implementation of the National Palliative Care Program, palliative care is part of the 'Mission Flexipool' of National Health Mission (NHM).

National Programme for prevention & Control of Cancer, Diabetes, Cardiovascular Diseases & stroke (NPCDCS) that was launched in 2010 and later revised as National Programme for Prevention & Control of Non-Communicable Diseases (NP-NCD), also aims to address the increasing burden of non-communicable diseases in India, aims to provide promotive, preventive, and curative care across all levels of healthcare.

Challenges:

There is a lack of awareness and understanding about palliative care among the general public and healthcare professionals.

There is a shortage of dedicated palliative care centers, hospices, and trained healthcare professionals in India.

Paediatric palliative care has also been neglected for a long time. About 98% of children facing moderate to severe suffering during their end of life reside in lower and middle-income countries like India.

This could be due to diseases like cancer, birth defects, neurological conditions, etc.

The revised operational guidelines of NP-NCD have also not addressed this issue.

The implementation of this program has been slow and uneven, resulting in limited progress in expanding palliative care services.

What are Non-Communicable diseases (NCDs)?

NCDs are the result of a combination of genetic, physiological, environmental and behaviours factors which are also known as chronic diseases tend to be of long duration. The main types of NCDs are cardiovascular diseases (like heart attacks and stroke), cancers, chronic respiratory diseases (such as chronic obstructive pulmonary disease and asthma) and diabetes.

Way Ahead

National health systems should incorporate palliative care into the continuum of care for persons with chronic and life-threatening disorders.

Early palliative care not only improves patients' quality of life, but it also lowers needless hospitalizations and usage of health-care resources.

Palliative care must be given in conformity with the principles of universal health coverage.

Financial and social protection systems must take into account the human right to palliative care for impoverished and vulnerable populations.

Since most patients who need palliative care are suffering from debilitating diseases, home-based care forms the ideal mode of healthcare delivery.

Palliative care must be delivered at least at the health and wellness centre and sub-center level.

The World Health Organization recommends the use of morphine consumption per capita to assess morphine access for palliative care services. This indicator allowed us to compare the progress of palliative care services in India with other countries.

NATIONAL SICKLE CELL ANAEMIA ELIMINATION MISSION

Why in news?

The PM will launch (today) the 'National Sickle Cell Elimination Mission' today with the target to eradicate the disease by 2047.

From where?

The mission announced in the Union Budget 2023 will be launched from a public programme in Shahdol in Madhya Pradesh.

MP is a state with the highest tribal population in terms of absolute numbers as per Census 2011 and also has the highest burden of sickle cell anaemia.

Background:

Sickle cell disease is a genetic blood disease which affects the whole life of an affected patient.

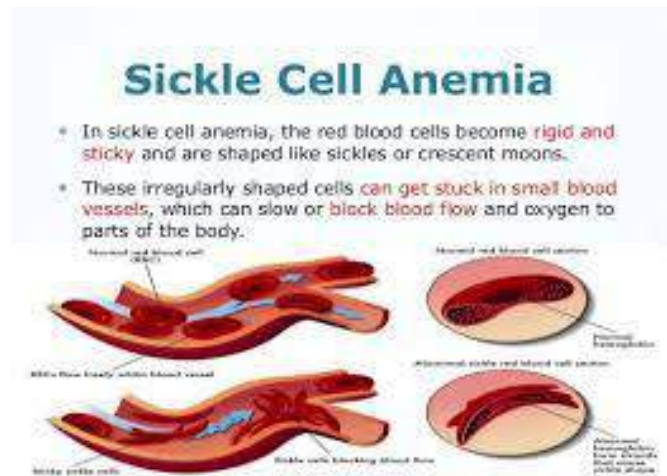
It is more common in the tribal population of India but occurs in non-tribals too.

It not only causes anaemia but also pain crises, reduced growth, and affects many organs like lungs, heart, kidneys, eyes, bones and the brain.

How vulnerable India is?

Globally, India has the largest density of tribal population [Census 2011: Tribal population - 8.6% of the total population of India/ 67.8 million].

Sickle cell disease is one of the 10 special problems in tribal health that affect the



tribal people disproportionately, thus making intervention necessary.

National Sickle Cell Anaemia Elimination Mission:

Mission: To improve the care of all Sickle Cell Disease patients for their better future and to lower the prevalence of the disease through a multi-faced coordinated approach towards screening and awareness strategies.

Vision: Eliminate sickle cell disease as a public health problem in India by 2047.

AN AVOIDABLE CONTROVERSY OVER SAMPLE SURVEYS

Some of the surveys such as the National Sample Survey, National Family Health Survey and Periodic Labour Force Survey (PLFS) underestimates the proportion of the urban population or overestimates the rural population from 2011-12 till 2019-21 which raised doubts the soundness of data collection procedures.

Arguments against about India's

statistical system

The sampling designs of the NSS or the PLFS do not specifically aim to estimate the total number of households or population. Instead, their primary purpose is to estimate the major socio-economic indicators.

The estimates of households or population

size are considered auxiliary information. Data users appropriately adjust the survey-based estimates for rural and urban areas separately by using projected population figures derived from the Census.

The estimates of the number of households derived from the NSS align closely with the Census-based figures for households. The writer's accusation about non-representative samples due to outdated sampling frames becomes less relevant for two main reasons.

Firstly, these surveys primarily rely on the population census lists of villages and urban blocks for sampling. It ensures comprehensive coverage.

Secondly, for sampling urban blocks, the NSS and PLFS utilise the latest Urban Frame Survey (UFS) blocks, covering all towns in the country. This helps address any urbanisation that occurred after the census through State government notifications.

Regarding the classification of geographical areas as rural or urban, all these surveys include census towns as part of the urban sampling frame.

Some households do not share information in the survey. As household income increases, the response rate tends to decline. This challenge is encountered in similar surveys worldwide.

To address this issue, the survey methodology recommends replacing non-responsive households with other households that are as similar as possible.

However, it is important to acknowledge

that the substituted households may have relatively lower income levels. It could introduce some downward bias in the overall estimates.

A majority of the welfare programmes of the government are targeted towards households in the lower income brackets. So, a very low non-response rate in these surveys is not likely to have a serious impact on the overall household level indicators.

Suggestions for effective data collection

Sample design and data quality are two distinct components of a survey. Sample design typically involves careful selection using scientific methods.

To remove the concerns about the representation of affluent households, there is a need to create a list of such households through alternative sources.

Incorporate a representative sample of them alongside the conventional survey of the rest of the population should be done.

Evaluating the coverage of the UFS frame is important to overcome the issue of underestimation of the urban population. Establishing a methodological study unit for further improvements in survey design is also a positive step.

To enhance data quality, strengthening the training of field personnel, conducting field inspections, concurrent data validation, and implementing effective publicity measures are other essential steps.

NARI ADALAT: WOMEN-ONLY COURTS FOR ALTERNATIVE DISPUTE RESOLUTION

Why in News?

The Centre is launching a unique initiative of setting up women-only courts - Nari Adalats - at the village level as an alternate dispute resolution forum for issues like domestic violence, property rights and countering the patriarchal system.

About

It is the process by which disputes between the parties are settled or brought to an amicable result without the intervention of Judicial Institution and without any trial.

ADR offers to resolve all types of matters including civil, commercial, industrial and family etc., where people are not able to start any type

of negotiation and reach a settlement.

Generally, ADR uses a neutral third party who helps the parties to communicate, discuss the differences and resolve the dispute.

It is a mechanism of dispute resolution that is non-adversarial - working together cooperatively to reach the best resolution for everyone. It can be instrumental in reducing the burden of litigation on courts.

Types of ADR:

Arbitration: The dispute is submitted to an arbitral tribunal which makes decision (an “award”) on the dispute that is mostly binding on the parties.

Conciliation: A non-binding procedure in which an impartial third party, the conciliator, assists the parties to a dispute in reaching a mutually satisfactory agreed settlement of the dispute.

Mediation:

In mediation, an impartial person called a “Mediator” helps the parties try to reach a mutually acceptable resolution of the dispute.

The mediator does not decide the dispute but helps the parties communicate so they can try to settle the dispute themselves.

Negotiation: A non-binding procedure in which discussions between the parties are initiated without the intervention of any third party with the object of arriving at a negotiated settlement to the dispute.

Lok Adalat: An interesting feature of the Indian legal system is the existence of voluntary agencies called Lok Adalats (Peoples’ Courts).

What is Lok Adalat?

About: It is a form of party-based (parties involved in the dispute) justice in which people and judges work together to resolve problems by discussion, persuasion and mutual consent, in order to provide affordable and timely justice.

Legal backing: Lok Adalats have been given statutory status under the Legal Services Authorities Act, 1987.

Powers:

Lok Adalats shall have jurisdiction over -
Any case pending before the court.

Any matter which is falling within the jurisdiction of and is not brought before any court (pre-litigation stage).

The award (decision) made by the Lok Adalats is deemed to be a decree of a civil court.

Such award is final and binding on all parties and no appeal against such an award lies before any court of law.

There is no court fee payable when a matter is filed in a Lok Adalat.

About the Nari Adalat [Women’s Court]:

The scheme would be run by the Ministry of Women and Child Development under the Sambal sub-scheme of Mission Shakti, which is dedicated to strengthening women’s safety, security and empowerment.

It would be launched on a pilot basis in 50 villages each in Assam and J&K and would be extended to the rest of the country over the next six months.

The implementation process will be done in collaboration with the Ministry of Panchayati Raj, the Ministry of Rural Development and Common Service Centers operated by the MeitY.

The scheme takes inspiration from the Parivarik Mahila Lok Adalats [People’s Court of Women] which were run by the National Commission for Women (NCW) till 2014-15.

Other Aspects of Nari Adalats:

The Nari Adalat of each village would have 7-9 members/Nyaya Sakhis.

Half of which would be the elected members of the gram panchayat

The other half are women with social standing like teachers, doctors and social workers - who would be nominated by the villagers.

The head of Nari Adalat called the Mukhya

Nyaya Sakhi [chief legal friend] will be chosen among the Nyaya Sakhis, generally for a six-month term.

The Nari Adalat though does not hold any legal status, has its primary focus on reconciliation, grievance redressal and creating awareness of rights and entitlements.

Significance of Nari Adalats:

The Nari Adalat will not only address individual cases but also raise awareness about social schemes under the government while

collecting valuable feedback to enhance the effectiveness of these initiatives.

It will cater to all women and girls who require assistance or have grievances within the local community.

WOMEN'S REPRODUCTIVE AUTONOMY AS THE NEW CATCHWORD

This year's World Population Day theme, i.e., 'Unleashing the power of gender equality: Uplifting the voices of women and girls to unlock our world's infinite possibilities', could not be more apt for India. When we unlock the full potential of women and girls, encouraging and nurturing their desires for their families and themselves, we galvanise half the leadership, ideas, innovation, and creativity available to societies.

How is the World population day theme relevant to India?

The theme of the World Population Day 2023 is, 'Unleashing the power of gender equality', resonates powerfully with India.

When we empower women and girls, we harness a wealth of leadership, creativity, and innovation. In India, women-led development across various sectors must prioritize reproductive autonomy.

What is meant by reproductive autonomy?

Reproductive autonomy refers to an individual's right and ability to make informed decisions regarding their reproductive health and choices without interference, coercion,

or discrimination.

It encompasses the freedom to decide whether or when to have children, the number of children to have, and the spacing between pregnancies.

Reproductive autonomy includes access to comprehensive reproductive healthcare services, including family planning methods, contraceptives, sexual education, prenatal care, safe abortion services, and support for reproductive health decisions.

India's Progress on Population Front

On World Population Day (July 11), India deserves to be commended for its family planning initiatives, where despite the many challenges, the aim is to provide an increasingly comprehensive package of reproductive health services to every potential beneficiary — with a focus on the provision of modern short and long-acting reversible contraceptives, permanent methods, information, counselling, and services, including emergency contraception.

India's commitment towards the Family Planning 2030 partnership includes expanding its contraceptive basket.

The inclusion of new

contraceptive options advances women's rights and autonomy, leading to a spike in modern contraceptive prevalence.

Access to timely, quality and affordable family planning services is crucial because unspaced pregnancies may have a detrimental influence on the newborn's health as well as major effects on maternal mortality, morbidity, and healthcare expenditure.

The Indian government's health, population and development programmes have shown steady progress.

Life expectancy at birth has significantly increased in the country over the years. Compared to the 1990s, Indians are currently living a decade longer. In terms of maternal health, India has made impressive strides.

The current maternal mortality rate is 97 (per 100,000 live births in a year), down from 254 in 2004.

Another triumph of these programmes is gender empowerment.

Since the beginning of 2000, India has cut the number of child marriages by half.

Teen pregnancies, too, have dramatically decreased.

Access to vital services, including health, education, and nutrition, has also improved.

Advantages of Physical/Reproductive Autonomy

Advancing gender equality is not just about women but also populations as a whole.

In ageing societies that worry about labour productivity, achieving gender parity in the workforce is the most effective way to improve output and income growth.

In countries experiencing rapid population growth, women's empowerment through education and family planning can bring enormous benefits by way of human capital and inclusive economic development.

More importantly, the focus on gender equality helps shift the focus away from the notion of 'population stabilization' to 'population dynamics' based on reproductive choices people make.

India has a significant opportunity to advance gender equality and grow its economy. Raising the women's labour force participation by 10 percentage points might account for more than 70% of the potential GDP growth opportunity (\$770 billion in additional GDP by 2025).

What are the Challenges?

Lack of physical autonomy:

Despite the progress made, many women in India continue to lack physical autonomy.

Limited decision-making power: According to the National Family Health Survey, only %10 of women in India are independently able to make decisions about their own health.

Acceptance of marital violence:

The survey also reveals that %11 of women believe that marital violence is acceptable if a woman refuses to have sex with her husband.

Unplanned pregnancies:

Nearly half of all pregnancies in India are unplanned, highlighting a challenge in ensuring effective family planning services and education.

Ongoing gender disparities:

While progress has been made, there are persistent gender disparities and inequalities that need to be addressed to achieve true gender equality.

Societal attitudes:

Attitudes and societal norms that perpetuate gender-based discrimination and violence continue to pose challenges to women's empowerment.

Opportunities for India

India has a significant opportunity to advance gender equality, which can have far-reaching positive effects on various aspects of society, including economic growth, social progress, and inclusive development.

By increasing women's labour force participation by 10 percentage points, India could unlock significant economic growth potential. It is estimated that this could contribute to more than 70% of the potential GDP growth, amounting to an additional \$770 billion by 2025.

Empowering women through education and family planning can lead to the accumulation of human capital, which is crucial for sustainable development and economic progress.

By enabling women to participate fully in various sectors, including science, technology, agriculture, education, and healthcare, India can tap into the immense talent, ideas, and innovation that women bring to the table.

India has the opportunity to formulate and implement legislation and policies that empower women, girls, and marginalized individuals, enabling them to assert their rights and make life-changing personal decisions.

Promoting gender equality and empowering women can contribute to inclusive economic development by ensuring equal opportunities and participation for all segments of society.

By focusing on reproductive choices and ensuring reproductive autonomy for individuals, India can shape its population dynamics in a way that respects individual rights and choices, while

also addressing demographic challenges.

Way forward

Focusing on gender equality-centred growth, rights, and choices promises to help all achieve their aspirations.

Gender equality can be ensured by making investments in a woman's life at every stage, from childbirth to adolescence to maturity.

Engaging with women, girls and other marginalised people and formulating legislation and policies that empower them to assert their rights and take life-changing personal decisions are the first steps in this direction.

Gender-just approaches and solutions are the fundamental building blocks of a more prosperous India, and indeed the world.

Economic Development & Agriculture

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GEO-CODING

Recently, the Goods and Services Tax Network (GSTN) made the geocoding functionality live for all states and union territories.

Why in news?

There are concerns over fake registrations and fraudulent availment of input tax credit under the Goods and Services Tax (GST) regime.

About Geo-coding:

It converts an address or description of a location into geographic coordinates.

It has been introduced to ensure the accuracy of address details in GSTN records and streamline the address location and verification process.

GST Network has already geocoded 1.8 crore principal places of businesses.

The functionality is available for normal, composition, SEZ units, SEZ developers, input service distributor and casual taxpayers who are

active, cancelled, and suspended.

This is a one-time activity and once submitted, revision in the address is not allowed.

The functionality will not be visible to the taxpayers who have already geocoded their address through new registration or core amendment.

Key Facts about Goods and Services Tax Network (GSTN):

It is a nonprofit non-government company registered under Section 8 of the Companies act, 2013.

It will provide shared IT infrastructure and service to both central and state governments including tax payers and other stakeholders.

The private players hold 51% equity in the GSTN and the Centre and State governments together holds 49% equity in GSTN.

VARIABLE RATE REVERSE REPO AUCTIONS (VRRRS)

Why in news?

The Reserve Bank of India (RBI) pressed ahead with variable rate reverse repo auctions (VRRRs) to suck out surplus liquidity from the banking system since June 30, in keeping with its monetary policy stance to remain focussed on withdrawal of accommodation.

Variable rate reverse repo auctions (VRRRs)

The Reserve Bank of India (RBI) uses various ways to increase or decrease liquidity in the banking system.

Repo rate is the rate at which the central bank gives loans to commercial banks against government securities.

Reverse repo rate is the interest that RBI pays to banks for the funds. Variable rate reverse repo(VRRR) is a sub-type of reverse repo.

VRRR is the rate at which the Reserve Bank

of India (RBI) borrows money from banks for a variable period of time, usually ranging from 14 days to 56 days.

It is one of the tools used by the RBI to manage liquidity in the banking system and to influence short-term interest rates.

The VRRR auction is conducted by the RBI on a regular basis to absorb excess liquidity from the banks.

The banks can bid for the amount and the rate at which they are willing to lend money to the RBI. The RBI decides the cut-off rate and the amount based on the bids received.

The banks that have placed their bids at or above the cut-off rate are allotted funds. The RBI pays interest to the banks for lending money to it. The interest rate is determined by the market forces of demand and supply of liquidity.

Implications of VRRR auctions

Money market - The VRRR auction affects the overnight money market rates, such as call money, CBLO and market repo rates. These rates tend to move in tandem with the VRRR rates. As the VRRR rates increase, the money market rates also increase, reflecting tighter liquidity conditions.

Bond market - The VRRR auction affects the bond yields, especially at the short end of the yield curve. As the VRRR rates increase, the bond yields also increase, reflecting higher borrowing costs and lower demand for bonds. This also affects

the transmission of monetary policy signals to the bond market.

Banking sector - The VRRR auction affects the profitability and liquidity management of banks. As the VRRR rates increase, banks earn higher returns on their excess funds parked with the RBI. However, this also reduces their availability of funds for lending and investment activities. Banks have to balance their liquidity needs and returns while participating in the VRRR auctions.

FARMER'S DISTRESS INDEX

Why in the News?

The Central Research Institute for Dryland Agriculture (CRIDA) in India has developed an **early warning system called the "farmers' distress index"** to address agrarian distress and prevent its spread.

The index aims to anticipate and mitigate the impact of crop loss, income shocks, and extreme climate events on farmers.

Methodology for Tracking Distress

Local newspapers, news platforms, and social media will be **monitored for reports on farmers' distress**, such as debt repayment issues, suicides, pest attacks, drought, floods, and migration.

Telephonic interviews will be conducted with marginal and small farmers to gather information using 21 standardised questions.

Seven indicators will be used to assess distress, including exposure to risks, debt, adaptive capacity, landholding and irrigation facilities, mitigation strategies, triggers for immediate distress, and socio-psychological factors.

Farmers' Distress Index

The index will assign values ranging from 0 to 1 to indicate the degree of distress: 0-0.5 for low distress, 0.5-0.7 for moderate distress, and above 0.7 for severe distress.

If the index indicates severe distress, it will

identify the component that contributes most to the farmers' distress among the seven indicators.

The index is being developed as a mobile or desktop application.

Dissemination and Utilisation of the Index

Once completed, ***the index will be shared with the central government***, state governments, agriculture departments, rural development departments, agriculture universities, non-profits, and civil society organizations.

These agencies can use the index ***to implement interventions based on the severity of distress***, such as direct money transfer, mid-term release of crop insurance claims, employment under the rural employment guarantee scheme, and enhanced rationing under the public distribution system.

The ***index will inform targeted approaches, such as addressing gender-based distress or improving women's incomes through existing schemes.***

Challenges of the agricultural sector

The major challenges of the agriculture sector are:

- Food Sufficiency but Nutrition Deficiency.
- High import of edible oil and oilseeds.
- Yield plateaus.

- Degrading soil, Water stress.
- Inadequate market infra/linkages.
- Unpredictable, volatile prices.
- Post-harvest losses, wastages.
- Lack of crop planning due to information asymmetry.
- Lack of Agricultural Extension Services
- Inadequate Rural Infrastructure
- Lack of Diversification and Market Linkages
- Policy Implementation Gaps
- Social and Gender Inequities
- Global Trade Dynamics

Causes of Farmers' Distress

- Climate Change and Natural Disasters
- Dependence on Monsoons
- Land Degradation and Soil Health
- Lack of Irrigation Facilities
- Farming Input Costs and Indebtedness
- Market Volatility and Price Fluctuations
- Lack of Access to Credit and Financial Services
- Lack of Crop Insurance and Risk Mitigation
- Fragmented Land Holdings
- Lack of Technological Advancements
- Inadequate Storage and Post-Harvest Infrastructure
- Inequitable Land Tenure and Lack of Land Reforms

Way Forward:

Sustainably improving agricultural productivity to meet increasing demand

- Ensuring a sustainable natural resource base
- Addressing climate change and intensification

of natural hazards

Making food systems more efficient, inclusive and resilient

Improving income earning opportunities in rural areas and addressing the root causes of migration

Building resilience to protracted crises, disasters and conflicts Preventing transboundary and emerging agriculture and food system threats

Addressing the need for coherent and effective national and international governance

Measures Taken by Indian Government

- Pradhan Mantri Kisan Samman Nidhi (PM-KISAN)
- Crop Insurance Schemes - PM Fasal Bima Yojana
- PM KUSUM
- Minimum Support Price (MSP)
- Soil Health Card Scheme
- Agricultural Extension Services
- Infrastructure Development - Development of cold storages
- Farm Mechanization
- Priority sector loans in the banking sector
- Watershed Management and Irrigation
- Research and Development in Agriculture - Development of nano urea, Krishi Vigyan Kendras
- Market Reforms in Agriculture
- National Digital Agricultural ecosystem - IDEA

IMD agrometeorological advisory services - Medium-Range Weather Forecasts- Impact-Based Forecasts (IBFs)- Rainfall Monitoring and Alerts-SMS-Based Alerts - Multichannel Dissemination- Upgradation of Forecasting Capabilities

BHARATNET PROJECT

Context:

Union Cabinet has accorded approval for the revised implementation strategy of BharatNet through Public-Private Partnership (PPP) mode in 16 States of the country.

The strategy includes:

The government will provide Rs 19,041 crore as viability gap funding for the project.

BharatNet will now extend up to all inhabited villages beyond the gram panchayats (GPs) in the said states.

It includes creation, upgradation, operation, maintenance and utilisation of BharatNet by the concessionaire who will be selected by a competitive international bidding process.

Significance:

The PPP model will leverage private sector efficiency for operation, maintenance, utilisation and revenue generation, and is expected to result in a faster rollout of BharatNet.

Extension of reach of BharatNet to all inhabited villages with reliable, quality, high speed broadband will enable better access of e-services offered by various central and state government agencies.

It will also enable online education, telemedicine, skill development, e-commerce and other applications of broadband.

About BharatNet:

BharatNet Project was originally launched in 2011 as the National Optical Fibre Network (NOFN) and renamed as Bharat-Net in 2015.

It seeks to provide connectivity to 2.5 lakh Gram Panchayats (GPs) through optical fibre.

It is a flagship mission implemented by Bharat Broadband Network Ltd. (BBNL).

The objective is to facilitate the delivery of e-governance, e-health, e-education, e-banking, Internet and other services to rural India.

The larger vision of the project is:

To establish a highly scalable network infrastructure accessible on a non-discriminatory basis.

To provide on demand, affordable broadband connectivity of 2 Mbps to 20 Mbps for all households and on demand capacity to all institutions.

To realise the vision of Digital India, in partnership with States and the private sector.

Implementation:

The project is a Centre-State collaborative project, with the States contributing free Rights of Way for establishing the Optical Fibre Network.

The entire project is being funded by Universal service Obligation Fund (USOF), which was set up for improving telecom services in rural and remote areas of the country.

UREA GOLD

Context:

Prime Minister recently launched “Urea Gold”, a new variety of Urea, during an event in Rajasthan’s Sikar.

About Urea Gold:

It is a new variety of Urea coated with Sulphur.

It is being introduced to address the Sulphur deficiency in soil and save input costs for the farmers.

Urea Gold surpasses the existing Neem-coated urea in terms of both economic viability and efficiency.

How Urea Gold Is Better Than Others?

Sulphur-coated urea facilitates a gradual release of nitrogen, thereby enhancing its availability and uptake by crops.

The inclusion of humic acid in Urea Gold further extends its lifespan as a fertilizer.

This product not only substitutes traditional urea consumption but also reduces overall fertilizer usage.

According to the report, 15 kg of Urea Gold provides comparable benefits to 20 kg of conventional urea, making it a more efficient and effective choice for farmers.

What is Neem-coated urea?

Urea is a commonly used nitrogen-based fertilizer that provides essential nutrients to plants

to promote healthy growth.

Neem-coated urea is a specialized form of urea fertilizer that has been coated with neem oil.

Benefits:

The neem coating on urea slows down the release of nitrogen into the soil. This controlled release helps reduce nitrogen leaching and volatilization, leading to improved nitrogen use efficiency by plants.

It would bring down the quantity of urea per acre and consequent reduction in input cost to farmers.

The emission of nitrous oxide is also brought down significantly.

Neem oil, derived from the neem tree (*Azadirachta indica*), has natural pesticidal properties.

RAJASTHAN PLATFORM BASED GIG WORKERS BILL, 2023

Why in the News?

On July 24, the Rajasthan government passed the Rajasthan Platform Based Gig Workers (Registration and Welfare) Bill, 2023. It is the first legislation of its kind in India outlining welfare schemes for the State's approximately three lakh gig workers.

About the Bill

The Bill applies to “**aggregators**” (digital intermediaries connecting buyers and sellers) and “**primary employers**” (individual or organisations engaging platform-based workers).

Welfare Board

The Bill proposes a **Welfare Board comprising State officials, five representatives each from gig workers and aggregators, and two others from civil society.**

The Board will set up a welfare fund, register platform-based gig workers, aggregators and primary employers



It will facilitate **guarantee of social security to platform-based gig workers and to provide for matters connected therewith or incidental thereto.**

The Board will maintain a database of companies and workers and each worker will receive a unique ID which “shall be valid in perpetuity.”

Social Security and Welfare Fund

According to the Bill, the Board will create



a “Social Security and Welfare Fund” comprising contributions made by individual workers, State government aids, other sources and a ‘welfare cess’ — a cut from each transaction — which the aggregator is required to pay.

The rate of the welfare cess will not exceed 2% nor fall short of 1% of the value of “each transaction,” and aggregators are required to submit the amount within the first five days of a month.

Are workers’ rights recognised?

Under existing labour laws, gig workers who are named ‘partners’ by platforms are not ‘employees’ because theirs is not a “fixed term of employment” — marked by providing exclusive service to one provider for a specified duration.

The Code on Social Security, passed in 2020 and yet to be implemented, carried “restrictive criteria” about eligibility which are done away with in the Rajasthan Bill.

The Bill states any person has the right to

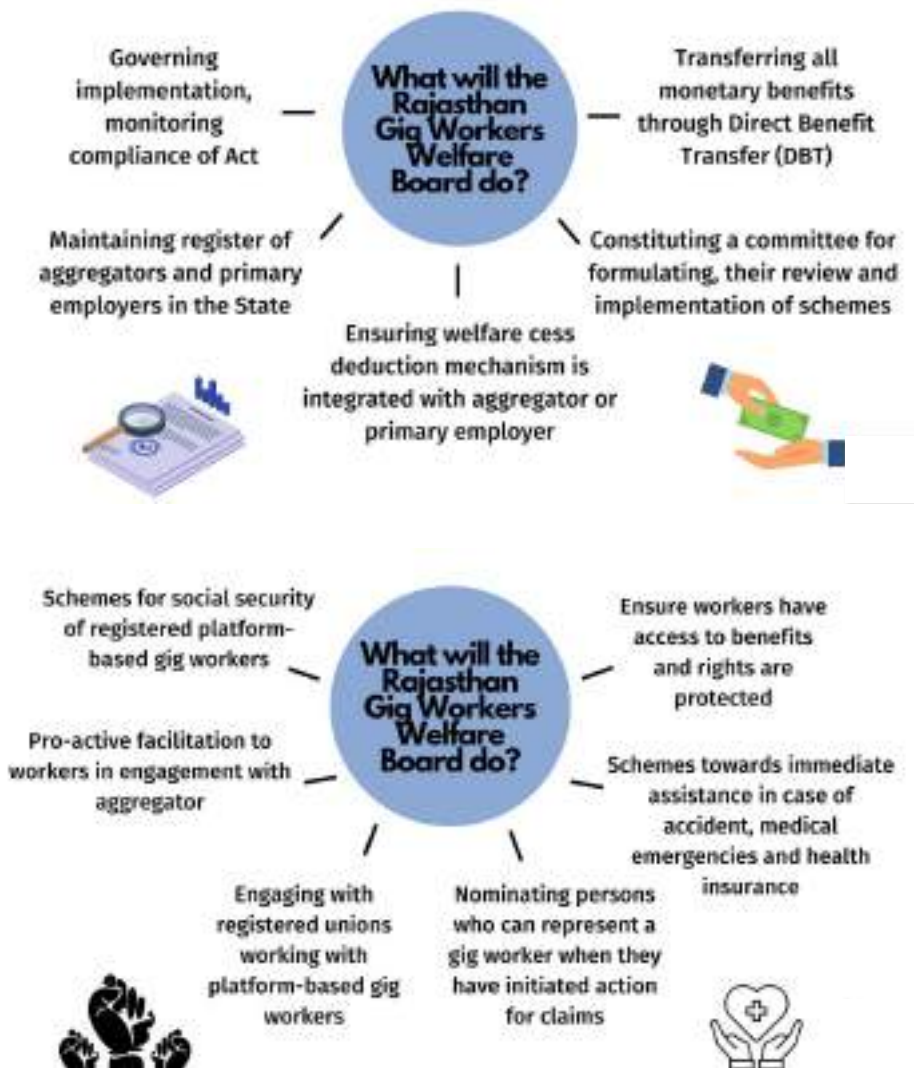
be registered the minute they join an app-based platform, regardless of the duration of work or how many providers they work for.

The Welfare Board is expected to formulate schemes “for social security,” listing only accidental insurance and health insurance, and “other benefits concerning health, accident and education as may be prescribed.”

Another responsibility of the Welfare Board, unions say, should be to assist workers in negotiating contracts by developing standard formats and principles for aggregators.

What about workers’ grievances?

Gig workers “have an opportunity to be heard for any grievances” with “entitlements, payments and benefits provided under the Act.” As Per



Section 15, a worker can file a petition physically before an officer or online through the web portal.

The employer can object to the order within 90 days before an 'Appellate Authority'. Several reports have documented ineffective and unresponsive redressal mechanisms. Urban Company workers are currently protesting the "arbitrary" blocking of their accounts and a lack of support.

Duties of the Aggregators

An aggregator's duties under the Bill include:

Depositing welfare cess on time

Updating the database of gig workers, and

Documenting any variations in numbers within one month of such changes.

If they fail to comply, they will be fined up to ₹5 lakh for the first offence and ₹50 lakh for further violations; primary employers will pay up to ₹10,000 for the first offence and ₹2 lakh for subsequent violations.

SMALL SAVING SCHEMES: GOVT TWEAKS RULES, ALLOWS NRIS AS NOMINEES

Why in news?

A Non-Resident Indian (NRI) can now be made a nominee for government saving schemes such as PPF, NSC and post offices savings, said the Finance Ministry in a notification.

About

These changes are part of list of amendments to the Government Savings Promotion General Rules, as notified by the Finance Ministry.

The rules cover various schemes provided under Government Savings Promotion Act, 1873 such as Public Provident Fund (PPF), National Saving Certificate (NSC), Sukanya Samridhhi, Senior Citizens Savings Scheme, Mahila Samman Nidhi Post Office Time Deposits, Kisan Vikas Patra, and Post Office Monthly Income Scheme.

Mahila Samman Savings Scheme

Mahila Samman Savings Scheme is a government supported savings scheme introduced exclusively for women. This is a one-time savings scheme where Mahila Samman Savings Certificate will be made available for two-year duration. One can open multiple accounts, but that requires a minimum gap of three months between the existing account and the new one.

The scheme offers a one-time opportunity for women to undertake this secured investment with promising returns. It aims to support women as

the savings will benefit them financially.

Mahila Samman Savings Scheme eligibility:

The Mahila Samman Savings Scheme is exclusively available for women. It allows every woman and girl to invest in the scheme. While any girl or woman above 18 years of age can invest themselves, in case of minors, a guardian (male or female) can open the account on behalf of the girl.

The Mahila Samman Savings Scheme offers a fixed interest rate of 7.5 per cent annually for two years. The interest is compounded quarterly and then credited to the account.

One can invest at a minimum of Rs 1,000 under this scheme or a cumulative deposit can be done up to Rs 2 lakh in multiples of Rs 100.

The Mahila Samman Savings Certificate Scheme is a fixed investment scheme for two-year period. However, it also provides the women investors with partial withdrawal as an emergency assistance. A partial withdrawal of upto 40 per cent of the total deposit amount is allowed after one year from the date of the opening of the account.

Determination of rates of Small Savings Scheme

Interest rates on small savings schemes are reset on a quarterly basis, in line with the movement in benchmark government bonds of similar maturity. The rates are reviewed

periodically by the Ministry of Finance.

The Shyamala Gopinath panel (2010) constituted on the Small Saving Scheme had

suggested a market-linked interest rate system for small savings schemes.

REGIONAL RURAL BANK MERGERS EXEMPTED FROM CCI APPROVAL

Why in news?

The government has decided to exempt mergers of regional rural banks (RRBs) ordered by it from the requirement of clearance from the Competition Commission of India, a senior official said, an indication that the next round of consolidation of such lenders may be in the offing

About

A similar relief was granted by the corporate affairs ministry in 2017 for a five-year period.

The latest move comes at a time when the government has stepped up focus on *modernising the RRBs in a bid to spur credit growth* in remote areas and boost economic activities.

It had earlier *favoured amalgamation of RRBs* to enable them to minimise their expenses, shore up the capital base, optimise the use of technology and raise their exposure.

The number of RRBs fell to 43 in 2021-22 from 196 in 2004-05, following a series of amalgamations.

The gross non-performing assets (NPAs) of RRBs eased to 9.1% in 2021-22 from 9.4% in the previous fiscal. Similarly, their net NPAs fell marginally to 4.7% in 2021-22 from 4.8% in the previous year. Their deposits grew 7.1% on year in 2021-22 to Rs 5.63 lakh crore, while outstanding

advances stood at Rs 3.63 lakh crore, up 8.6% from 2020-21.

Regional Rural Banks

Regional Rural Banks are the financial institutions in India that designed to provide banking services in rural areas. They were established under the *Regional Rural Banks Act of 1976*.

These banks are *regulated by the Reserve Bank of India (RBI)*. RRBs are jointly *owned by the Central and the State Government and the sponsoring commercial bank* in the specific ratio. The Central Government holds a 50% stake, the state government holds a 15% stake and the sponsoring commercial bank holds a 35% stake.

Competition Commission of India

Competition Commission of India has been established by the Central Government on 14th October 2003. It consists of a chairperson and 6 other members appointed by the Central Government.

It is the duty of the CCI to eliminate practices having adverse on competition, promote and sustain competition, protect the interests of consumers and ensure freedom of trade in the markets of India.

RESOURCE EFFICIENCY - CIRCULAR ECONOMY INDUSTRY COALITION (RECEIC)

Why in news?

A Resource Efficiency Circular Economy Industry Coalition (RECEIC) was recently launched on the sidelines of the 4th *G20 Environment and Climate Sustainability Working Group (ECSWG)*.

About

The mission of this coalition is to facilitate and foster *greater company-to-company collaboration*. It would help in *building and advancing capabilities across sectors* and value

chains and bring the learnings from diverse global experiences. The coalition members *can use the platform to unlock on-ground private sector action* to enhance resource efficiency and accelerate the circular economy transition.

RECEIC would play a pivotal role. The alliance could help in promoting technological cooperation and encourage knowledge transfer, fostering innovation, and facilitating the exchange of insights to enhance access to finance.

The coalition is structured around the *three guiding pillars of partnerships for impact, technology cooperation and finance for scale*. Resource efficiency and circular economy industry coalition will also aim to contribute towards *progress on key global goals and priorities set by the G20* and other international fora.

RECEIC will also act as an overarching platform enabling industries *to address information gaps and coordination challenges across the G20 members*.

RE-CIRCLE: Resource Efficiency and Circular Economy

The OECD “Resource Efficiency and Circular Economy” (RE-CIRCLE) project provides policy guidance on resource efficiency and the transition

to a circular economy. It aims to *identify and quantify the impact of resource-efficient, circular economy policies to guide a range of stakeholders in OECD member countries* and emerging market economies through quantitative and qualitative analysis.

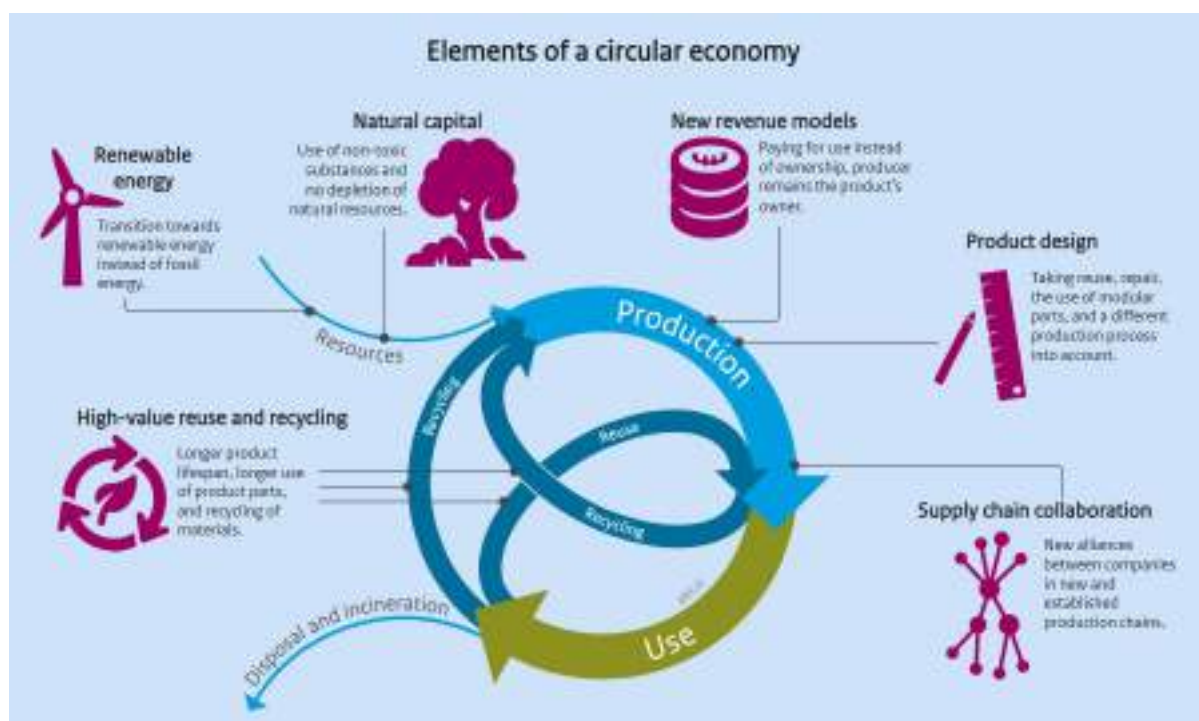
Global Alliance on Circular Economy and Resource Efficiency (GACERE)

The Global Alliance on Circular Economy and Resource Efficiency (GACERE) is an alliance of governments at the global level willing to work together on and advocate for a global just circular economy transition and more sustainable management of natural resources at the political level and in multilateral fora. GACERE was launched in February 2021, in the margins of the first segment of fifth United Nations Environment Assembly (UNEA-5.1).

GACERE is an initiative of the European Commission on behalf of the European Union and UNEP, in coordination with UNIDO. India is a member of the initiative.

Circular Economy

Circular economy is essentially an economic system where *means of production are organized around reusing and recycling the inputs* so that



they can be used to reduce our environmental emissions and at the same time facilitate a sustainable and environment friendly mode of production.

The central idea here is to achieve **a circularity of inputs**. The idea of Circular economy comes from several schools of thoughts which have been refined over a period of time

Key Principles

Cradle to cradle can be defined as the design and production of products of all types in such a way that at the end of their life, they can be truly recycled (upcycled), imitating nature's cycle with everything either recycled or returned to the earth, directly or indirectly through food, as a completely safe, nontoxic, and biodegradable nutrient. With cradle to cradle, all the components of a product feed another product

The second principle is to **use clean and renewable energy**. The argument goes that natural systems thrive on current solar income and human systems could too. Renewable energy is clean (at the point of use), low-cost to operate, creates no emissions in use, and utilises abundant resources

Finally, **celebrate diversity**: diversity builds resilience in natural systems, and can do so in human systems, too. Equally, no two places are the same: a diverse approach is often necessary to overcome the challenges and meet the opportunities offered by different geographies

Size of the Circular Economy - The Circularity Report 2023 estimates that only 7.2% of the global economy is circular and this number is only getting worse with time

India's current economic model is largely linear, where resources are extracted, processed, and transformed into products that are sold to consumers. After use, these products are disposed of, leading to a significant amount of waste generation.

Governmental Efforts

India's circular economy policy framework involves multiple approaches: regulatory measures, financial incentives, awareness campaigns, and

capacity building. Key policies and initiatives include:

(i) **National Resource Efficiency Policy (NREP)**: Launched in 2019, it promotes sustainable production and consumption, resource efficiency, and the use of circular business models like product-as-a-service and sharing. Extended Producer Responsibility (EPR) is also part of this framework, holding producers accountable for post-consumer waste.

(ii) **Swachh Bharat Mission (SBM)**: Started in 2014, it focuses on waste segregation, recycling, and composting to achieve a "zero-waste" country.

(iii) **Atal Innovation Mission**: Launched in 2016 to promote innovation and entrepreneurship, it supports circular business models and sustainable technologies.

(iv) **Financial Incentives**: The government offers tax benefits, subsidies, and low-interest loans to encourage circular business models and sustainable consumption patterns.

(v) **National Housing and Habitat Policy, 2007**: Ecological design standards for building components, materials and construction methods

(vi) **National Design Policy, 2007**: Eco-friendliness, ecology and sustainability as key criteria for the India Design Mark (I Mark)

(vii) **E-Waste (Management and Handling) Rules, 2016**: Restricts usage of certain hazardous substances in electrical and electronics equipment Ecomark issued by the Bureau of Indian Standards

(viii) **The Strategy for Resource Efficiency by NITI Aayog (2017)** establishes a broad framework for enhancing RE in the Indian economy

(ix) **National Mining Policy, 2008 - New draft 2018**: proposes Zero-waste mining and Upgradation of mining technology for efficient extraction.

Challenges for Circular Economy in India

- Lack of adequate infrastructure for waste management and recycling
- Lack of awareness and understanding of

the circular economy among policymakers in the country, businesses and consumers.

- Inefficiency in the waste management sector
- Lack of differentiation between circularity and recycling
- Absence of a multi-stakeholder level understanding of the circular economy in the country.
- Inefficient waste collection and segregation poses another huge challenge in creating a circular economy
- Limited availability of recycled materials also creates barriers towards the vision of a circular economy. In the absence of sufficient recycled materials, businesses in India are forced to rely on virgin materials, which can be costly and environmentally damaging

Downcycling is another key problem which poses a challenge to the vision of a circular economy. Downcycling refers to the process of recycling materials into products of lower value and quality compared to the original material. While downcycling does help in reducing the amount of waste generated, it also leads to a reduction in the quality and value of the recycled material, making it less desirable for reuse.

Limited research and development focus on the transition towards a circular economy is another critical bottleneck. A circular economy requires a fundamental shift in the way we design, produce, consume, and dispose of goods and services.

Opportunities for India in achieving Circular Economy

India has ample opportunities to excel in the circular economy:

Abundant Resources

Innovation and Entrepreneurship - India's focus on research and development

Young Skilled Workforce- demographic advantage

Sustainable Product Demand

Supportive Policies

Informal Sector Integration: By integrating and formalizing this sector, there is an opportunity to improve waste management practices and enhance the circular economy's effectiveness.

Circular Tourism: Adopting circular principles in the tourism industry can minimize the environmental impact

Sustainable Infrastructure: Implement circular design principles in large scale urbanization in India.

Benefits of CE and RE

Economic benefits of CE and RE

Development of CE and RE in India could create annual value of ₹14 lakh crore (US\$ 218 billion) in 2030.

Secure long-term material needs and increase resilience of Indian economy.

Businesses could achieve material cost savings and increase their profit.

Making use of digital technology to enable CE could reinforce India's position as a hub for technology and innovation.

Environmental and social benefits of RE and CE

A circular economy development path could significantly mitigate negative environmental externalities.

Cheaper products and services for India's population while reducing congestion and pollution

GOBARDHAN PORTAL

Context:

Over 1,200 biogas plants have registered on the Gobardhan portal since it was launched, according to an official release.

About Gobardhan portal:

It serves as a centralized repository for assessing investment and participation in the Biogas/CBG (Compressed Biogas) sector at a pan-India level.

Primary objective: To streamline the process of setting up CBG/Biogas plants in the country.

It allows any government, cooperative or private entity operating or intending to set up a Biogas/CBG/Bio-CNG plant in India to obtain a registration number by enrolling in the portal.

This registration number will enable them to avail a multitude of benefits and support from the Ministries and Departments of the Government of India.

Key Facts about GOBARDHAN

Scheme:

Galvanizing Organic Bio-Agro Resources Dhan is a crucial umbrella initiative of the Government of India.

The government launched the Gobardhan scheme in 2018 as a national priority project under the Swachh Bharat Mission Grameen-Phase II program.

Aim:

To generate wealth and energy by converting cattle dung, agricultural residue, and other organic waste into Biogas, CBG and bio-fertilizers.

It adopts a whole-of-government approach and aims to convert waste into wealth, thereby promoting a circular economy.

Nodal Ministry: The Department of Drinking Water and Sanitation, Ministry of Jal Shakti.

JOWAR - AS AN ALTERNATIVE TO WHEAT

Why in the News?

The paper titled “**Climate resilience of dry season cereals in India**” was published in Nature’s Scientific Reports. It examined the sensitivity of wheat and jowar yields to increases in temperature and compared water requirements under different scenarios.

The study was carried out by researchers from Columbia University, USA; Chinese Academy of Agricultural Sciences, China; Indian School of Business; and Indian Institute of Technology, Bombay.

Jowar (Sorghum) as an alternative

Wheat is highly sensitive to increases in maximum daily temperature during multiple stages of its growth in the post-monsoon and dry winter seasons.

Jowar (sorghum) can step in as a viable alternative.

Jowar is able to handle increases in temperature with far less impact on yields.

Wheat requires 1.4 times more water than jowar owing to the extension of its growth cycle into summer.

The wheat yields are likely to decrease by 5 per cent coupled with a significant increase in water footprint by 2040. Jowar, in that case, is India’s best bet with its meagre 4 per cent increase in water footprint with the same climatic projections.

The traditionally grown sorghum or jowar offers resilience to projected climate changes and requires significantly less water than wheat.

In addition to sorghum (jowar), we can explore millet crops such as pearl millet (bajra), finger millet (ragi), foxtail millet, barnyard millet, etc., as a suitable replacement for rice or wheat.

Wheat production in India:

India is the world's second-largest producer of wheat, which recorded a whopping 40 per cent increase in production since the early 2000s.

There is an urgent need for climate-smart agriculture interventions, particularly in the rabi season.

The total wheat production in the country has gone up since the turn of the century due both to increases in yield (26 per cent) and increases in area (17 per cent).

The production of jowar, on the other hand, declined by 5 per cent in the same time period. This decline is despite a 37 per cent increase in yields and is attributed to a 21 percent loss in the area under production.

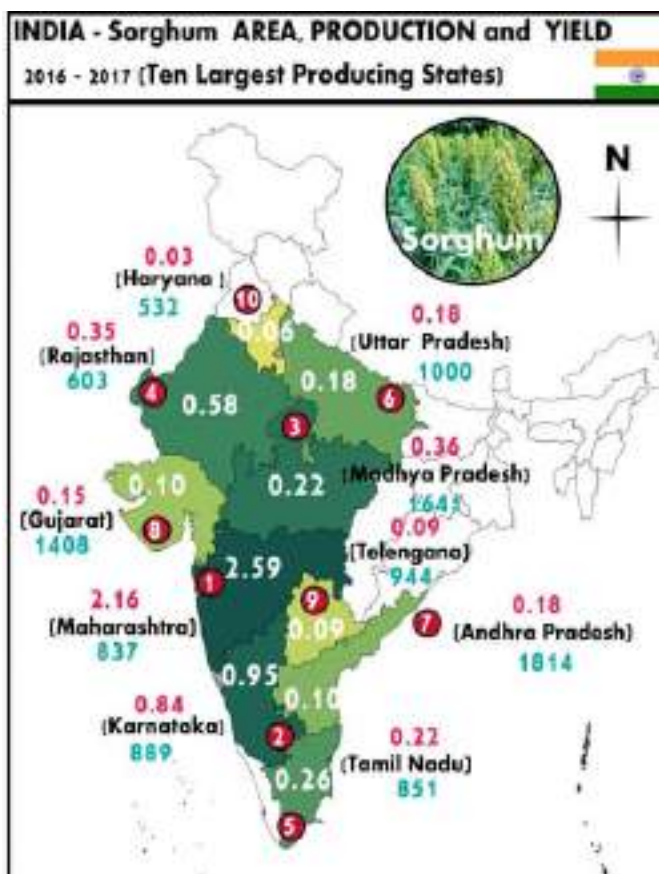
About Jowar (Sorghum) crop

An important food and fodder crop cultivated across India. It can be cultivated in both Rabi and Kharif seasons. It is the 5th most important cereal crop in the world after rice, wheat, maize & barley.

The nutritional value of sorghum is the same as that of corn and that is why it is gaining importance as **livestock feed**. It is also used for **ethanol production, producing grain alcohol, starch production, production of adhesives and paper** other than being used as food and feed for livestock. Jowar cultivation is gaining popularity due to its nature of extreme drought tolerance.

Health benefits of Jowar

- Sorghum/Jowar is packed with calcium, iron, potassium, phosphorus, protein and fibre.
- It provides good antioxidants.
- It contains B vitamins like thiamin and riboflavin.
- Sorghum/Jowar is also known to be heart-healthy and 'Jowar Roti' is widely used in India for its health benefits.
- Jowar helps in weight loss.



Local Names of Jowar in India

Great Millet/Sorghum (English), Juar (Bengali, Gujarati, Hindi), Jwari (Marathi), Jola (Kannada), Jonnalalu (Telugu), Cholam (Tamil, Malayalam), Janha (Oriya).

Climatic requirements for Sorghum (or) Jowar Farming

Basically, jowar or sorghum is a tropical crop.

It thrives well at a temperature between 25°C and 32°C but below 16°C is not good for the crop.

It requires rainfall of about 40 cm annually.

It is an extremely drought-tolerant crop and is recommended for dry regions.

Too much of moist and prolonged dry conditions are not suitable for jowar cultivation.

Soil Requirements

It adapts a wide range of soils but grows well in sandy loam soils having good drainage.

Soil pH range of 6 to 7.5 is ideal for its cultivation and better growth.

INDIA CURBS GOLD IMPORTS

Why in news?

The sudden spurt in duty-free imports of gold jewellery from Indonesia under the free trade agreement was one of the main reasons for the Indian Government's decision to ban shipments of certain gold jewellery products.

The Government suspects that gold is being re-routed into India from other countries without payment of any duty under the India-ASEAN free trade agreement as Indonesia was never known for exporting gold jewellery to India.

Indonesia shipped out 3-4 tonnes of gold articles and jewellery in last 2-3 months which raised alarm bell among policy makers, who are trying to curtail current account deficit by restricting non-essential imports. Once in India, the gold articles can be melted and converted into jewellery.

India ASEAN FTA

The *Framework Agreement on Comprehensive Economic Cooperation between ASEAN and India* was signed in October 2003 and served as legal basis to conclude further agreements, including *Trade in Goods Agreement, Trade in Services Agreement, and Investment Agreement* that form the ASEAN-Indian Free Trade Area (AIFTA)

The *ASEAN-India Trade in Goods Agreement* was signed and entered into force on 1 January 2010. Under the Agreement, ASEAN Member

States and India have agreed to open their respective markets by progressively reducing and eliminating duties on 76.4% coverage of good.

The ASEAN-India Trade in Services Agreement was signed in November 2014. It contains provisions on transparency, domestic regulations, recognition, market access, national treatment and dispute settlement.

The ASEAN-India Investment Agreement was also signed in November 2014. The Investment Agreement stipulates protection of investment to ensure fair and equitable treatment for investors, non-discriminatory treatment in expropriation or nationalisation as well as fair compensation.

Recent concerns

The Government has raised concerns over a potential diversion of gold into India from other countries, bypassing the necessary duty payments under the India-ASEAN free trade agreement.

This suspicion arises as Indonesia, which has not been traditionally associated with exporting gold jewelry to India, has recently shipped out a significant quantity of 3-4 tonnes of gold articles and jewelry over the past 2-3 months.

This sudden increase has alarmed policy makers who are striving to reduce the current account deficit by imposing restrictions on non-essential imports.

ANNUAL ECONOMIC REVIEW FOR 2023-24

Why in news?

The Finance Ministry in its Annual Economic Review for FY23 has made a strong pitch for measures to facilitate Foreign Direct Investment (FDI) flows, that dipped last year and may remain subdued in coming months, mooring greater attention from policymakers to resolving challenges faced by global investors, including last-mile infrastructure issues and the inability to set up larger factories.

Findings of the Review

A strong final quarter performance pushed the **GDP growth for the full year to 7.2 per cent**, higher than the 7 per cent estimated in February. This upside to the growth estimate takes the growth momentum deep into the current year

The **labour force participation rate (LFPR) in India rose** through the pandemic in line with the pre-pandemic trend. The **overall unemployment rate declined** to a five-year low of 4.1 per cent in

FY22, raising with it the worker-population ratio.

High growth in credit contributed to increasing the profitability of banks whose bottom lines were already improving with the **declining Gross Non-Performing Assets (GNPA) ratio**

The developments in the merchandise and services trade helped the **current account deficit (CAD) to narrow quickly** towards the end of FY23, in part assisted by high levels of remittances. Reducing CAD worked for the economy as it saved resources for strengthening domestic demand

Inflation emerged as the major challenge in FY23 for India as it did for the rest of the world following the emergence of the geopolitical conflict and the impact of El Nino

Lending and deposit rates of Scheduled Commercial Banks (SCBs) have increased in consonance with policy rate changes, reflecting moderation in surplus liquidity in the banking system and **improved transmission of the monetary policy**

The increase in the repo rate by RBI since the outbreak of the pandemic is less than the repo rate hikes of the US Fed, as also the average hike for the advanced economies. It is even lesser than the average hike of emerging market economies, which indicates that India was able to better handle the impact of FPI outflows this time

The services trade balance improved over the year primarily on account of an improvement in services exports. Net services trade grew by a robust 33.3 per cent on a YoY basis in FY23

The year ended with a lower fiscal deficit (as per cent of GDP) compared to the previous year

FDI inflows

FDI flows to India bore the brunt of inflationary pressures and tighter monetary policy abroad. While Gross FDI, which reached a record high of US\$ 84.8 billion in FY22, moderated in FY23 by 16 per cent on a YoY basis, **net FDI declined by 27.4 per cent in FY23** on a YoY basis.

However, this phenomenon is not unique to India, as **net FDI inflows to EMEs declined by 36 per cent in 2022**, as per OECD statistics.

Also, geopolitics has dominated geography, with investors **“friend shoring” the FDI** by increasing investments in countries which are geopolitically aligned to each other, thereby leading to fragmentation in FDI flows across the globe indicated in IMF’s World Economic Outlook (April 2023). **FDI flows may also be impacted by “political distance more than geographical distance” as “geopolitics has dominated geography”.**

Hence, India needs to watch FDI data closely and continue to take measures to facilitate FDI inflows. Last-mile infrastructure issues, labour availability and measures to facilitate large capacity creation will be needed. This policy space may need India’s increasing attention in the coming months and years.

On an annual basis, net FPI outflows moderated from US\$ 16 billion in FY22 to US\$ 5.5 billion in FY23. The trend until mid-June 2023 indicates that FPIs find Indian markets attractive despite globally tighter financial conditions.

Stability of Rupee

The Indian rupee depreciated by 8.5 per cent in FY23. However, the daily volatility in INR stood at 0.3 per cent, much lower compared to other currencies of EMEs and AEs, such as the Brazilian Real (1.1 per cent) and South African Rand (1.0 per cent), Japanese Yen (0.8 per cent), Euro (0.6 per cent), Chinese Yuan (0.4 per cent), Indonesian Rupiah (0.4 per cent)

Downside risk of India’s exports

European Union’s introduction of the Carbon Border Adjustment Mechanism (CBAM),

uncertainty about the Russia-Ukraine conflict

polarisation risks arising out of the prevailing geopolitical situation reflected in the possible adoption of trade-restrictive measures.

foreign direct investment flows may also be impacted by political distance more than geographical distance

Way forward

Resolve challenges: The FDI policy space

requires the government's attention in the coming months to resolve challenges faced by global investors, including last-mile infrastructure issues and the inability to set up larger factories.

Capacity creation: The manufacturing sector requires additional capacity creation, while its capacity utilisation is above its long-run average.

The word of caution from the Department of economic affairs (DEA), which prepares annual budgets, is significant in a pre-election year when governments tend to loosen fiscal controls and announce fresh schemes.

GLOBAL MINIMUM TAX BY OECD

OECD announced that 136 countries had agreed to join an accord to impose a two-pillar global tax reform plan. As per the deal, large multinationals have to pay a minimum tax of 15% on their global incomes from 2023 and those with profits above a threshold will now have to pay taxes in the markets where they conduct business.

What is Global Minimum Tax?

It is a proposal to impose a minimum rate of taxation on corporate income in most countries of the world by international agreement.

Two pillars of the Global Minimum Tax Agreement:

The agreement consists of two pillars to prevent companies from establishing bases in countries with low taxes to maximize profits earned elsewhere.

Pillar 1:

Pillar one would give countries a share of the taxes on profits earned there, though the tax would still be collected where the company has its fiscal base.

Multinationals operate in many countries. For example, oil giant BP is present in 85, but usually, pay taxes on profits only in their tax home.

Pillar 2:

Pillar two is a global minimum corporate tax rate to stop competition between countries over who can offer companies the lowest rate in what

Friend shoring Vs. Near shoring

Friend shoring refers to the rerouting of supply chains to countries perceived as politically and economically safe or low-risk, to avoid disruption to the flow of business.

This describes the process of a company relocating business operations to a nearby country, often with a shared border. "Nearshoring ensures faster speed to market and quicker transit from manufacturers to customers",

critics call a "race to the bottom".

How does the Global Minimum Tax work?

In terms of its implementation, this tax will be applicable to companies' overseas profits. This implies that if a global minimum is applied, governments can still set the local corporate tax rate as per their choice

In case a company pays lower rates in a particular country, their home governments can "top-up" their taxes to the agreed minimum rate, eliminating the advantage of shifting profits to a tax haven

Base Erosion and Profit Shifting (BEPS):

It refers to the strategies used by Multinational Companies to avoid paying tax, by exploiting the mismatches and gaps in the tax rules.

Firms make profits in one jurisdiction, and shift them across borders by exploiting gaps and mismatches in tax rules, to take advantage of lower tax rates and, thus, not paying taxes to in the country where the profit is made.

What is the need for a global minimum tax?

Global corporate tax rates have fallen from over 40% in the 1980s to under 25% in 2020.

The OECD's tax plan tries to put an end to

this race to the bottom which has made it harder for governments to shore up the revenues required to fund their rising spending budgets.

The minimum tax proposal is particularly relevant at a time when the fiscal state of governments across the world has deteriorated as seen in the worsening of public debt metrics.

Major Challenges

Some governments, particularly those of traditional tax havens, are likely to disagree and stall the implementation of the OECD's tax plan.

Large U.S. tech companies may have to pay more taxes to governments of developing countries.

Low tax jurisdictions are likely to resist the OECD's plan unless they are compensated sufficiently in other ways.

Internal rift within the EU countries such as Poland have already tried to stall the adoption of the global minimum tax proposal citing various non-economic reasons.

The OECD's plan essentially tries to form a global tax cartel; it will always face the risk of losing out to low-tax jurisdictions outside the cartel and cheating by members within the cartel.

Developing countries are disproportionately affected because they tend to rely more heavily on corporate income taxes than advanced economies.

Significance of the move

It is estimated that the minimum tax rate would boost global tax revenues by \$150 billion annually.

To ensure the big businesses with global operations, do not benefit by domiciling themselves in tax havens to save on taxes.

The OECD plan tries to give more taxing

rights to the governments of countries where large businesses conduct a substantial amount of their business.

Countries both within and outside the cartel will have the incentive to boost investments and economic growth within their respective jurisdictions by offering lower tax rates to businesses.

Way forward for India:

It is anticipated that the digital tax revenue might decrease as a result of the OECD tax deal.

Despite this, India ratified the deal as the G20 grouping played a major role in building political consensus on this matter amongst the non-OECD members due to the membership overlap between OECD and G20 countries.

To circumvent the reduction in tax revenues, India must push for the UN Model Tax Convention.

Article 12B of the UN Tax Model lays down the principle that the beneficial owner of that income is a resident of the other contracting State, and the amount of tax imposed by the State of source may not exceed a maximum percentage of the gross amount of the payment as may be negotiated between the two parties.

Whilst the OECD tax deal only taxes those companies that have a minimum of 20 billion euros of global sales, excluding many medium-sized tech companies from taxation.

Unlike the OECD's global tax deal, the UN model fares better firstly with respect to flexibility, giving source country a higher stake in deciding the tax rates with the partners, leading to a fair distribution.

Secondly, the UN model allows taxing of medium-sized firms as well.

GREEDFLATION

Recently, there has been an increasing consensus in Europe and US that Greedflation is driving the rising cost of living rather than just Inflation.

How inflation is contained in an economy?

Inflation - It is the rate of increase in prices over a given period of time.

There are two main ways in which inflation happens.

1. **Cost-push inflation** - Prices get pushed up because input costs have risen.
2. **Demand-pull inflation** - Prices are pulled up because there is excess demand.

Containing inflation - Central banks use monetary policy to contain the inflation.

It raises interest rates to bring overall demand in line with overall supply containing demand-pull inflation.

It raises interest rates to contain demand which in turn contains cost-push inflation.

In case of Greedflation, the whole monetary policy prescription becomes more unjust and ineffective.

Because it is neither due to higher input cost nor due to excess demand.

In normal inflation situation, corporates go for the wage-price spiral, in Greedflation corporates choose the profit-price spiral.

Wage-price spiral - A cyclical condition where the rise in wages leads to increased prices, resulting in inflation.

Profit-price spiral - Companies exploit the existing inflation by putting up their prices way beyond just covering their increased costs.

What is Greedflation?

Greedflation refers to price inflation caused by corporate greed for high profits.

Scenario:

During crises like natural disasters or pandemics, prices often surge as businesses raise them due to increased input costs.

However, in some cases, businesses exploit the situation by making excessive profits through significantly higher price mark-ups.

Impact:

Greedflation disproportionately impacts low-income and middle-class individuals, reducing their consumption and lowering their standards of living.

While it benefits the wealthy by increasing the value of their assets, widening the wealth gap and exacerbating income inequality.

Sharp price increases and speculation driven by greed can create bubbles and unsustainable market conditions. This makes financial markets more susceptible to crashes and crises, posing risks to overall economic stability.

Inflationary pressures caused by greedflation can result in divergent policies among countries. Each nation may adopt different strategies to combat inflation, leading to conflicting approaches.

This can exacerbate global imbalances, trade tensions, and geopolitical conflicts as countries seek to protect their own interests and competitiveness.

What are the implications of greedflation?

Less likeliness to spend money will lead to reduced economic activity.

Reduces the purchasing power of the people making even basic needs hard to afford.

Creates social unrest due to raising cost of living.

On the corporates' side it affects the business as well as loss of customer trust.

Forces governments to intervene like windfall tax to contain inflation.

India's Case:

In the context of India, the profitability of Indian companies has nearly tripled compared to the period before the pandemic. A significant growth in net profit, primarily driven by an increase in profit margins, indicates a possibility of corporate greed contributing to inflation in India.

In India, 60% of the growth in net profit can be attributed entirely to the increase in profit margin. The increase in sales contributed an additional 36% and the rest was a bonus from a combination of the two, which suggests the presence of greedflation.

INDIA – UAE: CURRENCY DEAL

Why in news?

During Prime Minister Narendra Modi's recent visit to the UAE, the Reserve Bank of India (RBI) and its Abu Dhabi-headquartered counterpart the Central Bank of the UAE signed two memoranda of understanding (MoUs). While the first established a framework to promote the use of local currencies for cross-border transactions, the other was for interlinking payment systems.

Promotion of local currencies for cross border transaction

The first of the two MoUs aims to establish a Local Currency Settlement System (LCSS) to promote the use of rupee and the dirham bilaterally. It will cover all current and permitted capital account transactions.

This would enable exporters and importers to send invoices and pay in their respective domestic currencies, which in turn would help the development of the INR-AED foreign exchange market.

It would also help promote investments and remittances between the two countries. Broadly, the arrangement would help optimise transaction costs and settlement time for transactions, including for remittances from Indians residing in UAE.

Significance for exporters

The focus on denominating export contracts and invoices in the local currency helps avert exchange-rate risks (such as when a third currency is being used as a standard), which further facilitates the scope to discover competitive pricing.

Moreover, it could also lead to enhanced avenues for cooperation among the banking systems of the two countries, thereby contributing to the expansion of trade and economic activity for both.

The major items of export from India to the UAE include mineral fuels, mineral oils and products, bituminous substances, mineral waxes, followed by pearls, precious stones and metals, electrical machineries and equipment, among other things.

The major items imported by India are petroleum crude and petroleum related products. India-UAE trade rose to \$85 billion in 2022. Furthermore, the UAE was India's third largest trading partner and second-largest export destination in FY2022-23. Conversely, India was the UAE's second largest trading partner.

Another important aspect about this economic relationship is that the UAE is the fourth largest investor in India. Its cumulative FDI

inflows between April 2000 and September 2022 stood at around \$15.2 billion.

Interlinking of payment systems

The second of the two MoUs links India's Unified Payments Interface (UPI) with its UAE-counterpart Instant Payment Platform (IPP). This is alongside the linking of card switches, that is, RuPay switch and UAESWITCH.

Card switches entail facilitating communications and transactions between different payment service providers. The agreement would also explore linking of payment messaging systems of the two countries.

As for card switches it will "facilitate mutual acceptance of domestic cards and processing of card transactions." This is relevant to 3.5 million resident Indians living in the UAE (figure as of 2021).

Significance

One of the several issues with sending remittances back home, especially for low wage earners, is the high costs of transactions. This may entail fees and exchange rate margins, among other potential costs.

Remittances from gulf countries are of major proportion

Similar arrangements

In March, the National Payments Corporation of India (NPCI) finalised a collaboration with Singapore's PayNow for facilitating cross-border real time money transfers. In fact, it was noted by officials at the Monetary Authority

of Singapore (MAS) that facilitating remittances would become 10% cheaper.

Furthermore, the NPCI had in January permitted non-resident accounts with international numbers to be onboarded into the UPI

ecosystem. At the onset, it included users from 10 countries — Singapore, Australia, Canada, Oman, Qatar, the U.S., Saudi Arabia, the UAE, the U.K and Hong Kong.

INTERNATIONALISATION OF RUPEE

Why in news?

Pushing for a roadmap towards the internationalisation of the rupee, the Reserve Bank of India's (RBI) inter-departmental group (IDG) said with India remaining one of the fastest-growing countries and showing remarkable resilience in the face of major headwinds, the rupee has the potential to become an internationalised currency.

Roadmap for internationalisation - Recommendations

The working group, headed by RBI Executive Director Radha Shyam Ratho, has recommended a slew of short to long term measures to accelerate the pace of internationalisation of the rupee.

Short-term measures:

For the short term, the group has suggested adoption of a standardised approach

Examining the proposals on bilateral and multilateral trade arrangements for invoicing, settlement and payment in the rupee and local currencies,

Encouraging the opening of the rupee accounts for non-residents both in India and outside India

Integrating Indian payment systems with other countries for cross-border transactions.

Strengthening the financial market by fostering a global 24x5 rupee market and recalibration of the FPI (foreign portfolio investor) regime.

Medium term measures:

Over the next two to five years, the group has recommended

A review of taxes on masala (rupee-denominated bonds issued outside India by Indian entities) bonds

International use of Real Time Gross Settlement (RTGS) for cross-border trade transactions

Inclusion of Indian Government Bonds in global bond indices.

Long term measures:

For the long term, the group has recommended that efforts should be made for the

inclusion of the rupee in IMF's (International Monetary Fund) SDR (special drawing rights). The SDR is an international reserve asset created by the IMF to supplement the official reserves of its member countries. The value of the SDR is based on a basket of five currencies — the U.S. dollar, the euro, the Chinese renminbi, the Japanese yen, and the British pound sterling.

Currency Internationalisation

Currency internationalization is the widespread use of a currency outside the borders of its original country of issue. The level of currency internationalization for a currency is determined by the demand that users in other countries have for that currency. This demand can be driven by the use of the currency to settle international trade, to be held as a reserve currency or a safe-haven currency, or in general use as a medium of indirect exchange in other countries' domestic economies via currency substitution.

It involves promoting the rupee for import and export trade and then other current account transactions, followed by its use in capital account transactions. These are all transactions between residents in India and non-residents.

The internationalisation of the currency, which is closely interlinked with the nation's economic progress, requires further opening up of the currency settlement and a strong swap and forex market.

More importantly, it will require full convertibility of the currency on the capital account and cross-border transfer of funds without any restrictions. India has allowed only full convertibility on the current account as of now.

Currently, the US dollar, the Euro, the Japanese yen and the pound sterling are the leading reserve currencies in the world. China's efforts to make its currency renminbi has met with only limited success so far.

Advantages of internationalisation of the rupee

The use of the rupee in cross-border transactions mitigates currency risk for Indian businesses. Protection from currency volatility not only reduces the cost of doing business, it also enables better growth of business, improving the chances for Indian businesses to grow globally.

While reserves help manage exchange rate volatility and project external stability, they impose a cost on the economy. Internationalisation of the rupee reduces the need for holding foreign exchange reserves. Reducing dependence on foreign currency will make India less vulnerable to external shocks.

As the use of the rupee becomes significant, the bargaining power of Indian businesses would improve, adding weight to the Indian economy and enhancing India's global stature and respect.

Challenges to internationalizing rupee

Process being complex - Rupee-trade arrangements have not been easy to implement.

Trade arrangement with Russia is not yet fully operational even after a year-long engagement between the two partner countries.

Large trade deficit - With Russia would saddle Russia since with large rupee balances, it would have to find a way to use or invest.

Small market - The Indian economy is not as large as some other economies, so there is less demand for the rupee in the global financial markets.

Too much regulation - The Indian government has a number of controls on the rupee and these controls make it difficult for the rupee to be used as a global currency.

Lack of liquidity - The Indian rupee is not as liquid as some other currencies, so it can be difficult to buy and sell large amounts of rupees.

INDIAN REFINERS SAID TO START PAYING IN YUAN FOR RUSSIAN OIL

Indian refiners have reportedly started using Chinese Yuan to pay for some of their oil imports from Russia. This shift comes as Western sanctions against Moscow and its customers make it necessary to find alternatives to the US

dollar for settling payments.

India as the largest buyer of seaborne Russian oil

India has emerged as a largest buyer of seaborne Russian oil. This is because

Russia is selling oil at a discounted rate since the invasion of Ukraine.

Moreover, India being able to buy cheap Russian crude has boosted output and profits at Indian refineries.

India's crude oil imports from Russia are estimated to have hit a new record high of 2.2 million barrels per day (bpd) in June, having risen in 10 consecutive months.

It has also enabled them to export refined products competitively to Europe and take a bigger market share.

The changing payment method

Traditionally, the US dollar has been the dominant currency for global oil transactions, including those made by India.

The first preference of the Indian refiners is to pay in US dollars, but if that's not possible, for example, banks unwilling to settle trades with Russia in dollars, payments in other currencies are being made, such as in UAE dirhams or Chinese Yuan.

The yuan payments for Russian crude oil are part of both Russia and China's efforts to sideline the U.S. dollar as the currency of choice in international trade.

Will India continue to use Yuan?

Unfavourable exchange rate: The refiners are unlikely to use the yuan for multiple cargoes from Russia as higher demand for the currency will make the exchange rate unfavourable.

Unnecessary promotion of Chinese currency: Selling dollars to buy yuan would also result in India effectively

helping China further its currency agenda, potentially a politically unpalatable step.

China's encouragement

China has encouraged the use of the Yuan, specifically for Russian oil trade, as part of its efforts to internationalize its currency.

China has also begun to use the Yuan for importing Russian oil, which has become its top source of energy imports overtaking Saudi Arabia.

Why is Russia unwilling to trade in Rupees?

The two major reasons behind Russia's unwillingness to trade in rupees are:

1. *Trade gap*
2. *Convertibility*

Rupee accumulation is not desirable for Russia as the mechanism suggested by India would lead to an annual rupee surplus of over \$40 billion.

Other countries are reluctant to hold the rupee as it is not fully convertible, and India's share of worldwide exports of goods is only around 2%.

Indian imports after the sanctions

Indian imports of Russian oil rose to record highs in May 2023 overtaking the traditional sources of Iraq and Saudi Arabia.

India has become the largest buyer of seaborne

Russian oil despite having difficulties in paying for it due to the varying sanctions.

India's biggest buyer of Russian crude, the Indian Oil Corporation (IOC) became the first state refiner to pay for Russian purchases in yuan.

At least two of India's three private refiners are also paying for some Russian imports in yuan.

Bharat Petroleum Corp Ltd is also exploring yuan payment for Russian oil

It was unclear how much Russian oil Indian refiners have bought with yuan.

Indian refiners have mostly purchased Russian crude from Dubai-based traders and Russian oil companies since the imposition of the sanctions on Russia.

Indian refiners have also settled some non-dollar payments for Russian oil in the United Arab Emirates Dirham.

How would it impact (if becomes reality)?

Positive side

- Exporters and importers to balance risks
- Have more certainty about the revenues and sales
- Diversified risks
- Strengthened national currencies
- Increased monetary policy independence
- Reduced vulnerability to us sanctions

Negative side

- Erosion of the us dollar's dominance
- Emergence of parallel currencies
- Impact on a country's networking effect and create substantial barriers
- Heavy toll on countries reliant on imported essentials (fuel and food), rendering them exorbitantly expensive
- Transition challenges,

potential short-term instability

- Limited global acceptance of alternative currencies

Is the world moving towards de-dollarisation?

De-dollarisation refers to the replacement of the U.S. dollar by other currencies as the global reserve currency.

The emergence of parallel currencies in international trade has fuelled the ongoing heated

debate over de-Dollarization, with recent events providing additional ammunition to those critical of US dominance.

Countries are increasingly seeking to reduce their reliance on the US dollar.

Examples include China and France's yuan-settled LNG trade, Russia turning to China's yuan amid geopolitical tensions, and China and Brazil's deal to trade in their own currencies.

INDIA'S RICE EXPORT BAN

Why in the News?

India, the world's largest rice exporter, banned the exports of non-basmati white rice on July 20.

About

Recently, The Indian government prohibited the export of non-basmati white rice with immediate effect. Earlier, the Government had already imposed restrictions on wheat and sugar exports. In September 2022, the government banned the exports of broken rice and imposed a 20% duty on exports of various grades of rice.

Significance of India in Global Rice Trade:

Rice as a Staple Food: *Rice is a staple food for nearly half of the world's population*, with Asia consuming around 90% of the global supply.

India's Key Role: India's

ban on non-basmati white rice exports is crucial due to its status as the *world's largest rice exporter, accounting for 40% of global rice trade*.

Global Trade Impact: India exported 17.86 million tons of non-basmati rice in 2022. India's rice exports in 2022 exceeded those of Thailand, Vietnam, Pakistan, and the US combined, making its export restrictions a significant concern.

Reasons for India's Rice Export Ban:

Erratic Monsoon: India's rice cultivation heavily relies on monsoon rainfall, with the summer-sown crop accounting for over 80% of the annual output. The late arrival of the monsoon and subsequent erratic rainfall distribution led to damage to crops and reduced output projections.

Domestic Inflation: Rising

domestic rice prices prompted the government to curb exports to manage domestic inflation. Delhi saw a 15% increase in retail rice prices, while the nationwide average rose over 8%.

Slow Progress in Paddy Sowing: The government's decision was influenced by slow progress in paddy planting, which was 8.5% lower than the previous year by mid-July.

Depleting Rice Stocks: The Food Corporation of India's rice stocks dropped to a seven-year low of 25.34 million tonnes, leading to concerns over supply shortages.

Existing Bottlenecks in the Rice Supply chain

El-Nino Factor: Even before the Indian ban, rice prices had soared to a five-year high on fears of El Nino affecting production in Asia. Thailand has said its production

will be lower by six per cent, while Vietnam, Cambodia, Myanmar, and Pakistan's production could also be hit by the weather phenomenon.

Failure of Black Sea Grain Initiative: Russia has withdrawn from a UN-brokered deal to export Ukrainian grain across the Black Sea, potentially imperilling tens of millions of tonnes of food exports around the world. It has led to fears that the move could result in global food inflation.

Impacts

Reduced Exports: The ban is expected to reduce India's non-basmati rice exports by at least 40%, affecting global rice supply.

Food Security Considerations: Although India will allow exports based on government permission and the needs of other countries for

food security, the threat of food insecurity is a reality.

Global Price Increase: The ban's effect is comparable to the suspension of the Ukraine Black Sea grain export deal, leading to potential global grain price increases of 10-15%.

Affects India's Image as a Reliable Supplier:

The reputation of being a dependable supplier can be easily tarnished by abrupt policy changes. Years of effort invested in cultivating these markets can be undermined by swift decisions

Blanket export bans have detrimental effects that surpass their intended benefits. They disrupt supply chains, harm trade relationships, and create uncertainty in markets.

Other Challenges:

Distilleries and Ethanol

Production: The ban affected rice supply for ethanol production, causing disruptions in distilleries' operations. The move may impact India's ambitious Ethanol Blended Petrol (EBP) programme, which plans to achieve a 20 per cent blending target by 2025.

India's rice fortification plan may also be affected.

Way Forward

Balanced Approach: If the objective is to discourage exports to manage domestic inflation, employing measures such as tariffs or setting a minimum price threshold for exports is more appropriate.

Tariffs or Minimum Price: The use of tariffs or minimum price restrictions offers a more nuanced and targeted approach to addressing inflation concerns without disrupting international trade

GEOGRAPHY,

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BIODIVERSITY AND

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INDIAN GREY HORNBILL

Why in News?

Recently, the Indian grey hornbill (*Ocyrocus birostris*) was sighted by a bird enthusiast from the Nature and Wildlife Forums in Koodapakkam, near the Sankarabarani river in Puducherry.

It is a common hornbill found on the Indian subcontinent.

It is commonly sighted in pairs.

These birds are known to be arboreal, spend most of their time on tall trees, but may descend for food and to collect mud pellets for nesting.

Appearance:

It has grey feathers all over the body with a light grey or dull white belly.

The horn is black or dark grey with a casque

extending to the point of curvature of the horn.

Unlike a lot of other birds, the male and female look similar

It is one of the few hornbill species found in urban areas in many cities where they are able to make use of large trees in avenues.

They play an essential role in the ecosystem as prime dispersers of seeds.

Distribution: Indian subcontinent; found from north-east Pakistan and south Nepal east to north-west Bangladesh and south throughout most of India except in Assam.

Conservation status

IUCN: Least Concern

ZOMBIE FIRE

Why in News?

As global temperatures rise, fires are also spreading farther north and into the Arctic, which is causing an increase in “zombie fires.”

About Zombie fire:

It is a fire from a previous growing season that can smoulder under the ground which is made up of carbon-rich peat.

These smouldering fires also produce more smoke because of their lower temperature of combustion.

Why it occurs?

As the organic-rich Arctic soils dry up because of changing climate conditions, they can burn slowly and release vast amounts of smoke into the atmosphere.

One major culprit is the rising temperature: The Arctic is warming nearly four times faster than the rest of the world, a phenomenon known as Arctic amplification.

Among the changing conditions that favour wildfires are changes in atmospheric circulation that create periods of extreme heat, dry out vegetation and reduce moisture in soils, and, importantly, lead to more frequent lightning strikes that can spark blazes.

What is the Impact?

As the Arctic warms and fires move farther northward, peat soils rich in dead plant material burn at an accelerated rate.

The burning peat also removes the layer insulating permafrost, the region’s frozen carbon-rich soil.

Northern ecosystems store twice as much carbon in their peat and permafrost as the atmosphere, and both are increasingly vulnerable to fire.

KAWAL AND AMRABAD TIGER RESERVE

Why in News?

The number of big cats in Telangana’s protected areas of Kawal and Amrabad tiger reserves decreased from a total of 26 in 2018 to 21 in 2022, according to the National Tiger Conservation Authority.

About Kawal Tiger Reserve:

Location: It is located in North Eastern part of Telangana (Old Adilabad district), with the Godavari River on one side and the Maharashtra border on the other.

It forms part of the Deccan peninsula-central highlands.

Rivers: The reserve is the catchment for the rivers Godavari and Kadam, which flow towards the south of the sanctuary.

Corridor: It has connectivity to the Tadoba-Andhari Tiger Reserve of Maharashtra in the North and to the Indravati tiger reserve of Chhattisgarh towards its North-Eastern side.

Habitat: It has diverse habitats comprising of dense forests, grasslands, open areas, rivers, streams and water bodies.

Vegetation: Southern Tropical Dry Deciduous Forest.

Flora:

Teak is found extensively along with Bamboo.

As many as 673 plant species have been recorded, and the important ones are *Anogeissus latifolia*, *Mitragyna parviflora*, *Terminalia crenulata*, *Terminalia arjuna*, *Boswellia serrata* etc.

Fauna:

It has a faunal diversity which is typical of

the Deccan Plateau.

The major wild animals include: nilgai, chousinga, chinkara, black buck, sambar, spotted deer, wild dog, wolf, jackal, fox, tiger, leopard, and the jungle cat.

Key Facts about Amrabad Tiger Reserve:

Location: It is located in the Nagarkurnool and Nalgonda districts in the southern part of Telangana.

It was notified as a sanctuary in 1983, and after the State bifurcation, it was declared as Amrabad Tiger Reserve in 2015.

ATR covers a part of the Nallamala Forest and is home to a variety of flora and fauna.

The hilly terrain of this Tiger Reserve, with deep valleys and gorges, forms the catchment of the Krishna River.

Flora:

Dense grass occurs in 30% of the area and is scattered in an additional 20%.

Dominant tree species include *Terminalia tomentosa*, *Hardwickia binata*, *Madhuca latifolia*, *Diospyros melanoxylon*, *Gardenia latifolia* etc.

Fauna:

Major wild animals found are Tiger, Leopard, Wild dog, Indian Wolf, Indian fox, Rusty-spotted cat, Small Indian civet, Sloth bear, Honeybadger, Wild boar etc.

Over 303 bird species have been identified in this region. Some important groups include Eagles, Pigeons, Doves, Cuckoos, Woodpeckers, Drongos etc.

GRAVITY HOLE IN THE INDIAN OCEAN

Why in News?

According to researchers from the Indian Institute of Science, the Indian Ocean harbours a colossal and enigmatic phenomenon known as

the “Gravity Hole,” which may be the remnants of an ancient sea that vanished millions of years ago.

About

The Earth is not a perfect sphere; it is flatter at the poles and bulges at the equator due to its rotation.

Gravity is not uniform all over the planet; it varies depending on the mass of the Earth's crust, mantle, and core beneath each region.

In the Indian Ocean, there is a significant "gravity hole" where the gravitational pull is unusually low.

The "gravity hole" creates a pronounced dip in the ocean's surface, known as the Indian Ocean geoid low (IOGL), where the sea level is approximately 106 meters below the global average.

The IOGL was discovered in 1948 during a ship-based gravity survey by Dutch geophysicist Felix Andries Vening Meinesz.

The IOGL covers a large section of over three million sq. km in the Indian Ocean seafloor, located around 1,200 km southwest of India's southern tip.

Findings of the Research

It is estimated to have formed approximately 20 million years ago and is caused by variations in the gravitational pull of the Earth due to differences in the density of the materials that make up the Earth's crust.

The anomalies in the gravitational pull are attributed to slabs from the Tethys Ocean, a long-lost sea that submerged into the depths of the planet millions of years ago.

The Tethys Ocean once separated the supercontinents of Gondwana and Laurasia and is believed to have perturbed the African Large Low Shear Velocity province.

HEAT INDEX

Why in News?

The India Meteorological Department (IMD) has recently introduced the Heat Index on an experimental basis.

The Heat Index is designed to offer general guidance for regions in India where the apparent temperature, also known as the "feel-like" temperature, is higher due to a combination of heat and humidity, causing discomfort for people.

The Heat Index is calculated using an equation similar to the one used by the National Weather Service, National Oceanic and Atmospheric Administration (NOAA) in the USA.

It takes account the impact of humidity on high temperatures to provide a more accurate representation of how the weather feels to humans, indicating the level of discomfort.

The Heat Index is categorized into colour codes for easy interpretation:

Green: Experimental Heat Index below 35°C

Yellow: Experimental Heat Index in the range of 36-45°C

Orange: Experimental Heat Index in the range of 46-55°C

Red: Experimental Heat Index above 55°C

LIFE MISSION

Why in News?

The Indian Embassy in Kathmandu and the Indian Consulate General in Birgunj recently held a series of events on the LiFE mission.

About LiFE Mission:

Mission LiFE, or Lifestyle for Environment, is an India-led global mass movement to nudge individual and community action to protect and

preserve the environment.

It was launched by the Indian Prime Minister at the 26th UN Climate Change Conference of the Parties (COP26) in Glasgow in November 2021.

The program hopes to "mobilize one billion Indians as well as people in other countries to become individuals who practice sustainable lifestyles.

The global movement will showcase sustainable goals and climate actions taken by countries and individuals around the world.

It makes the fight against climate change democratic, in which everyone can contribute with their respective capacities.

It emboldens the spirit of the P3 model, i.e., Pro Planet People.

It functions on the basic principles of 'Lifestyle of the planet, for the planet and by the planet'.

It aims at following a three-pronged strategy

for changing people's collective approach towards sustainability,

Nudging individuals to practice simple yet effective environment-friendly actions in their daily lives (demand)

Enabling industries and markets to respond swiftly to the changing demand (supply)

To influence government and industrial policy to support both sustainable consumption and production (policy).

LEACHATE SPILL IN ARAVALLIS

Why in News?

A group of environmental activists has written to the Haryana Human Rights Commission (HHRC) drawing its attention to the alarming levels of toxic pollutants caused by leachate spilling over to the Aravalis from the Bandhwari landfill site in Gurugram.

About

A Haryana State Pollution Control Board laboratory report has been quoted which pointed to the high **presence of toxic substances, such as fluoride and chloride**, in the Aravalis due to the leachate spill.

While **chloride is harmful for human consumption, the high level of fluoride could damage the bones of humans and animals.**

The leachate collected in the **mining pit was close to the underground aquifers** and led to the contamination of groundwater.

Leachate

Leachate is the black, foul-smelling toxic liquid emanating from rotting garbage at landfills, which not just has fungus and bacteria in it but harmful chemicals as well.

It gets accumulated at the bottom of the landfill and percolates down through the soil contaminating the groundwater. It contaminates surface water as well.

Such contamination of groundwater resources

poses a substantial risk to local resource users and to the natural environment.

Properties of leachate

In older landfills and those with no membrane between the waste and the underlying geology, leachate is free to leave the waste and flow directly into the groundwater.

In such cases, high concentrations of leachate are often found in nearby springs and flushes.

As leachate first emerges it can be **black in colour, anoxic, and possibly effervescent**, with dissolved and entrained gases. As it becomes **oxygenated it tends to turn brown or yellow because of the presence of iron salts in solution and in suspension.**

It also quickly develops a bacterial flora often comprising substantial growths of bacteria *Sphaerotilus natans*.

Treatment of Leachate

Recycling, on-site treatment, discharge to a municipal sewage treatment plant, or a combination of these approaches.

About Aravallis

The Aravalli Range (also spelled Aravali) is a mountain range in Northwestern India. It runs approximately 670 km (430 mi) in a southwest direction, starting near Delhi, passing through southern Haryana and Rajasthan, and ending in Gujarat.

The highest peak is Guru Shikhar at 1,722 metres (5,650 ft). Guru Shikhar is a peak in the Arbuda Mountains of Rajasthan. It is 15 km from **Mount Abu**. Three major rivers and their tributaries flow from the Aravalli, namely **Banas and Sahibi Rivers which are tributaries of Yamuna, as well as the Luni River which flows**

into the Rann of Kutch.

The Aravalli Range is arguably the **oldest geological feature on Earth**, having its origin in the **Proterozoic era**. The Aravalli Range is rich in natural resources and serves as a check to the growth of the western desert.

BLACK CARBON

Why in News?

A team of researchers conducted a Study on black carbon and its impacts on health.

Key findings:

Black Carbon has a significant adverse effect on human health and can lead to a premature death.

The Indo-Gangetic plain is exposed to Black Carbon (BC) with serious implications on regional climate and human health.

Mortality rises linearly with an increase in air pollutants level and shows adverse impact at higher levels.

Relevance and significance of the study:

The inclusion of BC as a potential health hazard inspires and provides a background for more epidemiological studies to provide evidence of health effects of air pollutants from different

parts of India.

This will help government and policy-makers for better planning to mitigate the adversity associated with changing climate-air pollution-health nexus.

What is black Carbon? What are the concerns?

Black carbon results from the incomplete combustion of fossil fuels and biomass. BC is produced both naturally and by human activities as a result of the incomplete combustion of fossil fuels, biofuels, and biomass.

Primary sources include emissions from diesel engines, cook stoves, wood burning and forest fires.

It is a short-lived pollutant that is the second-largest contributor to warming the planet behind carbon dioxide (CO₂).

SILVER COCKSCOMB

Why in News?

Silver cockscomb isn't a troublesome weed for Karnataka's Soliga tribe.

About

It is a short-lived 50-60 cm-tall plant considered as a weed, that bears simple, spirally **arranged leaves around the stem with pinkish or silky white flowers.**

In Karnataka's **Chamarajanagar district** the silver cockscomb is referred to as **Anne soppu.**

Also known as **lagos spinach** which belongs to the **Amaranthaceae family**, which includes

economically important plants like spinach (*Spinacia oleracea*), beetroot and quinoa.

The plant is known as **Celosia argentea, kurdu in Marathi and pannai keerai in Tamil.**

It grows well even on **fallow land and in drought-like conditions.**

Although it is of the same family as spinach, it **does not pose the same risk to kidneys.** Spinach leaves are high in calcium, oxalates, vitamin K and potassium, which can impair kidney function and lead to formation of kidney stones.

Its leaves have **lower levels of oxalic acid**

and phytic acid.

Issues

It is a weed, when left unchecked, it can spread quickly and suppress the growth of other crops, affecting their yield.

It also attracts insects, caterpillars, worms and moths that can harm crops.

Benefits

Soligas use it as a nutritious leafy green vegetable, as it is high in nutrients such as beta-carotene and folic acids, and have vitamin E, calcium and iron.

It is frequently used in traditional **Chinese and Indian medicine** for treating **eye diseases and ulcers**.

Helps to lower the body’s heat and reduce stomach burn, which often stems from indigestion.

Its Seed contains an edible oil that is beneficial for treating conditions such as bloodshot eyes and cataracts.

Who are Soligas?

They are an indigenous tribe of Karnataka.

They reside in the **peripheral forest areas near Biligiri Rangana Hills** and Male Mahadeshwara in the Chamarajanagar district of Karnataka.

They are the **first tribal community living inside the core area of a tiger reserve** in India to get their forest rights officially recognised by a court of law.

TIGER ORCHIDS

Why in News?

Recently, Tiger Orchids (*Grammatophyllum speciosum*) bloom at the Jawaharlal Nehru Tropical Botanic Garden and Research Institute (JNTBGRI), Palode, Kerala.

About Tiger orchid:

It is the largest orchid species in the world.

It is called Tiger Orchid because of its splendid flowers which sport striking brown spots against a yellow backdrop, bringing to mind tigers.

After 8-12 years of growth, *Grammatophyllum speciosum* produces flowers in alternate years in its natural habitat.

It is often grown as an ornamental orchid in gardens and parks for its attractive foliage and

large flowers.

It flowers in January or July, but plants do not flower every year.

The plant was listed by the Guinness Book of World Records as the world’s tallest orchid, with specimens recorded up to 7.62 metres in height

Distribution: Malaysia, Indonesia, Thailand, Myanmar and Laos.

Habitat: They grow in Terrestrial (Primary Rainforest, Freshwater Swamp Forest, Riverine) habitats.

Preferred Climate Zone: Tropical, Sub-Tropical / Monsoonal.

Conservation status

CITES : Appendix II

BATAGAIIKA CRATER

Why in News?

Recently, stunning drone footage has revealed details of the Batagaika crater which is getting affected due to climate change.

About Batagaika Crater:

It is located in Russia’s Far East that forms

the world’s biggest permafrost crater.

Scientists believe that the crater is the result of a melting permafrost land, which was frozen during the Quaternary Ice Age 2.58 million years ago,

It began to form after the surrounding forest

was cleared in the 1960s and the permafrost underground began to melt, causing the land to sink.

It is also called as “gateway to the underworld,” by some locals in Russia’s Sakha Republic. It has a scientific name: a mega-slump.

This is produced by higher air temperatures, warming climate and anthropogenic impact.

It holds clues to prehistoric life on Earth.

Researchers believe the exposed ice and soil along the crater’s edges could hold up to 200,000 years of geological and biological history.

Impact on Environment

The soil beneath the slump, which is about 100 metres deep (328 feet) in some areas, contains an “enormous quantity” of organic carbon that will release into the atmosphere as the permafrost thaws, further fuelling the planet’s warming.

INDRAVATI TIGER RESERVE

Chhattisgarh Forest Department has arrested 39 persons for poaching in Indravati Tiger Reserve, Bijapur, and sent them on judicial remand.

About Indravati Tiger Reserve:

Location: It is located in the Bijapur district of Chhattisgarh.

The park derives its name from the Indravati River, which flows from east to west and forms the northern boundary of the reserve with the Indian state of Maharashtra.

Indravati attained the status of a national park in 1981 and a tiger reserve in 1983 under Project Tiger.

Topography: It mainly comprises of undulating hilly terrain with altitudes ranging between 177 to 599 m above sea level.

Vegetation: Three major forest types are recognized in Indravati: Moist Mixed Deciduous Forest with Teak, Moist Mixed Deciduous Forest without Teak, and Southern Dry Mixed Deciduous Forest.

Flora: Some common species include teak, achar, karra, kullu, shisham, semal, haldu, arjun, bel and Jamun.

Fauna: It is home to one of the last populations of rare wild buffalo.

Major faunal species include tiger, leopard, striped hyena, wolf, common mongoose, freshwater crocodile, common monitor lizard, Indian bull frog, herons, white-necked stork, black-necked stork, white ibis, black ibis etc.

Key facts about Indravati River:

It is a tributary of the Godavari River and flows through the central Indian states of Maharashtra, Chhattisgarh, and Odisha.

Origin: It rises in the Kalahandi district of Odisha on the western slopes of the Eastern Ghats.

Length: It flows for 535 km and has a drainage area of 41, 665 sq. km.

Course: After originating in Odisha, it flows westwards to join the Godavari, thus forming the boundary between Maharashtra and Chhattisgarh states at some places.

The famous ‘Chitrakoot’ falls forms on Indravati River in Chhattisgarh.

The Indravati River is sometimes known as the “lifeline” of the Bastar District, which is known as one of the greenest districts in India.



Tributaries:

The major right-bank tributaries of the Indravati River are Bhaskel River, Narangi River, Nimbra River, Kotri River and Bandia River.

The Nandiraj River is the only important left-bank tributary of the Indravati River.

Indravati Dam:

Indravati Dam, or the Upper Indravati

Hydro Power Project, was built near the town of Mukhiguda in the Kalahandi district.

It is one of the largest dams in India as well as Asia and produces 600 MW of electricity.

The project envisages the diversion of water of the Indravati River in its upper reaches into the Mahanadi valley for power generation and irrigation.

CAM RANH BAY

Why in News?

Indian Naval Ship Kirpan will soon be handed over to Vietnam People’s Navy (VPN) at the strategic military port of Cam Ranh Bay.

About Cam ranh bay:

Location: Cam Ranh Bay is a deep-water bay located in Khánh Hòa Province, Vietnam, on the South China Sea.

Size: It is approximately 20 miles (32 km) long from north to south and up to 10 miles (16 km) wide.

Depth: The bay is up to 164 feet (50 m) deep, making it one of the deepest natural harbours in Southeast Asia.

Facilities: The port has two main piers, one for general cargo and one for oil tankers. It also has a number of other facilities, including a repair yard, a fuel depot, and a container terminal.

It is a major refuelling and repair station for ships in the South China Sea.

Historical Significance:

During the colonial era, it was controlled by the Champa Kingdom and later became part of the Vietnamese territories.

In the 19th century, the French established a major military presence in the bay.

During the Vietnam War, Cam Ranh Bay gained significant importance as a strategic military base for both the United States and South Vietnam.

The United States constructed extensive facilities, including an airbase and a deep-water

port, to support its military activities during the war.

Following the end of the Vietnam War in 1975, Cam Ranh Bay came under the control of the Socialist Republic of Vietnam.

The Soviet Union subsequently leased the



former American facilities and established a major naval base there.

The Soviet Navy maintained a presence in Cam Ranh Bay throughout the Cold War until the early 2000s.

Key facts about INS Kirpan:

It is an indigenously-built in-service missile Corvette.

It is a Khukri class missile corvette commissioned into the Navy on January 12, 1991.

Features:

It has a displacing capacity of close to 1,400 tonnes.

It is capable of a speed of more than 25 knots.

The Khukri class are equipped with Diesel Engines assembled in India.

The ship is fitted with a medium-range gun, 30 mm close-range guns, chaff launchers, and surface-to-surface missiles.

It performs a wide variety of roles, including coastal and offshore patrol, coastal security, surface warfare, anti-piracy, and Humanitarian Assistance and Disaster Relief (HADR) operations.

SC URGES CENTRE TO TRANSFER CHEETAHS TO ANOTHER LOCATION

Why in news?

Recently, the use of radio collars in the cheetah reintroduction project in Kuno Wildlife Sanctuary, Madhya Pradesh, India, has resulted in unexpected setbacks, with cheetahs experiencing neck wounds and septicaemia, an infection of the blood by bacteria.

The Supreme Court told the Union Government that the deaths of 40% of the 20 cheetahs brought from South Africa and Namibia to the Kuno National Park (KNP) in under a year is does not present a good picture. A Bench headed by Justice B.R. Gavai urged the government to move the big cats to a more conducive environment, if required, and not make it a “prestige issue”.

About

On July 14, a male cheetah named Suraj, translocated from South Africa, died at KNP. This took the total number of cheetah deaths at the park in Sheopur district since March to eight. Another male cheetah, Tejas, brought to KNP from South Africa in February had died on July 11.

Besides these two deaths, six cheetahs, including three cubs born to Namibian cheetah ‘Jwala’, have died at the national park since March, in a setback to the reintroduction programme launched with much fanfare in September last year.

The Centre, in a report, attributed the deaths of eight cheetahs in less than four months at the Kuno National Park (KNP) in Madhya Pradesh to **several health issues and heat**. The report came hours after the Supreme Court expressed concerns about the cheetah deaths at the KNP and asked the Centre to take corrective steps.

Previously health issues on cheetah are

reasoned on the ground of infections due to radio collars

Radio Collars

Radio collars are used to track and monitor animals in the wild.

They consist of a collar with a small radio transmitter.

Collars provide data on animal behavior, migration, and population dynamics.

They can be combined with GPS or accelerometers for additional information.

Collars are designed to be lightweight and comfortable for animals.

Challenges with using the radio collars

Festering Neck Wounds and Septicaemia:

Two cheetahs in Kuno died due to suspected septicaemia caused by festering neck wounds from radio collars.

Problems with Long-term Collar Usage:

Carrying something on the body for an extended period can have downsides, as seen in studies on watch wearers and pet dogs. Similarly it can affect the cheetah also.

Weight Considerations:

Globally, the general guideline is to keep radio collar weight below 3% of the animal's body weight.

Modern collars for wild cats typically weigh around 400g, which is suitable for cheetahs weighing between 20 kg and 60 kg.

However, fitting collars on cheetahs can be challenging due to their small necks, especially

for younger animals.

Lack of adaptation

Secondary bacterial infections under collars are not commonly reported in African conditions due to drier skin between rain spells.

In historical times, cheetahs in India did not wear collars during the monsoon and may have adapted differently to the local climate.

Other reasons:

African Cheetahs may be more susceptible to local pathogens compared to Indian tigers and leopards, potentially due to differences in immunity and environmental conditions.

Cheetah

Acinonyx jubatus jubatus (African Cheetah)

Slightly brownish and golden skin; thicker than the Asiatic Cheetahs

More prominent spots and lines on the face.

Found all over the African continent

Acinonyx jubatus venaticus (Asiatic)

Cheetah)

Slightly smaller than the African ones.

Pale yellowish fawn coloured skin - more fur under body, belly specifically.

Found only in Iran; the country claims there are only 12 of them left.

Year 1952 - Asiatic Cheetah officially declared extinct from India.

Reintroduction of Cheetah to India:

The “Action Plan for Introduction of Cheetah in India” was released by MOEF&CC at the 19th meeting of the National Tiger Conservation Authority (NTCA) (January 2022).

Such a plan was first proposed in 2009.

In September 2022, eight cheetahs landed in India from Namibia.

The 8 cheetahs have been relocated to the Kuno-Palpur National Park, Madhya Pradesh.

The relocation of cheetahs to India from Namibia is the world’s first inter- continental large wild carnivore translocation project.

GRADED RESPONSE ACTION PLAN (GRAP)

Why in News?

Recently, the Commission for Air Quality Management in NCR & Adjoining Areas (CAQM) announced revision of the Graded Response Action Plan (GRAP) which will come into force w.e.f. 1st October, 2023 in the entire National Capital Region.

About Graded Response Action Plan:

It is a set of emergency measures that kick in to prevent further deterioration of air quality once it reaches a certain threshold in the Delhi-NCR region.

The GRAP was first notified in January 2017 by the Ministry of Environment, Forest and Climate Change.

Implementation:

The Commission for Air Quality Management (CAQM) has constituted a sub-committee for the operationalization of the GRAP.

This body includes officials from the CAQM, member secretaries of pollution control boards of Uttar Pradesh, Delhi, Haryana, Rajasthan, the Central Pollution Control Board, a scientist from the IMD and one from the IITM and Health Advisor.

The sub-committee is required to meet frequently to issue orders to invoke the GRAP.

The orders and directions of the CAQM will prevail in case of any conflict between directions issued by the State governments and the CAQM.

What are the revised measures?

Stage I – ‘Poor’ Air Quality (AQI ranging between 201-300): Enforce NGT / Hon’ble SC’s

order on over aged diesel / petrol vehicles.

Stage II - 'Very Poor' (AQI 301-400): Rigorous actions to combat air pollution at identified hotspots in the region.

Stage III - 'Severe' (AQI 401-450): Impose strict restrictions on BS III petrol and BS IV diesel four-wheelers in certain areas and may suspend

physical classes in schools for primary grade children up to Class 5.

Stage IV - 'Severe Plus' (AQI greater than 450): When the AQI exceeds 450, four-wheelers registered outside Delhi, except for electric vehicles, CNG vehicles, and BS-VI diesel vehicles, will not be allowed to enter the city.

DEEP SEA MINING

Why in the News?

On July 10, 2023, the International Seabed Authority (ISA) began a three-week-long discussion in Jamaica. Talks such as these are crucial as controversial proposals to allow deep sea mining are set to take centre stage. Moreover, many countries and private institutions are proposing deep sea mining as a source to extract minerals to promote the world's push for green technology.

Deep sea mining

Deep sea mining is the extraction of mineral resources **from the ocean below 200 metres**. It has gained attention due to the increasing demand for metals like lithium, cobalt, copper, nickel, and manganese and the depletion of terrestrial deposits.

Clarion-Clipperton Zone (CCZ)

The Clarion Clipperton Zone, or CCZ, in the eastern Pacific is the most studied area of commercial interest for deep sea mining. Situated at depths between 3,500 and 5,500 metres, this one zone contains more nickel, manganese and cobalt than all terrestrial resources combined.

The **abyssal plain**, more than 4km down, is studded with trillions of potato-sized "polymetallic nodules" containing manganese, nickel, copper and cobalt, which are used in rechargeable batteries for electric vehicles.

The nodules build up around **small objects such as shells or teeth over millions of years**. The seabed elsewhere also features seamounts, or underwater mountains, draped in metal-heavy crusts; and sulphide ores laid down around hot,

deep-sea vents.

The crusts are rich in precious metals such as **platinum and molybdenum**; the ores contain copper, gold and silver. All are sought-after commodities in electronics, construction and transportation.

CCZ falls outside national jurisdictions, and hence is regulated by the ISA. So far, the authority has granted 16 exploration contracts in the CCZ.

Importance of Polymetallic nodules

Polymetallic nodules are small rounded accretions **found on the ocean floor**, particularly in **abyssal plains**, at depths typically ranging from **4,000 to 6,000 metres**. They are composed of various minerals, **including manganese, iron, nickel, copper, cobalt, and traces of other metals**. These nodules form over millions of years through a slow process called **sedimentation**.

Mining the nodules would involve scraping off the top layer of the ocean floor, separating the nodules from the mud, using a giant tube to pump them to a surface ship, and returning the water and fine particles through another tube. Nodules form over millions of years and cannot be replaced in any meaningful way.

Resource potential- rich in valuable metals such as manganese, iron, copper, nickel, cobalt, and other rare earth elements

Sustainability and circular economy

Potential for clean energy transition

Economic opportunities:

Diversification of resource supply - an

alternative source of metals, reducing dependence on a limited number of countries that currently dominate metal production.

Climate change mitigation - Potential carbon sinks

The International Seabed Authority

The International Seabed Authority (ISA) is an independent intergovernmental body established under the authority of the United Nations Convention on the Law of the Sea (UNCLOS), **to regulate mining activities on the ocean floor as well as protect seabed ecosystems.**

Critics say that its dual role as mining regulator and custodian of the seabed environment is contradictory, and that the body has been leaning too far in the direction of corporate interests. They also say it lacks transparency and accountability, claims it denies.

ISA members are currently drawing up a “mining code” that will allow mining activities in the deep sea to begin, but a loophole in its rules could allow it to start approving applications

Proposed methods for Deep Sea mining

The proposed methods for deep sea mining include:

Extracting metals from polymetallic nodules on abyssal plains: Abyssal plains are underwater plains on the seafloor that contain polymetallic nodules with various metals like manganese, iron, copper, nickel, cobalt, lead, zinc, molybdenum,

lithium, titanium, and niobium.

Stripping cobalt crusts from seamounts: Seamounts are underwater mountains formed through volcanic activity, and they are potentially rich in cobalt. Cobalt crusts accumulate at depths between 400 and 7,000 metres and also contain iron, manganese, nickel, copper, and rare earth elements.

Extracting polymetallic sulphides from hydrothermal vents: Polymetallic sulphides, also known as seafloor massive sulphides, are found in hydrothermal vents and are rich in copper, iron, zinc, silver, and gold. These vents are home to unique ecosystems with chemosynthetic bacteria, giant tube worms, crustaceans, mollusks, and other species.

Concerns related to deep sea mining include:

Ecological damage: The deep-sea ecosystem is not fully understood, and exploitation through mining can cause irreversible harm to fragile and unique species and habitats.

Disturbance to underwater ecosystems: Studies have shown that deep-sea mining can disrupt underwater ecosystems for long periods, impacting biodiversity and ecosystem functioning.

Sediment disruption: Mining activities can lead to **sediment plumes**, which can smother and suffocate organisms in the water column and on the seafloor.

Wastewater generation: Deep Sea mining can produce large amounts of wastewater containing chemicals and potentially harmful substances, which can negatively impact marine life.

Light and noise pollution: Mining operations can introduce artificial light and noise



into the deep-sea environment, affecting organisms that rely on natural light cycles or sound for communication and navigation.

A new study has found that deep-sea mining may pose **a big threat to tuna species moving into the eastern Pacific Ocean** as climate change pushes them into the open ocean. Many Global South countries in the eastern Pacific are likely

to get more fish from this migration of tuna, but deep-sea mining could mean that they end up catching less.

Loss of historical information: Deep Sea mining may lead to the destruction of unique species and ecosystems before they can be fully studied and understood, resulting in the loss of valuable scientific knowledge.

LIGHTNING NOT A NATURAL DISASTER

Recently, The Union government is not in favour of declaring lightning a natural disaster as deaths caused by it can be avoided through education and awareness

Deaths due to Lightning:

National Crime Records Bureau (NCRB) data show that 2,880 people died in lightning strikes in 2021. The deaths made up 40% of all accidental deaths caused by “forces of nature”.

The frequency of lightning was the highest in northeastern States and in West Bengal, Sikkim, Jharkhand, Odisha and Bihar.

But the number of deaths is higher in the central Indian States of Madhya Pradesh, Maharashtra, Chhattisgarh and Odisha.

What is lightning?

Lightning is **a rapid and powerful discharge of electricity in the atmosphere**, often directed towards the Earth.

When particles like **rain, ice, or snow collide inside storm clouds**, they increase the charge

imbalance, leading to **negative charges in the lower parts of the clouds**.

Meanwhile, **objects on the ground become positively charged**, creating a situation that nature tries to resolve by passing electrical current between the two charges.

Cloud-to-ground lightning bolts are a common occurrence, with approximately 100 striking the Earth’s surface every second.

These lightning bolts typically start with a stepped leader, a series of negative charges that

rapidly move downward from the bottom of the storm cloud to the Earth along a channel, traveling at an astonishing speed of about 200,000 mph (300,000 kph).

Why Lightning is not categorized as a Natural Disaster in India?

Several states have been demanding that lightning deaths be covered as a natural disaster. Once this is notified, the victims will be entitled to compensation from the State Disaster Response Fund (SDRF). The Centre makes 75% of the contribution to the SDRF.

Government Measures

The National Disaster Management Authority (NDMA) guidelines:

The NDMA guidelines follow a community-centric approach.

These guidelines, drawn from international best practices, provide do-s and don’t-s as well as steps to be taken by common people.

NDMA also works on improving inter-agency coordination which includes monitoring and reviewing mechanisms at field level, forecasting and dissemination of now cast warnings of IMD, etc.

India is among a few countries which has introduced a Lightning Warning System. This system has a location-specific **forecast up to 48 hours** about the occurrence of thunderstorms, lightning, squally winds, gusty winds, hailstorms.

Besides, **ISRO is providing satellite information from INSAT3-DR about convective clouds.**

Damini App was developed by the **Indian Institute of Tropical Meteorology (IITM-Pune)** and **Earth System Science Organization (ESSO)** under the ministry of earth sciences.

The app monitors lightning occurrences all

over India and alerts the user of lightning near them by a GPS notification under 20 km and 40 km.

Further, the Damini app also triggers warnings about lightning strikes three hours in advance which can help reduce losses to life and property.

YELLOW SEA

Why in News?

North Korea recently fired several cruise missiles into the Yellow Sea.

About Yellow Sea:

It is a marginal sea of the western Pacific Ocean.

Location:

The Yellow Sea is situated between mainland China to the west and north, the Korean Peninsula to the east, and the Shandong Peninsula and Liaodong Peninsula to the south.

It connects with the Bohai Sea to the northwest.

Size: Also referred to in China as Huang Hai and in North and South Korea as the West Sea, the Yellow Sea is 870 kilometres long and 556 kilometres wide.

Depth: It is one of the largest shallow areas of continental shelf in the world with an average depth of 44 metres and a maximum depth of 152

metres.

Inflow: Several major rivers, including the Yellow River and the Yangtze River, discharge into the Yellow Sea, carrying significant amounts of sediment and nutrients.

Islands: The Yellow Sea is dotted with numerous islands, the largest of which include Jeju Island (South Korea), Shandong Peninsula islands (China), and Ganghwa Island (South Korea).

Climate: The climate is characterized by very cold, dry winters and wet, warm summers.

Currents:

The warm current of the Yellow Sea is a part of the Tsushima Current, which diverges near the western part of the Japanese island of Kyushu and flows at less than 0.5 mile (0.8 km) per hour northward into the middle of the sea.

Along the continental coasts, southward-flowing currents prevail, which strengthen markedly in the winter monsoon period, when the water is cold, turbid, and of low salinity.

ANTARCTICA'S BLOOD FALLS

Why in news?

After more than a century of curiosity, scientists have finally unravelled the mystery behind Antarctica's Blood Falls, a bright red waterfall that flows from Taylor Glacier.

The iconic red hue is caused by the presence of small "iron-rich nanospheres" (various elements such as iron, silicon, calcium, aluminium, and sodium) in the water.

About Taylor Glacier:

The Taylor Glacier is an Antarctic glacier about 54 kilometres long, flowing from the

plateau of Victoria Land into the western end of Taylor Valley, north of the Kukri Hills, south of the Asgard Range.

It was first discovered in 1911 by a British expedition to the continent.

The crimson drool is known as Blood Falls.

The red waterfall is located in the McMurdo Dry Valleys region of Antarctica.

Scientists analysed the contents using powerful electron microscopes and revealed that there were little nanospheres and they were iron-rich.

The minuscule particles come from ancient

microbes and are a hundredth of the size of human red blood cells.

They are highly abundant in the meltwaters of Taylor Glacier, which was named after the British scientist Thomas Griffith Taylor who first noticed the Blood Falls on the 1910 to 1913 expedition.

Along with iron, the nanospheres also contain silicon, calcium, aluminium, and sodium.

Key Facts about Antarctica

It is the world's southernmost and fifth largest continent. Its landmass is almost wholly covered by a vast ice sheet.

It has an extremely cold, dry climate. Winter temperatures along Antarctica's coast generally range from -10° to -30°C (14° to -22°F).

Lichens, mosses, and terrestrial algae are among the few species of vegetation that grow in Antarctica.

The islands of the Antarctic region are: South Orkney Islands, South Shetland Islands, South Georgia.

GLOBAL STOCKTAKE

Why in news?

The **Bonn Climate Change Conference** was the last big milestone in climate negotiations before the first Global Stocktake under the Paris Agreement at COP28 (Conference of the Parties 28 in Dubai. The outcomes of the Global Stocktake will guide countries in updating

of the Global Stocktake is to assess collective progress made by countries in achieving the long-term goals of the Paris Agreement. This includes evaluating the implementation of countries' nationally determined contributions (NDCs) and assessing the overall effectiveness of global climate actions.

mobilization and allocation of financial resources to support climate actions, particularly from developed to developing countries. The Stocktake reviews progress towards the commitment of developed countries to jointly mobilize **\$100 billion annually by 2020** to support climate mitigation and adaptation efforts in developing nations.



and enhancing their climate action plans

What is The Global Stocktake?

The Global Stocktake mandated under Article 14(1) of the Paris Agreement, aims to assess collective progress towards long-term global climate goals, including greenhouse gas reduction, building climate resilience, and securing adequate finance.

Key aspects of the Global Stocktake under the Paris Agreement

Assessment of Progress: The primary purpose

Review of Mitigation Efforts: The Stocktake examines the **mitigation efforts undertaken by countries to reduce greenhouse gas emissions**. It evaluates the adequacy and ambition of these efforts **limiting global temperature rise to well below 2 degrees Celsius above pre-industrial levels** and pursuing efforts to limit the increase to 1.5 degrees Celsius.

Assessment of Adaptation Measures: It assesses the extent to which countries are building resilience and adapting to the changing climate conditions.

Evaluation of Climate Finance: It examines the

Technology Transfer and Capacity Building: It assesses the provision of technology, knowledge, and technical assistance to enhance the capabilities of developing nations in implementing climate solutions.

Transparency and Reporting: The Stocktake ensures that countries provide accurate and reliable information to facilitate an objective assessment of global progress.

Informing Future Climate Action: It provides guidance for countries to set more ambitious targets in their subsequent rounds of NDCs. The Stocktake also identifies areas where additional efforts and support are required to bridge the emissions gap and accelerate progress towards the Paris Agreement goals.

Just Transition Pathways

Climate change negotiators reached a compromise on “just transition pathways” during the

conference.

India's climate policy emphasised the need for financing a "just transition" in sectors like energy and transport to achieve net-zero emissions by 2070.

Just transition pathways aim to ensure a fair and inclusive transformation towards low-carbon development.

Aligned with Paris Agreement Principles

The adoption of just transition pathways aligns with the Paris Agreement's self-differentiation principle.

Developing countries were able to strengthen just transition pathways, while developed countries focused more on mitigation efforts.

Just transition also respects soft obligations from the UN Sustainable Development Goals and the ILO's guidelines on just transition.

Mobilizing Climate Finance

Climate finance flows are not aligned with countries' identified priorities in their nationally determined contributions.

The **\$100 billion annual climate finance goal has not been fully realized**, and adaptation finance lags behind mitigation finance.

The **Environmental Integrity Group** suggested that the Mitigation Work Programme should contribute to financing, deviating from

major international public finance transfers.

Environmental Integrity Group (EIG)

The Environmental Integrity Group (EIG), **formed in 2000**, comprises Mexico, Liechtenstein, Monaco, the Republic of Korea, Switzerland and Georgia.

The Environmental Integrity Group was initiated by Switzerland during the negotiations of the Kyoto Protocol, where only party groups were allowed to negotiate.

Switzerland was not part of any group and they did not want to join the Umbrella Group. So, Switzerland declared to form the EIG and invited other independent parties to join.

Challenges in Mobilizing Climate Finance

Insufficient Funds: The commitment made by developed countries to mobilize \$100 billion annually by 2020 for climate finance has not been fully met. Many observers argue that only a fraction of this target has been realized.

Accounting and Transparency: There is a need for improved accounting mechanisms and transparency in climate finance. Ensuring accurate tracking, reporting, and verification of financial flows for climate action is essential.

Adaptation Finance Gap: While there is a growing recognition of the importance

of adaptation, the provision of financial resources for adaptation projects and programs remains limited

Complexity of International Financial Flows: The complexity of international financial flows poses a challenge in effectively channeling climate finance to where it is needed most.

Accountability and Conditionality: The conditionality of climate finance can also be a challenge, as the terms and conditions attached to financial assistance may not always align with the priorities and circumstances of the receiving countries.

Integrating the World Bank and Ensuring Equity

Efforts to align climate finance with the Paris Agreement's temperature goals require integrating the World Bank in climate change negotiations and holding it accountable for investments in fossil fuels.

The pursuit of the Global Stocktake should comply with principles of equity, justice, and fairness.

Way forward

In the efforts towards aligning climate finance with the Paris Agreement temperature goals, it is important to **integrate the World Bank in climate change negotiations** and hold it accountable as it is making huge investments in fossil fuels.

Efforts should be made

to ensure that the committed funds are effectively mobilized and channeled.

Developing universally agreed-upon metrics for tracking climate finance will enhance transparency and ensure that financial resources are allocated and utilized effectively.

Governments should create an enabling environment for private investment in climate-friendly projects by providing policy certainty, risk reduction

mechanisms, and incentives.

Developed countries should support technology transfer through financial and technical assistance, capacity building, and knowledge sharing.

Strengthening international cooperation and collaboration is crucial to mobilize climate finance effectively.

Ensuring adequate financial resources for climate action should be a key

consideration in international negotiations, such as the Global Stocktake and COP meetings.

India also underlined the need for “**financing**” a ‘**just transition**’ in sectors such as energy and transport in order to reach **net zero emissions by 2070**.

Therefore, the pursuance of the Global Stocktake as per the Paris Agreement needs to comply with the **principle of equity, justice and fairness**.

REDUCING THE RISK OF DISASTERS

The world needs to do more to prevent the risk of losses from all disasters, whether they are weather-related, earthquakes, or biological ones like COVID-19.

Recent Disasters

Three continents were gripped by **heat waves**. Massive forest fires have ravaged parts of Greece and Canada.

The river Yamuna breached the highest flood level, recorded 45 years ago, and **inundated parts of Delhi**.

About Disaster Risk Reduction (DRR)

It is aimed at preventing new and reducing existing disaster risk and managing residual risk, all of which contribute to strengthening resilience and therefore to the achievement of sustainable development.

DRR strategies and policies define goals and objectives

across different timescales and with concrete targets, indicators and time frames.

Sendai Framework 2015-2030

The **Sendai Framework works hand in hand with the other 2030 Agenda agreements, including The Paris Agreement on Climate Change**, The Addis Ababa Action Agenda on Financing for Development, the New Urban Agenda, and ultimately the SDGs.

It was **endorsed by the UN General Assembly** following the 2015 Third UN World Conference on Disaster Risk Reduction (WCDRR).

It **advocates for the substantial reduction of disaster risk** and losses in lives, livelihoods, and health and in the economic, physical, social, cultural, and environmental assets of persons, businesses,

communities, and countries.

State has the primary role to reduce disaster risk but that responsibility should be shared with other stakeholders including local government, the private sector, and other stakeholders.

Challenges to Disaster Risk Reduction Mechanism

The lack of competent financial risk management and insurance has provided a fertile breeding ground for these risks to proliferate and intensify.

There is also a **scarcity of investment in a development-oriented approach** that unites all parties into a transparent framework of action at the national level.

Significant difficulty in collecting and analysing data on hazards and exposures.

The lack of technical and institutional capacity for risk assessment and modelling.

Achieving comprehensive coverage of disaster risks.

Disaster Management in India

National Disaster Management Authority (NDMA):

It is the apex statutory body for Disaster Management in India, established through the Disaster Management Act, 2005.

The Disaster Management Act envisaged the creation of the **National Disaster Management Authority (NDMA)**, headed by the **Prime Minister**, and **State Disaster Management Authorities (SDMAs)** headed by respective **Chief Ministers**, to spearhead and implement a holistic and integrated approach to Disaster Management in India.

National Disaster Response Force (NDRF):

Established in **2006**, NDRF is the world's single largest force dedicated to disaster response.

It is functioning under the **Ministry of Home Affairs**, within the overall command, control and leadership of the Director-General.

At present, the NDRF consists of **15 battalions from the BSF, CISE, CRPF, ITBP, SSB and Assam Rifles**.

It is a **multi-skilled and high-tech force** that effectively responds to all types of **natural**

and man-made disasters, including **building collapses, landslides, devastating floods, and cyclones**.

Initiatives by India

Coalition for Disaster Resilient Infrastructure (CDRI):

Coalition for Disaster Resilient Infrastructure (CDRI) was first proposed by India during the **2016 Asian Ministerial Conference on Disaster Risk Reduction** held in **New Delhi**.

India is taking the lead and offering the expertise of **Disaster Resilient Infrastructure (DRI)** to its friendly countries.

Humanitarian Aid and Disaster Relief (HADR) operations:

Indian defence forces, under the aegis of **Headquarters Integrated Defence Staff (HQ IDS)** have been carrying out HADR operations within the country as well as outside the country to deepen coordination with its neighbours and friendly countries with a focus on sharing expertise and building capabilities.

India's initiative at G20 - Disaster Risk Reduction Working Group:

India has established the first G20 Disaster Risk Reduction Working Group.

Countries that make up the G20 hold around 85% of the global GDP and about two-thirds of the world population.

And as human vulnerability

to disasters is strongly linked to economic decisions, the G20 is in a unique position to chart a new path of disaster risk-informed decision-making.

Suggestions

Working on disaster early warning & early actions:

Expanding disaster early warning and early action systems is a top priority.

Inclusive and multi-hazard early warning systems are among the most effective means of reducing disaster deaths and economic losses.

During Cyclone Biparjoy, effective systems for end-to-end early warning and action helped achieve zero deaths from the event in India.

Preparedness of the power sector helped reduce the disruption time in power supply in the aftermath of the cyclone.

Significance of technologies:

The promise of disruptive technologies can help many countries leapfrog into a regime where they can use global capacity for forecasting to meet local needs.

To that end, we are working to realise the goal of the UN Secretary General's Early Warnings for All Initiative, which seeks to create universal coverage for everyone by the end of 2027.

Building resilient infrastructure:

Enhancing the resilience

of infrastructure to withstand climate and disaster risks is another global priority.

Infrastructure has a long-life cycle, and if built well, can lock-in resilience as opposed to risk.

That same infrastructure also becomes the lifeline of recovery during a crisis.

Understanding risks & impacts:

Failure to adopt an integrated perspective to understand risks to infrastructure, and its impact on

development, has the potential to multiply losses, which disproportionately impact the poor, who subsequently take the longest time to recover.

Financing disaster risk reduction:

Developing a new approach to financing disaster risk reduction is needed to transform risk reduction plans into concrete actions.

This effort must be led by finance and economy ministries in collaboration with the private sector.

Way Ahead

G20 nations like Indonesia and India have used risk metrics to allocate resources at the sub-national and local levels for disaster risk reduction. These need to be studied and scaled.

Building on these areas of work, scaling up ecosystem-based approaches and enhancing national and local response capacities will be the responsibility of the next G20 presidents.

STRATEGIC NATURAL GAS STORAGE

Why in News?

India is exploring building strategic natural gas storage facilities in the country on the lines of strategic crude oil reserves in a bid to have a large gas stockpile that can be utilised in emergencies and supply disruptions, and serve as a hedge against extreme price volatility in the international market

Strategic gas storage

Strategic gas storage is a concept of building and maintaining large reserves of natural gas in underground or above-ground facilities that can be utilised in emergencies and supply disruptions, and serve as a hedge against extreme price volatility in the international market.

Status of Natural Gas in India

India is a net importer of natural gas and depends on imports to meet around half of its requirement. The government considers natural gas as a key transition fuel and is pushing for increasing its consumption in the country.

India has set a target to increase the share of natural gas in its primary energy mix to 15 per cent by 2030 from a little over 6 per cent at present.

As one of the major importers of liquefied natural gas (LNG), India was adversely impacted by the tightening global supply and surging gas prices last year in the aftermath of Russia's invasion of Ukraine.

India has no strategic gas storages as of now.

How can the natural gas be stored?

Natural gas is a commodity

that can be stored for an indefinite amount of time. It is possible to identify different types of storages, depending on their purpose.

Natural gas can be stored underground in depleted reservoirs in oil and gas fields, and in natural aquifers and salt caverns.

It can also be stored in the gaseous state as well as in the form of LNG in large over-ground tanks.

In the United States, most existing natural gas storages are in depleted oil and gas fields that are close to gas consumption centres, according to the US Energy Information Administration (EIA).

Underground gas storage (UGS) responds to the need of storing large amounts of natural gas and it is therefore used for strategic purposes.

Underground storages can be natural structures (depleted gas reservoirs, aquifers, or salt caverns) or hand-made.

They are pressurized natural gas containers: pressure builds up the more gas is added. The higher the pressure, the more readily can the gas be extracted, while as the pressure falls below that of the wellhead, the resource cannot be pushed out of the facility. This means that a certain amount of gas can never be extracted (“unrecoverable gas”). Furthermore, underground storages contain “cushion gas,” which is the volume needed to provide the required pressurization to extract the resource.

Significance

- Energy Security
- Price Stability
- Economic Resilience
- Geopolitical Leverage

Challenges

Infrastructure Development: Establishing the required infrastructure for gas storage, including retrofitting depleted reservoirs or building LNG tanks, involves significant investment and technical challenges.

Cost Considerations: The cost of setting up and maintaining strategic gas reserves needs to be balanced against potential benefits in terms of energy security and price hedging.

Regulatory Framework: Clear regulations and policies need to be in place to govern the ownership, management, and utilization of strategic gas reserves.

Crude oil Reserves

India already has strategic crude oil reserves with a capacity to hold 5.33 million tonnes of oil in underground caverns, fit to meet around 9.5 days of the country’s oil

demand. The capacity is being expanded by another 6.5 million tonnes in the second phase of the project.



SCIENCE & TECHNOLOGY

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“NAEGLERIA FOWLERI”: A BRAIN-EATING AMOeba

Why in News?

Recently, a 15-year-old boy in Kerala recently died due to a rare infection caused by *Naegleria fowleri*, or “brain-eating amoeba”.

About *Naegleria fowleri*:

It is an amoeba (single-celled living organism) that lives in soil and warm freshwater, such as lakes, rivers, and hot springs.

It is commonly called the “brain-eating amoeba”.

Naegleria fowleri is a heat-loving (thermophilic) organism, meaning it thrives in heat and likes warm water. It grows best at high temperatures up to 115°F (46°C) and can survive for short periods at even higher temperatures.

How does it infect people?

It infects people when water containing the amoeba enters the body through the nose.

This typically happens when people go swimming, diving or when they put their heads under fresh water, like in lakes and rivers.

The amoeba then travels up the nose to the brain, where it destroys the brain tissue and causes a devastating infection called primary amoebic meningoencephalitis (PAM).

PAM is a very serious infection of the central nervous system that’s almost always fatal. The fatality rate is higher than 97% even with treatment.

Cause of death:

The infection destroys brain tissue, causing brain swelling and death.

Naegleria fowleri infections may also happen when people use contaminated tap water to



cleanse their noses during religious practices or rinse their sinuses (sending water up the nose).

There is no evidence that *Naegleria fowleri* can spread through water vapor or aerosol droplets (such as shower mist or vapor from a humidifier).

People cannot be infected with *Naegleria fowleri* by drinking contaminated water.

Naegleria fowleri infection does not spread from person to person, nor does it manifest symptoms when contracted in other forms.

Treatment:

The US-based Centres for Disease Control (CDC) recommends treatment with a combination of drugs, often including amphotericin B, azithromycin, fluconazole, rifampin, miltefosine, and dexamethasone.

These drugs have been used to treat patients who survived.

CHANDRAYAAN3’S SLINGSHOT ROUTE TO THE MOON

Why in news?

Chandrayaan3, like its predecessor Chandrayaan2, will take a rather intriguing route

to the moon. It will circle the earth five six times, to get the slingshot effect. It will likewise circle the moon 56 times before the lander began its

descent on to the moon's surface.

Sling shot Effect

The slingshot effect is also known as a planetary swing-by or a gravity-assist manoeuvre.

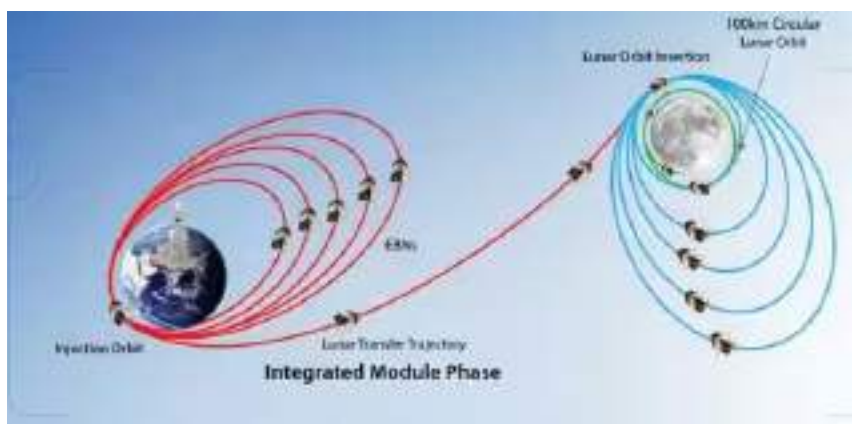
It is performed to achieve an increase in speed and/or a change of direction of a spacecraft as it passes close to a planet.

As it approaches, the spacecraft is caught by the gravitational field of the planet, and swings around it.

The speed acquired is then sufficient to throw the spacecraft back out again, away from the planet.

By controlling the approach, the outcome of the manoeuvre can be manipulated and the spacecraft can acquire some of the planet's velocity, relative to the Sun.

The Chandrayaan-3 mission will be launched into space by the Launch Vehicle Mark-III, (LVM-III). After launching into an orbit around the Earth at an altitude of 179 km on Friday, the spacecraft will gradually increase its orbit in a series of manoeuvres to escape the Earth's gravity and slingshot towards the moon. After reaching close to the moon, the spacecraft will need to be captured by its gravity.



Direct Path vs. Multi-Step Approach: Apollo 11 used a direct trajectory (TLI) to reach the Moon in just over four days, while Chandrayaan-3 follows a multi-step approach, using a series of Earth orbits and engine burns over 40 days to gradually increase speed and position it for lunar insertion.

Launch Vehicles: Apollo 11 used the powerful Saturn V launch vehicle, enabling a direct trajectory, while Chandrayaan-3 uses the GSLV Mark-III, which requires a more gradual trajectory due to its lower payload capacity.

The choice of trajectory for Chandrayaan-3 allows ISRO to optimize the mission within the constraints of the GSLV Mark-III's capabilities, even though it takes longer to reach the Moon compared to Apollo 11.

CARBON MOLECULES IN SPACE

Why in the News?

Recently, the CH_3^+ molecule has been detected in space for the first time by the James Webb Space Telescope (JWST).

About

One of the most important unsolved problems of modern science is: How did life arise from non-living matter?

We still don't know but we have a good idea of what the required steps are, for instance, the formation of complex organic molecules, like amino acids, from simpler ones, like CH_3^+ , or methylum.

The CH_3^+ molecule, which is also known as methyl cation, has been detected in space for the first time by the James Webb Space Telescope (JWST).

Scientists found the fingerprints of the CH_3^+ molecule in light coming from a swirling disk of dust and gas around a young star. The disk is in the Orion Nebula, 1,350 light years from Earth.

The Orion Nebula is visible to the naked eye although you may only see a dot on Orion's sword slightly below the belt.

Visible light is just a fraction of the whole

picture. But every atom and molecule absorb or emits light uniquely, with its own specific colour



palette.

For example, hydrogen, the simplest of atoms, when excited, emits a red glow, and if you view it through a prism, you will see four characteristic lines that make up its spectrum.

About CH₃⁺ molecule:

It is also known as methyl cation.

CH₃⁺ is a very simple organic molecule, just one carbon atom and 3 hydrogen atoms.

It reacts with other molecules to form more complex ones.

Its presence in space tells us that basic building blocks for life are out there.

It is an initiator of a lot of very interesting more complex reactions

Significance of the discovery

The discovery of methyl cation in a region where planets that could eventually host life are forming may help untangle this cosmic riddle and help scientists better understand how and where in the universe life could get started.

ICMR CONTROLLED HUMAN INFECTION STUDIES

Why in News?

With the Bioethics Unit of the Indian Council of Medical Research (ICMR) placing a consensus policy statement on Controlled Human Infection Studies (CHIS) for comments, India has taken the first step in clearing the deck for such studies to be undertaken here.

About

Controlled Human Infection Studies (CHIS), also called human challenge studies, where healthy volunteers are intentionally exposed to a disease-causing microbe in a highly controlled and monitored environment, has been carried out for hundreds of years, an example being the yellow fever study in the early 1900s to establish that mosquitoes transmit the virus and has been used to study malaria, typhoid, dengue, etc.

Typically, a less virulent strain of the microbe is used to study less deadly diseases that have proven drugs for treatment. They are more often undertaken on a small number of volunteers to understand the various facets of infection and disease, and, occasionally, to accelerate the development process of a medical intervention.

When used as part of vaccine development, these studies are initiated only when safety and immune responses of the candidate vaccines are known through early phases of clinical testing.

ICMR's Bioethics Unit has introduced a consensus policy statement which is now open for comment and argues the case for bringing in CHIS. The document talks of the need, benefits, and challenges associated with CHIS.

This paper is aimed at addressing a variety of

ethical issues so that research can be conducted in India without compromising on ethical principles while ensuring the protection of human participants.

It adds that the deterrents include technical, clinical, ethical and legal contentions, amid unique socio-cultural context.

Ethical Issues

India has so far stayed away from CHIS, because regardless of the potential scientific benefits, these studies are ethically sensitive and raise concerns about contentious research ethics — issues like deliberate harm, possible disproportionate payment and hence inducements, third-party risk, withdrawal from the study and research with vulnerable participants.

However, these studies need a streamlined ethics review process with additional ethical oversight and safeguards to protect the study participants.

Why does India need CHIS?

India carries a high burden of morbidity and

mortality from infectious diseases. They contribute about 30% of the disease burden in the country.

Finding novel, efficient, and cost-effective alternatives to existing methods of research in these diseases and their prevention is imperative to reduce this burden.

CHIS is a relatively new research model that helps provide unique insights into disease pathogenesis and can accelerate the development of novel medical interventions.

It further states that CHIS offers accelerated, cost-effective, and efficient outcomes using smaller sample sizes in comparison to large clinical trials.

Its social value includes potential contributions to public health response to diseases of concern, healthcare decision-making, policies and economic benefits, improved pandemic preparedness, and community empowerment.

CHIS is a highly complex area and may require collaborations at different levels between researchers, institutions, organisations and/or between different countries.

DUCHENNE'S MUSCULAR DYSTROPHY

Why in News?

Indo-Japanese researchers develop 'disease-modifying' treatment for Duchenne's Muscular Dystrophy.

About

A team of doctors from Tamil Nadu along with scientists from Japan have developed a disease-modifying treatment for Duchenne Muscular Dystrophy (DMD), a rare genetic disease, using a food additive — a beta-glucan produced by N-163 strain of a yeast *Aureobasidium pullulans*.

The six-month-long clinical study screened 27 children with DMD — 18 in treatment arm and nine in control arm. Along with regular treatment, the participants, all aged above three years, were given the beta-glucan in the form of a food supplement.

There is evidence of reduction in muscle weakness and muscle damage. The muscle strength of the treatment group improved (determined by Medical Research Council scaling). There was no adverse reaction in the participants and it potentially delayed progress of disease without side effects to the liver and kidneys

Duchenne Muscular Dystrophy (DMD)

DMD is a rare genetic disease that affects only male children. There are approximately 5,000 patients in Japan and 80,000 in India.

Muscles need lubricant. Dystrophin, an enzyme secreted in the muscles, helps in wear and tear and regeneration of muscles. Because of the genetic disorder, muscles cannot produce dystrophin. This damages and weakens the muscles, and patients become wheelchair-bound

in their early teens and die prematurely.

It is characterised by progressive muscle degeneration and weakness due to the alterations of a protein called dystrophin that helps keep muscle cells intact.

It is a multi-systemic condition, affecting many parts of the body, which results in deterioration of the skeletal, heart, and lung muscles.

The dystrophin gene is found on the X-chromosome, it primarily affects males, while females are typically carriers.

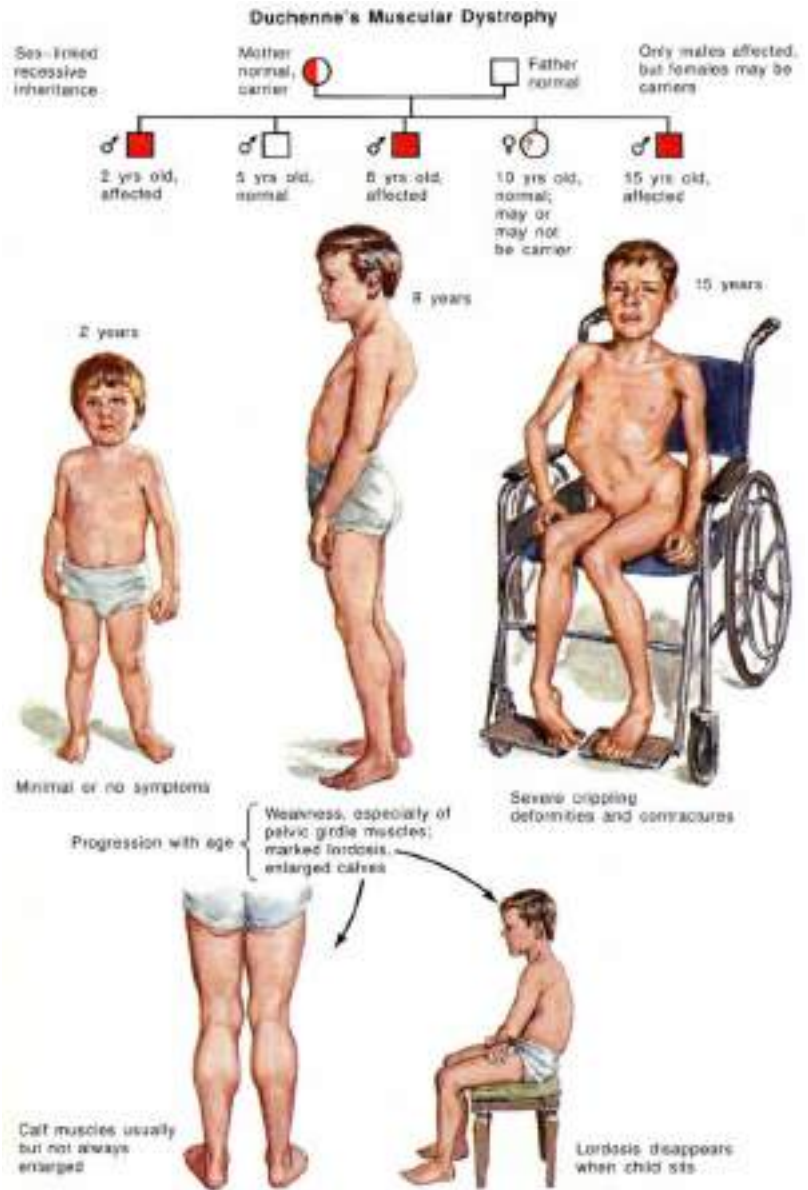
Symptoms

It can begin as early as age 2 or 3, first affecting the proximal muscles (those close to the core of the body) and later affecting the distal limb muscles (those close to the extremities).

Usually, the lower external muscles are affected before the upper external muscles. The affected child might have difficulty jumping, running, and walking. Other symptoms include enlargement of the calves, a waddling gait, and lumbar lordosis (an inward curve of the spine). Later on, the heart and respiratory muscles are affected as well.

Treatments

Presently available treatments are gene therapy, exon skipping, stop codon read-through and gene repair.



STAR-C INITIATIVE

Why in news?

India is considering expanding its Solar Technology and Application Resource Centres (STAR -C) initiative to a number of Pacific Island countries.

About STAR-C Initiative:

The programme aims to boost solar power ecosystems in the poorest countries.

The initiative is run by the International Solar Alliance in partnership with the United Nations Industrial Development Organisation (UNIDO).

It aims to create a strong network of institutional capacities within ISA member states to enhance quality infrastructure for the uptake of solar energy products and services.

The project is also funded by France.

Programme's objectives: Building solar workforces, standardizing products, setting up infrastructure, and raising awareness among

policymakers in developing countries.

Through this initiative, India aims to enhance the institutional capacities of International Solar Alliance member states and contribute to the development of quality infrastructure for solar energy uptake.

Key Facts about International Solar Alliance:

It was conceived as a joint effort by India and France to mobilize efforts against climate change through deployment of solar energy solutions.

It was conceptualized on the side-lines of the 21st Conference of Parties (COP21) to the United Nations Framework Convention on Climate Change (UNFCCC) held in Paris in 2015.

With the amendment of its Framework Agreement in 2020, all member states of the United Nations are now eligible to join the ISA.

Headquarter: India

HYGROELECTRICITY

Why in the News?

Researchers have successfully developed this technology which can generate electricity from humid air.

About

Hygroelectricity is the generation of electricity from the humidity of the air. It is a type of renewable energy that has the potential to be a major source of power in the future.

How does it work?

The key to harvesting electricity from humid air lies in a tiny device comprising two electrodes and a thin layer of material filled with nanopores. These nanopores, each less than 100 nanometres in diameter, allow water molecules from the air to pass through the device.

As these molecules move from an upper chamber to a lower chamber, they interact with

the edges of the nanopores, leading to a buildup of electric charge imbalances between the chambers. This process effectively transforms the device into a miniature battery, generating continuous electricity.

Just as clouds create electrical charges and give rise to lightning bolts during storms, this revolutionary device converts air humidity into usable electricity.

Advantage

Unlike other renewable energy sources such as solar and wind, air humidity is continuously available, making it a sustainable reservoir of energy.

Challenges

Currently, the fingernail-sized device can only produce electricity equivalent to a fraction of a volt. Scaling up the technology to meet practical energy demands is a significant hurdle.

ANTIBIOTICS WITH PROMISE

Why in the News?

Recently, Indian researchers have developed the antibiotic Cefepime/Zidebactam to combat drug resistance of pathogens.

What is Antibiotic Resistance?

The term antibiotic resistance or drug resistance is a subset of antimicrobial resistance or AMR which is the ability of a microbe to resist the effects of medication.

AMR is facilitated by the inappropriate use of medicines, for example, using antibiotics for viral infections such as the flu. Recently, the United Nations (UN) has begun considering the threat of antimicrobial resistance (AMR) to be at par with diseases like Ebola and HIV.

The new Global Research on Antimicrobial Resistance (GRAM) report

It reveals that AMR is now a leading cause of death worldwide, higher than HIV/AIDS or malaria.

AMR was directly responsible for an estimated 1.27 million deaths worldwide, and associated with an estimated 4.95 million deaths, in 2019.

HIV/AIDS and malaria have been estimated to have caused 860,000 and 640,000 deaths, respectively, in 2019.

Issues Caused by Antimicrobial Resistance

The scarcity of potent antibiotics to combat drug resistant infections poses a threat to the lives of millions of people.

The available antibiotics have lost their effectiveness due to rising resistance.

Due lack of efficiency in antibiotics, doctors have to resort to sub-optimal treatments that can have significant side effects.

Indian Innovation to Combat AMR

Cefepime/Zidebactam, developed by Indian

researchers is an antibiotic that combines two active components to combat drug resistant gramnegative pathogens, including *Pseudomonas aeruginosa*.

Gram-negative bacteria are resistant to multiple drugs and are increasingly resistant to most available antibiotics.

These bacteria have built-in abilities to find new ways to be resistant and can pass along genetic materials that allow other bacteria to become drug-resistant as well.

This Indian innovation has shown remarkable potential, when given to an 18year old patient (Under a compassionate use protocol) suffering from T-cell leukaemia it showed positive signs such as the patient's fever subsided, blood cultures turned negative, and the need for oxygen diminished, slowly but steadily, his strength returned, reigniting hope.

Japanese Counterpart

Cefiderocol, developed by a Japanese company, has demonstrated excellent efficacy against drug-resistant infections. The drug is being licensed in many countries but not in India.

Current Hurdle in accessing these Drugs

India has not given Emergency Use Authorization (EUA) to these drugs.

EUA is a mechanism to facilitate the availability and use of medical countermeasures, including vaccines, during public health emergencies such as the COVID-19 pandemic. It is opposite to the conventional method of drug approval.

In India, the regulatory authority is the Central Drugs Standard Control Organisation (CDSCO).

FLUOROCHEMICALS

Why in the News?

Scientists from the University of Oxford have come up with a new way to obtain fluorine atoms, used to manufacture important chemical compounds used in industry and research, in a much safer and less energy-intensive way.

Members of the scientific community have hailed the finding as a major breakthrough that could transform the synthesis of these compounds.

About Fluorine

Fluorine is a highly reactive element. It comes from a calcium salt called calcium fluoride, or fluorspar. Fluorspar is mined and then treated with sulphuric acid at a high temperature to release hydrogen fluoride (HF).

HF is then made to react with other compounds to create fluorochemicals, which in turn are used to produce plastics, agrochemicals, lithium-ion batteries, and drugs.

Issues with HF

HF is an extremely poisonous and corrosive liquid that irritates the eyes and respiratory tract even at low concentrations. It also requires special transportation and storage.

Despite stringent safety regulations, HF spills have occurred numerous times in the last decades, sometimes with fatal accidents and detrimental environmental effects.

Inspiration For Scientists

To avoid HF and to make the extraction process that requires less energy, the researchers took inspiration from how the human body makes bones and teeth: through calcium phosphate Bio mineralisation.

Novel method

They ground fluorspar in a ball-mill with potassium phosphate. While fluorine is very reactive, calcium atoms prefer phosphorus even more, so the milling created calcium phosphate and another compound with fluorine atoms, called the Fluoromix.

When Fluoromix was reacted with organic compounds, it could create around 50 fluorochemicals with up to 98% yield.

What is ball Milling?

Ball milling is a type of grinding method used to grind materials into extremely fine powder and to blend materials.

CMV AND TOMV VIRUSES

Why in News?

Tomato growers in Maharashtra and Karnataka have blamed two different viruses for the loss of yields earlier this year. Farmers in Maharashtra have said their tomato crop was impacted by

attacks of the cucumber mosaic virus (CMV), while growers in Karnataka and other South Indian states have blamed the tomato mosaic virus (ToMV) for crop losses.

| | Context | Tomato Mosaic Virus | Cucumber Mosaic virus |
|---|----------------|---|--|
| 1 | Family | ToMV belongs to the Virgaviridae family and is closely related to the tobacco mosaic virus (TMV). | Cucumber mosaic virus (CMV), which belongs to the genus Cucumovirus (family Bromoviridae), is an icosahedral plant virus approximately 28–30 nm in diameter |
| 2 | Hosts | ToMV hosts include tomato, tobacco, peppers, and certain ornamental plants. | CMV has a much larger host pool that includes cucumber, melon, eggplant, tomato, carrot, lettuce, celery, cucurbits (members of the gourd family, including squash, pumpkin, zucchini, some gourds, etc.), and some ornamentals. |
| 3 | Mode of spread | ToMV spreads mainly through infected seeds, saplings, agricultural tools and often, through the hands of nursery workers who have failed to sanitise themselves properly before entering the fields. It would require only a few infected saplings for the virus to take over an entire field in a matter of days. | CMV is spread by aphids, which are sap-sucking insects. CMV too can spread through human touch, but the chances of that are extremely low. Conditions of high temperature followed by intermittent rain, which allow aphids to multiply, are conducive to the spread of CMV. These conditions were seen in Maharashtra - the late rabi crop (planted in January-February) faced a sudden bout of rain followed by extreme heat. |
| 4 | Effect on crop | 100% crop loss unless properly treated on time. The foliage of plants infected with ToMV shows alternating yellowish and dark green areas, which often appear as blisters on the leaves. Distortion of leaves and twisting of younger leaves are also symptoms. The fruit develops necrotic spots, which leads to overripening. Younger plants are dwarfed and fruit setting is affected. | 100% crop loss unless properly treated on time. CMV too causes distortion of leaves, but the pattern is different. Often leaves at the top and bottom are distorted while those in the middle remain relatively blemish-free. In cucumber, the virus causes a mosaic-like pattern of alternating yellow and green spots. In tomato, fruit formation is affected and in some cases the fruit is distorted and small. Overall, CMV causes stunting and lower production. |
| 5 | Control | Plants cannot be cured of ToMV, but the infection can be controlled with good agricultural practices ensure that nurseries maintain biosafety and restrict entry into the premises. look out for signs of infection throughout the cropping cycle and remove infected plants without allowing it to touch healthy ones. | The best way is to stop the aphids, which can be done by spraying quick acting insecticides or mineral oils on the plants. An eye must be kept on aphid migration so that measures can be taken while planting the crop. |

ASPARTAME

Why in news?

Assessments of the health impacts of the non-sugar sweetener aspartame are released today by the International Agency for Research on Cancer (IARC) and the World Health Organization (WHO) and the Food and Agriculture Organization (FAO) Joint Expert Committee on Food Additives (JECFA). Citing “limited evidence” for carcinogenicity in humans, IARC classified aspartame as possibly carcinogenic to humans (IARC Group 2B) and JECFA reaffirmed the acceptable daily intake of 40 mg/kg body weight.

About

Aspartame is an artificial (chemical) sweetener widely used in various food and beverage products since the 1980s, including diet drinks, chewing gum, gelatin, ice cream, dairy products such as yogurt, breakfast cereal, toothpaste and medications such as cough drops and chewable vitamins.

Aspartame is a methyl ester of a dipeptide consisting of two amino acids, aspartic acid, and phenylalanine. In the digestive tract, aspartame is completely hydrolyzed to its constituent amino acids in addition to methanol.

It is 200 times sweeter than sucrose.

Findings

JECFA concluded that it continues to be safe for a person to consume a substantial quantity of

aspartame each day. An adult weighing around 70 kilogrammes (150lbs) would need to consume more than 9-14 cans of soft drinks to go beyond the recommended intake, assuming there was no intake from other sources.

IARC classified aspartame as possibly carcinogenic to humans (Group 2B) on the basis of limited evidence for cancer in humans (specifically, for hepatocellular carcinoma, which is a type of liver cancer)”

IARC classification of carcinogens

Other substances classed as ‘possibly carcinogenic’ include extracts of aloe vera, traditional Asian pickled vegetables, some vehicle fuels and some chemicals used in dry cleaning, carpentry and printing. The IARC has also classified red meat as ‘probably carcinogenic’ and processed meat as ‘carcinogenic’.

IARC

The International Agency for Research on Cancer is an intergovernmental agency forming part of the World Health Organization of the United Nations. Its role is to conduct and coordinate research into the causes of cancer. It also collects and publishes surveillance data regarding the occurrence of cancer worldwide.

Its IARC monographs programme identifies carcinogenic hazards and evaluates environmental causes of cancer in human.

DARK PATTERNS

Why in news?

The Centre has asked e-commerce companies to not use “dark patterns” on their platforms that may deceive customers or manipulate their choices. The government has set up a 17-member task force to prepare guidelines to protect consumers.

The Ministry of Consumer Affairs, Food and Public Distribution consulted stakeholders on this issue on June 13. Consumer Affairs Secretary Rohit

Kumar wrote to major e-commerce platforms on June 28.

The Ministry has started classifying complaints received on the National Consumer Helpline 1915 to compile information on dark patterns, which can be used by the Central Consumer Protection Authority to initiate action under the Consumer Protection Act, 2019.

About

Dark patterns, also known as deceptive patterns, is the term used to describe the ways in which websites or apps make their users do things that the users do not intend to do or would not otherwise do, as well as to discourage user behaviour that is not beneficial for the companies.

The term 'dark pattern' was coined by Harry Brignull, a London-based user experience (UX) designer, in 2010. The Internet is replete with examples of dark patterns.

In a study published by Northeastern University in October 2021, alarming statistics regarding the usage of dark patterns were found:

95 percent of the top 240 Android apps employed deceptive patterns

Well over 50 percent of major websites used dark patterns

Examples - Certain dating apps require the user to type the word 'delete' if they want to delete their account permanently — the pop-up, showing 'yes' and 'no' options, has been done away with.

Instagram allows users to deactivate their account through the app, but they must visit the website if they want to delete the account.

Common types of dark patterns



Government Efforts

The Department of Consumer Affairs discussed their proposed approach towards tackling dark patterns to ensure consumer protection, under the following 4 pillars:

Self-regulation: Encourage industry to self-regulate dark patterns by, for example, adopting guidelines on ethical design practices, conducting independent audits to identify dark patterns and taking actions against findings.

Consumer awareness: Introduce tools for users to make informed choices, spread awareness on various forms of dark patterns. Nasscom emphasised on the need for increasing consumer awareness, as ultimately only when a consumer is aware can he/she identify and avoid getting trapped into dark patterns.

Reporting: Encourage consumer to report dark patterns. Nasscom highlighted the practice in UK, under the 'rip-off-tip-off' campaign, to encourage consumers to report online dark patterns.

Enforcement action: by Central Consumer Protection Authority, against unfair trade practices (which can include dark patterns) under the Consumer Protection Act.

International best practices

In United States, the Federal Trade Commission took action against some online interfaces that engaged in enrolling consumers onto subscription programmes without obtaining their consent.

In Norway, pursuant to an investigation by the Norwegian Consumer Council, an online platform has committed to bringing its subscription cancellation practices in line with EU consumer rules.

In United Kingdom, the Competition and Markets Authority took action against online interfaces that indulged in misleading reference pricing and misleading countdown clocks for flash sale.

“ENDOMETRIOSIS” - A REPRODUCTIVE DISEASE

Why in News?

According to the study, an infectious bacterium, *Fusobacterium* is linked with endometriosis in some women. Scientists are yet to figure out why the locations of the lesions vary in each woman.

Endometriosis:

Endometriosis, a reproductive disease affecting one in 10 women worldwide, involves the growth of lesions on pelvic organs such as the ovaries.

These lesions are composed of endometrium, a layer of tissue lining the uterus.

It causes infertility, chronic pain during periods, pelvic pain, bloating, nausea, fatigue, and is also associated with depression and anxiety among women.

Researchers have also linked endocrine-disrupting substances to the endometriosis as they interfere with the signalling, production, transport and metabolism of hormones such as oestrogen and progesterone, which are causal factors of endometriosis. The condition has also been linked to genetic and metabolic factors.

Common signs and symptoms of endometriosis include:

Painful periods (dysmenorrhea). Pelvic pain and cramping may begin before and extend several days into a menstrual period. You may also have lower back and abdominal pain.

Pain with intercourse. Pain during or after sex is common with endometriosis.

Pain with bowel movements or urination. You're most likely to experience these symptoms during a menstrual period.

Excessive bleeding. You may experience

occasional heavy menstrual periods or bleeding between periods (intermenstrual bleeding).

Infertility. Sometimes, endometriosis is first diagnosed in those seeking treatment for infertility.

Other signs and symptoms. You may experience fatigue, diarrhea, constipation, bloating or nausea, especially during menstrual periods.

Treatment options are limited to hormone therapies, contraceptive pills, and laparoscopic surgery to remove the lesions.

Gut microbes and *Fusobacterium*:

There's a link between inflammatory bowel disease with endometriosis; the latter's proximity to the gut has had scientists asking whether a bacteria could be the problem.

Fusobacterium already has known links to infections of the gum, vagina, and rectum – yet it isn't commonly found in meaningful quantities in the gut.

Experts have suggested that it could be moving to the abdomen through the bloodstream or to the vaginal region from the rectum.

What do the findings say?

There are only few treatment options available even after the diagnosis of an average of six years.

According to the study, fibrous food can help to manage the conditions because while metabolites released by certain microbes aggravate endometrial lesions, other metabolites produced by the fermentation of certain types of food can protect from the condition. This is because the latter can decrease the abundance of *Fusobacterium* and other infectious bacterial species.

MAJORANA ZERO MODES

Why in News?

Researchers at Microsoft have announced a

breakthrough in creating Majorana zero modes, a type of particle that could greatly advance quantum computing.

Majorana Fermions: A conceptual background

Fermions and Antiparticles: All subatomic particles that constitute matter are known as fermions, with each fermion having an associated antiparticle that annihilates upon interaction.

Majorana Fermions: In 1937, Italian physicist Ettore Majorana discovered that certain particles, known as Majorana fermions, can satisfy specific conditions and be their own antiparticles.

Neutrinos as Potential Majorana Fermions: Neutrinos are one type of subatomic particle that scientists speculate may exhibit Majorana fermion behavior, although experimental confirmation is still pending.

Majorana Zero Modes

In the world of physics, particles can have interesting properties and behave in strange ways. One type of particle that scientists have been studying is called a Majorana particle.

Majorana particles have a special property called “non-Abelian statistics.” Without getting too technical, this property means that when two Majorana particles come close together, something interesting happens.

Instead of behaving like normal particles, they can combine in a special way to form a new kind of particle called a Majorana zero mode.

A Majorana zero mode is a very peculiar

particle because it is its own antiparticle.

Normally, particles have antiparticles with opposite properties, like an electron and a positron. But Majorana zero modes are special because they don't have separate antiparticles. They are their own antiparticles!

Advantages of Majorana Zero Modes in Computing

Majorana zero modes possess unique properties that make Quantum Computers more robust and computationally superior. Quantum computers currently use individual electrons as qubits, but they are fragile and susceptible to decoherence.

Majorana zero modes, composed of an electron and a hole, can be used as more stable qubits.

Even if one of the entities is disturbed, the overall qubit does not decohere, protecting the encoded information.

Majorana zero modes offer topological degeneracy, allowing for the storage and retrieval of information from different topological properties, without easily losing the encoded information.

Topology is the study of those properties of matter that don't change when it undergoes continuous deformation – i.e., when it's stretched, folded, twisted, etc., but not ruptured or glued to itself.

ENTEROVIRUSES

Why in the News?

Recently, the World Health Organization (WHO) has warned against the rising incidence of enterovirus infections in a few countries across Europe.

About Enteroviruses

Enteroviruses are a group of viruses that can cause various infectious illnesses and are responsible for annual epidemics.

There are many kinds of enteroviruses, including coxsackieviruses, echoviruses,

polioviruses, and the hepatitis A virus. All enteroviruses are antigenically heterogeneous and have wide geographic distribution.

They can infect anyone, but are more likely to cause illnesses in people with weak immune systems, as well as infants, children, and teens who don't have immunity against a virus yet because it's their first exposure to it.

Illness is usually mild but has been found to affect neonates differently and sometimes more severely than older children and adults.

Transmission:

There are multiple transmission routes, particularly in the neonatal period, including intrapartum by exposure to maternal blood, secretions, and/or stool, or postnatally from close contacts with infected caregivers.

Symptoms:

Most people with an enterovirus infection don't get sick. For those who do, symptoms depend

on the type of enterovirus and which part of the body it affects. Most often a child will simply have a fever or mild cold symptoms such as runny nose, sneezing, coughing, or muscle aches.

Treatment:

There is no specific treatment for enterovirus infection. The focus is on easing symptoms until the infection has run its course, which usually takes only a few days.

IMPACT OF SLAKED LIME FOUND IN PAAN ON CHILDREN

Why in News?

A new study found that while the physical or chemical agents responsible for eye injuries varied between children and adults, chuna was the most common alkali agent in both groups, causing %32 of all alkali burns among children.

About:

Slaked lime (chuna) is an alkali compound widely used as a binding agent, along with betel nut and other ingredients, to make paan in the Indian subcontinent.

A new study has found that chuna is a major cause for ocular burns among children, along with household chemicals and fireworks.

Loosely sold in plastic packets, the quicklime can puff out of the packet on to a child's eyes.

The alkali then burns the ocular surface and can result in eye injury. They are a tragic cause of ocular morbidity, even vision loss, especially among children.

Chuna and its risks:

Indian paan contains slaked lime, or chuna which is smeared onto a betel leaf and chewed along with the areca nut.

Tobacco is also added to the paan and the alkali quickens its absorption.

Paan consumption, especially in South and South East Asia, has been a practice from prehistoric times.

The alkali chemically burns through the delicate tissue, causing extensive damage.

The rim of the cornea, called the corneal limbus, is home to specialised stem cells that replenish the cornea.

Chemical burns can destroy the limbus, compromising the cornea's ability to repair itself.

The risk of chemical injury to the eye is not limited to slaked lime. Household cleaning agents like toilet cleaners and other acids, as well as fireworks and even super-glue in tubes, are all liable to cause ocular injury.

Chemical burns to the eye results in ocular burns or, in worse cases, severe loss of vision.

They may require extensive surgical intervention, including stem-cell transplantation and corneal grafts, and will need lifelong management.

Children with access to household chemicals like chuna, adults who work with such agents without protective eye glasses, and individuals of both age-groups when they play with firecrackers are at risk of ocular burns.

The necessary preventive measures:

Such injuries can be avoided if the substance causing them is stored safely, away from the reach of children.

Adults who are at risk of workplace injuries — since lime is also present in whitewash, for example — will benefit from protective eye glasses.

The study also underscores the need to improve the packet integrity of chuna sold over the counter.

Better quality plastic and sealing and clear warning messages on the packet may help reduce the risks to children.

People should only purchase adequately sealed packets of alkalis and acids, and insist on using them with protective glasses.

About Alkalis:

Alkali is the Base that dissolved in water. Base refers to a type of chemical substance that has a high pH value, typically above 7 on the pH scale.

Alkalis are also known as bases that are characterized by their ability to neutralize acids, producing salts and water in the process.

Examples of alkalis: sodium hydroxide (NaOH) and potassium hydroxide (KOH).

WATER ATM

Why in News?

The Delhi government aims to address the issue of inadequate piped water supply by installing 500 Reverse Osmosis (RO) plants with integrated “water ATM machines” in affected areas. This initiative, led by the Delhi Jal Board, seeks to provide free and safe access to clean drinking water for residents in such regions.

Water ATMs

Anytime Water Machines (ATM) is a water dispensation system which can be automatic with a coin or smart card, or manually.

Operated by private companies, water ATMs provide an alternative solution to the safe drinking water challenge.

Essentially water ATM is a community RO

(Reverse Osmosis).

Installed at various public places such as railway stations, bus stands, places of worship and slums where the need for potable water is acute.

Osmosis and RO:

Osmosis involves ‘a solvent (such as water) naturally moving from an area of low solute concentration, through a membrane, to an area of high solute concentration.

A reverse osmosis system applies an external pressure to reverse the natural flow of solvent and so seawater or brackish water is pressurised against one surface of the membrane, causing salt-depleted water to move across the membrane, releasing clean water from the low-pressure side’.

ISRO TO LAUNCH SINGAPORE’S SATELLITE

Why in News?

The launch of PSLV-C56 carrying DS-SAR satellite, along with 6 co-passengers from the first launch-pad of SDSC-SHAR, Srihari Kota is accomplished successfully on July 30, 2023.

DS-SAR

The DS-SAR satellite is developed under a partnership between DSTA (representing the Government of Singapore) and ST Engineering.

Once deployed and operational, it will be used to support the satellite imagery requirements

of various agencies within the Government of Singapore.

ST Engineering will use it for multi-modal and higher responsiveness imagery and geospatial services for their commercial customers.

DS-SAR carries a Synthetic Aperture Radar (SAR) payload developed by Israel Aerospace Industries (IAI).

This allows the DS-SAR to provide for all-weather day and night coverage, and capable of imaging at 1m-resolution at full polarimetry.

Six other satellites: The six other satellites include

1. VELOX-AM, a 23 kg technology demonstration microsatellite
2. ARCADE, an experimental satellite
3. SCOOB-II, a 3U nanosatellite with a technology demonstrator payload
4. NuLloN by NuSpace, an advanced 3U nanosatellite enabling seamless IoT connectivity in both urban and remote locations
5. Galassia-2, a 3U nanosatellite set to orbit at low earth orbit and
6. ORB-12 STRIDER, a satellite developed under international collaboration.

AI - DISRUPTIVE TO ECONOMY?

Context

The rise of Artificial Intelligence (AI) and generative AI models and its impact on productivity, growth, and employment is explored, with a focus on the positive effects, potential job displacement, and opportunities for India, while dispelling fears of a robot-dominated future.

Artificial Intelligence (AI):

It is a branch of computer science dealing with the simulation of intelligent behavior in computers. It describes the action of machines accomplishing tasks that have historically required human intelligence. It includes technologies like machine learning, pattern recognition, big data, neural networks, self-algorithms etc.

Example: Facebook's facial recognition software which identifies faces in the photos we post, the voice recognition software that translates commands we give to Alexa, etc are some of the examples of AI already around us.

What is generative AI?

Like other forms of artificial intelligence, generative AI learns how to take actions from past data.

It creates brand new content – a text, an image, even computer code – based on that training, instead of simply categorizing or identifying data like other AI.

The AI powering it is known as a large language model because it takes in a text prompt and from that writes a human-like response.

AI Innovations:

GANs (Generative Adversarial Networks)

LLMs (Large Language Models)

GPT (Generative Pre-trained Transformers)

Image Generation to experiment

Create commercial offerings like DALL-E for image generation

ChatGPT for text generation.

It can write blogs, computer

code, and marketing copies and even generate results for search queries.

How will AI impact economic growth?

A study by PricewaterhouseCoopers predicts a global GDP increase of 14% or \$15.7 trillion by 2030 due to AI advancements.

The Kent A. Clark Center for Global Markets survey showed 44% of US experts and 34% of European experts expect a substantial increase in GDP per capita due to AI.

However, some experts like Professor Nicholas Bloom suggest that AI might not significantly impact per capita GDP.

Employment challenges:

Labor replacement: AI technologies have the capability to automate both repetitive and creative tasks, potentially leading to the displacement of certain jobs.

Negative impact on wages and employment: Studies indicate that the adoption

of robots and automation can have a negative effect on wages, employment, and the labour share. This impact is particularly observed among blue-collar workers and those with lower levels of education.

Wage inequality: Automation and AI contribute to wage inequality by affecting worker groups specializing in routine tasks. Changes in the wage structure over the last few decades can be attributed to the decline in wages for workers engaged in routine tasks in industries undergoing automation.

Intensified competition and winner-takes-all scenario: The adoption of AI may intensify competition among firms, potentially leading to a winner-takes-all scenario where early adopters gain significant advantages.

Displacement of middle-class jobs: AI technologies, especially in white-collar industries, may displace middle-class jobs, posing challenges for those in such occupations. The impact of AI on middle-class employment remains uncertain, potentially leading to job losses in these sectors.

Positive effects of AI adoption:

There is broad consensus on increasing productivity by adopting AI in producing goods and services.

Study on “Generative AI at Work” (by MIT economists): It

showed that AI tools boosted worker productivity by %14.

It improved consumer satisfaction, leading to better treatment of customer service agents and increased employee retention.

Experts suggest that generative AI may not replace employees, but employees using generative AI will replace those who do not upskill.

Survey among employees of LinkedIn’s top 50 companies in the United States: It shows that almost 70% of them found AI helping them to be faster, smarter, and more productive.

32% were of the opinion that while AI’s current impact may be modest, they anticipate larger gains over the next five years.

Professor Erik Brynjolfsson (MIT): suggests that restructuring business processes and increased investments are essential to fully leverage AI’s productivity potential.

Research from across the world is largely optimistic about AI’s impacts on growth.

Report from Goldman Sachs Research (April 2023): It said that generative AI alone could raise global GDP by 7% or almost \$7 trillion over a 10-year period.

It highlights generative AI’s potential to create human-like output.

Its ability to break down communication barriers between humans and

machines could have large positive macroeconomic effects.

Negative impacts of AI technologies (Research and Analysis):

A research paper titled “Robots and Jobs (Evidence from US Labor Markets” MIT and Boston University): It found that robot adoption has a negative effect on workers.

On average it reduces the labour share, employment and wages.

It primarily affects blue-collar workers and individuals with lower levels of education.

Acemoglu argues that automation reduces labour share and wages, especially when productivity gains from automation are small.

His other studies highlight distributional concerns over automation.

Causing inequality among workers and possible serious negative impacts on social welfare.

A European Parliamentary Research Service report: It cites McKinsey Global Institute’s research that suggests that AI may intensify competition and deepen the technological divide among firms.

Analysis by Goldman Sachs has suggested that 15%-35% of work in the U.S. economy is exposed to automation.

It puts out numbers to show how this may not

adversely affect the labour market.

Opportunities for India:

E m b r a c i n g t h e demographic dividend: India's large population presents an opportunity to leverage the demographic dividend. By investing in AI education and training, India can harness the potential of its workforce and utilize AI to drive economic growth and create employment opportunities.

F o c u s o n o n l i n e education: The pandemic has increased acceptance and reliance on online education. India can take advantage of this trend and utilize online platforms to offer AI education and reach a wider audience, further accelerating the adoption of AI skills across the country.

P o t e n t i a l e c o n o m i c gains: The PwC report suggests that China is projected to experience the greatest economic gains from AI. However, India can still benefit by focusing on AI education, innovation, and creating an ecosystem that fosters AI-

driven growth. By doing so, India can tap into the economic benefits associated with AI and boost its own GDP.

Way forward:

C o l l a b o r a t i v e approach: Governments, industry, academia, and civil society should collaborate to shape the future of AI in a manner that benefits society as a whole. Open dialogues, partnerships, and knowledge sharing can drive responsible AI development.

L i f e l o n g l e a r n i n g: Promoting a culture of lifelong learning and continuous skill development is crucial. This includes investing in education and training programs that cater to the changing demands of the AI-driven job market.

R e g u l a t o r y frameworks: Governments need to develop agile regulatory frameworks that strike a balance between innovation and accountability. These frameworks should be adaptable to evolving technologies and address potential risks associated with AI.

R e s e a r c h a n d innovation: Continued research

and investment in AI can drive innovation, especially in areas such as explainable AI, ethics, and responsible AI practices. Encouraging interdisciplinary collaboration and supporting AI research can lead to breakthroughs in addressing challenges and maximizing benefits.

I n c l u s i v e a p p r o a c h: Ensuring inclusivity in AI development and deployment is vital. Diversity in AI teams and the inclusion of diverse perspectives can help mitigate biases and ensure AI systems serve the needs of all individuals and communities.

Conclusion

Artificial Intelligence has permeated various sectors of the global economy, offering substantial benefits in terms of productivity and growth. While concerns regarding job displacement persist, the full extent of AI's impact on employment remains uncertain. Governments should proactively address the challenges posed by AI while promoting education and training in AI-related fields.



SECURITY

What's Inside?

1. CLUSTER BOMBS
2. NUCLEAR CABBAGE STRATEGY

CLUSTER BOMBS

Why in News?

Recently, the decision by the United States to supply Ukraine with cluster bombs has caused concern among key US allies.

About Cluster bombs:

A cluster bomb is a type of weapon that is designed to disperse smaller bombs over a large area.

They are also known as cluster munitions, with the smaller bombs referred to as submunitions or bomblets.

They can be dropped from air or fired from ground/sea, dispersing dozens or hundreds of bomblets across a large area.

These explosions pose a grave threat to anyone in the vicinity, causing death or severe injuries.

Some bomblets fail to detonate immediately, leaving behind unexploded ordnance that can harm or kill people for years to come.

The use of cluster bombs has been widely

condemned internationally.

Over 100 countries have ratified the Convention on Cluster Munitions.

Key Facts about Convention on Cluster Munitions

It was adopted in Dublin on 30 May 2008 and opened for signature in Oslo on 3 December the same year.

It prohibits all use, stockpiling, production and transfer of cluster munitions.

Separate articles in the Convention concern destruction of stockpiles, clearance of contaminated areas, assistance to victims, submission of transparency reports, and adoption of domestic legislation.

The Convention became binding international law when it entered into force on 1 August 2010.

Till date a total of 123 States have joined the Convention – 111 States Parties and 12 Signatories.

India is not a signatory to this convention.

NUCLEAR CABBAGE STRATEGY

Why in news?

The United States, the world's sole superpower, has taken note of China's presence in the South China Sea and has been defending international waterways with its vast fleet. China regards the US presence as an infringement on its territory and has used the "cabbage strategy" to construct artificial islands.

About

China's plan entails *encircling disputed islands with as many ships as possible*, a tactic known as "the cabbage strategy." This approach entails encircling contested islands with as many ships as possible, and China employs the cabbage technique

to gradually take over contested territory.

The South China Sea tensions are rising, with nations detaining trespassers and threatening to impose an air identification zone over the South China Sea. It has also been called *small-stick diplomacy*.

It is probable that Xi has tasked the PLA nuclear submarine unit with conducting strategic deterrent patrols in the South China Sea and abroad.



HISTORY



ART & CULTURE



What's Inside?

1. U.S. HANDS OVER 105 ANTIQUITIES TO INDIA
2. WORLD CITIES CULTURE FORUM

U.S. HANDS OVER 105 ANTIQUITIES TO INDIA

Why in News?

In a significant gesture of cultural repatriation, the **United States** handed over **105 trafficked antiquities to India** during a repatriation ceremony at the Indian Consulate in **New York**. The restitution of these artefacts is a result of an agreement made during Prime Minister **Narendra Modi's** state visit to the U.S. last month.

India-US: Cultural Property Agreement

To prevent stolen Indian antiquities from being transported overseas, India and the United States will collaborate on a new accord, the Prime Minister and President of the US stated in a joint agreement.

Cultural property agreements, according to the US State Department, are methods for combating illegal transportation of antiquities.

The purpose of such an agreement is to conserve cultural assets by eliminating the motivation for future theft of archaeological and ethnological material.

Emotional Significance for India

For the people of India, these artifacts hold immense cultural and heritage value, reflecting their living heritage.

The artifacts represent various regions of India, with origins spanning from the **2nd-3rd century CE to the 18th-19th century CE**. Made of terracotta, stone, metal, and wood, around 50 of these artefacts have religious significance.

Trafficking of Cultural property in India

The illicit exchange and transfer of precious artifacts, antiques, and cultural heritage objects is referred to as cultural property trafficking.

The unauthorized excavation and plundering of archaeological sites is a big concern in India.

This results in the loss of precious artifacts

and alters the archaeological environment, making it harder to determine the historical and cultural relevance of the artifacts.

Collectors, art dealers, and individual consumers drive the demand for Indian antiquities, creating a rich market for traffickers.

It is difficult to monitor and identify stolen goods due to inadequate documentation and inventory management of cultural heritage sites and artifacts.

The artifacts are frequently marketed in the international art market through shady routes.

The local and international demand for Indian antiquities adds to the survival of this illegal activity.

Efforts to Address the Issue

The Indian government, in collaboration with several national and international organizations, has taken significant initiatives to combat cultural property trafficking.

To govern the transportation and trading of cultural artifacts, India has implemented legislation such as the **Antiquities and Art Treasures Act of 1972** and the **Protection of Cultural Property in the Event of Armed Conflict Act of 2010**.

Improving law enforcement agencies such as the police, customs, and specialized units such as the Archaeological Survey of India is critical for efficient cultural property trafficking prevention and detection.

Raise public awareness about the necessity of conserving cultural assets and the implications of illicit trading.

Stakeholders, such as communities living near archaeological sites, can aid in the fight against human trafficking.

WORLD CITIES CULTURE FORUM

Why in News?

Recently, Bengaluru has become the first Indian city to become part of the World Cities Culture Forum (WCCF).

About World Cities Culture Forum:

It was founded in 2012 by Justine Simons OBE, London's Deputy Mayor for Culture and the Creative Industries.

It is a global network of cities that share research and intelligence, and explore the role of culture in future prosperity.

The network currently has 40 cities spanning six continents.

Bengaluru being the latest addition is set to join the league of cities like New York, London, Paris, Tokyo and Dubai among others.

World cities culture summit hosted on a rotating basis by city partners, an unprecedented gathering of city leaders sharing ideas and knowledge about culture's role in public policy in a world city context.

Key facts about Bengaluru

Bengaluru (formerly Bangalore) is a megacity, the capital of the Southern state of Karnataka and the fastest growing city in India.

Its population has grown from one million in 1950 to over 16 million in 2023.

It is commonly referred to as the 'Silicon Valley of India' because of its role as the nation's leading information technology exporter,

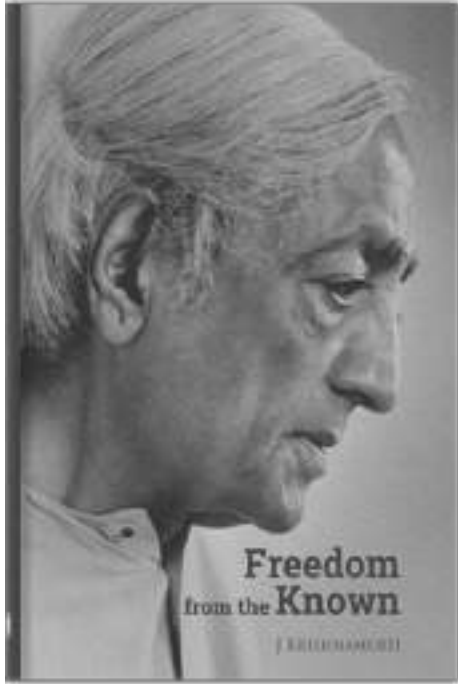
It is home to more than 30 government and private museums that showcase the city's rich history, art and culture.

Most recently, South India's first major private art museum, the Museum of Art and Photography (MAP), opened in February 2023.

Bengaluru's distinction lies in being a rare city where both North Indian (Hindustani) and South Indian (Carnatic) classical music thrive.

As the "Garden City of India", Bengaluru has many green spaces including two nationally recognised botanical gardens, Lal Bagh and Cubbon Park that act as green lungs for the city.

“FREEDOM FROM THE KNOWN” BY J. KRISHNAMURTHY



“Freedom from the Known” is one of J. Krishnamurthy’s most thought-provoking books.

In this book, Krishnamurti reveals how we can free ourselves radically and immediately from the tyranny of the expected. By changing ourselves, we can alter the structure of society and our relationships. The vital need for change and the recognition of its very possibility form an essential part of this important book’s message.

In this section, we have provided a few ideas from the book.

We are second-hand people

For centuries we have been spoon-fed by our teachers, by our authorities, by our books, our saints.

We say, ‘Tell me all about it – what lies beyond the hills and the mountains and the earth?’ and we are satisfied with their descriptions, which means that we live on words and our life is shallow and empty. We are second-hand people.

But when you have thrown it off and have this energy in which there is no fear at all - no fear of making a mistake, no fear of doing right or wrong that energy itself produces the radical inward revolution. You do not have to do a thing about it.

You had an experience yesterday which taught you something and what it taught you becomes a new authority - and that authority of yesterday is as destructive as the authority of a thousand years.

The primary cause of disorder in ourselves is the seeking of reality promised by another.

That is the first thing to learn – not to seek.

When you seek you are really only window-shopping.

Immaturity lies only in total ignorance of self. To understand yourself is the beginning of wisdom.

Truth has no path, and that is the beauty of truth, it is living.

You cannot depend upon anybody. There is no guide, no teacher, no authority. There is only you – your relationship with others and with the world – there is nothing else.

It is important to understand from the very beginning that I am not formulating any philosophy or any theological structure of ideas or theological concepts. It seems to me that all ideologies are utterly idiotic. What is important is not a philosophy of life but to observe what is actually taking place in our daily life, inwardly and outwardly.

When you reject something false which you have been carrying about with you for generations, when you throw off a burden of any kind, what takes place? You have more energy, haven’t you? You have more capacity, more drive, greater intensity and vitality. If you do not feel this then

you have not thrown off the burden, you have not discarded the dead weight of authority.

Order imposed from without must always breed disorder.

There is no such thing as doing right or wrong when there is freedom. You are free and from that centre you act. And hence there is no fear, and a mind that has no fear is capable of great love.

You had an experience yesterday which taught you something and what it taught you becomes a new authority – and that authority of yesterday is as destructive as the authority of a thousand years.

To be free of all authority, of your own and that of another, is to die to everything of yesterday, so that your mind is always fresh, always young, innocent, full of vigour and passion.

It is only in that state that one learns and observes.

And for this a great deal of awareness is required, actual awareness of what is going on inside yourself, without correcting it or telling it what it should or should not be, because the moment you correct it you have established another authority, a censor.

Learning about Ourselves and Conditioning

All authority of any kind, especially in the field of thought and understanding, is the most destructive, evil thing.

Leaders destroy the followers and followers destroy the leaders. You have to be your own teacher and your own disciple.

If you do not follow somebody you feel very lonely. Be lonely then.

Acquiring knowledge about yourself and learning about yourself are two different things, for the knowledge you accumulate about yourself is always of the past.

Understanding is not an intellectual process.

Each of us has an image of what we think we are or what we should be, and that image, that picture, entirely prevents us from seeing ourselves as we actually are. It is one of the most difficult things in the world to look at anything simply.

The moment you have achieved anything you cease to have that quality of innocence and humility.

The moment you have a conclusion or start examining from knowledge, you are finished, for then you are translating every living thing in terms of the old.

Self-concern – Position – Fear – Fragmentation of Thought

Most of us crave the satisfaction of having a position in society because we are afraid of being nobody.

A mind that is caught in fear lives in confusion, in conflict, and therefore must be violent, distorted and aggressive.

Freedom – Solitude

When we talk of freedom are we talking of complete freedom or of freedom from some inconvenient or unpleasant or undesirable thing?

To see is to act and to be free

Freedom comes only when you see and act, never through revolt.

The seeing is the acting and such action is as instantaneous as when you see danger.

Freedom is a state of mind – not freedom from something but a sense of freedom, a freedom to doubt and question everything.

To be alone you must die to the past.

You are never alone because you are full of all the memories, all the conditioning, all the mutterings of yesterday; your mind is never clear.

The Burdens of Past

It is only when we give complete attention to a problem and solve it immediately – never carrying it over to the next day, the next minute – that there is solitude.

Solitude indicates a fresh mind, an innocent mind.

To have inward solitude and space is very important because it implies freedom to be, to go, to function, to fly.

FACT SHEET

GENERAL STUDIES – II

SOCIAL ISSUES

Women

- ◆ Preeti Aghalyam, the first woman to become the Director of an Indian Institute of Technology (IIT), highlighted the underrepresentation of women on IIT campuses. Her appointment coincides with a broader effort by various IITs to address the gender imbalance on their campuses.
- ◆ The enrolment ratio of men to women in engineering colleges in India has improved over the years. However, the proportion of women in IITs remains low, with some institutes having as little as 5% to 12% female representation in 2014.

India's demographic dividend

- ◆ India's average age is 29 years, whereas the average age in US, China, France, Germany and Japan is 38, 38, 42, 45 and 48 years, respectively. Therefore, India is the youngest among the most populous countries in the world.

Criminalization of Politics

- ◆ According to data compiled by the Amicus Curiae, a total of 4,984 criminal cases involving legislators were pending in various courts across the country as of 1st December 2021. In the 2019 Lok Sabha elections, 159 MPs had declared serious criminal cases against them, including those of rape, murder, attempt to murder, kidnapping, and crimes against women.

Manual scavenging in India

- ◆ As many as 58,000 people worked as manual scavengers as of 2018. In 2022, 48 people died due to hazardous cleaning of sewers in 2022. This number was 49 in 2021, 19 in 2020, and 117 in 2019. The practice, which is considered the worst remaining evidence of untouchability, is most prevalent among people from lower castes/Dalits.

National Multidimensional Poverty Index

- ◆ The NITI Aayog released the 'National Multidimensional Poverty Index: A Progress Review 2023'. India has registered a decline in the number of multidimensionally poor from 24.85% in 2015-16 to 14.96% in 2019-2021. In absolute terms, ~13.5 crore Indians escaped poverty during the five-year time period. Still, one in seven Indians is multidimensionally poor.

International Relations

- ◆ China inks deal with Pakistan to set up the Chashma nuclear power plant in Punjab province.

GENERAL STUDIES – III

Economy

- ◆ In June, India's exports experienced a significant decline of 22% to about \$33 billion compared to \$42.28 billion in the previous year. This is the steepest monthly decline in exports in 3 years.
- ◆ Reasons for the decline: Global slowdown (e.g., the US and Europe); Inflationary pressure; Tightening of Monetary policies by developed countries; India's poor manufacturing sector's performance; Companies looking at a China+1 policy are moving to India's competitor countries like Vietnam.

Duty-Free Quota Free Scheme

- ◆ According to a report by the LDC Group at the World Trade Organisation (WTO), approximately 85% of the products that India offers at zero tariff to the least developed countries (LDCs) under the duty-free quota-free (DFQF) scheme are not being utilized.

Environment

- ◆ Latest All-India Tiger Estimate (AITE) report was released by the Environment Ministry. Sharp skew in national big cat map: 20% of tiger area has less than 1% of tiger population.

VALUE ADDITION

1. Central Tuber Crops Research Institute, is gearing up to extend its tuber-based “rainbow diet” to more areas with sizeable tribal populations. The initiative is aimed at popularising bio-fortified tubers and value-added products made from them among the tribal communities to tackle malnutrition and ensure a balanced diet.
2. India has climbed seven places on Henley Passport Index 2023 to 80th rank from 87 last year though the number of countries allowed visa-free access to Indian passport holders remain unchanged.
3. Rajya Sabha chairman Jagdeep Dhankhar reconstituted the panel of vice-chairpersons of Parliament’s Upper House with half of them being women.
4. UAE is making significant efforts to achieve food security and reduce reliance on food imports due to its arid climate. Initiatives like the Manbat farmers’ market, promote local produce through enjoyable family-friendly events. The UAE’s National Strategy for Food Security, launched in 2018, aims to make the country a leader in the Global Food Security Index by 2051. It reached 21st among 113 countries in the GFS, 2019. Agri-tech practices, including hydroponics and AI-facilitated irrigation, play a vital role in sustainable farming.
5. Through these initiatives, IIT-Madras plans to prevent suicides in their campus. The face recognition attendance management system to identify students absent for prolonged periods of time and an app that will let parents have regular interactions with their children. Attendance in class, mess, gym among all will be maintained. The data will be consolidated to see patterns.
6. A study conducted on anaemic pregnant women of low-and middle-income countries has found that there is a strong link between anaemia and postpartum haemorrhage, with the risk of death or near-miss very high. Each year, about 70,000 women who give birth die from postpartum haemorrhage, almost all of them in low-and middle-income countries.
7. Supreme Court asks an NGO to make a representation before the Ministry of Panchayati Raj on this issue of Sarpanch-patism. It is the phenomenon of unelected male relatives wielding political and decision-making power behind women. 73rd Constitution Amendment Act, 1992 provided a one-third quota for women in panchayat governance. However, in reality, women take the backseat after winning the elections. It defies the whole purpose of reservation.
8. The stratosphere ozone layer is slowly recovering and the recovery will be complete in most parts of the atmosphere in the coming decades, according to the latest bulletin by the World Meteorological Organization (WMO).
9. The tomato prices are there on high. There are multiple factors for the dip in overall tomato production this year, with the two key reasons being extreme weather conditions and low commercial realisation of the crop for farmers.
10. Central Government issued a notification to bring the Goods and Services Tax Network (GSTN) under the Prevention of Money Laundering Act (PMLA). With the implementation of it, the infor-

mation stored on the GST Network can now be shared, as may be required, under the PMLA Act.

11. Indian Government aims to end urea import dependence by 2025 and replace it with nano urea and other alternatives. There are no plans to completely stop the consumption of chemical fertilisers, but the country is gradually transitioning towards natural and organic farming.
12. The Global Food Regulators Summit 2023, recently held in Delhi, was a platform for food regulators from various countries to come together, share knowledge, and exchange best practices. With participation from over 40 countries, the summit promises to foster collaborative efforts in enhancing food safety standards worldwide. The theme of the summit, “One Earth, One Family, One Future,” aligns perfectly with India’s G20 Presidency.
13. Introduced in the early 1900s, trout fish has become a staple on the Kashmir Valley’s menu, and an increasing number of farmers are now eyeing opportunities to export trout to meet European demand, leading to solid profits. However, climate change poses a potential threat to the industry, as the fish require specific conditions to thrive. Despite this challenge, the government is taking measures to combat climate change’s impact by offering subsidies to set up Recirculating Aquaculture Systems (RAS) for trout farming.
14. An invasion of aquatic weed *Ludwigia Peruviana*, native to Central and South America, is suppressing edible forage for elephants, gaurs and other herbivores, increasing the risk of man-animal conflict in the areas of Tamil Nadu.
15. Union government has launched the ‘Meri Maati Mera Desh’ campaign, envisaged as a culminating event of the ‘Azadi Ka Amrit Mahotsav’ celebration of 75 years of Indian Independence, in which soil collected from different parts of the country in August will be used to develop a garden called Amrit Vatika, along the Kartavya Path in Delhi.

TERMS IN NEWS:

1. De-dollarisation => It is a term that refers to the process whereby countries tend to reduce their reliance on the US dollar as a reserve currency, medium of exchange, and also a unit of account. They often prefer their own currency for international transactions. Ex: Internationalisation of the Indian Rupee.
2. “Bilbao effect” and “Guggenheim effect” => It is a phenomenon where several areas around the world have economically benefited from cultural investments in museums combined with spectacular architecture. Ex: Sabarmati Ashram, Ahmedabad.
3. Stapled visa => It is different from a regular visa and simply an unstamped piece of paper that is attached by staples to a page of the passport and can be torn off or detached at will. This approach is often used in situations where there are political sensitivities or territorial disputes between countries. It mainly avoids acknowledging or legitimizing certain territorial claims or political statuses.

RELEVANT QUOTES

1. Democracy: “I understand democracy as something that gives the weak the same chance as the strong” - Mahatma Gandhi.
2. Health: “Healthy citizens are the greatest asset any nation can have” - Winston Churchill.
3. Growth Vs. Development: “GDP measures everything in short, except that which makes life worthwhile” - Robert F. Kennedy.
4. Technology: “Technology is a useful servant but a dangerous master” - Christian Lous Lange.
5. Wise person: “The wise win before the fight while the ignorant fight to win” - Zhuge Liang.