

PANORAMA

CURRENT EVENT ANALYSIS

VOLUME - 3
AUGUST, 2022

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GS I – GEOGRAPHY

Rare Earth Metals

Recently Minerals Security Partnership, an ambitious new US-led partnership to secure supply chains of critical minerals was formed. It aimed at reducing dependency on China. In 2019, China supplied between 85% and 95% of the global demand for the 17 rare earth powders.

India is *not* a part of the alliance.

What are rare earth metals?

Rare-earth elements or lanthanides are a set of 17 nearly-indistinguishable lustrous silvery-white soft heavy metals.

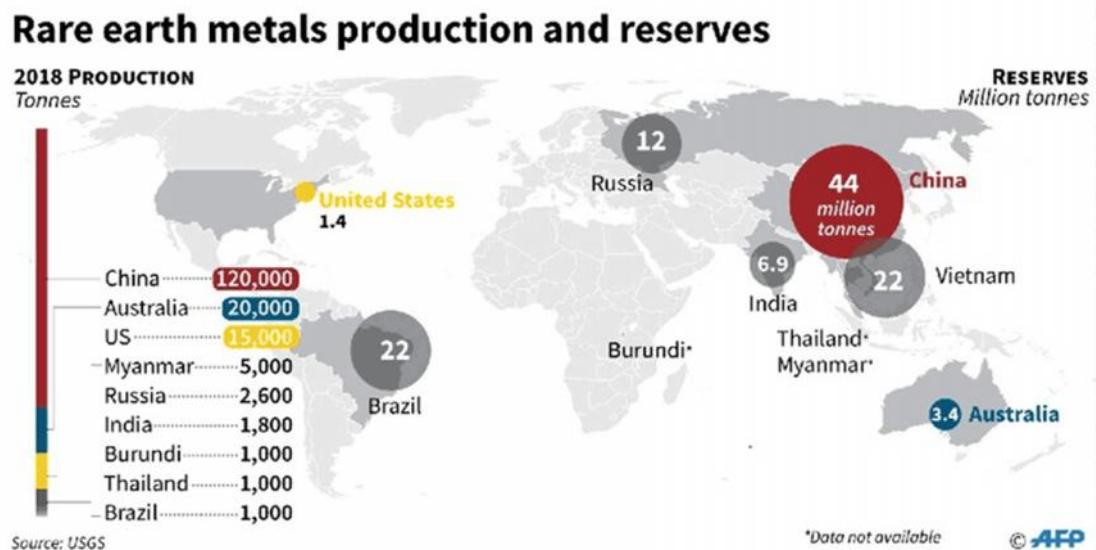
Because of their geochemical properties, rare-earth elements are typically dispersed and not often found concentrated in rare-earth minerals. Consequently, economically exploitable ore deposits are sparse (i.e. "rare").

These elements and their compounds have no biological function.

These include:

- | | | |
|----------------|--------------|-------------|
| ✓ Scandium | ✓ Promethium | ✓ Holmium |
| ✓ Yttrium | ✓ Samarium | ✓ Erbium |
| ✓ Lanthanum | ✓ Europium | ✓ Thulium |
| ✓ Cerium | ✓ Gadolinium | ✓ Ytterbium |
| ✓ Praseodymium | ✓ Terbium | ✓ Lutetium |
| ✓ Neodymium | ✓ Dysprosium | |

Distribution in World



Why are they important?

Compounds containing rare earths have diverse applications in:

- ✓ Used in electronic components, lasers, glass
- ✓ To develop magnetic materials
- ✓ Used in many industrial processes

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- ✓ Used in many emerging green energy technologies
- ✓ High tech defence systems
- ✓ Used in consumer goods such as smartphones, computer screens and telescopic lenses
- ✓ Used for clean energy
- ✓ Used for glass polishing, car catalyts or optical lenses
- ✓ Used in electric vehicles, wind turbines and Drones

But main issues with its extraction are:

- ✓ Difficulty in extraction or mining
- ✓ Lack of availability of technology
- ✓ Impact on human, animal and environment due to radioactive radiation
- ✓ Most of market is captured by China

Extraction and regulatory control in India:

India has world's fifth-largest reserves of rare earth elements but it imports most of its rare earth needs in finished form from China.

Found in Kerala, Andhra Pradesh, Tamil Nadu, and Odisha.

Indian Rare Earth Limited (IREL), a Mini Ratna Company, is a Government of India Undertaking under the Department of Atomic Energy (DAE) is actively engaged in mining and processing of beach sand minerals from placer deposits.

Importance for India:

- ✓ As India is planning to convert large part of public and private transport to electric vehicles development in rare earth will be helpful.
- ✓ This will boost India's electronics manufacturing push.

What is the Minerals Security Partnership?

It is a new initiative led by the US to bolster critical mineral supply chains.

It includes the USA, Australia, Canada, Finland, France, Germany, Japan, the Republic of Korea, Sweden, United Kingdom, and the European Commission.

Median Line

Recently Chinese fighter jets and warships crossed median line that runs down the Taiwan Strait during drills.

About median line

Median line is an unofficial border runs down middle of Taiwan Strait

Taiwan Strait separates Taiwan and China.

It came about during the Cold War

No agreement or treaty ever solidified its status.

But crossings of the median line were generally less common and are seen as more provocative.

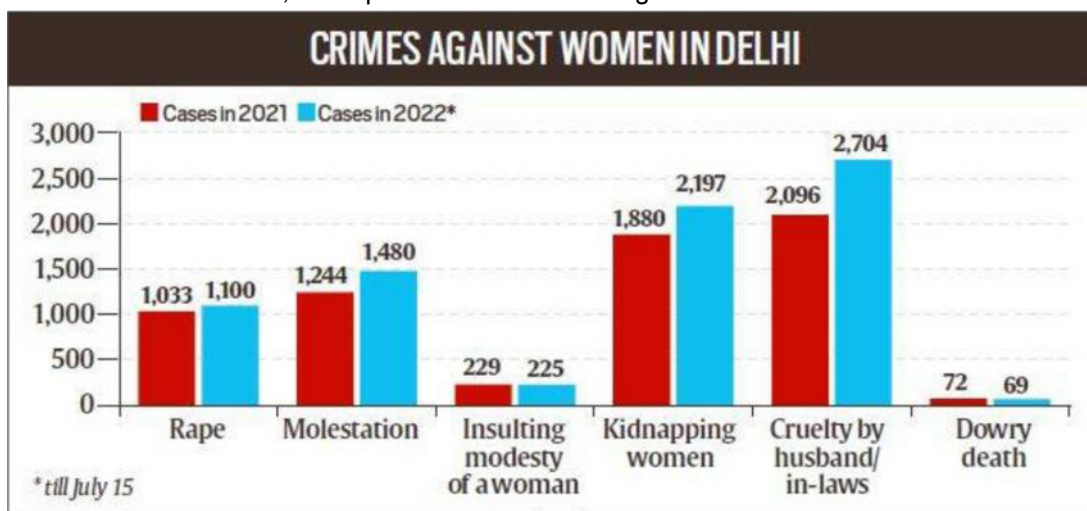


GS I - SOCIAL ISSUES, SOCIAL JUSTICE

Gender Based Violence

Delhi recorded 6 rape cases every day this year

In the first six months 1,100 rape cases have been registered in Delhi.



What is gender based violence?

Gender based violence is a form of discrimination that seriously inhibits women's ability to enjoy rights and freedom on the basis of equality with men. Any act of gender based violence that results in, or is likely to result in, physical, sexual, or psychological harm or suffering to women, including threats of such acts, coercion or arbitrary deprivations of Liberty, whether occurring in public or private life.

- ✓ **Prenatal stage:** female foeticide, physical battering of women during pregnancy.
- ✓ **Infancy stage:** female infanticide
- ✓ **Childhood stage:** Child marriage, Child sexual abuse, differential access to care, nutrition, healthcare, education
- ✓ **Adolescence:** Molestation, rape, sexual harassment at workplace, trafficking, forced prostitution.
- ✓ **Youth and Adulthood:** domestic violence, marital rape, dowry related abuse or death, coerced pregnancy, desertion, sexual harassment at workplace.
- ✓ **Old age:** abuse of elderly women, neglect, desertion, lack of access to care, nutrition and medical facilities.

Reasons for increasing rate of Gender Based Violence in India:

- ✓ In India, society is organised around rigid gender roles, which prescribe what women and men can or cannot do. Violence against women is a tool to reinforce and maintain gender roles and as a weapon to punish women who transgress them. Thus, for example, domestic violence is seen as justified if women do not perform their wifely or motherly duties.

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- ✓ Due to modernization and globalization women are aspiring to get space with men in employment, education, political and other social spheres. This also reflects into rise in crimes against women.
- ✓ Within society and families, the onus of maintaining honor is placed on women and in many instances, rape and sexual violence against women are used by men to dishonour families or communities.
- ✓ Another reason for the growing trend is impunity, lack of social or legal sanctions, and failure to implement existing legislation's. Women are often condemned by their own families and community for speaking out against discrimination and abuse. When they seek help and justice, they are often confronted with further discrimination from the criminal justice system.
- ✓ Women empowerment can itself unleash violence against women as men may react to the challenge it poses to the patriarchal social structure which benefits them. Social and economic transformation are being juxtaposed against patriarchal values and attitudes, leading to backlash against women.
- ✓ There is a culture of silence around issues as such as domestic violence, rape, and child sexual abuse especially if the perpetrators is from within the family. In case of latter, violence in family is considered as a private affair, a family matter beyond the domain of law. As a result, these form of violence, though widely pervasive, are privatized, are trivialized and most of these cases go unreported.
- ✓ Rise in crime against women is also the result of increased registration of crimes, because of growing awareness about laws, sensitisation efforts, introduction of Women-friendly helplines and booths.

Economically Weaker Section (EWS)

Recently, the Haryana government launched the "Chief Minister Equal Education Relief, Assistance and Grant (Cheerag)" scheme. Under the Cheerag scheme, government school students of economically weaker sections can enroll in private schools.

What is EWS?

The One Hundred and Third Amendment Act, 2019 enables the State to provide the benefits of reservation on preferential basis to the Economically Weaker Sections (EWSs) in civil posts and services in the Government of India and admission in Educational Institutions.

The 10% reservation under EWS category is applicable to those persons who are not covered under the existing scheme of reservations for the Scheduled Castes, the Scheduled Tribes and the Socially and Educationally Backward Classes.

Why 'Upper caste' people are demanding for reservation?

- ✓ Due to increase in population and subsequent land fragmentation, the land holding size of upper strata has been shrunk considerably.
- ✓ Low profitability of agriculture also led to income vulnerability.

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- ✓ More competition from OBCs in employment and education leading to a sense of insecurity.
- ✓ Many sub-castes and communities categorised as 'Upper castes', actually facing socio-economic backwardness but due to lack of reservation they feel excluded.
- ✓ Lack of quality education and suitable skills creates hardship in the job market; hence many believe reservation will provide safe guard.
- ✓ Caste based vote bank politics is playing a very crucial role as it is connected with identity politics.

Is reservation a solution?

The main objective of reservation policy is to ensure representation for marginal sections of society. Reservation is to meet social justice.

Issues like poverty and unemployment cannot be adequately resolved by tools like reservation.

Simply being added to the reserved list will not effectively reduce the competition for jobs and education.

What should be done?

The main driver of this demand is the agricultural crisis; hence it must be addressed effectively and immediately.

Creation of more job opportunities in small and medium enterprises is necessary as this sector of economy has potential to absorb surplus labour force from agriculture.

Programs like doubling the farmers income, land reforms, Make in India and Skill India must be successful to deal with the job crisis.

Investing in education infrastructure, particularly state institutions are necessary to develop employment worthy human capital.

Political parties should engage in a long lasting solution instead of short term political gain over the issue.

GS II - POLITY AND GOVERNANCE

Functioning of Rajya Sabha

- ✓ As PM Modi again refers to Rajya Sabha 'hurdle'

About Rajya Sabha

The second house of the Indian parliament

Dates back to the 1919 Montagu-Chelmsford Reforms

Rajya Sabha was established on April 3, 1952, and on May 13, 1952, it convened for first time.

Constitutional Provisions

The makeup of the Rajya Sabha is in Article 80.

The procedure for electing these members is outlined in Article 80 (1).

Criteria to join the Rajya Sabha are mentioned in Article 84.

Criteria of disqualification in either house are outlined in Article 102.

Distribution of Rajya Sabha seats to states and union territories covered in fourth schedule.

Special Powers of Rajya Sabha

- ✓ Can move a subject from State List to Union List (Article 249)
- ✓ Can develop more All-India Services (Article 312)
- ✓ Can approve emergency under Article 352 for a brief time while Lok Sabha is dissolved.

Role of Rajya Sabha

- ✓ Acts as a safety valve within the legislative itself, alleviating federal tensions
- ✓ Can stop authoritarianism from being practised by any government which holds an overwhelming majority in Lok Sabha
- ✓ Experts in different fields can participate in legislative process through an indirect election
- ✓ Defends interests of states and preserves federal balance and promotes federalism.
- ✓ Second and more thoughtful opinion is made possible by the second chamber.
- ✓ There are groups which are not generally represented through electoral process such as women, people of different linguistic, religious, and ethnic backgrounds, areas like the Northeast and Jammu and Kashmir, urban casual workers, destitute in rural areas. Through Rajya Sabha members of such social groups finds representation.

Criticisms of Rajya Sabha

- ✓ Sincerity of nominated members is questioned many times.
- ✓ Nominations are made on the basis of loyalty or to appease certain caste or religion or group.
- ✓ There is no equal representation for all states. Thus impacting federalism.
- ✓ Rajya Sabha is sometimes bypassed when regular laws are enacted in the form of a Money Bill, raising concerns about the effectiveness of RS.

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- ✓ Seats in Rajya Sabha are used to elect unsuccessful candidate from the Lok Sabha.
- ✓ Candidates enter from the states with which they have the least affinity.
- ✓ Legislation delaying and parliamentary gridlock can be prevented.
- ✓ It is considered that impasse between two Houses on parliamentary issues is a significant setback for India's development.
- ✓ Few members meet the requirements to fulfill the duties of the Rajya Sabha.

NITI Aayog Governing Council meeting

PM Modi said that every state has played a “crucial role” in India’s fight against Covid and the country’s federal structure and cooperative federalism have emerged as a “model for the world” during the pandemic.

Current issues highlighted by states in federalism:

Some states such as Punjab have sought legal guarantee on Minimum Support Price for farm output.

Some states such as West Bengal have pointed out towards the shortage of IAS officers

Some states have called for an extension of compensation due to the implementation of GST

A higher allocation of funds for states has also been demanded

Adequate consultation with states on policy issues and revocation of restrictions on borrowing limits of states is demanded.

States have argued that legislation on subjects in Concurrent List should be initiated only after adequate consultations and Centre should desist from legislating on items in State list.

On various other critical reform areas which lie in the domain of the states such as labour reforms progress has been very slow.

Cooperative federalism during pandemic:

The initial stages of the pandemic response highlighted the unitary tilt in the Indian federal structure.

Following legislations strengthened the hands of the Central government in times of crisis:

- ✓ Epidemic Disease Act (1897)
- ✓ National Disaster Management Act (2005)

The lack of cooperation between the States and the Centre’s failure to facilitate horizontal federalism for the purpose caused a great pain to migrant workers.

An intergovernmental institution such as Inter-State Council (ISC) could have been used as a common forum for the Centre and the States for cooperative federalism.

At the later stages of this crisis, cooperative federalism appeared to be visible.

The Centre, to some extent, understood the sensitivity of States, and the autonomy of States in terms of taking measures against the epidemic was restored.

Major challenges of cooperative federalism during the Covid-19 pandemic:

- ✓ Center imposed pan-India policies on subjects strictly within the States’ domain

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- ✓ Centre shifted onus of procurement and distribution of vaccines onto states. It was only after much criticism, and a nudge from Supreme Court, that central government reversed its decision.
- ✓ Prohibiting the sale of alcohol which form major chunk of state government revenue
- ✓ GST compensation was withheld which created much problems for states
- ✓ The irregular supply of essential medical equipment during the initial phase of lockdown
- ✓ Denial of State disaster funds from benefit of CSR contributions
- ✓ Failure to coordinate with States with regards to migrants returning to their States

Niti Aayog Governing Council:

It is the premier body trusted with developing a shared vision of national priorities and strategies with the active involvement of States and Union Territories.

It is a platform to discuss inter-sectoral, inter-departmental and federal issues.

It comprises:

- ✓ The Prime Minister of India.
- ✓ Chief Ministers of all the states and union territories with the legislature.
- ✓ Lt Governors of other UTs.
- ✓ Ex-Officio Members; Vice Chairman, NITI Aayog; Full-Time Members, NITI Aayog.
- ✓ Union Ministers as Special Invitees.

Right to Information Act, 2005 (RTI)

RTI is in news as:

- ✓ Act is rapidly losing its sheen because of bureaucratic apathy. Efficacy of RTI Act is threatened by opacity, opposition from bureaucracy and lawmakers
- ✓ Many RTI activists are being targeted and killed by mafias

RTI mandates timely response to citizen requests for government information. It is also an important tool for countering abuses, mismanagement, and corruption and for enforcing essential economic and social rights.

RTI is derived from our fundamental right of freedom of speech and expression under Article 19 of the Constitution.

What RTI includes?

- ✓ A right of an individual, organization, or legal entity to demand information from public bodies
- ✓ A duty of the relevant body to respond and provide the information. This includes mechanisms for handling requests and time limits for responding to requests
- ✓ Exemptions to allow the withholding of certain categories of information. These exemptions include the protection of national security and international relations, personal privacy, commercial confidentiality, law enforcement and public order, information received in confidence, and internal discussions.
- ✓ Internal appeals mechanisms for requestors to challenge the withholding of information

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- ✓ Mechanisms for external review of the withholding of information
- ✓ Government bodies to affirmatively publish some types of information about their structures, rules, and activities

Why RTI is needed?

There is global trend towards recognition of right to information by countries, intergovernmental organizations, civil society and the people.

The right to information has been recognized as a fundamental human right, which upholds the inherent dignity of all human beings.

The right to information forms the crucial underpinning of participatory democracy.

It is essential to ensure accountability and good governance.

The greater the access of the citizen to information, the greater the responsiveness of government to community needs.

More restrictions that are placed on access, the greater will be the feelings of 'powerlessness' and 'alienation'.

Without information, people cannot adequately exercise their rights as citizens or make informed choices.

The free flow of information in India remains severely restricted by three factors:

- ✓ The legislative framework includes several pieces of restrictive legislation, such as the Official Secrets Act, 1923
- ✓ The pervasive culture of secrecy and arrogance within the bureaucracy
- ✓ The low levels of literacy and rights awareness amongst India's people.

The primary power of RTI is the fact that it empowers individual Citizens to requisition information. Hence without necessarily forming pressure groups or associations, it puts power directly into the hands of the foundation of democracy- the Citizen

This law empowers people to ask for information about central, state governments including non-governmental organizations which are substantially funded by the government.

The law gives citizens of India the tools to fight against corruption.

RTI gives people the right to hold the government and organizations substantially funded by the government accountable.

Who is covered under RTI?

The Act applies both to Central and State Governments and all public authorities.

A public authority means any authority or body or institution of self-government established or constituted

- ✓ by or under the Constitution
- ✓ by any other law made by Parliament
- ✓ by any other law made by State Legislature
- ✓ by a notification issued or order made by the appropriate Government and includes any (i) body owned, controlled or substantially financed, (ii) non-government organization

substantially financed - which, in clauses (a) to (d) are all, directly or indirectly funded by the appropriate Government.

Exemption from Providing Information under RTI

Exempts information:

- ✓ Forbidden by any court of law or tribunal or the dispute of which may constitute contempt of court.
- ✓ disclosure of which would endanger life, or physical safety of any person
- ✓ which identify the source of information for law enforcement or security purpose
- ✓ which could impede the process of investigation or prosecution of offenders
- ✓ related to Cabinet papers
- ✓ intelligence and security organizations are exempted from the application of the Act

However, it is provided that in case the demand for information pertains to allegations of corruption and human rights violations, the Act shall apply even to such institutions.

CJI come under the RTI Act The apex court had stated that the office of the Chief Justice of India (CJI) is a public authority and that it will come under ambit of the RTI Act. This ruling was given by the 5-judge Constitution Bench that was headed by the Chief Justice Ranjan Gogoi.

The Right to Information (Amendment) Act, 2019

This act removed the fix tenure of five years of Chief Information Commissioner (CIC) and Information Commissioners (ICs). Central government will notify the term of office for the CIC and the ICs.

Salaries, allowances, and other terms and conditions of service of the central and state CIC and ICs will be determined by the central government.

Thus jeopardizing the autonomy of CIC and ICs and affecting the RTI Act.

Issues with implementation

- ✓ Public Awareness is very low in India regarding their rights as well as duties.
- ✓ Political interference and bureaucratic apathy and delays has resulted in delay of information
- ✓ The Act does not give adequate authority to the Information Commissions to enforce their decisions.
- ✓ Poor quality, incomplete and inaccurate information is provided
- ✓ Ineffective record management systems and procedures to collect information from field offices lead to delays.
- ✓ Due to non-requirement of giving reasons for seeking information, it has been observed that the RTI act is misused by the many petitioners.
- ✓ RTI activists are targeted, threatened and killed in many instances who have demanded information under RTI Act, thus raising the question of security to the information seekers.

GS II - INDIA AND WORLD

India and Association of Southeast Asian Nations (ASEAN)

The year 2022 marks the 30th anniversary of dialogue relations between ASEAN and India. Partnership started in early 1990s, turned into a robust, strategic partnership.

ASEAN is intergovernmental organization of ten Southeast Asian countries: Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, the Philippines, Singapore, Thailand, and Vietnam.

Indo-Pacific is an interconnected geography where ASEAN is at core. ASEAN is very important for India in its vision of the Indo-Pacific.

The relationship between India and ASEAN is a critical pillar of her foreign policy and the foundation of Act East Policy.

India's fourth largest trading partner is ASEAN.



Brief history of relationship

India did not have very cordial relations with ASEAN after independence. As ASEAN was with USA during cold war. This difference was mainly ideological.

With end of Cold War, India-ASEAN relations have progressed from merely economic ties to strategic coopearions.

Highlights of relations

India's trade with ASEAN accounts for approximately 10.6% of total Indian trade.

India prioritises ASEAN in its Indo-Pacific vision of regional security and growth.

India and ASEAN have had

- ✓ a dialogue partnership for 25 years



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- ✓ a summit level interaction for 15 years
- ✓ a strategic partnership for 5 years

The Delhi Declaration identifies maritime cooperation as a key area of cooperation under the ASEAN-India strategic partnership.

The ASEAN India-Business Council (AIBC) formed in 2003 to bring key private sector players from India and the ASEAN countries together on a single platform.

Programs to increase People-to-People Interaction with ASEAN, such as inviting ASEAN students to India, Special Training Course for ASEAN Diplomats, Parliamentarian Exchange etc.

The following funds have provided financial assistance to ASEAN countries:

- ✓ Fund for ASEAN-India Cooperation
- ✓ ASEAN-India Science and Technology Development Fund
- ✓ Green Fund for ASEAN-India

ASEAN-India Centre (AIC): To conduct policy research, advocacy, and networking activities with Indian and ASEAN organisations and think tanks.

Why Mutual Cooperation?

Indo-pacific region: ASEAN has greater influence on Asia-Pacific trade, political, and security issues. ASEAN is central to India in its vision of the Indo-Pacific. India and ASEAN share a desire to see the region remain peaceful and stable.

Economic and Trade: ASEAN biggest success has been promoting economic integration among members. It also helped negotiate the RCEP, the world's largest free trade agreement. India's economic and investment relationship with ASEAN has been steadily improving. India's trade with ASEAN is worth US\$ 81.33 billion, or roughly 10.6% of total trade.

Climate Change: ASEAN and India are also significant players in the global effort to combat climate change. ASEAN and India work together to combat marine pollution.

Renewable Energy: Two parties can work together to develop renewable energy sources such as solar and wind power. They have potential to help reduce carbon emissions and their reliance on fossil fuels.

India-ASEAN Digital Work Plan 2022 The work plan includes system for combating the use of stolen and counterfeit mobile handsets, wifi access network interface for nationwide public internet, the capacity building and knowledge sharing in emerging areas in the field of information and communication technologies such as Internet of Things (IoT), 5G, advanced satellite communication, cyber forensics etc.

People-to-people interaction: To promote people-to-people interaction with ASEAN, a number of programmes have been held, including

- ✓ ASEAN students to India each year for the Students Exchange Program
- ✓ Special Training Course for ASEAN diplomats
- ✓ Parliamentarian Exchanges
- ✓ ASEAN students participating in the National Children's Science Congress
- ✓ ASEAN-India Network of Think Tanks

- ✓ ASEAN-India Eminent Persons Program

India, ASEAN and Indo-Pacific

Both ASEAN and India believe that openness, inclusiveness, rules-based order, freedom of navigation and peaceful settlement of disputes lie at the very core of the Indo-Pacific.

There is convergence in Indian and the ASEAN conception of the Indo-Pacific.

Both India and ASEAN emphasize connectivity in the Indo-Pacific and underline cooperation over rivalry.

India is with ASEAN towards a vision of an open and inclusive Indo-Pacific in tandem with initiatives such as:

- ✓ Act East Policy (AEP)
- ✓ Indo-Pacific Oceans Initiative (IPOI)
- ✓ Security and Growth for All in the Region (SAGAR)

India and some of the ASEAN countries are also members of the The Indo-Pacific Economic Framework (IPEF).

- ✓ IPEF was launched by United States (US). The IPEF has four pillars: Trade; supply chains; clean energy, decarbonisation and infrastructure; tax and anti-corruption. Except Cambodia, Laos and Myanmar, other Southeast Asian nations are a part of the IPEF.

Irritants

ASEAN countries remains divided over how to address security challenges. These include:

- ✓ China's claims in the South China Sea
- ✓ Human rights abuses for example: Rohingya issue in Myanmar
- ✓ Political repression by member states: Myanmar against democracy
- ✓ narcotics trafficking
- ✓ refugee flows
- ✓ terrorism

India many times objected actions by some ASEAN countries related to above issues.

Another major irritant is trade relations. Especially, ASEAN countries are not ready to open market for services such as BPO, KPO etc. to India.

GS III – ECONOMY

Power Sector in India

With India looking at rapid industrialisation and urbanisation, the demand for power in the country is going to increase.

India has twin goals, to ensure 24x7 adequate and reliable energy access and simultaneously, accelerate clean energy transition by reducing the country's reliance on fossil based energy and shifting to cleaner and renewable energy sources.

The power generation situation in the country has improved in the last few years. In June 2017, India has become a power surplus country, with no shortage of electricity or coal.

Why power sector is important?

- ✓ Plays vital role in the economic growth
- ✓ Helps in Human development.
- ✓ Electricity consumption is important indices for measuring the development level of a nation.
- ✓ Critical component of infrastructure development

Current status

India is world's sixth largest energy consumer

Accounts for 3.4 per cent of global energy consumption

Due to India's economic rise, demand for energy has grown.

India is sixth largest in terms of power generation.

Maharashtra is the leading electricity generator.

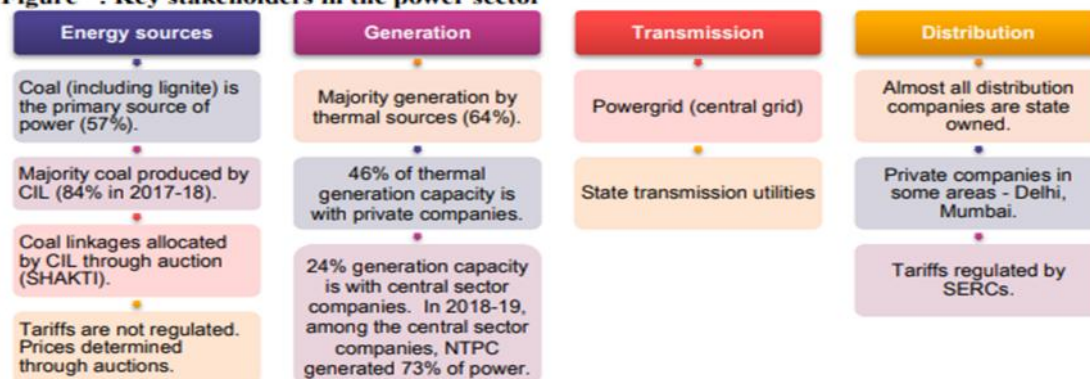
India's power sector

There are three primary segments in the electricity sector:

- ✓ Generation is the process of producing power using different fuels and is carried out in generating stations (generation plants).
- ✓ Transmission utilities carry bulk power from the generation plants to the distribution substations through a grid and at high voltages.
- ✓ Distribution utilities supply electricity from the substations to individual consumers through a distribution network. Distribution is the retail stage and operates at lower voltages.

Composition of power sector

- ✓ Coal accounts for a majority of power generation at 55%.
- ✓ Overall thermal power generation (including coal, and natural gas) is at 64%.
- ✓ Renewable energy accounts for around 21% of the total generation capacity.
- ✓ Hydro power accounts for 13% of generation and nuclear for 2%.

Figure : Key stakeholders in the power sector**Main issues in India**

- ✓ Country has surplus generation capacity but deficits continue in some regions
- ✓ Electrification numbers have (electricity reached to 100% villages) improved but the quality of supply is questionable
- ✓ Discoms (power distribution companies) are in poor financial health and have weak capacity to buy power
- ✓ High cost of power
- ✓ Capacity utilisation of thermal plants has declined
- ✓ Energy mix needs to be balanced for efficient capacity utilization.
- ✓ NPAs in the power sector have been increasing
- ✓ Environmental concerns of thermal generation
- ✓ Transmission infrastructure issues affect power supply
- ✓ Renewable market is still developing
- ✓ Connecting renewable energy sources with the grid

Power sector reforms**Table : Developments in the power sector**

Year	Key developments
1948	Electricity Supply Act, 1948: Created state-level vertically integrated utilities responsible for power generation, transmission, and distribution, and for setting tariffs. ¹⁹
1991	1948 Act amended to allow private companies to set up their power generation plants.
1996-98	Some states (Odisha, Haryana) started restructuring their state electricity boards. Restructuring included segregating generation, transmission, and distribution segments, and allowing private participation in the distribution segments.
1998	Established Regulatory Commissions at both the central and state levels through the Electricity Regulatory Commission Act, 1998. These Commissions regulate inter-state and intra-state matters in generation, transmission, and distribution of power.
2003	Electricity Act, 2003: Gave more powers to the Regulatory Commissions; provided for unbundling of the state owned electricity boards and multiple discoms in an area; allowed open access; provided for elimination of cross-subsidies in the sector. The 1948 Act, and 1998 Acts were repealed.
2014	Electricity (Amendment) Bill, 2014 to segregate retail supply from distribution, and bring in multiple supply licensees.
2015-2017	As of March 2015, the state discoms had accumulated losses of approximately Rs 3.8 lakh crore and outstanding debt of approximately Rs 4.3 lakh crore. The Ujwal Discom Assurance Yojana (UDAY) was introduced to allow states to help the discoms by taking over their debt.
2017 - now	India declared as a power surplus country. All villages have been electrified. New household electrification scheme, Saubhagya, launched. Draft amendments to the 2003 Act propose to segregate the network and supply business, and introduce a system of direct benefit transfers with regard to subsidies. Coal linkages are being allocated through auction (SHAKTI).

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To improve the condition in power sector reforms by Indian government generally includes implementing Programmes/schemes (discussed below) to:

- ✓ Augment power supplies
- ✓ Revamp transmission & distribution networks
- ✓ Deregulation of diesel prices
- ✓ Gas pricing and marketing freedom
- ✓ New policy for exploration and production
- ✓ Improve distribution efficiency
- ✓ Reduce supply-demand dissonance
- ✓ Decrease technical and commercial losses
- ✓ Improve revenue realisation
- ✓ Thrust on renewable energy to increase the penetration of electricity
- ✓ Emphasis on emerging technologies like power storage devices, electric vehicles, energy saving devices, smart transmission and distribution systems, etc.

Power sector schemes

PM-KUSUM (Pradhan Mantri Kisan Urja Suraksha evam Utthaan Mahabhiyan), 2019: Scheme is aimed at ensuring energy security for farmers in India, along with honoring India's commitment to increase the share of installed capacity of electric power from non-fossil-fuel sources to 40% by 2030 as part of Intended Nationally Determined Contributions (INDCs). Scheme for solarization of agriculture and thereby to reduce subsidy burden.

Privatization of power distribution in Union Territories - for quality and assured power supply.

Pradhan Mantri Sahaj Bijli Har Ghar Yojana (Saubhagya), 2017: Achieve universal household electrification by providing last mile connectivity and electricity connections to all households in rural areas, and all poor households in urban areas by March, 2019.

Scheme for Harnessing and Allocating Koyala (Coal) Transparently in India (SHAKTI), 2017: coal linkage policy for the allocation of coal among thermal power plants in a transparent and objective manner.

National Smart Grid Mission (NSGM) 2015: plan and monitor implementation of policies and programmes related to Smart Grid.

Ujwal Discom Assurance Yojana (UDAY), 2015: for the financial and operational turnaround of state-owned power distribution companies (discoms).

Deen Dayal Upadhyaya Gram Jyoti Yojana (DDUGJY) 2014: the scheme provides for:

- ✓ rural electrification
- ✓ separation of agriculture and nonagriculture feeders
- ✓ strengthening and augmentation of sub-transmission and distribution infrastructure
- ✓ electrification of villages across the country

The previous rural electrification schemes (including the Rajiv Gandhi Gram Jyoti Yojana) were subsumed in it.

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Integrated Power Development Scheme (IPDS) 2014: to provide quality and reliable power supply in urban areas.

Financial Restructuring Package (FRP) 2012: the central government had announced the FRP to solve the immediate funding needs of the highly distressed state discoms.

Jawaharlal Nehru National Solar Mission (JNNSM) 2010: Targeted 20 GW of grid-connected solar generation capacity in India by 2022. In 2015, the central government increased the overall target under the mission to 100 GW by 2021-22.

Re-structured Accelerated Power Development and Reforms Programme (R-APDRP), 2008: To help reduce losses of the state discoms.

Accelerated Power Development and Reforms Programme (APDRP) 2002: with the primary objective of reducing the AT&C losses and improving the revenue realisation by the state discoms.

Way Ahead

Governments should focus on:

- ✓ **Power Generation Strategy** with focus on low cost generation, optimization of capacity utilization, controlling the input cost, optimisation of fuel mix, technology upgradation and utilization of non-conventional energy sources
- ✓ **Transmission Strategy** with focus on development of National Grid including interstate connections, technology upgradation & optimization of transmission cost.
- ✓ **Distribution Strategy** to achieve distribution reforms with focus on system upgradation, loss reduction, theft control, consumer service orientation, quality power supply commercialization, Decentralized distributed generation and supply for rural areas.
- ✓ **Regulation Strategy** aimed at protecting consumer interests and making the sector commercially viable.
- ✓ **Financing Strategy** to generate resources for required growth of the power sector.
- ✓ **Conservation Strategy** to optimise the utilization of electricity with focus on demand Side management, load management and technology upgradation to provide energy efficient equipment / gadgets.
- ✓ **Communication Strategy** for political consensus with media support to enhance the general public awareness.

Repo Rate Increase

RBI has increased the repo rate by 50 basis points in its latest policy review to tame spiraling inflation.

What is the repo rate?

The interest rate at which RBI lends short-term loans to its clients, keeping their government securities or treasury bills as collaterals is called the repo rate.

Repo operation is a type of Liquidity Adjustment Facility (LAF) which is a part of quantitative tools to control the flow of money in terms of quantity and volume in the economy.

Repo rate is the benchmark rate of the RBI to control inflation in the economy.

Why was the repo rate increased?

Repo rate was increased to deal with increased inflation in the economy

RBI is supposed to keep inflation (Consumer Price Index) in the range of 2% - 6% which was 6.71% in July 2022.

Impact of increase in repo rate:

- ✓ The increased repo rate will discourage banks from borrowing from the RBI and lending to the customers.
- ✓ This in turn will reduce the liquidity and demand in the market.
- ✓ Slows down investment in the market.
- ✓ It brings down the purchasing power of consumers, which helps in controlling inflation.
- ✓ People who have savings and have a fixed deposit, for example, will benefit from an increase in interest rates as they would get increased returns.
- ✓ The loans which are benchmarked with repo rate will get expensive i.e. interest on these loans will increase.

Impact of decrease in repo rate:

- ✓ The decreased repo rate will encourage banks to borrow from the RBI and lend to the customers.
- ✓ This in turn will increase the liquidity and demand in the market.
- ✓ It increases the purchasing power of consumers which boosts the economy.
- ✓ Increases the investment in the market.
- ✓ People who have savings and have a fixed deposit will receive lesser returns.
- ✓ The loans which are benchmarked with repo rate will get cheaper i.e. interest on these loans will decrease.

What is the reverse repo rate?

It is the interest rate that clients of RBI earn when they park their surplus funds with the RBI for short periods, to earn interest.

In this case, RBI gives its government securities or treasury bills as a collateral to the client.

Impact of change in reverse repo rate:

- ✓ Reverse repo rate is lower than the repo rate and linked with the repo rate.
- ✓ When repo rate is increased there is increase in reverse repo rate and vice-versa.
- ✓ Increase in reverse repo rate encourages the banks to park their excess funds with the RBI to earn interest. This in turn reduces the liquidity in the economy.
- ✓ Decrease in repo rate encourages the banks to lend to customers to earn interest. This in turn increases the liquidity in the economy.

GS III - ENVIRONMENTAL ISSUES

Climate Change Targets

India's NDC (nationally determined commitments) have been updated with two promises, both of which are enhancements of existing targets.

What is NDC?

Nationally Determined Contribution is a climate action plan to cut emissions and adapt to climate impacts.

Each Party to the Paris Agreement is required to establish an NDC and update it every five years.

India's first NDC was submitted in 2015, just before the Paris Agreement was finalised.

Panchamrit or India's promises at COP 26:

- ✓ Increase non-fossil energy capacity to 500 GW (gigawatts) by 2030.
- ✓ Meet 50 percent of energy requirements from renewable energy (RE) by 2030.
- ✓ Reduce the total projected carbon emissions by 1 billion tonnes (BT) by 2030.
- ✓ Reduce the carbon intensity of the economy by less than 45 percent.
- ✓ Achieve net zero carbon by 2070.

The following table shows India's original NDC made in 2015 and the new NDC which was updated taking into consideration PM Modi's "Panchamrit" commitments made at the Glasgow Summit (COP 26) in 2022.



Target (for 2030)	Existing: First NDC (2015)	New: Updated NDC (2022)	Progress
Emission intensity reduction	33-35 per cent from 2005 levels	45 per cent from 2005 levels	24 per cent reduction achieved in 2016 itself. Estimated to have reached 30 per cent
Share of non-fossil fuels in installed electricity capacity	40 per cent	50 per cent	41.5 per cent achieved by the end of June this year
Carbon sink	Creation of 2.5 to 3 billion tonnes of additional sink through afforestation	Same as earlier	Not clear.

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What is net zero?

Net zero is a situation in which a country's greenhouse gas emissions are offset entirely.

This is done either by absorption of carbon dioxide through natural processes like photosynthesis in plants, or through physical removal of greenhouse gases using futuristic technologies.

India's progress:

It is very likely that the 33 to 35 per cent reduction target of emission intensity has already been achieved, or is very close to being achieved.

The other target of having at least 40 percent of electricity coming from non-fossil fuels has been officially achieved.

- ✓ According to the latest data from the power ministry, 41.5 per cent of India's current installed electricity capacity of 403 GW is now powered by non-fossil fuels.
- ✓ Renewables (wind, solar and others) alone account for more than 28 percent of this capacity
- ✓ Hydropower contributes to over 11 percent of the capacity.

Lifestyle for the Environment (LiFE)

At the CoP 26 in Glasgow PM Modi articulated the concept of "Lifestyle for the Environment" (LiFE). LiFE was launched on June 5, 2022, World Environment Day, by PM Modi.

What is LiFE?

LiFE movement aims at harnessing the power of individual and collective action across the world to address the climate crisis.

It advocates "mindful and deliberate utilisation" by people worldwide, instead of "mindful and wasteful consumption".

The objective of the movement is to nudge individuals and communities to adopt simple and specific climate-friendly behaviours in their daily lifestyles.

For instance, an individual

- ✓ can carry a reusable cloth bag instead of a plastic bag
- ✓ walk short distances instead of driving
- ✓ turn off electrical appliances from the sources when not in use
- ✓ prioritise public transport wherever possible
- ✓ avoid food wastage which can reduce an individual's carbon footprint

By making such daily actions an integral part of our collective social norms, LiFE aims to activate a global community of "Pro Planet People" and steer the world towards a sustainable model of development.

Significance of LiFE:

LiFE aims to alter the course of the climate change debate

Policies and actions to address climate change focus on larger social groups/communities such as nations.

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✓ This can be discerned from the concept of Nationally Determined Contributions (NDC). However, the positive impact that individual and community behaviours can have on climate action has remained under realised which LiFE seeks to realise.

According to the United Nation Environment Programme (UNEP), if one billion people out of the global population of close to eight billion adopt eco-friendly behaviours in their daily lives, global carbon emissions could drop by approximately 20 per cent.

Thus individual behaviour has enormous potential to make a significant dent in the climate conundrum.

There is an urgent need for individuals to transcend geographical, social and economic boundaries, and come together as a global community to tackle the climate crisis.

India can lead the global climate debate by nudging the world towards a new model of sustainable and inclusive development through the Lifestyle for the Environment (LiFE) movement.

Precedents of pro-planet initiatives around the world:

Denmark promotes the use of bicycles by limiting parking within the city centre and providing exclusive bike lanes.

Japan has its unique “walk-to-school” mandate, which has been in practice since the early 1950s. There are other examples of how people can practice sustainable lifestyles.

Proposed Amendment to Energy Conservation Act, 2001

The Bill to amend the Energy Conservation Act, 2001 was introduced in Parliament in order to facilitate the achievement of more ambitious climate change targets and ensure a faster transition to a low-carbon economy.

The Bill has the following objectives:

- ✓ It seeks to make it compulsory for a select group of industrial, commercial and even residential consumers to use green energy. A prescribed minimum proportion of the energy they use must come from renewable or non-fossil fuel sources.
- ✓ It seeks to establish a domestic carbon market and facilitate trade in carbon credits.
- ✓ Also it seeks to widen the scope of energy conservation to include large residential buildings as well which till now applied mainly on industrial and commercial complexes.

Energy Conservation Act, 2001

It defined standards for energy conservation and efficiency to be followed by a select group of industries and commercial complexes.

Efficiency standards were also prescribed for equipment and appliances like air conditioners or refrigerators.

This law set up the Bureau of Energy Efficiency (BEE) to promote the use of more efficient processes and equipment in order to save energy.

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- ✓ The star ratings on various household appliances and the large-scale shift to LED bulbs were some of the successful initiatives of BEE that have resulted in massive energy savings over a period of time.

The overall objective has been to improve energy efficiency across sectors, so that much more productivity can be obtained from the same amount of energy.

As a result, India's energy intensity, or the amount of energy consumption per unit of GDP, has declined significantly over the years.

New provisions of the proposed amendment:

It seeks to specify energy consumption standards for motor vehicles, ships and other water vessels, industrial units, and buildings just like the standards for appliances and equipment.

It seeks to define fuel consumption norms in the case of vehicles and water vessels.

And just like it is for appliances and equipment, the new provisions would empower the government to prohibit the manufacture or import of any vehicles or water vessels if it does not conform to the prescribed energy standards.

New sustainable building codes are to be defined which every building with a certain threshold of energy consumption, whether industrial, commercial or residential, would have to adhere to.

Every such building would have to ensure that at least a part of its total energy consumption comes from renewable or non-fossil fuel sources. This would help in reducing the proportion of fossil-fuel based energy being used in the economy and push the demand for renewable or other non-fossil fuels.

What are carbon markets?

Carbon markets allow the trading of carbon credits with the objective of bringing down emissions. These markets create incentives to reduce emissions or improve energy efficiency.

How does this work?

For example, an industrial unit which outperforms the emission standards stands to gain credits.

Another unit which is struggling to attain the prescribed standards can buy these credits and show compliance to these standards.

The unit that did better on the standards earns money by selling credits, while the buying unit is able to fulfill its operating obligations.

International carbon markets:

Under Kyoto Protocol

- ✓ Under the Kyoto Protocol, the predecessor to the Paris Agreement, carbon markets have worked at the international level as well.
- ✓ It had prescribed emission reduction targets for a group of developed countries.
- ✓ Other countries did not have such targets, but if they did reduce their emissions, they could earn carbon credits.

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- ✓ These carbon credits could then be sold off to those developed countries which had an obligation to reduce emissions but were unable to.
- ✓ This system functioned well for a few years but the market collapsed because of the lack of demand for carbon credits.
- ✓ As the world negotiated a new climate treaty in place of the Kyoto Protocol, the developed countries no longer felt the need to adhere to their targets under the Kyoto Protocol.
- ✓ A similar carbon market is envisaged to work under the successor Paris Agreement, but its details are still being worked out.

Domestic or regional carbon markets:

Domestic or regional carbon markets are already functioning in several places such as the emission trading scheme (ETS) in Europe.

China, too, has a domestic carbon market.

A similar scheme for incentivizing energy efficiency has been running in India for over a decade now.

This BEE scheme, called PAT, (or perform, achieve and trade) allows units to earn efficiency certificates if they outperform the prescribed efficiency standards.

The laggards can buy these certificates to continue operating.

New carbon market in India as per the proposed amendment:

It would be much wider in scope.

Although the details of this carbon market are not yet known, it is likely to be on the lines of the European ETS, facilitating the buying and selling of carbon credits.

GS III - SCIENCE AND TECHNOLOGY

Gaia Hypothesis

Recently James Lovelock who had propounded the Gaia hypothesis passed away.

What is Gaia hypothesis?

The Gaia hypothesis proposes that living organisms interact with their inorganic surroundings on Earth to form a synergistic and self-regulating, complex system that helps to maintain and perpetuate the conditions for life on the planet.

Life has a longing for life and thus all of nature, from microscopic living organisms to rocks, are interlinked.

Gaia, or Gaea in Greek, is the name for the primordial earth or mother goddess.

The Gaia thesis emerged out of the work Lovelock did for NASA, on whether there might be life on Mars. This led him and biologist Lynn Margulis to delve deeper into the origins of life on earth.

Together they put forth the formulation that the earth is a self-regulating organism and that when early lifeforms began extracting carbon dioxide from the atmosphere, this gave birth to a biological system which kept morphing to constantly recalibrate itself in order to sustain life.

Lovelock was among the first scientists to identify human-made climate change as a serious existential threat to our species. The idea that nature will hit back at humans for destroying the balance of planetary flows resonated with the environmental movement.

Gaia appealed to “back to nature” environmentalists across the world.

Blackswan Events

A Black Swan event refers to an unpredictable event that has negative consequences. The coronavirus pandemic and the Russia-Ukraine war can be called as blackswan events.

Small Satellites Launch Vehicle (SSLV)

The maiden flight of the SSLV resulted in failure as the rocket placed the satellites into elliptical orbit instead of circular orbit rendering the satellites unusable.

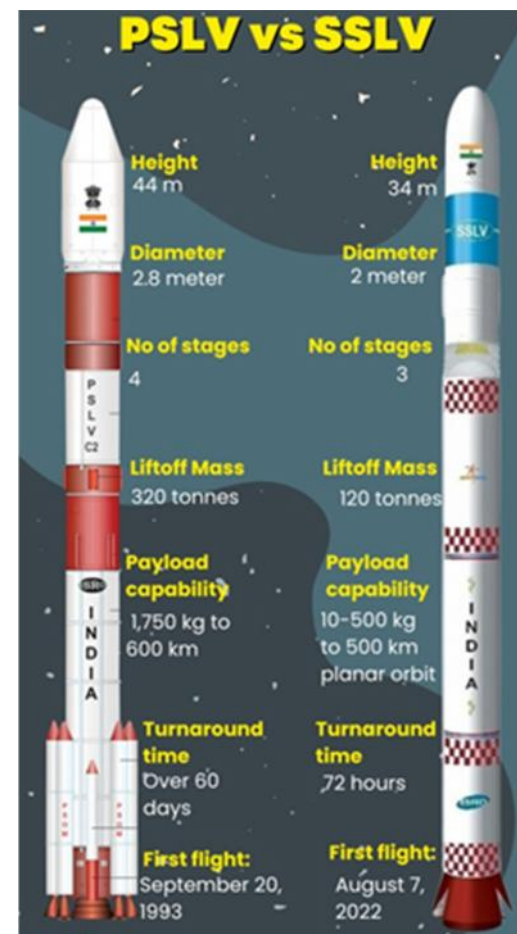
About SSLV:

It uses three solid fuel-based stages and a liquid fuel-based velocity trimming module (VTM) to place the satellite in orbit.

It is designed in order to ensure faster turnaround times.

Why is SSLV considered a game changer for the Indian space sector?

It has the capability to carry satellites weighing up to 500 kg to the lower earth orbits (up to altitudes of 1,000 km from earth's surface) which is one of the most sought after places in space for positioning



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of satellites.

It can be assembled within 72 hours by a team of just 5-6 people whereas PSLV and GSLV typically take 70-80 days to assemble.

It costs at least one-tenth of those such as PSLV and GSLV which are currently in use.

ISRO makes 5-6 launches with its PSLV and GSLV (Geospatial Satellite Launch Vehicles) rockets whereas SSLV can enable a space launch from India more frequently.

The revenue generated from PSLV and GSLV is not commensurate with the costs incurred. SSLVs are less costly so revenue generated will be more.

SSLV caters specifically to the small and micro satellites that constitute over 90 per cent of all satellites being launched these days.

Stablecoins

What are stablecoins?

A stablecoin is a cryptocurrency whose value is pegged to a 'stable' asset, such as the U.S. dollar or gold. The best-known stablecoin in the crypto ecosystem today is arguably Tether (USDT).

Cryptocurrencies such as Bitcoin are highly volatile. Hence people take refuge in stablecoins.

Langya Virus

A new zoonotic virus has been discovered in the country's two eastern provinces.

This new type of Henipavirus is also being called Langya Henipavirus or the LayV.

What is Langya virus?

- ✓ It is a new type of Henipavirus
- ✓ Nipah is also a type of Henipavirus
- ✓ Langya is known to cause fever

Origin of Langya Virus:

- ✓ Langya Virus is most likely to have a zoonotic origin
- ✓ The LayV virus RNA has been predominantly found in shrews, which may be its natural hosts.

The outbreak of this virus is at its initial stage.

Lumpy Skin Disease (LSD) outbreak

What is LSD?

LSD infects cattle and water buffalo mainly through vectors such as blood-feeding insects.

Signs of infection include the appearance of circular, firm nodes on the animal's hide or skin that look similar to lumps.

It is caused by a virus called the Capripoxvirus, a virus of the family Poxviridae, also known as Neethling virus.

It is genetically related to the goatpox and sheeppox virus family.

The virus does not spread to humans

According to a report by GAVI, the Global Alliance for Vaccines and Immunisation, the LSD is an emerging threat to livestock worldwide.

GS III – INTERNAL SECURITY

Changing Nature of Militancy in Jammu and Kashmir

Note: Changing nature militancy in Jammu and Kashmir is covered in Panorama Volume 2.

Steps taken in order to address this new form of militancy:

- ✓ Anti-militancy operations have been expanded.
- ✓ Widespread detentions under security laws such as Unlawful Activities Prevention Act (UAPA), 1967 and Public Safety Act (PSA), 1978.
- ✓ Enforcement and tax raids to break alleged funding networks
- ✓ Crackdowns on overground worker networks and their linkages.
- ✓ The constitution of the multi-agency Terror Monitoring Group and the State Investigation Agency by the J&K administration

GS IV – ETHICS

Euthanasia

Bengaluru woman files petition in the Delhi HC to stop friend's euthanasia trip to Europe.

What is Euthanasia?

Euthanasia is the practice of intentionally ending life to relieve pain and suffering.

Euthanasia may be classified into three types-

- ✓ Voluntary: When a person gives informed consent to end her life
- ✓ Non-voluntary: Non-voluntary euthanasia is conducted when the consent of the patient is unavailable.
- ✓ Involuntary: Involuntary euthanasia is conducted against the will of the patient.

Status in India:

In India, euthanasia is a crime under Section 309 of the Indian Penal Code (IPC) which deals with the attempt to commit suicide and Section 306 of the IPC which deals with abetment of suicide – both actions are punishable.

Only those who are brain dead can be taken off life support with the help of family members.

The Supreme Court has held that the right to life guaranteed by Article 21 of the constitution does not include the right to die.

However in the Aruna Shanbaug Case in 2011, the Supreme Court issued a set of broad guidelines legalizing passive euthanasia in India.

These guidelines for passive euthanasia—i.e. the decision to withdraw treatment, nutrition, or water—establish that the decision to discontinue life support must be taken by parents, spouse, or other close relatives, or in the absence of them, by a "next friend". The decision also requires court approval.

Status of euthanasia in other countries:

- ✓ Euthanasia is illegal in most countries, although doctors do sometimes carry out euthanasia even where it is illegal.
- ✓ Voluntary euthanasia is legal in countries like Belgium, Luxembourg, Canada, the Netherlands
- ✓ Assisted-suicide, if within the prescribed rules, is legal in Switzerland, Germany, and certain states of the USA

Ethical concerns:

The ethical debate on euthanasia stems from the basic question of whether an individual who has no hope of recovery has the right to decide how and when to end her/his life?

Arguments in favour of euthanasia:

- ✓ Supporters of euthanasia argue that a civilised society should allow people to die in dignity and without pain, and should allow others to help them do so if they cannot manage it on their own.
- ✓ They argue that our bodies are our own, and we should be allowed to do what we want with them. Hence it's wrong for them to make anyone live longer than they want.
- ✓ According to them, forcing people to go on living when they don't wish to violate their personal freedom and human rights. It's immoral, they say to force people to continue living in suffering and pain.

Arguments against euthanasia:

- ✓ Those who oppose euthanasia on religious basis argue that life is given by God and only God should decide when to end it.
- ✓ Others fear that if euthanasia was made legal, the laws regulating it would be abused, and people would be killed who didn't really want to die.

Non-voluntary Euthanasia in the UK

A 12 year old boy from the UK underwent an accident and was declared brain-stem dead by the doctors. He was on life support. In a series of decisions, judges found that Archie had suffered severe brain damage and that the burdens of treating his condition “along with the total lack of a prospect of recovery” outweighed the benefits of continuing to keep him alive on a ventilator. His life support was subsequently removed and he passed away shortly.

Ethical questions arising out of the issue:

- ✓ Is the judiciary the right authority to decide whether the life-support should be withdrawn or should it be the parents as long as they are willing to bear the expenses of medical care?
- ✓ Is the judiciary the competent authority to decide on the cost-benefit of keeping a person alive?

Arguments in favour of ending life support:

- ✓ Wastage of medical resources which would otherwise be used for someone needy.
- ✓ Ending the suffering of someone who is suffering a lot and shows no prospects of recovery.

Arguments against ending life support:

- ✓ On a religious basis it can be said that life is given by God and only God should decide when to end it
- ✓ It is feared that such discretion by the judges would be abused
- ✓ It is feared that it would set a wrong legal precedent which would be followed around the world in different contexts.
- ✓ It is argued that such decisions concerning the questions of life and death should be taken by parents and not judges