

PANORAMA

CURRENT EVENT ANALYSIS

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SYNERGY
STUDY POINT

590, 3rd building, Shivam complex Narayan peth, Pune.

9850 981796 www.upsctmantra.com
[synergyupscpune](https://www.instagram.com/synergyupscpune)

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GS I – GEOGRAPHY

Monsoon Getting Hotter than summer

In 2012-2021, the average monsoon temperatures have risen 0.40 C higher than average summer temperatures.

India's average temperature has risen 0.62 C from 1901-2020 according to India Meteorological Department records.

Reason behind temperature increase:

Anthropogenically induced climate change is the main reason behind this.

- ✓ Increase in food demand leading to clearing of forests which act as carbon sinks.
- ✓ Unsustainable agricultural practices leading to degradation of land and emission of soil carbon.
- ✓ Changes in land use and land cover
- ✓ High demand for energy and consumption of fossil fuels.
- ✓ Consumerist lifestyle leading to ever increasing per capita carbon footprint.

Impact of rising temperatures on public health:

From 2015 - 2020, more than 4600 people had reportedly died due to heat stroke in the States in the northwest and the southern peninsula combined.

Urban heat-island effect has aggravated the problem of heat stress.

Extreme heat and poor air quality increase complications from underlying heart and respiratory conditions like asthma, renal failure, and preterm birth, and as temperatures rise, there will be more heat-related illness and deaths in both urban and rural areas.

The risk of very large fires has increased and will further directly threaten people's lives and cause severe air pollution across large areas.

The frequency and intensity of heavy downpours has increased and is likely to increase further, raising the risk of flash flooding.

Ticks and mosquitos that transmit Neglected Tropical Diseases (NTD's) are likely to increase and spread to new areas.

More frequent heavy rain events will likely increase exposure to water-borne illnesses.

Human-caused climate change also threatens food safety in by

- ✓ lowering the nutritional quality of staples like wheat and rice
- ✓ causing greater accumulation of mercury and other toxins in seafood
- ✓ increasing the chance for food-borne pathogens to enter the food supply

Increase in fatigue and decrease in work efficiency leading to economic loss on account of reduced productivity.

Response to heatwaves and increased temperature:

States like Gujarat have formulated Heat Action Plan (HAP) with the help of NDMA.

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HAPs describe step-by-step procedures the States ought to implement in case of heatwave-like conditions which include:

- ✓ Developing and installing an early warning system about heat waves.
- ✓ Communication and ensuring first aid.
- ✓ Bringing changes in the built environment by using material that keeps the indoors cooler.
- ✓ Improving health infrastructure to treat heat stroke patients.
- ✓ Imposing early summer vacations in schools.
- ✓ Ensuring that labourers employed in MGNREGA schemes aren't assigned work during certain times of the day.

Way Forward:

Adaptation and mitigation planning.

Reaching out to rural India by HAPs and involving Panchayati Raj Institutions.

Taking steps to plan infrastructure and housing in ways that recognise the dangers from a warming environment.

Including financial incentives, preferably via Budget outlays, for effective cooling plans.

Energy Poverty

PM Modi spoke about energy poverty at G-7 summit.

Energy poverty - meaning

Energy poverty is usually defined in energy studies in two ways:

- ✓ lack of access to electricity
- ✓ dependence of the household energy needs on burning solid biomass using inefficient and polluting ways

Energy poverty has multiple dimensions:

Domestic spatial dimension: In India certain states or parts of India have energy consumption which is very low compared to other parts of the country. Eg. Eastern and Central India have lower consumption than that of Western India.

Rural-urban dimension: The energy availability and consumption is too low in rural India compared to urban India.

Gender dimension: There also exists a significant disparity in energy consumption between men and women.

International dimension:

- ✓ There exists a significant gap in energy consumption between the countries of global North and global South. This has been exacerbated by Carbon Imperialism practised by the Western world wherein the developing world is indirectly forced to cut down their carbon emissions at the cost of their development.

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- ✓ The war in Ukraine has led to western sanctions on Russia which has led to increase in oil prices further aggravating the problem of energy security.

Energy Poverty: Indian perspective

India presently faces severe energy poverty concerns as 89% of rural households depend on polluting energy sources for cooking and access to electricity is limited to 56% households.

Impacts of energy poverty

Energy poverty has serious implications on income poverty and gender disparity at the household level.

- ✓ Access to clean and efficient sources of energy facilitates income generating activities and thus helps in alleviating income poverty.
- ✓ Usage of clean fuels eliminates the negative impact faced by women and children with usage of polluting fuels.

Insufficient and irregular energy supply leads to losses in agriculture and manufacturing sectors leading to increase in poverty level. And these poor people can't afford energy. Thus, creating the vicious cycle.

Energy fuels such as wood, dung, crop residue leads to air pollution causing damage to human health.

More demand for fossil fuels leads to depletion of energy resources leading to energy crisis.

More reliance on fossil fuels increases the global warming due to increase in greenhouse gases.

Causes of Energy Poverty in India

- ✓ Due to lower levels of income rural or urban poor use fuel that is cheap and locally available
- ✓ Poor people relies on traditional biomass such as wood fuel, charcoal, burning crop residue and wood pellets
- ✓ Lack of energy infrastructure like power plants, transmission lines, pipelines to deliver resources
- ✓ High loss of useful energy during energy conversions, energy transmission
- ✓ Factors external to India such as geopolitical tensions Ex: Russia and Ukraine war leads to disturbances in global energy supply.

Measures to curb Energy Poverty

- ✓ Effective and effective global cooperation in managing energy resources is needed. Different international organisations such as G-20, SAARC, UNEP etc. can play important role in this direction.
- ✓ Need more focus on development of renewable energy resources and required infrastructure.
- ✓ Focus on creating effective policy to tackle the impact of energy poverty on different sections of society such as women, old age people, farmers, poor people etc.

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- ✓ Need to create awareness among people about subsidies available for using energy resources.

Different initiatives by India

- ✓ Pradhan Mantri Sahaj Bijli Har Ghar Yojana (SAUBHAGYA)
- ✓ Green Energy Corridor (GEC)
- ✓ National Solar Mission (NSM)
- ✓ National Biofuels Policy
- ✓ Small Hydro Power (SHP)
- ✓ National Hydrogen Energy Mission (NHEM)
- ✓ Production-Linked Incentive (PLI) Scheme
- ✓ Unnat Jyoti by Affordable LEDs for All (UJALA)
- ✓ Pradhan Mantri Ujjwala Yojana (PMUY)
- ✓ Faster Adoption and Manufacturing of (Hybrid &) Electric Vehicles (FAME)
- ✓ Smart City Mission (SCM)

Global Initiatives:

- ✓ International Solar Alliance (ISA)
- ✓ Clean Energy Ministerial (CEM)
- ✓ Mission Innovation (MI)

Derecho

A storm that turned the sky green in the USA



What is a derecho?

Broad, long-lasting straight-line thunderstorm accompanied by a band of rapidly moving showers or thunderstorms.

It is a warm-weather phenomenon that occurs during the summer.

They are uncommon when compared to other storm systems such as tornadoes or hurricanes.

Different types of derechos

They fall into three categories – progressive, serial and hybrid.

- ✓ **Progressive derecho** - short line of thunderstorms that can travel hundreds of miles along a relatively narrow path. It's a summer occurrence.
- ✓ **Serial derecho** - has a long and wide squall line that sweeps across a large area. It usually happens in the spring or fall.
- ✓ **Hybrid derechos** - combine the benefits of both progressive and serial derechos.

Why did the sky turn green during the derecho that hit US recently?

Severe thunderstorms produce a "green sky" as a result of light interacting with the massive amount of water they contain.

It is thought that the large raindrops and hail scatter all but the blue wavelengths, allowing only blue light to penetrate below the storm cloud.

This blue then combines with the afternoon or evening sun's red-yellow to produce green.

Occurrence of Derechos:

They are most common in the central and eastern United States.

Derechos have also been reported in other parts of the world. Russia experienced its first documented derecho in 2010. They have also swept through Germany and Finland, as well as Bulgaria and Poland more recently.

GS I - SOCIAL ISSUES, SOCIAL JUSTICE

Malnutrition among children

- ✓ Over 35.5% kids stunted, government releases target to curb malnutrition

What is Malnutrition?

Malnutrition is the condition that develops when the body is deprived of vitamins, minerals and other nutrients it needs to maintain healthy tissues and organ function.

Malnutrition occurs in people who are either undernourished or over nourished.

- ✓ In India malnutrition due to undernourishment is the most prevalent form.
- ✓ Whereas, in developed countries like the United States, more children suffer from malnutrition due to over nourishment (than due to nutritional deficiencies).

Undernutrition occurs when not enough essential nutrients are consumed or when they are excreted more rapidly than they can be replaced.

Overnutrition occurs in people who eat too much, eat the wrong things, don't exercise enough or take too many vitamins or other dietary replacements.

Risk of overnutrition is increased by being more than 20 percent overweight or consuming a diet high in fat and salt.

Types of malnutrition

- ✓ Protein energy malnutrition which can be attributed to acute deficiency of food or chronic deprivation.
- ✓ Deficiency of micronutrients, such as vitamins, iron iodine and other trace elements. Sometimes this may be subtle and is often described as 'hidden hunger'.

Groups vulnerable to malnutrition

- ✓ Biological vulnerability as in infants, preschool children, pregnant mothers, adolescent girls and old people.
- ✓ Socioeconomic factors like poor, socially deprived, slum dwellers, street kids, etc.
- ✓ Habitat such as those living in inaccessible remote areas, thick forests and mountainous regions e.g., tribal population and nomads.

Findings of 2019-21 National Family Health Survey (NFHS-5)

- ✓ Stunting has reduced
- ✓ Wasting has reduced
- ✓ Underweight prevalence is down
- ✓ Women (15-49 years) whose BMI is below normal has reduced.

Despite the decrease, nutrition experts have said that India has one of the highest burdens of malnutrition in the world.

Stunted children

- ✓ Meghalaya has the highest number of stunted children, followed by Bihar.
- ✓ Assam, Dadra and Nagar Haveli, Gujarat, Jharkhand, Madhya Pradesh and Uttar Pradesh have stunted children higher than the national average.
- ✓ Puducherry and Sikkim have the lowest percentage of stunted children.

Wasted children

- ✓ Maharashtra has highest numbers of wasted children (weight for height) followed by Gujarat.
- ✓ Assam, Bihar, Dadra and Nagar Haveli, Karnataka and West Bengal have a higher percentage of wasted children than the national average of 19.3%.

Underweight children

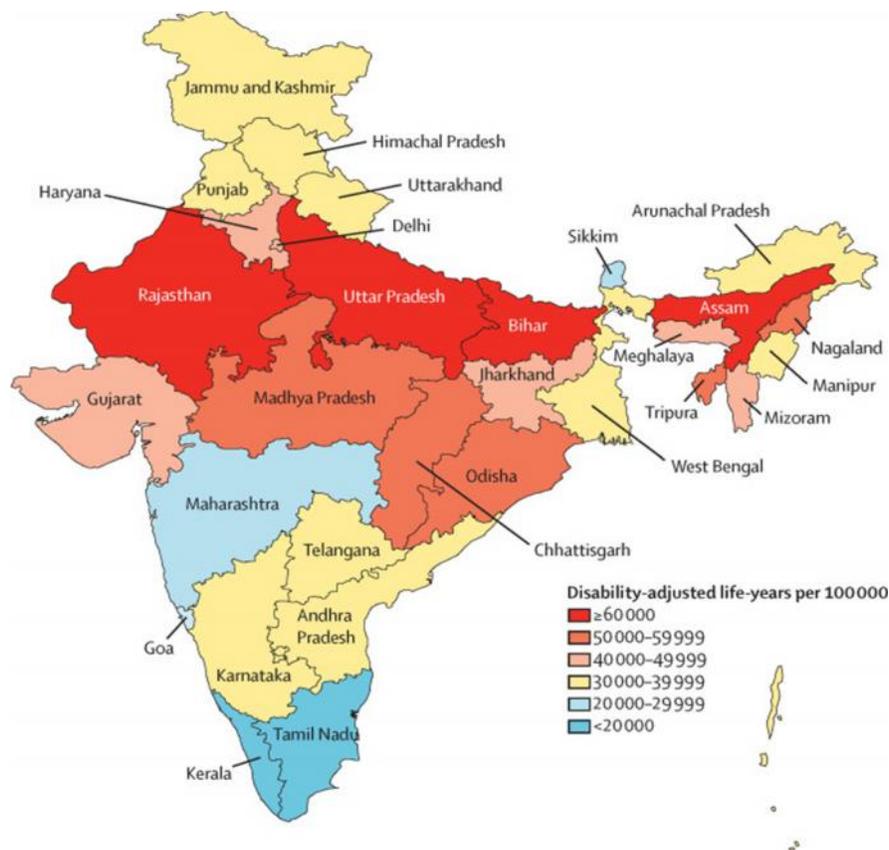
- ✓ Bihar has the highest number of underweight children, followed by Gujarat and Jharkhand.
- ✓ Assam, Dadra and Nagar Haveli, Karnataka, Madhya Pradesh, Maharashtra and Uttar Pradesh have a higher percentage of underweight children than the national average.

Women BMI

- ✓ Jharkhand has highest percentage of women, with below-normal Body Mass Index (BMI). BMI is a value derived from mass and height of a person, and an indicator of under-nutrition.
- ✓ More than 26% Jharkhand women have below-normal BMI, the national average being 18.5%.
- ✓ Bihar, Chhattisgarh, Gujarat, Madhya Pradesh, Maharashtra and Odisha also have high percentages of undernourished women.

Causes of Malnutrition in India

- ✓ Poverty
- ✓ Mother's health
- ✓ Social inequality
- ✓ Sanitation
- ✓ Lack of diversified food
- ✓ Lack of food security
- ✓ Failure of government approaches
- ✓ Disease spread



The burden of child and maternal malnutrition and trends in its indicators in the states of India: the Global Burden of Disease Study 1990–2017 (Credit: Science Direct)

The Government/NITI Aayog's road map to tackle malnutrition

- ✓ To address various policy and systemic needs, the ICDS and Anganwadi Services schemes were re-evaluated by the Ministry of Women and Child Development
- ✓ The efforts under
 - The Supplementary Nutrition Programme under Anganwadi Services,
 - Scheme for Adolescent Girls and
 - POSHAN Abhiyaan has been realigned under 'Saksham Anganwadi and POSHAN 2.0' for maximizing nutritional outcomes.
- ✓ Poshan 2.0 seeks to address the challenges of malnutrition in children, adolescent girls, pregnant women and lactating mothers through a strategic shift in nutrition content and delivery and by creation of a convergent eco-system to develop and promote practices that nurture health, wellness and immunity.
 - POSHAN Abhiyaan provides a platform to converge the activities of various stakeholders for attaining the goal of 'Suposhit Bharat'.
 - The DM has been designated as the Nodal Point in the district for monitoring nutritional status and quality standards.
 - The DM will also chair the District Nutrition Committee.

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- State Level Steering Committees have been mandated to ensure effective convergence and monitoring of the implementation of the scheme.
- ✓ Zonal and sub-zonal conferences were held across the country with States/UTs and civil society organizations for their inputs and suggestions.
- ✓ Panchayati Raj Institutions (Poshan Panchayats) is also mandated to bring community ownership and encourage accountability

Global Gender Gap Index

India ranks 135 out of 146 countries.



Index is based on four key dimensions:

1. Economic Participation and Opportunity
2. Educational Attainment
3. Health and Survival
4. Political Empowerment

On each of the four sub-indices as well as the overall index, the scores are between 0 (complete imparity) and 1 (full gender parity)

Findings of report:

Iceland (90.8%) leading the global ranking, was the only economy to have closed more than 90% of its gender gap.

India ranks poorly among its neighbours and is behind Bangladesh, Nepal, Sri Lanka, Maldives, and Bhutan.

Report highlights that labour force participation shrunk for both men and women.

India recorded a declining score on political empowerment due to the diminishing share of years women have served as head of state for the past 50 years.

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India: Reasons for poor performance:

Lower Economic participation of women:

- ✓ India has also slipped in female labour force participation from 24.8 per cent to 22.3 per cent.
- ✓ Very few women actually occupy senior managerial position like CEOs, directors.
- ✓ Indian women's earnings are only 20.7 per cent of men's.

Health issues:

- ✓ The latest NFHS data (2019-2021) show that 57% of women in the age group of 15-49 are anemic
- ✓ The percentage of women approaching health facilities for any health issue is very poor in India.

Political Participation:

- ✓ In 17th Lok Sabha, percentage of women MPs is just 14%
- ✓ Percentage of women MLAs in India is just 9%.
- ✓ It shows poor representation of women in higher political deciding making bodies.

Education Attainment:

- ✓ Gross Enrolment Ratio (GER) for women in 2019-20 is 27.3 per cent as compared to 26.9 per cent for men. So, progress is visible at this front.
- ✓ Covid 19 pandemic led to higher drop out ratio for girl students due to decline in family income.

Ageing in India

The percentage share of the elderly population in the total population is said to rise from 8.6 per cent in 2011 to 20% by 2050.

The shift will be first recorded in the Southern states like Kerala and Tamil Nadu.

Challenges of an ageing population:

Inter-state disparity in terms of ageing of population:

- ✓ Southern states are the front runners in population ageing along with Himachal Pradesh, Maharashtra, Odisha and Punjab, the central and northern states have much lower proportions of aged population.

Economic Problems:

Lack of adequate financial resources make it more difficult to handle old age related issues and requirements.

The percentage of poverty among India's elderly population is very high.

Majority of them works in unorganised sector and not protected by any social security schemes.

- ✓ Pension continues to cover only 35 per cent of senior citizens.

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- ✓ More than 65% of India's elderly population will be without any income security by 2050.

Health issues:

- ✓ One in five elderly persons in India has mental health issues, many suffer from a chronic diseases, majority elderly population suffers from one or another form of disability.
- ✓ Isolation and loneliness among the elderly is rising.

Feminisation of old age population:

- ✓ The sex ratio of elderly has increased from 938 to 1033 in 2011. This is because of high life expectancy of women compare to men.
- ✓ Elderly women face gender-based discrimination and neglect, increased by widowhood and economic dependency.

Ruralisation of Old age:

- ✓ According to 2011 Census, 71 percent of the elderly live in rural India as high percentage of young selective migration from villages.
- ✓ Income insecurity, lack of adequate access to quality health care and isolation are more acute for the rural elderly than their urban counterparts.
- ✓ Poorer states such as Odisha, Bihar, Uttar Pradesh have a larger percentage of the rural elderly.

Physical security:

- ✓ Many elderly people live alone at home, so many times become vulnerable for robbery, physical attacks.

Solutions:

- ✓ Article 41 of the Constitution secured the rights of the senior citizens to employment, and public assistance. It says that the state must uphold the rights in cases of disability, old age or sickness.
- ✓ The Maintenance and Welfare of Parents and Senior Citizens (MWPSA) Act 2007 ensure need based maintenance for parents and senior citizens and their welfare.
- ✓ National Action Plan for the Welfare of Senior Citizens (NAPSrC): It lay down the vision, mission and the plan of action of the Government of India for welfare and wellbeing of senior citizens of the country.
- ✓ Pradhan Mantri Vaya Vandana Yojana (PMVVY) to provide social security during old age. Under the scheme, on payment of an initial lump sum amount ranging from Rs 1,50,000 for a minimum pension of Rs 1000 per month to a maximum of Rs 7,50,000/- for a maximum pension of Rs 5,000 per month.
- ✓ Rashtriya Vayoshri Yojana (RVY) scheme will providing Physical Aids and Assisted-living Devices for Senior citizens belonging to BPL category.

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- ✓ Vayoshreshtha Samman recognises the eminent senior citizens and institutions for their services towards the cause of the elderly persons.
- ✓ Indira Gandhi Old Age Pension Scheme provides a pension of 600 per month for old age persons belongs to BPL category.
- ✓ Need more investment and collaboration with private sector and civil society in institutionalisation of elderly care facilities.
- ✓ Need to have community-based day-care centres for the elderly providing services such as skill building, financial and legal advice, entertainment, exercise and other ways of active ageing, with effective linkages with the public health system.
- ✓ Subsidized health insurance for BPL senior citizens with better implementation of an integrated health care system for elderly would be desirable.
- ✓ Socialization with peers: Senior citizen clubs could be established for better socialization, reduced sense of isolation and loneliness, particularly amongst those who have lost their spouses, and more productive use of time.
- ✓ Organising elderly women into Elderly Self Help Groups (ESHG), Elderly self-help groups (ESHGs) evolved as an emergency response to the 2004 tsunami that had severely affected lives of elderly persons in Tamil Nadu, Kerala and other coastal areas. This model is rapidly spreading in states like Bihar, West Bengal, Jharkhand.
- ✓ Need for decentralised old age policy to cater the state specific needs.

Personal law review

In recent times, there's a growing debate on the need to review personal laws and have a uniform civil code.

What is Personal Laws?

Personal laws are a set of laws that apply to a certain group of people based on their religion, caste, faith, and belief made after due consideration of customs and religious texts.

Personal law governs and regulates subjects or areas of a private sphere such as marriage, divorce, maintenance, succession, minority, and guardianship, etc.

These laws are largely influenced by religious customs of different communities.

Examples:

- ✓ Hindu women are deprived of joint heirship in parental property
- ✓ Triple talaq, imposing purdah, allowing polygamy in Muslim religion
- ✓ Christian women could not obtain divorce on the grounds of adultery committed by the husband.
- ✓ Parsi daughters married to non-Parsi lost their property rights and non-Parsi wives of Parsi husbands were entitled to only half of the husband's property.

Issue with Personal laws

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Personal laws in different religions perpetuate gender inequality. They discriminate against women in marriage, inheritance and guardianship of children.

They also perpetuate discriminatory attitudes.

Many of these laws violate fundamental and human rights of citizen. For example: Right to equality.

Personal laws are irrelevant to the changing and modern time. They create hindrance to social change and social development.

Shayara Bano Case

In the case of Shayara Bano v. Union of India, the dispute between Part III of the Constitution and the Religious Personal Laws was raised.

It was seen by many as a golden opportunity for resolving the conflict between the religious Personal Laws and Constitutional Rights.

The Court held that triple talaq was unconstitutional by examining it in accordance with Part III of the Constitution.

Uniform Civil Code (UCC) as a Solution

What is UCC?

The Uniform Civil Code (UCC) calls for the formulation of one law for India, which would be applicable to all religious communities in matters such as marriage, divorce, inheritance, adoption.

The code comes under Article 44 of the Constitution.

Article 44 lays down that the state shall endeavour to secure a Uniform Civil Code for the citizens throughout the territory of India.

Need of UCC:

- ✓ It will help to strengthen the unity and integrity of the nation by enforcing common civil laws.
- ✓ Bring equality: It will bring all communities at equal front in terms of rights in personal matters. It will also end gender discrimination in personal laws. Generally personal laws are discriminatory and oppressive for women, so by bringing UCC, all kinds of gender unjust practices prevalent among different communities can be ended.
- ✓ Strengthen the secular credentials of India: Secularism which is one of the basic principle of India's constitution, UCC will strengthen Secularism as all religious communities will be governed by common laws without discrimination.
- ✓ Gender justice: It will help to improve position and condition of women in patriarchal Indian society, also it will help Indian society to become modern and democratic in true sense.
- ✓ It will degrade the power of Informal associations like caste organisations, khap panchayats.

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- ✓ It will help to reduce the burden on judiciary by minimising the litigation emerging from customary personal laws.

Examples of UCC in India

- ✓ The State of Goa is the first and the only State to implement a uniform civil code since its liberation from the Portuguese in 1961.

Examples of UCC Western countries

- ✓ **United States of America:** There are common principles that govern civil laws in the States in a manner that is universal across the nation. Only issues of a federal nature or those affecting the country are dealt with by the Federal Supreme Court.
- ✓ **France:** The Napoleon Civil Code was introduced in France as early as 1804. The French Code has sought a balance between privilege and equality, customs and legal requirements.

Challenges in India to implement UCC

- ✓ Challenge to reconcile legal uniformity with protection of minority rights.
- ✓ Threat of majoritarianism: Minority communities fears that in the name of UCC, personal laws of majority communities would be imposed on them.
- ✓ Constitutional complexities: Article 26 protects each religious denomination's or section's ability to manage their religious affairs. Many personal laws of diverse religious communities, tribes are associated with religion, again Article 29 gives minorities right to protect their distinctive culture and personal laws are integral component of culture.
- ✓ Long and deeply entrenched history of personal laws, therefore it will be difficult for people to give up personal laws easily.
- ✓ Broad Consensus needed from different communities, so there always would be challenge of bringing diverse communities on common platforms.
- ✓ India is a nation of immense cultural diversity and not all personal laws which are parts of our customs and traditions are wrong and oppressive, they define the communities, provide them unique identity. so Implementation of UCC can eliminate these diverse cultural practices which could be a cultural loss for a nation.
- ✓ Challenges of drafting: Should UCC be a blend of all personal laws or should it be a new law adhering to constitutional mandate?
- ✓ Hasty implementation of UCC can create the sense of alienation among diverse communities, it also has the potential to fuel communal hatred.

GS II - POLITY AND GOVERNANCE

Parliamentary disruptions

In the monsoon session of the Parliament disruptions were caused by a few members of Parliament leading to their suspension.

Reasons behind parliamentary disruptions

- ✓ Representatives of political parties utilising Parliament to further political interests rather than using it as a platform for legislative functioning.
- ✓ Declining ethical standards of the legislators.
- ✓ Actions by the ruling party such as ordinances, redefining bills as money bills invoke ire of opposition.
- ✓ Many MPs in Lok Sabha are from criminal background whose presence erodes the moral authority of the parliament.
- ✓ Lack of subject expertise to parliamentarians as elected representatives are not well versed with the subject matters.
- ✓ Misuse of parliamentary privileges by parliamentarians.

Impact of parliamentary disruptions:

- ✓ Reduction in time spent on deliberating legislation.
- ✓ Decrease in the frequency of conduct of fruitful discussions.
- ✓ Reduction in the quality of discussion.
- ✓ Leads to insufficient time allocation for many important issues.
- ✓ Rise in subordinate legislations

Remedial measures:

- ✓ Imposing monetary penalties for indiscipline.
- ✓ Increasing the powers of ethics committees.
- ✓ More powers to the Speaker and the Chairman to curb indiscipline.
- ✓ Developing a code of conduct for parliamentarians.
- ✓ Codification of parliamentary privileges.

What are the Rules under which the Presiding Officer acts?

In Lok Sabha

- ✓ Rule Number 373: It empowers presiding officers to direct an MP to withdraw from the House for any disorderly conduct. MP shall remain absent during the remainder of the day's sitting.
- ✓ Rules 374: If the MP continues disrupting the House even after repeated warnings speaker can name MPs. House can move a motion to suspend the MP for a period not exceeding the remainder of the session.

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- ✓ Rule 374 A: Without passing the motion speaker can suspend MPs for five days or the remaining part of the session, whichever is less.

In Rajya Sabha

- ✓ Rule Number 255: Chairman of Rajya Sabha to direct any Member to withdraw immediately from the House.
- ✓ Rule Number 256: Chairman to name the members who persistently disregards the authority of the Chair. House may adopt a motion suspending the Member for a period not exceeding the remainder of the session.

Electoral bonds

Donations to political parties through electoral bonds (EBs) have crossed the Rs 10,000-crore mark.

About electoral bonds and their working:

- ✓ Electoral bonds are an instrument through which anyone can donate money to political parties.
- ✓ These were introduced in the Budget 2017 speech.
- ✓ These bonds are sold in multiples of Rs 1,000, Rs 10,000, Rs 1 lakh, Rs 10 lakh, and Rs 1 crore.
- ✓ These can be bought from authorised branches of the State Bank of India.
- ✓ A donor is required to pay the amount via a cheque or a digital mechanism to the authorised SBI branch.
- ✓ The donor can then give this bond to the party or parties of their choice.
- ✓ The political parties can choose to encash such bonds within 15 days of receiving them and fund their electoral expenses.

Reasons for introduction of electoral bonds:

- ✓ Bringing about transparency in electoral funding in India.
- ✓ Reducing the volume of cash donations to political parties.

Criticism:

- ✓ Electoral bonds are criticised for not being transparent.
- ✓ Critics argue that the anonymity of electoral bonds is only for the broader public and opposition parties.
- ✓ These bonds are sold by the SBI which is owned by the government. This leaves the door open for the government to know exactly who is funding its opponents. This provides an unfair advantage to the party in power.
- ✓ According to the National Campaign for People's Right to Information more than 75 percent of all electoral bonds have gone to the ruling party.

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- ✓ One of the reasons behind the introduction of electoral bonds was to allow common people to easily fund political parties. However, more than 90% of the bonds have been of the highest denomination (Rs 1 crore).
- ✓ The government has amended the Companies Act to remove the limit of donation of 7.5% of the average net profits of a company in the preceding three years to a political party, opening the doors to unlimited funding by corporate India.

Democracy or an Authoritarian system: A Debate

On one hand it was predicted that democracies with transparency and sensitivity to public opinion would make them better equipped to handle crisis such as Covid 19. While on the other, it was believed that authoritarian systems would handle it better due to ability to move decisively.

Assessment of democracy and autocracy

On the basis of economic performance:

- ✓ China: Authoritarian government
 - Free from frequent elections or inefficiencies of democratic process, could force economic development through better policy.
- ✓ South Korea: Democratic Government
 - Democracies' transparency and accountability led to more responsive governance and growing of economy
- ✓ North Korea: Authoritarian government
 - Economy collapsed.

So authoritarian economies worldwide neither exceeded nor lagged behind democracies. Rather political systems, smart choices by leaders, better-run institutions and other factors playing a vital role in economic performance.

On the basis of social performance:

- ✓ Citizens' happiness, health measures like infant mortality, and the quality of public services are all better under democracy. For example Norway, Finland, USA has fared better as compared to Authoritarian governments like China, North Korea.
- But still this can not be generalized.

Performance during crisis management:

Democracies and authoritarian systems are roughly as likely to do well or poorly, with neither consistently outperforming the other during Covid 19.

- ✓ Iran's early failures due to secrecy and corruption, but Vietnam excelled.
- ✓ The United States and India struggled, but, New Zealand or Taiwan, performed well.

The studies found factors like social trust or institutional competency are important and neither system is necessarily and consistently better at cultivating those.

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In case of deaths due to pandemic authoritarian governments did not share true data. On average, democracies fared better at curbing pandemic deaths than did authoritarian governments.

A slight advantage for democracies when it came to vaccination rates. But many democracies underperformed authoritarian governments and vice versa.

Takeaway:

Either system can function effectively, as the pandemic has shown, with individual democracies and authoritarian governments alike among the world's best performers. And either system can falter, as with China's pushing pandemic restrictions to the e point of cratering its own economy, or the U.S.' climate plans collapsing.

This undermines theories that either system wields an innate advantage in certain crises, but it hints at another lesson:

"The prevailing threats to democracy and authoritarianism alike might not come from each other, but from weaknesses within."

Issues of free speech

Recently, Twitter has initiated legal action against the government's content-blocking orders issued under Section 69 (A) of the Information Technology Act, 2000.

Section 69 (A) of the Information Technology Act

Section 69 (A) of the IT Act, 2000 allows the Centre to issue blocking orders to social media intermediaries.

This can be done in the interest of sovereignty and integrity of India, defence of India, security of the state, friendly relations with foreign states or public order etc.

These blocking orders issued under Section 69 (A) of the IT Act are confidential in nature.

What is Free Speech?

Free Speech means the citizens are free to express their view without any restrictions except in exceptional circumstances.

It allows people to express themselves without interference or regulation from the government.

Importance of Free Speech

- Freedom of expression is a fundamental human right.
- It allows free exchange of ideas.
- It empowers citizens to achieve the development of the nation.
- Free speech is core pillar of the democratic process upholding fair and equitable society.



Constitutional Measures Article 19: According to Article 19(1)(a) of the Indian Constitution, "all citizens shall have the right to freedom of speech and expression."

International statutes: International statutes such as the Universal Declaration of Human Rights, the International Covenant on Civil and Political Rights, the European Convention on Human Rights and Fundamental Freedoms, and others protect freedom of expression.

Role of Judiciary

Judiciary through judicial creativity, wisdom, and craftsmanship has broadened the scope of free speech and expression.

This has been incorporated in the following aspects:

Freedom of Press: In *Romesh Thappar v. State of Madras* case, the supreme court declared freedom of press as a part of freedom of speech and expression.

Right to information: In *Union of India v. Assn. for Democratic Reforms*, the Supreme Court stated that freedom of speech and expression includes the right to impart and receive information.

Right to Broadcast: The Supreme Court ruled in *Odyssey Communications (P) Ltd. v. Lokvidayan Sanghatana* that a citizen's right to watch exhibit films on the State channel - Doordarshan - is a fundamental right guaranteed under Article 19(1)(a).

Right to expression beyond national boundaries: The Supreme Court ruled in *Maneka Gandhi vs Union of India* that freedom of speech and expression is not limited by national boundaries.

Threats to Free Speech

- ✓ **Balance of Privacy with Freedom of Speech and Expression:** Privacy concerns must be balanced against freedom of expression.
- ✓ **Colonial Laws:** Laws that are often archaic in origin and profoundly anti-democratic in intent pose a significant threat to freedom of expression in India.
- ✓ **Imperfections in our judicial system:** High courts and the Supreme Court are sometimes more sympathetic to writers' and artists' rights.
- ✓ **Rise of identity politics:** The communities can likely raise concerns against content that it has hurt its sentiments giving rise of identity politics.
- ✓ **Behaviour of the police force:** Many times the courts rule in favour of writers and artists, but the police may side with the parties who harass them.

Grounds on which Freedom of Speech Could Be Restricted

- Security of the State
- Friendly relations with foreign States
- Public order
- Decency and morality
- Contempt of court
- Defamation
- Incitement to an offence
- Sovereignty and integrity of India

Current examples

Arnab Goswami Case: A was filed by Republic TV Editor-in-chief Arnab Goswami seeking quashing of FIRs filed in connection with a TV where he questioned certain political leader over the lynching in Palghar in Maharashtra.

Vinod Dua case: A journalist Mr. Vinod Dua released a YouTube video where he criticised the government for actions taken during Covid-19. An FIR was registered against him for spreading false news and t inciting violence amongst the citizens.

Anuradha Bhasin Case: Anuradha basin had argued that communication shutdowns imposed in Jammu & Kashmir had impacted the right to free speech of individuals.

Steps to safeguard it:

- **Reasonableness of a statute:** The court should consider the nature of the restriction as well as the procedure prescribed by the statute for enforcing the restrictions on individual freedom.
- **Reasonableness Restriction:** The reasonable restriction on freedom of speech implies that the restriction imposed on a person in the exercise of a right should not be arbitrary or excessive.
- **Focus on Objectivity:** The reasonableness of a restriction must be determined objectively and from the standpoint of the public's interests.
- **Enforcing DPSP:** A reasonable restriction is one that is imposed to secure the objectives outlined in the Directive Principles of State Policy.

Section 66(A) of the IT Act The sending of offensive messages via a computer or other communication devices is prohibited by Section 66(A) of the Act.

Digital India Act The Ministry of Electronics and IT (MeitY) is about to regulate “deliberate” misinformation as offences under a fresh legislation known as Digital India Act. It aims to focus on “user harms” specific to the online world. The MeitY is considering adding doxxing as an offence under the new Act.

Doxxing is an attempt by a person to publish private information about a particular individual on the internet with malicious intent.

GS II - INDIA AND WORLD

India's role in UN Peacekeeping force

Two BSF personnel of the United Nations Peacekeeping Mission were killed in Democratic Republic of Congo.

Issue in Congo

DRC's eastern region holds massive reserves of valuable minerals such as gold, diamond, copper, zinc, tin, cobalt and coltan. Rebel groups are aiming to control these resources. The DRC's army is engaged in battle with more than 100 armed militias. Chief among them is the M23 rebel group.

MONUSCO

In 1999, United Nations Organization Mission in the Democratic Republic of the Congo (MONUC) was established. In 2010 was renamed to United Nations Organization Stabilization Mission in the Democratic Republic of the Congo (MONUSCO).

- ✓ To implement multiple political, military, rule of law and capacity-building tasks as mandated by the Security Council resolutions, including trying to resolve ongoing conflicts in a number of the DRC provinces.

Protests against MONUSCO erupted in parts of eastern Congo, leading to the death of 36 people including four UN peacekeepers.

What is United Nations Peacekeeping?

The United Nations Peacekeeping operations are policing and peace building actions carried out by the UN to bring order and stability in war torn nations.

UN Peacekeeping has unique strengths, including:

- ✓ Legitimacy
- ✓ Ability to deploy troops and police from around the world
- ✓ Integrating peacekeepers with civilians to address a range of mandates set by the UN

The UN Peacekeeping force is supplemented by personnel from member nations. They are added to the force on a volunteer basis.

India is one of the leading contributor in terms of personnel to UN Peacekeeping operations.



Ongoing Peacekeeping Operations

- | | |
|-------------------------------------|-------------------------------|
| ✓ MINURSO, Western Sahara | ✓ UNIFIL, Lebanon |
| ✓ MINUSCA, Central African Republic | ✓ UNISFA, Abyei (Sudan town) |
| ✓ MINUSMA, Mali | ✓ UNMIK, Kosovo |
| ✓ MONUSCO, D.R. of the Congo | ✓ UNMISS, South Sudan |
| ✓ UNDOF, Golan | ✓ UNMOGIP, India and Pakistan |
| ✓ UNFICYP, Cyprus | ✓ UNTSO, Middle East |

History of Indian participation:

India's contribution to UN Peacekeeping began with its participation in the UN operation in Korea in the 1950s. India's mediatory role led to signing of armistice that ended the Korean War.

The UN entrusted the Indian armed forces with subsequent peace missions in the Middle East, Cyprus, and the Congo.

India also served as Chair of the three international commissions for supervision and control for Vietnam, Cambodia, and Laos.

India's contribution to United Nations Peacekeeping (UNPK):

- ✓ India has contributed more personnel than any other country to UNPK.
- ✓ India has lost more peacekeepers than any other UN Member State.
- ✓ At present India ranks fifth highest amongst troop-contributing countries.
- ✓ Indian Peacekeepers have successfully provided medical care to the communities which lack basic healthcare.
- ✓ India has also provided eminent Force Commanders for UN Missions.
- ✓ They also perform specialised tasks such as veterinary support and engineering services.
- ✓ Women officers of the Indian contingent in Liberia played a role in increasing number of women in Liberia's security sector.

Issues with UN Peacekeeping:

UN peacekeeping has been criticized for a wide range of problems including

- ✓ Mismanagement
- ✓ Failure to act when civilians are under threat
- ✓ Rights abuses by peacekeepers
- ✓ Allegations of sexual abuse and exploitation
- ✓ Troubles in financing of the peacekeeping missions
- ✓ Providing security to the peace keeping forces from different member countries

GS III – ECONOMY

Rise in Trade Deficit

What is the trade deficit?

It is the amount by which the cost of a country's imports exceeds the value of its exports.

Present magnitude of trade deficit:

India's merchandise trade deficit widened sharply to a record \$31.02 billion in July or 43.6% higher than a year earlier.

Reasons for higher trade deficit:

Traditional reasons

- ✓ Increase in imports
- ✓ Decrease in exports
- ✓ India's import dependency for fuel supplies
- ✓ High demand and import of gold
- ✓ Lower manufacturing exports

Present reasons

- ✓ Fall in the value of Indian rupee
- ✓ High commodity good prices
- ✓ Tense geopolitical situation leading to global economic slowdown and subsequent lower demand.
- ✓ Increase in silver imports
- ✓ Drop in demand and exports of engineering goods

Impacts of trade deficit:

- ✓ Decrease in country's GDP
- ✓ Depreciation of domestic currency
- ✓ More imports than exports, according to economists, impact the jobs market and lead to an increase in unemployment.
- ✓ Possibility of balance of payments crisis

Solutions for reducing trade deficit:

Long term:

- ✓ Boosting domestic manufacturing in order to reduce import dependence
- ✓ Promoting exports especially manufacturing exports
- ✓ Increasing domestic production of coal and petroleum
- ✓ Transition to renewable energy which will reduce fossil fuel imports
- ✓ Attitudinal change among people to reduce gold demand and consumption

Panorama

Contemporary:

- ✓ Depreciating currency value to make exports more competitive
- ✓ Making excessive borrowing for consumption more expensive by placing taxes on non-FDI investment flow of capital.
- ✓ Discouraging gold imports by increasing import duties on gold
- ✓ Setting quota on imports

Randomised Control Trials

Context:

Economist and Nobel laureate Michael R Kremer has said that for a diverse country like India randomised controlled trials (RCTs) must be carried out at multiple sites for better analysis and to see differences across states.

RCT, a research design for experimental studies, was in news after Kremer and fellow economists Abhijit Banerjee and Esther Duflo won the 2019 Nobel Prize winner in Economics.

They had made the use of RCT for their research on poverty.

What are randomised control trials?

RCTs involve dividing a population into smaller groups, in order to comparatively see the outcomes of an external stimulus.

For example, if the aim of a study is to understand whether a free grains distribution scheme helped improve the nutrition levels among people living in a district, researchers will first create two groups within the population, and then put people into those groups randomly.

One group (called the control group) does not receive the grains or the external stimulus, while the other group (treatment group) does.

After a designated period of time, details of how both the groups are doing would be collected.

In this way, the goal is to understand what the overall impact of introducing something new could be.

Cooperatives

Recently, the 100th International Day of Cooperatives was celebrated.

In 2021, the Ministry of Cooperation was established with the aim of strengthening the cooperative movement in the country.

It is being argued that capitalism and communism are both “extreme” models of economic development and have caused unbalanced development and only cooperatives can ensure inclusive development.

What is a cooperative?

The cooperative society is a voluntary association of persons who join together with the motive of welfare of the members and/or prevent exploitation by middlemen.

- ✓ For example: The farmers of Kheda region (Gujarat) were exploited by the middlemen in the milk trade. So, Sardar Vallabhbhai Patel advised them to sell their milk by forming a cooperative society (1946) which later evolved into AMUL.

Types of Cooperative Societies:

- ✓ **Consumers' cooperative societies:** purchases goods in bulk directly from the factory and sells goods to the members, thereby eliminating the middlemen's commission. eg. Apna Bazar
- ✓ **Producers' cooperative societies:** small-scale producers buy raw material directly from source/members, thereby eliminating the middlemen's commission. e.g. AMUL procures Milk
- ✓ **Farmers' cooperative societies:** member-farmers cooperate for purchase and sharing of seeds, fertilizers, machinery, land. This helps to solve the problems associated with farming on fragmented land holdings. Indian Farmers Fertiliser Cooperative (IFFCO)
- ✓ **Marketing cooperative societies:** They help small producers in selling their products. e.g. Tribal Cooperative Marketing Development Federation of India (TRIFED) under the Ministry of Tribal Affairs.
- ✓ **Credit cooperative societies:** To collect money from members and give loans to the members at affordable rates. Formed by farmers, villagers, caste-based organizations etc. Eg. State Electric Board Employee Co-op Credit Society
- ✓ **Cooperative housing societies:** To help members get houses by pooling land/loans etc.

Constitutional and legal provisions for Cooperatives:

The incorporation, regulation and winding up of co-operative societies (other than those operating in more than one State) is a State subject and is governed by the State laws on cooperative societies

In the case of cooperatives with objects not confined to one State, their incorporation, regulation and winding up fall in the central domain and are governed by the Multi-State Co-operative Societies Act, 2002.

Cooperative societies were granted constitutional status and protection by the 97th Constitutional Amendment Act of 2011. It made the following three changes:

- ✓ It established the right to form cooperative societies as a fundamental right (Article 19).
- ✓ It included a new directive Principle of State Policy on the Promotion of Cooperative Societies (Article 43-B).
- ✓ It added a new Part IX-B to the Constitution titled "The Cooperative Societies" (Articles 243-ZH to 243-ZT).

In 2021, the Supreme Court upheld the validity of the 97th constitutional amendment (Part IX B) that deals with issues related to effective management of cooperative societies but struck down a part inserted by it which relates to the Constitution and working of cooperative societies.

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- ✓ It is because the Supreme Court held that the Parliament cannot enact laws with regard to cooperative societies as it is a State subject
- ✓ Before July 2021, the Department of Agriculture, Cooperation and Farmers Welfare of the Agriculture Ministry looked after the administrative, legal and policy framework for cooperative movement in India.
- ✓ After July 2021, the Government announced the formation of a separate Union Ministry of Cooperation /Cooperative Ministry.
- ✓ The function of the Cooperative Ministry will be to look after the administrative, legal and policy framework for cooperative movement in India- including cooperative organisations in agriculture, dairies, sugar mills, spinning mills, banking-finance, etc.

Importance of Cooperative Sector:

The cooperatives account for

- ✓ 19% of the agricultural credit
- ✓ 35 % of fertilizer distribution
- ✓ 25% of fertilizer production
- ✓ 31% of sugar production
- ✓ 10% of the production and procurement of milk
- ✓ 13% of wheat procurement
- ✓ 20% of paddy procurement
- ✓ 21% of fish production

Features / Benefits of a Cooperative Society

- ✓ Voluntary membership: A person is free to join, can also leave anytime.
- ✓ Legal status / Stable existence: formed by minimum 10 persons and registered under
 - State laws (if Single State Cooperative Society), or
 - Under the union's multi-state cooperative Societies Act 2002- if it is operating in more than one state e.g. National Agri. Cooperative Marketing Federation Of India (NAFED).
- ✓ Cooperative Society is a separate artificial legal person: It can enter into contracts and hold property in its name. Death, or insanity of individual members do not affect continuity of a cooperative society. Limited liability of members.
- ✓ Equal Voting: one person gets one vote irrespective of how much capital he contributed.
- ✓ Service / Welfare motive: Not driven by desire for excessive profit or excessive growth.
- ✓ Support from the government: through low taxes, subsidies, and low interest rates on loans.

Issues faced by Cooperatives:

- ✓ The principle of cooperatives i.e. resource mobilization for the members of the society is increasingly under threat from the profit-minded forces of privatization.

Panorama

- ✓ Voluntary nature of work by members in some types of cooperatives such as Housing Cooperative Societies leads to inefficiency in working as the members are not compensated for their work..
- ✓ Quality human resources and management is absent to compete with large MNCs.
- ✓ Face dilemma because on one hand they aim at the welfare of its members while on the other hand they have to compete with the MNCs to stay relevant and survive.
- ✓ Mismanagement and maladministration by politically aligned bureaucrats (not in every case).
- ✓ Members of cooperatives are many times illiterate and ignorant.
- ✓ Cooperatives are not well connected using modern ICT technology which increases the cases of frauds, misappropriations, etc.
- ✓ Politicisation of Cooperatives because of the culture of political patronage
- ✓ Casteism because of which cooperatives are largely dominated by upper and dominant land-owning castes.
- ✓ Large amount of NPAs of cooperative banks.
- ✓ Benefits of cooperatives are accrued by big and influential members of cooperatives.
- ✓ Financial scams in cooperatives. eg. PMC Bank scam.

Solution to issues:

- ✓ Providing monetary compensation to important stakeholders in the cooperatives.
- ✓ Appointing professionals with specialised knowledge for running cooperatives.
- ✓ Training of personnel of co-operative departments and co-operative institutions (including education of members, office bearers and non-officials).
- ✓ Computerization of Primary Agricultural Credit Societies (PACS).
- ✓ Coordination and convergence of various schemes of different Ministries/ Department and issues of cooperatives.

GS III - ENVIRONMENTAL ISSUES

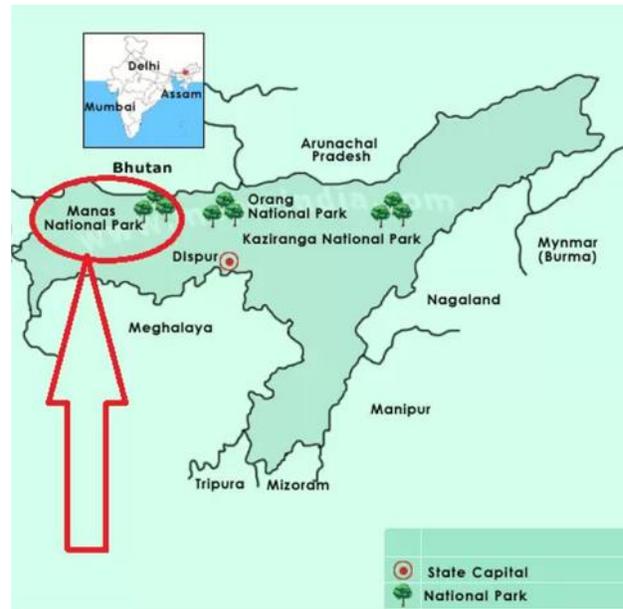
Manas National Park

The Manas Tiger Reserve in Assam has 2.4 tigresses for every tiger, the annual wildlife monitoring results revealed.

About Manas National Park

Manas National Park is a national park, Project Tiger reserve, biosphere reserve and an elephant reserve in Assam, India.

- ✓ **Physiography:** It is located in the Himalayan foothills. The Manas River is a major tributary of Brahmaputra River, which passes through the heart of the national park. It is contiguous with Royal Manas National Park in Bhutan.
- ✓ **Types of ecosystem:** Semi-evergreen forests, broad leaved deciduous forests and grasslands are found in the park.
- ✓ **Climate:** The climate of Manas National Park is warm and humid with most rain falling during the monsoon season (May-September)
- ✓ **Fauna:** The Park is known for its rare and endangered endemic wildlife such as the Assam roofed turtle, hispid hare, golden langur and pygmy hog. Manas is famous for its population of wild water buffalo.



Ecologically Sensitive Areas (ESA)

The Ministry of Environment, Forests and Climate Change (MoEF&CC) had issued a draft notification, which demarcated large parts of Karnataka, Tamil Nadu, Gujarat, Maharashtra and as eco-sensitive areas.

Among these states, Karnataka contains the lion share of the notified areas in the Western Ghats, at 20,668 sq km. This has generated opposition in Karnataka.

What are Ecologically Sensitive Areas (ESA)?

These are areas around National Parks and Wildlife Sanctuaries where certain activities are regulated to minimize the negative impacts of such activities on the fragile ecosystem encompassing the protected areas.

The basic aim is to regulate certain activities around National Parks and Wildlife Sanctuaries so as to minimise the negative impacts of such activities on the fragile ecosystem encompassing the protected areas.

Western Ghats Ecology Expert Panel (Gadgil Committee)

In 2011, it recommended that all of the Western Ghats be declared as the Ecological Sensitive Areas (ESA) with only limited development allowed in graded zones.

It had classified the Western Ghats into Ecologically Sensitive Areas (ESA) 1, 2 and 3 of which ESA-1 is high priority, almost all developmental activities (mining, thermal power plants etc) were restricted in it.

It specified that the system of governance of the environment should be a bottom to top approach (right from Gram sabhas) rather than a top to bottom approach.

It also recommended the constitution of a Western Ghats Ecology Authority (WGEA), as a statutory authority under the Ministry of Environment and Forests, with the powers under Section 3 of the Environment (Protection) Act, 1986.

The report was criticized for being more environment-friendly and not in tune with the ground realities.

What does the new draft notification for the Western Ghats say?

The draft notification demarcates 46,832 sq km in the five states Gujarat, Maharashtra, Karnataka, Goa and Tamil Nadu as ESA in the Western Ghats.

Kerala is excluded from the draft notification.

What are the curbs that the state governments will have to implement?

The draft notification states there shall be a complete ban on mining, quarrying and sand mining in the ESA.

All existing mines are to be phased out within five years from the date of issue of the final notification or on the expiry of the existing mining lease.

It bars setting up of new thermal power projects and expansion of existing plants in the sensitive area.

It bans all new 'Red' category industries. These are activities that have a Pollution Index score of 60 and above, such as petrochemical manufacturing, and coal liquefaction.

The construction of new townships and area development projects will also be prohibited in the areas.

What activities are allowed?

All existing health care establishments shall continue in ESA.

New hydropower projects on the basis of the Environmental Impact Assessment notification will also be allowed to continue.

'Orange' category industries, with a pollution index score of 41-59, such as jute processing will be allowed with strict compliance of environmental regulation.

'White' industries that are considered non-polluting, like chalk making, will also be allowed with strict compliance of environmental regulation.

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Suggestions by the Kasturirangan panel

The panel, which was formed in 2012, had suggested future steps to be taken to prevent further degradation of the fragile ecology of the Ghats.

In 2013, the Kasturirangan committee had submitted a report which recommended that 37% of the Western Ghats, covering an area of 59,940 sq km be classified as ESA.

On the basis of this, several drafts were introduced which were subsequently rejected by the surrounding states, including Karnataka.

The report had recommended a blanket ban on mining, quarrying, red category industries and thermal power projects.

It also stated that the impact of infrastructural projects on the forest and wildlife should be studied before permission is given.

Banni Grasslands Restoration

The Gujarat Forest Department will restore 10,000 hectares of grassland next year and the same amount for every year in the next decade.

About Banni Grasslands

- ✓ One of the finest grasslands of Asia
- ✓ 2,500 sq. km area in Kutch, Gujarat
- ✓ Rich wildlife and biodiversity

They are protected or reserve forest in India. According to the Wildlife Institute of India they are one of the last remaining habitats of the cheetah in India and a possible reintroduction site for the species.

Fauna: Nilgai, Chinkara, blackbuck, wild



Panorama

boar, golden jackal, Indian hare, Indian wolf, Asiatic wildcat, desert fox, Indian wild ass etc.

Reasons behind degradation:

- ✓ Heavy uncontrolled grazing
- ✓ Widespread of *Prosopis Juliflora*.
- ✓ Dams constructed on rivers flowing towards Banni.
- ✓ Periodic occurrence of droughts
- ✓ Continuous increase in soil salinity
- ✓ Traditional pastoralists are diversifying into agriculture and dairy farming

Content of the project:

Removal of *Prosopis Juliflora* trees which were introduced in order to check salt flat ingression but are now said to cause the same.

Production and storage of fodder for local pastoral and farming communities.

One Million Species at Risk of Extinction

Intergovernmental Science-Policy Platform on Biodiversity and Ecological Services (IPBES) Report has argued that one million species are at the risk of extinction.

About IPBES:

The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) is an intergovernmental organization

It is established with an aim to improve the interface between science and policy on issues of biodiversity and ecosystem services.

It does the following functions

- ✓ assessments on various ecosystem related issues
- ✓ policy support for state and non-state institutions
- ✓ capacity building and knowledge sharing
- ✓ communication and outreach to ensure wide impact of its work

Reasons:

Natural Reasons:

- ✓ Invasive alien species.
- ✓ Rise in sea levels leading to submergence.

Human related:

- ✓ Overexploitation of species of flora and fauna by the following means
 - Unsustainable logging and gathering
 - Unsustainable fishing
 - Unsustainable hunting
- ✓ Unsustainable tourism.
- ✓ Encroachment upon habitats.

Panorama

- ✓ Construction of large infrastructure projects such as dams and highways.
- ✓ Mining activities.
- ✓ Destruction of habitat.
- ✓ Human wildlife conflicts.

Governance related:

- ✓ Unplanned urbanisation.
- ✓ Change in land use pattern.

Khejri Trees

Villagers in Rajasthan protest against the felling of khejri trees.

Khejri trees were fallen for building solar plants.



The Khejri tree supports rural economy like no other wild vegetation does.

About Khejri tree (*Prosopis cineraria*):

It is the state tree of Rajasthan.

It is valued by the Bishnoi community.

The tree is used in different ways, such as a source of fodder and firewood.

Its fruit is used to make the popular dish 'Sangri'.

Significance of Khejri tree:

It has religious and cultural significance.

It plays an important role in maintaining the ecosystem of the Thar region because of its ability to survive in dry weather.

It helps in sustaining the soil's nutrient value and ensuring a good yield of desert crops and food plants.

It supports rural economy in desert area.

Changes in Forest Conservation Rules

The Ministry of Environment, Forest and Climate Change (MOEFCC) has notified Forest (Conservation) Rules 2022, under the Forest (Conservation) Act, 1980.

What are forest conservation rules?

Forest Conservation Rules prescribe the procedure to be followed for forest land to be diverted for nonforestry uses such as road construction, and highway development.

New rules:

For monitoring, constitute an advisory committee, a regional empowered committee and a screening committee at the State/UT. Integrated Regional Office to examine all the linear projects (e.g. roads, highways, etc) involving land up to 40 hectares and the use of forest land up to 0.7 canopy density.

A fixed time frame for quicker review of each project.

Responsibility given to the states for settling forest rights of forest dwellers (Forest Rights Act, 2006) and allowing diversion of forest land.

Allows compensatory afforestation (CA) in other states in case the state already has over two-thirds area under green cover or over one-third area under forest cover. CA could be taken in other states/UTs where the cover is less than 20%

Changes in rules:

The new rules do not mention the earlier requirement of attaining a gram sabha NOC before diverting forest land for a project.

They also allow forest rights to be settled after the final approval for forest clearances has been granted by the Centre.

The settling of forest rights now needs to be carried out by the state government instead of the Centre.

Implications:

Doing away with the earlier requirement of attaining a gram sabha NOC will loosen the control of local self-governments over the diversion of land.

It is feared that once forest clearance is granted, everything else becomes a mere formality and almost inevitably, no claims will be recognised and settled.

It is feared that the state governments will be under even greater pressure from the Centre to accelerate the process of diversion of forest land.

It would lead to streamlining of the process for reducing the timelines to arrival at the final decision.

GS III - SCIENCE AND TECHNOLOGY

Research in diabetes treatment

A study by Australia's Monash University has identified a new way to restore insulin production in the pancreatic cells. This could one day lead to eliminating the need for daily insulin injections.

What is diabetes?

Diabetes is a chronic health condition that affects how your body turns food into energy.

With diabetes, the human body doesn't produce enough insulin or can't use it as well as it should.

Insulin, a hormone produced by beta cells in the pancreas, helps regulate blood sugar levels in the body.

High blood sugar is damaging to the body and can cause other serious health problems, such as heart disease, vision loss, and kidney disease.

Type 1 diabetes:

Beta cells of pancreas produce less or no insulin at all.

It usually develops in children, teens, and young adults, but it can happen at any age.

Type 1 diabetes is less common than type 2.

Currently, there is no preventive measure for type 1 diabetes.

Type 2 diabetes:

In type 2 diabetes, cells don't respond normally to insulin; this is called insulin resistance.

Because of this, the pancreas makes more insulin to try to get cells to respond.

Eventually pancreas can't keep up, and blood sugar rises, setting the stage for prediabetes and type 2 diabetes.

How diabetes affects human body?

Human body breaks down most of the food one eat into sugar (glucose) and releases it into bloodstream. When blood sugar goes up, it signals pancreas to release insulin. Insulin acts like a key to let the blood sugar into body's cells for use as energy.

With diabetes, body doesn't make enough insulin or can't use it as well as it should. When there isn't enough insulin or cells stop responding to insulin, too much blood sugar stays in bloodstream.

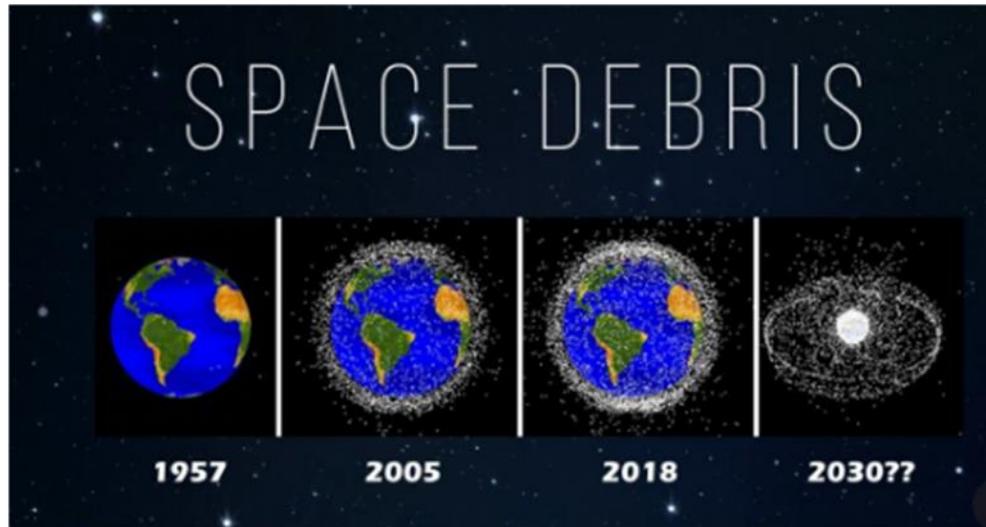
Over time, that can cause serious health problems, such as heart disease, vision loss, and kidney disease.

How does this potential new treatment work?

This study showed that insulin-producing cells (beta cells), which have been destroyed in Type 1 diabetes, can be replaced with new insulin-generating cells using a drug called GSK-123.

Panorama

Space debris



The debris from a large Chinese rocket – the Long March 5B — crashed to earth over the Pacific and the Indian oceans.

Like climate change and the need for sustainable development itself, space debris is now a global concern – affecting everyone who relies on satellites in their daily life.

What is space debris?

Space debris is defined as all of the non-functional, human-made objects like defunct satellites, explosion and collision fragments or discarded rocket bodies orbiting Earth.

Magnitude of space debris:

While there are about 2,000 active satellites orbiting Earth at the moment, there are also 3,000 dead ones littering space.

There are around 34,000 pieces of space junk bigger than 10 centimetres in size and millions of smaller pieces.

Problems:

- ✓ It can prove disastrous if it hits other satellites or space objects.
- ✓ As many day to day works are dependent on satellites cut off of any satellites may affect us.
- ✓ It creates hindrance to study of celestial objects from earth.
- ✓ Debris falling over earth may threaten to human and animal life.

How to deal with space debris?

European Space Agency (ESA) and United Nations Office for Outer Space Affairs (UNOOSA) are working together on this critical issue. The two organisations works together to:

- ✓ increase global understanding and consolidate knowledge on space debris
- ✓ disseminate information on the latest research
- ✓ support the implementation of existing space debris mitigation guidelines

- ✓ strengthen international cooperation and global awareness on space debris mitigation

Removing dead satellites from orbit and dragging them back into the atmosphere, where they will burn up is one of the solutions. Many international companies work to remove space debris.

India's debris

India has 103 active or defunct spacecraft and 114 objects categorised as 'space debris' in orbit and it has embarked on research to reduce such fragments from outer space.

India's efforts

- ✓ ISRO has taken up research activities to study feasibility and technologies required to undertake active debris removal.
- ✓ Active Debris Removal (ADR) Technology demonstration studies have been taken in India.
- ✓ A new facility System for Safe & Sustainable Operation has been set in Bengaluru that will deal with emerging threats from space debris. The new facility will help India achieve its Space Situational Awareness (SSA) goals by providing comprehensive and timely information about the space environment. The system will alert the agency about probabilities of in-orbit collisions, fragmentation, atmospheric re-entry risk, space-based strategic information, hazardous asteroids and space weather forecasts.

Protein prediction tool

DeepMind, a company owned by Google, announced that it had predicted the three-dimensional structures of more than 200 million proteins using AlphaFold. This is the entire protein universe known to scientists today.

What is AlphaFold?

- ✓ AlphaFold is a protein structure prediction tool which is AI-based.
- ✓ It is based on a computer system called deep neural network.
 - Neural networks are inspired by the human brain.
 - They use a large amount of input data and provide the desired output exactly like how a human brain would.
- ✓ AlphaFold has now predicted the structures of the entire 214 million unique protein sequences deposited in the Universal Protein Resource (UniProt) database.
 - UniProt is a freely accessible database of protein sequence and functional information.

Significance and uses:

Proteins carry out all the functions inside a living cell. Therefore, knowing protein structure and function is essential to understanding human diseases.

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Conventional methods of predicting protein structures are time-consuming (they often take years) and are based mainly on trial-and-error methods.

AlphaFold fast tracks the process of predicting the protein structures.

AlphaFold has already helped hundreds of scientists accelerate their discoveries in vaccine and drug development.

Tuberculosis

Tuberculosis is caused by a bacterium called *Mycobacterium tuberculosis*

In humans, TB most commonly affects the lungs (pulmonary TB), but it can also affect other organs (extra-pulmonary TB).

The entire focus of the programme of TB eradication is on the lungs (pulmonary TB).

TB is a treatable and curable disease.

TB spreads from person to person through the air.

Symptoms

Common symptoms of active lung TB are

- ✓ cough with sputum and blood at times
- ✓ chest pains
- ✓ Weakness
- ✓ weight loss
- ✓ fever
- ✓ Night sweats.

Forms of TB

MultiDrug Resistant Tuberculosis (MDR-TB) is a strain of TB which cannot be treated with the two most powerful first-line treatment anti-TB drugs.

Extensively Drug Resistant Tuberculosis (XDR-TB) is a form of TB caused by bacteria that are resistant to several of the most effective anti-TB drugs.

India's efforts at TB elimination:

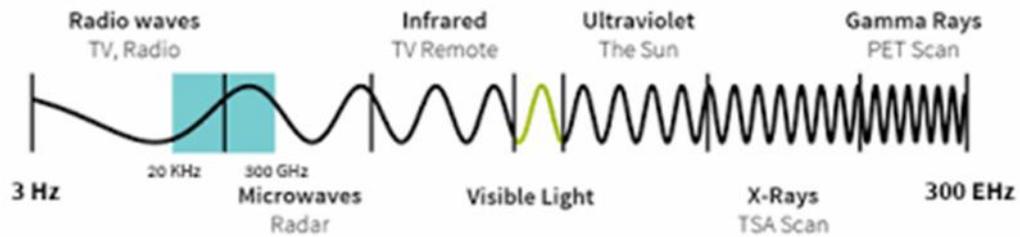
India has one-fourth of the world's TB cases.

- ✓ National Strategic Plan (NSP) for Tuberculosis Elimination (2017-2025) seeks to eliminate TB by 2025
- ✓ The Nikshay Ecosystem (National TB information system)- central repository of TB information
- ✓ Nikshay Poshan Yojana (NPY- financial support) to improve nutrition amongst TB patients
- ✓ TB Harega Desh Jeetega Campaign to create awareness about TB

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The 5G spectrum

The 5G auctions were recently completed.



What is Spectrum?

Spectrum refers to the invisible radio frequencies that wireless signals travel over. Those signals are what enable us to make calls from our mobile devices, tag our friends on Instagram, call an Uber, pull up directions to a destination, and do everything on our mobile devices.

The frequencies we use for wireless are only a portion of what is called the electromagnetic spectrum. The entire electromagnetic spectrum encompasses other frequencies we interact with daily.

Portions of electromagnetic spectrum are grouped in “bands” depending on their wavelengths.

How Does Spectrum Work?

For the purposes of wireless communication, we can think of spectrum in three categories: low-, mid-, and high-band spectrum. Each band of spectrum is essential for a different kind of communication.

- ✓ Low-band spectrum (under 3 GHz) travels longer distances with minimal signal interruption. Used today for:
 - high-speed wireless networks
- ✓ High-band spectrum (above 24 GHz) travels much shorter distances—think meters, not miles—compared to low-band spectrum, but offers high capacity and ultra-fast speeds.
- ✓ Mid-band spectrum (between 3 and 24 GHz) blends the characteristics of both low- and high-band spectrum—providing a mix of coverage and capacity.

These spectrum frequencies are transmitted between cell sites and our mobile devices.

What is 5G?

5G is the fifth-generation technology standard for broadband cellular networks, which cellular phone companies began deploying worldwide in 2019.

How different from 4G?

- ✓ up to 100 times faster than 4G.
- ✓ capable of providing faster connectivity speeds
- ✓ capable of providing ultra-low latency
- ✓ provides greater bandwidth as compared to 4G

The most impactful feature of 5G is its low latency.

Latency refers to the delay between an instruction being given and executed.

4G has a latency of about 50ms; 5G will reduce this to less than 5ms in three years and less than 1ms in four years.

Evolution from 1G to 5G

5G evolution

Things have changed a lot since the first generation of mobile technology.

- The 1G era was defined by briefcase-sized phones and short conversations between a relatively small number of professional people.
- In the lead up to 2G, the demand for mobile services grew and never slowed down.
- Phones that could fit in your pocket, SMS and mobile internet access were hallmarks of the 3G world.
- Thanks to 4G, we have smartphones, app stores and YouTube.
- Now, 5G is completely reshaping both our professional and personal lives by enabling new use cases like connective vehicles, Augmented Reality and enhanced video and gaming.

Comparison between 4G and 5G:

Capability	LTE, 4G	5G	Improvement
Peak Data Rate (Gbps)	1	20	20x
User Experienced Data Rate (Mbps)	10	100-1000	10-100x
Spectrum Efficiency	Baseline	2x/3x/5x	2x-5x
Mobility (km/h)	350	500	1.4x
Latency (ms)	10	1	10x
Connection Density (#/km ²)	10 ⁵	10 ⁶	10x
Network Energy Efficiency	Baseline	100x	100x
Area Traffic Capacity (Mbps/m ²)	0.1	10	100x

Application and uses of 5G:

- ✓ Low latency enables real-time remote control at scale and across distances
- ✓ Ultra high speed data transmission
- ✓ 5G can help to build the world of Internet of Things (IoT)
- ✓ 5G can make the whole city digital infra wireless
- ✓ It can boost autonomous driving, i.e. driverless car
- ✓ Can help in tele-medicine, remote medical surgeries and diagnostic
- ✓ Can be used of Smart-traffic control

700 MHz band for 5G 700 MHz band is best suited for coverage in high-density areas, is ideal for data networks and consumer-led services. Globally 5G ecosystem is very well developed in the 700 MHz band as it gives very wide base coverage up to 6-10 kilometres.

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Auction process in India:

Department of Telecommunications (DoT) conducts auctions of licenses for electromagnetic spectrum. India adopted auctions process in 1994.

A telecom company that wishes to offer services in India must purchase a Unified Access Services (UAS) license to operate that circle. Licences are awarded by auctions. UAS is valid for a period of 20 years, which can be extended by an additional 10 years once per licence per circle.

New Cancer Therapy

University of Houston announced that its researchers developed a next-generation cancer therapy that kills tumour cells while keeping healthy tissues intact.

Existing cancer therapies: Many therapies for curing cancer are available: Surgery, chemotherapy, radiation therapy, bone marrow transplant, immunotherapy, hormone therapy, targeted drug therapy, cryoablation and radio-frequency ablation

How does next-generation therapy work?

This therapy uses genetically engineered or naturally occurring oncolytic viruses. (An oncolytic virus is a virus that preferentially infects and kills cancer cells.)

As the infected cancer cells are destroyed by oncolysis, they release new infectious virus particles or virions to help destroy the remaining tumour.

Oncolytic viruses also stimulate host antitumor immune system responses.

Benefits:

Cancer can be eliminated without the use of surgery or chemotherapy.

Way forward:

This therapy must be made available across the world especially in least developed countries and developing countries which have high percentage of cancer related deaths.

GS III – INTERNAL SECURITY

Changing nature of militancy in Jammu and Kashmir

According to top police officers in J&K, the nature of militancy in J&K has undergone a significant change. After emergence of leaders such as Burhan Wani, the militancy in Kashmir has entered a dangerous and secretive phase, alarming the security apparatus.

Manifestations of change:

- ✓ Increase in number of attacks on migrant workers, police and Kashmiri Pandits
- ✓ High number of youth acquiring weapons.
- ✓ Loose and decentralised command organisation of militant outfits wherein even the militants of the same organisation do not know/ recognize others.
- ✓ Militants keep their intent of joining militancy secret and not going underground. Instead they stay in the open society.
- ✓ Less reliance on over ground workers (OGW)
- ✓ More reliance on the newly recruited youth who do not have any militancy records and are difficult to track. This phenomenon is called '**faceless militancy**'.

Critical information infrastructure

The Union Ministry of Electronics and IT (MeitY) has declared IT resources of ICICI Bank, HDFC Bank and UPI managing entity NPCI as 'critical information infrastructure'.

What is Critical information?

Critical information implies sensitive or private data that are critical to the country's safety and security.

What is critical information infrastructure (CII)?

Critical Information Infrastructure is a computer resource, destruction of which shall have debilitating impact on national security, economy, public health or safety.

It is defined in the Information Technology Act of 2000.

Need of Classification and protection:

IT resources form the backbone of countless critical operations in a country's infrastructure.

Disruptions in IT infrastructure can have a cascading effect across sectors. An information technology failure can lead to prolonged outages crippling national security and other sectors like healthcare, banking services.

For examples:

- In 2007, a wave of denial-of-service attacks from Russian IP addresses hit major Estonia was seen as cyber aggression.
- The power outage in 2020 in India could have been a cyber-attack, allegedly from a China-linked group, aimed at critical infrastructure.

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Such incidents underlined the possibility of hostile state and non-state actors attacking country's internet-dependent critical systems.

How are CII's protected in India?

The National Critical Information Infrastructure Protection Centre (NCIIPC) is the nodal agency for taking all measures to protect the nation's critical information infrastructure.

It is mandated to guard CII's from "unauthorized access, modification, use, disclosure, disruption, incapacitation or distraction".

NCIIPC may call for information and give directions to the critical sectors or persons serving or having a critical impact on Critical Information Infrastructure.

National Investigation Agency

The National Investigation Agency (NIA) has taken over the probe into the Udaipur killing over a social media post.

Now, the Union Home Ministry has handed over to the agency the investigation of a similarly executed murder of a pharmacist at Amravati in Maharashtra.

What is NIA?

The National Investigation Agency (NIA) is a government agency tasked with investigating any offences harming India's sovereignty, security, and integrity.

These include terror attacks and their suspected links to crimes such as the smuggling of arms, drugs, and counterfeit Indian currency, as well as infiltration from outside borders.

Powers of NIA:

- To investigate friendly relations with foreign states.
- To investigate crimes committed in violation of the statutory laws enacted to implement international treaties, and resolutions of the United Nations, etc.
- To search, seize, arrest, and prosecute people who commit such crimes.

What are Scheduled Offenses?

The Act's schedule includes a list of offenses that must be investigated and prosecuted by the NIA. Offenses under Acts such as the Atomic Energy Act of 1962 and the Unlawful Activities Prevention Act of 1967 are examples.

Jurisdiction of National Investigation Agency (NIA):

The jurisdiction of the National Investigation Agency extends to the whole of India.



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It also applies to

- Indian citizens outside the country;
- Persons in the service of the government wherever they are posted;
- Persons on ships and aircraft registered in India wherever they may be;
- Persons who commit a scheduled offence beyond India against the Indian citizen or affecting the interest of India.

Working of NIA:

State governments may refer cases involving scheduled offences lodged at any police station to the Central government (Union Home Ministry) for NIA investigation.

After reviewing the information provided, the Centre can direct the agency to take over the case.

State governments are expected to provide the NIA with all necessary assistance.

Central Government may direct the agency to take up/oversee the investigation on its own initiative.

National Investigation Agency (Amendment) Bill, 2019

The National Investigation Agency (Amendment) Bill, 2019 was passed with the objective of speedy investigation and prosecution of certain offences, including those committed outside India.

National Investigation Agency (Amendment) Bill, 2019 amendment in the law focused on three main areas.

- Offences Outside India
- Widened Scope Of Law to cases related to human trafficking, counterfeit currency or banknotes, manufacture or sale of prohibited arms, cyber-terrorism, and offences under the Explosive Substances Act, 1908.

Special Courts: allowed the central government to designate Sessions Courts as Special Courts for the trial of scheduled offenses under the Act.