

GS CONNECT

It gives us immense pleasure to present an innovative approach to master current affairs. Current is a passing wind and diverse issues happen at the same time. It is to an extent chaotic. Newspapers, magazines and various other sources report the chaos per se. With our experience of current affairs we have tried to give “the current” a medium to travel. It is the syllabus of the UPSC with their components that are the medium through which the “Current is Passed” to the readers. Ever since the new syllabus of the UPSC came into existence, current has been gaining significance both at prelims as well as mains examination. This book is meant to cover current affairs and related questions arising from those events. We have not only covered the current events for their factual contents but also presented it in such a way that any question asked from that topic gets covered. Moreover, topics are also “peppered” with the relevant facts/key concepts that are related to the theme. We have also given questions for practice both, subjective and objective, so that candidates are oriented to the examination mode. It is a collection covering myriad source yet in a manageable size. To use this book we recommend you to master the components of general studies (GS) syllabus as broken into rows and columns (provided in the beginning after preface). Each cell comprising of the portion of GS becomes the connect for the current and every news subsequently covered guides the reader to the address of the syllabus. It is logical to expect that same issue may be connected to more than one topic of the syllabus. Further, the news also has some additional vistas opened for the readers by adding a box with a title **“PEPPER IT WITH”** where we expect the students to build further around the theme.

We are also trying to reach the remotest part of the country with our spirit and zeal of “Mains Answer Writing”, which has been admired by students, CSE rankholders and other scholars. Continuing in line with the effort, we have started with programs like 7 Question (7Q) Challenge, Shell Points, Stock Points, Content Enrichment Booklet etc.

When it comes to evaluation, we are altogether at a different level. We are also reaching every nook and corner with this expertise for the aspirants of CSE. Now you can write a Mains Answer and get it evaluated from our Expert Team and can get Feedback. [Drop a mail at evaluation@ksgindia.com](mailto:Drop_a_mail_at_evaluation@ksgindia.com) for registering yourself in our race to perfection. Don't wait, it's your golden chance to crack this exam and fulfill your passionate dream.

Team KSG

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GS - I	Culture-Art Forms, Literature and Architecture from ancient to modern times.	Indian history significant events, personalities, issues and the Freedom Struggle	Post independence issues, National boundary and disputes	Indian society features, issues, globalization and diversity	Women - issues and developments	Urbanization - problems and remedies	Distribution of industries and resources - India and world	Geophysical phenomena such as earthquakes, Tsunami, Volcanic activity, cyclone etc			
GS - II	Indian constitution- Amendments, acts and bills.	Legislative, executive and judicial processes.	Constitutional, non-constitutional, judicial, quasi-judicial, administrative and other types of bodies.	Federal structure and local bodies. Their powers and functions.	Government policies and various governance issues like transparency, accountability and - governance	Committees and schemes.	Non-government issues, self-help groups and role of civil society	Vulnerable sections of our society and social sector issues and initiatives.	International Relation- India and other countries, various Indian and international agreements, effects of other countries on India and international institutions.		
GS - III	Various measures to boost Indian economy- planning, policies, management	Government budgeting and issues related to budget.	Agriculture, animal husbandry and transport	Food security- measures to boost food security and food processing. Issues related to land- land reforms	Industries and infrastructure - their growth and investment model	Space and technology, IT space, robotics and computer	Disease, biotechnology and human welfare	Innovations, intellectual property, Awards, POI and other import and aspects of S&T	Environment ; government initiatives, various judgment, pollution, degradation and conservation efforts	Disaster & Disaster Management	Challenges to internal security, Various Security forces and agencies and their mandate. Cybersecurity; money laundering and its prevention.
GS - IV	Ethical issues related to family society, education, Corruption etc.	Ethics in public and private administration	Issues	Related laws and rules	Governance/ e - Governance	Ethics in international issues	Personalities and their teachings	Other important topics			
Misc.											

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POLITY

Inner-Party Democracy

NEWS EXCERPT

In recent times, political parties in India are witnessing a change in form of pushing the agenda of inner-party democracy. The Election Commission of India is also looking forward to taking up the issue of internal democracy within parties.

Pre-Connect

Meaning of Inner Party Democracy

- Democracy has two offshoots:
 - Procedural Democracy includes all aspects of the practice of democracy such as universal adult franchise, periodic elections, etc.
 - Substantive Democracy includes a core set of beliefs that are crucial for the well-functioning of democracy which includes inner-party democracy.
- Inner-party democracy promotes a bottom-up approach to decision-making. It does so while ensuring the effective distribution of power amongst the party functionaries to enable inclusivity and participation of diverse persons.

Politico-Legal framework in India

- In India, there is a paradox of whether India is a party-led democracy or a democracy based on political parties. There is no statutory backing for internal democratic regulation of political parties.
- The definition of a political party is defined under the anti-defection law which was inserted through 52nd constitutional Amendment Act 1985. All rules and regulations apply more to candidates than to political parties in India.
- Various commissions have recommended introducing statutes to enforce internal democracy for political parties.

Need for Inner-Party Democracy

Fair and transparent internal functioning of parties ensures that democracy functions with the people too, since Indians' perception of politics is so closely tied to one's perception of party politics. Therefore, it is important to preserve inner-party democracy as it helps in:

- **Bridge Trust deficit and prevent Hero Worship:** Inner-party democracy enhances the fair and transparent procedures in selecting leaders within political parties which counters a general trust deficit amongst the public. In absence of such provisions, a culture of Hero Worship gets promoted in a political party. Dr. B.R. Ambedkar considers such a situation as a sure road to degradation and eventual dictatorship.
- **Promotes Inclusive Representation:** Opaque nature of selecting party candidates also runs the risk of excluding marginalized groups. It leads to a denial of equality of status and opportunity, that is entrenched in India's Constitutional scheme.
- **The criminalization of Politics:** The transparency deficit in selecting candidates within political parties becomes a breeding ground for criminalization in Indian politics. With candidatures based on the whims of certain political heads, mere winnability becomes the sole criterion for fielding certain candidates, as those with significant money and muscle power can easily indulge in gerrymandering of the voter base.
- **Safeguard against dynastic politics:** It is integral for promoting freedom of speech and dissent within the political parties. It prevents the breeding of dynastic politics and political nepotism.
- **Counters factionalism:** Democratizing political parties can also work as a safety valve against factionalism and split into parties. Various incidents of internal party rivalry have culminated in splits.

Role of the Election Commission of India

- ✓ The ECI does not question the result or the procedure political parties follow. The ECI expects political parties to abide by their constitution, a copy of which is also submitted to the commission when the parties are registered.

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- ✓ Nothing in Article 324 of the Constitution, or Section 29(A) of the Representation of the People Act, 1951 empowers ECI to regulate internal structures, organizations, or elections of the party. As a result, most political parties in India have become similar, where internal structures and organizations do not follow their constitutional norms.
- ✓ Political parties are required to inform the ECI about changes in their office-bearers and addresses. They are required to submit a document of expenditure incurred during elections and in the non-election period. But there is no cost attached to non-compliance.
- ✓ Therefore, ECI needs a new interpretation and some bold moves for re-interpreting the existing laws. ECI has to imagine its role as a regulator of these political parties.

Recommendations for Indian Political Parties

- **Law Commission recommendation:** 170th report of the Law Commission of India recommends that the constitutional values of democracy and accountability must also apply to and bind the political parties which are integral to parliamentary democracy. It cannot be a dictatorship internally and democratic in its functioning outside.
- **National Commission for Review of Working of Constitution:** It recommends that there should be comprehensive legislation regulating the registration and functioning of political parties or alliances of parties in India.
- **Political Parties** are the only organizations in the country that seek, compete, and acquire power over state apparatus, control over public funds, government bureaucracy, and legislative mechanisms. Political parties must open their eyes to growing calls for electoral political reforms and take steps toward bringing in intra-party democracy.

PEPPER IT WITH

Representation of People Act, 1951, Law Commission, NCRWC, Election commission of India, X schedule, 91st Amendment

Conclusion

As parties contribute to the expression of political opinion and are instruments for the presentation of candidates in elections, some regulation of internal party activities can be considered necessary to ensure the proper functioning of a democratic society.

Parliamentary Committees

NEWS EXCERPT

Recently, 22 standing committees of Parliament were revamped. A cause of concern that arose from this revamp is the lack of representation of the opposition parties.

Pre-Connect

- The idea of the Parliamentary Committee lies in the Britain parliamentary system. These committees examine issues in detail, from government policy and proposed new laws, to wider topics like the economy.
- In India, a Parliamentary Committee is made up of Members of Parliament who are either elected by the house or nominated by the Speaker/Chairman. Such committees work under the direction of the Speaker/Chairman.
- Constitution sanction of Parliamentary committees lies under Article 105 (Privileges of MP) and Article 118 (Power of Parliament to make rules to regulate its procedure and conduct of business).
- Parliamentary Committees are of two kinds
 - **Standing Committees:**
 - These are permanent and regular committees.
 - They are constituted from time to time in pursuance of the provisions of an Act of Parliament or Rules of Procedure and Conduct of Business in Lok Sabha.
 - The work of these Committees is of continuous nature.
 - **Ad hoc Committees:**
 - These are appointed for a specific purpose and they cease to exist when they finish the task assigned to them and submit a report.
 - The principal Ad hoc Committees are the Select and Joint Committees on Bills.

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- Railway Convention Committee, Joint Committee on Food Management in Parliament House Complex, etc also come under the category of ad hoc Committees.
- A Minister is not eligible for election or nomination to the following committees:
 - Financial Committees
 - Any Departmentally Related Standing Committees
 - Committees on
 - Empowerment of Women
 - Government Assurances
 - Petitions
 - Subordinate Legislation
 - The welfare of Scheduled Castes and Scheduled Tribes.
- An invitation to appear before a Parliamentary Committee is equivalent to a summons from a court. However, the chairman should have the support of the majority of the members to summon a witness.

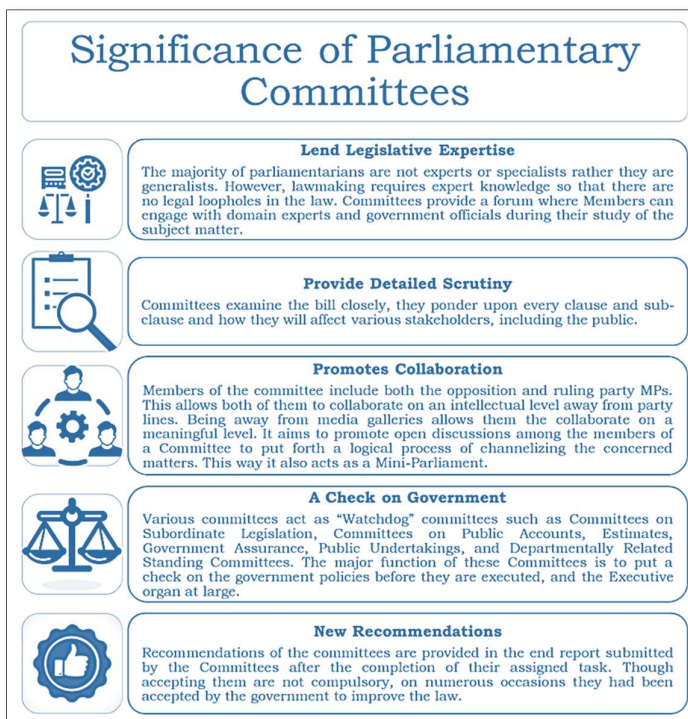
Functions of Important Committees

➤ **Estimate Committee**

- Examines whether the money is well laid out within the limits of the policy implied in the estimates.
- Suggest the form in which the estimates shall be presented to Parliament.
- Suggest alternative policies to bring about efficiency and economy in administration.

➤ **Public Accounts Committee**

- Public Accounts Committee was introduced in 1921 after its first mention in the Government of India Act, 191.
- Examine the statement of accounts showing the appropriation of sums granted by Parliament for the expenditure of the Government of India.
- Examine annual finance accounts of the Government and such other accounts laid before the House as the Committee may think fit
- The scrutinization of the Appropriation Accounts of the Government of India is reported to the Comptroller & Auditor General of India (CAG)
- It examines accounts of all bodies whose audit is done by CAG either under the directions of the President or by a statute of Parliament.
- Chairman is invariably from the opposition since 1967.



➤ **Committee on Public Undertakings**

- Examine the reports and accounts of Public Undertakings specified in the Fourth Schedule to the Rules of Procedure and Conduct of Business in Lok Sabha.
- Those Public Undertakings whose accounts it doesn't examine are examined by the estimates committee.

- Examine the reports (if any) of the Comptroller and Auditor General of India on Public Undertakings.
- Examines autonomy and efficiency of Public Undertakings.
- Any other function allocated to the committee by the Speaker from time to time.

➤ **Departmentally Related Standing Committees**

- It considers the demand for Grants
- It examines bills referred to it by the Speaker/Chairman.
- It considers national basic long-term policy documents presented to the Houses and referred to the Committee by the Speaker/Chairman.
- They do not consider matters of the day-to-day administration of the concerned Ministries/Departments.

➤ **Other Important Committees**

- Business Advisory Committee, which recommends the time for discussing matters allocated to it by the ex-officio Chairperson, the Speaker of the Lok Sabha.
- Committee on Private Members' Bills and Resolutions, formulated with the function of examining Private Members' Bills after they are introduced, and before they are taken up for discussion in the House.
- General Purpose Committee, working towards the affairs, and matters that are referred from time to time by the Speaker of the House.
- Rules Committee which recommends changes, and amends Rules of Procedure and Conduct of Business in Lok Sabha.
- The privileges Committee is vested with the function of examining the breach of any kind of privileges available to the Members of the House.
- Committee on Papers Laid on the Table vested with the functioning of the papers falling within the ambit of the Subordinate Legislation Committee.
- The committee on Government Assurance is vested with the function of scrutinizing the assurances and promises given by the Ministers.

Committee on Empowerment of Women

- ❖ Consider the reports submitted by the National Commission for Women.
- ❖ Suggest measures to be taken by the Union Government for improving the status/conditions of women.
- ❖ Examine the measures taken by the Union Government to secure for women equality, status and dignity in all matters.
- ❖ Examine the measures taken by the Union Government for comprehensive education and adequate representation of women in Legislative bodies/services and other field.
- ❖ Report on the working of the welfare programmes for the women.

Challenges faced by the Parliamentary committees

- ✓ **Sidelining of the Parliamentary Committees:** In recent times, Parliamentary committees have been circumvented even in case of significant legislation. This may affect the working of parliamentary democracy and weakens the Parliament's oversight over the government.
- ✓ **Lack of representation:** The chairmanship of some key committees have been allocated to opposition parties in the past. But in the latest reshuffle, this pattern is missing. This will impact policy-making as it will make laws based on a single school of thought.
- ✓ **The Speaker/Chairman factor:** It is the discretion of the speaker/chairman to send any bill for scrutiny by the parliamentary committee, in recent times speaker has devoid crucial bills from the parliamentary committee's scrutiny. This avoids the necessary checks and balances required for any law.

In the current Lok Sabha, 17 Bills have been referred to committees. In the 16th Lok Sabha (2014-19), 25% of the Bills were referred to committees, which was much lower than the 71% and 60% in the 15th and 14th Lok Sabha respectively.

Way-Forward

- There is a need to bring more opposition participation in Parliamentary committees. The very nature of parliamentary committees promotes the same as party affiliations usually do not come in the way of MPs speaking their minds in ways they are unable to do in Parliament.
- Scrutiny and detailed analysis is the sine qua non of an effective legislation process. That too in a diverse democracy like India.
- The role of the Speaker/ Chairman must be curtailed in deciding whether a bill deserved parliamentary scrutiny or not. As scrutiny is not a hurdle in the legislation process.

PEPPER IT WITH

Parliamentary Privileges, Investigative Joint Parliamentary Committees, MPLADS, Office of the CAG

Scheduled Caste Status**NEWS EXCERPT**

Several petitions were filed in the Supreme Court challenging the Constitution (Scheduled Castes) Order of 1950, which allows only members of Hindu, Sikh, and Buddhist religions to be recognized as SCs. Court has sought the stand of the Union government on the same.

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Pre-Connect**Constitutional Order 1950**

- Initially, the order was only provided for the Scheduled Caste reservation for those who belong to the Hindu religion. The idea was to address the social disability arising out of the practice of untouchability.
- In 1956 on the recommendation of the Kaka Kalekar Commission (1955), the order was amended to include Dalits who converted to Sikhism.
- In 1990 on the recommendation of the High Powered Panel (HPP) on Minorities (1983) the order was amended to include Dalits who had converted to Buddhism.

Previous Efforts for Religion-Neutral Reservation

- ✓ To include Dalit Christians as a Scheduled Caste, Union Government brought a bill to amend the Constitution (Scheduled Castes) Order (1950) in 1996. However, it failed, later when the government tried to use the ordinance route it could also not be promulgated.
- ✓ In 2000, Union Government sought the opinion of the Registrar General of India and the then National Commission for Scheduled Castes and Scheduled Tribes on whether Dalit Christians could be included. Both had recommended against the proposition.
- ✓ Multiple private member bills were introduced to include Dalit Christians and Dalit Muslims as SCs, but all failed.
- ✓ In 2019, the Union government decided not to include Dalit Christians as members of SCs. The decision was based on the Imperial Order of 1936, which had first classified a list of the Depressed Classes and specifically excluded "Indian Christians" from it.

A Case for Inclusion

- Multiple reports time and again have pointed towards the existence of caste and caste inequalities among Indian Christians and Indian Muslims. This has affected those who

Constitutional Provisions for upliftment of Scheduled Caste

Article 15 (4)- special provision for the advancement of any socially and educationally backward classes of citizens or for the Scheduled Castes and the Scheduled Tribes

Article 16(4A)- provision for reservation [in matters of promotion, with consequential seniority, to any class] or classes of posts in the services under the State in favor of the Scheduled Castes and the Scheduled Tribe

Article 46- The State shall promote with special care the educational and economic interests of the weaker sections of the people, and, in particular, of the Scheduled Castes and the Scheduled Tribes, and shall protect them from social injustice and all forms of exploitation.

Article 330 and 332- reservation of seats in favor of the Scheduled Castes and the Scheduled Tribes in the House of the People and in the legislative assemblies of the States.

Article 335- The claims of the members of the Scheduled Castes and the Scheduled Tribes shall be taken into consideration, consistently with the maintenance of efficiency of administration, in the making of appointments to services and posts in connection with the affairs of the Union or of a State

Article 338- it deals with National Commission for Scheduled Castes.

Part IX and Part IXA- Reservation for SC and ST in local bodies

converted to other religions but were originally SCs. In other words, they continue to experience the same social disabilities.

- These Reports includes
 - First Backward Classes Commission (1953)
 - The Committee on Untouchability Economic and Educational Development Of the Scheduled Castes (1969)
 - The High-Powered Panel (HPP) report on SCs, STs, and Minorities (1983)
 - The Mandal Commission Report
 - Prime Minister's High-Level Committee (2006)
 - Ranganath Misra Commission (2008)
- If caste identities are lost upon conversion, then there is no logic for the inclusion of Sikhs and Buddhists in the list.
- Though Union government refuses to accept the recommendation of several reports as they do not form appropriate empirical evidence. However, critics argue that such evidence was not present in both Sikhism and Buddhism.

Reasons for Dalit Christian Exclusion

- ✓ In the view of the office of the Registrar General of India (RGI), SC status is meant for communities suffering from social disabilities arising out of the practice of untouchability. Such practices are more prevalent in Hindu and Sikh communities.
- ✓ Any inclusion of Dalit Christians and Dalit Muslims would just significantly swell the population of SCs across the country. This would make access to reservation benefits difficult for that who are oppressed historically and continues to face the same.
- ✓ RGI is of opinion that Dalits who converted to Islam or Christianity belonged to different sets of caste groups and not just one, as a result of which they cannot be categorized as a "single ethnic group", which is required by Clause (2) of Article 341 for inclusion.
- ✓ RGI is of opinion that the practice of "untouchability" was a feature of the Hindu religion and its branches, allowing the inclusion of Dalit Muslims and Dalit Christians as SCs could result in being misunderstood internationally as the imposition of its caste system upon Christians and Muslims.
- ✓ RGI opined that Christians and Muslims of Dalit origin had lost their caste identity by way of their conversion and that in their new religious community, the practice of untouchability is not prevalent.

PEPPER IT WITH

Socio-Economic Caste Census 2011, Procedure for Inclusion/Exclusion in Scheduled caste/ tribe

Need for Religion-Neutral Reservation

- The fact remains that despite a change of religion, Scheduled Castes are still devoid of any social inclusion.
- The caste hierarchies are omnipresent and they are visible and acted upon within Christianity and Muslims even though the religion forbids it.
- De-linking religion from reservation will provide access to reservation benefits to those whose destiny didn't change even after a change in religion.

Ban on Popular Front of India (PFI)

NEWS EXCERPT

The government of India decided to ban the PFI and its affiliates for five years. Ministry of Home Affairs invoked provisions of the Unlawful Activities (Prevention) Act, of 1967. The action was taken under section 3 of the Unlawful Activities (Prevention) Act, 1967.

Pre-Connect

Genesis of Home-Grown Terror in India

- The Afghan Jihad of the 1980s lead to the formation of Markaz Ad-Da'wa Wal Irshad in 1985. The objective of the organization was to direct radicalized youth in the Afghan theatre.

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- As the Soviet Union withdrew from the Afghan theatre, ISI started using Markaz for its anti-India operations in Kashmir. For this, a new organization, Lashkar-e-Toiba (LeT) was formed as the military arm of the Markaz.
- As LeT grew its space in the valley in the 1990s, ISI got wary of its power and started propping up new players, leading to the foundation of a competitive terrorism industry in India.
- In 1977, an organization called as Student Islamic Movement of India (SIMI) was founded to raise issues related to Indian Muslims. However, post-Babri incident, SIMI became aggressive and as a result, it got banned in 2001.
- After 9/11, American attitude towards terrorism changed and it started pressurizing Pakistan on its export of terror policy. Pakistan decided to develop an alibi, it founded Jammāt-ud-Dawah (JuD) as the political wing of Markaz.
- Pakistan decided to change the narrative that terrorism in India is home-grown due to its government policies which has alienated its people who are now resorting to violent means.
- Inter-Service-Intelligence (ISI) of Pakistan, envisaged Karachi Project, wherein it will use the network of Daud Ibrahim to connect with alienated Indian Muslims and radicalize them with the help of JuD.

Indian Response to Home-Grown Terror

Certain strategy India has developed in dealing with home grown terror, these includes:

- ❖ **Policy Computation Algorithms:** Indian Security agencies are using big data and machine learning to predict the action of terror group and pre-empt their moves.
- ❖ **Communication Surveillance:** Security agencies are monitoring social media closely to understand the potential location of future attacks.
- ❖ **Ground Intelligence:** Agencies are gathering ground reports from local resources and also monitoring travel data in sensitive locations.
- ❖ **Misinformation Campaigns:** Deliberate misinformation campaigns to confuse terror organisation. It keeps them off-balance compromise their planning and operations and cause resource leakage of terror organisations.
- ❖ **Kinetic Operations:** Through these operations dissension within terror groups and establish a dissonance in the group. For such operations cyber space is used.

About PFI

PFI was founded in 2007 by merging three organizations which were the National Democratic Front (Kerala), The Karnatak Forum for Dignity, and Manitha Neethi Pasarai (Tamil Nadu). It was founded at the “Empower India Conference” in Bengaluru and was registered under the Societies Registration Act, 1860.

About UAPA

- Enacted in 1967, the act was transformed into anti-terror law in 2004 and 2008.
- In 2019, the act was amended to designate an individual as a terrorist on certain grounds.
- It provides for special legal procedures which overlook the constitutional safeguards of the accused

About Ban

- ✓ Along with the PFI, its associates are also declared as “unlawful association” these are:
 - Campus Front of India (CFI), All India Imams Council (AIIC), Rehab India Foundation (RIF), National Confederation of Human Rights Organisation (NCHRO), National Women’s Front, Junior Front, Empower India Foundation and Rehab Foundation.

Key Sections of UAPA		
Section 7	Section 8	Section 10
<ul style="list-style-type: none"> • It prohibits the use of funds by an unlawful association • It prohibits the use of any money, securities, or credits by any person for an organization that is banned. • It empowers law enforcement agencies to search premises and examine their accounts. 	<ul style="list-style-type: none"> • Empowers the Central government to notify any place which in its opinion is used for such unlawful association These includes; <ul style="list-style-type: none"> • A House • A Building or its part • A Tent • A Vessel 	<ul style="list-style-type: none"> • It criminalizes membership of a banned organization • Being a member of a banned organization is punishable with imprisonment of two years. • It also applies to any person who aids the objectives of the banned organization.

- ✓ The reasons given by the Ministry for the ban include
 - PFI linkages with SIMI, Jamaat-ul-Mujahideen Bangladesh (JMB), and other terror groups like ISIS.
 - Subversive activities and disturbing public order, undermine the constitutional setup of the country.
 - Propagating anti-national sentiments and radicalizing a particular section of society to create disaffection against the country.
 - They operate openly as a socio-economic, educational, and political organization but, they have been pursuing a secret agenda to radicalize a particular section of the society
- ✓ The Social Democratic Party of India (SDPI) the political wing of the PFI, escaped the ban.

UAPA Tribunal

- Under the UAPA, there is a provision for a one-person tribunal under a High Court judge. These are constituted to provide its bans a long-term legal sanctity.
- All expenses incurred for a tribunal are borne out of the Consolidated Fund of India. All proceedings before the Tribunal are deemed to be judicial proceedings.
- Any Order of ban issued by the government under section 3 of the UAPA Act would not come into effect until the tribunal has confirmed it. However, in exceptional circumstances, the notification can come into effect immediately once the reasons for it are recorded in writing. The tribunal can endorse or reject it.
- The Procedure of the UAPA Tribunal is defined under section 4 under which
 - Notification of the center declaring any organization as unlawful must reach the tribunal within 30 days
 - Then within the next 30 days tribunal calls upon the association, by notice in writing, to show cause why it should not be declared unlawful.
 - Then tribunal holds an inquiry and decides the matter within six months
- It has the power to regulate its procedure, including the place at which it holds its sittings. Thus, it can hold hearings in different states for allegations about those states.
- The tribunal has the same powers as vested in a civil court under the Code of Civil Procedure, 1908. Therefore, it can
 - Summon a witness, examine a witness on oath, Ask for the production of any document or other material object producible as evidence.
 - Reception of evidence on affidavits, requisitioning any public record from any court or office and Issue any commission for the examination of witnesses.

ECI and De-registering of Political Party

- ❖ The Representation of the People Act only empowers the ECI to register a party. ECI has limited powers when it comes to de-registering of a political party.
- ❖ In *Indian National Congress vs the Institute of Social Welfare (2002)* case SC laid conditions in which ECI can de-register a political party which includes:
 - If the registration is obtained fraudulently
 - If there is alteration in the original name or other material particulars of the party
 - Where a de-registration without even an enquiry is an imperative. For example, if the registration of the political party cannot be continued for the very party becoming unlawful by a declaration by the competent authority to that effect

PEPPER IT WITH

Maharashtra Control Of Organised Crime Act, Indian Penal Code, Terrorist and Disruptive Activities (Prevention) Act

Electoral Bonds (EBs)

NEWS EXCERPT

The Supreme Court will soon be hearing the petition filed by the Association for Democratic Reforms (ADR) challenging the Centre's electoral bonds Scheme in 2017. The interim petitions seeking to stay the electoral bonds scheme were taken up twice in the past, in 2019 and 2021 before elections but such a stay was not granted by the apex court.

Pre-Connect

Need for Political Funding Reforms in India

- In India, Political funding has been an opaque affair.
- Businesses, which need approvals for projects, tend to appease political patrons through political donations, which in turn becomes a cause for fudging books to generate funds for such contributions.
- Political parties, which have various expenses to meet in running their organizations and in conducting elections, accept funding from businesses, which makes it possible for an inappropriate nexus between the two to emerge.

About Electoral Bonds

- The scheme was introduced in 2017, under which bonds in multiples of **Rs 1000, Rs 10000, Rs 1 Lakh, Rs 10 lakh, and Rs 1 crore are issued without any maximum limit.**
- Only the State Bank of India's (SBI) dedicated branch is authorized to issue and encash such bonds. **They are valid for fifteen days from the date of issuance.** They are only redeemable in the designated account of a registered political party.
- Any citizen can purchase these bonds either singly or jointly with other individuals. The name of the donor is not required, **for a bond value less than Rs 20000 even Pan details are not required.**
- Bonds are available **for ten days each in January, April, July, and October as may be specified by the Central Government. Another 30 days window in case of Lok Sabha elections can be designated by the Central government.**
- Every political party which is registered under **section 29A of the Representation of the Peoples Act, 1951 (43 of 1951)** and has **secured at least one percent of the votes polled** in the most recent Lok Sabha or State election is eligible for donation through EBs.
- According to SBI data, since the introduction of the scheme in 2018, political parties have **received around Rs 10,246 crore, till July 2022.**
- Other than EBs, Political Parties can also receive cash donations of less than ₹2,000 from anonymous sources through cheque or digital mode.

Supreme Court Observation on Electoral Bonds

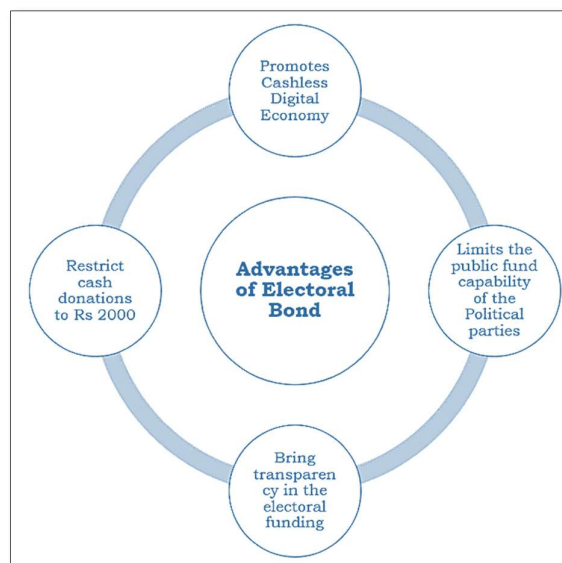
- ✓ In 2019, SC asserted that EBs have a tremendous bearing on the sanctity of the electoral process in the country. Therefore, it requires an in-depth hearing which could not be done in the limited timeframe. At the same time, it directed political parties to provide complete information to the ECI in sealed covers on every single donor and contribution received by them till that date through electoral bonds.
- ✓ In 2021, SC again refused to put stay on the Electoral Bonds and suggested a little effort was required to pierce the veil of anonymity around electoral bonds. It also discarded the repurchase issue raised by RBI by asserting that the bond was not tradable and nobody would sell the bond to get black money in return for white.

Concerns Regarding Electoral Bonds

- **Legitimate Electoral Corruption:** It will allow unlimited political donations by both Indian and foreign companies. It will legitimize electoral corruption at a huge scale and would have serious repercussions on Indian democracy.
- **Wrong Entry:** The scheme was brought in through Finance Act 2017 and 2016 both passed as money bills and therefore don't require Rajya Sabha scrutiny. This is not only violative of doctrines of separation of powers and fundamental right but also pump in black money for political funding.

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- **Lacks Transparency and Increase Opacity:** The scheme exempts political parties from informing the ECI about the details of contributions made to them through electoral bonds. This means there won't be any transparency and ascertaining the legitimacy of the donation would be difficult.
- **Politico-Business Nexus:** The scheme exempts companies to give details of political contributions in their annual profit and loss accounts. Further, the cap of limiting political donations to 7.5 % of net profits in the previous three years is also removed. These steps would promote opacity in political funding and the danger of "quid pro quo" in return for benefits passed to such companies by political parties. It will also promote crony capitalism.
- **Foreign Funding:** The Scheme has amended the Foreign Contribution Regulation Act, 2010 (FCRA). Now, foreign companies with subsidiaries in India can donate to political parties. However, the move can expose Indian politics and democracy to international lobbyists having their agendas. Further, shell companies can be created just to fund political parties whose trail would be difficult.
- **Income Tax Act Issue:** It allows anonymous donations of less than Rs 20000 without any PAN details. As a result, political parties are reporting a major portion of the donations received as being less than the prescribed limit of Rs. 20,000.
- **Infringes Right to Know:** It infringes on the fundamental right of "Right to Know" which various Supreme Court judgments have interpreted as part of the freedom of speech and expression.
- **RBI Red Flags:** RBI termed EBs as bearer bonds that can be traded like currencies, this would not only defeat the purpose of demonetization but also promotes money laundering. There are dangers of counterfeit bonds being flooded by adversaries of India and political parties falling into such a trap.
- **Unfairness in Anonymity:** The idea behind EBs is to promote anonymity in political funding but this anonymity is unfair as the government can always know who funded who, and this might dry up funds for the opposition parties and harm Indian democracy.



PEPPER IT WITH

Money bill, Shell Companies, FCRA Amendments, Representation of People Act 1951

Way Forward

- ✚ **Make them Digital:** Making EBs digital allows agencies to trail the origin of the money deposited as a political donation.
- ✚ **Bring in the regulation:** Effective regulation of political financing can ensure a real democratic polity.
- ✚ **Plug in the loopholes:** This will make the entire governance machinery more accountable and transparent.

Women's Reproductive Autonomy

NEWS EXCERPT

Recently, the Supreme Court of India ruled that single and unmarried women with pregnancies between 20 and 24 weeks are entitled to access the same safe and legal abortion care as married women. The court opined that the Constitution gives an unmarried woman the right of choice as to whether or not to bear a child on a similar footing as that of a married woman.

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Pre-Connect

Understanding Abortion

- An abortion is the removal or expulsion of an embryo or fetus from the uterus, resulting in, or caused by, its death.
- It can occur spontaneously as a miscarriage or be artificially induced through chemical, surgical, or other means.
- Medically, it is defined as a miscarriage or induced termination before twenty weeks gestation, which is considered nonviable.

Abortion as Human Right

A person's position on abortion may be described as a combination of their personal beliefs on the morality of induced abortion and the ethical limit of the government's legitimate authority. It is a woman's individual rights, right to her life, to her liberty, and to the pursuit of her happiness, that sanctions her right to have an abortion. Reproductive rights are internationally recognized as critical both to advancing women's human rights and to promoting development. In recent years, governments from all over the world have acknowledged and pledged to advance reproductive rights to an unprecedented degree.

Evolution of Abortion Law in India

- Abortion is severely condemned in Vedic, Upanishadic, the later puranic(old), and smriti literature.
- Abortion as a penal provision is mentioned under Section 312 of the Indian Penal Code, 1860. The section criminalizes a person who voluntarily causes a woman miscarriage (even with the women's consent). The only exception is that it was done in good faith to save the life of the pregnant woman.
- Till the 1960s, India continued with section 312 which made abortion illegal along with three years of imprisonment and/or a fine.
- Later in the mid-1960s when maternal morality rose due to unsafe abortions, the government formed a group under the chairmanship of Shantilal Shah which came to be known as the Shantilal Shah Committee.
- Based on the report of the committee a medical termination bill known as the Medical Termination of Pregnancy (MTP) Act 1971, was passed by Parliament and came into force in April 1972.

Key Facts about Abortion in India

- National Family Health Survey 2019-2021, shows that 3% of all pregnancies in India result in abortion. Out of which:
 - More than 53% of abortions in India are performed in the private sector.
 - Only 20% are performed in the public sector because public facilities often lack abortion services.
 - 27% are performed by the woman herself at home.
- According to the Lancet Study, abortions outside of health facilities are performed by untrained people under unhygienic conditions using damaging methods, which causes a rise in maternal mortality rates in India.
- The Ministry of Health and Family Welfare's 2019-20 report on Rural Health Statistics indicates that there is a 70% shortage of obstetrician-gynecologists in rural India.
- In India, besides patriarchal mindsets and social stigma, unmarried and single women face greater hurdles in exercising a right over their bodies, thus leading to higher risks and complications.

Medical Termination of Pregnancy (MTP) Act, 1971

- The Act allows for medical termination of pregnancy in two situations
 - For up to 12 weeks after conception, only a single doctor's opinion is required.
 - For between 12-20 weeks, the opinion of two doctors is required to determine
 - Physical-Mental Risk to the life of pregnant women.
 - Physical-Mental abnormalities to the unborn child including the risk of serious handicapped
 - Only after that termination of pregnancy is permitted.

- Section 5A of the Act protects the privacy of a woman undergoing an abortion. Details cannot be divulged unless to a person authorized by the law. If the doctor reveals such information in breach of the woman's privacy then it would attract a jail term of up to one year or a fine, or both.
- MTP Rules of 2003 prohibit unmarried women who are between 20 weeks to 24 weeks pregnant to abort with the help of registered medical practitioners.
- In 2021, Parliament amended the MTP act, which made several changes such as:
 - Single doctor opinion is now extended for 20 weeks. Two doctor opinions for pregnancies between 20 and 24 weeks.
 - It also defined seven categories of women who are eligible for seeking medical termination under Section 3B of the Act these are-
 - Mentally ill-including mental retardation, Survivors of sexual assault-rape-incest, Physical disabilities-mentioned under the Rights of Persons with Disabilities Act (2016), Children, if born, would suffer from serious disabilities whether physical or mental, change of marital status during the ongoing pregnancy (widowhood and divorce), Minors and Women with pregnancy in humanitarian settings or disasters or emergencies may be declared by the Government.

Right To Abortion Of The Mother Vs Right To Life Of The Unborn

Religious, moral, and cultural sensibilities continue to influence abortion laws throughout the world. The right to life, the right to liberty, and the right to security of person are major issues of human rights that are sometimes used as justification for the existence or the absence of laws controlling abortion. Many countries in which abortion is legal require that certain criteria be met in order for an abortion to be obtained, often, but not always, using a trimester-based system to regulate the window in which abortion is still legal to perform.

Analysing Supreme Court Judgement

- ✓ SC opined that restricting unmarried women from accessing pregnancy terminations is violative of several fundamental rights such as:
 - Article 14: Equality before law and equal protection. A woman can suffer the same change in material circumstances as a married woman. Therefore, she should have access to the same right.
 - Article 21: Rights of reproductive autonomy, dignity, and privacy under Article 21
- ✓ SC also asserted that doing artificial distinctions between married and unmarried women is not constitutionally sustainable. The benefits of the law must extend equally to single and married women
- ✓ SC also extended the ambit of Reproductive rights and asserted that it is not restricted to having or not having children. It includes the right to access education and information about contraception and sexual health, the right to choose safe and legal abortion, and the right to reproductive health care.

Supreme Court on Marital Rape

- ❖ Justice Verma Committee had recommended that the law should specify that a marital relationship cannot be a defence against sexual violation. A rapist remains a rapist regardless of his relationship with the victim.
- ❖ Human rights experts point out that if a person is guaranteed equality, autonomy and dignity under Articles 14 and 21, then marital rape must be termed a criminal offence.
- ❖ SC asserted that the meaning of the words "sexual assault" or "rape" in Rule 3B(a) includes a husband's act of sexual assault or rape committed on his wife.
- ❖ The meaning of rape must therefore be understood as including marital rape, solely for the purposes of the MTP Act and any rules and regulations framed there under. Any other interpretation would have the effect of compelling a woman to give birth to and raise a child with a partner who inflicts mental and physical harm upon her.

Other Important Court Observations

- In the case of *D. Rajeswari vs State Of Tamil Nadu And Others* court allowed the termination of pregnancy as it was caused by rape.
- In the case of *Justice K.S. Puttaswamy v. Union of India* and others, SC held that the decision by a pregnant person on whether to continue a pregnancy or not is part of such a person's right to privacy.

Arguments in Favour of Abortion

- Each Women has Bodily Sovereignty and the sole right to make decisions about what happens to her body - no one should force her either to carry or terminate a pregnancy against her will.
- Most abortions are carried out on the grounds of safeguarding the woman's mental health.
- Other are situations where abortions is done to safeguard the life of a fetus, as it would involve risk if pregnancy is carried, it might damage the fetus resulting in danger to the life of the mother.
- If abortion is banned, or just more restricted, we would return to the days of 'back-street abortions'. In the past this has been accompanied by wild claims of the risk to women's health from these procedures. The women resort to some unhygienic measures to abort the fetus.
- Act of performing an abortion to save the mother's life when occurs, however, the rationale is not that the fetus is seen to have less value than the mother, but that if no action is taken both will die. Aborting the fetus at least saves the mother's life.
- If suppose abortion is banned, a woman does not want to carry her pregnancy, she would carry it and then abandon the new born child. This would be more dangerous to the life of the baby. Thus, it is better to terminate the pregnancy at an earlier stage.

Arguments Against the Abortion

- The conflict is whether one person's desire for autonomy can extend to ending another's existence.
- The killing of innocent is a crime and the fetus is also an innocent life.
- Many women suffer significant emotional trauma after having an abortion.
- There is also some evidence that having an abortion may increase a woman's risk of breast cancer in later life. Some other complications include damage and/or infection to the uterus and the Fallopian tubes making a woman infertile. Menstrual disturbances can also occur.
- Aborting fetuses because they may be disabled sends an implicit message of rejection to people with disabilities.
- A fetus is a human being, entitled to protection, from the moment of conception and therefore has a right to life that must be respected. Killing it would tantamount to homicide.

Issues with Abortion in India

There are several issues associated with Abortion in India these are:

- ✚ Lack of Legal awareness about abortion and also lack access to places from where such information can be accessed.
- ✚ The MTP Act does not recognize abortion as a choice, they need the approval of medical professionals even in the first few weeks of the pregnancy.
- ✚ Unmarried and transgender people continue to face stigma and can be turned away from health facilities, forcing them to resort to unsafe care.
- ✚ Mandatory reporting requirements under the Protection of Children from Sexual Offences Bill (POCSO), 2011 law against child sexual offences, impact privacy and hinder access of adolescents to safe abortion services.
- ✚ Many are still coerced into agreeing to a permanent or long-term contraceptive method as a prerequisite for getting abortion services.
- ✚ Healthcare providers may impose their morality by insisting on 'husbands' or 'parental' consent for abortion. Even women seeking abortion care in health facilities are often mistreated and not provided medications for pain relief
- ✚ Despite laws prohibiting sex determination, the illegal practice persists. The mushrooming of unregulated ultrasound clinics in India continues to facilitate the illegal practice of sex determination, resulting in unsafe abortions and female foeticide.

PEPPER IT WITH

POSCO, Justice Verma Committee (2013), National Family Health Survey, Roe vs Wade

Conclusion

There is an urgent need in our country to shift the discourse on abortions from just being a family planning and maternal health issue to one of sexual health and reproductive rights issues. The situation in India shows that one law alone is insufficient and India must raise the bar on reproductive justice. India must improve its health systems to ensure good quality and respectful abortion care. Reproductive injustice anywhere is a threat to the lives of people everywhere.

Issues with the Right to Information (RTI)

NEWS EXCERPT

According to a report by Satark Nagrik Sangathan, the backlog of appeals or complaints is steadily increasing in commissions every year.

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Pre-Connect

- RTI was enacted in 2005 to empower citizens and promotes transparency and accountability in governance. It makes democracy in India more people-oriented.
- RTI provides rules and procedures for access to information from a public authority. Those agencies are required to reply expeditiously or within 30 days.

About Recent Amendments

- RTI (Amendment) Act, 2019 was criticized on grounds of diluting the law and giving more powers to the central government.
- The amended act provided that the Chief Information Commissioner and an Information Commissioner of Centre and States shall hold office for such term as prescribed by the Central Government. Before this, their term was fixed for 5 years.
- The same act provided that the salary, allowances, and other service conditions of the Chief Information Commissioner and an Information Commissioner (of Centre as well as States) shall be such as prescribed by the Central Government.
- Before this amendment, the salary, allowances, and other service conditions of the Chief Information Commissioner were similar to those of the Chief Election Commissioner and that of an Information Commissioner were similar to those of an Election Commissioner (State Election Commissioners in the case of States).

Grounds for Rejection under RTI

- ✓ Section 8(1) deals with the exemption from disclosure of information, these grounds include:
 - Information, disclosure of which would prejudicially affect the sovereignty and integrity of India, the security, strategic, scientific, or economic interests of the State, relation with foreign State or lead to incitement of an offense.
 - Information that has been expressly forbidden to be published by any court of law or tribunal or the disclosure of which may constitute contempt of court
 - Information, the disclosure of which would cause a breach of privilege of Parliament or the State Legislature.
 - Information including commercial confidence, trade secrets, or intellectual property, the disclosure of which would harm the competitive position of a third party, unless the competent authority is satisfied that larger public interest warrants the disclosure of such information.
 - Information that relates to personal information the disclosure of which has no relationship to any public activity or interest.
 - Information received in confidence from foreign Government
- ✓ Section 9: Information where such a request for providing access would involve an infringement of copyright subsisting in a person other than the State.
- ✓ Section 24: It exempts information related to the intelligence and security organizations specified in the Second Schedule of the act, being organizations established by the Central Government or any information furnished by such organizations to that Government:

Key Findings of the report

- Around 3.15 lakh complaints or appeals are pending with 26 information commissions across India.
- The highest number of pending cases was in Maharashtra followed by Uttar Pradesh, Karnataka, etc.

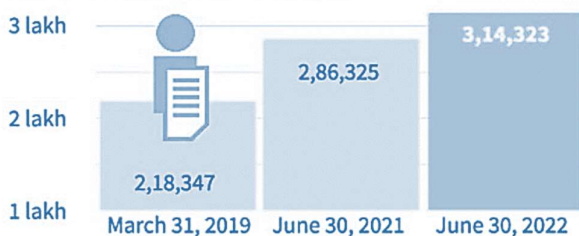
- 2 out of 29 information commissions across the country are completely defunct.
- 4 of them are headless at the moment and only 5% of the positions are occupied by women.
- Jharkhand and Tripura have been completely defuncted for around 29 months and 15 months respectively.
- Manipur, Telangana, West Bengal, and Andhra Pradesh are without chiefs.
- The commissions did not impose penalties in most of the cases (95%) of the cases where penalties were potentially imposable.
- Only 11 information commissions out of 29 provide e-filing facilities, but only five are functional.

Issues and Challenges with the RTI

- ✚ Poor record-keeping practices within the bureaucracy result in missing files.
- ✚ Lack of infrastructure and staff for running Information Commissions.
- ✚ Dilution of supplementary laws such as the one for whistle-blower protection.
- ✚ Increasing frivolous RTI applications. (Public authorities have also complained about some applicants using RTI for blackmail).
- ✚ Lack of clarity on what public interest is and right to privacy.
- ✚ Lack of political will and poor infrastructure
- ✚ Rejection of information requests made by active citizens on important matters of public importance
- ✚ Covert means of attacks and threats against RTI activists and applicants to suppress their voices

Rising backlogs

Data gathered by the Satark Nagrik Sangathan show that appeals and complaints pending with information commissions have steadily increased over the years



PEPPER IT WITH

Central Information Commission,
Role of Public Information Officer,
Central Vigilance Commission

Conclusion

The RTI has unquestionably proved to be one of the significant milestones and a major step towards ensuring the participatory and transparent development process in the country. The proper functioning of information commissions is crucial for people to realize their right to information. Government should introduce a digital RTI portal deliver more efficient and citizen-friendly services which are not possible through conventional mode.

Capital Punishment in India

NEWS EXCERPT

Supreme Court of India is examining the sentencing methodology of Capital punishment in India. The focus will be on mitigating circumstances which lead to capital punishment and giving a meaningful opportunity to those found guilty of a capital offense so that they can better plead for a life term. It has referred the matter to a five-judge constitutional bench.

Pre-Connect

About Capital Punishment

- Capital punishment is the execution of an offender sentenced to death after conviction by a court of law for a criminal offense. It is different from the extrajudicial executions carried out without due process of law.
- The history of human civilization reveals that there was no time in which capital punishment has been discarded as a mode of punishment. Capital punishment for murder, treason, arson, and rape was widely employed in ancient Greece under the laws of Draco.

Capital Punishment in India

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- In India, capital punishment provisions were introduced by the British under the Indian Penal Code (IPC) of 1861. After the independence, India retained few of the provisions of the IPC which prescribed capital punishment.
- The idea of abolishing the death penalty was expressed by several members of the Constituent Assembly but no such provision was incorporated into the Constitution.
- To abolish the death penalty, private member bills were introduced in both Lok Sabha and Rajya Sabha, but none of them were adopted.
- Under the Indian Penal Code, several offenses can be sentenced to a punishment of death these includes:
 - Murder (Section 302), Dacoity with Murder (Section 396), Criminal Conspiracy (Section 120B), Waging war against the Government of India or attempting to do so (Section 121) and Abatement of mutiny (Section 132)
- Section 354(3) of the CrPC made it compulsory for the court to state reasons in writing for awarding the maximum penalty. Now the situation is reversed, a life sentence is the rule and the death penalty is an exception in capital offenses.
- Capital punishment delivered by the session court requires confirmation from the High Court. Without this, no execution can be implemented.
- National Law University Delhi's Project 39A found that there is no judicial uniformity or consistency when it comes to awarding the death sentence.
- India opposed a UN resolution calling for a moratorium on the death penalty because it goes against the Indian statutory legislation as well as against each country's sovereign right to establish its legal system.

Offenders excluded from Capital Punishment

- A minor who is under the age of 18 at the time of committing a crime is not executed.
- Clemency must be granted to a pregnant woman sentenced to death.
- A person who was mentally ill or is not able to understand the nature of the act or the act is wrong, then that person can be held liable under the law and can be punished with the death penalty.

Arguments in favour of the Capital Punishment

- It is retributive in nature and provide justice to the victims, their families, and/or society at large.
- It acts as a moral response to the crime. Sometimes it becomes necessary.
- In India, Article 21 provides right to life and no person is deprived of his life. Except it is done by following procedure established by law. So if, there is a procedure, which is fair and valid, then the state by framing a law can deprive a person of his life.
- Some crimes and criminals require deterrence and the threat of being executed in the future will be sufficient to cause a significant number of people to refrain from committing a heinous crime they may otherwise commit.
- It ensures safety and welfare of the citizens. Constitution of India provides for 'Social justice, so capital punishment is often defended on the ground that state has the moral obligation to safeguard its citizens' welfare and safety.

Arguments against the Capital Punishment

- It defeats the purpose of reforming the prisoners. It promotes hate of criminal then hate of crime.
- Retribution is immoral, and it is just a sanitized form of vengeance. Further, the data could not conclusively prove that the death penalty does reduce the crime rate, especially rape.
- Death has been prescribed in rape cases since 2013 (Sec. 376A of IPC), still, rapes continue to happen and in fact, the brutality of rapes has increased manifold. This makes death penalty as an ineffective deterrent to crime.
- It reciprocates the existing cultural violence in society and does not offer a solution.
- It only accounts for the 'individual failure' of the convict and turns a blind eye on the 'societal failures'. Society is let free of its responsibilities.
- According to the national figures, 74.1% of the prisoners sentenced to death in India are economically vulnerable according to their occupation and landholding and most death row prisoners belong to the lower strata of society.
- Mistakes or flaws in the justice system can lead to innocent people being killed.

Court Observations on Capital Punishment

- In the *Jagmohan Singh vs State of UP (1973)* case SC held that Article 21 permits deprivation of life if it's done according to the procedure established by law.
- In the *Bachan Singh vs State of Punjab (1979)* case SC held that capital punishment should only be given in the rarest of rare cases.
- In the *Machhi Singh vs State of Punjab (1983)* case SC provided two questions that must be answered before handling capital punishment as a sentence. These include, firstly there is no scope for awarding any other sentence, and Secondly, even when weightage is accorded to the mitigating circumstances the circumstances still warrant the death penalty.
- In the *Ravji vs State of Rajasthan (1995)* case SC opined that it is the nature of the crime and not the criminal which should be the deciding factor for any punishment.
- In the *Mofil Khan vs State of Jharkhand (2021)* case, SC held that the state had to establish that there is no possibility of reformation and rehabilitation of the accused.

Recent SC observation

- SC has taken a suo motu cognizance of capital punishment in India.
- SC will consider laying down new guidelines for determining mitigating circumstances in death penalty cases.
- SC has asserted that the accused must have a meaningful, real and effective hearing, along with the chance to introduce evidence relevant to the sentence question.
- SC also asked courts to weigh in on the convict's social background, age, and educational levels before delivering judgment.

Rarest of the Rare Case

The principles as to what would constitute the “**rarest of rare**” has been laid down by the top Court in the landmark judgment in *Bachan Singh vs State of Punjab case*.

Two prime questions, SC held, may be asked and answered. First, is there something uncommon about the crime which renders the sentence of imprisonment for life inadequate and calls for a death sentence? Second, are there circumstances of the crime such that there is no alternative but to impose the death sentence even after according maximum weightage to the mitigating circumstances which speak in favour of the offenders?

Law Commission Report

The Law Commission of India in its 262nd Report (August 2015) recommended that death penalty be abolished for all crimes other than terrorism related offences and waging war.

Way-Forward

- ✓ Psycho-Social analysis of the accused can help the court in concluding capital punishment. The amendment in the Criminal Procedure (Identification) Act, 2022 is a step in the right direction.
- ✓ There is a need to strengthen the doctrine of the rarest of rare, as no person is indubitably ‘irreformable’.
- ✓ There is a need to expedite investigations at the hands of a well-trained and equipped police system ably supported by fast-track trials to reinforce the faith of the public in our legal system.
- ✓ There is a need to bring broader social reforms, sustained governance efforts, and strengthen investigative and reporting mechanisms.

PEPPER IT WITH

Clemency Powers of President and Governor, Criminal Identification Act 2020, International Covenant on Civil and Political Rights

Centre-State power struggle over India's waters

NEWS EXCERPT

In recent times several issues like electricity, water resources, law and order, judiciary, and finance have emerged as new fault lines between the Centre and States.

Pre-Connect

Water in the Constitution of India

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- The right to clean drinking water has been read into the right to life under Article 21 of the constitution.
- Article 246 grants the Centre the exclusive power to make laws on the following subjects under List I of the Seventh Schedule:
 - Decide on shipping and navigation on inland and tidal (sea) waterways and national waterways for vessels
 - Regulate training and education of mercantile marines by states and other agencies
 - Decide on goods, and passengers by sea or national waterways via mechanically propelled vessels
 - Regulate and develop interstate rivers and river valleys
 - Decide on fishing and fisheries beyond territorial waters
- Similarly, List II of the seventh schedule empowers states to
 - Develop roads, bridges, ferries, municipal tramways, ropeways, and other means of communication on inland waterways in the State
 - Decide on water supply, irrigation and canals, drainage and embankments, water storage, and water power
 - Taxes on goods and passengers carried by road or on inland waterways
 - Decide on shipping and navigation on inland waterways via mechanically propelled vessels and carriage of passengers and goods on such waters
- The overlap in the powers of the Centre and State in several areas is also an area of conflict between States.

Inter-State Water Dispute

Inter-State Water disputes are governed by the Inter-State River Water Dispute Act, 1956.

The mechanism under the Act

- State Government makes a request to the Central government for any water dispute.
- If the Central government is of opinion that the dispute cannot be resolved through negotiations then it constitutes a Water Dispute Tribunal for the adjudication of the Water Dispute.
- In 2002, the act was amended which provided major time frames along the lines of recommendations made by the Sarkaria commission. The constitution of the tribunal had to be done in a one-year time frame and Tribunal had to give its verdict in 3 years.

Major Water Disputes

✓ Cauvery dispute (Karnataka-Tamil Nadu)

- The dispute dates back to 1924.
- Under British rule, an agreement between the Madras Presidency and Mysore state, Tamil Nadu and Puducherry were awarded 75% of surplus water, while Karnataka would get 23% and the remaining would be used by Kerala.
- Later, with the increase in irrigation needs of Tamil Nadu, the Cauvery Water Disputes Tribunal allocated 419 TMC (thousand million cubic feet) from the river basin. It further allotted 270 TMC to Karnataka, 30 TMC to Kerala, and 7 TMC to Puducherry.

National Mission for Clean Ganga (NMCG)

- ❖ The river Ganga originating from the Himalayan mountain range, flows through Uttarakhand, Uttar Pradesh, Bihar, West Bengal.
- ❖ NMCG was formed Under the Environment (Protection) Amendment Act (EPA) ,2016.
- ❖ The NMCG was given a two-tier management structure Governing Council and Executive Committee (at National, State and district levels).
- ❖ Namami Gange is the project under NMCG (managed by the Jal Shakti Ministry) that was started in 2014.
- ❖ Aimed at rejuvenating Ganga, it comprises of developing sewerage treatment infrastructure, river-front development, river-surface cleaning, afforestation, industrial effluent monitoring, enhancing the river's bio-diversity, developing Ganga Gram (villages on Ganga banks) and raise public awareness.
- ❖ Courts are not happy with NMCG, Allahabad High Courtopined that NMCG had become a machine to disperse money and no one was serious about cleaning the river, Ganga.

- Karnataka refused to release 134 TMC to Tamil Nadu from June to September, and Tamil Nadu moved to the Supreme Court seeking relief.
- In 2018, the apex court reduced Tamil Nadu's allocation to 177.25 TMC from 192 TMC, hiking Karnataka's allocation by 14.75 TMC.
- ✓ **Satluj-Yamuna Link Canal (Punjab-Haryana)**
 - After the partition of India, the rivers – Ravi and Beas were divided between Rajasthan, Undivided Punjab, and Jammu & Kashmir.
 - As the state of Punjab gets reorganized in 1966, the majority of waters were divided between Punjab, Haryana, and Rajasthan
 - To implement it the 214 km-long Sutlej-Yamuna Link (SYL) Canal was flagged in 1982 with 122 km to be constructed in Punjab and 92 km in Haryana.
 - A Tribunal was set up which awarded 5 MAF (million-acre feet) to Punjab and 3.83 MAF to Haryana of the SYL canal waters.
 - Punjab is heavily opposed to SYL as 79% of its groundwater has been depleted due to its excessive farming of wheat and paddy. While Haryana has sought its rightful share of the rivers and completion of the SYL project.
 - Court has urged both parties to mediate to solve the quagmire.
- ✓ **Polavaram project dispute (Andhra Pradesh-Telangana)**
 - Constructed in undivided Andhra Pradesh to direct 80 TMC of Godavari River waters to the Krishna River to share water with Karnataka and Maharashtra.
 - The state of Telangana is opposing the project as it fears backwaters flooding the Khammam district. While Andhra Pradesh has claimed the project is essential to irrigate its Godavari districts.
 - Increasing the height of the Polavaram dam is also opposed by the Telangana as it can cause the inundation of the temple town of Bhadrachalam and several villages along the course of the Godavari River.

Jal Jeevan Mission (JJM)

- ❖ It aims to provide a Functional Household Tap Connection (FHTC) to every rural household by 2024, in collaboration with States and Union Territories (UTs).
- ❖ The scheme also aims to develop bulk water transfer facilities, treatment plants and a robust in-village water distribution network.
- ❖ Since the launch of the scheme in 2019, 7,00,05,724 (44%) households have received new tap connections.
- ❖ Goa, Telangana, Haryana and UTs like Andaman & Nicobar Islands, Puducherry, Dadra & Nagar Haveli and Daman & Diu have achieved 100% tap water connections.
- ❖ Some large states like Jharkhand and Uttar Pradesh have only 23.04% and 17.54% households which have tap water connections.

Active River Water Dispute Tribunals in India

- Krishna Water Disputes Tribunal II (2004) – Karnataka, Telangana, Andhra Pradesh, Maharashtra
- Mahanadi Water Disputes Tribunal (2018) – Odisha & Chattisgarh
- Mahadayi Water Disputes Tribunal (2010) – Goa, Karnataka, Maharashtra
- Ravi & Beas Water Tribunal (1986) – Punjab, Haryana, Rajasthan
- Vansadhara Water Disputes Tribunal (2010) – Andhra Pradesh & Odisha.

Concerns with Interstate Water Dispute Tribunals

- ✚ It Suffers from extreme delays for example The Cauvery Water Disputes Tribunal, constituted in 1990, gave its final award in 2007.
- ✚ Proceedings of tribunals suffer from opacity and lack the capability in ensuring compliance.
- ✚ Despite the award of such tribunals being final and beyond the jurisdiction of Courts, States do approach courts under Article 136 (Special Leave Petition) under Article 32 linking the issue with the violation of Article 21 (Right to Life).
- ✚ Lack of diversity in the composition as only judiciary persons can become part of any such Tribunals.
- ✚ The lack of appropriate data makes it difficult to even set up a baseline for adjudication.

- ✚ Politicization is another issue that leads to increasing defiance by states, extended litigations, and subversion of resolution mechanisms.

Key Highlights of The Inter-State River Water Disputes (Amendment) Bill, 2017

- It envisages a standalone tribunal that would be permanent, so there would be no need to create a tribunal on a case-by-case basis.
- It envisages a Dispute Resolution Committee (DRC) by the Central Government for resolving amicably. DRC would resolve the inter-State water disputes within a maximum period of one year and six months. If DRC fails, then matters will be referred to the Tribunal for its adjudication.
- It removes the publication of the final decision of the tribunal in the official gazette.
- It allows for a transparent data collection system at the national level for each river basin and a single agency to maintain a data bank and information system.
- It decides the bench of the tribunal will be final and binding on the parties involved in the dispute.

PEPPER IT WITH

Sarkaria Commission,
Article 21, Namami Gange,
National Waterways

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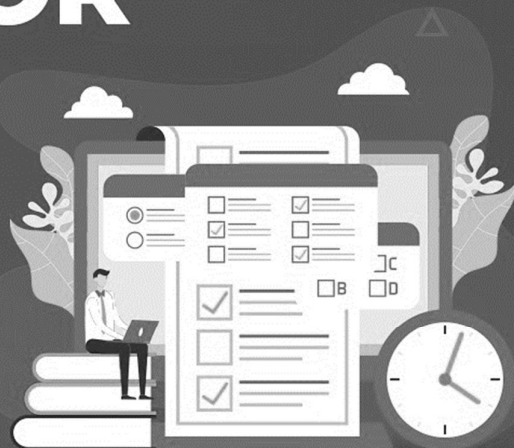
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SOCIAL ISSUES

World Bank's Report on Poverty

NEWS EXCERPT

According to a new World Bank report, titled “**Poverty and Shared Prosperity 2022: Correcting Course**”, the Covid pandemic has been the biggest setback to global poverty alleviation in decades.

Pre-connect

- World Bank has concluded that nearly 80% of people who slipped into poverty in 2020 due to the COVID-19 pandemic hailed from India.
- Out of 7 crore people globally who became poor that year due to economic losses caused by the pandemic, Indians accounted for 5.6 crore.

What does the report say?

About Global Poverty:

- The report states that global poverty reduction has been slowing down since 2015 but the Covid pandemic and the war in Ukraine have completely reversed the outcomes.
- Globally, extreme poverty levels went up to 9.3% in 2020 compared to 8.4% in 2019, halting the progress made by poverty alleviation programmes worldwide for the first time in decades.
- About 7 crore people were additionally pushed into extreme poverty by the end of 2020, increasing the global total of poor to over and above 70 crore.

About income inequalities

- There is a rise in inequalities as the poorest people bore the steepest costs of the pandemic: income losses averaged 4 per cent for the poorest 40 per cent, double the losses of the wealthiest 20 per cent of the income distribution. As a result, Global inequality rose for the first time in decades.

Government's initiatives to address poverty in India

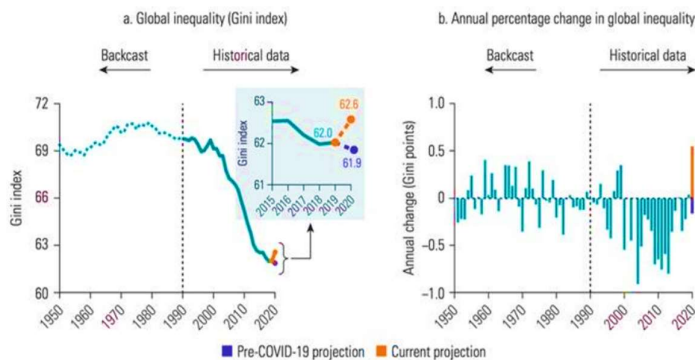
- The strategy for poverty alleviation is essentially two-fold. Firstly, an effort is underway to provide greater opportunities for the poor to participate in the growth process by focusing on specific sectors, which offer such opportunities.
- Secondly, poverty alleviation and social sector programmes have been strengthened and restructured with special programmes for the weaker sections of society.

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History of Poverty estimation in India:

- In 1962, the **Planning Commission** constituted a working group to estimate poverty nationally, and it formulated separate poverty lines for rural and urban areas – of Rs 20 and Rs 25 per capita per year respectively.
- VM Dandekar and N Rath** made the first systematic assessment of poverty in India in 1971, based on National Sample Survey (NSS) data from 1960-61.
- Alagh Committee (1979)**: constructed a poverty line for rural and urban areas on the basis of nutritional requirements i.e. 2400 calories in a day for rural and 2100 calories for urban areas.
- Lakdawala Committee (1993)**: suggested that consumption expenditure should be calculated based on calorie consumption as earlier. The basket of goods and services used to calculate CPI-IW and CPI-AL reflect the consumption patterns of the poor.
- Tendulkar Committee (2009)**: recommended using Mixed Reference Period (MRP) based estimates, as opposed to Uniform Reference Period (URP) based estimates that were used in earlier methods for estimating poverty. It concluded that the all India poverty line was Rs 446.68 per capita per month in rural areas and Rs 578.80 per capita per month in urban areas in 2004-05.

Recent global inequality trends were reversed in 2020



✓ Some of the poverty alleviation, employment generation and basic services programmes

- Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS)
- Deendayal Antyodaya Yojana – National Rural Livelihoods Mission (DAY-NRLM)
- Deen Dayal Upadhyay – Gramin Kaushalya Yojana (DDU-GKY)
- Pradhan Mantri Awaas Yojana – Gramin (PMAY-G)
- Pradhan Mantri Gram Sadak Yojana (PMGSY)
- Shyama Prasad Mukherjee National RuRBAN Mission (SPMRM)
- National Social Assistance Programme (NSAP)
- Programmes of Department of Land Resources, viz., Watershed Development Component of Pradhan Mantri Krishi Sinchai Yojana (WDC-PMKSY)
- Aatmanirbhar Bharat Rozgar Yojna (ABRY) Scheme
- Pradhan Mantri Kaushal Vikas Yojana (PMKVY)
- Besides these initiatives, flagship programmes of the Government such as Make in India, Digital India, Swachh Bharat Mission, Smart City Mission, Atal Mission for Rejuvenation and Urban Transformation, Housing for All, Infrastructure development and Industrial corridors have the potential to generate productive employment opportunities.

Table 1: Unprecedented fall in poverty between 2004 and 2011 has been followed by an equally unprecedented rise between 2012 and 2020

Year	Headcount Poverty Ratio (As a % of total population)	Absolute Number of Poor (in millions)
1973	54.9	321.3
1983	44.5	322.9
1993	36	320.4
2004	27.5	301.7
2004*	37.2	407.2
2011*	21.9	269.8
2019#	20.8	346.3

Analysis

- There are several government safety net programs, and large-scale government livelihood programs that are targeted at the poor, however, many of these programs do not reach the ultra-poor and the most vulnerable.
- India contributes significantly to global poverty levels due to the sheer size of its population, the World Bank flagged that the lack of official data on poverty from India had become a hindrance in drawing up global estimates. Since 2011, the Indian government has stopped publishing data on poverty.

Conclusion:

National policy reforms can help to restart progress in reducing poverty but stepping up global cooperation will also be necessary. In fiscal policy, governments should act promptly on three fronts:

- Choose targeted cash transfers instead of broad subsidies.
- Prioritize public spending for long-term growth.
- Mobilize tax revenues without harming the poor.

PEPPER IT WITH

Pradhan Mantri Garib Kalyan Yojana, Lorenz curve, S-shaped curve. Situational poverty, Generational poverty

PM-POSHAN Scheme (Mid-Day Meal Scheme)

NEWS EXCERPT

After a gap of over two years, the cooking cost per child under the mid-day meal scheme is set to rise by 9.6 per cent, with the Ministry of Finance approving the hike proposed by a committee which has recommended inter-ministerial deliberations on linking the number of LPG cylinders per school to enrolment.

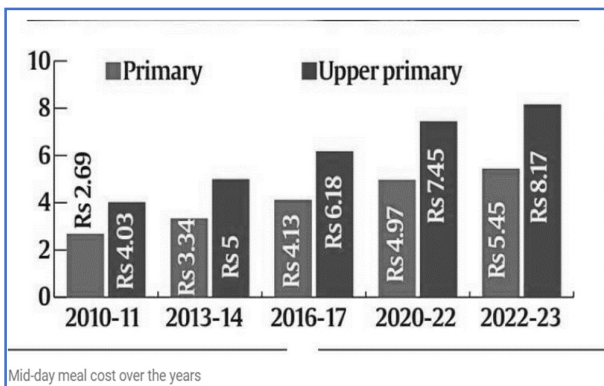
Pre-Connect

- The last hike was seen in early 2020 as the cooking cost per child has been Rs 4.97 per child per day in primary classes (class I-V), and Rs 7.45 (class VI-VIII) in upper primary classes.
- After the hikes come into effect, the allocation at the primary level and upper primary levels will be Rs 5.45 and Rs 8.17, respectively.
- The prices of ingredients such as pulses, salt, vegetables, condiments, and fuel needed to prepare cooked meals are included in cooking cost.

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About Pradhan Mantri Poshan Shakti Nirman (PM POSHAN):

- Under the scheme, one hot cooked meal is provided in the Government and Government – aided Schools from 2021-22 to 2025-26.
- The Scheme is being implemented by the Ministry of Education. Under the Scheme, there is provision of hot cooked meal to children of pre-schools or Bal Vatika (before class I) in primary schools also in addition to the 11.80 crore children of classes I to VIII studying in 11.20 lakh schools.
- The main objectives of the PM POSHAN Scheme (earlier known as Mid-Day Meal Scheme) are to address two of the pressing problems for majority of children in India, viz. hunger and education by improving the nutritional status of eligible children in Government and Government-aided schools as well as encouraging poor children, belonging to disadvantaged sections, to attend school more regularly and help them concentrate on classroom activities.



Malnutrition in India: A Snapshot

- ✓ As per Food and Agricultural Organisation (FAO), the Sub-Saharan countries of Africa have the highest prevalence of hunger but India has the highest number (one quarter) of undernourished (hungry) people in the world which is a matter of concern.
- ✓ The NFHS-5 (2019-21) report has shown that the percentage of obese children and adults, rose in India in the last five years. Moreover, as per the survey, several of India's nutritional indicators have shown minor improvement, since NFHS-4 was conducted in 2015-16. The report shows:
 - Nearly three per cent decline in child stunting – from 38.4 (NFHS-4) to 35.5 (NFHS-5).
 - While child wasting has seen a 1.7 per cent decline, the percentage of children under five who are severely wasted has increased by 0.2 per cent.
 - The percentage of underweight children has also reported a 3.7 per cent drop.
 - The percentage of overweight children under the age of 5, have increased from 2.1 per cent (NFHS-4) to 3.4 per cent which is a 1.3 per cent rise.

What is mid-day meal scheme?

- ❖ The mid-day meal scheme was launched by the central government in 1995 to provide free cooked meals to children in primary schools (classes 1-5; age 6–10 years).
- ❖ Initially, states did not participate in the scheme, but between 1999 and 2004, the programme's coverage increased manifold, largely due to an order from the Supreme Court of India directing state governments to provide cooked mid-day meals in primary schools.

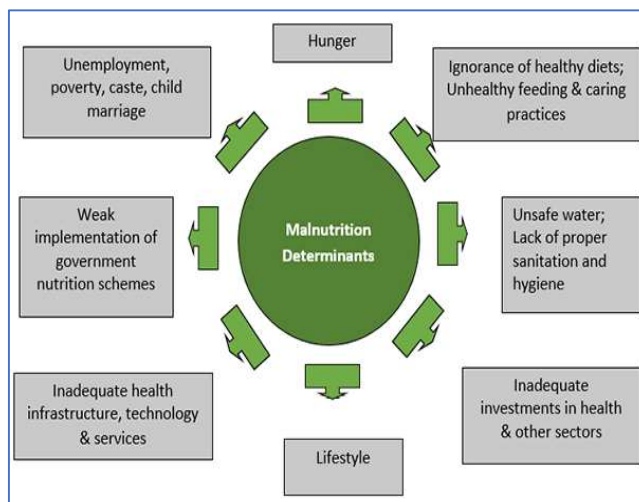
Steps taken by Government to address the issue of hunger and malnutrition:

- Government has accorded high priority to the issue of malnutrition and is implementing several schemes like **Anganwadi Services, Scheme for Adolescent Girls and Pradhan Mantri Matru Vandana Yojana (PMMVY) under the Umbrella Integrated Child Development Services (ICDS) Scheme** as direct targeted interventions to address the problem of malnutrition in the country. Children with Severe Acute Malnutrition are treated at the Nutrition Rehabilitation Centres established by the Ministry of Health and Family Welfare.
- **POSHAN Abhiyaan** launched on 8th March 2018, aims to reduce malnutrition in the country by adopting a synergised and result oriented approach.
- **Mission Poshan 2.0** is an integrated nutrition support programme which has been announced in budget 2021-2022 for all States/UTs. It seeks to strengthen nutritional content, delivery, outreach and outcomes with focus on developing practices that nurture health, wellness and immunity to disease and malnutrition.

- To improve nutritional content in food products, steps are being taken towards universal food fortification. A proposed policy would provide for adding essential vitamins and minerals (iron, folic acid, vitamin, iodine) to food items (rice, wheat flour, salt, edible oil, milk) should be sold in markets.

Analytica

- Nutrition interventions and tracking progress cannot be done without reliable, updated sufficient information, and also operationalisation of national nutrition surveillance system. Thus, there is a need to collect and maintain real-time data on various nutrition indicators using ICT and GIS.



- Judicial and civil society activism is working in bringing down India's malnutrition rates. For example, the Right to Food Campaign (launched in March 2014), which is an informal network of individuals and organisations, is the result of public interest litigation. Under the campaign, organised efforts are made to persuade State governments to attend to the most pressing demands of society, including proper nutrition.

Conclusion

An overview of the malnutrition situation in India presented in this paper has shown that a sizeable proportion of the country's population are malnourished and anaemic, and for this, numerous factors are responsible. Some of these factors directly cause malnutrition among people, whereas many others affect indirectly. Significant among these are poverty; unemployment; ignorance and lack of education; unhealthy lifestyle; lack of access to nutritious food, safe water, sanitation and hygiene; non-availability of reliable and timely data, and sufficient funds; and unimpressive performance by the government in the implementation of schemes.

PEPPER IT WITH

National Food Security Act., Public Distribution System, Antyodaya Anna Yojana, Food fortification, Biofortification

Ageing citizenry in India

NEWS EXCERPT

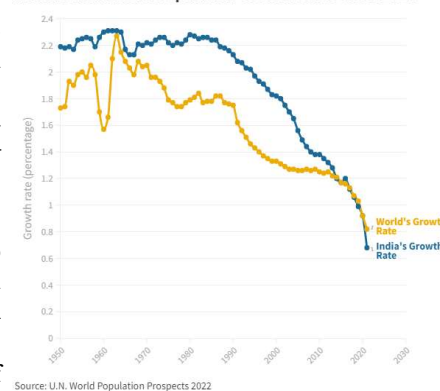
Recently, a report by the UN Department of Economic and Social Affairs (UNDESA), "World Population Prospects 2022", has projected big shifts in global demographic patterns in the coming decades.

Key Highlights of the report:

- Population growing at slower pace:**
 - The world population will reach eight billion by mid-November this year, growing to around 8.5 billion in 2030 and 9.7 billion in 2050.
 - The global population is expected to reach 10.4 billion during the 2080s, where the levels are likely to stabilise until 2100.
 - The pace of growth is slowing down.
 - The population of 61 countries or areas is likely to decrease by one per cent or more between 2022 and 2050 due to sustained low levels of fertility and, in some cases, elevated rates of emigration.
 - The report estimates women to equal the number of men by 2050. At present, the world counts slightly more men (50.3 per cent) than women (49.7 per cent).

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World's and India's Population Growth Rates 1950-2021



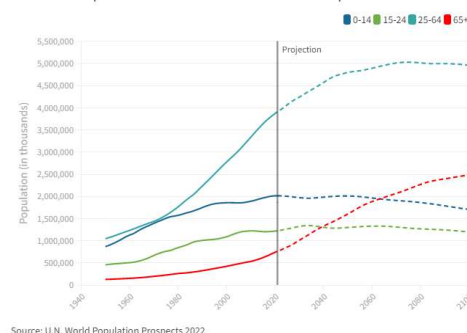
Source: U.N. World Population Prospects 2022

• Elderly population:

- The global population of people aged 65 years or above is projected to rise to 16 per cent in 2050 from the current 10 per cent.
- By 2050, the elderly population will be more than twice the number of children under the age of five and about the same as the number of children under the age of 12.
- As per estimates, one in every four persons in Europe and Northern America is expected to be aged 65 years or over by 2050.
- Women outnumber men in older ages at present, but this elderly population will decline slightly to 54.5 per cent by 2050 from 55.7 per cent in 2022.

World Population Estimates of Different Age Groups

The global population of people aged 65 years or above is projected to rise to 16 per cent in 2050 from the current 10 per cent.



Source: U.N. World Population Prospects 2022

Changes to population structure of India: Keeping an eye on the elderly

- The number of elders (those over 60 years) are 137 million at present, and expected to increase by 40% to 195 million in 2031, and 300 million by 2050 as the life expectancy in India has risen from 50 (1970-75) to 70 years (2014-18).
- The prevalence of non-communicable diseases such as diabetes, hypertension and heart disease, or disabilities related to vision, hearing or mobility is higher among the elderly.
- The change in demographic structure will increase the pressure on public health systems that are not geared to deliver universal health care along with social security measures such as old-age and disability pensions.

Issues faced by Elderly in India:

- ✓ **Changing health-care needs:** Generally, the elderly population needs more medical attention of a diverse range. As per the first ever Longitudinal Ageing Study in India (LASI), 11% of the elderly suffer from at least one form of impairment (locomotors, mental, visual and hearing). It is estimated that 58 lakh Indians die from non-communicable diseases (NCDs) in India annually, and cardiovascular disease (CVD) prevalence is estimated to be 34% amongst 60-74 year olds, rising to 37% in those above 75 years.
- ✓ **Lack of universal pension schemes:** A large section of the elderly population will have to depend upon the income generated by the young. Only one-third of the old in India receive some sort of pension from their former employers.
- ✓ **Inadequate healthcare:** A dedicated geriatric wards and nursing staff is required in India. An overwhelming proportion of the elders are from the lower socio-economic strata which are unable to afford the cost of health care and slip into ever poorer health.

Government initiatives for elderly

- ❖ **National Social Assistance Programme (NSAP):** The elderly, widows, and disabled persons belonging to Below Poverty Line (BPL) and fulfilling eligibility criteria prescribed in the NSAP guidelines, are provided financial assistance ranging from Rs.200/- to Rs.500/- p.m.
- ❖ **Indira Gandhi National Old Age Pension Scheme (IGNOAPS):** A monthly pension of Rs.200/- is given to elderly aged 60-79 years belonging to BPL category.
- ❖ **Pradhan Mantri Vaya Vandana Scheme:** offered by the Life insurance Corporation (LIC) of India that gives a guaranteed payout of pension at a specified rate for 10 years.
- ❖ **National Programme for the Health Care of Elderly (NPHCE):** addresses various health related problems of elderly people.
- ❖ **Rashtriya Vayoshri Yojana (RVY)** is a scheme for providing Physical Aids and Assisted-living Devices for Senior citizens belonging to BPL category.
- ❖ **Atal Pension Yojana (APY):** has objective of creating a universal social security system for all Indians, especially the poor, the under-privileged and the workers in the unorganized sector.

- ✓ **Social neglect:** Elderly people are neglected by their children and face emotional issues and loneliness due to neglect.

PEPPER IT WITH
Silver Economy, Pradhan Mantri Vaya Vandana Scheme, IGNOAPS, Atal Pension Yojana

Way forward:

- Considering the demographic trends, India should prioritize its entire health-care policy, with respect to elderly people.
- India needs to rapidly increase its public health-care spending, and invest heavily in the creation of well-equipped and staffed medical care facilities and home health-care and rehabilitation services.
- Widening the net of social assistance schemes from targeted to near-universal. It has already happened in several States. It requires larger pension budgets, but additional expenditure is easy to justify. India's social assistance schemes have low budgets and make a big difference to large numbers of people (about 40 million under NSAP).

Urbanization and Water Management System

NEWS- EXCERPT

Bengaluru and Lucknow cities could not prevent flooding events, which is assumed to be an outcome of global warming accompanied by incessant high rains and consequent flooding. Bengaluru received a record-breaking 180 mm of rainfall in a span of three hours in a day. Lucknow received 160 mm of rainfall over 24 hours.

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Pre-connect

- With the rapid growth of cities, water demand has exponentially increased.
- Even as aspirations cause people to migrate to urban areas, water depletion and scarcity remains a huge challenge staring at people's faces in the near future.
- Water demand is going to increase even more, with India's population in urban areas expected to double by 2050. Around 35 per cent of India's population lived in urban areas as of 2020.
- In urban areas, only 45 per cent of the demand is met using groundwater resources. Apart from this, climate change, pollution and contamination have also added to the burden on water resources.

Urban flooding: a frequent phenomenon

- **Unplanned urbanization:** Megacities in India have flouted the basic urban planning norm — the density of housing and planned growth, roads cutting across natural drains and the sheer growth of our large cities that requires massive grey infrastructure investments in drainage and sewerage.
- **Destruction of natural drainage system:** Natural drainage systems have indeed been disrupted by roads and encroachment of water ways, that urban lakes and water bodies are filled up and there is no place for water to seep in, recharge and reduce the surface flow.
- Large cities have grown into **large built-up concrete spaces** with no regard for the urban watershed.
- **No separate stormwater drainage:** Our sewerage system is combined stormwater drainage and sewerage system. In cities either there is no stormwater drainage nor connected to a city stormwater drainage system.

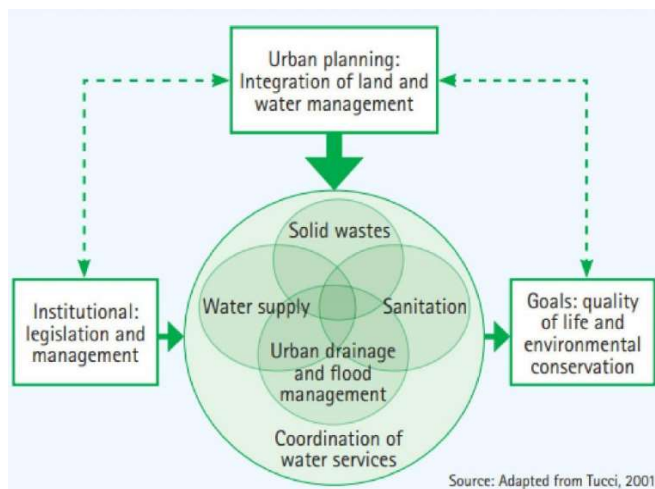
India is the second largest urban system in the world with almost 11% of the total global urban population living in Indian cities but is highly affected by disasters of heat impacts and water scarcity, followed by monsoon flooding.

Why there is a need for adopting a new holistic water management approach?

- ✓ Differences in regional water availability, pricing and affordability, the seasonal and inter-annual variation in supply, water quality and quantity, and unreliability of the resource poses great challenges.
- ✓ Aged infrastructure, supply-centric management, polluted water bodies, agricultural and industrial expansion following changes in consumption and production patterns demands new water management techniques.
- ✓ Changing climate and disproportionate distribution of the water also push for new water techniques.

'One Water': An Integrated water resources management (IWRM) approach

- 'One Water' is the recognition that all water has value, regardless of its source. Integrated urban water management system (IUWM) is a process which ensures planned economic development and land use along with water supply, used water management, sanitation and stormwater management.
- This holistic process makes coordination among water departments easier at the local level. It also helps cities adapt to climate changes and manage water supply more efficiently.
- A 'One Water' approach can be analyzed and implemented in many different forms, but all share some common unifying characteristics:
 - **The mindset that all water has value** from the water resources in our ecosystems to our drinking water, wastewater and stormwater.
 - **A multi-faceted approach** meaning that our water-related investments should provide economic, environmental, and societal returns.
 - **Utilizing watershed-scale thinking and action** that respects and responds to the natural ecosystem, geology, and hydrology of an area.
 - **Partnerships and inclusion** in recognising that real progress and achievements will only be made when all stakeholders come forward and together will take a decision.

**How IWRM is superior to the conventional water management approach?**

- ✚ In the conventional water management approach, drinking water, wastewater and stormwater are managed separately, whereas in 'One Water', All the water systems, regardless of its source, are connected intentionally and managed meticulously for water, energy and resource.
- ✚ Water is recycled and reused several times in IWRM, in contrast to a one-way route from supply to use, treatment and disposal.
- ✚ Stormwater is utilised as a valuable resource to fight against water scarcity, recharge groundwater and support natural vegetation.
- ✚ The water system includes green infrastructures and a mix of grey and green infrastructure that form a hybrid system as compared to grey infrastructure in conventional water management.
- ✚ The interconnectedness of surface water, groundwater, stormwater and wastewater is collectively recognised and managed by these separate but connected entities.
- ✚ Active collaborations with industry, agencies, policymakers, business leaders and various stakeholders is a regular practice in the 'One Water' approach, whereas collaboration is need-based in conventional water management systems.

About Green Infrastructure

Green infrastructure is the natural vegetative systems and green technologies that collectively provide society with a multitude of economic, environmental, health, and social benefits.

What is grey infrastructure?

Grey infrastructure for stormwater management refers to a network of water retention and purification infrastructure (such as pipes, ditches, swales, culverts, and retention ponds) meant to slow the flow of stormwater during rain events to prevent flooding and reduce the amount of pollutants entering waterways.

Way forward

- > Institutional practices in large cities should be transformed, but a different approach to stakeholder resource management might yield a positive result.
- > IUWM has proven to be a successful practice, but budget constraints, inadequate guidance from authorities and lack of awareness have limited the implementation of this solution. However, recent policies by the central government can help pave the way for state-wise planned implementation of IUWM.
- > The 'One Water' concept is about bringing all the diverse stakeholders together to advance common-ground solutions to combat the water and urban ecology challenges.
- > Every individual, every community, every sector and every stakeholder group have a role to play in an improved decision-making network, from implementing policies to formulating plans for future developments.

Public Capital Investment (Budget 2022-23)

- ❖ Public investment to continue to pump-prime private investment and demand in 2022-23.
- ❖ Outlay for capital expenditure stepped up sharply by 35.4% to Rs. 7.50 lakh crore in 2022-23 from Rs. 5.54 lakh crore in FY 2021-22.
- ❖ 'Effective Capital Expenditure' of Central Government estimated at Rs. 10.68 lakh crore in 2022-23, which is about 4.1% of GDP.

Conclusion

- > The Centre has started initiatives by implementing the Swachh Bharat Mission (SBM) for inclusive sanitation solutions and Jal Jeevan Mission for ensuring piped water supply.
- > The government has also allowed reuse of water based on circular economy principles. No sustainable development goals (SDGs) can be accomplished without running water; therefore, it is imperative that water is managed efficiently.
- > This will help India achieve SDGs in health, sanitation, education, livelihood and education. Adopting IUWM will also help us tackle water scarcity, address public health risks and make cities climate resilient. It is the one-stop solution to ensure good health and clean water for all.

PEPPER IT WITH

Flash Flood, Torrid Rain, Atal Bhujal Yojana, Atal Jal, Jaldoot App, Jal Jeevan Mission

Scheme for Special Assistance to States for Capital Investment**NEWS EXCERPT**

The Government of India has launched a Scheme **Special Assistance to States for Capital Investment for 2022-23**. Under this Scheme, financial assistance is provided to the States Governments in the form of 50-year interest free loan for capital investment projects.

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Pre-connect:

- On the recommendation of the fifteenth finance commission, Ministry of Finance, fixed the normal net borrowing ceiling for the state at 4% of GSDP for the financial year 2022-23.
- Out of which borrowing of 3.5% of GSDP is unconditional and borrowing ceiling of 0.5% of GSDP is allowed for certain performance criteria.

Borrowing by States

In terms of Article 293(1), **Article 293 (2) and Article 293(3)** of the Constitution of the India, the State governments can give guarantees within such limits as fixed by the legislature of the concerned State. The constitutional provision relating to raising of loans and issuing of guarantees are summarised below:

- > Subject to the provisions of this Article, the executive powers of the State extend to borrowing within the territory of Indian upon the security of the Consolidated Fund of the State within such limits, if any, as may from time to time be fixed by the Legislature of such State by law and to the giving of guarantees within such limits, if any, as may be so fixed.
- > The Government of India may subject to such conditions as may be laid down by or under any law made by Parliament, make loans to any State or, so long as any limits fixed under Article 292 are not exceeded, give guarantees in respect of loans raised by any State, and any sums required for the purpose of making such loans shall be charged on the Consolidated Fund of India.

- A State may not without the consent of the Government of India raise any loan if there is still outstanding any part of a loan which has been made to the State by the Government of India or by its predecessor Government, or in respect of which guarantee has been given by the Government of India or its predecessor Government.

PEPPER IT WITH

Finance Commission, Gross Budgetary Support, Centrally Sponsored Schemes, Central Sector Scheme, Special Category States

Conclusion:

The hike in capital expenditure will be a huge boost for the economy and for crowding in private investment to spur job creation. The virtuous cycle of investment requires public investment to crowd-in private investment. At this stage, private investments seems to require the support to rise to their potential and needs of the economy. Public investment must continue to take the lead and pump-prime the private investment and demand in 2022-23.

Global Hunger Index 2022**NEWS-EXCERPT**

As per **Global Hunger Index (GHI)**, India has slipped six places and ranked 107, out of 121 countries, in 2022.

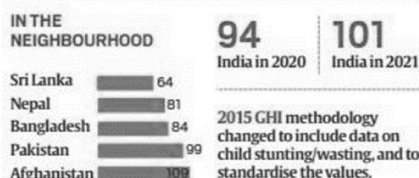
Pre-Connect

- **India has ranked 107th** out of 121 countries in the Global Hunger Index (GHI) 2022, down from the 101st position the previous year.
- With a score of 29.1, which falls in the 'serious' category of hunger, India was ranked behind its neighbours Nepal (81), Pakistan (99), Sri Lanka (64), and Bangladesh (84).
- India has recorded decreased GHI scores as in 2000, it recorded an 'alarming' score of 38.8, which reduced to 28.2 by 2014. The country has started recording higher scores since then.
- Yemen has ranked in the lowest position at 121, while the top of the list is dominated by European nations including Croatia, Estonia and Montenegro.
- Among Asian nations, China and Kuwait have ranked the highest.

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FROM ALARMING TO SERIOUS: GHI; MISIN

File
Index suffers from serious methodological issues: ministry

**What is Global Hunger Index (GHI)?**

- Global Hunger Index was Jointly published by Concern Worldwide and Welthungerhilfe, in year 2000. Since then very year report is released, with this year's report being the 15th one.
- A low score gets a country a higher ranking and implies a better performance.
- The reason behind mapping hunger is to ensure that the world **achieves "Zero Hunger by 2030"** — one of the **Sustainable Development Goals** laid out by the United Nations. It is for this reason that GHI scores are not calculated for certain high-income countries.
- GHI tracks the performance of different countries on four key parameters which are undernourishment, child wasting, child stunting and child mortality. These parameters give comprehensive measure of hunger.

Parameters used by GHI:

The GHI looks at **four main indicators**:

- ❖ **Undernourishment** (which reflects inadequate food availability): calculated by the share of the population that is undernourished (that is, whose caloric intake is insufficient);
- Child Wasting** (which reflects acute under nutrition): calculated by the share of children under the age of five who are wasted (that is, those who have low weight for their height);
- Child Stunting** (which reflects chronic under nutrition): calculated by the share of children under the age of five who are stunted (that is, those who have low height for their age);
- Child Mortality** (which reflects both inadequate nutrition and unhealthy environment): calculated by the mortality rate of children under the age of five (in part, a reflection of the fatal mix of inadequate nutrition).

India's performance

- ✓ According to the report, **child wasting** increased from 17.1% in 2000 to 20% in 2007; it dropped to 15.1% in 2014 and then increased to 19.3% in 2022.
- ✓ **Child stunting**, however, has shown a steady decline over the past two decades — from 54.2% in 2000, to 47.8% in 2007, 38.7% in 2014, and 35.5% in 2022, the biggest drop taking place between 2007 and 2014.
- ✓ **Mortality rate for children** under 5 years has also reduced from 9.2% in 2000 to 3.3% in 2022, the report shows.
- ✓ **The proportion of undernourished** in the country has, however, increased since 2014, according to GHI. From 18.4% in 2000 it dropped to 17.5% in 2007 and 14.8% in 2014, to rise to 16.3% in 2022.

Conclusion

- As India launches the celebrations of its 75th anniversary of Independence significant advances have been made in science, technology, and medicine, adding to the country's ancient, traditional, and civilisational knowledge base, wisdom and wealth. Still, it is disconcerting that even after seven decades of Independence, India is afflicted by public health issues such as child malnutrition, under-five child mortality and so on.
- Poor nutrition not only adversely impacts health and survival but also leads to diminished learning capacity, and poor school performance. And in adulthood, it means reduced earnings and increased risks of chronic diseases such as diabetes, hypertension, and obesity.
- We need to systematically review the status, and develop a new system that would combine the human resource from village to the district and State levels. This would address the mismatch that exists on focusing on delivery of services in the first 1000 days of life for preventing child undernutrition by having an effective accountable system.

PEPPER IT WITH

National Nutrition Mission (NNM), National Food Security Mission, Zero Hunger Programme, Eat Right India Movement

PM-DevINE

NEWS EXCERPT

The Union Cabinet has approved the **Prime Minister's Development Initiative for North East Region (PM-DevINE)**. The scheme will be operational for the remaining four years of the 15th Finance Commission, from 2022-23 to 2025-26, and will have an outlay of Rs 6,600 crore.

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About PM- DevINE:

- PM-DevINE is a Central Sector Scheme with 100% Central funding implemented by Ministry of Development of North Eastern Region (DoNER) through North Eastern Council or Central Ministries/ agencies.
- PM-DevINE aims to create infrastructure, support industries, social development projects and create livelihood activities for youth and women, thus leading to employment generation.
- Measures would be taken to ensure adequate operation and maintenance of the projects sanctioned under PM-DevINE making them sustainable.
- To limit construction risks of time and cost overrun, falling on the Government projects would be implemented on Engineering-procurement-Construction (EPC) basis, to the extent possible.
- Efforts will be made to complete the PM-DevINE projects by 2025-26 so that there are no committed liabilities beyond this year.
- It will be ensured that there is no duplication of project support under PM-DevINE with any of the other schemes of MDoNER or those with any other Ministry/Department.
- PM-DevINE is an additionality to the quantum of resources available for the development of the NER. It will not be a substitute for existing Central and State Schemes.

Objectives of PM-DevINE

- ❖ Fund infrastructure convergently, in the spirit of PM Gati Shakti.
- ❖ Support social development projects based on felt needs of the NER.
- ❖ Enable livelihood activities for youth and women;
- ❖ Fill the development gaps in various sectors.

Other initiatives/schemes for North East region:

- **North East Special Infrastructure Development Scheme” (NESIDS):** It is a 100% centrally funding is provided to the State Governments of North Eastern Region for the projects of physical infrastructure relating to water supply, power and connectivity enhancing tourism and Social infrastructure relating to primary and secondary sectors of education and health.
- **The Non Lapsable Central Pool of Resources (NLCPR) Scheme:** The objective of NLCPR Scheme is to fill up the gap in infrastructure sector of the North Eastern Region through sanctioning the projects prioritised by the State Governments. Ministry gets Annual Budgetary Allocation from Ministry of Finance for funding the projects under NLCPR Scheme. Funds under the scheme are shared between the Central and State Governments on 90:10 basis.
- **Social and Infrastructure Development Fund (SIDF):** It is a one-time package that covers projects, prioritized by the State Governments as per their requirement, which include construction of new roads and bridges, re-establishment of new sub-stations/transmission lines, construction/upgradation of hospitals, establishment of schools, water supply projects etc.
- **10 percent GBS:** 10% of the Annual Plan Budget of 52 Ministries of the Union Government is earmarked every year for spending in NER since 1998-99 even though the NER has 7.9% (2,62,179 sq. km out of 3287263 sq. km) of India's land mass and 3.76% (4.55 crore out of 121 crore) of population as per Census 2011.
- **The North East Venture Fund (NEVF):** Ministry of DoNER had joined with North Eastern Development Finance Corporation Ltd (NEDFi) to set up the North East Venture Fund, the first and the only Venture Fund for Northeast with an initial corpus of Rs. 100 crores. The fund targets to invest in Start-Ups and unique business opportunities to provide resources for new entrepreneurship. The main focus of North East Venture Fund (NEVF) are mostly the enterprises involved in Food Processing, Healthcare, Tourism, segregation of services, IT, etc.
- **Science & Technology Interventions in the North East Region (STINER):** This scheme aims to bring in the latest and advanced technologies to the North-Eastern region to help the women farmers and other artisans living there. National research institutes and technological institutions such as IITs are assigned to develop new technology for the people living in the North-eastern region which can help them in agriculture.

PEPPER IT WITH

Special Category States, Article 371, 53rd Amendment Act, 1986, Centre State relations, Sarkaria Commission

Revised Beti Bachao Beti Padhao (BBBP) Scheme

NEWS EXCERPT

Beti Bachao Beti Padhao, the Centre's flagship programme for women's empowerment, which focuses on education of girl child and improving sex ratio, will now be extended across the country, according to guidelines issued by the Women and Child Development (WCD) Ministry.

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Coverage of BBBP scheme

- **First Phase:** The 100 districts were identified on the basis of low Child Sex Ratio as per Census 2011 covering all States/UTs as a pilot with at least one district in each state.
- **Second Phase:** The scheme was further expanded to 61 additional districts selected from 11 States/UT having CSR below 918.
- **Pan India Expansion of BBBP:** The Pan India Expansion of Beti Bachao Beti Padhao (BBBP) covering all districts of the country has been launched.

Targets of the scheme

BBBP scheme aims to achieve the following:

- Improvement in the Sex Ratio at Birth (SRB) by 2 points every year,
- Improvement in the percentage of institutional deliveries or sustained at the rate of 95% or above,
- 1% increase in 1st Trimester ANC Registration per year, and

- 1% increase in enrolment at secondary education level and skilling of girls/women per year.
- To check dropout rate among girls at secondary and higher secondary levels.
- Raising awareness about safe menstrual hygiene management (MHM)

Skilling of girls in non-traditional livelihoods:

- ✓ The scheme will now also focus on increasing the enrolment of girls in secondary education, particularly in STEM (Science, Technology, Engineering, Mathematics) subjects. Women have been historically under-represented areas such as technology.
- ✓ A Memorandum of Understanding was signed between the Ministries of Women and Child Development, Skill Development and Entrepreneurship, and Minority Affairs. It emphasizes convergence between Ministries and Departments to ensure adolescents complete their education, build skills, and enter the workforce in a diverse range of professions, including in STEM fields.
- ✓ Through this initiative, girls will be given skill training in non-traditional vocations, thereby making them torchbearers of a women-led Aatmanirbhar Bharat (self-reliant India).

Mission Shakti

- ❖ 'Mission Shakti' is a scheme in mission mode aimed at strengthening interventions for women safety, security and empowerment.
- ❖ 'Mission Shakti' has two sub-schemes - 'Sambal' and 'Samarthya'. While the "Sambal" sub-scheme is for safety and security of women, the "Samarthya" sub-scheme is for empowerment of women.
- ❖ The components of 'Sambal' sub-scheme consist of erstwhile schemes of **One Stop Centre (OSC)**, **Women Helpline (WHL)**, **Beti Bachao Beti Padhao (BBBP)** with a new component of **Nari Adalats** - women's collectives to promote and facilitate alternative dispute resolution and gender justice in society and within families.
- ❖ The components of 'Samarthya' sub-scheme consist of erstwhile schemes of **Ujjwala**, **Swadhar Greh** and **Working Women Hostel** have been included with modifications. In addition, the existing schemes of **National Creche Scheme** for children of working mothers and **Pradhan Mantri Matru Vandana Yojana (PMMVY)** under umbrella ICDS have now been included in Samarthya. A new component of Gap Funding for Economic Empowerment has also been added in the Samarthya Scheme.

Analytica

- The initiative of government has done well in improving the position of women and overall sex ratio in the country. As per the fifth round of the National Family Health Survey (2019-21), the sex ratio of the population (females per 1000 males) for the country was estimated at 1020 as compared to the 943 females per thousand males in 2011.
- However, the Sixth Report of the Committee on Empowerment of Women (2021-22) has highlighted that more than 78 per cent of total funds released during 2016-2019 for Beti Bachao Beti Padhao scheme was spent only on media advocacy.
- Calling it one of the most important schemes of the government to improve child sex ratio in backward regions and ensure education of the girl child, the committee recommended that the government should, hereafter, reconsider spending on advertisements under the scheme and focus on planned expenditure allocation for sectoral interventions in education and health.

Conclusion:

- ✚ In order to achieve better oversight, the government should develop without further delay the online management information system portal for monitoring and supervision at state, district, block and village level and to make available the data in the web portal for transparency and real-time monitoring.

PEPPER IT WITH

Kanyashree Prakalpa Yojana, Sukanya Samridhi Yojana, Balika Samridhi Yojana, Ladli Laxmi Yojana, Dhanalakshmi scheme

Multi-State Cooperatives

News-Excerpt

The Union Cabinet approved the Multi-State Cooperative Societies (Amendment) Bill, 2022, which seeks to enhance transparency and accountability, as well as improve ease of doing business, among others.

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About Multi State Cooperative Societies ACT, 2002:

- It is an Act to consolidate and amend the law relating to co-operative societies, with objects not confined to one State and serving the interests of members in more than one State.
- It aims to facilitate the voluntary formation and democratic functioning of co-operatives as people's institutions based on self-help and mutual aid and to enable them to promote their economic and social betterment and to provide functional autonomy.

Cooperative societies in India:

- Cooperatives are organisations formed at the grassroots level by people to harness the power of collective bargaining towards a common goal.
- As per government data, there are around 8,55,000 cooperatives in India. Of this, 1,77,000 are credit societies, 700,000 are cooperative societies, 17 national-level cooperative unions, and 33 state cooperative banks.
- There are more than 63,000 active Primary Agricultural Credit Society (PACS) with more than 12 crore members. Around 91 per cent of the villages have cooperatives.

Constitutional provisions related to Cooperatives:

- Article 19(1)(c)** guarantees freedom to form association or union or cooperatives subject to certain restrictions.
- Article 43B under Directive Principles of State Policy (DPSP)** of the constitution says that state shall endeavour to promote voluntary formations, autonomous functioning, democratic control and professional management of cooperative societies.
- Part IX-B of the constitution inserted by 97th Constitutional Amendment** deals with incorporation, terms of members of board and effective managements of cooperative societies.

How cooperatives are governed?

- Agriculture and cooperation are in the state list, which means state governments can govern them. A majority of the cooperative societies are governed by laws in their respective states, with a Cooperation Commissioner and the Registrar of Societies as their governing office.
- In 2002, the Centre passed a MultiState Cooperative Societies Act that allowed for registration of societies with operations in more than one state. These are mostly banks, dairies and sugar mills whose area of operation spreads across states.
- The Central Registrar of Societies is their controlling authority, but on the ground the State Registrar takes actions on his behalf.

Issues and concerns

- Over the years, the powers of the Central Registrar, who had the most powers, were questioned by experts and economists as in many cases it has led to cases of corruption.
- Another major issue was the lack of transparency as the board of directors had control of finances and administration.
- Also, the Central Registrar can inspect societies only under special conditions. This has even led to Ponzi schemes in some cases.

PEPPER IT WITH

Co-operative Societies Act, 1912, 97th amendment act, seventh schedule

Conclusion

The government formed **Ministry of Cooperation** in 2021 to provide a separate administrative legal and policy framework for strengthening the cooperative movement in the country. The government has been trying to rationalise its role and increase member participation in the working of multi-state cooperative societies. This is done to increase public faith and create a conducive environment for their growth and development.

ECONOMY

Moonlighting

News Excerpt

- Moonlighting — or employees working for remuneration with entities other than their employers — has been a hot topic recently.
- Recently, Information technology giant Infosys sacked 300 employees following the discovery that they were working for rival firms on the side, leading to conflict of interest. Infosys has warned staff against moonlighting, saying it could lead to termination.

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Pre-Connect

- Moonlighting means taking up a second job or multiple other work assignments apart from one's full-time job. Several companies have opposed the practice, saying that employees doing multiple jobs can impact their productivity.
- Moonlighting has become a topic of debate in the IT industry as working from home became the normal norm during the Covid-19 pandemic, which is believed to have led to a rise in dual employment.

Why it is increasing among workforce?

- ✓ **COVID-19 impact:** Moonlighting is definitely the pandemic's baby. In the IT industry, particularly the freshers, do not get the kind of hikes their seniors get. Taking advantage of the pandemic, many freshers have taken to secondary jobs.
- ✓ **Work from home culture:** It has become easier for employees to work on a second job or business without their primary employer's knowledge.
- ✓ **To Gain Additional Work Experience:** Employees may also consider a second job to gain additional skills or indulge in work profiles they are more passionate about.
- ✓ **Additional source of income:** Employees may opt for a second job for additional income if they have low pay at their primary jobs.
- ✓ **Changing nature of work:** As more and more jobs are becoming digital, it is possible to do so without having to come to office. Such jobs are more taken up for moonlighting.
- ✓ **Increased sense of job insecurity:** Particularly after COVID.
- ✓ **Lack of trained IT employees and need for smaller firms to cut cost:** There is a demand for non-permanent workers, particularly in IT industry. Smaller companies find it difficult to hire high paying permanent employees.

What Are Companies' Concerns?

- The primary concerns companies have against moonlighting is data and confidentiality breaches, and loss of productivity. Moonlighting may give employees the opportunity to divulge trade secrets if they are working in a similar industry and job.
- If employees are working long hours, the second job may cause the employee to become distracted, unproductive, and neglect job responsibilities because of physical fatigue.
- Employees may use company resources for their second job which increases operating expenses.

Does Any Law Prevent Dual Employment?

- ✚ Moonlighting **is not defined under any statute in Indian employment laws**. Moonlighting is also not necessarily dual employment, which is a formal employer-employee relationship, complete with legal obligations like minimum wage, provident fund, gratuity etc. It could also be side hustles or freelancing which can be with or without the knowledge of the primary employer.
- ✚ Swiggy earlier announced an **"industry first" policy** that allowed moonlighting for its employees.
- ✚ Moonlighting could be considered cheating if an employee's contract calls for non-compete and single employment, which is the situation with the majority of conventional employment contracts. However, it is not cheating if the employment contracts do not have such a clause or provide relaxations.
- ✚ The Courts of law in India dealing with employment are Writ Courts and Labour Courts,

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which exercise jurisdiction based on equity or fairness. Therefore, the Courts may lean in favour of the employee unless the contravention of the employee has led to serious prejudice and loss to the employer.

Conclusion

Taking care of employees better is key to create a culture in which employees will not find the need to moonlight. The right culture is the only solution to this perennial problem. Companies should also change with changing times and allow moonlighting if it is not directly impacting worker's productivity which should be better tracked. At times employee may even gain skill during moonlighting which will improve their productivity at full time job.

PEPPER IT WITH

Gig economy, Work from home culture, Code on Wages, 2019, Code on Social Security, 2020

Card Tokenisation

News Excerpt

From 1st of October, Reserve Bank of India's card-on-file (CoF) tokenisation norms have kicked in, which aims at improved safety and security of card transactions.

No online retailers or payment gateways will be permitted to save any credit card information of the customers on their digital platform.

Pre-Connect

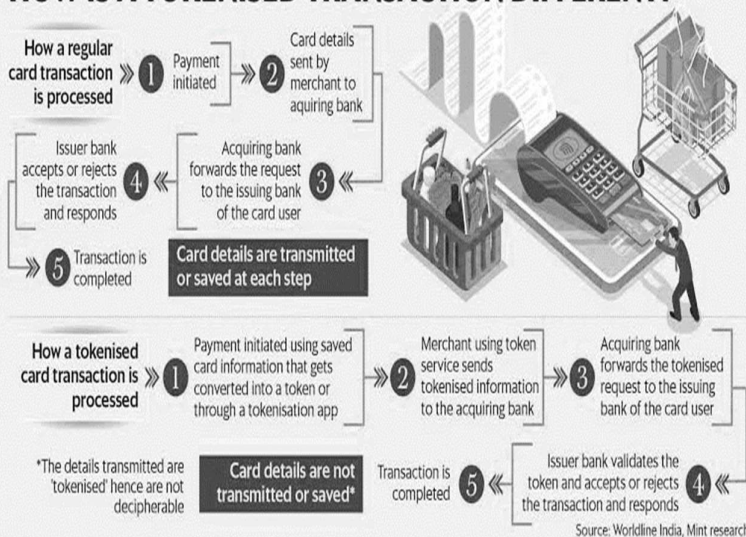
- Tokenisation refers to the replacement of actual card details with a unique alternate code called the 'token'.
- Token shall be unique for a combination of card, token requester, (i.e. the entity which accepts requests from the customer for tokenisation of a card and passes it on to the card network to issue a corresponding token) and the device.
- The customer need not pay any charges for availing this service.
- Tokenisation and de-tokenisation can be performed only by the authorised card network.
- It is not mandatory for a customer who can choose whether or not to let his / her card tokenised.

Card-on-File: A CoF transaction is a transaction where a cardholder has authorised a merchant to store the cardholder's Mastercard or Visa payment details.

Benefits

- **Safer:** A tokenised card transaction is considered safer as the actual card details are not shared with the merchant during transaction processing. Actual card data, token and other relevant details are stored in a secure mode by the authorised card networks.
- The token requester cannot store Primary Account Number (PAN), or any other card details. Card networks are also mandated to get the token requester certified for safety and security that conform to international best practices/globally accepted standards.
- In case of any data breach or hacking attempt at the merchant's end, the customer's card details will be protected.

HOW IS A TOKENISED TRANSACTION DIFFERENT?



Necessity

- ✓ **Increasing use of plastic money:** During 2021-22, payment transactions carried out through credit cards increased by 27.0 per cent and 54.3 per cent in terms of volume and value, respectively.
- ✓ Till end July 2022, while the number of credit cards issued stood at around 8 crore, debit cards in the system were 92.81 crore, according to RBI.
- ✓ **High cyberattack risk:** India ranked fifth on the list of countries most hit by cyberattacks according to a 2022 report by Surfshark, a Netherlands-based VPN company.

PEPPER IT WITH

Rupay card, JAM trinity, NPCI, SWIFT, Merchant discount rate

Insolvency and Bankruptcy Code

News Excerpt

Recently, sixth anniversary of the Insolvency and Bankruptcy Board of India (IBBI) was organised.

Pre-Connect

- Insolvency is the state of being unable to pay the debts, by a person or company (debtor), at maturity.
- Insolvency and Bankruptcy Code (IBC) 2016 was implemented through an act of Parliament. It got Presidential assent in May 2016. Centre introduced the IBC in 2016 to resolve claims involving insolvent companies.
- The IBC process has changed the debtor-creditor relationship. A number of major cases have been resolved in two years, while some others are in advanced stages of resolution.
- It provides for a **time-bound process to resolve insolvency**. When a default in repayment occurs, creditors gain control over debtor's assets and must take decisions to resolve insolvency. **Under IBC, debtor and creditor both** can start 'recovery' proceedings against each other.
- The resolution procedure should be completed within 330 days, failing which the Adjudicating Authority will initiate liquidation procedure.

The SC in Swiss Ribbons Vs Union of India, has held that the core objective of the IBC is to ensure revival and continuation of the corporate debtor. Thus, the IBC has a larger public-welfare consideration in play.

The Process

- When insolvency is triggered under the IBC, there can be two outcomes: resolution or liquidation; all attempts are made to resolve the insolvency by either coming up with a restructuring or new ownership plan and if resolution attempts fail, the company's assets are liquidated.
- When a corporate debtor (CD), or a company which has taken loans to run its business, defaults on its loan repayment, either the creditor (a bank or an entity that has lent money for operational purposes) or the debtor can apply for the initiation of a Corporate Insolvency Resolution Process (CIRP) under Section 6 of the IBC. Earlier, the minimum amount of default after which the creditor or debtor could apply for insolvency was ₹1 lakh, but considering the stress on companies amid the pandemic, the government increase the minimum amount to ₹1 crore.
- To apply for insolvency, one has to approach a stipulated adjudicating authority (AA) under the IBC— the various benches of the National Company Law Tribunal (NCLT) across India are the designated AAs.
- Once the application is admitted, the AA appoints an interim resolution professional (IRP), registered with an insolvency professional agency (IPA). IRPs could be experienced and registered chartered accountants, company secretaries, lawyers and so on. Once appointed by the Tribunal, the IRP takes control of the defaulter's assets and operations, collects information about the state of the company from Information Utilities (repositories keeping track of the debtor's credit history), and finally coordinates the constitution of a **Committee of Creditors or a CoC**.

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- A CoC is the most important business decision-making body in every CIRP, as it decides whether the defaulting company is viable enough to be restructured and given a fresh start, or liquidated. It also appoints an **insolvency professional (IP)**, who can either be the same as the IRP or a new professional, who looks after the operations of the company during the CIRP.
- The IP invites and examines proposals for a resolution plan for a company, which could include restructuring of debt, merger or demerger of the company. It submits eligible plans to the CoC, which can approve a plan if it receives 66% of the voting share of committee members. If the CoC fails to approve any resolution plan, the company goes for liquidation.
- If a plan is approved, the CoC submits it to the Tribunal (before the maximum 330-day deadline), which then approves the plan which the debtor is bound to implement. The AA can also reject a plan.

Insolvency and Bankruptcy Code (Amendment Bill), 2021

- ✓ The Bill is set to replace the Insolvency and Bankruptcy Code Amendment Ordinance 2021 promulgated in April 2021.
- ✓ It proposed the Pre-packaged Insolvency Resolution Process (PIRP), also called 'pre-packs' as an insolvency resolution mechanism for Micro, Small and Medium Enterprises (MSMEs).
- ✓ It was introduced to alleviate the distress faced by MSMEs due to the impact of the pandemic & the unique nature of their business, duly recognizing their importance in the economy.

Challenges

- The IBC has reformed the Indian insolvency law landscape to a great extent. It has contributed to the development of disciplined borrowing amongst companies. Promoters are fearful of losing control of their enterprises in the event of a default. Post the implementation of IBC, as per the World Bank's report, India's rank in resolving insolvency went from 136 in 2017 to 52 in 2020.
- The recovery rates under the IBC are low. There are matters where haircuts of as much as 95 per cent are being granted during the insolvency resolution. Since 2016, the lenders took an average of 61 per cent haircut on claims.
- Around 71 per cent of the cases are pending for more than 180 days which is a marked deviation from the intent of swiftly resolving insolvency. As far as staffing is concerned, in September 2021, the NCLTs were functioning without a President and were short of 34 members out of a total sanctioned strength of 62 members.
- Another important challenge is the digitisation of the IBC ecosystem. The lack of digitisation has led to the insolvency process being stymied with long delays much beyond the statutory limits. Often, the admission of cases in NCLT has proven to be a task.
- **Lack of professionals:** At present, there are less than 1000 registered insolvency professionals.
- **Financial Creditors given more power:** The issue of exclusion of the operational creditors from the committee of creditors. Financial creditors are banks and financial institutions who have forwarded loan. Operational creditors are those who have provided goods and services.

Way forward

- ✚ Statistics indicate that a majority of liquidation happens in matters where the debtor's assets erode over time during a prolonged insolvency process.
- ✚ Hence, the timeliness of insolvency resolution is key. The government needs to cater appropriate budgetary allocations to upskilling insolvency professionals, improvement of tribunal infrastructure and digitisation of the insolvency resolution process.
- ✚ The IBC has undoubtedly revived India's insolvency regime. Not only has it been successful in combating the growing threat of NPAs, but it has also benefited the economy in a variety of nuanced ways, including improving credit discipline.
- ✚ We need to eliminate any room for collusion between lenders and potential buyers and, therefore, a code of conduct for the CoC needs to be framed.

PEPPER IT WITH

NPA issue, SARFAESI Act, NCLT, Bad Bank, RBI's Financial Stability Report, NPA resolution

Semiconductor industry

News Excerpt

In a bid to make India's \$10 billion chip-making initiative more attractive to investors, the Centre, approved changes to the scheme for the development of a semiconductor and display manufacturing ecosystem in the country.

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Pre-Connect

- Semiconductors are the thumbnail-sized building blocks of almost every modern electronic device from smartphones to connected devices in the Internet of Things (IoT). They help give computational power to devices. The global semiconductor industry is currently valued at \$500-\$600 billion and caters to the global electronics industry currently valued at about \$3 trillion.
- The chip-making process is complex and highly exact, having multiple other steps in the supply chain such as chip-designing done by companies to develop new circuitry for use in appliances, designing software for chips and patenting them through core Intellectual Property (IP) rights.

- ❖ **India Semiconductor Mission (ISM)** is a specialized and independent Business Division within the Digital India Corporation that aims to build a vibrant semiconductor and display ecosystem to enable India's emergence as a global hub for electronics manufacturing and design.
- ❖ Led by global experts of the Semiconductor and display ecosystem the mission aims to serve as a focal point for the comprehensive, coherent, efficient, and smooth deployment of the Program for Development of Semiconductor and Display Ecosystem in consultation with the Government ministries/departments/agencies, industry, and academia.

About Semiconductor

- Semiconductor devices can display a range of useful properties such as showing variable resistance, passing current more easily in one direction than the other, and reacting to light and heat. Their actual function includes the amplification of signals, switching, and energy conversion.
- Therefore, they find widespread use in almost all industries, and the companies that manufacture and test them are considered to be excellent indicators of the health of the overall economy.
- Semiconductors come in two main types based on the elements that are included alongside silicon, a process known as "doping." These "impurities" are introduced to the crystalline silicon to alter the properties of the finished semiconductor:
 - An n-type semiconductor contains one or more impurities based on pentavalent atoms like phosphorus, arsenic, antimony, and bismuth
 - A p-type semiconductor has dopants with five electrons in its valence layer. Phosphorus is commonly used for this purpose, as well as arsenic, or antimony.

Why essential for India?

- ✓ Currently, India imports a staggering \$2.38 billion of semiconductor devices from countries like China, Singapore, Hong Kong, Japan, and the United States. Despite being the global leader in semiconductor chip design, **India imports 100% of its semiconductors.**
- ✓ The chip-making industry is a highly-concentrated one, with the big players being Taiwan, South Korea and the U.S. among others. 90% of 5nm (nanometre) chips are mass-produced in Taiwan, by the Taiwan Semiconductor Manufacturing Company (TSMC). Therefore, the global chip shortage, U.S.-China tensions over Taiwan, and the supply chain blockages owing to the Russia-Ukraine conflict have led major economies to enter the chip-making sector with a renewed push.
- ✓ The Indian government also sees indigenous chip manufacturing as essential to its plans to massively scale up the country's electronics manufacturing industry, as part of its "Make in India" initiative.
- ✓ Given the fact that chips are an essential part of the technology driven product value chains, the Indian government is aiming to address those by bringing manufacturing in-house. The other benefits include increased innovation, improved margins, increased GDP contribution and a business model that can further scale and support products beyond smartphones.

Modified Incentive Scheme for Semiconductor Chip-Making

In December 2021, India announced its roughly \$10 billion dollar production-linked incentive (PLI) scheme to encourage semiconductor and display manufacturing in the country. It also announced fiscal support for a design-linked initiative (DLI) scheme to drive global and domestic investment related to design software, IP rights etc. According to the Electronics and IT Ministry, semiconductor demand in India would increase to \$70-\$80 billion by 2026 with the growing demand for digital devices and electronic products.

Applicants

- ❖ Vedanta and Taiwanese chipmaker Foxconn have signed an MoU to set up a ₹1,54,000 crore semiconductor plant in Gujarat.
- ❖ \$3 billion plant in Karnataka by the International consortium ISMC (a joint venture between Abu Dhabi-based Next Orbit Ventures and Israel's Tower Semiconductor)
- ❖ \$3.5 billion plant in Tamil Nadu by Singapore's IGSS Ventures.

The new changes announced seek to:

- i. Harmonise government incentives for all technology nodes of semiconductors.
- ii. In the previous version of the scheme, the Centre was offering to fund 30% of the project cost for 45nm to 65nm chip production, 40% for 28nm to 45nm, and 50% or half of the funding for chips 28nm or below. The modified scheme provides uniform 50% fiscal support for all nodes.
- iii. Besides, it will provide 50% of capital expenditure for other steps of the process as well (chip design and ATMP).
- iv. The modified scheme also emphasised the production of the 45nm chip, which is fairly less time-consuming and economical in terms of production. These chips had high demand, driven primarily by automotive, power and telecom applications.

Challenges

- While the scheme is an encouraging move, chip production is a resource-intensive and expensive process. Notably, just the setting up of one semiconductor fab requires an investment of anywhere between \$3 and \$7 billion.
- Creating global demand may be difficult as giants like Taiwan offer viable cutting-edge chip-tech worldwide. Thus, attracting global players to set up here would be beneficial as they come with their customer base.
- Chip-making also requires gallons of ultrapure water in a single day, which could be a task for the government to provide to factories, compounded also by the drought conditions which often prevail in large parts of the country. Besides, an uninterrupted supply of power is central to the process, with just seconds of fluctuations or spikes causing millions in losses.
- Another task for the government is to drive up consumer demand in the semiconductor industry to not end up in a situation where these ventures remain successful only till taxpayers are forced to fund required subsidies.

Way Forward

- ✚ **Ensuring Demand within the Country:** To create the ecosystem for fab manufacturing, it is important to lock in the demand for semiconductors produced within the country.
- ✚ **Develop Raw Material Supply Capabilities:** The India Electronics and Semiconductor Association is exploring the opportunity to start supplying processed raw materials like minerals and gases to the fab and ATMP.
- ✚ **Promoting Fab Clustering:** It is where key semiconductor supply chains and related businesses are in one place to create backward and forward linkages.
- ✚ **Encourage Private Participation:** Along with promoting FDI in the sector, India also needs to focus on encouraging Indian manufacturers and start-ups to enter and master complex R&D and manufacturing verticals. This will ensure that valuable Intellectual Property is created and owned by India.
- ✚ **Promoting Research in the area:** To cut cost and innovate to stay competitive in global market.
- ✚ **Global Supply Chain:** India should try to become part of global supply chain which involves semiconductors.

PEPPER IT WITH

PLI scheme, Rare earth metals, Supply chain resilience, Quantum physics

Foreign Exchange Reserve and Rupee Depreciation

News Excerpt

Foreign exchange reserves of India (Asia's third-largest economy) fell by \$4.85 billion to \$532.66 billion for the week ending Sep 30, according to data released by the Reserve Bank of India.

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Pre-Connect

- Forex or foreign exchange reserves are essentially assets held by the central bank in foreign currencies as a reserve. They are usually used for backing the exchange rate and influencing monetary policy.
- In the case of India, our forex reserves include dollars, gold, and the International Monetary Fund's quota for Special Drawing Rights. Most of the reserves are usually held in US dollars given the currency's importance in the international trading and financial system. Though central banks also hold reserves in British pounds, euros, Chinese yuan, or the Japanese yen, in addition to their US dollar reserves.

Why are the reserves so important?

- **To support import:** All international transactions are settled in US dollars and are therefore needed to support our imports.
- **To increase trust in RBI's ability to conduct monetary policy and stabilize exchange rate:** More importantly, they are needed to support, maintain confidence for central bank action, whether monetary policy action or any exchange rate intervention to support the domestic currency.
- **Help deal with fluctuations in global market:** It also helps limit any vulnerability because of a sudden disruption in foreign capital flows, which could happen during a crisis.

Cause of decline

- ✓ **RBI's action to check depreciation of rupee:** Analysts believe a large part of the fall has been on account of the Reserve Bank of India's intervention in the currency market to prevent the rupee from depreciating more sharply against dollar.
- ✓ **Appreciation of US Dollar:** According to Finance minister (in the ongoing annual meeting of the World Bank and the International Monetary Fund), the decline in India's foreign exchange reserves is largely due to the valuation changes arising from an appreciating U.S. dollar. The US dollar reached its highest level in two decades.
- ✓ **Slowdown in FII inflow:** Because of increasing interest rate in United States. So far, in 2022, FIIs have removed ₹270,246.51 crore from the equities.
- ✓ **Increasing import bills because of high crude oil and food prices.**

Impact of Depreciation of Indian Rupee

Depreciation in rupee is a double-edged sword.

Negative impact

- **Costly import:** Domestic manufacturers and services providers are now having to cope with not just higher dollar prices for the raw materials, equipment or other supplies they may need to procure from overseas, in the wake of the supply disruptions caused by the pandemic and the war in Ukraine, but they also face mounting import bills — the slide means they have to fork out more rupees for the same dollar price.
- **Imported Inflation risk:** It poses risk of imported inflation, as India meets more than two-thirds of its domestic oil requirements through imports. India is also an importer of lots of electronic goods and components, such as mobile phones, along with other consumables, such as fuels, fertilisers, base metals, among others.

PEPPER IT WITH

Forex reserves, IMF, FPI, FII, P-Notes, REER and NEER

Positive impact

- **Increasing competitiveness of Indian export:** Weaker rupee should theoretically give a boost to India's exports. It benefits IT sector, real estate sector, and engineering goods industry.

INTERNATIONAL RELATIONS

India-Saudi Relations

News Excerpt

Recently, a Ministerial meeting of the India-Saudi Arabia Strategic Partnership Council was held in Saudi Arabia. The meeting resulted in multiple positive outcomes ranging from fintech cooperation to the strengthening of India's energy security.

Pre-Connect

Foundation of India-Saudi Relations

- Diplomatic Relations between India and Saudi Arabia were established in 1948. However, the early phase doesn't see any meaningful cooperation due to following key factors
 - Pakistan emerged as an Islamic state and hence Saudi supported it on Kashmir Issue.
 - India was aligned with Egypt (the Middle East was witnessing a conflict between Pan Arabism of Egypt vs Pan Islamism of Saudis)
- In both the India-Pakistan War of 1965 and 1971, Saudis supported Pakistan and even didn't give diplomatic recognition to Bangladesh.
- Three events in the 1980s changed the strategic landscape in the Middle East. Soviet Invasion of Afghanistan, the Islamic Revolution of Iraq, and the Iran-Iraq War.
- In recent times Saudis are facing multiple problems, Its bargaining chip with the US is lost after Shale Gas exploration by the USA, It is entangled in a military conflict in Yemen (a result of sectarian conflict between Saudi and Iran), Turkey and Iran efforts in dislodging the house of Saud. These factors are compelling Saudi to undertake massive social and economic transformation. This brings India into Saudi new strategic calculation

India-Pakistan De-hyphenation

In 2019, Saudi de-hyphenated India and Pakistan. Its stance on China's BRI is also in line with Indian policy. Saudi condemned the Pulwama attack and has shown a positive understanding of India's stand on the abrogation of Article 370.

India-Saudi Nuclear Diplomacy

Saudi has announced the setting up of 22 nuclear reactors as a priority goal. India will be assisting Saudis in manpower training, thorium supply, nuclear research, and nuclear waste management

India-Saudi Strategic Partnership

- In 2006, Saudi King Abdullah visited India and it culminated in Delhi Declaration. It was the first comprehensive document signed between the two countries marking the beginning of a new era.
- In 2010, the then-Indian Prime Minister, Dr. Manmohan Singh visited Saudi Arabia which culminated in Riyadh's Declaration. India and Saudi Arabia entered into a strategic partnership that included components ranging from Space cooperation to renewable energy. It included critical components like Intelligence sharing and the Extradition treaty.
- In 2019, India's PM visited Saudi Arabia for the Future Investment Summit (Davos in Desert). It resulted in Inter-Governmental Agreement for cooperation in Oil, Gas, Defense, and Civil Aviation. Both countries decided to form Strategic Partnership Council (SPC).
- SPC is jointly led by the Saudi King and Indian PM and includes multiple sections involving the External Affairs Ministry and NITI Aayog counterpart organizations from Saudi Arabia. It is a permanent bilateral platform with two verticals jointly serviced by the two Foreign and Trade and Industry Ministries.

The Indo-Abrahamic Plus

It refers to the growing convergence of strategic interests between India, Israel, and the United Arab Emirates (UAE) (including Saudi Arabia and Egypt). It soon can emerge as a new geostrategic coalition. This coalition will fill the gap left by the United States in the Middle East. As Saudi-Israel relations normalize which in the present scenario is a matter of when than if, It will lead to a rise of a West Asian system that ensures long-term peace and stability.

India's Interest in Saudi Arabia

- Energy Security
 - India's second-highest oil import is from Saudi Arabia.
 - Saudi Aramco is investing in two key projects in India- Ratnagiri Refinery and Strategic Petroleum reserve in Karnataka.
 - Saudis are investing in such projects as China is diversifying its oil import sources at the Gwadar refinery and hence it becomes less attractive for them.
 - For India, Saudi investment not only provides energy security but also ensures that these critical installations are secure from any Pakistan attack (as Pakistan won't attack any installation which is backed by Saudi investment).
- Indian Diaspora
 - There are around 2.6 million Indian diasporas in Saudi. The remittances from Saudi to India are around \$12-\$15 billion annually.
 - In 2020, Saudi Arabia decided to launch RuPay Cards for payments.
- Defense and Security Cooperation
 - India-Saudi defense cooperation is based on multiple pillars which include- Maritime Security, Anti-Piracy, Military training, counter-terrorism cooperation, and intelligence sharing.
 - Both nations have Joint Defense Cooperation Committee and Joint defense manufacturing.
 - Both nations have a comprehensive security dialogue at the National Security Advisor level. This would enable both sides to explore new areas of cooperation alongside reinforcing the already thriving bilateral engagements.
 - Both nations conducted Join-Naval Exercises in 2020 for the first time.
 - India and Saudi intelligence agencies are working closely to provide data, and real-time information, and track the movements of suspects as well as the flow of finances through the process of money laundering.
- Economic Interest
 - India is one of the eight major partner countries under the Saudis Kingdom Vision for 2030. Through this Saudis will invest \$100 billion in India. This investment will come in areas ranging from Technology and Innovation, Infrastructure development, Human resource development, Environment, and Business-friendly governance.

Core Elements of India's West Asia Policy

- ❖ Focus on Investment, Security and Defence
- ❖ Use culture and soft power
- ❖ Prevent Piracy and protect the sea lanes of communication
- ❖ Establish Energy-Economic growth line
- ❖ Protect Indian Diaspora
- ❖ Enhance strategic presence in the region
- ❖ Develop Military cooperation

Look West Policy

- ❖ Major strands of India's Look West Policy. These are:
 - Import of Oil for India's energy security.
 - Protect itself from turbulence in the region, ranging from (Iranian Revolution to ISIS)
 - Manoeuvre the geopolitics of the region involving key player like Saudi Arabia-Iran-Israel and the US.

New Changes in the Policy

- Use of diaspora as a special strategic tool
- Diversify Oil Imports from the region
- Expand domestic biofuel program
- Emerge as Net Security Provider
- ❖ India intreset with countries of region:
 - India-UAE- Infrastructure+Diaspora+Terrorism
 - India-Saudi Arabia- Defence Training and exercise+Strategic partnership for oil+Naval Cooperation
 - Qatar-Diaspora+Natural Gas
 - Israel- Agriculture+Defence Products
 - Iran-Transit to Central Asia+Oil+Pakistan Management
 - Iraq-Diaspora+Oil
 - Egypt- Terrorism+Oil+Diaspora+Pharmacy

- Saudi Arabia is India's fourth-largest trade partner whilst India is now Saudi Arabia's second-largest trade partner.
- The Saudi sovereign Public Investment Fund (PIF) has invested US \$1.5 billion in Reliance's Jio and the US \$1.3 billion in Reliance Retail Ventures Limited in 2020. Aramco's chairman is also on Reliance Board

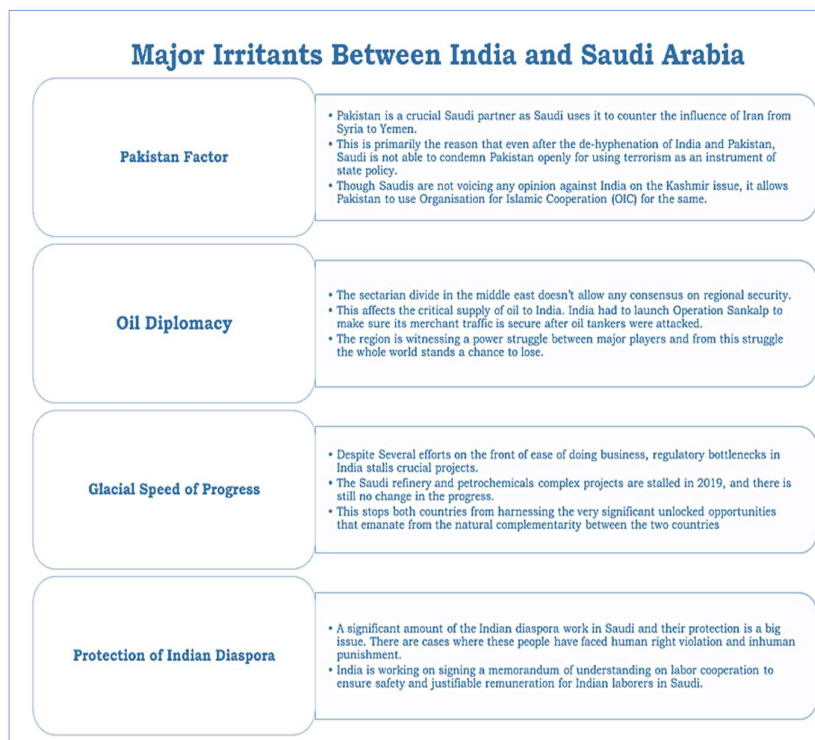
Future Areas of Cooperation

✓ **Comprehensive Economic Partnership Agreement:**

India-Saudi can sign CEPA on the lines of the India-UAE CEPA. It will help in

creating a technology and defense-tech highway between the two countries.

- ✓ **Atamirbharta in the Middle East:** India can help Saudi in building its own protective and sustainable security architecture for the future so that it won't have to bank on "security umbrellas" designed by third parties.
- ✓ **Indo-Pacific:** Both nations can strengthen their maritime security cooperation in the western Indian Ocean, which includes some of the busiest shipping lanes, including those in the Red Sea, the Gulf of Aden, the Arabian Sea, the Gulf of Oman, and the Persian Gulf. The same was highlighted in the Indian Navy's Maritime Security Strategy issued in 2015.
- ✓ **Growing India:** India has vast requirements for investment, particularly in the infrastructure sector. It provides Saudi Arabia with the ideal opportunity to meet its economic goals.



PEPPER IT WITH
NEOM, CEPA, Strategic
Petroleum reserves, Yemen
Humanitarian Crisis

SCO Summit 2022

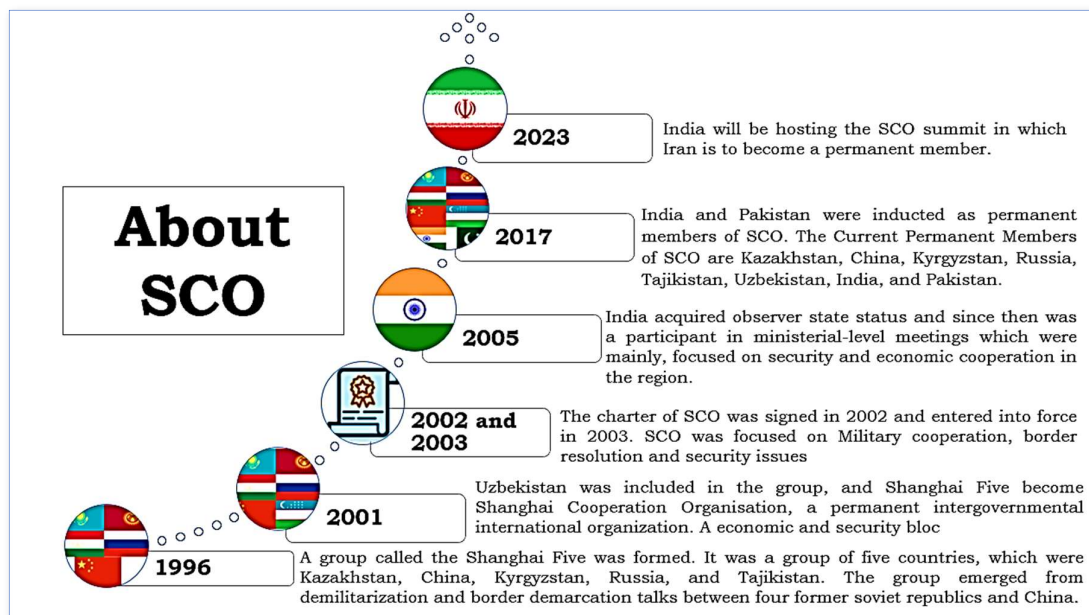
News Excerpt

The Annual Summit of the Shanghai Cooperation Organisation was recently held in Samarkand, Uzbekistan. The summit ended up in Samarkand Declaration and India taking over the presidency of SCO for 2023.

Key Highlights of the Summit

- Samarkand Declaration was focused on the peaceful settlement of differences and disputes between countries using dialogue and diplomacy.
- India called upon all states to provide each other with full rights to transit as connectivity can change the future of the region.
- India also stressed the issue of the global food crisis and therefore promoted millet cultivation among member states. It was in line with 2023 being an International Millet Year.

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- Varanasi was declared as SCO Tourism and Cultural Capital for 2022-2023. A move to boost the tourism potential of SCO states.
- Bahrain, Maldives, Kuwait, UAE, and Myanmar are the new dialogue partners of the SCO while the process has started for the granting of this status to Egypt, Saudi Arabia, and Qatar

Significance of SCO for India

- **Nature of SCO**: SCO ensures political stability in Central Asia and enhances intra-regional cooperation. It doesn't use democracy as an instrument to encourage regime change and promote its geopolitical agenda. Despite being a democracy, India is also skeptical about the merits of democracy promotion by western countries which have proved disastrous, contributing merely to chaos and instability in the region.
- **Neutrality and Strategic Autonomy**: SCO is not a military alliance rather its military exercises are essentially counter-terror drills. This allows India to follow a policy of neutrality and strategic autonomy and keep away from any formal military alliance.
- **No Anti-Americanism**: the SCO does not perceive itself as an anti-American formation. Neither does it intend to create an alternative world order. It endorses the UN Charter and remains committed to the existing institutions and demands reforms of multilateral institutions. This makes it in sync with Indian foreign policy objectives.
- **Part of Multi-Alignment Strategy**: SCO is a part of India's multi-alignment strategy. It has paved the way for the policy of strategic engagement with preeminent powers in the world. It fits completely within the doctrine of plurilateralism, in which India's objective is to engage with all the major players based on its national interest.
- **Pragmatic De-coupling**: The Covid-19 pandemic, made the world realize its dependence on Chinese supply chains. This also prompted India to go for the Atmanirbhar Bharat Campaign. However, India understands that complete decoupling would be utopian and hence it wants to keep engaging with China and SCO to provide that forum in which diplomacy and dialogue can help resolve India-China differences.

The Colour Revolution

- ❖ China raised the issue of cooperation required to prevent foreign powers from destabilising region with colour revolutions.
- ❖ Colour revolutions is uprising in which protestors use a particular colour. Its origins were linked to uprisings in former communist nations of Eastern Europe.
- ❖ Few Examples are Orange Revolution of Ukraine, Lotus Revolution of Egypt, Jasmine Revolution of Tunisia among others.

- **Beyond South Asia:** SCO will help India in projecting its global power aspirations in Central Asia. This will push India's status as a significant pan-Asian player, which was earlier restricted to South Asia. It helps India surpasses the physical and psychological barrier created by Pakistan.
- **Connectivity:** SCO allows India to pursue its connectivity and developmental projects in Eurasia. One example is the International North-South Transport Corridor (INSTC) which will become operational soon.
- **Afghanistan Factor:** SCO will allow India to play an active role in Afghanistan. The SCO-CSTO Outreach Summit on Afghanistan is an important initiative for India to increase its presence once again in Afghanistan. It can be used as a regional platform to contribute to peace in Afghanistan.

Changing India-Russia Dynamics

- ❖ India had asserted its displeasure with Russia on the issue of Ukraine.
- ❖ The geopolitical pillar of Russian-Indian relations is poised to be weakened by forces beyond Russia's control.
- ❖ The breakdown in relations with the United States has propelled Russia to seek ever-closer ties with China at the same time as the rivalry between India and China has intensified. Russia could face a difficult choice between its "no limits" friend, China, and its oldest and most valuable Asian partner, India.
- ❖ India on its part not want to abandon its long-standing security relationship with Russia, however it will keep diversifying its defence imports and will look more develop defence capabilities indigenously.
- ❖ Though India is willing to buy cheap Russian oil, however China is big buyer of Russian energy, the added advantage it has is the geographical connect it has with China.
- ❖ The balancing act will be difficult for Russia, however, the ball is in the court of Russia.

- **Scope for India-Pakistan engagement:** SCO provides India and Pakistan with a platform for talks. There is an opportunity to discuss a two-way Pakistan-Central Asia connectivity project. If the project gets materialized, the improvement in Indo-Pak relations will emerge as a subset of the rise of Eurasia.

PEPPER IT WITH

RATS-SCO, INSTC, BIMSTEC, BRICS, IORA, G-20, Ashgabat Agreement

Challenges For India

- ✓ **China Challenge:** China is the biggest player in the region, its investment reached \$40 billion at the end of 2020. Compared to it, India's trade was estimated to be about \$2 billion with Central Asia. With the Ukraine war on, there is growing strategic proximity between Russia and China, it is unlikely that the problems that are confronting India-Russia relations are going to disappear anytime soon.
- ✓ **The Pakistan Factor:** The presence of the Pakistan-China alliance in SCO limits India's capability in pushing the issue of terrorism in the SCO. China shields Pakistan so that there is no extra pressure on Pakistan to act on the question of terrorism and this serves its interests also.

Conclusion

In the book "World Order" Henry Kissinger stated that SCO will provide an alternative vision for global governance based on the historical experiences and values of the member states. Rightly so, the SCO is emerging as a pivotal organization in Eurasia. India's membership in the SCO is critical to its ambition to secure a foothold in Eurasia. India is gradually carving out its own space in the region through the SCO and other independent initiatives such as the India-Central Asia Summit.

Crisis in Korean Peninsula

News Excerpt

A new crisis is emerging in the Korean peninsula as North Korea flew 12 warplanes near the South Korean border. Further, the cause of worry is that

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North Korea is ratcheting up tension on the peninsula from its unprecedented wave of weapons tests in 2022.

Pre-Connect

Understanding Conflict in Korean Peninsula

- Japanese occupied Korea in 1910 and the peninsula was under its control till the end of World War II.
- After Japan's defeat in World War II, the Allied power decided to establish a four-power trusteeship over Korea under the terms set in Yalta Conference (1945).
- The fault lines between the Allied partners led to the USSR invasion of Korea, resulting in a division of Korea as Communist North and the US protected South Korea.
- In 1948, the Republic of Korea (South Korea) and the People's Republic of Korea (North Korea) were established. They were divided along the 38th Parallel lines, which still stands as an official border of the two Koreas.
- The difference between US and USSR was reflected in the conflict in Korean Peninsula. In 1950 USSR supported North Korea's attack on South Korea. In response, the UN forces led by the USA attacked North Korea. The war soon saw the entry of China, supporting North Korea.
- In 1951, peace began and India played a crucial role in it and in 1952, an Indian resolution on Korea was adopted at the UN.
- In 1953, the Korean Armistice Agreement was signed between China, Korean People's Army, and the UN Command. So, it was a ceasefire but without a peace treaty, and as a result, war never ended in Korean Peninsula.
- However, a Korean Demilitarised Zone (DMZ) was established between the two Korean nations as a buffer zone. In 1991, both countries signed a pact agreeing to refrain from aggression.



The nuclearization of the Korean Peninsula and India's Foreign Policy

- North Korea has nuclear capabilities, which it intends to use against the USA.
- The Trump administration tried to resolve this issue using the Libyan model wherein it wants North Korea to relinquish its nuclear weapons in return for economic integration with western economies.
- However, North Korea has two conditions for complete denuclearisation these are:

New Southern Policy (NSP) and India

- ❖ NSP is the new foreign policy of South Korea to enhance its strategic and economic relationship with South East Asian states and India. It is the first ever endorsement of South Korea interest in deepening its ties with India.
- ❖ South Korea serves as an example for India as it changed its destiny from one of the poorest countries in 1960s to wealthy club of OCED in 1996, it avoided middle-income trap, in which India find itself.
- ❖ South Korea on its part is enhancing its partnership with India under NSP for following reason:
 - Reduce its economic dependence on USA and China.
 - Larger role in the Indo-Pacific
 - Partner to brace against assertive China
 - Democratise the large business in the South Korea by pushing up bottom-up jobs through wider diplomacy with India.
- ❖ With NSP and India's Act East Policy, India and South Korea can become true "Seoul Mates".

- Firstly, the US should withdraw nuclear-capable forces and armament from the region and provide a security guarantee to North Korea.
- Secondly, It will follow the South African Model of disarmament wherein it will maintain weapons-grade enriched uranium. But it will not allow monitoring by International Agencies.
- While the USA doesn't provide any guarantee to North Korea it has acknowledged the fact that complete de-nuclearization won't be possible. This has brought a new debate in South Korea, on how long it should rely on the US nuclear umbrella for its national security.
- India considers the nuclearization of North Korea as a threat to its national security. Denuclearisation of North Korea will help India in two ways:
 - End the nexus between Pakistan and North Korea bringing more strategic stability to the region.
 - Boost trade and commerce with North Korea.
- India and South Korea signed a nuclear deal in 2011. South Korea has been working on fourth-generation reactors in UAE. India also wants South Korea to make nuclear reactors in India but as of now it is following a wait-and-watch policy, It wants to assess the success of the South Korean nuclear reactor.

Consequences of Rising Tension

- ✓ The world is already reigning under the impact of the pandemic and Ukraine crisis which has resulted in global energy and food crisis. Any other conflict will be a death knell for the global economy.
- ✓ The Korean peninsula is different from the Ukraine theatre, any conflict in the region will bring superpower on the verge of war.
- ✓ For India, any conflict in the Korean peninsula will affect its both strategic and economic security. India on its part can play a constructive role in promoting peace and security on the Korean Peninsula.

PEPPER IT WITH

POSCO Steel Plant, India-South Korea Defence Partnership, India-South Korea CEPA, Korea+ Platform

Global Energy Crisis

News Excerpt

The Organisation of the Petroleum Exporting Countries (OPEC) along with its allies (OPEC+) has decided to cut oil production by 2 million barrels per day (bpd). It is the largest cut since the Covid-19 pandemic, the decision will have a huge impact on the ongoing global energy crisis.

Pre-Connect

OPEC+

- The international oil market was dominated by the "Seven Sisters" multinational companies. As the political landscape changed with extensive decolonization, OPEC was conceived to give the oil-producing nations greater influence over the oil market.
- OPEC was founded in September 1960 (Baghdad Conference) by five oil-producing countries which were Iran, Iraq, Kuwait, Saudi Arabia, and Venezuela.



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- Currently, the organization has 13 member states which are Algeria, Angola, Congo, Equatorial Guinea, Gabon, Iran, Iraq, Kuwait, Libya, Nigeria, Saudi Arabia, United Arab Emirates, and Venezuela.
- OPEC+ consists of 13 member states of OPEC and 10 other allied major oil-producing countries which are Azerbaijan, Bahrain, Brunei, Kazakhstan, Malaysia, Mexico, Oman, Russia, South Sudan, and Sudan.
- OPEC's objective is to
 - Coordinate and unify petroleum policies among Member Countries.
 - Ensure fair and stable prices for petroleum producers.
 - An efficient, economic, and regular supply of petroleum to consuming nations.
 - Fair return on capital to those investing in the industry.
- According to current estimates, 80.4% of the world's proven oil reserves are located in OPEC Member Countries, with the bulk of OPEC oil reserves in the Middle East, amounting to 67.1% of the OPEC total.



The genesis of the Global Energy Crisis

- A global energy crisis set in late 2021 has three distinct elements:
 - COVID-19 and supply chain disruptions,
 - Greater Interconnectedness of Natural gas markets,
 - Energy price volatility due to the energy transition away from fossil fuels.
- As Russia invaded Ukraine, the energy crisis deepened, especially in Europe. Europe imported 39.2 percent of gas, 24.8 percent of crude oil, and 46 percent of coal from Russia. But it is a two-way street, energy sales are a significant source of Income also for Russia.
- To pressurise Russia, the US and its European allies decided to cut the maximum they can on the energy imports from Russia. They decided to cut on the demand as well as look for alternatives.
- However, this plan had several issues
- Firstly, many European countries like Germany in their zeal to promote renewables stopped using nuclear reactors for energy generation. But their renewable supply never equated to their demands.
- Secondly, the cost of alternatives to Russian energy is high. For example, Spain is the only country in Europe that has LNG terminals but while there are six terminals through which LNG comes to Spain, there are only two pipelines through which it is transported to all of Europe.
- Thirdly, the US is unable to drill more oil, not because of the availability but because of economic issues. If it drills more oil, the supply will go up, and as a result price of oil will fall. This it cannot afford partly due to mid-term elections and partly due to the economic slowdown it can witness if prices of shale further go down.
- All these factors forced the US and its European allies to look for refugees in OPEC. Russia on the other hand is relying on its famous “General Winter” to turn the tide of Ukraine War in its favor and force European powers to agree to peace in Ukraine on its term.

Decrease in Production

- ✓ Global oil prices is going down in recent times due to recessionary trends in the global economy and a reduction in demands from China because of its lockdown.
- ✓ Europe on the other hand though now is dependent on OPEC for energy supply, it is also taking austerity measures and reeling under a recessionary trend and has not been able to up the demand. As a result to protect itself, OPEC+ is seeing production cuts as a way to make profits.

NORD STREAM Ruptures

- ❖ Nord Stream are set of two subsea pipelines running alongside one another.
- ❖ Nord Stream 1 is a 1,224 km-long line which runs under the Baltic Sea (S.t Petersburg in Russia to Lubmin in eastern Germany). It has been operational since 2011, and is the largest single supply route for Russian gas to Europe. It has a combined capacity of 55 billion cubic metres (bcm). In Germany, Baltic Sea pipeline and North European Pipeline combine to power European Grid.
- ❖ Nord Stream 2 was completed in 2021 but needed German approval to start supply. Germany is not providing its approval since Ukraine conflict began. Nord Stream 1 and 2 could deliver a combined total of 110 billion cubic metres of gas a year to Europe for at least 50 years.
- ❖ Nord Stream crosses Exclusive Economic Zone of several countries which include Russia, Finland, Sweden, Denmark and Germany, and the territorial waters of Russia, Denmark, and Germany.
- ❖ Nord Stream provides 40% of European natural gas requirement. Many European business had invested in the Nord Stream 2. Nord Stream 2 also helps in cutting the operation cost by bypassing transit fees and gives direct access to its most important European customer, Germany.
- ❖ The leaks occurred a day before the ceremonial launch of the Baltic Pipe, which carries gas from Norway to Poland, a project that is part of Poland's attempt to reduce its dependence on Russian energy.
- ❖ Though the source of leakage is not clear, leaders from Europe and the United States suspect foul play. They alleged that it was an act of sabotage by Russia with three separate leaks and explosions occurring on the very same day.
- ❖ Russia on the other hand blames USA as Europe is heavily dependent on LNG imports from the USA and this will increase the demand from Europe translating into profits. Further since the majority stake is of Russian Gazprom, its highly unlikely that Russia would do such things.
- ❖ In any case, the real loser is the Europe, who is looking forward to major energy crisis in the upcoming winter season.

- ✓ For, Russia this consensus among OPEC+ on production cuts is a favorable bet. With the destruction of Nord Stream 1 and the US's inability to ramp up its production, Russia hopes to bring Europe to the dialogue table with a bargaining chip in its hand.

Impact on the Decision

On Europe:

- Europe is set to face the biggest brunt of this move, both economically and socially. With winters about to set in, the rise in energy prices will drive inflation.

NOPEC (No Oil Producing and Exporting Cartels)

- NOPEC will allow U.S. antitrust law to revoke the sovereign immunity that has protected OPEC+ members and their national oil companies from lawsuits.
- However, it is unclear that how USA could enforce judicial antitrust decisions against a foreign nation.
- Experts believe that it will harm USA more, than it can help. OPEC might resort to overproduction and can then drive the price down for USA oil.
- Further, other countries could take similar action on the United States for withholding agricultural output to support domestic farming.
- It can undermine the dollar's status as the world's main reserve currency, reduce the USA clout in global trade, and weaken its ability to enforce sanctions on nation-states.

This will put pressure on the middle class and might lead to social unrest across Europe.

- Europe has allowed Russian energy import but only by sea. However, with leakages in Nord Stream 1 and non-operational Nord Stream 2, access to Russian energy is now possible only through land routes. But on the land route, Russia can place a valve on supplies coming through Ukraine.
- In such a situation, the price cap placed by Europe on Russian energy import will be lost and Russia may set the price and will earn significant revenue from its energy export.

On the USA:

- The mathematics of demand and supply don't allow the US to produce more oil, hence it was relying completely on its OPEC partners to ensure energy security for itself and its European allies. With this cut, the US is baffled and is thinking of bringing No Oil Producing and Exporting Cartels (NOPEC) legislation.
- The Cut will also impact domestic crude oil prices in the USA and in turn impact inflation which will be a political disaster for the Biden administration in the upcoming midterm elections.

On India:

- India is an oil-importing country, it imports near about 85% of its crude requirements. The price rise will impact the import bill and subsequently inflation and current account deficit and fiscal deficit. It will also weaken the rupee which is witnessing a historic fall already.
- A rise in inflation in the USA will result in Fed Reserve tightening of monetary policy and this will cause a flight of money from India.
- For India, Russian Oil is a ray of hope as Russia is ready to provide oil to India at a nominal cost but it won't last long as the crude oil market will soon become a sellers-market than a buyers-market with this cut.

PEPPER IT WITH

Crimean Crisis, OCED, Ukraine Crisis, India's Energy Security, Greenflation

Conclusion

Europe learned a lesson during the Crimea crisis of 2014 to reduce its dependency on Russian energy, however, its policies didn't translate into action. With winters setting in, that too with a pinch of Climate Change, Europe's mettle would be challenged to the maximum it can. For Russia, its "General Winter" can end the Ukraine crisis in its favor, especially when it has never failed since World War-1. For the US, "winter is coming" as it has to balance both internal and external crises at the same time. For India, on the economic front it is important to ensure energy security and at the same time keep inflation in check without compromising on growth. On, the diplomatic front, India needs to walk on a tightrope to ensure that its domestic stability is preserved.

Fatalities among UN Peace-Keeping Forces

News Excerpt

Recently, United Nations, Undersecretary General highlighted the issue of rising fatalities among the United Nations Peacekeeping Forces (UNPKF). It was also asserted that these fatalities are rising due to an increase in direct attacks and there is a need for better training, technology, and equipment.

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Pre-Connect

About UN Peace-Keeping Mission

- The foundation of UNPKF can be traced back to the decision of the UN security council to deploy UN military observers to the Middle East in 1948. The Peacekeeping mission's role was to monitor the Armistice Agreement between Israel and its Arab neighbors.
- UNPKF is a joint effort between the Department of Peace Operations and the Department of Operational Support
- UNPKF aims to assist host countries to transition from situations of conflict to peace. It provides security as well as political and peacebuilding support to conflict-ridden countries.
- The first large-scale mission having nearly 20,000 military personnel was the UN Operation in Congo launched in 1960.

- The three basic principles that guide U.N.'s Peacekeeping missions are:
 - Consent of the parties
 - Impartiality
 - Non-use of force except in self-defense and defense of the mandate
- UN Peacekeepers are now undertaking a wide variety of complex tasks, from establishing sustainable governance structures, human rights monitoring, and security sector reforms, to the disarmament, demobilization, and reintegration of former combatants

India and UN Peace-Keeping Mission

- India contributed to the UNPKF for the first time in the UN operation in Korea (the 1950s), where India's mediatory role in resolving the stalemate over prisoners of war in Korea led to the signing of the armistice that ended the Korean War. Since then, Over 200,000 Indians have served in 49 U.N. Peacekeeping missions.
- India has a long tradition of sending women on UN peacekeeping missions. In 2007, India became the first country to deploy an all-women contingent to a UN peacekeeping mission.
- Medical care is among the many services Indian Peacekeepers provide to the communities in which they serve on behalf of the Organization. They also perform specialized tasks such as veterinary support and engineering services.
- India was the first country to contribute to the Trust Fund on sexual exploitation and abuse, which was set up in 2016.
- In 2021, India supported the rolling out of the "Unite Aware" platform to enhance the safety of peacekeepers
- About 179 Indian soldiers have died in UN Peacekeeping operations.

Reasons for the increase in fatalities and Mitigation measures

Two factors that are causing an increase in fatalities are

- The type of war UNPKF is fighting involves confrontation with criminals and terrorists, whose modus operandi involves the creation of a state of chaos.
- The working atmosphere of UNPKF is getting worse both from a political and security point of view.

To mitigate such incidents India has presented a 10-point formula to address security and operational challenges faced by United Nations peacekeeping missions around the world. It includes:

- Ensure efficient cooperation with the host state.
- The agenda of the mission must be defined by the Countries participating in peacekeeping missions and not the security council.
- Before deployment understand the limits of the mission pragmatically.
- Have clearly defined objectives that have the support of adequate resources.

The Blue Helmet

- ❖ Blue Helmets are the military personnel of the U.N. that work alongside the U.N. Police and civilian colleagues to promote stability, security, and peace processes. They wear iconic blue helmets or berets.
- ❖ All military personnel under Blue Helmets are members of their national armies first who are seconded to work under the U.N. command.
- ❖ Qualified military officers from U.N. member states are recruited to serve as individual staff officers, military observers, or as part of units from an individual troop-contributing country, by the United Nations Office of Military Affairs.
- ❖ Blue Helmets are seconded to work under the U.N. flag for periods normally of up to one year in the field, or two or three years at the headquarters.

Line Number	Rank	Country	Male	Female	Total	Report Date
1	1	Bangladesh	6247	463	6710	31/03/2022
2	2	Nepal	5337	369	5706	31/03/2022
3	3	India	5479	102	5581	31/03/2022
4	4	Rwanda	4788	467	5255	31/03/2022
5	5	Pakistan	4041	82	4123	31/03/2022
6	6	Ethiopia	3346	414	3760	31/03/2022
7	7	Egypt	2708	84	2792	31/03/2022
8	8	Indonesia	2522	148	2670	31/03/2022
9	9	Ghana	2162	413	2575	31/03/2022
10	10	China	2136	101	2237	31/03/2022

- Prosecute those responsible for atrocities against peacekeepers.
- Using cutting-edge technology in peacekeeping operations can help overcome security issues.
- Leadership roles of military, civilians, and mission should be evaluated
- Always have an exit strategy.
- The duty to safeguard people against non-state groups operating on their soil shall rest with the host government

UNPKF-A Case for Reform

UNPKF is facing serious challenges such as:

- ✓ Difference of opinion between the countries of the Global North and South concerning the scope and mandates of peacekeeping operations.
- ✓ The countries of the north are asking for more robust peacekeeping mandates, while countries of the south fear that this may threaten their sovereignty.
- ✓ The peacekeepers are demanding more resources, whereas Global South fears that this would divert resources better spent on fighting poverty.
- ✓ The Security Council is accused of using these operations only in areas, which are geopolitically significant to them, and ignoring the rest.

To overcome these UNPKF should undergo reforms which must include:

- ✓ Security Council and the concerned member states need to report their performance failures in a time-bound and transparent manner.
- ✓ An accountability mechanism for failure needs to be established and incentives should be given for stronger performance.
- ✓ Data is necessary for troops to be deployed for the right roles, and deployment should only be based on training and operational readiness, and not politics.

PEPPER IT WITH
UNSC, UNGA, UNESCO

India has also suggested several reforms in UNPKF. India wants that the UNSC should decide on peacekeeping operations within 30 days or a maximum period of 90 days to avoid tragedies because of delays. India also wants the involvement of experts from various fields in peacekeeping to better deal with emerging challenges.

Conclusion

There is a need to improve the safety of peacekeepers and hold them accountable for their actions. There is also a need to strengthen the protection provided by peacekeeping forces, and finding political solutions to conflicts, and enhance the political impact of peacekeeping. India should take advantage of its rising global stature and should take a lead to make this arm of the UN more effective.

The Interpol General Assembly

News Excerpt

The General Assembly of the International Criminal Police Organisation (Interpol) is to be held in India. India will be hosting General Assembly for the second time since 1997.

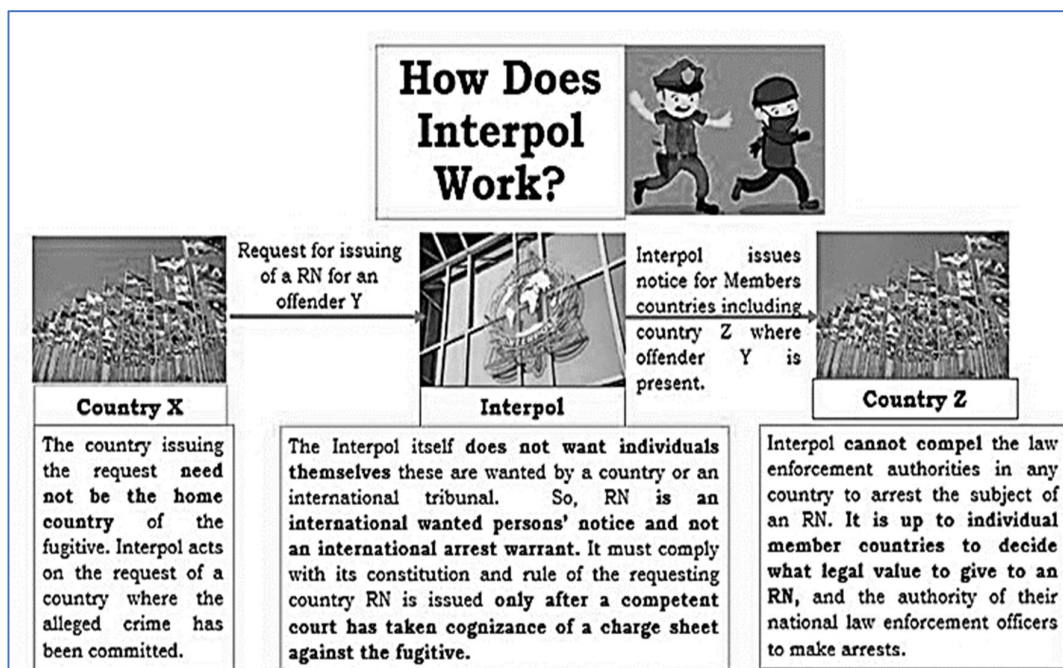
About Interpol

- Interpol was founded in 1923 as a secure information-sharing platform that facilitates criminal investigation of police forces across the globe through the collection and dissemination of information received from various police forces.
- It keeps track of the movements of criminals and those under the police radar in various regions and tips off police forces that had either sought Interpol's assistance or which in its opinion will benefit from the particulars available with it.
- Interpol aims to promote the widest-possible mutual assistance between criminal police forces.

Interpol Organisation

- Interpol is headed by the President who is elected by the General Assembly. President comes from one of the member nations and holds office for four years.

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- The day-to-day activities are overseen by a full-time Secretary General elected by the General Assembly, who holds office for five years. The General Assembly lays down the policy for execution by its Secretariat which has several specialized directorates for cybercrime, terrorism, drug trafficking, financial crime, environmental crime, human trafficking, etc.
- The CBI is the nodal agency of contact in India for Interpol. It assumes this role in India with its exclusive Interwing (the National Central Bureaus) for the collation of information and liaison with the world body.








About Red Notice(RN)

- ✓ Criminals or suspects often flee to other countries to evade facing justice. An RN alerts police forces across the world about fugitives who are wanted internationally.
- ✓ Issuance of RN act as a request to law enforcement to locate and provisionally arrest a person pending extradition, surrender, or similar legal action.
- ✓ An RN is published by Interpol at the request of a member country. The fugitives may be wanted for prosecution or to serve a sentence.
- ✓ RNs are issued to simultaneously alert police in all member countries about internationally wanted fugitives. An RN can help bring a fugitive to justice, sometimes many years after the crime was committed.

Conditions for Requesting a Red Notice

- ❖ The publication of an 'A' series or Red notice should only be requested if all the following conditions are fulfilled:
 - The person against whom the notice is to be published has committed an offence against ordinary criminal law.
 - The offence is an "extraditable offence" under the Indian Extradition Act, 1962.
 - A warrant of arrest has been issued for his/her arrest. Extradition will be requested, at least from certain countries
- If any of the above conditions is not satisfied, a 'B' series notice should probably be requested

Other Interpol Notices


 BLUE NOTICE <p>The Blue Notice or 'B' series notices are also called 'enquiry notices' and may be issued in order to have someone's identity verified; to obtain particulars of a person's criminal record; to locate someone who is missing or is an identified or unidentified international criminal or is wanted for a violation of ordinary criminal law and whose extradition may be requested.</p>	 GREEN NOTICE <p>The Green Notices or 'C' series notices are also called as 'Warning notices' is to give law enforcement agencies in member countries information about persons who have committed or are likely to commit offences affecting several countries and who might be on their territory. It gives info only about important international criminals and not about every criminal.</p>	
 BLACK NOTICE <p>The Black Notices or 'D' series notices is to circulate information about unidentified dead bodies or deceased persons who were probably using false identities.</p>	 <p>It is issued for groups and individuals who are the targets of UN Security Council Sanctions Committee</p>	 ORANGE NOTICE <p>The Orange Notices are issued to warn of an event, a person, an object or a process representing a serious and imminent threat to public safety</p>
 PURPLE NOTICE <p>The purpose of Purple notices or modus operandi notices is to notify the Narcotics Control Bureaus (NCBs) and through them, their police forces and law enforcement agencies, of certain modus operandi, procedures and hiding places used by criminals and to centralize information at the General Secretariat about similar methods used in different parts of the world and then circulate this information to the NCBs.</p>	 YELLOW NOTICE <p>The Yellow notices or 'E' series notices are published with a view to circulate information about stolen property or about objects found in circumstances which suggest that these may have been acquired illegally. Such objects may include cultural property i.e. idols, antiquities, paintings, etc. It is also used to locate missing persons</p>	

Future Challenges of Interpol

The rising specter of transnational, cyber, and organized crime requires a globally coordinated law enforcement response. Interpol has a legacy of trust and reliability. It needs to acquire powers of sanction against a country that refuses to cooperate in implementing a Red notice. It is however highly unlikely that member nations will ever agree to dilute their sovereignty and invest the Interpol with such authority.

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FATF, ICJ, Fugitive Economic Offenders Act



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ENVIRONMENT

Particulate Matter (PM) Pollution and NCAP

News excerpt

Union government has set a new target of a 40% reduction in PM concentration in cities covered under the National Clean Air Programme (NCAP) by 2026, updating the earlier goal of 20% to 30% reduction by 2024 while considering 2017 as base year.

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Pre-connect

- The Central Government launched National Clean Air Programme (NCAP) as a long-term, time-bound, national level strategy to tackle the air pollution problem across the country in a comprehensive manner.
- Goal of NCAP is to meet the prescribed annual average ambient air quality standards.
- Under NCAP, 122 non-attainment cities have been identified across the country based on the Air Quality data from 2014-2018.
- Implementation of the city specific action plans are regularly monitored by Committees at Central and State level namely Steering Committee, Monitoring Committee and Implementation Committee.
- Air quality of cities is monitored by State Pollution Control Boards which publishes their results from time to time.
- Some Smart Cities have established Integrated Command and Control Centres (ICCCs) which are also connected to Air Quality Monitors (AQMs) for effective monitoring.

Particulate matter

- ❖ Particulate matter (PM) includes microscopic matter suspended in air or water.
- ❖ Airborne particles are called aerosols.
- ❖ PM10 includes particles less than 10 μm in diameter, PM2.5 those less than 2.5 μm ,
- ❖ The toxicity of suspended particles is mainly due to particles with a diameter of less than 10 μm .
- ❖ They can be emitted directly into the air from anthropogenic activities (industry, residential, agriculture, transport) and natural sources (forest fires, volcanic eruptions, etc.).

Current scenario

- According to the Union Environment Ministry, 95 of the 131 non-attainment cities covered under the NCAP have witnessed an overall improvement in PM10 levels in 2021 as compared to 2017 levels.
- Twenty cities, including Chennai, Madurai and Nashik, have met the national standards for annual average PM10 concentration (60 microgram per cubic metre).
- The acceptable annual standard for PM2.5 is 40 micrograms per cubic metre.
- In Delhi, the PM10 concentration has reduced from 241 micrograms per cubic metre in 2017 to 196 micrograms per cubic metre in 2021.

Prana portal

- ❖ "PRANA" – Portal for Regulation of Air-pollution in Non-Attainment cities, is a portal for monitoring of implementation of National Clean Air Programme (NCAP).
- ❖ It will support tracking of physical as well as financial status of city air action plan implementation and disseminate information on air quality management efforts under NCAP to public.

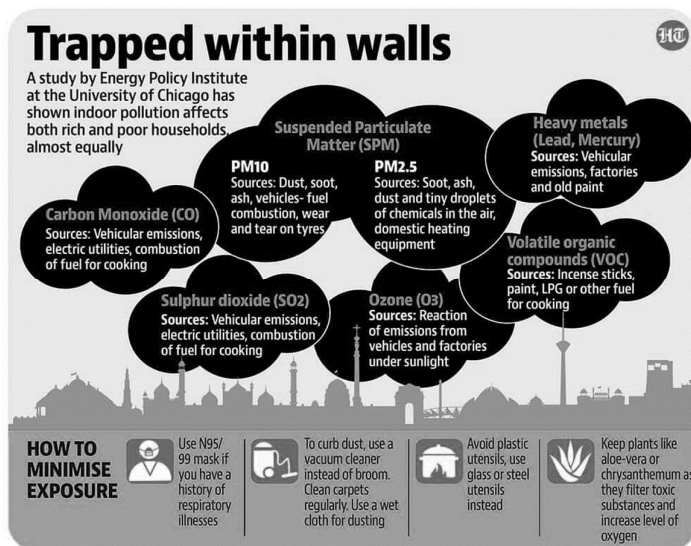
Initiatives under NCAP

- ✓ **Indoor Air Pollution Monitoring & Management:** It refers to the physical, chemical, and biological characteristics of air in the indoor environment within a home, building, or an institution or commercial facility.
- ✓ **National Emission Inventory:** An emission inventory is an accounting of the amount of pollutants discharged into the atmosphere. An emission inventory usually contains the total emissions for one or more specific air pollutants, originating from all source categories in a certain geographical area and within a specified time span, usually a specific year.

- ✓ **Technology Assessment Cell:** Technology Assessment Cell is being envisaged to evaluate the technologies having significance in reference to prevention, control and abatement of pollution. The cell is expected to focus on both indigenous and international monitoring and abatement technologies.
- ✓ **Institutional Framework:** An effective institutional framework which basically refers to formal organisational structures is the precondition for the successful implementation of pollution specifically air pollution related intervention tools and therefore needs to be considered in particular.

Challenges

- **Issue in organizational structures:** Most of the Indian cities do not have the organizational and individual capacity in terms of skills, workforce, and understanding to support these plans.
- **Lack of data analysis:** Most air pollution sources lack primary activity data required for developing source-specific strategies. There is no data available for city-specific vehicle populations, vehicle kilometres, construction activities, municipal solid waste burning, industries, the presence of appropriate technologies for air pollution control in industries, etc.
- **Infrastructural issue:** Cities lack a suitable number of continuous and manual monitoring stations to capture representative air quality data. Available monitoring stations are not able to capture data with proper guidelines.
- **Legal backup:** The city clean air action plan under NCAP is not notified under any Act; therefore, it does not legally bind any authorities into implementing mitigation measures.
- **WHO guidelines:** The national standards are much lower than that of WHO new guidelines on air pollution standards. Thus the new guidelines indicate that almost the entirety of India would be considered a polluted zone.
- **Minimal change:** A recent report showed that the pollution levels have expanded geographically over time and increased so much in Maharashtra and Madhya Pradesh that an average person is now losing an additional 2.5 to 2.9 years of life expectancy.
- **Weak mandate:** The WHO said that disparities in air pollution exposure are increasing worldwide, particularly as low- and middle-income countries are experiencing growing levels of air pollution because of large-scale urbanization and economic development.



China is winning after declaring war on air pollution.

China released a national air quality action plan that required all urban areas to reduce concentrations of fine particulate matter pollution by at least 10 percent, more in some cities.

Steps taken:

- ❖ China prohibited new coal-fired power plants in the country's most polluted regions.
- ❖ The country also reduced its iron- and steel-making capacity and shut down coal mines.
- ❖ Large cities, including Beijing, Shanghai, and Guangzhou, restricted the number of cars.
- ❖ Existing plants were told to reduce their emissions.

Way forward

Although cities face several challenges while developing these plans, recent development in the area of air quality management is a constructive step towards ensuring clean air in India.

- ✚ **Mandatory norm** : There should also be mandatory norms for each city to develop a plan to be able to properly assess local and regional air pollution sources and mitigation actions.
- ✚ **Need fiscal strategy** : Taking the 'polluter pay' based taxation mechanism on board to mobilise resources for dedicated funding of pollution control action and also to discourage polluting products, processes and activities.
- ✚ **Integrating data base** : NCAP should integrate health database, health impact, cost benefit studies and indicators for policy making.
- ✚ **Improving effectiveness spatially** : As air pollution sources are not limited to city boundaries, clean air plans need to consider both city (core) and the surrounding region (buffer) for effective mitigation strategies with the airshed approach.
- ✚ **Strong federal structure** : NCAP, while ensuring compliance, will also have to create enough room for tighter action that can be even stronger than the common minimum national programme as defined by NCAP, within federal structure.

Conclusion

Through its effective measures and strict policies, china and some other countries were successfully able to control their air quality, and India could also achieve success if it tries its level best in making NCAP a considerable success.

In a nutshell, with more strategic implementation, financial mechanisms, and strict policies, NCAP is bliss for our country because it is necessary to take immediate steps for controlling decreasing quality rates of air.

PEPPER IT WITH

SAFAR, Anti-Smog Guns, Smog Tower, NGT, CPCB, BS VI Emission Norms

Global Warming: Risk of Climate Tipping Points

News Excerpt

While the world is worried about restricting global warming to within 1.5 degree or 2 degree Celsius, a new study has found that even the current level of average global temperatures — about 1.1 degree Celsius higher than preindustrial times — is enough to trigger catastrophic changes in several climatic systems.

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Pre-connect

- Global warming is the long-term heating of Earth's surface observed since the pre-industrial period (between 1850 and 1900) due to human activities, primarily fossil fuel burning, which increases heat-trapping greenhouse gas levels in Earth's atmosphere. This term is not interchangeable with the term "climate change."
- Climate change is a long-term change in the average weather patterns that have come to define Earth's local, regional and global climates. These changes have a broad range of observed effects that are synonymous with the term.

Cooling effect on earth surface

- ❖ Volcanoes have contributed substantially to dust and acid aerosol levels high in the atmosphere.
- ❖ The Mount Pinatubo eruption in 1991 in the Philippines reduced average temperatures about half a degree Celsius (°C).
- ❖ While at lower levels in the atmosphere sulfate aerosols and dust are short-lived, such material in the stratosphere remains for years, increasing the amount of sunlight which is reflected away.
- ❖ Hence there is, for the time being, a balancing cooling effect on the Earth's surface.
- ❖ In the northern hemisphere the sulfate aerosols are estimated to counter nearly half the heating effect due to anthropogenic greenhouse gases.

Climate tipping points

- ✓ Climate tipping points are conditions beyond which changes in a part of the climate system become self-perpetuating. These changes may lead to abrupt, irreversible, and dangerous impacts with serious implications for humanity.
- ✓ Triggering Climate tipping points leads to significant, policy-relevant impacts, including substantial sea level rise from collapsing ice sheets, dieback of bio-diverse biomes such as the Amazon rainforest or warm-water corals, and carbon release from thawing permafrost.

- ✓ Crossing these CTPs (climate tipping points) can generate positive feedbacks that increase the likelihood of crossing other CTPs.

Tipping point and Global warming impacts

- Rising temperatures are causing large scale changes in these climatic systems. Glacial melt, thinning of Arctic ice, rise in sea-levels are all well-documented and visible changes.
- However, it is still possible to arrest these changes, or even reverse them over time. But once the tipping points are crossed, this possibility no longer exists.
- **Greenland Ice sheets**
 - When Greenland ice-sheet melts, the height of the ice sheet gradually reduces. In the process, a larger part of it gets exposed to warmer air. That is because air is warmer at lower altitudes than at higher altitudes.
 - The exposure to warmer air expedites the process of melting. Once the tipping point is crossed, this becomes a self-sustaining and cyclic system.
 - The system does not reverse even if the global temperatures stop rising.
- **Amazon forest**
 - If deforestation continues unabated in the region of Amazon forest, there would be fewer and fewer trees, which would reduce rainfall, causing further stress on the trees.
 - Thus, it develops into a self-perpetuating process.
- **Atlantic Meridional Overturning Circulation (AMOC)**
 - A recent study found that the AMOC is in its weakest state in 1,000 years. Moreover, the latest climate models project that continued global warming could weaken the AMOC by 34 to 45 percent by 2100.
 - If the AMOC shuts down, it would cause significant cooling along the east coast of the U.S. and Western Europe.
 - This, in turn, would alter rainfall patterns, make sea levels rise, cause more drying, and reduce agriculture in the U.K.
 - It could also potentially set off other tipping points. And even if global warming is reversed, once shut down, the AMOC would not switch back on for a long time.
- **Thawing of permafrost**
 - Several areas of the world remain frozen throughout the year. These are known as permafrost.

Climate feedbacks

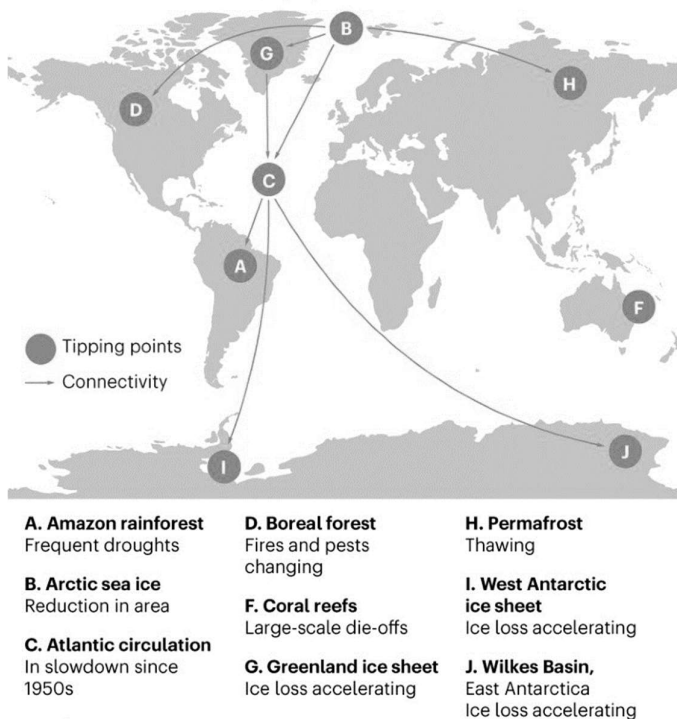
- ❖ It is a process that can either amplify or reduce the effects of climate forcings.
- ❖ A feedback that increases an initial warming is called a "positive feedback."
- ❖ A feedback that reduces an initial warming is a "negative feedback."

Climate forcing

Climate forcing is the physical process of affecting the climate on the Earth through a number of forcing factors. These factors are specifically known as forcings because they drive the climate to change, and it is important to note that these forcings exist outside of the existing climate system.

RAISING THE ALARM

Evidence that tipping points are under way has mounted in the past decade. Domino effects have also been proposed.



©nature

- Because they have remained in this state for centuries, they hold large amounts of carbon — from plants and animals that died and decomposed over the years — trapped in them.
- It is estimated that the permafrost layers hold as much as 1,700 billion tonnes of carbon, mainly in the form of carbon dioxide and methane. In comparison, the global emissions of carbon in a year are in the range of 40 billion tonnes .
- The softening or melting of permafrost layers, due to global warming, is already releasing some carbon into the atmosphere.
- This release of carbon is adding to the warming, which in turn is expediting the process of softening of permafrost layers.
- This has led to a tipping point beyond which it would become a self-perpetuating cycle.

New findings

The discussion on tipping points had first emerged about two decades ago, which warming scenarios exceeding 5 degree Celsius. But more recent information, including those presented by the Intergovernmental Panel on Climate Change (IPCC), suggest that climate tipping points would be crossed between 1 and 2 degree Celsius temperature rise.

- ✚ The latest study has presented evidence to suggest that some of these tipping points could be met even at the current levels of warming.
- ✚ It has shown that the present 1.1 degree Celsius warming was within the lower end of temperature ranges for at least five tipping points.
- ✚ Thus these self-perpetuating changes could possibly have already begun.
- ✚ For warming between 1.5 degree and 2 degree Celsius, six tipping points become “likely” and four more become “possible”.
- ✚ Evidences at 1.5 degree celsius, five tipping points become possible, which includes changes to vast northern forests and the loss of almost all mountain glaciers, the die-off of tropical coral reefs and changes to the west African monsoon.
- ✚ At more than 2 degree celsius, the nine global tipping points identified can possibly be the collapse of Greenland, West Antarctic, and two parts of the east Antarctic ice sheets, the partial and total collapse of Atlantic Meridional Overturning Circulation (AMOC), Amazon dieback, permafrost collapse and winter sea ice loss in the Arctic.
- ✚ There can be possible other impacts such as loss of ocean oxygen and major shifts in the Indian summer monsoon.

Conclusion

The findings of this study are expected to further amplify the voices asking for increase in efforts to restrict global warming. According to the sixth assessment report of the IPCC released earlier this year had said that

- Global emissions of greenhouse gases needed to peak by 2025, and reduce by 43 per cent from current levels by 2030, if the 1.5 degree Celsius target was to be achieved. With the current level of efforts, the world is on the path to become more than 2 degree warmer by the year 2100.

PEPPER IT WITH

GHG effect, Infrared Radiation, Short wave radiation, GHG Gases

Living Planet Report

News Excerpt

According to the WWF's Living Planet Report (LPR) 2022, Wildlife populations of mammals, birds, amphibians, reptiles and fish have seen a devastating 69% drop on average since 1970. The report highlights the stark outlook of the state of nature and urgently warns governments, businesses and the public to take transformative action to reverse the destruction of biodiversity.

Pre-connect

Biodiversity

- Biodiversity refers to the various life forms that exist on earth, including animals, plants, microorganisms, and the entire ecosystem they live in.
- Biodiversity is in the form of biological resources, including genes, species, organisms, and ecosystems. Thus, there are three main levels of biodiversity are species, genetic, and ecosystem biodiversity.

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Levels of biodiversity

- **Genetic diversity** is the variety of genes within a species. Each species is made up of individuals that have their own particular genetic composition. This means a species may have different populations, each having different genetic compositions. To conserve genetic diversity, different populations of a species must be conserved.
- **Species diversity** is the variety of species within a habitat or a region. Some habitats, such as rainforests and coral reefs, have many species. Others, such as salt flats or a polluted stream, have fewer.
- **Ecosystem diversity** is the variety of ecosystems in a given place. An ecosystem is a community of organisms and their physical environment interacting together. An ecosystem can cover a large area, such as a whole forest, or a small area, such as a pond.

Biodiversity cold-spots

A “biodiversity cold spot” is an area with a limited variety of living things, like plants, animals, fungi, and bacteria.

Biodiversity hotspots

There are currently 36 recognized biodiversity hotspots. These are Earth’s most biologically rich—yet threatened—terrestrial regions. To qualify as a biodiversity hotspot, an area must meet two strict criteria:

- Contain at least 1,500 species of vascular plants found nowhere else on Earth (known as “endemic” species).
- Have lost at least 70 percent of its primary native vegetation.

Many of the biodiversity hotspots exceed the two criteria. For example, both the Sundaland Hotspot in Southeast Asia and the Tropical Andes Hotspot in South America have about **15,000** endemic plant species. The loss of vegetation in some hotspots has reached a startling **95** percent.

Key Points of the Report✓ **Decline in wildlife population**

- Report highlighted that there is highest decline in the wildlife populations (94%) was in the Latin America and the Caribbean region.
- Whereas, Africa recorded a 66% fall in its wildlife populations from 1970-2018 whereas the Asia-Pacific recorded a decline of 55%.

✓ **Reduction in freshwater species**

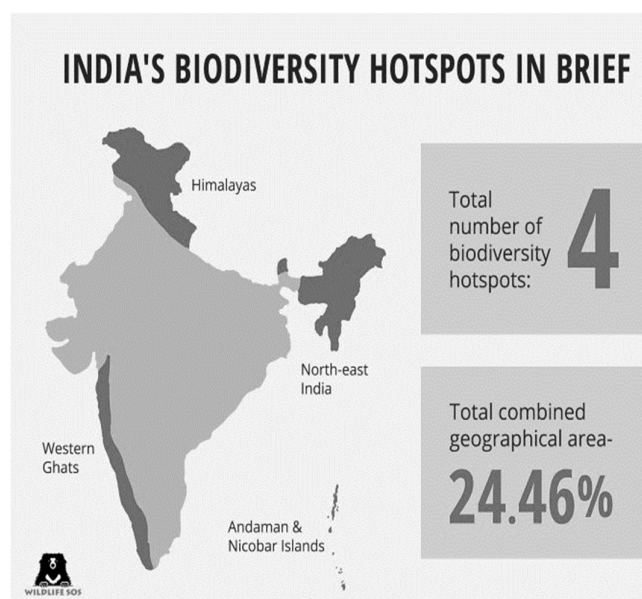
- The Freshwater Species populations globally reduced by 83%.
- The threat such as habitat loss and barriers to migration routes were responsible for about half of the threats to monitored migratory fish species.

✓ **Decline in vertebrate wildlife species**

- Report highlighted that vertebrate wildlife populations are collapsing at a particularly staggering rate in tropical regions of the world.

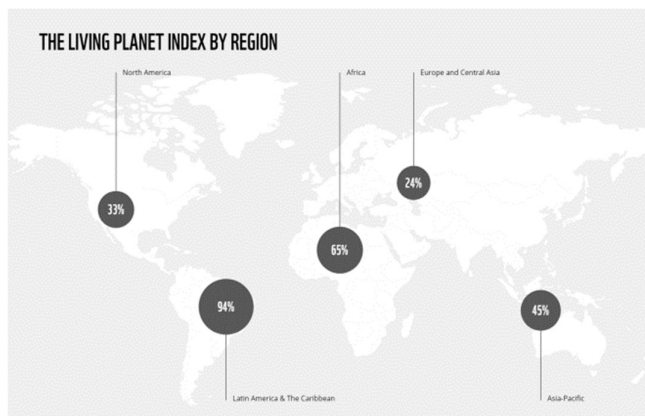
✓ **Degradation of Mangroves region**

- The report highlighted that the mangroves continue to be lost to aquaculture, agriculture and coastal development at a rate of 0.13% per year.
- Many mangroves are degrading because of overexploitation and pollution, alongside natural stressors such as storms and coastal erosion.



Threats to biodiversity

- **Habitat loss:** This occurs when a particular area is converted from usable to unusable habitat. Industrial activities, agriculture, aquaculture, mining, deforestation, and water extraction are all central causes of habitat loss. This includes deforestation for cooking food. Habitat fragmentation, the loss of large units of habitat, is also a serious threat to biodiversity.
- **Invasive species:** When an animal, plant, or microbe moves into a new area, it can affect the resident species in several different ways. New species can parasitize or predate upon residents, hybridize with them, compete with them for food, bring unfamiliar diseases, modify habitats, or disrupt important interactions.
- **Pollution:** The discharge of toxic synthetic chemicals and heavy metals into the environment has a huge impact on species abundance and can lead to extinctions. It's important to remember that substances that are "natural" can become pollution when they are too abundant in a certain area.
- **Human population:** In the year 1800, there were fewer than 1 billion people on earth, and today there are about 6.8 billion. Even without the vast increases in per capita resource use that have occurred during this period, the pressures on biodiversity would have increased during this time period simply based on population growth. Thus increasing populations have lead to increasing threats to biodiversity.
- **Overharvesting:** This includes targeted hunting, gathering, or fishing for a particular species as well as incidental harvesting such as bycatch in ocean fisheries. The mega fauna extinction example earlier was an example of overharvesting causing biodiversity loss.



Impacts

Impacts of climate change on biodiversity:

- ✚ The present global biota has been affected by fluctuating concentrations of temperature, precipitation, and greenhouse gases like carbon dioxide and has coped through evolutionary changes through the adoption of natural adaptive strategies.
- ✚ Habitat fragmentation is one of the effects of climate change on biodiversity and has already confined many species to relatively small areas, decreasing their population and their roles and contribution in the ecosystem. It also leads to reduced genetic variability.
- ✚ Human activities have already resulted in the loss of biodiversity and thus may have affected goods and services crucial for human well-being. For example, the dodo bird, native to Mauritius was hunted to extinction within a century.
- ✚ With the current rising level of greenhouse gases emissions, its magnitude and effects will continue to diminish biodiversity and its related aspects.

Links between biodiversity and climate change

- ✚ Climate change affects biodiversity through shifting habitat, changing life cycles, as well as the development of new physical traits.
- ✚ Conserving and sustainably managing biodiversity can help to control climate change. Conserving natural habitat like freshwater, marine and terrestrial ecosystems and at the same time restoring degraded ecosystems is essential for achieving global goals and controlling climate change.
- ✚ The habitat of biodiversity is a major carbon sink contributing to climate change mitigation. For instance, mangrove forests provide habitat to tigers and at the same time reduce the disastrous impacts of climate change such as flooding and storm surges.
- ✚ Henceforth, ecosystem-based adaptation integrates the use of biodiversity and ecosystem services, acting as an adaptation strategy. It is cost-effective and stabilizes the social, economic and cultural co-benefits and contributes to the conservation of biodiversity.

Way Forward

There are many ways in which we can reverse nature loss which include bolder and more ambitious conservation efforts. However, we also need transformational changes in the way we produce and consume, such as making food production and trade more efficient, reducing waste and favouring healthier and more sustainable diets. Thus the living planet report 2022 shows how climate change and biodiversity loss are not only environmental issues but economic, development, security and social issues too- and they must therefore be addressed together.

PEPPER IT WITH

Kunming Declaration,
AICHI biodiversity Target,
30x30 Target, CBD, CITES

New Tiger Reserve In Uttar Pradesh

News Excerpt

The Uttar Pradesh government has approved the notification of the State's fourth tiger reserve. It will come up in Chitrakoot district's Ranipur Wildlife Sanctuary (RWS).

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Pre-connect

National Tiger Conservation Authority (NTCA)

- The National Tiger Conservation Authority (NTCA) is a statutory body under the Ministry of Environment, Forests and Climate Change constituted under enabling provisions of the Wildlife (Protection) Act, 1972, as amended in 2006, for strengthening tiger conservation, as per powers and functions assigned to it under the said Act.
- NTCA has been fulfilling its mandate within the ambit of the Wildlife (Protection) Act, 1972 for strengthening tiger conservation in the country.
- The objectives of NTCA are:
 - Providing statutory authority to Project Tiger so that compliance of its directives become legal.
 - Fostering accountability of Center-State in management of Tiger Reserves, by providing a basis for MoU with States within our federal structure.
 - Providing for an oversight by Parliament.
 - Addressing livelihood interests of local people in areas surrounding Tiger Reserves.

Ranipur wildlife sanctuary

- Founded in 1977, Ranipur Wildlife Sanctuary is home to dry deciduous forest of Bamboo, Palash, Khair, Mahua, Dhau, Saal, Tendu, etc.
- According to the report, "Status of tigers, co-predators & prey in India" by the National Tiger Conservation Authority (NTCA), RWS is an important corridor for the movement of tigers.

Wildlife (Protection) Act 1972

- The Government enacted Wildlife (Protection) Act 1972 with the objective of effectively protecting the wildlife of this country and to control poaching, smuggling and illegal trade in wildlife and its derivatives.
- The Act was amended in January 2003 and punishment and penalty for offences under the Act have been made more stringent.
- The Ministry has proposed further amendments in the law by introducing more rigid measures to strengthen the Act.
- The objective is to provide protection to the listed endangered flora and fauna and ecologically important protected areas.

Project Tiger

- The Government of India has taken a pioneering initiative for conserving its national animal, the tiger, by launching the "Project Tiger" in 1973.
- From 9 tiger reserves since its formative years, the Project Tiger coverage has increased to 51 at present, spread out in 18 of our tiger range states.
- This amounts to around 2.23% of the geographical area of our country.
- Core-buffer strategy in Project tiger**

- **Core area:** A particular expanse of land is identified and marked as the 'core area of the reserve. These areas are kept free of all human activities. It usually has the legal status of National Park or Wildlife Sanctuary. No human activity is allowed inside the core area, including tourism. Even everyday tasks such as grazing and wood collection are banned.
- **Buffer area:** The buffer areas usually surround the core area and are comparatively less frequented by the resident wildlife. Hence, limited human interaction here will not harm their habitat. Hence, it is subjected to 'conservation-oriented land use'. Certain everyday activities necessary for daily life and living of surrounding villages are allowed.
- The buffer area serves twin purposes. One, it serves as a habitat supplement to the spillover population of wild animals from the core area. Two, it becomes a livelihood source for surrounding villages and relieves their impact on the core zone.

Plan of actions for tiger reserves in India

- ✓ To counter poaching, wireless communication systems and outstation patrol camps have been deployed within the tiger reserves.
- ✓ Fire protection is ensured through preventive and control measures. Compensatory developmental works have improved water availability which in turn better vegetation. Lush vegetation cover helps in increasing the tiger prey base.
- ✓ Village relocation is one of the significant steps as well as a hurdle to reserve management in core zones. While some villages relocate voluntarily, most others resist giving up their ancestral dwellings. The issue gets even more sensitive in the case of tribal communities.
- ✓ The Indian Government passed the Forest Rights Act in 2006 which recognized the right of some forest communities to their native forest area.

Global initiatives

- **The Global Tiger Initiative (GTI)** was launched in 2008 as a global alliance of governments, international organizations, civil society, the conservation and scientific communities and the private sector, with the aim of working together to save wild tigers from extinction.
 - The GTI's founding partners included the World Bank, the Global Environment Facility (GEF), the Smithsonian Institution, Save the Tiger Fund, and International Tiger Coalition. The initiative is led by the 13 tiger range countries (TRCs).
- **CITES :** Tigers have been included in Appendix of CITES since 1975, which means all international trade in tigers, including parts and derivatives, for commercial purposes is generally prohibited under the Convention.
- **Global tiger forum :** Global Tiger Forum is an international intergovernmental body exclusively set up for the conservation of tigers in the wild in the range countries.
 - Out of the 13 tiger range countries, seven are currently members of GTF: Bangladesh, Bhutan, Cambodia, India, Myanmar, Nepal and Vietnam besides non-tiger range country U.K.

Threats




✚ **Threats to Habitats and Connectivity:** Threats to tiger habitats remain significant and are predicted to intensify with rapid infrastructure development and investment in extractive industries.

✚ **Poaching and Wildlife Crime Control:** Poaching and wildlife crime continue to be major concerns, with poaching remaining a significant issue, while it remains to accurately pinpoint overall trends and indicators of wildlife crime and assessments of law enforcement efforts.

✚ **Capacity Building:** Developing institutional capacity and national centers of excellence are priority activities to scale up current efforts.

Facts about tiger and tiger reserves in India

- ❖ India hosts a total of 75% tiger population of the world.
- ❖ India is the only country to host three prime members of Big Cats Family; Lion, Tiger, and Leopards.
- ❖ Tigers are classified as endangered under IUCN red data book
- ❖ Tiger comes under schedule 1 of WPA 1972.
- ❖ Largest tiger reserve Nagarjunsagar-Srisailem Tiger Reserve.
- ❖ Smallest tiger reserve is Bor tiger reserve.
- ❖ Highest tiger density is in Jim Corbett national park.

-  **Scientific Monitoring:** Monitoring results are essential for guiding management interventions, such as identification of poaching corridors around the world.
-  **Demand Elimination:** Eliminating demand for tiger products remains a significant hurdle.
-  **Rebuilding Tiger Populations:** Sharing existing experience on how to rebuild tiger populations is a priority and essential for countries that are working to prevent the extinction of the species.

PEPPER IT WITH

Trophic Downgrading, Key Stone Species, Indicator Species, Edge effect

Commission for Air Quality Management and Graded Response Action Plan (GRAP)

News excerpt

The Delhi and NCR have witnessed "poor" category in the Air quality index. The Commission for Air Quality Management (CAQM) said that measures under 'Stage-1' of the Graded Response Action Plan (GRAP) will be enforced in the NCR with immediate effect.

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Pre-connect :

About Graded response action plan (GRAP)

- GRAP is a set of emergency measures to prevent further deterioration of air quality once it reaches a certain threshold.
- The GRAP was first notified in January 2017 by the Ministry of Environment, Forest and Climate Change. This was based on a plan that was submitted by the Central Pollution Control Board (CPCB) in November 2016.
- The GRAP is being implemented by the CAQM.
- Stage 1 of GRAP is activated when the AQI is in the 'poor' category (201 to 300)
- The second, third and fourth stages will be activated when the AQI reaching the 'very poor' category (301 to 400), 'severe' category (401 to 450) and 'severe +' category (above 450) respectively.
- The CAQM is relying on air quality and meteorological forecasts by the Indian Institute of Tropical Meteorology (IITM) and the India Meteorological Department (IMD).
- Measures being imposed under the previous categories will continue even when the subsequent category is activated, that is, if measures under Stage-2 are activated, measures under Stage-1 will continue to remain in place.

Air quality index

The air quality index (AQI) is an index for reporting air quality on a daily basis. It is a measure of how air pollution affects one's health within a short time period. The purpose of the AQI is to help people know how the local air quality impacts their health. The Environmental Protection Agency (EPA) calculates the AQI for five major air pollutants, for which national air quality standards have been established to safeguard public health.

- Ground-level ozone, Particle pollution/particulate matter (PM_{2.5}/ PM₁₀), Carbon Monoxide, Sulfur dioxide and Nitrogen dioxide

The higher the AQI value, the greater the level of air pollution and the greater the health concerns.

Changes in response this year

- In the version of the GRAP that was notified in 2017, measures were taken after the pollution concentrations reached a certain level. This year, measures are pre-emptive and will be based on forecasts in an attempt to prevent the AQI from deteriorating further.
- The older version of the GRAP was enforced based only on the concentration of PM_{2.5} and PM₁₀. This year, GRAP is being enforced based on the AQI, which takes other pollutants also into account, such as ozone, sulphur dioxide and oxides of nitrogen.
- For the first time, it specifies that State governments in the NCR may impose restrictions on BS-III petrol and BS-IV diesel four wheelers under Stage-3, or when the AQI is likely to reach the 'severe' category.
- Under 'severe +' category

- GRAP imposes a ban on plying of four-wheelers in Delhi and NCR districts bordering Delhi, except for BS-VI vehicles and those plying for emergency or essential services.
- Ban on the movement of Delhi registered, diesel-operated medium and heavy goods vehicles in Delhi, with exceptions for those carrying essential commodities or providing essential services under 'severe +' category.
- Ban on construction activities on linear public projects like highways, roads, flyovers, pipelines and power transmission,
- State governments may consider additional emergency measures like the closure of schools, plying of vehicles on an odd-even basis, and decide on allowing public, municipal and private offices to work on 50% strength and the rest to work from home.

Implementation and enforcement of GRAP

- ✓ The CAQM has constituted a sub-committee for the operationalization of the GRAP.
- ✓ The sub-committee is required to meet frequently to issue orders to invoke the GRAP.
- ✓ The orders and directions of the CAQM will prevail in case of any conflict between directions issued by the State governments and the CAQM.
- ✓ Measures under the different categories of the plan are to be enforced by the pollution control boards of the NCR states and the concerned departments and agencies, including the traffic police, the Transport Department and road owning and construction agencies.

PEPPER IT WITH

CPCB, NGT, Air Pollution, WHO's Ambient Air Quality Standards, NAAQ

Conclusion

It is expected that the revised GRAP, in addition to multiple directions issued by CAQM regarding permitted fuels and comprehensive plan on menace of air pollution, will ensure consistency in air pollution management policies across Delhi-NCR. However, it remains to be seen as to how the implementation of these policies will overcome the challenges and shortcomings that were identified in the earlier policies to address air pollution in Delhi-NCR.

Digital de-carbonization

News excerpt

In 2020, digitisation was purported to generate 4% of global greenhouse gas emissions. The "dark data" is anchored to the real world by the energy it requires. Even data that is stored and never used again takes up space on servers - typically huge banks of computers in warehouses. Those computers and those warehouses all use lots of electricity at the cost of environment. Thus data de-carbonization can be the solution.

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Pre-connect

Dark data

- Dark data is all of the unused, unknown and untapped data across an organization, generated as a result of users' daily interactions online with countless devices and systems — everything from machine data to server log files to unstructured data derived from social media.
- Organizations may consider this data too old to provide value, incomplete or redundant, or limited by a format that can't be accessed with available tools.

Digital carbon footprint

A carbon footprint is the total amount of greenhouse gases (including carbon dioxide and methane) that are generated by our actions. However, the production, use and data transfer of digital devices causes more CO₂ emissions than one might expect. These emissions are summarized under the terms "digital CO₂ footprint" or "digital carbon footprint".

Current scenario

While most climate change activists are focused on limiting emissions from the automotive, aviation and energy industries, the processing of digital data is already comparable to these sectors and is still growing.

- In 2020, digitisation was purported to generate 4% of global greenhouse gas emissions.

- Production of digital data is increasing fast-this year the world is expected to generate 97 zetta-bytes (that is: 97 trillion gigabytes) of data.
- By 2025, it could almost double to 181 zettabytes. It is therefore surprising that little policy attention has been placed on reducing the digital carbon footprint of organisations.
- The lion's share of the digital footprint is caused by video streaming due to large data sizes of videos. By comparison, using a search engine or sending text-only emails has a negligible impact.

Environmental impacts of digitisation:

- ✓ **Increase in Energy Demand:** Digitisation has led to high global energy demand and has increased GHG's emission. global trends such as cryptocurrency mining, cloud usage, artificial intelligence, virtual and augmented reality, autonomous driving, the "Internet of Things" and the foreseen implementation of 5G will drive further increases in energy demand.
- ✓ **Impacts from mineral and metal supply chains needed for digital products and energy technologies:** The extraction process, as well as the production process to turn the minerals into cell phones, computers and servers, comes with its own environmental footprint across the lifecycle. Similarly, the increasing level of green energy technologies that power digital technologies also have supply chains based on extensive use of metals and rare earth minerals.
- ✓ **Increase of E-waste:** E-wastes are the world's fastest-growing domestic waste stream, fuelled mainly by higher consumption rates of electrical and electronic equipments, short life cycles, and fewer options for repair. Thus affecting the soil and environment.



Digital De-carbonization:

- There is a need to act now to decarbonise data centres, and there are three key areas to address.
 - **Less heat, less energy use:** Data centres should technologically reduce the heat dissipation such as including passive cooling. As data centre growth continues, becoming a source of heat for nearby homes and businesses is one way the centres can be integrated into communities and contribute to wider decarbonisation efforts.
 - **Greening the power supply:** Using renewable energy as the source of supply can be another option available for data centres to de-carbonize. One promising option is to use tidal power, which offers completely reliable power, predictable centuries in advance.
 - **Clean energy storage and backup:** Flow batteries store their energy in tanks of electrolytes and can hold their charge indefinitely, making them potentially more effective. The emerging hydrogen economy may also provide an alternative. It can be produced using surplus renewable energy and carbon emissions from industrial facilities.

Conclusion

The rapid growth of dark data raises significant questions about the efficiency of current digital practices. Various digital de-carbonization practices can reduce dark data production and contribute to the digital decarbonisation movement. Thus there is need to acknowledge the urgency if net zero is to be realised.

PEPPER IT WITH

Net Zero Emissions, 'Dark data', Industrial Deep Decarbonisation Initiative

Shifting monsoon patterns

News excerpt

The India Meteorological Department (IMD) asserted that the monsoon has begun to retreat from Rajasthan.

Pre-connect

A monsoon is a seasonal change in the direction of the prevailing, or strongest, winds of a region. Monsoons cause wet and dry seasons throughout much of the tropics. Monsoons are most often associated with the Indian Ocean. Monsoons always blow from cold to warm regions. The summer monsoon and the winter monsoon determine the climate for most of India and Southeast Asia.

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Theories

• Thermal theory of Admand hally- Based on phenomena of Land and Sea Breeze

- According to the theory, in Summer- Sun is over Northern Hemisphere- Land gets heat up in comparison with ocean- Creating Low Pressure- Wind blows from Ocean to land bringing rain.
- In winter sun is over southern hemisphere- land mass cools rapidly- High pressure area over Asia- Low pressure centre on Indian ocean.

• Dynamic theory of Flohn

- Monsoon is result of the seasonal migration of planetary winds and pressure belts.
- The trade winds in both the hemisphere converge at equator and form Inter-tropical convergence zone (ITCZ)
- The northern limits called northern Inter-tropical convergence zone (NITCZ) and southern is called SITCZ (Southern Inter-tropical convergence zone)
- Doldrum lies between NITC and SITC- characterized by equatorial westerlies.
- During summer solstice- trade wind of southern hemisphere shift northward- creates south-east trade winds- produce monsoon.
- During winter solstice winds shift southward- creating north-east trade winds- produce winter monsoon.

• Role of Tibet

- Tibetan plateau produces anticyclone in mid troposphere- weakens sub-tropical jet streams (STJ) - produces tropical easterly jet stream
- Koteswaram tried to establish relationship between monsoon and the atmospheric conditions prevailing over Tibet Plateau.



- The northward movement of sub-tropical jet-streams is responsible for the onset of monsoon in India.
- The westerly jet causes high pressure over northern parts in winter-winds flow north and south causing north-east monsoon.
- **Role of jet streams**
 - The jet streams are a narrow belt of high altitude westerly winds in the troposphere.
 - Tropical easterly jet streams are low level jet streams in northern hemisphere of southern Asia and northern Africa.
 - It comes into existence when STJ moves northward.
 - It does not come into existence if snow over Tibet does not melt, hampering monsoon in India.

Retreating monsoon mechanism:

- The northeast monsoon derives its name from the direction in which it travels – from the northeast to the southwest.
- The reversal of direction in the lower-atmosphere moisture-laden winds happens primarily due to the southward movement of Inter Tropical Convergence Zone (ITCZ) during the withdrawal phase.
- The ITCZ is a dynamic region near the Equator where the trade winds of the northern and southern hemispheres come together.
- The intense sun and warm waters of the ocean heat up the air in this region and increase its moisture content. As the air rises, it cools, and releases the accumulated moisture, thus bringing rainfall.
- During the monsoon season, this ITCZ is located over the Indian landmass. By September, as the temperature in the northern hemisphere begins to go down, the ITCZ starts moving southwards, towards the Equator.
- Whereas in the southern hemisphere, the summer season begins to take shape.

El-Nino and La Nina seasonal impacts

- ✓ El Nino and La Nina are mutually opposite phenomena, during which an abnormal warming or cooling of sea surface temperatures is observed in the Pacific Ocean along the equator, off the coast of South America.
- ✓ Together they constitute what is known as the El Niño-Southern Oscillation system, or ENSO for short.
- ✓ ENSO conditions can alter both temperatures and rainfall globally, due to their strong interference on global atmospheric circulations.
- ✓ It is a recurring phenomenon and the change in temperature is accompanied by changes in the patterns of upper and lower level winds, sea level pressure, and tropical rainfall across the Pacific Basin.
- ✓ Normally, El Nino and La Nina occur every four to five years. El Nino is more frequent than La Nina.

Country	Normal condition	El-Nino	La-nina
India	Rainfall	Weak walker cell over Indian ocean-causing drought	Strong walker cell over Indian ocean-causing flood
Australia	Rainfall due to warm water in eastern pacific Australia	Weak walker circulation over pacific in eastern Australia-causing warm and dry conditions	Strong walker circulation over pacific in eastern Australia-causing floods and heavy rainfall
South America	Drought condition	Heavy rainfall over the coast of Peru causing floods and weakens the trade winds	Strong trade winds causing dry weather condition and draught.

Other factors affecting Indian monsoon

- **Indian ocean dipole:** The Indian Ocean Dipole (IOD) is defined by the difference in sea surface temperature between two areas (or poles, hence a dipole) – a western pole in the Arabian Sea (western Indian Ocean) and an eastern pole in the eastern Indian Ocean south of Indonesia. The IOD affects the climate of Australia and other countries that surround the Indian Ocean Basin, and is a significant contributor to rainfall variability in this region.
- **Madden Julian oscillation:** The MJO is an *eastward moving* disturbance of clouds, rainfall, winds, and pressure that traverses the planet in the tropics and returns to its initial starting point in 30 to 60 days, on average. This atmospheric disturbance is distinct from ENSO, which once established, is associated with persistent features that last several seasons or longer over the Pacific Ocean basin. There can be multiple MJO events within a season, and so the MJO is best described as *intra-seasonal* tropical climate variability (i.e. varies on a week-to-week basis).

Indian ocean dipole (IOD)	Consequences in India
+ve IOD	Western Indian ocean becomes warm and causes heavy rainfall
-ve IOD	Eastern Indian ocean becomes warm causing low or below average rainfall

Combined phenomena	Consequences
+ve IOD + La Nina	Extreme flood
-ve IOD + El Nino	Extreme drought
+ve IOD + El nino	Average rainfall
-ve IOD + La Nina	Average rainfall

Madden Julian oscillation	Consequences in Indian subcontinent
MJO + El Nino	Increase in drought conditions
MJO + La Nina	Decrease in flood events

El-Nino impact on North-east monsoon

- ✚ Like the southwest monsoon, the northeast monsoon is also impacted by the warming and cooling of sea surface waters in the central Pacific Ocean. But the impact is opposite.
- ✚ The northeast monsoon is known to receive a boost from El Niño, when the sea surface temperatures in the equatorial Pacific Ocean, off the western coast of South America, are warmer than usual.
- ✚ When the opposite phenomena La Niña happens, rainfall during the northeast monsoon is known to get depressed.

Other factors influencing monsoon in India

- > **Climate change** : Marked by extreme localised rainfall events, an unusually dry August and an unusually wet September, the summer monsoon and winter monsoon had a shift from their usual pattern.
- > **Irrigation pattern** : The winter irrigation (November-March) actually strengthens the monsoon rains over the region for the following year and also reduces intra-seasonal variations in rainfall. However, with year-round irrigation, there is a noticeable decrease in the summer monsoon rainfall.
- > **Aerosols and dust** : The local factors that have been shown to affect the monsoon rainfall in India. In a recent study in 2022, researchers at IIT Bhubaneswar have shown that dust transported to the Arabian sea from the Middle-Eastern deserts (the Sahara and the Sinai) could increase rainfall in India and south Asia over short time scales of one or two weeks.

PEPPER IT WITH
 Monsoon trough, Pseudo
 Monsoonal Tendencies,
 Monsoon Pause, Cooling of
 Arabian Sea

Conclusion

The country's first ever official climate change report, the *Assessment Of Climate Change Over The Indian Region*, prepared by the Indian scientific community and published by the ministry of earth sciences (MoES) in 2020, lays out the state of the monsoon in a rapidly heating world quite clearly. Since 1951, the monsoon circulation has weakened, especially in regions like the Western Ghats and the Indo-Gangetic plains. Simultaneously, however, incidents of localised heavy rainfall have increased. What has also increased is the duration of dry spells between rainy days during the monsoon. Thus climate change has added variability and uncertainty.

Cyclones Intensification

News excerpt

As Earth's climate warms, more storms are growing quickly from relatively weak tropical storms to Category 3 or higher hurricanes in under 24 hours.

Pre-connect

Tropical cyclones

- **Tropical cyclone**, or **typhoon** or **hurricane** are Severe atmospheric disturbance that originates over tropical oceans.
- Tropical cyclones have very low atmospheric pressures in the calm, clear centre (the eye) of a circular structure of rain, cloud, and very high winds.
- Because of the Earth's rotation, they rotate clockwise in the Southern Hemisphere and counter-clockwise in the Northern.
- They may be 50–500 mi (80–800 km) in diameter, and sustained winds in excess of 100 mph (160 kph) are common.
- In the eye, however, the winds drop abruptly to light breezes or even complete calm. The lowest sea-level pressures on Earth occur in or near the eye.
- In the North Atlantic Ocean and the eastern North Pacific, these storms are called hurricanes. In the western North Pacific, they are referred to as typhoons. Elsewhere they are called tropical cyclones or, simply, cyclones.

Frontogenesis

- Frontogenesis is the generation or intensification of a front.
- It occurs when warm air converges onto colder air, and the horizontal temperature gradient amplifies by at least an order of magnitude.
- Whenever a region experiences horizontal convergence (and therefore uplift), any pre-existing gradient will increase.
- A prerequisite for frontogenesis is that the atmosphere is *baroclinic*, i.e. that temperature advection occurs.

Role of corolis force on cyclone

- ✓ Cyclones are low-pressure systems that suck air into their center, or "eye."
- ✓ In the Northern Hemisphere, fluids from high-pressure systems pass low-pressure systems to their right. As air masses are pulled into cyclones from all directions, they are deflected, and the storm system—a hurricane—seems to rotate counter-clockwise.
- ✓ In the Southern Hemisphere, currents are deflected to the left. As a result, storm systems seem to rotate clockwise.

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Dvorak technique

- ❖ It was first developed in 1969 and tested for observing storms in the northwest Pacific Ocean.
- ❖ Forecasters used the available satellite images obtained from polar orbiting satellites to examine the features of the developing tropical storms (hurricanes, cyclones and typhoons).
- ❖ During day time, images in the visible spectrum were used while at night, the ocean would be observed using infrared images.
- ❖ The Dvorak technique was a cloud pattern recognition technique based on a concept model of the development and decay of the tropical cyclone.

Hemisphere	Cyclone
Northern	Anti-clock wise
Southern	Clock wise

Anti-cyclonic conditions:

- Anticyclones are often regions of clear skies and sunny weather in summer; at other times of the year, cloudy and foggy weather—especially over wet ground, snow cover, and the ocean—may be more typical.
- Winter anticyclones produce colder than average temperatures at the surface, particularly if the skies remain clear.
- Anticyclones are responsible for periods of little or no rain, and such periods may be prolonged in association with blocking highs.
- Desert regions of the world generally have anti-cyclonic conditions.

Climate change impact on cyclones

- ✚ Climate change is making hurricanes wetter, windier and altogether more intense.
- ✚ It is causing storms to travel more slowly, meaning they can dump more water in one place.
- ✚ Ocean heat is contained near the water's surface. The additional heat due to climate change can fuel a storm's intensity and power stronger winds.
- ✚ Climate change boosts the amount of rainfall delivered by a storm. Because a warmer atmosphere can also hold more moisture, water vapor builds up until clouds break, sending down heavy rain.
- ✚ The typical "season" for Hurricanes is shifting, as climate warming creates conditions conducive to storms in more months of the year.
- ✚ Hurricanes are tended to make landfall in regions far outside the historic norm.

Conclusion

Even the most stringent mitigation efforts cannot avoid some impacts of climate change over the next few decades. Climate change impacts such as rapid intensification of hurricanes can be seen now. This makes adaptation essential, particularly in addressing near-term impacts. However, unmitigated climate change would, in the long term, be likely to exceed our capacity to adapt. It is essential, then, to develop a portfolio or mix of strategies that includes mitigation, adaptation, technological development (to enhance both adaptation and mitigation) and research (on climate science, impacts, adaptation and mitigation).

Melting Ice and ocean acidification

Scientists have predicted that by 2050, Arctic sea ice in this region will no longer survive the increasingly warm summers. As a result, the ocean's chemistry will grow more acidic, creating life-threatening problems for the diverse population of sea creatures, plants and other living things that depend on a healthy ocean.

Mechanism for Ocean acidification and melting

- ❖ The water under the sea ice, which had a deficit of carbon dioxide, now is exposed to the atmospheric carbon dioxide and can take it up freely.
- ❖ The seawater mixed with meltwater is light and can't mix easily into deeper waters, which means the carbon dioxide is concentrated at the surface.
- ❖ The meltwater dilutes the carbonate ion concentration in the seawater, weakening its ability to neutralise the carbon dioxide into bicarbonate and rapidly decreasing ocean pH.

PEPPER IT WITH

ESSO-INCOIS, Tropical Cyclone, Frontogenesis, Jet Stream, Super Cyclone

SCIENCE & TECHNOLOGY

NASA's DART Mission

News Excerpt

NASA's DART spacecraft successfully crashed into the asteroid Dimorphos and made history as it was humanity's first successful planetary defense test. NASA has confirmed DART Mission Impact Changed Asteroid's Motion in Space.

Pre-Connect

- It is the world's first planetary defense technology demonstration.
- DART spacecraft successfully collided with the asteroid Dimorphos.
- DART is a low-cost spacecraft.
- It has two solar arrays and uses hydrazine propellant for maneuvering the spacecraft.
- A major objective is to test this technology for the future threat of real asteroid collision.
- Scientists do not yet know the exact mass of Dimorphos but it is estimated to be around five billion kilograms.
- This spacecraft carries a high-resolution imager called Didymos Reconnaissance and Asteroid Camera for Optical Navigation (DRACO).

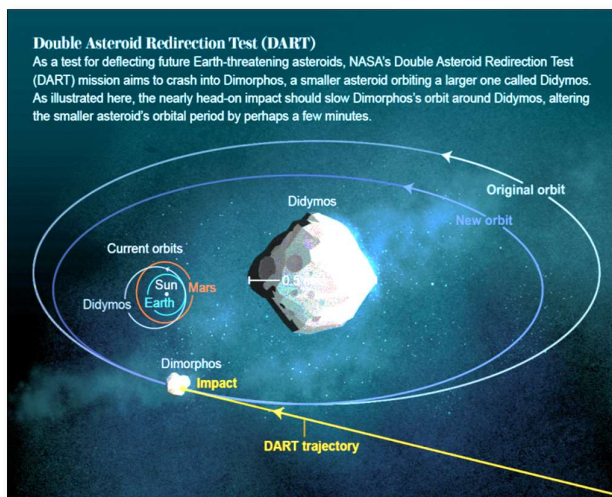
DART Mission

- DART is the first-ever space mission to demonstrate asteroid deflection by the kinetic impactor. This asteroid system is a perfect testing ground to see if intentionally crashing a spacecraft into an asteroid is an effective way to change its course, should an Earth-threatening asteroid be discovered in the future.
- While no known asteroid larger than 140 meters in size has a significant chance to hit Earth in the next 100 years, only about 40 percent of those asteroids have been found.
- The DART mission is developed and led for NASA by the Johns Hopkins University Applied Physics Laboratory.
- NASA's Planetary Defense Coordination Office is the lead for planetary defense activities and is sponsoring the DART mission.

Demonstrations of DART

- ✓ DART carries xenon used to demonstrate the agency's new thrusters called NASA Evolutionary Xenon Thruster-Commercial (NEXT-C) in space.

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Why Didymos?

- ❖ Asteroid Didymos and its small moonlet Dimorphos make up what's called a binary asteroid system that is the small moon (Dimorphos) orbits the larger body (Didymos).
- ❖ The two asteroids are not a threat to Earth, but because they do pass relatively close to Earth, they were chosen as the target for NASA's Double Asteroid Redirection Test (DART) mission – the agency's first mission to test planetary defense technology. This technology could one day be used to deflect hazardous asteroids on a collision course with Earth.
- ❖ DART deliberately impacted Dimorphos on Sept. 26, 2022. On Oct. 11, 2022, NASA announced that analysis of data obtained by DART's investigation team showed the spacecraft's kinetic impact with its target asteroid, the moonlet Dimorphos, successfully altered the smaller asteroid's orbit. This marked the first time humanity had purposely changed the motion of a celestial object, and it was the first full-scale demonstration of asteroid deflection technology.

- ✓ The ion thruster system provides spacecraft integration capabilities that enable it for deep robotic missions.
- ✓ Images from the DRACO are sent to Earth in real-time and will help study the impact site and surface of Dimorphos.
- ✓ The investigation team will observe Dimorphos using ground-based telescopes to confirm that DART's impact altered the asteroid's orbit around Didymos.
- ✓ Researchers expect the impact to shorten Dimorphos' orbit by about 1%, or roughly 10 minutes; precisely measuring how much the asteroid was deflected is one of the primary purposes of the full-scale test.
- ✓ DART has given us some fascinating data about both asteroid properties and the effectiveness of a kinetic impactor as a planetary defense technology.

Futuristic implications

- It demonstrates a viable mitigation technique for protecting the planet.
- An Earth-bound asteroid or comet can be diverted through this test.
- Largely it would serve the future related threats of such gravity.

China factor

- ✚ China National Space Agency is to aim 2025 to alter the orbit of a potentially dangerous asteroid.
- ✚ It will also use a kinetic impactor test just like NASA's Mission.
- ✚ China's mission would present tough competition to ISRO due to increased capabilities.

PEPPER IT WITH
ESA's Hera mission

Conclusion

- > It had been the successful completion of the first part of the world's first planetary defense test.
- > In the coming days and weeks, scientists will be studying the **Didymos system** from all angles.
- > This includes observing the changes in Dimorpho's orbit with ground-based observatories and studying the impact crater with space telescopes.

Trio of One web, New Space India and ISRO

News Excerpt

As of 2021, One Web which is the UK-based satellite operator announced the arrival of its latest batch of Low-Earth orbit satellites in India. ISRO will be launching 36 satellites which are a part of a constellation by One Web. The satellites have been integrated into the fairing of the rocket, which will carry them into Low Earth Orbit for deployment.

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Pre-Connect

- One Web satellite constellation is a planned network of 648 LEO satellites.
- The OneWeb satellite constellation incorporates up to 3,600 communication antenna subsystems to provide 3G, LTE, 5G, and Wi-Fi services to end users.
- A major aim is to deliver high data. throughput, low latency, and truly global coverage to the poles.
- This project is the brainchild of a London-based communications company i.e. One Web.
- Low-earth orbit satellites remain relatively close to the earth's surface and are mostly used for telecommunication and satellite imagery.

New initiatives

- In October 2021, One Web signed a letter of intent with the NSIL as one of the potential platforms to launch its satellites.
- India's Bharti Enterprises which owns Bharti Airtel; is one of the major investors and shareholders in One Web.
- The satellites will be launched in October 2022 onboarding the Geosynchronous Satellite Launch Vehicle Mark-III (GSLVMk-III) from Satish Dhawan Space Centre in Sriharikota.

- With the launch of One Web, it will have more than 70 percent of its planned “Gen 1 Low Earth orbit constellation” in orbit as it progresses to deliver high-speed, low-latency connectivity services around the world.
- The launch will be the company's 14th mission to deploy these satellites into orbit.

Impact of One Web and NSIL on India

- ✓ One Web aims to help in bridging the digital divide in India.
- ✓ The launch of One Web satellites in India for launch could provide a huge impetus.
- ✓ It would lead to more global exposure to the country's space industry.
- ✓ Spending India in the space sector in relation to its GDP is more than that of most of the developed nations excluding Russia and the USA.
- ✓ The space economy of India was at approximately \$5 billion for the 2020-21 fiscal year which is 0.19% of its GDP.

About Low Earth Orbits

Low-Earth Orbit (LEO) is an orbit with an altitude ranging from 200–300 km to 1600 km. In LEO, particles of different origins are encountered which are protons, electrons, heavy ions, neutrons, and others.

Benefits:

LEO satellites do not always follow a particular path around Earth as there are more available routes for satellites, which is one of the reasons why LEO is a very commonly used orbit. LEO's proximity to Earth makes it useful for several reasons such as:

- It is the orbit most commonly used for satellite imaging, as being in proximity to the surface allows it to take images of higher resolution.
- It is also the orbit used for the International Space Station (ISS), as it is easier for astronauts to travel to and from it at a shorter distance.
- However, individual LEO satellites are less useful for tasks such as telecommunication, because they move so fast across the sky and therefore require a lot of effort to track from ground stations.
- Communications satellites in LEO often work as part of a large combination or constellation, of multiple satellites to give constant coverage.
- Constellations of the same or similar satellites are launched to increase coverage and to create a ‘net’ around Earth. This lets them cover large areas of Earth simultaneously by working together.

Conclusion

- The arrival of One Web satellites in India for the launch can provide a huge impetus and even more global exposure to the country's space industry.

What is NSIL?

- ❖ It is the commercial arm of the Indian space agency ISRO.
- ❖ It was incorporated in March 2019 and is under the administrative control of the Department of Space of the Government of India.
- ❖ It operates to fulfill business demands in the space sector, including building launch vehicles through Indian industries, technology transfer, and satellite-based services.
- ❖ Its mission is to enable Indian industries to develop a high technology manufacturing base for Indian Space Programmes.
- ❖ NSIL has signed two launch contracts with One Web for deploying the broadband satellite constellation. The October launch will be the first commercial launch for GSLV-MkIII, which was previously used to launch the ambitious Chandrayaan-2 mission to the Moon.

Geosynchronous satellite is placed in the geosynchronous orbit with an orbital period matching the Earth's rotation period. These satellites take 24 hours to complete one rotation around the earth. The orbital plane for a typical **geosynchronous satellite** is generally not the equatorial plane. The communication platforms based on the communication with the help of these satellites are known as **geosynchronous networks**. Most of the communication satellites are placed in the geosynchronous orbit.

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Pros and Cons of this collaboration, Genesis of NSIL, Starlink, Loon Project, Project Kuiper.

- Indian space industry could better prosper with this kind of collaborative approach. China factor could also be negated to some extent in the space sector.

Satellite broadband services in India

News Excerpt

As various companies like JIO, One Web, and Hughes were preparing to provide satellite broadband services in India. India's first high throughput satellite (HTS) broadband service, powered by ISRO satellites is launched by Hughes Communications India (HCI) which is a satellite internet service provider.

Pre-Connect

- Satellite broadband is network connectivity provided through low earth orbit or geostationary satellites.
- The biggest development in the global satellite communication space was the emergence of Low Earth Orbit which promises to provide truly global coverage.

New initiatives

- OneWeb has partnered with NSIL and Elon Musk's SpaceX to resume its satellite launches.
- Hughes Communications India and Bharti Airtel announced a joint venture to provide satellite broadband services in India.
- Another development was HTS (High Throughput Satellites Service) which offers unprecedented capacity and flexibility.

Broadband Services

- ✓ Broadband essentially means a wide bandwidth, high-capacity data transmission technique, using a broad range of frequencies.
- ✓ In the case of a **satellite broadband service**, broadband services are delivered directly via satellites instead of optical fiber or mobile networks.

High Throughput Satellite (HTS) broadband service

- Higher throughput refers to higher data processing and transfer capacity than conventional satellites when using the same amount of orbital spectrum.
- HTS is a communication satellite that provides more throughput than conventional communication satellites or Fixed Satellite Services.

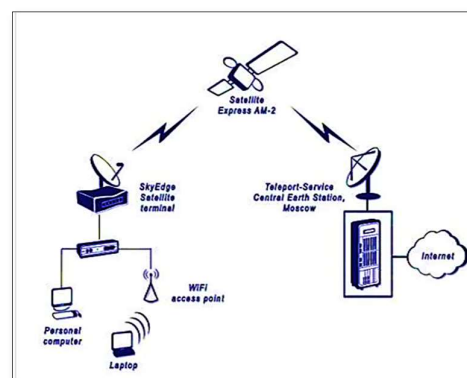
Applications of HTS

- ✚ It will extend broadband connectivity to the remotest locations and create economic opportunities to boost the local economy.
- ✚ The service will support applications like Wi-Fi hotspots for community internet access, managed SD-WAN solutions, backhaul to extend mobile network reach, and satellite internet for small businesses.
- ✚ It can support the high bandwidth requirements of government organizations, financial companies, cellular operators, mining and energy companies.
- ✚ The HTS broadband service from Hughes combines Ku-band capacity from ISRO GSAT-11 and GSAT-29 satellites with Hughes JUPITER Platform ground technology to deliver high-speed broadband.

Major advantages

- > **Global coverage**- One can provide high-speed internet services in remote areas, where terrestrial networks cannot be set up.

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Reliance Jio, which recently announced its entry in the satellite internet space in partnership with European satellite operator SES, will use GEO and medium earth orbit satellites for its services. However, most other operators that have announced services are operating on LEO satellites, including Bharti Airtel-OneWeb, SpaceX's Starlink, Tata-backed Nelco and Telesat, and Amazon's Project Kuiper.

- > **High speed-** Satellite internet is faster than dial-up connections.
- > **Cost-effective-** If one lacks terrestrial connectivity, satellite internet is the most cost-effective means of high-speed Internet access.
- > **Instant installation and deployment-** Satellite antennas can be instantly deployed and installed within a matter of a few hours only.
- > **Reliability-** Complete satellite network could work independently of terrestrial infrastructure while maintaining connectivity as long as the equipment is powered.

Difference between GEO and Leo		
TYPE	GEO	LEO
Description	Geostationary Earth Orbit	Lower Earth Orbit
Height	36000km	200-3000km
Time of LOS	24hrs	15min
Advantages	<ul style="list-style-type: none"> Covers 42.2% of the earth's surface Constant review No problem due to Doppler 	<ul style="list-style-type: none"> Lower launch costs Very short round-trip delays Small Path loss
Disadvantages	<ul style="list-style-type: none"> Larger round trip delays- 250ms latency up/downlink Poor look angle elevations at high altitudes Must be pointed to acquire a satellite. 	<ul style="list-style-type: none"> Short life Short LOS Short call interruptions depending on the position

How are Satellite broadband services

different from existing broadband services?

- o Data aggregation and transmission happen in space i.e. in the satellite.
- o In the case of cellular networks aggregation happens on the ground, in the base stations.
- o The normal mobile handset cannot directly access satellite broadband.

Challenges in Satellite broadband services

- o **Latency-** In satellite internet; one has to send data to space, to one's ISP, and back again which causes it to have poor latency or a high ping rate.
- o **Data caps-** Data cap decides on how much information one is allowed to get.
- o **Weather-** Weather affects the signal path of the satellite internet.

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ISRO and Satellite Broadband Bharat net project, Project Starlink

Conclusion

Although the satellite broadband industry in India is still at a nascent stage, the growing demands for connectivity and Internet for the Digital India drive are inevitable. Thus, Satellite broadband industry must prosper to serve the Indian interest.

eSIM Technology

News Excerpt

The eSIM (or embedded SIM) technology is enlarging its presence in the Indian tech market as companies like Apple wants to introduce it by coordinating with the respective telecom companies in India.

Pre-Connect

Since 1991, SIM cards have been used to connect customers to their wireless carriers. The seventeen-digit code on the card identifies the country or region where the service works, the connected network, and a unique customer ID.

What is eSIM?

- eSIM stands for Embedded Subscriber Identity Module.
 - An eSIM is a digital embedded, programmable and rewritable SIM and would use a cellular plan of a network carrier without requiring the need for a physical SIM.
 - It would be much like a traditional SIM card and would become a part of the phone's internal organs.
 - It also allows users to switch operators without having to replace any physical SIM cards.
- Jio, Bharti Airtel, and VI are the only telecommunication companies to offer eSIM support on smartphones in India both in Android and iOS.

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eSIM Functioning

- eSIM offers a new way to load carrier information into phones without using an external physical chip.
- Technically, an eSIM is a physical part. It's a microchip embedded inside your smartphone. This component can download carrier data remotely, enabling to switch carriers on the spot.
- If a phone has a physical SIM tray and an eSIM, people can actively use multiple lines at the same time. Some phones even support multiple active eSIM simultaneously. Toggling different carriers on and off can be accomplished easily with the press of a button in your phone's settings.
- Beyond the simple use of keeping connected to the wireless network, there's huge potential for unique applications that will help streamline consumer and business connectivity practices.

Feature	Physical SIM	eSIM
Locked to a carrier?	One carrier per SIM.	Reprogrammable to multiple carriers.
Dual-SIM (use two lines simultaneously)	Some phones have two SIM card slots.	Use an eSIM and a physical SIM, or 2 eSIMs simultaneously.
Switch phone lines on the fly	Pop out the SIM tray, remove the card, and pop a new one in.	Go to phone settings and turn your lines on/off.
Size dimensions	12.3mm x 8.8mm	6mm x 5mm

Why eSIM?

- ✓ The "invisible" nature of eSIM creates a seamless experience for getting devices configured and connected.
- ✓ There is no need to fumble around and try to organize small, plastic chips; activation is instant and doesn't require any physical keys. Managing your lines or switching plans and carriers can be done remotely without any hassle.
- ✓ Time would be saved a lot while going to a telecom store for changing SIM amid a change in state or country to switch to other telecom operators.
- ✓ Security boost over physical SIM is real and convenient.
- ✓ eSIMs cannot be stolen without also stealing the device. This makes it much more difficult for thieves to use port-out scams, where they cancel a victim's service and sign up for a new one using the stolen SIM.
- ✓ eSIMs are immune to 2FA scams, in which a thief takes a physical SIM out of a phone and uses the associated phone number to get 2FA codes and log in to your private online accounts.
- ✓ eSIMs provide a higher level of security than traditional SIM cards, making them an ideal choice for anyone who is looking to protect their data.
- ✓ The impact grows massively as we consider the scalability of eSIM adoption across all connected devices.

Carbon Nano-Dots

News Excerpt

Carbon based Nano materials or carbon dots are increasingly used for multi purposes like to offer solutions for managing aquatic environment as well.

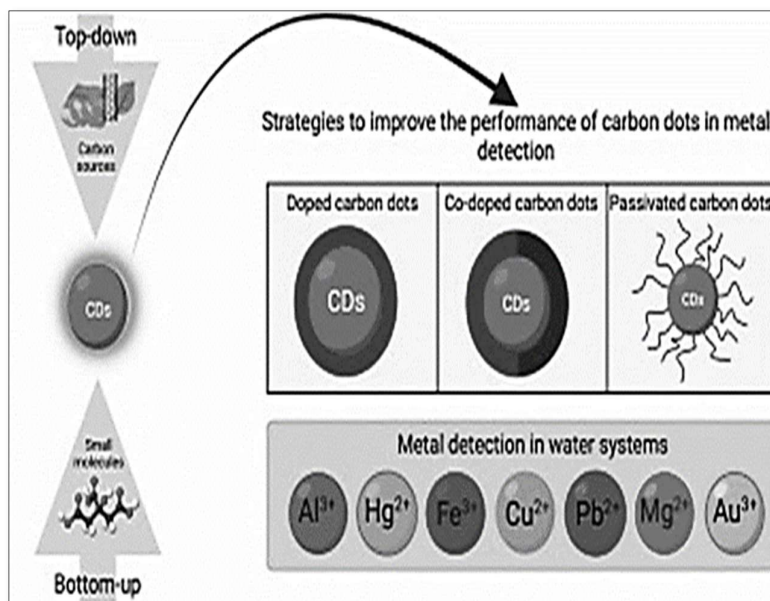
About Carbon dots

- Carbon dots were first discovered in 2004.
- These are a new type of carbon-based nanomaterial that have diverse physicochemical properties, especially in chemical sensors, bioimaging, nanomedicine, drug delivery, biosensing, solar cells, light-emitting diode (LED), and electrocatalysis.
- They have favorable attributes like good biocompatibility, unique optical properties, low cost, eco-friendliness, etc.
- Conventionally, C-dots are produced by the surface modifications of carbon NPs with organic and polymeric molecules.

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Carbon Dots Structure

- Carbon dots, broadly regarded as small carbon nanoparticles in aqueous or other suspensions, are generally categorized into three types, namely, graphene quantum dots (GQDs), carbon nanodots (CNDs), and carbonized polymeric dots (CPDs)
- Most CDs are commonly comprised of the sp²/sp³ hybridized carbon core with surface functional groups.
- GQDs are composed of mono- or multi-layer nano-sized graphite and surface or edge functional groups or interlayer defects, which are anisotropic with lateral dimensions larger than their height, and their optical properties are mainly dominated by the size of π -conjugated domains, and the surface or edge structures.
- Different from the GQDs, CQDs and CPDs possess typically spherical cores connected with surface groups.
- The spherical core of CQDs exhibit multiple-layer graphite structures, and their photoluminescence (PL) emission properties are mainly dominated by the intrinsic state luminescence and the quantum confinement effect of size.
- CPDs are hybrid nanostructures, consisting of aggregated or cross-linked carbon cores and polymer chains shells, and the optical properties of CPDs are mainly dominated by the molecular state and cross-link structure.
- The different structures of the CDs are affected by various synthesis routes which can be generally classified into “bottom-up” strategies and “top-down” strategies



Formation of C Dots

CDs are more straightforward and less expensive to acquire. Different raw materials, including carbon, are used as precursors to create CDs using different preparation techniques. Petroleum coke, fruit, grass, hair, coal, plants, and even household garbage are examples of raw materials. CDs can be synthesized mainly via two routes:

- ✓ Top-down approach: Top-down approach refers to breaking down larger carbon structures via chemical oxidation, discharge, electrochemical oxidation, and ultrasonic methods
- ✓ Bottom-up approach: The bottom-up approach refers to the conversion of smaller carbon structures into CDs of the desired size. This bottom-up approach is consisting of hydrothermal treatment, ultrasonic treatment, thermal decomposition, pyrolysis, carbonization, microwave synthesis, and solvothermal method to synthesize CDs.

The drawbacks of this approach include the requirement of expensive materials, harsh reaction conditions, and long reaction times.

Properties and

- Carbon dots (CDs) have two unique advantages:
- One is the ease of synthesis at a low price, and the other is desirable physical and chemical properties, such as ultra-small size, abundant surface functional groups, nontoxic/low toxicity, good biocompatibility, excellent antibacterial and antioxidant activities, etc.

Applications of Carbon dots

Food Packaging

- ✚ They are used in new food packaging enhancers and food preservatives.

- ✦ CDs are used to strengthen the physical properties of food packaging, including strengthening mechanical strength, ultraviolet (UV) barrier properties, and water barrier properties.
- ✦ The antioxidant and antibacterial properties of CDs as preservatives, and discusses the effect of CDs applied as coating agents and nano-level food additives for extending the shelf life of food samples.

Photocatalysis

- ✦ With the rising demand for a low-carbon society, how to utilize the full advantage of solar energy and other clean energies becomes an important issue.
- ✦ The appearance of photocatalytic technology caused the research of photocatalytic technology boom, involving solar energy, photovoltaic cells, self-cleaning materials, environmental pollution control, and many other related fields.
- ✦ The traditional photocatalytic materials such as TiO₂ and ZnO generally with absorption range in ultraviolet light, visible light cannot be taken full advantage of and has been greatly restricted in practical applications.
- ✦ Preparing nanomaterials with high stability and high visible light composite catalyst activity is of great significance in solving environmental problems and energy issues.

Macrostructure Material

- ✦ The corrosion of graphite electrodes produced new types of CDs.
- ✦ Upon the addition of CDs on a glass surface with a concentration of 1.3 mg/mL, the CDs thin film was obtained after being dried.
- ✦ The oxygen-contained group at the CD's surface determined its sensitivity to humidity and the conductivity of CDs was in direct proportion to the relative humidity.
- ✦ Because of the high specific surface area and excellent stability of the CD's thin film, it is suitable for gas sensing.

Fluorescent carbon dots, due to their excellent optical properties, chemical stability, and good solubility in water, in the field of chemical sensing under great attention, are widely used in metal ion detection, anion detection, small organic molecules, and biomolecules detection.

Chemical Sensing

Fluorescent carbon dots, due to their excellent optical properties, chemical stability, and good solubility in water, in the field of chemical sensing under great attention, are widely used in metal ion detection, anion detection, small organic molecules, and biomolecules detection.

Metal Ion Probe

Carbon dots as a new fluorescent probe in solution are easily quenched efficiently by an electron acceptor and thus can effectively detect metal ions in solution and determine the concentration of metal ions in a certain concentration range, to achieve the trace analysis of metal ions.

Bioimaging

CDs possess great advantages compared with traditional semiconductor quantum dots, including their outstanding optical properties and stable chemical properties. CDs are environmental friendly and have low-toxicity nanomaterials. These characteristics make it possible that CDs to replace semiconductor quantum dots in biological imaging

Drug Delivery

Traditional drug carrier does not have observability and traceability; thus, the research that applied fluorescent nanomaterial to the drug carrier is expected to solve these problems. Due to their low toxicity, excellent biocompatibility, and modifiable surface function groups, CDs have become a hot spot in drug delivery research

PEPPER IT WITH

Role of Nano technology in various fields, Nano mission of dst.

Carbon dots and aquatic environment

- CDs provide an excellent possibility for fluorescence and colorimetric environmental pollutants detection.
- They are majorly used as fluorescent Nanoprobe for pollutant detection because of their high fluorescence emission.
- Many surface groups provide CDs with outstanding water stability and dispersion. Selecting suitable precursors may readily control their chemical polarity, encouraging dispersion in more solvents.

Way-Forward

- > CDs would be very much helpful for future environmental applications and many more fields including specific and complex problems related to human health.
- > CDs will become a part of the scientific toolbox for environmental science in the future with the development and integration with other nanotechnology.

Click Chemistry

News Excerpt

Carolyn Bertozzi, Morten Meldal, and Barry Sharpless were the Nobel laureates in Chemistry (2022) for pioneering click and bio-orthogonal chemistry.

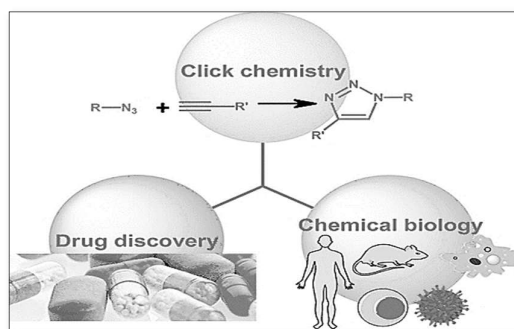
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Pre-Connect

- Click chemistry refers to a group of reactions that are fast, simple to use, easy to purify, versatile, regiospecific, and give high product yields.
- Genesis-** Click name has been taken from the click sound that airline seat belts make when they are fastened.
- Main theme-** Molecules that easily fit into each other or click with each other, make the resultant chemical reaction more efficient.
- Bioorthogonal chemistry** is a field in which click reactions are used to carry out chemical transformations inside biological cells- It offers a new way to study the natural processes in a living cell.

About Click Chemistry

- > "Click Chemistry" is a term that was introduced by K. B. Sharpless in 2001 to describe reactions that are high yielding, wide in scope, create only by-products that can be removed without chromatography, are stereospecific, simple to perform, and can be conducted in easily removable or benign solvents.
- > This concept was developed in parallel with the interest within the pharmaceutical, materials, and other industries in capabilities for generating large libraries of compounds for screening in discovery research.
- > Several types of reaction have been identified that fulfill these criteria, thermodynamically-favored reactions that lead specifically to one product, such as nucleophilic ring-opening reactions of epoxides and aziridines, non-aldol type carbonyl reactions, such as the formation of hydrazones and heterocycles, additions to carbon-carbon multiple bonds, such as the oxidative formation of epoxides and Michael Additions, and cycloaddition reactions.
- > For example, an examination of the azide-alkyne cycloaddition shows that it fulfills many of the prerequisites. Many of the starting mono-substituted alkynes and organic azides are available commercially, many others can easily be synthesized with a wide range of functional groups, and their cycloaddition reaction selectively gives 1,2,3-triazoles.



Sharpless, who is the originator of the concept of 'Click Chemistry', has now won the Nobel Prize for the second time, making him only the fifth scientist to achieve this distinction. His previous Nobel Prize had come in 2001 in recognition of a different kind of work.

Applications of Click chemistry

- ✓ The click reaction has proven to be very useful for modifying functional biomolecules because of its high chemoselectivity. Biologic oligomers and polymers, such as peptides, nucleic acids, and carbohydrates, have been modified by using the copper-catalyzed azide-alkyne cycloaddition click reaction.
- ✓ Biomedical science, Nanoparticle research, Targeted drug delivery, Natural product discovery, Biomaterials, Biopolymers, etc.
- ✓ Therapeutic applications in attacking certain cancer tumors (Under clinical trials).

Nobel Prize in Physics

News Excerpt

Alain Aspect, John F Clauser, and Anton Zeilinger were the Nobel laureates in Physics (2022) for their work in quantum mechanics.

Pre-Connect

- A Series of experiments were conducted on something called entangled quantum states, where two separate particles behave like a single unit.
- **Quantum entanglement-** Pair of particles (photons); that are allowed to exist in a shared state where they have complementary properties.
- **Main theme-** Experiments with entangled photons, establishing the violation of Bell inequalities and pioneering quantum information science.
- **Role of Quantum mechanics-** It is the best tool we have to understand how the universe works on its smallest scales.
- **Difference between Classical & Quantum mechanics-** Classical mechanics follows Newton's law of motion but it cannot be applied to study subatomic particles.
- **Chief architects of quantum mechanics-** Max Planck, Albert Einstein, Erwin Schrodinger, Werner Heisenberg, and Niels Bohr.

About Quantum Mechanics

Alain Aspect, John Clauser and Anton Zeilinger have each conducted groundbreaking experiments using entangled quantum states, where two particles behave like a single unit even when they are separated. Their results have cleared the way for new technology based on quantum information.

- In the 1960s, John Stewart Bell developed the mathematical inequality that is named after him. This states that if there are hidden variables, the correlation between the results of a large number of measurements will never exceed a certain value.
- Quantum mechanics predicts that a certain type of experiment will violate Bell's inequality, thus resulting in a stronger correlation than would otherwise be possible.
- John Clauser developed John Bell's ideas, leading to a practical experiment. When he took the measurements, they supported quantum mechanics by clearly violating a Bell inequality. This means that quantum mechanics cannot be replaced by a theory that uses hidden variables.
- Some loopholes remained after John Clauser's experiment. Alain Aspect developed the setup, using it in a way that closed an important loophole. He was able to switch the measurement settings after an entangled pair had left its source, so the setting that existed when they were emitted could not affect the result.
- Using refined tools and long series of experiments, Anton Zeilinger started to use entangled quantum states. Among other things, his research group has demonstrated a phenomenon called quantum teleportation, which makes it possible to move a quantum state from one particle to one at a distance.

Major Applications

- ✓ Ultra-precise clocks, super powerful computers, improved microscopes, uncrackable codes, biological compasses, solar cells, etc.
- ✓ Electronic devices use transistors that apply quantum mechanical ideas. For example- A laser that applies quantum properties of light.
- ✓ **Futuristic aspect-** Quantum cryptography and precise timekeeping as it is done in atomic clocks.

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Nobel Prize in Physiology or Medicine

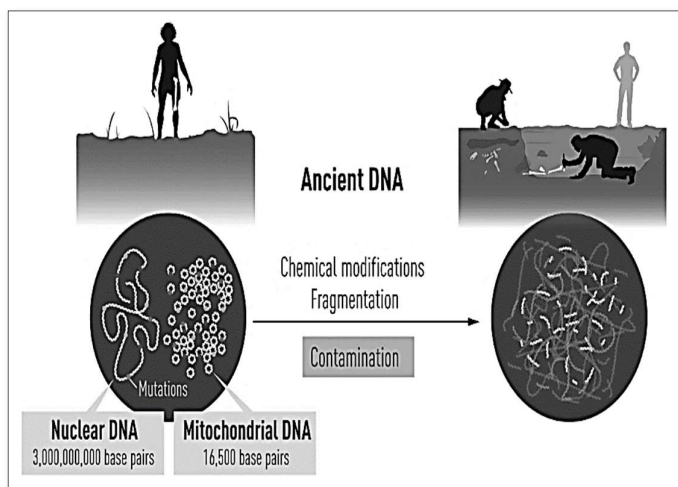
News Excerpt

Svante Pääbo received the Nobel Prize in Physiology for his discoveries concerning the genomes of extinct hominins and human evolution.

Pre-Connect

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- The 2022 Nobel Prize for Physiology or Medicine has been awarded to Swedish geneticist Svante Pääbo for his research in the field of genomes of extinct hominins and human evolution
- Dr. Pääbo's research has resulted in the rise of a new scientific discipline called paleogenomics, which is the study and analysis of genes of ancient or extinct organisms
- Neanderthals, the closest relatives of the present-day human species, lived in Europe and West Asia as far as southern Siberia and the Middle East – before they disappeared around 30,000 years ago
- Sequencing the genome of Neanderthal (an extinct relative of present-day humans) to reveal the link between extinct and modern humans.
- **Implication:** To better understand human evolution and migration.
- **Concluding fact:** It demonstrated that the most recent common ancestor of Neanderthals and Homo sapiens lived around 800,000 years ago.
- **Major hurdles:** As genetic material is fragile, most of the DNA discovered in ancient bones is highly degraded, chemically modified, and tainted with contamination. Thus it was difficult to quantify the DNA.
- He pioneered the study of ancient DNA from archaeological samples and extinct species- Established a new scientific discipline called Paleogenomics.



About Svante Pääbo's work on evolution

- Through his pioneering research, Svante Pääbo accomplished something seemingly impossible: sequencing the genome of the Neanderthal, an extinct relative of present-day humans.
- He also made the sensational discovery of a previously unknown hominin, Denisova.
- Importantly, Pääbo also found that gene transfer had occurred from these now-extinct hominins to Homo sapiens following the migration out of Africa around 70,000 years ago.
- This ancient flow of genes to present-day humans has physiological relevance today, for example affecting how our immune system reacts to infections.
- Pääbo's seminal research gave rise to an entirely new scientific discipline; paleogenomics.
- By revealing genetic differences that distinguish all living humans from extinct hominins, his discoveries provide the basis for exploring what makes us uniquely human.

Conclusion

His discoveries have generated a new understanding of our evolutionary history. The Nobel laureate's research has helped in furthering the recognition of evolutionary biology and paleogenomics. This is a hard field to follow, especially in places like India and Africa because ancient DNA is not preserved well in tropical weather conditions.

SECURITY ISSUES

Narco-Terrorism in Jammu & Kashmir

News Excerpt

Jammu and Kashmir witnessed a 2000 percent surge in heroin-related drug seizures between 2017 and 2022. Further, The National Crime Records Bureau (NCRB) report revealed that 1222 cases under NDPS Act 1985 were registered in J&K in 2020, however, the number has increased to 1681 in 2021. This points towards a rise of an alarming trend in the valley, emerging as a new security threat. Shopian and Pulwama had emerged as a hotbed of narco-terrorism in the valley.

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Pre-Connect

- **Narco terrorism implies** the nexus between drug syndicates and terrorists that facilitate and fund terrorist activities and influence government policies. It was first coined in Colombia when drugs lord in the country started employing violent methods against anti-drug police.
- Pakistan is the chief sponsor of terrorism in Jammu & Kashmir. This is attributed to its psyche of incomplete partition.
- Terrorism in Kashmir has changed various forms, Mehman Mujahid phase to radicalization and indoctrination of local youth using cyberspace.
- After the abrogation of Article 370, India has cut the umbilical cord of terror in the valley. As there is significant decline in cross-border infiltration, terror attacks, and death of both civilian and army personnel.

Narcos and Pakistan Unholy Alliance

- The United States is the founder of the Narcos trade in the Af-Pak region. In its war against the Soviet Union, it facilitated the brewing of narcotics in Afghanistan and Pakistan. The money generated is used to fund mujahid operations.
- Pakistan used this drug network as a weapon to create trouble in Pakistan-bordered states in India.
- Presently, as most of the doors of spreading terrorism in J&K are closed for Inter-Service Intelligence (ISI) of Pakistan, they are re-routing their export of terror through Narcos, as it earns enormous money.
- With Narco-Terrorism, Pakistan is like killing two birds with one stone. On, one hand, it funds terror activities in Jammu and Kashmir, on the other, it mounts trouble for security forces in the state.

Narcotics in J&K

- ✓ Since 2021, Narcos abuse is on the rise in the state, as the consumption of heroin had increased significantly.
- ✓ In recent times arrests done by the security forces included not only the recovery of weapons and explosive devices but also narcotics in large amounts.
- ✓ According to AIIMS (Jammu), Six lakh Kashmiris are stuck in the menace of drug abuse and require urgent attention.

Reason For Rising Narco-Terrorism in Jammu & Kashmir



Crackdown on Terror Funding

- After the abrogation of Article 370, Security forces have choked terrorist finances by either seizing or freezing the assets of separatists and terror outfits.
- Their modus operandi of buying and selling of properties is also busted by security forces. As a result, Pakistan needed new avenues for terror financing. Further, Pakistan placement in grey list of FATF had made situation difficult for it.



Covid-19

- It had impacted Socio-economic fabric of Jammu & Kashmir. It is possible that unemployment induced due to Covid Lockdown might have forced people to consume drugs. And, once they get entangled in the vicious web of narco-trade and drug addiction, it becomes strenuous to free themselves from the same.



Disruption of Hawala Rackets

- Pakistan and its elements in UAE, smuggle money through hawala to fund terrorist organizations, separatists, and Madrasa who recruit young people.
- After abrogation of Article 370, there has been a considerable crackdown on the hawala racket. This has resulted in drying up of foreign funds for terror activities in J&K.



Increased Drug Production in Afghanistan

- Since the takeover of Afghanistan by Taliban, drug production in Afghanistan rose by 38% in 2021.
- This made availability of raw material easy for Pakistan, it is using this opportunity to push as much as drug possible. It is evident from the size of seizure made not only in Jammu & Kashmir but also along the Arabian sea coast.

- ✓ A thriving drug nexus, in which drug syndicates and overground workers (OGWs) purchase and sell drugs to generate funds for banned terror outfits.
- ✓ Pakistan transports drugs and arms in Jammu and Kashmir using drones and tunnels.
- ✓ They also use crypto currencies in narco-trade, as it eliminates the requirement of a middle-man. This shifts narco-terrorism trade from public to cyberspace.

Implications for India's Security

- **The Geographic Factor:** India is the crossroads between the 'Golden Crescent' (Iran-Pakistan-Afghanistan) and the 'Golden Triangle' (Thailand-Myanmar-Laos), two most significant opium production and trade hubs connecting South Asia with South East Asia.
- **Funneling of Extremism in J&K:** More drug abuser means more future extremists in the state and the country.
- **Terror is a costly affair:** Pakistan is the epitome of state-sponsored terror and no matter the economic situation the country is in, its Army and ISI are always able to get hold of a large share of the country's economic pie.

Measures were taken by Government to tackle Narco-Terrorism

- ✚ **Operation Sadbhawna-** Under it, the Indian army has set up several de-addiction counseling centers for drug-addicted youth. Drug awareness campaigns are being organized by the army to caution people against the use of drugs.
- ✚ **De-addiction policy- J&K is the first union territory of India** to introduce a Drug De-Addiction Policy to fight the drug menace in J&K. **The policy is based on 4As.** These include increasing Awareness, restricting the Availability of drugs, and increasing Affordability and Accessibility to treatment programs.
- ✚ **Increase of Police Beats:** To monitor illicit drug trade in the local colonies.

Way-Forward

Several other steps can be taken to counter Narco-Terrorism such as:

- **Strengthen the soft-power capacities** of the security forces. This will curb and gradually eliminate growing substance abuse across the state.
- **Improving and extending the jurisdiction of ED:** This will help in improving the economic intelligence that can stop narcotics trade, funding, and transportation promptly.
- **Improving Anti-Drone Capability:** As many drones go undetected, India should focus on manufacturing such capabilities and meanwhile it can push forward with the acquisition of SMASH 2000L, an anti-drone capability developed by Israel that follow and lock in on targets using image processing based on artificial intelligence.

Hybrid Terrorism-Secularization of Terrorism in Kashmir

- ❖ India had been actively exposing the terror sponsorship of Pakistan. This brought tremendous pressure on Pakistan globally and ISI is now restoring to Hybrid terrorism in the valley.
- ❖ The idea is to use India's own citizens and indoctrinate them using social media. However, there will be a change in narrative. **The fight is not for religion but for liberation.** Therefore, **several new organisations have come, which are in reality front organisation of terror groups. These includes, The Resistance Front, Geelani Force, People Anti-Fascist Front, Kashmir Tigers among others.**
- ❖ Pakistan wishes to present the world a narrative that Indians are alienated and therefore fighting for liberation.
- ❖ India is countering it by using political and economic tools. Delimitation is being done to politically empower people. Panchayat elections are being conducted to develop grassroot democracy. Focus is on bringing investment in J&K, along with skill development of locals, so that they have job and they stay away from such propaganda.

PEPPER IT WITH

NDPS Act, 1985, Narcotics Control Bureau, New Industrial Policy J&K, Cyber Terrorism

Left-Wing Extremism in India

News Excerpt

Ministry of Home Affairs has asserted that the battle against Left-Wing extremism is in the final stage. Ministry pointed out that the security forces had achieved a decisive victory in the ongoing fight against Left Wing Extremism (LWE).

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Pre-Connect

Origin and Evolution of Naxalism in India

- **The Naxalites are the people who believe in Maoism.** They use tactic of terrorism and violence to achieve their political goals. The inspiration for the Naxalite movement is also drawn from the Tibhaga Movement of Bengal and the Telangana Rebellion of 1946.
- Naxalites reject the parliamentary system of India and wish to replace it with a new social order where there is no exploitation of marginalized and vulnerable groups.
- The root of the Naxalite movement lies in the land reforms brought in by the Government of India soon after the independence. The idea was to provide land to landless farmers by placing a ceiling on land held by an individual.
- The Naxalite movement in India was started on 3rd March 1967 in Naxalbari Village in West Bengal when CPI (Marxist) members attacked and looted the jotedar of the region. Later, CPI (Marxist) leader Kanu Sanyal hailed the incident as a Peasant Movement in Terai Region and gave Ten Targets for Naxal Movement.
- **The Naxalism in India can be divided into three phases:**
 - **Foundational Phase (1967-1972)-** The goal was to destroy the feudal order and provide land to landless farmers. It ended with the death of Charu Majumdar.
 - **Fragmentary Phase (1972-2004)-** Multiple fragments were formed due to internal violent struggles. It was more violent than the first phase.
 - **Unified Phase (2004-Present)-** Creation of the Communist Party of India (Maoist) and unification of splinter groups and rise of fourth-generation warfare

Strategic Location of Naxalbari

Naxal Uprising was planned at **Naxalbari** because of its strategic location. **It was at the tri-junction of India-Nepal-Bangladesh** (then East Pakistan). Nepal and Bangladesh can help them in evading police dragnet. Further, China is also nearby which too acted as a reliable hinterland.

Narrative of Naxals:

- Naxals have a political strategy to spread their propaganda. Through it, they want to convert an agitation into an armed struggle. For this, they have created several groups such as the Revolutionary United Front (RUF) which devised a political strategy, the Subcommittee on Mass Organisation (SUCMO) for organizing mass movements by exploiting grievances, and the People Democratic Front of India (PDFI) as student union for mass organizations.

Front Organisation

- ❖ These are the organisation which are separated from the main organisation but remain associated with it.
- ❖ They often exist as nameless group and carry out constant propaganda.
- ❖ Their objective is to ensure that masses are indoctrinated with the group ideology without coming in the eye of the law.

Strategy and Financing

- **Naxals follows a three-pronged strategy**
 - Use of propaganda to expand their mass base
 - Use Guerrilla Warfare against the government and weaken their resolve
 - Use Conventional Warfare to capture cities and control the country.
- **Financing of Naxal activities**
 - Fixed commission from government contractors especially Mining Industries
 - Extortion
 - Social Institutions and NGOs give funds to Naxals as a fees
 - Membership Fees of CPI (Maoist)

- Revolutionary Taxes imposed by Naxals
- Tendu leaves
- Stock trading
- Hawala Operations
- Generations of revenue from Urban Areas.

Role of Intelligentsia in Subversion

- A certain section of intelligentsia and activists are acting as a front organization and giving a platform to Naxals to participate in debates related to civil society.
- They become a ground cadre of these Naxals and spread their ideologies in Urban areas through indoctrination campaigns and project CPI (Maoist) as a political organization concerned with social issues.
- They give a twist and turns to reality, for example, In 2009, the Superintendent of Police of Bastar found out that Naxals have pitched green tents in the jungle as a camouflage strategy. He launched **Operation Green Hunt** to target and eliminate those tents. However, several sections of civil society projected the whole operation as a Government operation to eliminate tribals. The impact of such propaganda was that it resulted in the listing of Operation Green Hunt in the UN human right violation in India assessment.

Government Response to Naxal Movement

- Government Strategy to Counter Naxal Movement is based on three components:
 - **Use of Coercive power-** Naxal challenges the sovereignty of the state and therefore they need a strong response from the state. Further, stable law and order is a prerequisite for any development.
 - **Promotion of Development-** Improved the living conditions of people and pull them away from Naxal propaganda
 - **Centre-State Coordination-** Centre-State comes together to win the confidence of the tribals by providing good governance.

➤ Several other initiatives include

- **Police Modernisation** - Funds were given for modern weaponry and communication system
- **Special Intelligence Structure-** Street-level police bureaucracy is being used to gather local intelligence.
- **Additional battalions of CAPF** are created which have a fixed amount of people recruited from local areas.
- **CRPF COBRA** (Commando Battalion for Resolute Action) is a highly trained unit suited for jungle warfare.

Reasons For Spread of Naxalism in India



Tribal Factor

- Wrong policies by the government caused tribal displacement.
- It created a discontent among the tribal people and they become easy targets for Naxal recruitment.

Socio-Economic Factors

- Lack of Socio-economic development in the region of Naxal problem pushed people towards Naxalism.
- People got money and arms from Naxals which boosted their resolve against the repression they were facing.
- Most of the Naxal areas have huge reserves of Natural resources but without skill development, economic potential is not fully realised as result people move towards Naxalism

Infrastructure Issues

- Most of Naxal affected region lacks critical infrastructure needed for development.
- Any infrastructural development is projected by Naxal as a tool of people oppression and as a result they target it.
- This breaks infrastructural development cycle and pushed region backwards

Administration Issues

- Actionable intelligence always remains a key issue in handling Naxal problem.
- State Government considers Naxalism as a issue of Central government and thus are not proactive in resolving the issue.
- Number of violent attacks were considered as the yardstick for gauging progress against Naxalism rather than development done in the region.

Why India Don't Employ Army against Naxal Problem?

- Deeper analysis of Naxal problem points towards the fact that Naxal issue originated due to inept handling of socio-economic problems. Naxals are indeed Indian citizens who picked up arms owing to widespread discontent and alienation. They have been forced to pick up arms.
- Crushing its own citizen with brute force doesn't suits well with India values and its global power aspirations. It is also violation of Human rights.
- Rather army can be used to train CAPFs and state police in guerrilla warfare tactics and use of network centric operations.

- **Fortified police station scheme** where Police stations are fortified with at least 400 personnel. They are also supplied with my Protective Vehicles (MPV).
- **Surrender cum Rehabilitation (SRS) Scheme**- To encourage Naxals to surrender and join the mainstream. The government provides monetary support and skill training
- **SAMADHAN Doctrine**- Based on **S**mart leadership, **A**ggressive strategy, **M**otivation and training, **A**ctionable intelligence, **D**ashboard based key result areas, **H**arnessing technology, **A**ction plan for each theatre, and **N**o access to financing. It acts as a one-stop solution to all Naxal problems.
- Panchayat Extension to Scheduled Areas Act, 1996 and the Forest Rights Act, 2006: Both acts provides a balance of power in favor of tribal communities by offering them a mechanism for self-governance and self-protection. They have made a significant contribution to raising the attrition rate among the Naxal ranks.

Recent Achievements

- ✓ Incidents of violence have come down from the highest level of 2258 in 2009 to 509 in 2021.
- ✓ The death rate due to violence has also come down by 85 percent. In the year 2010, the death toll was at its highest level of 1005 which has come down to 147 in the year 2021
- ✓ The area of influence of Maoists has also reduced significantly and the influence of Maoists has reduced from 96 districts in the year 2010 to only 39 districts in 2022.
- ✓ **In 2022, the security forces achieved unprecedented success in Operation** Octopus, Operation Double Bull, and Operation Chakrabandha in the fight against Left Wing Extremists.

Way Forward

- **Dialogue is the Key:** The way out of the Naxal problem is dialogue. However, dialogue cannot become a tool for Naxals to buy time. Talks, therefore, should be based on certain conditions such as, will commence only when Naxal abjures violence, and surrender arms at designated camps and will happen in a closed-door format and be made public only after the final accord is done.
- **Use Local to build trust:** Often Naxals destroy schools and road projects among other development initiatives of the government by projecting it as a tool of suppression. Government should remove forces once any development project is over and also try to name them after local deity and tribal icons so that their destruction by Naxals create an anti-Naxal attitude
- **Political integration:** Political parties must strengthen their grassroots presence in Naxal-affected areas and provide youth with a political platform to readdress their political grievances.
- **Information War:** As a front organization of Naxals is waging an information war, it needs to be countered with a positive information campaign and busting of fake news.

PEPPER IT WITH

Salwa Judam, PVTG of red corridor, Schedule V, Article 244, Integrated Action Plan for Scheduled Tribal and Backward District, Aspirational District Programme, National Policy and Action Plan on Naxal Violence

Conclusion

Former Prime Minister of India, Dr. Manmohan Singh termed “Naxalism” the biggest internal security threat to India. Naxalism in India is not a law & order problem but violent ideological terrorism originating out of genuine socio-economic grievances. Hence, the government must resort to positive development and a positive narrative to counter the Naxals ideologically.

LCH Prachand

News Excerpt

Recently, an indigenously developed Light Combat Helicopter (LCH) was formally inducted into the Indian Air Force at the Jodhpur airbase. It was named **Prachand meaning fierce**.

Pre-Connect

Development of LCH Prachand

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- During the Kargil War, it was realized that India needs an LCH that can not only operate at high altitudes but was also capable of precision strikes.
- In 2006, the government sanctioned the design and development of the LCH
- In 2017, after extensive flight testing in diverse terrains and weather conditions, the LCH received initial operation clearance.
- In 2022, Cabinet Committee on Security, headed by the Prime Minister approved the procurement of 15 limited series production (LSP) variants of LCH.

Current Status of IAF Fleet

- IAF fighter squadrons are down to 31 as against the authorized strength of 42. It will further go down as MiG-21 Bison squadrons are phased out.
- India is operating, obsolete aircraft like Mig-21 and SEPECAT Jaguar. Though these aircraft had a weapon and avionics upgrade, the basic design remains vintage.

Air Threat

- ❖ Government of India and armed forces had acknowledged a possible two-front war scenario.
- ❖ Both India's adversaries are developing their air warfare capabilities especially, China. China has two home-grown stealth fighters (J-20 and J-31) and nearly 80 combat squadrons.
- ❖ Pakistan on the other hand has nearly 20 combat squadrons and is fast inducting the JF-17 Block III. It has also placed an order for 25 Chinese J 10C aircraft which will come in fly-away condition.
- ❖ Though IAF has plan 'B' to fight with what it has, if and when forced into a conflict, the numbers are clearly inadequate to execute a full-fledged air campaign even on a single front.
- ❖ It is imperative that the IAF quickly rebuild its strength of fighter squadrons to the authorised level of 42.

About LCH Prachand

Key Features

- ✓ It has been built with 45% indigenous content which will progressively increase to more than 55%.
- ✓ It is powered by twin Shakti engines which were developed jointly by India and France.
- ✓ It is a Multi-Role Combat Helicopter designed and built for high-altitude operations.
- ✓ It possesses several capabilities such as:
 - Modern Stealth Characteristics
 - Robust Armour Protection
 - Night Attack Capability
 - Close Combat Guns
 - It can fly up to 21000 feet.
 - Electro-optic pod and helmet-mounted display allow a pilot to aim at a target just by looking at it.
 - Damage-tolerant rotor blades and the main gearbox can run for 30 minutes even after a bullet hits it.

Status of India's Defence Exports

- ❖ According to SIPRI, India ranked 23 among the major arms exporter between 2015-2019.
- ❖ India's defence exports for 2021-22 were estimated at ₹13,000 crore (highest ever). India has set an ambitious target to achieve exports of about ₹35,000 crore in aerospace and defence goods and services by 2025.
- ❖ India has exported to countries like Italy, Maldives, Sri Lanka, Russia, France, Nepal, Mauritius, Sri Lanka, Israel, Egypt, UAE, Bhutan, Ethiopia, Saudi Arabia, Philippines, Poland, Spain and Chile.
- ❖ One of the biggest defence orders for India is signing of a \$374.96-million deal with the Philippines, for the supply of three batteries of shore-based anti-ship variant of the BrahMos supersonic cruise missile.
- ❖ Major defence export items of India include personal protective items, defence electronics systems, engineering mechanical equipment, offshore patrol vessels, advanced light helicopters, avionics suits, radio systems and radar systems.
- ❖ India will also export the indigenous Pinaka multi-barrel rocket launchers to Armenia, which will be the first export of the Pinaka rocket launchers.

- Electronic warfare system that detects incoming missiles and confuses them by scattering flares and chaff
- The pressurized cabin offers protection from nuclear, biological, and chemical contingencies.
- Its armory includes an Anti-tank guided missile 'Dhruvastra' and an air-to-air missile 'Mistral-2' which has a maximum interception range of 6.5 km.

Significance

- It can operate at higher altitudes, so it is ideal for deployment at the Line of Actual Control.
- Due to light weight, it allows for rapid movement on the battlefield.
- Boost to India's Atamirbhar Abhiyan in defense.

Aatma-nirbharta In Defence

India is one of the largest arms importers in the world, accounting for 11% of the total arms sales globally. Of India's total volume of defense procurement in 2016-20, 84 percent was of foreign origin.

According to SIPRI, India ranks fourth among 12 Indo-Pacific nations in self-reliant arms production capabilities.

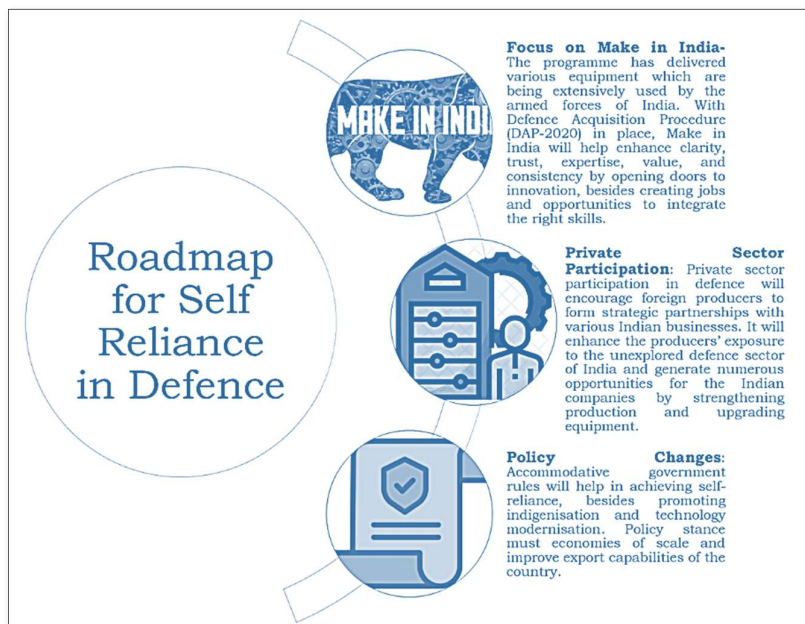
India's global power aspirations are linked with its self-reliance in the production of defense equipment.

There are several other benefits also such as:

- It will enhance India's strategic independence and promote development in the country's domestic defense and aerospace industry.
- The private sector will benefit from the transformation due to export authorization and the embargo imposed by the government on the import of various products.
- India will be able to boost exports and achieve its 2025 export target of Rs. 36,500 crores (US\$ 4.8 billion).
- India will be able to develop a surprise element over its nemesis.

Government Initiatives

- > Union budget 2022-2023 has reserved around 68% of the defense budget for the domestic defense industry. It sets aside 25 percent of its budget in defense Research and Development (R&D) for collaborating with private industry.
- > **FDI in defense is up to 74% under automatic route** for companies seeking new industrial licenses. Further, the industrial licensing process is streamlined with a longer authentication period.
- > **An indigenization portal called SRIJAN** is launched to support indigenization by Indian entities, including MSMEs.
- > **Two industrial defense corridors**, one each in Uttar Pradesh and Tamil Nadu.
- > **A new "independent umbrella body"** will be set up for private players to test new technology and certification.



PEPPER IT WITH

Indian IDDM, Pinaka Rocket, Kaveri Engine Project, Project 75, Stand-off Anti-tank (SANT) Missile Man Portable Anti-Tank Guided Missile (MPATGM), DRDO Lakshya

- > **Strategic Partnership Model** was introduced to encourage the participation of the private sector, in the manufacture of defense platforms and equipment such as aircraft, submarines, helicopters, and armored vehicles
- > **Draft of Defence Production & Export Promotion Policy (DPEPP) 2020** provides a focused, structured, and significant thrust to the defence production capabilities of the country for self-reliance and exports in the Defence sector, including the Aerospace and Naval Shipbuilding sectors.
- > **Restructuring of Ordnance Factory Board** into seven new Defence Companies and issuing of the action plan by the MoD (Ministry of Defence) aiming to ensure that contracts for all Capital Acquisition cases are finalized within two years of AoN (Acceptance of Necessity).

Road Ahead

Aatmanirbhar Bharat Abhiyan will create several opportunities for start-ups and private sector companies to showcase their domestic capabilities. The government's role as a mediator will help improve the processes and boost the sector. However, the industry must work in tandem with the government to achieve self-reliance and the US\$ 5 trillion economy target. The country is drastically reducing its import needs and promoting domestic defence capabilities.

Refugee Crisis in India

News Excerpt

As the political crisis deepens in Myanmar, over 40,000 refugees have taken shelter in Mizoram. The situation is worrisome for India as the Northeast region is always sensitive to demographic change induced by the influx of refugees and illegal migrants.

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Pre-Connect

- India as a nation is born out of a refugee crisis, which was unprecedented in the history of mankind. Therefore, in the psyche of Indians, there is always a soft spot for refugees. Civilizational values of love, tolerance, peace, and “Vasudhaiva Kutumbakam” drive India in welcoming the refugees.
- Since, the independence India has welcomed persecuted people from Tibet, Bangladesh, Pakistan, Sri Lanka, and Myanmar. **Even though India is neither a signatory to the 1951 Refugee Convention nor the 1967 Protocol. It shows India's commitment to human rights.**

Security Threats Emerging from Refugee Crisis

- > **The ISI Factor:** Pakistan is always an irritant in India's north-east, earlier it used to supply weapons and money to rebel groups in the north-east. However, in recent times it is trying to strike the ethnic, religious, and cultural differences of the northeast by bringing demographic disturbance. Its role behind the Rohingya crisis points towards the implementation of this strategy.
- > **Radicalization Threat:** Overflowing refugee camps, and hundreds and thousands of disenfranchised men and women without any hope to live provide fertile grounds for terrorist movements to grow. Lashkar-e-Taiba is already doing it through its front organization Falah-e-Insaniyat and Al Khidmat Foundation. They are pushing these radicalized youth into India under the garb of being a refugee.
- > **Economic Stress:** The influx of refugees caused increased pressure on land, resulting in the depletion of forest wealth. It causes the undercutting of wages of unskilled jobs.

Legal Provisions dealing with refugee issues

- ❖ Passport (Entry into India) Act, 1920: Allows for removal of Illegal foreigners by force.
- ❖ Registration of Foreigners Act of 1939: Under this all-foreign national visiting India on a long-term visa (for more than 180 days) is required to register themselves with a Registration Officer within 14 days of arriving in India. The exception to this law is Overseas Citizen of India.
- ❖ Foreigners Act of 1946: Central Government can detect, detain and deport illegal foreign nationals.
- ❖ Citizenship Act, 1955: Carries provisions for renunciation, termination, and deprivation of citizenship.

- **Lone-Wolf attacks:** As the surveillance capabilities of Security agencies have increased, coordinated attacks have become difficult for terrorist organizations. However, radicalized individuals are carrying out a crude terrorist attack. There is always a danger of a radicalized refugee undertaking lone-wolf attacks.
- **Social tensions:** Tensions between illegal migrants or refugees and the local population can result in communal violence, destroying the social fabric. Multiple communal violence in Assam is linked with refugees.
- **Organized Crime:** Refugees are easy targets for organized crime gangs. They fall easy prey to drug smuggling, and arms smuggling among other things.

PEPPER IT WITH

LTTE and Sri Lanka, Tibet History, Citizen Amendment Act 2019, Assam NRC, Assam Accord, Militancy in NE

How India should respond?

- ✓ **Increase Police Beats:** Police beat round must be increased in areas where refugee influx is increased, this will make sure no underground illegal activity takes place in the region.
- ✓ **Engagement and Dialogue:** Engage with refugees using civil society as a medium and make sure that their desperation doesn't translate into criminal actions.
- ✓ **Awareness among the local residents:** Make the local residents aware of the situation the refugees are in and with their help create temporary job opportunities for the refugees.
- ✓ **Ensure that Basic facilities are provided** in the camps which host the refugee population. This includes basic health and education facilities. For these, collaborations with civil society can be done.
- ✓ **Bring a proper refugee policy:** A proper refugee policy in India will help in keeping track of refugee activity and will direct implementing agencies in the proper direction.
- ✓ **Talk and Persuasion:** India must talk with the authorities of the concerned country and persuade them to resolve the issue and take back their refugees.

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ART & CULTURE

Bathukamma

News Excerpt

Ministry of Culture organizes the Bathukamma festival- an annual celebration in Telangana at Kartavya Path. Bathukamma means festival of life and it was celebrated to thank Goddess Parvati for her blessings for the crop harvest.

About Bathukamma

- Bathukamma Festival is an annual celebration in Telangana that goes on for nine days and overlaps with the festival of Navratri.
- The festival is celebrated with colorful exotic flowers of the region that symbolizes the collective spirit of the people of Telangana. A beautiful flower stack is arranged in a unique style in the shape of a temple, which usually consists of seasonal flowers, having medicinal values.
- Every year this festival is celebrated as per the Shathavahana calendar for nine days starting Bhadrapada Pournami (also known as Mahalaya Amavasya or Pitru Amavasya) till Durgashtami, usually in September–October of the Gregorian calendar.
- Bathukamma is followed by Boddemma, which is a 7-day festival. Boddemma festival marks the ending of Varsha Ruthu whereas the Bathukamma festival indicates the beginning of Sarad or Sharath Ruthu.

Significance of Bathukamma Festival Celebration at Kartavya Path:

- It is the festival for feminine felicitation and celebrates the spirit of womanhood.
- Kartavya Path is the symbol of National Unity and therefore celebration of the regional festival will not only showcase India's cultural tradition but also integrates India culturally.
- It also gives a boost to cultural tourism and with schemes like "Dekho Apna Desh" in place, the tourism sector will get a big boost.

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Buddhist Cave Architecture

News Excerpt

In a major exploration, the Archaeological Survey of India has unraveled remarkable archaeological remains of temples, caves, monasteries, stupas, sculptures, Brahmi inscriptions, and scattered remains in Madhya Pradesh's Bandhavgarh Forest Reserve.

About The Exploration

- The Archaeological Survey of India has explored 26 ancient temples/relics of the Kalachuri period, 26 caves which are mostly Buddhist, 2 monasteries, 2 stupas, 24 Brahmi inscriptions, 46 sculptures, 20 scattered remains, and 19 water structures recorded.
- Among the 46 sculptures, also is a Varah sculpture which is one of the largest. The Varaha sculpture is among the many monolithic sculptures of the 10 incarnations of Lord Vishnu that were discovered by an ASI at the national park earlier. The exploration took place 84 years after the last such effort in 1938.
- The ASI team discovered 26 mostly Buddhist caves dating back to the 2nd and 5th centuries. The caves and some of their remains had 'Chaitya' (rounded) doors and stone beds typical of Mahayana Buddhism sites. This discovery brings the total number of caves found in Bandhavgarh to 76, as 50 are already in the records since the last survey.
- The ASI team found 24 inscriptions in Brahmi text, all dating back to the 2nd to 5th centuries. The inscriptions mention sites such as Mathura and Kaushambi, Pavata, Vjabharada, and Sapatanaairikaa. The period of the findings covered the reigns of the kings Shri Bhimsena, Maharaja Pothasiri, and Maharaja Bhattadeva.
- The remains of 26 temples which dates back to the Kalachuri period between the 9th-11th centuries were also found.

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- Two Saiva mutts have also been documented. The Kalachuri dynasty, which spread over parts of Gujarat, Maharashtra, and Madhya Pradesh, is also associated with the earliest Ellora and Elephanta cave monuments.
- Some remains of the Gupta period, such as door jambs and carvings in caves, have also been found.

Buddhist Caves Architecture-Key Features

- It included sectionalizing areas for specific purposes like the viharas and chaityas and embellishing the areas with fine carvings, reliefs, and paintings. Some caves also included elaborate facades, arches, and pillars.
- The Buddhist chaityas and viharas stand as examples of early cave structures. While the viharas were residential areas of the monks, the congregational worship was conducted in the cave shrines known as chaityas.
- A pillared circular chamber in the garbhagriha hewn out of rock enabled one to circumambulate around the stupa.
- Buddhist architecture saw a second phase that started in the 5th century AD. The most prominent aspect of architectural design that emerged during this period was the introduction of the image of Lord Buddha.
- Huge statues of Lord Buddha in various postures as also Jataka stories and deities associated with Buddhism in the form of paintings and carvings found a place on the stupas. Sculptures associated with Buddhism were also introduced in the viharas.

Buddhist Caves In India

- ✓ The greater chunk of around 1200 surviving cave temples are Buddhist. The topography of the Western Ghats including the deep ravines, the sharp rocky exposures, and horizontal basalt hill tops naturally drew the Buddhist monks to the region where they employed the caves as shelters and shrines.
- ✓ From 200 BCE to 650 AD the Buddhist monks kept on occupying the earliest Kanheri Caves situated inside the forests of the 'Sanjay Gandhi National Park' in Maharashtra, India, that were excavated out of a huge basaltic rock outcropping during the 1st and 2nd centuries B.C. as also the earliest Ajanta caves dating back to the 2nd century BCE.
- ✓ The earliest caves comprising cave temples that are associated with Buddhism include the **Karla Caves, the Kanheri Caves, the Bhaja Caves, the Bedsa Caves, and the Ajanta Caves.**
- ✓ Buddhism encourages association with trade and commerce and the early involvement of the Buddhists with traders probably influenced them to locate their monastic establishments close to major trade routes. Most of the Buddhist caves are thus located near important trade routes and remained stopovers for many traveling traders.

Kalachuri Temple Architecture

Kalachuri Temple Architecture were mainly based on Nagara Style of Temple Architecture. Such temples have some common features such as:

- ❖ Temple is constructed on a high platform which is accessible through stairs.
- ❖ They don't have elaborate boundary wall or gateways
- ❖ Garibhagrah is always lies below the tallest tower.
- ❖ Amalaka or Kalash installed on Shikhara
- ❖ Shape of Shikhara decides the subdivision under Nagara Style of Temple Architecture.
- ❖ There are three schools of Nagara Style which are Odisha, Chandel and Solanki.

Some unique features of Kalachuri Temple Architecture are:

- ❖ Vrittassamsthanaka (Circular Sanctum Sanctorum) and Sunken Sanctum Sanctorum
- ❖ They are crowned with pancharathshikhara and had pyramidal mandap

Mahakal Corridor

News Excerpt

Prime Minister inaugurated the first phase of the Mahakaleshwar Temple corridor development project worth ₹856 crores in Ujjain, Madhya Pradesh.

About Mahakaleshwar Temple

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- The Mahakaleshwar Jyotirlinga in Ujjain is one of the twelve jyotirlingas. It is believed to be self-manifested, deriving currents of power (Shakti) from within itself.
- The idol of Mahakaleshwar is also unique known to be dakshinamurti, i.e. facing the South.
- Mahakal Path contains 108 stambhs or pillars whose mural wall is based on Shiva Purana.

About Mahakaleshwar Corridor Development Project

- The project is named as “Mahakal Lok” Project, it will connect Mahakal temple with the Kshipra river
- There will be 93 Shiva statues from the main door to the temple depicting stories from Shiv Puran. These statues and murals will depict ancient stories related to lord Shiva and Saptarishi, Navgraha, Tripurasur Vadh, etc.
- The Mahakaleshwar Temple and its surrounding region in the Ujjain district are the main goals of the plan. The 108 pillars in the corridor will display Lord Shiva in various Anand Tandav mudras.

PRASAD Scheme

- ✓ The project is being developed under the union government’s PRASAD (Pilgrimage Rejuvenation And Spiritual Augmentation Drive) scheme.
- ✓ The scheme was launched in the in the year 2014-2015 under the Ministry of Tourism.
- ✓ This scheme focuses on developing and identifying pilgrimage sites across India for enriching the religious tourism experience. It aims at paving the way for the development and promotion of religious tourism in India.

Ambedkar Circuit

News Excerpt

Union Government has announced a special tourist train that will cover the Ambedkar Circuit.

About Ambedkar Circuit

- The circuit will include key sites (panch teerth) associated with Dr. Br Ambedkar’s life. Ambedkar Circuit will cover Mhow, Ambedkar’s birthplace, Nagpur, where he converted to Buddhism, 26 Alipur Road, Delhi, where he lived during his last years, and Dadar in Maharashtra where he was cremated.
- Ambedkar Circuit is one among the 15 tourist circuits set up by the government.

Why Tourists Circuit?

- The government has been pursuing an integrated development of theme-based tourist circuits in the areas of eco-tourism, wildlife, Buddhist desert,

Newspaper and Books by Dr Ambedkar

❖ Newspaper Published are:

- Mooknayak (1920)
- Bahishkrut Bharat (1927)
- Janata (1930)
- Prabudhha Bharat (1956)

❖ Important Books are:

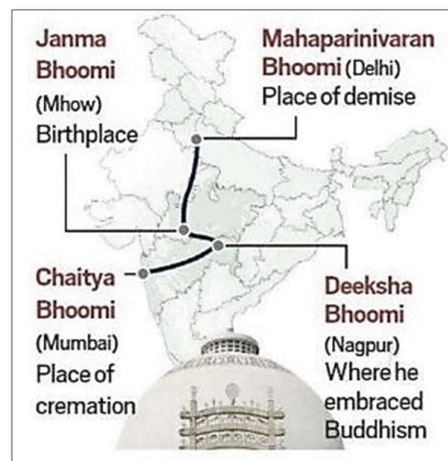
- The Problem of the Rupee – Its origin and its solution
- The Untouchables, Who are they?
- Who were the Shudra?
- States and Minorities
- Emancipation of the Untouchables
- The Annihilation of Caste
- Pakistan Or Partition Of India
- Buddha Or Karl Marx
- Ranade, Gandhi and Jinnah

spiritual, Ramayana, Krishna, coastal, Northeast, rural, Himalayan, tribal, and heritage.

- The government had set up 15 tourist circuits as part of the Swadesh Darshan program, including the Ramayana Circuit, Buddhist Circuit, Coastal Circuit, Desert Circuit, Eco Circuit, Heritage, North East, Himalaya, Sufi, Krishna, Rural, and Tribal circuits.

- The aim was to find different perspectives on the development and growth of tourism from all states and Union Territories of India. It also intended to bring an overall improvement in India’s tourism sector.

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Indian Heritage Textile

News Excerpt

UNESCO released a list of 50 exclusive and iconic heritage textile crafts of the country.

About UNESCO

UNESCO is a specialized agency of the United Nations aimed at promoting world peace and security through international cooperation in education, arts, sciences, and culture.

About the List

- The list was named Handmade for the 21st Century: Safeguarding Traditional Indian Textile.
- The list aims to bridge the gap of lack of proper inventory and documentation and has researched 50 selected textiles.
- UNESCO recommended the protection and revitalization of the textile crafts, which cover a broad spectrum of issues extending from policy to grass-root-based micro-interventions.

Textiles that are included in the list

Significance of inclusion of Indian textiles

- Textile crafts represent a very significant share of the Indian cultural heritage and have dazzled the world for centuries.
- Despite the pressures of industrial mass production and competition from new countries, these iconic heritage crafts must be taken stock of and promoted as contemporary treasures.
- No textile practices from India have been included in the list so far and an inscription in the list would be due to recognition of the talent and diversity of the country's extraordinary weaving traditions.

Textile	Place
Sungadi and Toda	Tamil Nadu
Himroo	Hyderabad
Bandhia tie and die weaving	Sambalpur, Odisha
Khes	Panipat
Chamba rumals	Himachal Pradesh
Thigma or wool tie and dye	Ladakh
Awadh Jamdani	Varanasi
Ilkal and Lambadi or Banjara embroidery	Karnataka
Sikalnayakanpet and Kalamkari	Thanjavur

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CONTEMPORARY ETHICS CASE STUDIES

Strategies for Different Types of Case Studies

S.No	Category	Strategy
1.	Challenges Faced by Government Officials in their role	<p>In such types of case studies, you will be given specific positions like DM, SP, Sarpanch, Public Information officer (PIO), etc. Strategy for such type of case study includes:</p> <ul style="list-style-type: none"> • Make a list of the power and responsibilities of these officers i.e. the role they play for example a PIO's role is of a quasi-judicial officer, Due to which a PIO can decline an order. • Understanding foundational values of a civil servant like impartiality, integrity, political neutrality, and others • Not to take shortcuts or break the law to produce results. • Understand the Roles and Duty- If the orders are to Stop an agitating crowd using a water cannon, then you have to follow the order, no matter the impact of the water canon on the crowd.
2.	Government officials facing corruption, inefficiency, indiscipline	<p>Usually, government departments are perceived to be corrupt and inefficient. This is due to security of tenure, the process of removing any person is tedious and difficult. This makes people complacent and inefficient. Further, promotions are linked with seniority then performance, and therefore people sometimes become undisciplined. In such type of case studies, you will be given charge of such department. Strategy for such type of case studies includes:</p> <ul style="list-style-type: none"> • “Be the Change You wish to See in the World” i.e., inspire officers with your conduct and be their role model. • Use of Saam (Make People Understand the wrong they are doing), Daam (Reward for good work), Dand (Punish for the violations), and Bhed (Divide those who are against you)- Remember the first battle is within the department. • Improving work culture with fairness, justice, impartiality, and objectivity- those who do good work must know that you are with them and those who are involved in wrongdoing must know you won't leave them.
3.	Government officials facing social prejudices	<p>Indian society faces many social prejudices based on caste, gender, creed, and class. These prejudices are exploited for vote bank politics. But a Civil Servant is need to be free from all prejudices, therefore he is to fight them, Strategy to solve such type of case studies includes:</p> <ul style="list-style-type: none"> • Use persuasion to change the worldview • Involve all stakeholders and leaders in transforming society • Don't allow any kind of discrimination • Follow the law strictly <p>For Eg, If in a school a Scheduled Tribe was appointed as a teacher and maximum students of upper caste are not attending school for this reason. You cannot in your answer suggest the removal of the teacher. Remember even if 99 out of 100 people are against us, you will follow the law.</p>
4.	Subordinate Government official facing ethical challenges in	<p>If Senior officers or politicians force subordinate government officials to do an illegal act. Then remember Government officers must act according to Law. Your loyalty lies with the constitution of India or the Law of the Land than any individual.</p> <p>Strategy includes</p>

	Law enforcement	<ul style="list-style-type: none"> • Try to convince the seniors about the dangers of the wrong decisions, as nobody is above the law and sooner or later chickens will come home to roost. • Even then If Senior persists, then do what is according to rules and regulations. • Prepare a suitable strategy to face the consequences of your actions. For example, even if you are transferred after this, you make a watertight case against the criminal so that he doesn't get discharged in your absence.
5.	Cases related to Applied Ethics	<p>Applied Ethics deals with controversial moral issues that have an impact on a large population. For example, medical ethics, human rights ethics, environmental ethics, etc. For such cases, studies strategy includes:</p> <ul style="list-style-type: none"> • Study Applied ethics issues • Study the normative principles of Applied ethics • Solve multiple case studies as there are standard solutions for such case studies based on the type. • Always give solutions that maximize the benefits to society on a sustainable basis.
6.	Situations related to public policy issues in the government	<p>Civil servants are considered honest and hardworking when they join the service. After working for some time, however, they also become corrupt and inefficient. Such type of case study strategy includes:</p> <ul style="list-style-type: none"> • Identify the systemic problem by studying them, for example understand Why there is corruption in the department? or why there is inefficiency in the department? • Use various recommendations of experts who have highlighted causes and provided solutions to these problems. For example, Central Vigilance Commission reports • Lastly, always add your suggestions to improve the solution.
7.	Individuals Facing Ethical issues in the workplace or private life	<p>Individuals often face an ethical dilemma in real life. They have to choose between two ethical options. Strategy includes:</p> <ul style="list-style-type: none"> • Use Normative ethics principles in solving such case studies • Decisions must be based on ethical and legal dimensions. • Your answer must reflect balance in private and public relation roles.
8.	Conflict of Interest at Workplace	<p>Conflict of interest arises when the personal interest of the person and professional duties conflict with each other. In such case studies strategies includes:</p> <ul style="list-style-type: none"> • Identify the situation where conflict might arise and de-attach yourself from the situation • Then follow the code of ethics and code of conduct of your organization • Make sure that such conflicts of interest are avoided in the future.

Case Studies for practice

Q.1. You are the Registrar, of Cooperative Societies of a State Government. You are known for your honesty, integrity, and discipline. People call you an officer with a no-nonsense attitude. You are well respected and have maintained good relations with everyone in society. You have a habit of coming early to your office and planning your day ahead and in doing so, you strictly ordered your assistant not to disturb you.

One morning, when you reached your office, you heard a knock on your door, there was a man who was desperate to meet you and requested a few minutes of your time. He introduced himself as a cousin of the doctor under which your daughter's asthma treatment is going on. You allowed him to present his case. He was an employee of a Primary Agriculture Credit Society, who developed an addiction to drugs and in his quest to buy drugs, he had siphoned off funds from the bank. When his crime was detected, he was terminated. He wanted his job back as he claimed he is now completely transformed; he also showed his left hand to you which was artificial as he lost it due to gangrene. He broke down and asserted that he is also considering committing suicide as life has become unbearable for him. He also showed you his certificate from the rehabilitation center.

- (a) **Identify the Ethical issues involved in the given case.**
- (b) **What are the options available to you in this situation? Evaluate each one of them.**
- (c) **What course of action you will take? Give a reason for the same.**

Q.2. Mr. A and Miss B are the officers of the Indian Revenue Service of the same batch. Soon after the training they married and joined their respective department. Being from the same batch they have commonalities in both their personal and professional life. Within a few years of service both generated a good name for themselves, people know them as honest and upright officers.

Mrs. B was posted as Additional Director General (Vigilance) and Mr. A got posted as the Commissioner in the Custom House. This custom house was riddled with cases of corruption. Several times CBI had raided the house and filed cases against the officers of the custom house. One day Mrs. B got an anonymous complaint against her husband Mr. A. The complainant accused Mr. A. of taking a large bribe from the particular importer. Mrs. B was extremely upset and when she went home, she informed Mr. A about the complaint which Mr. A said as bogus and was planted to put pressure on him as he was doing a clean-up in the department.

- (a) **Discuss the ethical issues involved in the case.**
- (b) **Critically Examine the options available to Mrs. B. What options she should adopt and why?**

Q.3. Ashok and Rajat are childhood friends and studied in the same school. Ashok belongs to a rich family, while Rajat belongs to a poor family. Rajat has always been good in their studies while Ashok has been average. Rajat performed well in his Engineering Entrance Examination and got admission to a top Engineering college. However, his parents did not have adequate funds to send him to Engineering. At the request of Ashok, his father provided handsome money to the parents of Rajat, which helped him fund his engineering education without any financial crisis. After graduation, Rajat joined a major engineering company and after a couple of years became the Managing Director of the Company. The financial condition of Ashok however, deteriorated and soon their family lost most of their wealth. Ashok was now looking for a job desperately. Meanwhile, he saw a vacancy for a Manager in the company headed by Rajat and applied for the job. The interview board for the selection of a manager was headed by the Managing Director. When Rajat compared, the credentials of Ashok with other applicants, he found that other candidates are more qualified for the job.

- (a) **What are the ethical issues involved in the case?**
- (b) **What are the different options available to Rajat?**
- (c) **Provide the merit and demerit of each option and recommend the best option.**

Note: In case studies the number of options available are not limited, one can use her/his imagination to explore more, hence your options might not be wrong, just make sure that they are pragmatic in nature.



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PHILOSOPHY OF THE MONTH

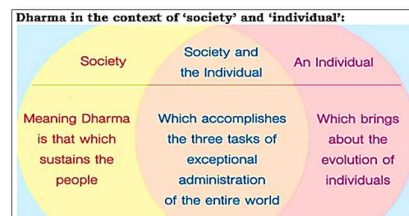
True Leaders Give Way for Other

- Good leaders institutionalize their legacy by stepping aside and allowing others to take lead. History teaches us that Sher Shah Suri was a much bigger reformer than Akbar however, Sher Shah Suri failed to institutionalize his reforms while Akbar did it successfully and as a result despite having a weak successor like Jahangir, Mughal Empire survived and Sur Empire didn't.
- Delegation of responsibility strengthens the root system of the entire society and develops relational roots, character roots, spiritual roots, and mental and physical roots. This helps in sustain diversity, and flexibility and creates a healthy society with roots spreading in all directions.
- Great leaders often work behind the scenes and help develop others. They allow space for independent decision-making. They understand that responsibility and decision-making go hand in hand.
- Good Leaders don't feed answers they show the path on which people will find the answers and help people discover themselves. They encourage the development of problem-solving skills and increase ownership of insights and commitment to actions among people.
- The maturity of the person is reflected in the way a person handles his/her vulnerabilities by leaving one position for other, a person shows maturity. Great leaders do the same when they give space to others.
- Good leaders have the wisdom to realize that we all are living in a vast web of inter-relational beings and that we are all vulnerable. Thus, we all need to bow down when the time comes for us to pass the baton on to others.



The Duty of Doubt

- According to Immanuel Kant, all humans must be seen as inherently worthy of respect and dignity. He argued that all morality must stem from such duties: a duty based on a deontological ethic. Consequences such as pain or pleasure are irrelevant.
- The premise of the obligation of duty lies in doubt. Many people believe that doubt is the opposite of duty; however, the opposite of duty is dogma i.e. unquestioning, blind adherence. Rabindranath Tagore used to term it “the desert sands of dead habit”.
- The path of true duty, in reality, is performing purposeful action. This action arises after resolving questions raised by doubt. This action is also known as Dharma.
- Renaming of Rajpath as Kartavya Path is a reminder that a true democracy while giving certain rights it also entails duties.
- Rights granted to us by the Constitution can only be ensured by the duty of vigilance on the part of all of us to keep them safeguarded.
- Doubt is central not only to the realm of political democracy (Voting based on Candidate Merit, than any other factor) but also to the far larger domain of the democracy of speculative ideas called philosophy.
- Doubt is a touchstone to discovering the truth. French Philosopher René Descartes in his Cartesian Dualism tenet asserts that “I think, therefore I am”, truly means “I doubt, therefore I am.”
- Doubt is the foundation of all scientific inquiry. Heisenberg's Principle of Uncertainty proves that our perception of reality necessarily includes unknowability, which is an alias for doubt.



PT CONCATENATION

Hemkosh

- Assamese Dictionary whose Braille version was recently received by the PM
- It dates back to the 19th century.

LINK IT WITH: Bhartiya Bhasha Kosh, Trilingual Dictionaries in India, Bi-Lingual Dictionary, Official Language of India, Rights of Linguistic minorities in India.

India Semiconductor Mission (ISM)

About: Comprehensive deployment of the Programme for Development of Semiconductors and Display Manufacturing Ecosystem in India.

- ISM is a specialized and independent Business Division within the Digital India Corporation under the Ministry of Electronics and Information Technology (MeitY)
- It aims to build a vibrant semiconductor and display ecosystem in India.
- Under the new changes, the Government of India will provide uniform fiscal support of 50% of Project Cost shall be provided across all technology nodes for setting up Semiconductor Fabs.

LINK IT WITH: Semiconductor Fabrication- Technical and Geopolitical aspect, IPEF, Digital India Mission, BharatNET

Production Linked Incentive Scheme

About: Production Linked Incentive Scheme on National program on High-Efficiency Solar PV Modules.

- The national program on High-Efficiency Solar PV Modules aims to build an ecosystem for the manufacturing of high-efficiency solar PV modules in India. It will help in:
- Creation of direct employment of about 1,95,000 and indirect employment of around 7,80,000 persons.
- It will bring a direct investment of around Rs.94,000 crore
- It will help in the import substitution of approximately Rs.1.37 lakh crore.
- It will give impetus to Research and Development to achieve higher efficiencies in Solar PV Modules.
- PLI will be disbursed for 5 years post-commissioning of solar PV manufacturing plants on sales of high-efficiency solar PV modules from the domestic market.

LINK IT WITH: PLI for Large Scale Electronics Manufacturing, Electronics Development Fund (EDF) policy, Scheme for Promotion of Manufacturing of Electronic Components and Semiconductors

National Commission for Women

About: NCW organizes Workshop on Gender Responsive Governance for Women MLAs from 6 States under 'She Is A Changemaker' project'

- 'She Is A Changemaker' project, a pan-India capacity-building programme of the Commission for improving the leadership skills of women representatives at all levels.
- It includes women leaders from gram panchayats to parliament members and political workers including office bearers of National/ State political parties.

LINK IT WITH: Samagra Sashaktikaran, National Policy for Women, Stand-up India Scheme, The Maternity Benefit (Amendment) Act, 2017 (Maternity Amendment)

Convergence Module

About: Linking scheme of Ministry of Agriculture & Farmers' Welfare with Ministry of Food Processing Industries.

- The agriculture Infrastructure Fund Scheme of the Minister of Agriculture & Farmers' Welfare is linked with the Prime Minister's Micro Food Enterprises Upgradation Scheme and PM Kisan Sampada Yojana of the Ministry of Food Processing Industries, through a convergence portal.
- About Agriculture Infrastructure Fund Scheme (AIFS)-
 - It is a central sector scheme (i.e., 100% funded by Union Government) launched in July 2020.
 - It provides a financing facility for the creation of post-harvest management infrastructure and community farm assets.
 - A 3% interest subvention and credit guarantee support (for a loan up to Rs 2 Crore) will be provided till the year 2032-33.
- About Pradhan Mantri Micro Food Industry Upgradation Scheme
 - It is a centrally sponsored scheme (i.e., not 100% funded by Union Government) launched in June 2020.
 - It seeks to enhance the competitiveness of individual micro-enterprises, which will provide financial, technical, and commercial assistance for the up-gradation of micro-food processing enterprises in the country.
 - Under the scheme, a 35% credit-linked subsidy will be provided for the setting up of micro food processing unit with a maximum subsidy limit of Rs 10 lakh and common infrastructure with a maximum subsidy of Rs 3 crore.
- About Pradhan Mantri Kisan Sampada Yojana
 - It is a Central Sector Scheme, which seeks to create modern infrastructure with efficient supply chain management from farm gate to retail outlet.
 - It is an umbrella scheme consisting of sub-schemes such as Mega Food Park, Integrated Cold Chain, and Agro-processing Cluster among others.
- Through this convergence, eligible beneficiaries receiving credit-linked subsidies under PMFME and PMKSY schemes can avail of interest subvention at the rate of interest charged by the banks. It will also ease access to interest subvention.

LINK IT WITH: Operation Greens, Sanitary and Phytosanitary Measures, Farm to Fork Concept, PM-KISAN

Diving Support Vessels (DSV)

About: Launch of two indigenously built DSV -Nistar and Nipun.

- These are built by Hindustan Shipyard Ltd for the Indian Navy.
- These ships would be deployed for deep sea diving operations with deep submergence rescue vehicles embarked to undertake submarine rescue operations, in case the requirement exists.
- These ships are also capable of sustained patrolling, conducting Search & Rescue operations, and carrying out Helicopter Operations on the high seas.
- DSVs are built with 80% of indigenous content, which is a major step towards "self-reliance".

LINK IT WITH: Samudrayaan Mission, Deep Ocean Mission, Polymetallic Nodules, Rare-Earth Minerals.

Agni Tattva - Energy for LiFE

About: An initiative under the umbrella campaign of Sumangalam of the Ministry of Power

- It will provide a platform to deliberate upon the learning and experiences of subject experts and specialists and explore solutions for a sustainable future for all.
- It covers several important topics focusing on health, transport, consumption and production, security, environment, and spirituality.

LINK IT WITH: LiFE Movement, Ethanol Blending Programme, Pro-Planet People (P3), Philosophy- Indian cultural connect with the environment, Power Foundation of India

Molecular Biosensor

About: Detection of the cancer microenvironment

- Extracellular Vesicles (EV) are small pouches, found abundantly in body fluids. All types of body cells secrete these EVs into the extracellular matrix.
- Cancer Cells are known to secrete at least two times more EVs into the body fluids than normal cells. Further, these EVs are covered in sugar molecules known as Hyaluronan (HA).
- Research indicates that these sugar molecules have a direct link to tumor malignancy and is considered a potential biomarker for early diagnosis of colon cancer.
- Further, these sugar-coated EVs are more elastic than other EVs and as a result, they can withstand multiple external forces.

LINK IT WITH: Biomarkers, Cancer in India, Compulsory licensing of Drugs in India

Capital Investment for 2022-23

About: Scheme for Special Assistance to States for Capital Investment for 2022-23

- Under this Scheme, financial assistance is provided to the States Governments in the form of a 50-year interest-free loan for capital investment projects.
- An amount of Rs 1 Lakh crore has been allocated for the scheme. The loan provided under the scheme will be over and above the normal borrowing ceiling allowed to states for the financial year 2022-23.
- The scheme is divided into Seven Parts-
 - Part-1: Capital Work proposed by States. Funds will be given from the State's share of central taxes and duties decided by the award of the 15th Finance Commission.
 - Part-2: PM Gati Shakti Expenditure- Given Priority and funds saved from other parts can also be reallocated to this part.
 - Part-3: PM Gram Sadak Yojana- Supplemental funding for the priority segment of the Scheme.
 - Part-4: Incentives for Digitization- Includes mandatory adoption of Digilocker for all citizen-centric services. Promotion of Digital payments and DBT among others.
 - Part-5: Optical Fibre Cable: For Capital projects on Optical Fibre Cable Network
 - Part-6: Urban Reforms: Incentives will be given for undertaking reforms related to Building Byelaws, Town Planning Schemes, Transit Oriented Development, and Transferable Development Rights.
 - Part-7: Disinvestment and Monetization: Providing Incentives to State Governments for Privatization/ Disinvestment of State Public Sector Enterprises (SPSEs) and monetization/recycling of assets.

LINK IT WITH: National Infrastructure Pipeline, Green Highways, Sustainable Infrastructure Development.

Poshan Vatikas (PVs)

About: Poshan Vatikas or Nutri- gardens are being set up across the country to provide easy and affordable access to fruits, vegetables, medicinal plants, and herbs.

- PVs will provide a fresh and regular supply of locally produced fruits, vegetables, and medicinal plants to women and children straight from a Nutri garden at or near an Anganwadi Centre.
- PVs will enhance dietary diversity by providing key micronutrients through local fruits and vegetables.
- PVs will reduce external dependency and make communities Atamanirbhar for their nutritional security. They act as a good example of convergent action on-ground.

Swachh Toycathon

About: Competition to make toys from 'Waste'

- Organized by the Ministry of Housing and Urban Affairs under the 'Swachh Amrit Mahotsav'.
- Based on three themes:
 - FUN & LEARN seeks ideas for design and an early prototype of toys from waste at home, workplace, and surroundings.
 - USE & ENJOY that seeks ideas for design and models of games and play in the park/open spaces made from waste.
 - NEW & OLD that seeks ideas/solutions/working models for circularity in the toy industry.
- Swachh Toycathon merges National Action Plan for Toys (NAPT) 2020 with Swachh Bharat Mission (SBM 2.0).
- Centre for Creative Learning (IIT Gandhinagar) is the knowledge partner for the initiative.
- Winning start-ups/individuals will be provided incubation support by IIT Kanpur, as well as linkages with Urban Local Bodies to implement awarded play zone designs and with the toy industry to promote and scale up awarded designs.

LINK IT WITH: Garbage Free Cities, Innovate India portal, National Action Plan for Toys (NAPT) 2020

Fund of Funds for Startups (FFS)

About: The government of India had committed Rs. 7,385 crores under the Fund of Funds for Startup India Investment for 88 Alternative Investment Funds (AIFs)

- FFS was launched under the Startup India initiative in 2016. Operationalized by the Small Industries Development Bank of India (SIDBI).
- It was announced with a corpus of Rs. 10,000 crores, to be built up over the 14th and 15th Finance Commission Cycles (FY 2016-2020 and FY 2021-2025) through budgetary support by the Department for Promotion of Industry and Internal Trade (DPIIT).
- It also supports SEBI-registered Alternative Investment Funds (AIFs), which in turn invest in startups.
- FFS has not only made capital available for startups at the early stage, seed stage, and growth stage but also played a catalytic role in terms of facilitating the raising of domestic capital, reducing dependence on foreign capital, and encouraging homegrown and new venture capital funds
- Performing startups supported through FFS are showing valuation increases by more than 10 times with a number of them even achieving unicorn status, for example, Dunzo, Zostel, Vogo, Jumbotail, etc.

LINK IT WITH: Start-up India, Stand-up India, Unicorn Status of Startup, Chakravartu Challenge of Indian economy, Credit Enhancement Guarantee Scheme for Scheduled Castes (CEGSSC), and the Venture Capital Fund for Scheduled Castes

AVGAS 100 LL

About: Special aviation fuel meant for piston engine aircraft and Unmanned Aerial Vehicles

- Indian Oil becomes the first Oil Marketing Company to produce and market AVGAS 100 LL in India. Until now India was importing this fuel from Europe.
- It will help reduce dependence on imports and address the associated logistical challenges.
- India will be able to save crucial foreign exchange with the in-house availability of AVGAS 100.
- It will allow for the opening of more pilot training institutes and bridge the gap between the demand and supply of aviation services.

LINK IT WITH: Pradhan Mantri Ji-Van Yojana, Biofuels in Aviation in India, Ethanol Blended Programme, National Policy on Biofuels.

Pradhan Mantri Garib Kalyan Ann Yojana (PMGKAY)

About: Centre extends PPMGKAY for another three months (October 2022-December 2022)

www.ksgindia.com

DELHI: VIJAY NAGAR 9717380832 & OLD RAJENDER NAGAR 9811293743 | JAIPUR: 8290800441 | PATNA: 7463950774 | RANCHI: 9939982007
BENGALURU: KORMANGALA 7619166663 & CHANDRA LAYOUT 7619136662 | BHOPAL: 7509975361 | INDORE: 7314977441 | IMPHAL: 9650245599
t.me/ksgindia | facebook.com/khanstudygroup | youtube.com/khanstudygroupksg | Instagram.com/khanstudygroup | WhatsApp 9868005599

- PMGKAY was launched to provide relief to poor, needy, and vulnerable households during the Covid-19 crisis. It intends to ensure that they do not suffer on account of the non-availability of adequate food grains.
- Beneficiaries under the scheme included those covered under National Food Security Act (NFSA) [Antodaya Anna Yojana & Priority Households] including those covered under Direct Benefit Transfer (DBT).
- The scheme will provide 5 kg of food grain per person per month free of cost to all the beneficiaries. The total financial cost to the government with this extension will be 3.91 lakh crore.

LINK IT WITH: Pradhan Mantri Garib Kalyan Deposit Scheme (PMGKDS), 2016, Pradhan Mantri Garib Kalyan Package, Concept of Welfare State.

Indian Fertiliser Companies

About: Signing of MOU with Canpotex (Canada) one of the largest Potash suppliers globally.

- It will result in long-term agreements between the companies for the supply of MOP (Muriate of Potash) to the Indian farmers.
- Canpotex will supply up to 15LMT of potash annually for three years to the Indian fertilizer industries.
- It will reduce both supply and price volatility and ensure a stable long-term supply of Potassic fertilizer to India.
- Potash, which is a source of Potassium, is used both for direct application as MOP as well as in combination with 'N' (Nitrogen) & 'P'(Phosphorous) nutrients in NPK fertilizers.
- India meets 100% of its Potash requirement through imports. The country imports approximately 40 LMT MOP annually.
- Canpotex is a joint venture between leading fertilizer players, Mosaic and Nutrien

LINK IT WITH: Fertiliser Subsidy in India, One Nation-One Fertilizer, Paramparagat Krishi Vikas Yojana. Fertilizer use in India- Challenges and Impact on environment, including soil health.

India-Netherlands

About: Formalization of the bilateral Fast-Track Mechanism (FTM) between India and The Netherlands

- It aims to serve as a platform for faster resolution of investment cases of Dutch companies operating in India.
- Invest India (National investment promotion and facilitation agency) is the executing body of the bilateral FTM.
- Diplomatic relations between India and The Netherlands were formally established in 1947.
- The Netherlands is the 4th largest foreign direct investor in India. The cumulative flow of foreign direct investment from The Netherlands to India is around USD 42.3 billion till June 2022.
- India's exports to The Netherlands consist mainly of mineral fuels and mineral-based products, organic chemicals, electrical machinery and equipment, aluminum, iron and steel, and pharmaceutical products.

LINK IT WITH: India-UAE CEPA, Types of Trade agreements, Invest India, Read List of India's FTA from Economic Survey and makes notes about chronology and major facts.

Chief of Defence Staff

About: Government appoints Lt General Anil Chauhan (Retired) as Chief of Defence Staff (CDS)

- The post of Chief Defence Staff was created in December 2019.
- CDS is the permanent Chairman of the Chiefs of Staff Committee which has the three service chiefs as members and head of the Department of Military Affairs (DMA) in the Ministry of Defence. Work exclusively on military matters falls within the purview of the DMA.

- CDS acts as the Principal Military Adviser to the defence minister only on tri-services matters. CDS does not exercise any military command over the three service chiefs. But the service chiefs are members of the Chiefs of Staff Committee, which will be headed by the CDS.
- The CDS has the status of a Cabinet Secretary but functionally will head a department headed by a secretary. CDS is not responsible for the defense of the country.
- The Government formed this post to be a single-point military advisor to the government.
- As future wars become short, swift, and network-centric, coordination among the three services is crucial.
- The CDS, being above the three Service Chiefs, is expected to optimize procurement, avoiding duplication among the services and streamlining the process.

LINK IT WITH: Theatre Specific Command, Generation of Warfare, Border Management in India, Traditional and Non-Traditional Security threats.

Swachhta Saarthi fellowship

About: 'Swachhta Saarthi Samaroh organized by Office of Principle Scientific Advisor

- Swachhta Saarthi Fellowship (SSF) is a citizen-centric initiative to sensitize communities toward waste management and offer innovative solutions for the conversion of value from waste.
- The fellowships aim to empower people at the grass-root level under three categories
 - School-going students
 - College-going students
 - Community workers/self-help groups/sanitary workers
- SSF was conceptualized under the Waste To Wealth Mission which is a submission under Swachh Bharat Unnat Bharat Abhiyan of the Prime Minister's Science, Technology & Innovation Advisory Council (PM-STIAC).
- Waste to Wealth's mission addresses the issues of waste disposal, deteriorating air quality, and increasing pollution of water bodies. It is spearheaded by the office of the Principal Scientific Adviser (PSA), Government of India.

LINK IT WITH: Sustainable Development Goals, Smart Cities Mission, STEM, India's INDC, Solid Waste Management in India.

Quarterly Employment Survey (QES)

About: 4th Quarterly Employment Survey Report

- QES is part of the All-India Quarterly Establishment-based Employment Survey (AQEES), released by the Labour Bureau an attached office under the Ministry of Labour and Employment.
- Data of QES is collected from nine selected sectors, which are Manufacturing, Construction, Trade, Transport, Education, Health, Accommodation & Restaurant, IT / BPO, and Financial Services.
- The QES was launched in April 2021 to capture important information in terms of employment & related variables in the organized sector of the economy.
- Key Highlights of 4th Quarter-January 2022-March 2022
 - An estimated total of 3.18 crore workers were engaged in 5.31 lakh establishments during the 4th round, compared to a total of 3.14 crores in the third quarter.
 - In terms of the total number of workers, the ranking sequence is Manufacturing>Education>IT/BPO>Health Sector
 - Size-wise majority of the firms fall under the category of 10 to 99 workers, rest are with less than 10 workers. A minuscule of firms with at least 500 workers is mostly in IT/BPO and the Health sector.
 - Female workers' participation reported a marginally increase from 31.6% in the third quarter to 31.8% in the 4th quarter report.

- In terms of numbers, they are ranked as Health>Education>Financial Services>IT/BPO. Interestingly, in Financial Services, females far outnumber males among self-employed persons.

LINK IT WITH: Periodic Labour Force Survey (PLFS), Four Labour Codes- The Code on Wages, Industrial Relations Code, Social Security Code, and the Occupational Safety, Health, and Working Conditions Code. Participation of Women in Workforce in India.

Jaldoot App

About: JALDOOT App was launched to enable the monitoring of groundwater tables across the country

- It has been jointly developed by the Ministry of Rural Development and Panchayati Raj.
- It will be used across the country to capture the water level of selected 2-3 wells in villages manually.
- Jaldoots (Gram Rojgar Shayak) are the officers assigned to measure the water levels. They will upload the geo-tagged photographs through the app on every occasion of measurement.
- Monitoring water levels in open wells will be measured twice a year:
 - 1st May to 31st May as the pre-monsoon water level
 - 1st October to 31st October for post-monsoon level for the same well.
- The app will work in both online and offline modes, thereby removing the hindrance of data connectivity.
- Data Collected under Jaldoot App will be integrated with the database of the National Water Informatics Centre (NWIC). It can also, be utilized for Gram Panchayat Development Plan and Mahatma Gandhi NREGA Plans.
- Ground Water Depletion in India-Fact Sheet:
 - In India, 230 billion metric cubics of groundwater is drawn each year for Irrigation
 - Ranking based on the use of Groundwater is Irrigation (89%)> Domestic use (9%)>Industrial use (2%).
 - Groundwater fulfills the water requirement of Rural areas (85%) more than Urban Areas (50%).
- Major causes of Groundwater depletion include: Green Revolution + Inadequate Regulation + Water Contamination + Centra-State tussle.

LINK IT WITH: Atal Bhujal Yojana, Jal Shakti Abhiyan, Mission Kakatiya, AMRUT, Watershed development, Central Ground Water Board (CGWB). Artificial Recharge of Groundwater, Groundwater Management Plant. Layers of Soil.

Sympho-NE

About: Virtual Conference for the development of the Tourism sector in North-East India.

- Organized by the Ministry of Development of the Northeast Region.
- It aims to:
 - Create a roadmap to showcase the unexplored beauty of northeast India and appreciate the tourism sector in the northeastern region.
 - Develop a one-stop solution to eliminate all obstacles that are being faced by tourists, and tour operators alike while carrying out the operations.
 - Solve logistics & infrastructural bottlenecks, and lack of awareness about the locations among the tourist and spread necessary information among the people for marketing/promotional activities.

LINK IT WITH: PM-DevINE, Industrial Corridor in North Eastern Region, North East Special Infrastructure Development Scheme (NESIDS), Science and Technology Interventions in North East (STINER), North Eastern Regional Agricultural Marketing Corporation Ltd, NE Venture Capital Fund.

Exercise Kakadu

About: Multinational Maritime Exercise hosted by Royal Australian Navy in Darwin (Australia)

- The exercise included participants from 14 countries
- Indian Navy participated in Exercise Kakadu
- P8I Long Range Maritime Patrol Aircraft along with INS Satpura participated in the exercise.
- The maiden participation of the P8I provided an understanding of the varied nuances of collaborative Anti-Submarine and Anti-Surface Warfare operations in a complex multi-threat scenario.
- INS Satpura is an indigenously designed and built 6000-tonne guided-missile stealth frigate. It is the frontline unit of the Eastern Fleet of the Navy.

LINK IT WITH: Malabar Exercise, Exercise Pitch Black, AusIndex.

VSHORADS

About: Successful Flight Tests of Very Short-Range Air Defence System (VSHORADS) Missile by DRDO

- VSHORADS is a Man Portable Air Defence System (MANPAD) designed and developed indigenously by DRDO's Research Centre Imarat (RCI), Hyderabad in collaboration with other DRDO laboratories and Indian Industry Partners.
- It incorporates a miniaturized Reaction Control System (RCS) and integrated avionics. It is propelled by a dual-thrust solid motor.
- It will neutralize low-altitude aerial threats at short ranges. The design of the missile including the launcher has been highly optimized to ensure easy portability.
- Reaction Control System (RCS)
 - Controls attitude of the system by providing a direction or steering the system. For this it used thrusters.
 - RCS provides thrust in a single or a combination of directions. It can also control the rotation by providing torque.
- MANPAD
 - It is a short-range surface-to-air missile used to intercept fixed- and rotary-wing aircraft in flight.
 - They are designed to be fired while mounted on a person's shoulder or a tripod. These are fairly lightweight
 - They help shield troops from aerial attacks and are most effective in targeting low-flying aircraft.
 - The first MANPADS developed by the US were called 'Redeye' and declared operational in 1968
 - At least 57 non-state armed groups (NSAG) are thought to possess MANPADS.

LINK IT WITH: S-400, Terminal High Altitude Area Defense, Stinger Missile, and their role in Afghan Jihad.

Global Innovation Index (GII)

About: Improvement of India's rank from 46th position in 2021 to 40th in 2022

- GII is released annually by World Intellectual Property Organisation (WIPO)
- The Confederation of Indian Industry is the corporate partner of WIPO.
- WIPO is the self-funding agency of the United Nations with 193 member states. It acts as a global forum for intellectual property (IP) services, policy, information, and cooperation.
- GII has also been recognized by the UN Economic and Social Council as an authoritative benchmark for measuring innovation concerning the Sustainable Development Goals (SDGs).
- Parameters used in GII methodology are:
 - Institutions, Human Capital and Research, Infrastructure, Market Sophistication, Business Sophistication, Knowledge and Technology Outputs, Create Outputs
- The top 5 Countries are: Switzerland>United States>Sweden>The United Kingdom>The Netherlands
- India is the innovation leader in the lower middle-income group. However, it scores below average in the Infrastructure category.

- Two Key Innovation talked about in the report are:
 - Digital Innovation is based on supercomputing, artificial intelligence, and automation which will impact productivity across all sectors and fields of scientific research.
 - Deep Science Innovation is based on new developments in biotechnologies, nanotechnologies, new materials, and other sciences. It will revolutionize innovations in health, food, environment, and mobility.

LINK IT WITH: Digital India, Atal Tinkering Labs, structural reforms in IPR in India, NITI Aayog's India Innovation Index.

Swachh Shehar Samvad

About: Capacity Building initiative of the Swachh Bharat Mission Urban 2.0

- It is to equip States and Cities with an understanding of all recent developments in waste management.
- India has achieved several strides in the field of sanitation such as:
 - All 4,372 ULBs (100%) in India have now been declared Open Defecation Free (ODF).
 - Over 73.45 lakh individual and community toilets have been built restoring the dignity of the urban poor and Divyang Jan.
 - Waste processing capacities of urban local bodies (ULBs) have increased from a mere 18% in 2014 to 73% at present.

LINK IT WITH: Waste to Wealth, Lakshya Zero Dumpsite Challenge, Garbage-Free India, Material Recovery Facilities, ODF++

Hydrogen Valley Platform (HPV)

About HPV

- HPV is a global initiative to optimize hydrogen demand and supply by onsite generation and utilization.
- It aims to utilize renewable resources effectively in water-excess areas with geographical identity.
- It aims to combine a complete hydrogen value chain (production, storage, and transportation) to reach a critical scale and unlock learning curve effects.
- India has committed to facilitate the delivery of three clean hydrogen valleys in India by 2030.

LINK IT WITH: Hydrogen fuel- Green Hydrogen and Blue Hydrogen

5G

About: Official Roll Out of the 5G Services in India

- The Prime Minister of India officially launched 5G services in India during the 6th edition of the India Mobile Congress.
- In the first phase, 5G will be launched in 8 cities which are Ahmedabad, Bengaluru, Chandigarh, Chennai, Delhi, Gandhinagar, Gurugram, and Hyderabad.
- Peak Internet speeds on 5G could touch 10 Gbps compared to 100 Mbps in 4G. In terms of latency (the time it takes for a device to send packets of data and get a response), in 4G it is between 10 and 100 milliseconds, in 5G it is expected to be under 1 millisecond.

LINK IT WITH: SAR Value, International Electromagnetic Fields (EMF) Project, Orthogonal frequency-division multiplexing

Production Linked Incentive Scheme

About: Govt planning 7-8 more PLI schemes to expand coverage

- The new PLI schemes will cover segments, including textiles, electronic components, furniture, toys, and leather.
- Fresh budgetary allocation will be provided for the schemes, apart from using savings from the earlier PLI schemes.

- Presently, 14 PLI schemes have been announced since 2020 and it had led to incremental manufacturing of more than \$500 billion over five years
- Sectors in which PLI is present are mobile & specified electronic components, pharmaceuticals API, medical devices, telecom & networking products, food products, white goods, solar modules, automobiles & auto components, advanced chemistry cell battery textiles, specialty steel, and drones.
- PLI will help in achieving the share of manufacturing in the country's GDP to at least 25% which has remained stagnant at 16-17% over the past three decades.

LINK IT WITH: MSME Sambandh, MSME Samadhaan, Digital MSME Scheme, MCA 21, Baba Kalyani Committee on SEZ, Export Competitiveness of India.

Universal Service Obligation Fund (USOF)

About: USOF launches Telecom Technology Development Fund scheme

- USOF is headed by an Administrator appointed by the Government of India. It is an attached office of the Department of Telecommunications (DoT), Ministry of Communications. It was created in 2002 as a non-lapsable fund.
- All credits to this fund require parliamentary approval and it has statutory support under Indian Telegraph (Amendment) Act, 2003.
- USOF is also providing 4G services to NITI Aayog's Aspirational Districts across five states Andhra Pradesh, Chhattisgarh, Jharkhand, Maharashtra, and Odisha.
- India has the second largest telecom industry with a subscriber base of 1.17 billion as of 2022. Tele density in India is over 85%.
- India's telecom sector receives the third largest FDI (in the telecom sector 100% FDI is allowed through automatic route) in terms of inflows and contributes 2.2 million direct and 1.8 million indirect jobs.

LINK IT WITH: BharatNet Project, National Broadband Mission, Submarine Cable Connectivity to Andaman and Nicobar Islands National Optical Fibre Network, Digital India, National Digital Communications Policy, 2018

Swachh Survekshan 2022

About: President of India Announces Results of Swachh Survekshan 2022

- Organized under Swachh Bharat Mission-Urban 2.0 by the Ministry of Housing & Urban Affairs (MoHUA). For ranking, the survey is done of States, UTs, Cantonment Boards, and Ganga Towns
- Ranking sequences in:
 - The cleanest Cities with 'more than 1 lakh population is: **Indore (Madhya Pradesh) > Surat (Gujarat) > Navi Mumbai (Maharashtra)**
 - The cleanest Cities with 'less than 1 lakh population is: **Panchgani (Maharashtra) > Patan (Chhattisgarh) > Karad (Maharashtra)**
 - Cleanest States with "more than 100 Urban Local Bodies" is: **Madhya Pradesh > Chhattisgarh > Maharashtra**
 - The cleanest States with "less than 100 Urban Local Bodies" is: **Tripura > Jharkhand > Uttarakhand**
- **Tirupati** (Andhra Pradesh) received the best city award in the **Safai Mitra Suraksha category**.
- **Haridwar** (Uttarakhand) received the **best Ganga town** in more than one lakh population cities.
- **Shivamogga** received the **fast mover city award**.
- **Indore** is India's first **7-star Garbage Free city**.
- **Surat, Bhopal, Mysuru, Navi Mumbai, Vishakhapatnam, and Tirupati** earned **5-star Garbage Free certifications**.
- 4 out of the 8 North Eastern states have shown significant improvement in overall performance over the last year.

- Smaller cities with a population of less than 25,000 have performed admirably in the survey.

LINK IT WITH: Indore Model, Solid Waste Management in India, Waste to Wealth, Garbage Free Cities

Betting Advertisement

About: Ministry of Information & Broadcasting issues Advisory against advertisements of betting still visible on Television and Digital Media.

- Betting and gambling are illegal in most parts of the country, and advertisements of these betting platforms as well as their surrogates are also illegal.
- Several Indian states have legalized lotteries. These are Goa, Kerala, Arunachal Pradesh, Assam, Maharashtra, Madhya Pradesh, Mizoram, Manipur, Meghalaya, Punjab, Nagaland, West Bengal, and Sikkim
- Online gambling and land-based casinos are legalized in Goa, Sikkim, Nagaland, and Daman under the Public Gambling Act, (1976).
- Maharashtra has prohibited gambling and considers gambling illegal under the Bombay Prevention of Gambling Act, (1887).
- E-gaming (games of chance) has been legalized in Sikkim and Nagaland.
- Telangana and Arunachal Pradesh consider the game of skill illegal as per the Telangana State Gaming Act, 1974
- The promotion of offline or online betting/gambling through advertisements is not advised in the larger public interest.

LINK IT WITH: Cricket Betting in India, The Lotteries Regulation Act, 1998, Prize Competitions Act, 1955, Consumer Protection Act 2019, Cable TV Network Regulation Act 1995, and the IT Rules, 2021.

Credit Guarantee Scheme for Startups (CGSS)

About: Department for Promotion of Industry and Internal Trade (DPIIT) notifies the establishment of CGSS.

Key Facts About Start-up Ecosystem in India

- India has the 3rd largest startup ecosystem in the world.
- India has near about 73000 startups as of June 2022.
- Almost 49% of Startups in India belong to tier-2 and tier-3 cities.
- Almost 44% of the recognized startups have at least one woman director (as per Dec 2020 data)
- A total of 105 Indian Startups are a unicorn.

• About CGSS

- It is a scheme of the Ministry of Commerce and Industry.
- It will provide credit guarantees to loans extended to startups by Member Institutions (MIs) which includes:
 - Scheduled Commercial Banks
 - Non-Banking Financial Companies
 - The Securities and Exchange Board of India (SEBI) registered Alternative Investment Funds (AIFs)
- Credit guarantee under the scheme would be
 - Transaction-based: The guarantee cover is obtained by the MIs on a single eligible borrower. Transaction-based guarantees will promote lending by Banks/ NBFCs to eligible startups.
 - Umbrella-based: It will provide a guarantee to Venture Debt Funds (VDF) registered under AIF regulations of SEBI (a growing segment of funding in the Indian startup ecosystem).
- The exposure to individual cases would be capped at Rs. 10 crores per case or the actual outstanding credit amount, whichever is less.
- The scheme will provide collateral-free loans and enable the flow of financial assistance to startups.

- The National Credit Guarantee Trustee Company Limited (NCGTC) will be operating the Scheme.

LINK IT WITH: Startup India Action Plan (SIAP), National Initiative for Developing and Harnessing Innovations (NIDHI), Startup India Seed Fund Scheme, State Startup Ranking, Fund of Funds for Startups (FFS), Credit Guarantee Schemes For Exports.

Indian Railways (IR)

About: Indian Railways has adopted an integrated approach to a Green Environment. It plans to become Net Zero Carbon Emitter by 2030.

- Railway's Dedicated Freight Corridors (DFCs) first phase can alone reduce emissions by about 457 million tons of CO₂ over 30 years.
- IR has installed 142 MW of solar rooftop capacity and 103.4 MW of Wind energy till August 2022. By 2029-30, Railways plan to have a renewable capacity of 30 GW.
- IR has completed the fitment of bio-toilets in all the passenger-carrying coaches.

LINK IT WITH: Swachh Bharat Mission 2.0, Green Certifications, PAT Scheme, biofuels blending.

Slender Lorris

About: India's First Slender Loris Sanctuary

- Located in Kadavur Wildlife Sanctuary in the Dindigul district of Tamil Nadu.
- 11806 hectares of forest area will be covered. It will be notified under the Wildlife Protection Act (1972) section 26A (1)(B)
- Native to India and Sri Lanka
- Red Slender Loris is found only in Sri Lanka. While Grey Slender Loris is found both in India & Sri Lanka
- Tropical Rain Forest, Semi deciduous forests, and swampy areas are their habitat
- They live on trees predominately and eat plant shoots and fruits.
- IUCN States of Red Slender- Endangered, Grey Slender- Near Threatened

LINK IT WITH: Environment Protection Act 1986, CITES, IUCN-Red List, National Park vs Wildlife Sanctuary (Key Differences)

Manasbal Lake

About: NCC Naval training re-established in the Manasbal Lake after 33 years.

- Manasbal Lake is located in the Safapora area of the Gandarbal district of J&K.
- Manasbal is a freshwater lake and a natural stamping ground for birds.
- Nearby lake is Wular Lake which is located on the Jhelum River.
- Ahtung hills are also nearby and are famous for limestone extraction.

LINK IT WITH: Key Freshwater lakes in India, Limestone topography in India

Krishi Satellite Program

About: The Indian Space Research Organisation (ISRO) has proposed dedicated satellites for supporting the country's agriculture sector.

- It will work under the Department of Agriculture.
- Two Satellites will be earmarked for crop forecasting, pesticide application, irrigation, soil data, and generation of critical data related to drought.
- Earth Observation Council will be created for addressing the current deficiencies in earth observation capabilities and data utilization.
- Previous Satellites in Agri-Sector are:
 - KALPANA 1 (2002), CARTOSAT-1 (2005), RESOURCESAT-1 (2011), INSAT 3D (2013), RESOURCESAT 2A (2016)

LINK IT WITH: Indian Regional Navigation Satellite System, Radar Imaging Satellite, Earth Observation Satellite

G7 Climate Club

About: 48th G7 Summit resulted in the formation of an International “Climate Club” which will take more decisive climate action and combat global warming.

- As of 2022, G7 countries make up 10% of the world’s population, 31% of the global GDP, and 21% of global carbon dioxide emissions. They also have a high level of gross debt especially Japan, Italy, and the US.
- Under the initiative member countries, won't be imposing climate-related tariffs on each other's imports.
- The club will be inclusive to those countries who are committed to following the 2015 Paris Climate Agreement.
- It will support the effective implementation of the Paris Agreement by accelerating climate actions.
- It will be based on three pillars
 - Focus on advancing transparent policies to achieve Climate change.
 - Facilitating partnership and cooperation to encourage Climate action and unlock benefits of climate cooperation
 - Transforming industry to accelerate decarbonization
- The concept of Climate club was developed by the Nobel-Winning economist William Nordhaus in 2015
- It offers an attractive solution to deal with voluntary or non-participation that remains a root challenge of international climate policy.
- Five major goals of the club are:
 - Sustainable Planet
 - Healthy Lives
 - Stronger Together
 - Economic Stability & Transformation
 - Investment in a better future

LINK IT WITH: Members of G7-G8-G20, COP 26, Paris Climate agreement, India’s INDC

Flexi-Fuel Strong Hybrid Electric Vehicles (FFV-SHEV)

About: Launch of first FFV-SHEV pilot project in India.

- It will run on 100% petrol as well as 20 to 100% blended ethanol and electric power.
- It will help in a 6 to 8 percent increase in agricultural growth rate for AtmaNirbhar Bharat as per the concept of ‘Anndatas’ to become ‘Urjadatas’.
- The success of this pilot project will create an ecosystem of electric vehicles and make New India, a global leader in the manufacture of these electric vehicles.
- This technology is innovative, revolutionary, sustainable, cost-effective, and energy-efficient & will completely transform the transportation sector.

Paddy Straw Palletisation

About: Ministry of Environment, Forest & Climate Change releases guidelines for grant of financial support for the establishment of paddy straw palletization and torrefaction plant

- Paddy straw burning in Northern regions of India has emerged as one of the major causes of air pollution during winters, especially in Delhi-NCR.
- Under CPCB guidelines, individuals/entrepreneurs/ companies, interested in setting up pelletization and torrefaction plants, using only paddy straw generated in the NCT of Delhi, States of Punjab & Haryana, and NCR districts of Rajasthan & Uttar Pradesh can apply for obtaining a one-time grant on capital investment.
- The pilot project is a step towards the conversion of “Waste to Wealth” and a step towards achieving the PM’s vision of ‘Clean India’.
- Under the guidelines, a maximum grant of Rs. 14 lakh per Ton/hr for a non-torrefied pellet plant and Rs. 28 lakh per Ton/hr for a torrefied pellet plant is being provided with an overall cap of Rs. 70 lakhs for the former and Rs. 1.4 crore for the latter.

- The first 2G Ethanol Plant in Panipat, is expected to utilize ~2 lakh metric tonnes of paddy straw every year.

Bureau of Indian Standards

Key Facts about BIS

- BIS is the National Standard Body working under the Ministry of consumer affairs, food and public distribution, Government of India.
- Its objective is the harmonious development of the activities of standardization, product testing, and quality certification of goods in the country.
- BIS has been providing traceable and tangible benefits to the national economy in several ways – providing safe reliable quality goods; minimizing health hazards to consumers; promoting exports, and imports substitute; controlling the proliferation of varieties, etc. through standardization, certification, and testing.

PERSON IN NEWS

			
<p>GURU GOBIND SINGH</p> <ul style="list-style-type: none"> • He was born in Patna in 1666 and was the 10th Guru of Sikhism at the age of 9. • His father Guru Teg Bahadur was martyred by Emperor Aurangzeb for protecting the rights of Kashmiri Hindus. • At the age of 19, Guru Gobind Singh ji mastered all languages like Gurmukhi, Braj Bhasha, Sanskrit, Persian Hindi, and Urdu. • In 1699, he laid the foundation of Khalsa Panth at Anadapur Sahib in the State of Punjab. • Guru Gobind Singh Ji invented the musical instruments "Dilruba" and "Taus" • His battles were against oppression, weaknesses, and injustice. He strongly believed that a sword must be used only when other methods fail. • He composed "Jaap Sahib". The vocabulary that was used stressed just 1 fact i.e. universalism. • He formed some codes of conduct and practices for Sikhs. He asked them to accept Guru Granth Sahib Ji as their Guru after him. • He wrote a defiant letter in Persian to Aurangzeb, titled Zafarnama (literally, "epistle of victory"), a letter that the Sikh tradition considers important towards the end of the 19th century 	<p>Bhagat Singh</p> <ul style="list-style-type: none"> • He was born in the year 1907 in Lyallpur (now in Pakistan). He was the nephew of freedom fighter Sardar Ajit Singh • In the early days, Bhagat Singh was a follower of the ideals of non-violence popularised by Mahatma Gandhi. Later he was inspired by the writings of Vladimir Lenin, Leon Trotsky, and Mikhail Bakunin. • He was associated with more than a dozen prestigious newspapers and magazines that were published in different parts of the country. These included <i>Kirti</i> (on the editorial team), <i>Pratap</i>, <i>Maharathi</i>, <i>Vir Arjun</i>, <i>Matawala</i>, <i>Prabha</i>, <i>Akali</i>, <i>Chand</i>, and <i>Bande Mataram</i> • The most common pseudonyms that he used for by-lines were 'Virodhi', 'B.S. Sindhu', and 'Balwant Singh'. • In March 1926, he founded the Naujawan Bharat Sabha, a socialist organization to overthrow British rule in India. In 1927, he was arrested and charged with involvement in the Lahore bombing case that took place in 1926. • In 1928, He rebuilt Hindustan Republican Association (HRA) and renamed it the Hindustan Socialist Republican Army (HSRA) which included revolutionaries from across the country. Its first meeting was held at Feroz Shah Kotla Delhi. • In 1928, to avenge the death of Lal Lajpat Rai in an anti-Simon Commission protest, he along with HSRA members Sukhdev, Rajguru, and Chandrashekhar Azad, drew up a plan to kill police superintendent James Scott. However, they mistakenly killed John Saunders. • In 1929, Bhagat Singh and Batukeshwar Dutt had thrown bombs into the Central Legislative Assembly, to oppose the Public Safety Bill and Trade Dispute, Bill. He surrendered to the police after the incident while raising the slogan of • His most famous political work such as Why I am an Atheist, Letter to young political Workers, and Jail Notebook, were written while he was in prison. In Minawali Jail, he along with his prison mate • In Minawali jail, He along with his prison mate went on a hunger strike that lasted for 116 days to protest against the discriminatory treatment of Indians and European prisoners. In this protest revolutionary, Jatin Das made supreme sacrifice. • On March 23, 1931, Singh was executed along with Rajguru and Sukhdev. March 23 is observed as, 'Shaheed Divas to pay tribute to the trio • The first major personality to eulogize Bhagat Singh was EV Ramasamy Naicker (founder of the anti-Brahminical Self-Respect Movement) in his journal <i>Kudi Arasu</i>. 	<p>Mahatma Gandhi</p> <ul style="list-style-type: none"> • Born on 2 October 1869 in Porbandar, Mahatma Gandhi is the Father of the Nation. • Mahatma Gandhi's birthday is commemorated worldwide as the International Day of Non-violence. • Gandhi got married at the age of 13 and the death of his first child after marriage made him a strong opponent of child marriage. • Gandhiji ran four publications — Indian Opinion, Young India, Navjivan, and Harijan. • He assumed the leadership of the Indian National Congress in 1921 and rose to become its most prominent leader and iconic figure in Indian politics. • Gandhi was a social reformist and leader of the Indian Independence Movement who introduced the idea of non-violent resistance called Satyagraha. • He organized the Dandi Salt March in 1930 and the Quit India Movement in 1942. • Gandhiji in 1930, was recognized as the Time Magazine Man of the Year. He is the first and the only Indian to have been honored with the title • Mahatma Gandhi never failed to express his opinion concerning the caste system, the inhumane treatment of untouchables, and many problems plaguing the country. He espoused the ideas of brotherhood, non-violence, and civil disobedience. • Gandhi was nominated for the Nobel Peace Prize five times but never received the award. • He was a big football fan and had also formed two football clubs- one each in Johannesburg and Pretoria. • Twenty-one years after his death, Britain released a stamp in his honor. • There are around 48 roads outside India named after Mahatma Gandhi. • Mahatma Gandhi served in the army during the Boer War in South Africa. 	<p>Lal Bahadur Shastri</p> <ul style="list-style-type: none"> • Shastri was born on October 2, 1904 in Mughalsarai (Uttar Pradesh) • Lal Bahadur got the title 'Shastri' in Kashi Vidyapeeth university in 1926 as a mark of scholarly success. In fact, it was a degree • He integrated the idea of White Revolution, a national campaign to increase the production and supply of milk, by supporting the Amul milk co-operative of Anand, Gujarat, and creating the National Dairy Development Board in 1965. • Shastri also promoted the Green Revolution to boost demand and propel India's food production. • During his time as the Home Minister, he set up the first committee to tackle corruption. • When his son received an undue promotion at his job, it irked Shastri and he immediately released an order to reverse the promotion. • After the war with Pakistan in 1965, there was a severe drought in the country. To emerge from these conditions, Shastri requested the countrymen to fast for a day and gave us the slogan 'Jai Jawan Jai Kisan'. • He popularized the slogan 'Jai Jawan Jai Kisan', recognizing the need for self-sustenance and self-reliance as the pillars to build a strong nation. • As Minister of police in Uttar Pradesh, Shastri was the first person who used jets of water to disperse crowd instead of a lathi charge. • On the occasion of his wedding, Shastri took a khadi cloth and a spinning wheel as part of the dowry. • In school days, Shastri would swim across the Ganges twice a day with his book tied on top of his head since he didn't have enough money to take the boat • He won great popularity for his firmness on the outbreak of hostilities with neighboring Pakistan (1965) over the disputed Kashmir region. • On the occasion of his birth centenary in 2004, the RBI issued a Rs.100 coin with his portrait on it, commemorating his life. • Lal Bahadur Shastri was awarded the Bharat Ratna, India's highest civilian award posthumously in 1966

**Jai Prakash Narayan- "Lok Nayak"**

- Jai Prakash Narayan was born on 11th October, 1902 in Sitabdiara, Bihar.
- He was Marxist ideas in the USA and Gandhian ideology.
- In 1929, he joined the **Indian National Congress**.
- In 1932 imprisoned for a year for participation in the **civil disobedience movement**.
- He played a key role in the formation of the **Congress Socialist Party (1934)**, a **left-wing group within the Congress Party**.
- In 1948, he left the Congress Party and initiated an anti-Congress Campaign.
- In 1952, he **formed the Praja Socialist Party (PSP)**.
- In 1954, he devoted his life exclusively to the Bhoodan Yajna Movement, of Vinoba Bhave, which demanded land redistribution to the landless.
- In 1959 he argued for a "reconstruction of Indian polity" using a **four-tier hierarchy of village, district, state, and union councils (Chaukhamba Raj)**.
- He advocated a program of social transformation which he termed **'Sampoorna Kranti' (total revolution) in 1974 against corruption in public life**.
- He was posthumously conferred with **India's highest civilian award, the Bharat Ratna (1999)**

**Deen Dayal Upadhyaya**

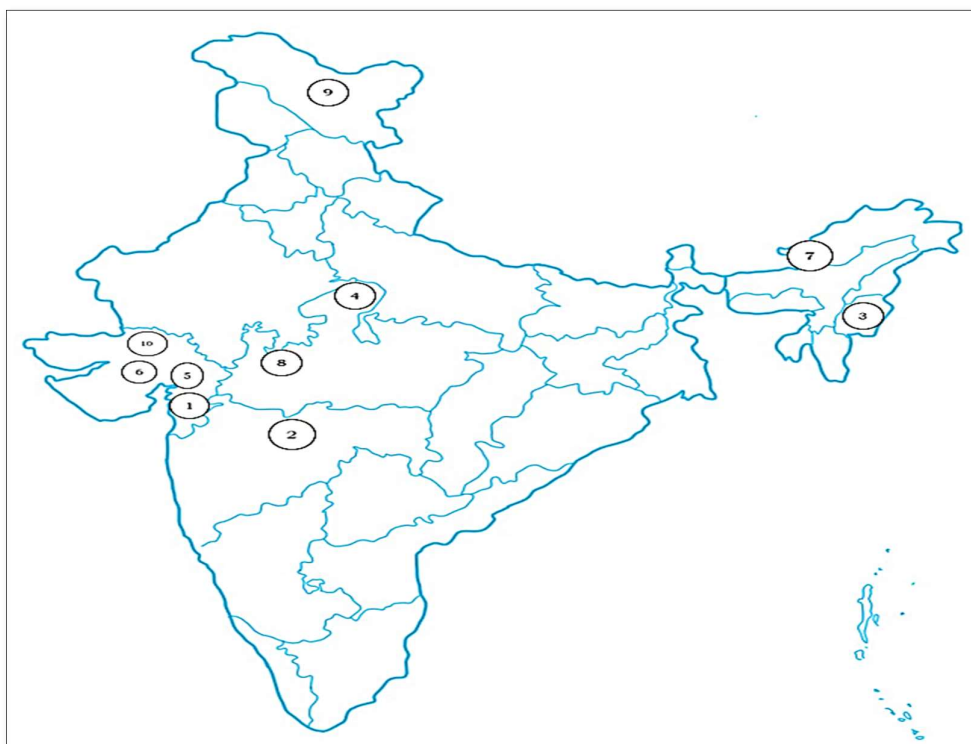
- Born on September 25, 1916, in a village near the Farah town in Mathura district called Chandrabhan, now known as **Deendayal Dham**. His birthday is observed as **'Antyodaya Divas**.
- In 1942, he joined RSS as a full-time worker, called Pracharak
- Deendayal Upadhyaya first started the monthly **Rashtra Dharma**, he also started the **weekly Panchjanya** and then the **daily Swadesh**.
- Upadhyaya devised the political philosophy of **Integral Humanism**, which advocates the simultaneous and integrated program of the body, mind, intellect, and soul of each human being.
- Deendayal was of the view that India is in **urgent need of a 'fresh breeze' to get rid of the post-independence westernization**
- When it came to modern technology, he wanted it to be adapted, but in such a way that it suits Indian requirements
- Deendayal Upadhyaya advocated **'Samyanit Upbhog' (sustainable consumption)**. He did not favor the exploitation of Mother Nature practiced by the capitalist societies of the West.

**Asha Parekh**

- Veteran actress Asha Parekh, will be honored with the **2020 Dadasaheb Phalke Award, the highest recognition in the field of Indian cinema**.
- President Droupadi Murmu will present the award to the actress at the 68th National Film Awards in Vigyan Bhawan, Delhi.
- For her contribution to Indian cinema, she was conferred with the **Padma Shri, India's fourth-highest civilian award in 1992**
- After years of experience in the industry, the legendary actress **was picked as the Central Board of Film Certification (CBFC) Chairperson for three years - between 1998 and 2001**.
- She became the **first woman chairperson of CBFC**
- She is considered to be **one of the most influential actresses of all time in Indian cinema**.

**Mulayam Singh Yadav**

- Mulayam Singh Yadav was born on November 22, 1939, in Saifai village of Etawa district in Uttar Pradesh.
- He became a teacher in a government school after obtaining a **master's degree from Agra University**
- He aspired to become a wrestler but, local competition in the early 1960s led him to politics
- Mulayam Singh Yadav rose to Uttar Pradesh's politics as a socialist leader and an OBC stalwart
- He started his career as an MLA from the **Sanyukta Socialist Party** from Jaswantnagar in 1969
- The veteran leader served as the Chief Minister of **Uttar Pradesh for three terms with the first term starting in 1989**
- In 1992, Yadav founded the Samajwadi Party and later became the Chief Minister for the second time
- He also served as **India's defence minister in 1996** and went on to become UP's CM for the third time in 2003

MAP CONNECT

S.No	Place	Reason
1	Kevadia (GJ)	<ul style="list-style-type: none"> National Conference of Environment Ministers- It will help in synergizing central and state governments' efforts in combating climate change. The city lies on the bank of Narmada and is the location of the Statue of Unity. It houses the mighty Sardar Sarovar Dam reservoir on the Narmada River. Kevadia is nestled between the lofty mountains of Satpura and Vindhya.
2	Jalna (MH)	<ul style="list-style-type: none"> Multi-Modal Logistics Park (MMLP) at Jalna in Maharashtra. It would connect Samruddhi Marg and Delhi-Mumbai Industrial Corridors. It will promote the export of Agro products and also transform Jalna into the Automobile Hub of the Marathwada region. It is planned under Bharatmala Pariyojana intending to centralize freight consolidation and reduce logistics costs from 14% to less than 10% of GDP at par with International Standards. Jalna was formerly a part of Nizam State and after the Marathwada Mukti Sangram, became part of India, as a tahsil of the Aurangabad district. Jalna city is situated on the banks of the Kundalika river. Part of the Godavari River system. Sweet Orange is the GI tag belonging to the city.
3	Imphal (Manipur)	<ul style="list-style-type: none"> The first-ever three-day "floating" photo exhibition organized by the Ministry of Information & Broadcasting. The main rivers draining Imphal's west plain are the Imphal river, Nambul river, and their tributaries. The course of the river is short and its outlet falls on Loktak Lake. Keibul Lamjao Conservation Area is the UNESCO Heritage site. Shaphee Lanphee, Wangkhei Phee, Chak Hao are GI tags of the region
4	Morena (MP)	<ul style="list-style-type: none"> Foundation stone of an organic seed farm of the National Seed Corporation (NSC) at Morena. Upon its completion, new organic seeds of oilseeds will be available to the farmers of Madhya Pradesh. With this farm, farmers will be introduced to modern techniques, they will get high-yielding seeds and their socio-economic status will improve. Chambal, Kunwari, Asan, and Sank are the major rivers Nagaji festival is an important festival celebrated here.
5	Vadodara (GJ)	<ul style="list-style-type: none"> Indianoil Producing AVGAS 100 LL for the first time in its refinery. The city is situated on both the banks of the river Vishwamistri and is famous as the cultural capital of Gujarat and the center of educational activities. Sankheda Furniture Logo is the GI Tag
6	Ahmedabad (GJ)	<ul style="list-style-type: none"> New Metro Started Project Started in Ahmedabad Ahmedabad is India's first world heritage city. Situated on the banks of river Sabarmati. The city was founded in 1411 to serve as the capital of the Sultanate of Gujarat, by its namesake, Sultan Ahmed Shah. Nal Sarovar Lake is also a famous Bird Sanctuary that migratory birds from Central Asia visit every year in the winter season, is situated in the Ahmedabad District. Kankaria Lake, Siddi Saiyad's Jali, Jama Masjid, and Roza of Sarkhej are the historical monuments/places situated in the city.
7	West Kameng (Arunachal Pradesh)	<ul style="list-style-type: none"> Sela tunnel will be the longest bi-lane tunnel in the world at an altitude above 13,000 feet. Under project Vartak on the same road, the Nechipu tunnel will be built. Arunachal Orange and Idu Mishmi Textiles are GI tag The name Kameng has been derived from the Kameng river originating from the glacier lake below Gorichan mountain and is one of the tributaries of River Brahmaputra Thembang Fortified Village is a UNESCO World Heritage site The Major tribes inhabiting this district are Bangnis(Nyishi), Akas, Mijis, and Puroiks (Sulung). Each tribe has its dialects, customs, and religion.
8	Ujjain (MP)	<ul style="list-style-type: none"> Mahakal Corridor Ujjain is an ancient and historical city that is 5000 years old. It is described as the best city in Adi Brahma Puran and it is called moksha and bhukti-Mukti in Agni Puran and Garuda Puran. There was a time when this city had been a capital of a big empire. Ujjain has provided the system of calculation of time to India and Foreign countries. Ujjain is situated On the bank of Kshipra and the plateau of Malwa
9	Turtuk (Ladakh)	<ul style="list-style-type: none"> Nestled between the mighty Karakoram and Himalayan mountain ranges lies Turtuk, a remote village, sparsely inhabited, and close to the Line of Control. This remote outpost of India has now become a shining example of the Swachh Bharat Abhiyan. The villagers see this not only as a Cleanliness campaign but also as one which integrates them with the rest of India.
10	Modhera (GJ)	<ul style="list-style-type: none"> Modhera is the first village in India to become a net renewable energy generator Modhera village is home to the famous Sun Temple More than 1,300 rooftop solar systems of 1 kW capacity have been installed on houses that generate electricity in the village. The heritage lighting and 3-D projection that is used to exhibit Modhera's history at the Modhera Sun temple will operate on solar energy.

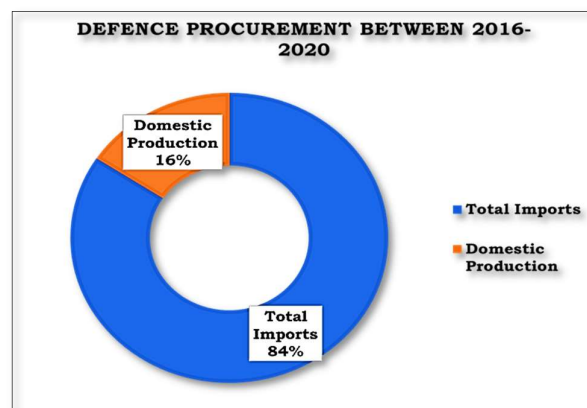
S.NO.	PLACE	REASON
1	Nippon Budokan, Tokyo.	Funeral of Shinzo Abe- PM of India attended the function
2	Port Gentil Gabon	INS Tarkash made a port call at Port Gentil, Gabon as part of her ongoing deployment in the Gulf of Guinea for anti-piracy patrol. This marks the first visit by any Indian Naval Ship to Gabon.
3	Seychelles	Indian Navy's Maiden Participation in Combined Maritime Forces Exercise is being attended by representative delegations from the USA, Italy, Australia, Canada, and New Zealand, and ship participation from UK, Spain & India.
4	Bali, Indonesia	G-20 Agriculture Minister meet
5	Mexico City	UNESCO-MONDIACULT 2022 World Conference to be held in Mexico City. The main goal of the conference is to shape a more robust and resilient cultural sector, fully anchored in the perspectives of sustainable development as well as promotion of solidarity, peace, and security, in line with the vision enshrined in the UN Secretary-General's report 'Our Common Agenda' (September 2021), which refers to culture as a 'global public good, the good of us all'. UNESCO has convened its Member States and the global community to embark jointly on a continuous reflection on cultural policies to tackle global challenges and outline immediate and future priorities.
6	Italy	Giorgia Meloni, whose political party with neo-fascist roots emerged victorious in recent elections, was sworn in as Italy's first far-right premier since the end of World War II. She is also the first woman to be premier.
7	Batken region	Nearly 100 people have been killed and scores injured in violent border clashes between Kyrgyzstan and Tajikistan. The Batken region of Kyrgyzstan is seeing families being moved out and getting relocated. The issue of the delimitation of the border is a relic of the Soviet era. The disagreement remains over the map which should be used for demarcation purposes. scarce grazing land is also driving the conflict.
8	Donetsk, Luhansk, Kherson, and Zaporizhzhia.	Russia had proclaimed the annexation of territory seized in his invasion in four regions - Donetsk, Luhansk, Kherson, and Zaporizhzhia - amounting to 15 percent of total Ukrainian territory. Ukraine, Western countries, and the United Nations have denounced Russia's move to annex, calling the referendums a "sham".
9	Nagorno-Karabakh region	Armenia-Azerbaijan has been locked in off-and-on hostilities for decades over the disputed Nagorno-Karabakh republic. Azerbaijan's forces killed over 200 Armenians, primarily soldiers, according to official government counts. Armenia has signed a contract with India for procuring the indigenous Pinaka multi-barrel rocket launchers, unspecified missiles, and ammunition, amid its growing tensions with Azerbaijan which is close to Turkey and Pakistan.
10	China	China's ruling Communist Party closed its once-in-five-year congress confirming leader Xi Jinping's precedent-defying third term, and paving the way for his domination of Chinese politics for the next five years.

DATA OF THE MONTH

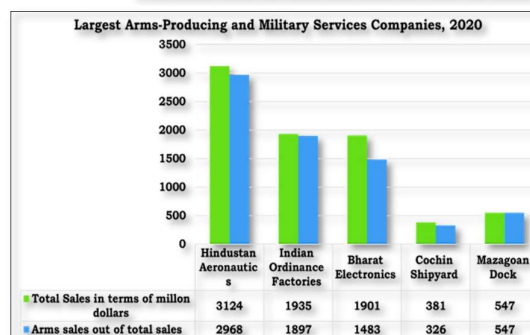
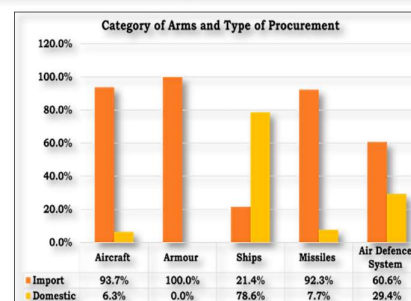
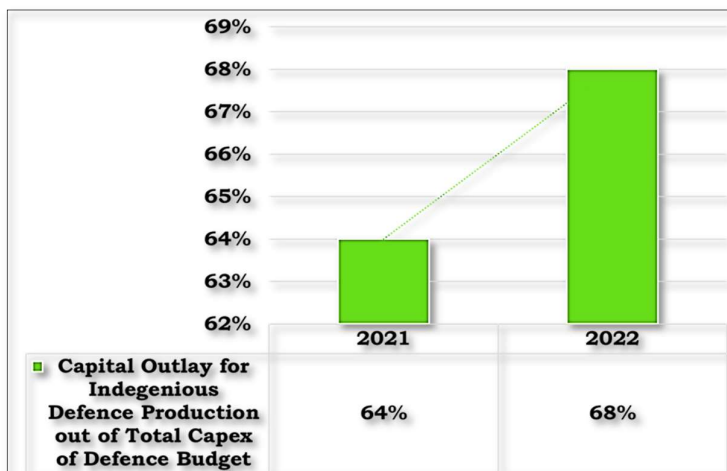
SIPRI Report

Key Highlights of the Report

- India was the second-largest importer of arms in the world in 2016-20. It will become the largest importer of arms in 2017-2021.
- The domestic shipbuilding industry stands out as a shining example of India's potential in designing and manufacturing major platforms. A prime example is the nuclear-powered ballistic missile submarine Arihant which gave India's nuclear forces a high level of autonomy.



- The dependence on the import of engines and radars, as indeed many other critical components, is a major hurdle in India's quest for self-reliance in defence production. India is unable to leverage licensed production which helps in developing local capabilities. For example, technology transfer for licensed production of Su-30MKI is generally considered to be a 'mistake' as 'no real technology transfer took place.
- For the desired scope, range, and depth of technology transfer, India should use unambiguous clauses in the contract which define the responsibilities of the transferor and transferee with absolute precision.
- State-owned companies have dominated the defence production sector. However, these companies suffer from three main issues:
 - Productivity Issues
 - Reliance on Domestic Military Orders
 - Dependence on foreign resources
- These companies have to diversify their business into the civil market and set up export offices overseas.
- The government is encouraging private sector participation in the flagship "Make in India" programme. However, the private sector has a long way to go to catch up. The government on its part to promote MSME had imposed a ban on the import of more than 300 items.
- In the short run, to encourage licensed production rather than indigenous design, development, and production of large platforms.



Concept Clearing Assignment

1. "Performance enrichment from moonlighting was stronger than Performance Conflict ". In the light of the statement, discuss structural shift happened in the minds and attitudes of the young Indian tech workforce.
2. What is meant by Tokenisation? How far will it help to improve the safety and security of the card transactions in India?
3. Examine the significance of retreating monsoon with reference to the north eastern parts of India. How the Indian monsoon has been impacted by the EL-NINO and LA-NINA events?

4. Climate change is making hurricanes wetter, windier and altogether more intense. Analyze. What measures should be adopted so as to alleviate this emerging menace?
5. What is digital de-carbonization? Analyze the environmental impacts of digitization in the light of increased dark data in the current scenario.
6. What does overcrowded prisons reveal about the condition of Indian prisons and society? How it is affecting the condition of women in prison?
7. Inner-party democracy enhances the 'visibility' of fair and transparent procedures in selecting leaders. Discuss.
8. Discuss the significance of Parliamentary Committees. How have they been beneficial to Indian Parliamentary system?
9. Naxalism is a challenge but it won't be wrong to say this menace is now shrinking. Critically analyse the statement and also throw some light on government efforts to curb naxalism over years.
10. What are the factors responsible for the rise of Narco-Terrorism in Jammu & Kashmir? Highlight steps taken by government to curb the menace of Narco-Terrorism in J&K.
11. What do you mean by "One Water" approach? How it is superior to the conventional water management approach?
12. Highlight the challenges faced by elderly population in India? What the government schemes in response to the ageing population of India?
13. While energy security continues to dominate the agenda, security and defense cooperation are becoming more important in the India-Saudi relationship. Comment. What are the challenges associated with the India-Saudi ties?
14. Examine the significance of Shanghai cooperation organization (SCO) for India. What are the challenges for India in this regard?
15. Critically examine the factors accountable for the instability on the Korean peninsula. What is India's foreign policy in this regard?

THEMATIC ESSAYS

1. Progress is impossible without change, and those who cannot change their minds cannot change anything.
2. Intolerance is antithetical to the idea of a free exchange of thought.
3. Biodiversity starts in the distant past and it points toward the future.

NOTE: Attempt the above given essays, and to get direction and approach 'Scan QR Code' given below.



PT ORIENTED QUESTIONS

1. Which of the following option is incorrect about India's semiconductor mission (ISM) recently seen in news?
 - (a) ISM is a specialized and independent Business Division within the Digital India Corporation.
 - (b) It aims to build a vibrant semiconductor and display ecosystem in India.
 - (c) It comes under the Ministry of Electronics and Information Technology (MeitY).
 - (d) Government of India will now provide uniform fiscal support of 90% of Project Cost as per recent changes.
2. With reference to the Swachh Toycathon recently seen in news, consider the following statements:
 1. It was organized by the Ministry of Culture.
 2. Centre for Creative Learning (IIT Gandhinagar) is the knowledge partner for the initiative.
 3. It was based on the competition to make toys from 'Waste'.
 4. It is based on the theme NEW & OLD that seeks ideas/solutions/working models for circularity in the toy industry.

Which of the statements given above is/are correct?

- (a) 1, 2 and 3 only (b) 2, 3 and 4 only
(c) 1, 3 and 4 only (d) 1, 2, 3 and 4

3. Consider the following statements with reference to the Hydrogen valley Platform (HVP):

1. It is a global initiative to optimize hydrogen demand and supply by onsite generation and utilization.
2. It aims to combine a complete hydrogen value chain to reach a critical scale.
3. India has committed to facilitate the delivery of three clean hydrogen valleys by 2050.

Which of the statements given above is/are correct?

- (a) 1 and 2 only (b) 2 and 3 only
(c) 1 and 3 only (d) 1, 2 and 3

4. With reference to the official rollout of 5G in India, consider the following statements:

1. Peak Internet speeds on 5G could touch 100 Gbps compared to 100 Mbps in 4G.
2. Latency rate of 5G has increased than of 4G.
3. Centre for Development of Telematics (C-DOT) developed the 5G Non-Standalone core at the event.
4. Under standalone mode, existing infrastructure is utilized usually.

Which of the statements given above is/are correct?

- (a) 1 only (b) 3 only
(c) 2, 3 and 4 only (d) 1, 3 and 4 only

5. With reference to the Production Linked Incentive Scheme recently seen in news, consider the following statements:

1. New PLI schemes only cover electronic components within its ambit.
2. It had led to the incremental manufacturing of more than \$500 billion over 5 years.
3. It will help in achieving the share of manufacturing in the country's GDP to at least 55%.

Which of the statements given above is/are correct?

- (a) 1 only (b) 2 only
(c) 1 and 3 only (d) 2 and 3 only

6. Consider the following statements with reference to the Swachh Survekshan 2022:

1. It was organized under the Ministry of Environment, forest and Climate change.
2. Haridwar (Uttarakhand) received the best Ganga town in more than one lakh population cities.
3. Lucknow is India's first 7-star Garbage Free city.
4. Tripura is among the cleanest States with less than 100 Urban Local Bodies.

Which of the statements given above is/are correct?

- (a) 1 and 3 only (b) 3 and 4 only
(c) 2 and 4 only (d) 1, 3 and 4 only

7. Which of the following option is incorrect about Cotton production in India?

- (a) India is the world's third largest exporter of cotton and the second largest exporter of textiles.
- (b) Tripura is among one of the major cotton producing states in India.
- (c) India is the largest producer of organic cotton, accounting for 50 % of global organic cotton production.
- (d) Better Cotton is the world's leading sustainability initiative for cotton.

8. With reference to the YUVA 2.0, consider the following statements:

1. This scheme is for mentoring young athletes in India.
2. The National Book Trust India is the Implementing Agency of this initiative.
3. India ranks 3rd in the arena of book publishing.

Which of the statements given above is/are correct?

- (a) 1 and 2 only (b) 2 and 3 only
(c) 1 and 3 only (d) 1, 2 and 3

9. With reference to the betting and gambling recently seen in news, consider the following statements:

1. Betting and gambling are illegal in most parts of the country.
2. Haryana and Rajasthan are among several states in India which have legalized lotteries.
3. E-gaming (games of chance) has been legalized in Sikkim and Nagaland.
4. UP has recently legalized land-based casinos under the Public Gambling Act (1976).

Which of the statements given above is/are correct?

- (a) 1 and 3 only (b) 3 and 4 only
(c) 2 and 4 only (d) 1, 3 and 4 only

10. Consider the following pairs with reference to the digital initiatives of the Ministry of defense:

Initiatives - Features

1. Agniveer Pay System - For payroll management of Agniveers
2. DARPAN - For third party bill payment and accounting
3. Defense Travel System - For free travel passes to defense personals
4. System for Pension - End to end solution to pension related processes Administration (SPARSH)

How many pairs given above is/are correctly matched?

- (a) One pair only (b) Two pairs only
(c) Three pairs only (d) All four pairs

11. With reference to the Universal Service Obligation Fund (USOF), consider the following statements:

1. It was created in 2002 as a non-lapsable fund.
2. It is also providing 4G services to NITI Aayog's Aspirational Districts.
3. India has the second largest telecom industry with tele density over 85%.
4. Telecom Technology Development Fund Scheme aims to the creation of intellectual property.

Which of the statements given above is/are correct?

- (a) 1 and 3 only (b) 3 and 4 only
(c) 2 and 4 only (d) 1, 2, 3 and 4

12. Consider the following statement with reference to the Credit Guarantee Scheme for startups recently seen in news:

1. It will provide credit guarantees for highly subsidized loans to startups.
2. The scheme will provide collateral free loans to startups.
3. India has now the 5th largest startup ecosystem in the world.
4. Almost 80% of Startups in India belong to tier-2 and tier-3 cities.

Which of the statements given above is/are correct?

- (a) 1 only (b) 2 only
(c) 3 and 4 only (d) 1, 3 and 4 only

13. With reference to poverty estimation in India, consider the following statements:

1. VM Dandekar suggested poverty estimation based on the nutritional requirements.
2. Tendulkar Committee used Mixed Reference Period (MRP) based estimates for poverty estimation.
3. Lakdawala Committee submitted first systematic assessment of poverty in India based on National Sample Survey (NSS) data.

Which of the statements given above is/are correct?

- (a) 1 and 3 only (b) 2 only
(c) 3 only (d) 1, 2 and 3

14. With reference to Malnourishment in India, Consider the following statements:

1. Percentage of obese children and adults in India is rising in the last five years.
2. Both Child stunting and wasting has declined in India by the same percentage in the last five years.

Which of the statement given above is/are correct?

- (a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2

15. With reference to Green Infrastructure, Consider the following statements:

1. It includes both the natural vegetative systems and green technologies.
2. Green infrastructure for stormwater management includes a network of water retention and purification infrastructure.

Which of the statement given above is/are incorrect?

- (a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2

16. The Insolvency and Bankruptcy Code (Amendment) Bill, 2021, introduced Pre-Packaged Insolvency Resolution Process, which is related to?

- (a) Resolution of Power Manufacturing Companies.
- (b) Resolution of Telecommunication Companies.
- (c) Resolution of Micro, Small and Medium Enterprises.
- (d) Resolution of Non-Banking Financial Companies.

17. Which among the following can be the possible impacts of depreciation in the value of Indian currency?
1. Depreciation increases the value of a rupee when compared with the currency of other countries.
 2. Depreciation encourages imports because the imported goods become cheaper.
- Select the correct answer using the codes given below:
- (a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2
18. With reference to the Living Planet Report, consider the following statements:
1. It is released by United nation Environment Program.
 2. As per report, there is a highest decline in the wildlife populations (94%) in the Latin America and the Caribbean region.
 3. The Freshwater Species populations globally reduced by 83%.
- Which of the statements given above is/are correct?
- (a) 1 only (b) 1 and 2 only
(c) 2 and 3 only (d) 1, 2 and 3
19. With reference to the theories of Monsoon, consider the following statements:
1. Monsoons cause wet and dry seasons throughout much of the tropics.
 2. As per thermal theory, monsoon is the result of the seasonal migration of planetary winds and pressure belts.
 3. Dynamic theory insists on the formation of Inter-tropical convergence zone.
- Which of the statements given above is/are correct?
- (a) 1 only (b) 1 and 3 only
(c) 2 and 3 only (d) 1, 2 and 3
20. With reference to SIPRI report on arms, consider the following statements:
1. India was the second-largest importer of arms in the world in 2016-20.
 2. State-owned companies have dominated the defence production sector.
- Select the correct answer using the code given below:
- (a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2
21. With respect to the powers of UAPA tribunal, which of the given statements is incorrect?
- (a) Ask for the production of any document or other material object producible as evidence.
 - (b) Requisitioning any public record from any court or office
 - (c) Issue any commission for the examination of witnesses.
 - (d) It can hold hearings in one place for allegations pertaining to any state.
22. With reference to the recently developed Light combat aircraft (Prachand), consider the following statements:
1. It is a Multi role combat helicopter designed for high altitude operations.
 2. It has been built with 100% indigenous content.
 3. It has stealth features but lacks night attack capability.
- Which of the statements given above is/are correct?
- (a) 1 only (b) 1 and 2 only
(c) 1 and 3 only (d) 2 and 3 only
23. With reference to the Narco-terrorism recently seen in news, consider the following statements:
1. It implies the nexus between the drug syndicates and terrorists.
 2. Ladakh is the first UT of India to introduce a Drug De-Addiction Policy to fight the drug menace.
 3. Under operation Sadbhawna, Indian army has set up de-addiction counselling centres for drug addicted youth.
- Which of the statements given above is/are correct?
- (a) 1 and 2 only (b) 2 and 3 only
(c) 1 and 3 only (d) 1, 2 and 3
24. Who among the following is associated with Prabudhha Bharat?
- (a) Dr. Rajendra Prasad
 - (b) Mahatma Gandhi
 - (c) Dr. B R Ambedkar
 - (d) Madan Mohan Malviya
25. Bathukama is the annual celebration of which among the following states?
- (a) Karnataka (b) Telangana
 - (c) Kerala (d) Tamil Nadu

26. What was the exact constitutional status of India on 26th January, 1950? (UPSC-2021)
- A Democratic Republic
 - A Sovereign Democratic Republic
 - A Sovereign Secular Democratic Republic
 - A Sovereign Socialist Secular Democratic Republic
27. With reference to cultural history of India consider the following pairs : (UPSC-2020)
- Parivrajaka – Renunciant and Wanderer
 - Shramana – Priest with a high status
 - Upasaka – Lay follower of buddhism
- Which of the pairs given above are correctly matched?
- 1 and 2 only
 - 1 and 3 only
 - 2 and 3 only
 - 1, 2 and 3
28. With reference to India, Didwana, Kuchaman, Sargol and Khatu are the names of (UPSC-2021)
- Glaciers
 - Mangrove Areas
 - Ramsar Sites
 - Saline Lakes
29. Which of the following phrases defines the nature of the 'Hundi' generally referred to in the sources of the post-Harsha period? (UPSC-2020)
- An advisory issued by the king to his subordinates
 - A diary to be maintained for daily accounts
 - A bill of exchange
 - An order from the feudal lord to his subordinates
30. Which one of the following ancient towns is well-known for its elaborate system of water harvesting and management by building a series of dams and channelizing water into connected reservoirs? (UPSC-2021)
- Dholavira
 - Kalibangan
 - Rakhigarhi
 - Ropar

ANSWERS

1. D	7. B	13. B	19. B	25. B
2. B	8. B	14. A	20. C	26. B
3. A	9. A	15. B	21. D	27. B
4. B	10. C	16. C	22. A	28. D
5. B	11. D	17. D	23. C	29. C
6. C	12. B	18. C	24. C	30. A



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