

## ABOUT CURRENT 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 for registering yourself in our race to perfection.](mailto:evaluation@ksgindia.com) Don't wait, it's your golden chance to crack this exam and fulfill your passionate dream.

Team KSG

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<b>GS - I</b>	Culture-Art Forms, Literature and Architecture from ancient to modern times.	Indian history and significant events, personalities, issues and the Freedom Struggle	Post independence issues, National boundary and disputes	Indian society, features, 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,			
<b>GS - II</b>	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-governmental issues, self-help groups and role of civil society	Vulnerable sections of our society and social sector issues and initiatives	International Relations - India and other countries, various treaties, Indian and international agreements, effects of other countries on India		
<b>GS - III</b>	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 and robotics and computer	Disease, biotechnology and human welfare	Innovations, intellectual property, Awards, POI and other import and anti-dumping aspects of S&T	Environment; government initiatives, various judgments, pollution, degradation and conservation and efforts	Disaster Management &	Challenges to internal security, Various Security forces and agencies and their mandate. Cybersecurity: monitoring and its prevention.
<b>GS - IV</b>	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	Personnel and their teachings	Other important topics			
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## POLITY

### Issues with Electoral Bond and Political Parties

#### News Excerpt

Recently, after hearing a plea by the Association of Democratic Reforms, the Supreme Court refused to put a hold on the selling of Electoral Bonds. Following this, the Finance Ministry rolled out its quarterly sales of these bonds amidst elections in five state assemblies.

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#### Pre-Connect

- An electoral bond is like a promissory note that can be bought by any Indian citizen or company incorporated in India from select branches of State Bank of India. The citizen or corporate can then donate the same to any eligible political party of his/her choice.
- The bonds are similar to bank notes that are payable to the bearer on demand and are free of interest. An individual or party will be allowed to purchase these bonds digitally or through cheque.
- The electoral bonds were introduced with the Finance Bill (2017).
- To push through electoral bonds in India, the government amended five major acts: the Reserve Bank of India Act (1934), Companies Act (2013), Income Tax Act (1961), Representation of People's Act (1951), and Foreign Contribution Regulation Act (FRCA) through the Finance Act of 2017 in the budget.

#### Are electoral bonds taxable?

In February 2017, the then finance minister said that the donations would be tax deductible. Hence, a donor will get a deduction and the recipient, or the political party, will get tax exemption, provided returns are filed by the political party.

#### Why were electoral bonds introduced in India?

According to the government, electoral bonds were being introduced to ensure that all the donations made to a party would be accounted for in the balance sheets without exposing the donor details to the public.

The government said that electoral bonds would keep a tab on the use of black money for funding elections. In the absence of electoral bonds, donors would have no option but to donate by cash after siphoning off money from their businesses, the government said.

Restrictions that were done away with after the introduction of the electoral bond scheme

- Earlier, no foreign company could donate to any political party under the Companies Act
- A firm could donate a maximum of 7.5 per cent of its average three-year net profit as political donations according to Section 182 of the Companies Act
- As per the same section of the Act, companies had to disclose details of their political donations in their annual statement of accounts.

The government moved an amendment in the Finance Bill to ensure that this proviso would not be applicable to companies in case of electoral bonds. Thus, Indian, foreign and even shell companies can now donate to political parties without having to inform anyone of the contribution.

#### How to use electoral bonds?

The bonds will be issued in multiples of Rs 1,000, Rs 10,000, Rs 100,000 and Rs 1 crore (the range of a bond is between Rs 1,000 to Rs 1 crore). These will be available at some branches of SBI. A donor with a KYC-compliant account can purchase the bonds and can then donate them to the party or individual of their choice. Now, the receiver can encash the bonds through the party's verified account. The electoral bond will be valid only for fifteen days.

#### When are the bonds available for purchase?

The electoral bonds are available for purchase for 10 days in the beginning of every quarter. The first 10 days of January, April, July and October has been specified by the government for purchase of electoral bonds. An additional period of 30 days shall be specified by the government in the year of Lok Sabha elections.



### Electoral bonds: Conditions

- Any party that is registered under section 29A of the Representation of the Peoples Act, 1951 (43 of 1951) and has secured at least one per cent of the votes polled in the most recent General elections or Assembly elections is eligible to receive electoral bonds. The party will be allotted a verified account by the Election Commission of India (ECI) and the electoral bond transactions can be made only through this account.
- The electoral bonds will not bear the name of the donor. Thus, the political party might not be aware of the donor's identity.

### Why is there a controversy over electoral bond?

1. Experts are of the view that if the electoral bonds scheme had been introduced to bring about greater transparency, the government must not restrain from allowing details of such donations to be made public.
2. Experts and several politicians say that since neither the purchaser of the bond nor the political party receiving the donation is required to disclose the donor's identity, the shareholders of a corporation will remain unaware of the company's contribution. Voters, too, will have no idea of how, and through whom, a political party has been funded.
3. Opponents of the electoral bond scheme argue that since the identity of the donor has been kept anonymous, it could lead to an influx of black money. Some others allege that the scheme was designed to help big corporate houses donate money without their identity being revealed.
4. According to civil rights societies, the concept of donor "anonymity" threatens the very spirit of democracy. The opposition parties said that the donations made through electoral bonds were equivalent to money laundering.

### Flow of funds

A look at what the petition filed by the NGO says:

- The Finance Act of 2017 introduced the use of electoral bonds, which are exempt from disclosure under the Representation of the People Act, 1951, opening doors to unchecked, unknown funding to parties
- Contribution received by any eligible political party in the form of electoral bonds will be exempt from income tax

The Election Commission vide letter dated May 26, 2017 and the RBI in letters on 31.01.2017, 14.09.2017, 27.09.2017 had objected to electoral bonds and advised against the issuance of electoral bonds as a mode for donation to political parties

- The amendments have removed the existing cap of 7.5% of net profit in the past three years on campaign donations by companies and have legalised anonymous donations



### What does the Supreme Court have to say on electoral bonds?

In April, 2019 the Supreme Court asked all the political parties to submit details of donations received through electoral bonds to the ECI. It also asked the Finance Ministry to reduce window of purchasing electoral bonds from 10 days to five days. The apex court is yet to fix a date for hearing other pleas against the electoral bonds.

### Election Commission of India's view on electoral bonds

- ✓ The Election Commission told the Supreme Court of India that while it was not against the Electoral Bonds Scheme, it did not approve of anonymous donations made to political parties.
- ✓ For a long time, the Election Commission has been requesting a law which would allow an auditor, recommended either by the Comptroller and Auditor General or the Election Commission, to scrutinise the funding of political parties.
- ✓ The former Election Commissioner of India T.S. Krishnamurthy had suggested forming a National Election Fund, to which all the party funding could be diverted. This would alleviate the donors' fictitious paranoia of democratic retaliation. The income tax deductions would be icing on the cake for donors. This fund could then be divided among political parties as per the rules and regulations stipulated by the fund.
- ✓ In a letter to the Ministry of Law and Justice, the ECI cautioned that electoral bonds and the subsequent regulatory changes would facilitate significant amounts of illicit contributions, and result in a proliferation of offshore firms funnelling black money into the system.

**PEPPER IT WITH**  
Judicial Review, Judicial Activism, Public Interest Litigation, Political Parties

### Reserve Bank of India on Electoral Bonds Scheme

According to a report, RBI was critical of the scheme. The central bank had warned the government that the bonds would "undermine the faith in Indian banknotes and encourage money laundering."

**Conclusion**

Though intent of the scheme was good, its provisions and implementations need to be reviewed seriously in order to address the root cause of the problem i.e. to curb the use of black money and corruption during the elections.

**Uniform Civil Code & Judicial Activism**

**News Excerpt**

Chief Justice of India S A Bobde recently lauded Goa’s Uniform Civil Code, and encouraged “intellectuals” indulging in “academic talk” to visit the state to learn more about it.

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**Pre-Connect**

- Article 44 of the Constitution lays down that the state shall endeavour to secure a Uniform Civil Code for the citizens throughout the territory of India.
- Goa has what Constitutional framers envisaged for India — a Uniform Civil Code. It applies in marriage and succession, governing all Goans irrespective of religious affiliation.

Is there one common personal law for any religious community governing all its members?

- All Hindus of the country are not governed by one law, nor are all Muslims or all Christians. Not only British legal traditions, even those of the Portuguese and the French remain operative in some parts.
- In Jammu and Kashmir until August 5, 2019, local Hindu law statutes differed from central enactments. The Shariat Act of 1937 was extended to J&K a few years ago but has now been repealed. Muslims of Kashmir were thus governed by a customary law, which in many ways was at variance with Muslim Personal Law in the rest of the country and was, in fact, closer to Hindu law.
- Even on registration of marriage among Muslims, laws differ from place to place. It was compulsory in J&K (1981 Act), and is optional in West Bengal, Bihar (both under 1876 Act), Assam (1935 Act) and Odisha (1949 Act).
- In the Northeast, there are more than 200 tribes with their own varied customary laws. The Constitution itself protects local customs in Nagaland. Similar protections are enjoyed by Meghalaya and Mizoram. Even reformed Hindu law, in spite of codification, protects customary practices.

**What is a Uniform Civil Code?**

- A Uniform Civil Code is one that would provide for one law for the entire country, applicable to all religious communities in their personal matters such as marriage, divorce, inheritance, adoption etc. Article 44 of the Constitution lays down that the state shall endeavour to secure a Uniform Civil Code for the citizens throughout the territory of India.
- Article 44 is one of the Directive Principles of State Policy. These, as defined in Article 37, are not justiciable (not enforceable by any court) but the principles laid down therein are fundamental in governance.
- Fundamental Rights are enforceable in a court of law. While Article 44 uses the words “state shall endeavour”, other Articles in the ‘Directive Principles’ chapter use words such as “in particular strive”; “shall in particular direct its policy”; “shall be obligation of the state” etc.
- Article 43 mentions “state shall endeavour by suitable legislation”, while the phrase “by suitable legislation” is absent in Article 44. All this implies that the duty of the state is greater in other directive principles than in Article 44.

**Historical Background**

**What was the view of Muslim members in the Constituent Assembly?**



- ✓ Some members sought to immunise Muslim Personal Law from state regulation. Mohammed Ismail, who thrice tried unsuccessfully to get Muslim Personal Law exempted from Article 44, said a secular state should not interfere with the personal law of people.
- ✓ B Pocker Saheb said he had received representations against a common civil code from various organisations, including Hindu organisations. Hussain Imam questioned whether there could ever be uniformity of personal laws in a diverse country like India.
- ✓ Dr B R Ambedkar said “no government can use its provisions in a way that would force the Muslims to revolt”.
- ✓ Alladi Krishnaswami, who was in favour of a Uniform Civil Code, conceded that it would be unwise to enact Uniform Civil Code ignoring strong opposition from any community. Gender justice was not mentioned in these debates.

**How did the debate on a common code for Hindus play out?**

- In 1948, Rajendra Prasad, president of the Constituent Assembly, warned Jawaharlal Nehru that to introduce “basic changes” in personal law was to impose “progressive ideas” of a “microscopic minority” on the Hindu community as a whole. Others opposed to reforms in Hindu law included Sardar Patel, Pattabhi Sitaramayya, M A Ayyangar, M M Malaviya and Kailash Nath Katju.
- When the debate on the Hindu Code Bill took place in December 1949, 23 of 28 speakers opposed it. On September 15, 1951, President Prasad threatened to use his powers of returning the Bill to Parliament or vetoing it. Ambedkar eventually had to resign. Nehru agreed to trifurcation of the Code into separate Acts and diluted several provisions.

**How does the idea of a Uniform Civil Code relate to the fundamental right to religion?**

- ✚ Article 25 lays down an individual’s fundamental right to religion; Article 26(b) upholds the right of each religious denomination or any section thereof to “manage its own affairs in matters of religion”; Article 29 defines the right to conserve distinctive culture. An individual’s freedom of religion under Article 25 is subject to “public order, health, morality” and other provisions relating to fundamental rights, but a group’s freedom under Article 26 has not been subjected to other fundamental rights.
- ✚ In the Constituent Assembly, there was division on the issue of putting Uniform Civil Code in the fundamental rights chapter. The matter was settled by a vote. By a 5:4 majority, the fundamental rights sub-committee headed by Sardar Vallabhbhai Patel held that the provision was outside the scope of

**Does India not already have a uniform code in civil matters?**

- Indian laws do follow a uniform code in most civil matters — Indian Contract Act, Civil Procedure Code, Sale of Goods Act, Transfer of Property Act, Partnership Act, Evidence Act, etc.
- States, however, have made hundreds of amendments and, therefore, in certain matters, there is diversity even under these secular civil laws. Recently, several states refused to be governed by the uniform Motor Vehicles Act, 2019.
- If the framers of the Constitution had intended to have a Uniform Civil Code, they would have given exclusive jurisdiction to Parliament in respect of personal laws, by including this subject in the Union List.
- But “personal laws” are mentioned in the Concurrent List. Last year, the Law Commission concluded that a Uniform Civil Code is neither feasible nor desirable.

**What are more important — Fundamental Rights or Directive Principles?**

- There is no doubt that Fundamental Rights are more important. The Supreme Court held in *Minerva Mills* (1980): “Indian Constitution is founded on the bed-rock of the balance between Parts III (Fundamental Rights) and IV (Directive Principles). To give absolute primacy to one over the other is to disturb the harmony of the Constitution”.
- Article 31C inserted by the 42nd Amendment in 1976, however, lays down that if a law is made to implement any Directive Principle, it cannot be challenged on the ground of being violative of the Fundamental Rights under Articles 14 and 19.

**PEPPER IT WITH**  
Judicial Overreach, Salient features of the Fundamental Rights, Directive Principles of State Policy

Fundamental Rights and therefore the Uniform Civil Code was made less important than freedom of religion.

### Conclusion

There is no uniform applicability of personal laws among Muslims and Christians either. The Constitution protects the local customs of Nagaland, Meghalaya and Mizoram. Even land laws in a number of states are discriminatory, and daughters do not inherit landed properties in the presence of sons. With a 2006 amendment in UP, only an unmarried daughter gets a share in agricultural property. The distinction between married and unmarried daughters is arbitrary. These laws have been exempted from judicial scrutiny by including them in the Ninth Schedule.

Let the secular laws first be made gender-just before the country undertakes reforms in religious laws. Piecemeal reform rather than enactment of the UCC in one go is the only way forward. In fact, a just code is preferable to a uniform code.

## SUPACE: AI System to assist Judges

### News Excerpt

The Supreme Court has recently launched an artificial intelligence-enabled portal that would help its judges in legal research. The Supreme Court Portal for Assistance in Courts Efficiency (SUPACE) was inaugurated by CJI.

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### Pre-Connect

- The introduction of an artificial intelligence (AI) based portal in the judicial system aimed at assisting judges with legal research "more efficiently, methodically and systematically" than a human mind.
- It was the first of its kind in the world as it would collect all the information, much faster than a human being, which a judge would require to decide a case, but it itself will not come out with a decision.
- The SUPACE will not be allowed to spill over to decision making.
- SUPACE is unique for another reason -- the interaction between a machine and human being leading to production of remarkable results which are customised to the needs of a case and how a judge thinks.
- SUPACE is a perfect blend of human intelligence and machine learning. A hybrid one.

### Background

- In the past decade, there has been considerable discussion around the design, development and deployment of artificial intelligence (AI). For instance, in India, the NITI Aayog recently published an approach paper on the need to harness AI in a responsible and ethical manner.
- The Indian judiciary, which has already created basic information and communication technology infrastructure under the eCourts Project, is now looking to leverage AI's potential as well.
- In the last two years, the Supreme Court's AI committee has already launched and piloted a neural translation tool (SUVAAS), a court administration tool (SUPACE).
- In view of this, it becomes abundantly clear that the talk of integrating AI into the justice system is not a futuristic endeavour, decades from now. In fact, it is already being designed and deployed in certain areas, with the intention of improving institutional efficiency.
- Researchers are examining the potential role AI can play in the Indian justice system, while giving a lay of the land in other jurisdictions. It flags some immediate and long-term challenges that this transformative technology is likely to cause and prescribes a roadmap for the way forward.

### Justice can be expedited through AI tools

- ✓ Artificial intelligence tools can aid lawyers and judges with "legal research, analysis of factual proposition, determination of appropriate legal provisions and other similar mechanical skills", which in turn can expedite justice delivery.
- ✓ The research noted that algorithms can be conceptualised, designed and deployed for "intelligence analytics and research work".
- ✓ These tools can also provide comprehensive legal briefs on cases, encapsulate pertinent legal research and identify crucial points of law and facts.

- ✓ This can effectively supplement human judgment in adjudication. Furthermore, intelligent tools, like legal bots, can be designed to help potential litigants with better informed decision making concerning their legal rights, and easily and cost-effectively access basic legal services.
- ✓ Developing tools that can help judges arrive at decisions in cases such as the motor vehicle compensation claims, where the tribunal’s role is limited and rarely involves legal interpretation.
- ✓ A possible tool could aid the judge in cataloguing the requisite documents for such a claim, and glean the relevant information that will allow the judge to determine if compensation is due, the party that is liable to pay, and the value of compensation.
- ✓ To harness the “transformative potential of emerging technologies like AI”, it stressed on the need to have open access to machine-readable, non-sensitive data.

**AI to improve administrative efficiency**

- Besides doing their judicial tasks, judges in all courts, including the Supreme Court, are required to undertake administrative work as well.
- In this context, the research talks about developing “task-specific narrow AI tools”, which can help judges in spending less time on administrative responsibilities.
- Such AI tools like SUPACE would also ease the “general rigour of the registry”, from scheduling a hearing and creating cause-lists to more complex tasks like discovery and review of evidentiary documents.
- The pandemic has led to a surge in discussion around increasing digitisation through the eCourts Project, creation of virtual courts, and the potential of online dispute resolution. Within this conversation, AI has also become an increasing talking point.
- Other small tasks like smart e-filing, intelligent filtering or prioritisation of cases and notifications or tracking of cases can also benefit from this integration.

**Challenges to AI**

- ✚ According to the several research papers, AI can perpetuate biases either unintentionally or intentionally and can be vulnerable to attack or hacking.
- ✚ Since these systems are often trained on large datasets, they tend to replicate the same biases that were present in the original datasets. Similarly, personal biases of developers of algorithms may further add to this problem.
- ✚ According to research, people tend to use computer systems to reduce the effort of the decision-making process rather than to increase the quality of their own decisions.
- ✚ Given the high pressure of caseloads and insufficient resources, there is a danger that supporting systems based on AI can be used by judges without applying their own minds.
- ✚ It is therefore possible that the use of decision support systems in the judiciary might not improve adjudication, but rather make it worse.

**PEPPER IT WITH**  
 Right to Constitutional Remedies, Art. 124, 124A, 124B, 124C, 129, 214, 215, 226, Seat and Procedure, Independence of Supreme Court, Jurisdiction and Powers of Supreme Court, Supreme Court Advocates

**Conclusion**

AI can be deployed in India in a phase-wise manner through generational innovation. The first generation of AI can be oriented towards increasing administrative efficiency and legal database, the learnings of which can feed into the second generation of tools which can target decision making processes. Introducing feedback loops and impact evaluation frameworks can help technology evolve and inform the broader discourse on governance on AI.

**Abolition of Film Certification Tribunal**

**News Excerpt**

Abolition of the Film Certification Appellate Tribunal (FCAT) by the Government of India under the Tribunal Reforms Ordinance, 2021 came as a bolt out of the blue for stakeholders in Indian cinema.

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**Pre-Connect**

- The Film Certification Appellate Tribunal was a statutory body established in 1983 under the Cinematograph Act, 1952 by the Ministry of Information & Broadcasting.
- FCAT heard appeals filed under Section 5C of the Cinematograph Act by those aggrieved by the decision of the CBFC.

- Indian film certification comprises three bodies: the Examining Committee, the Revising Committee, and the Film Certification Appellate Tribunal (FCAT).
- If a director is dissatisfied with the Examining Committee, then he/she approaches the Revising Committee.
- If the film producer disagrees with the Revising Committee, then her final recourse is the FCAT – followed by the courts.
- Based in New Delhi, the FCAT was the place disgruntled filmmakers walked into as a penultimate resort to challenge edits suggested to their films by the Central Board of Film Certification (CBFC).

### **The Role played by FCAT**

In India, all films must have a CBFC certificate if they are to be released theatrically, telecast on television, or displayed publicly in any way. The CBFC — which consists of a Chairperson and 23 members, all appointed by the Government of India — certifies films under four categories:

1. U: Unrestricted public exhibition (Suitable for all age groups)
2. U/A: Parental guidance for children under age 12
3. A: Restricted to adults (Suitable for 18 years and above)
4. S: Restricted to a specialised group of people, such as engineers, doctors or scientists.

The CBFC can also deny certification a film. On several occasions when a filmmaker or producer has not been satisfied with the CBFC's certification, or with a denial, they have appealed to the FCAT. And in many cases, the FCAT has overturned the CBFC decision.

### **Challenges for the film fraternity**

- The abolition of FCAT would only add to the powers of CBFC with the filmmakers left to contend with its vagaries.
- It would mean either falling in line with the unreasonable aesthetic constraints imposed on them and altering and deleting scenes as per the demands of the censor board instead of spending months and years to settle things legally.
- FCAT only charged a nominal fee to hold the screening for its members, and it would pass its judgement immediately.
- Now if one has to go to the High Court, he needs to spend lakhs of rupees to get a good lawyer and several hearings have to happen to present arguments, before a judgement comes through. And, he never knows when his film will release in this scenario.
- But the FCAT abolition has removed a crucial link in the process, compelling the filmmakers to approach the judiciary, an expensive and time-consuming procedure.
- The filmmakers considered the FCAT a reliable bulwark against the CBFC's (often) draconian orders. The FCAT has been historically more progressive than the CBFC.
- The filmmakers liked FCAT for a different reason: It dispensed quick judgments, allowing the producers to release their films on time, saving them from financial loss.
- FCAT was a sweet spot between the censor board and the courts, as the FCAT members at times also included people from the film fraternity, who knew how to judge a movie in the right context.
- The FCAT abolition will also overburden the courts, exacerbating their post-COVID-19 lockdown backlog.

### **Arguments in favour of the scrapping of FCAT**

- ✓ FCAT is the only one of many tribunals in the country that were either abolished or amalgamated under the Ordinance.
- ✓ Legal experts observe that tribunals hadn't been functioning well since their administration was dependent on a nodal agency — a Ministry under the Government.
- ✓ Most tribunals don't fill up vacancies, not only of the judicial and technical members, but also the staff.
- ✓ Tribunals also have a problem of finding good people to take up posts as tribunal members as most lawyers want to become High Court judges.

**PEPPER IT WITH**  
 Fundamental Right to  
 Freedom, Salient features of  
 the Cinematograph Act, 1952

### **Conclusion**



Every ruling party, irrespective of its ideology, has tried controlling the filmmaking narrative in this country. Scrapping of the FCAT seems like a disjointed decision, because it contradicts the recommendations of the 2013 Justice Mudgal report and the 2016 Shyam Benegal report. If the Mudgal committee wanted to expand the ambit of the FCAT, then the Benegal team wanted the Tribunal to be “empowered to cover all grievances under the lines of Broadcasting Content Complaints Council”.

**Shyam Benegal Committee Recommendations**

1. CBFC should only be a film certification body whose scope should be restricted to categorising the suitability of the film to audience groups on the basis of age and maturity.
2. Artistic expression and creative freedom should not be curbed, audiences should feel empowered to make informed viewing choices, and the certification process should be responsive to rapid social change.
3. The censor board, including the chairperson, should only play the role of a guiding body and not be involved in the day-to-day affairs of certification of films.
4. To tackle the problem of filmmakers being forced to contend with the random cuts being made to their films before they are shown on television, done to make the films more “suitable” for family viewing, the panel has called for a recertification of films for television. It has also recommended that every filmmaker who applies for certification deposit the original director’s cut and not the certified version at the National Film Archives of India in Pune. This would ensure that the filmmaker’s vision remain intact in the vaults of history, even if the film is not seen in its entirety by the public.

**Mudgal Committee Recommendations**

1. It had covered in detail a gamut of critical issues, not just certification categories but also the process of selection of board members, jurisdiction of the appellate tribunal, the administrative set-up, and so on.
2. The Committee opined that the provisions in the Act dealing with guidelines for certification must include provisions that protect artistic and creative expression on the one hand while requiring the medium of cinema to remain socially responsible and sensitive to the values and standards of society on the other.
3. The jurisdiction of the FCAT should be expanded to permit appeals by any person aggrieved by any order/certification passed by the Board. FCAT should be given the power to grant interim orders in addition to the present power. The infrastructure of the FCAT should be commensurately augmented in consultation with the Chairperson of the FCAT, including increasing the number of Members and/or benches.
4. It said that no State could ban a film without taking the Centre into confidence.

**Register of Indigenous Inhabitants of Nagaland**

**News Excerpt**

Nagaland government has decided to form a joint consultative committee (JCC) involving all traditional tribal bodies and, civil society organisations for taking an exercise to register the State’s indigenous inhabitants.

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**Highlights**

- The NRC-like exercise seeks to filter out the non-original residents of the State.
- The Register of Indigenous Inhabitants of Nagaland (RIIN) will be the master list of all indigenous inhabitants of the state.
- On December 1, 1963, the day Nagaland attained Statehood was the cut-off date for determining the “permanent residents” of the State.
- Apart from non-Nagas, the “outsiders” implied Nagas living in areas beyond the boundaries of Nagaland could be left out of the RIIN.

**Pre-Connect**

- Nagaland had earlier constituted a committee on ILP (Inner Line Permit) and the committee recommended that the ‘RIIN’ be created. The state government had earlier also formed a commission to frame modalities for implementing the RIIN.
- Earlier this year, the JCPI (Joint Committee for Prevention of Illegal Immigrants) had urged the Chief Minister to pass a legislation to make RIIN an Act and fix December 1, 1963 as the cut-off date. The proposal was supported by various organisations.

- In July 2019, the Nagaland government launched the RIIN, seen as a variant of Assam's National Register of Citizens that excluded 19.06 lakh people out of about 3.3 crore applicants.
- Four years after Assam started revising the National Register of Citizens (NRC), the Nagaland government has initiated a move to implement its own version of citizenship register, albeit only for indigenous communities of the state.
- The exercise was put on hold after some civil society and extremist groups opposed its stated objective of preventing outsiders from obtaining fake indigenous certificates for seeking jobs and benefits of government schemes.

**What is the Government of Nagaland's initiative?**

- According to a notification issued by Nagaland Chief Secretary last year, the Government of Nagaland has decided to set up a Register of Indigenous Inhabitants of Nagaland (RIIN) with the aim of preventing fake indigenous inhabitants' certificates.
- RIIN will aim to strengthen the entire process for issuance of indigenous inhabitant certificates to protect the rights and privileges of the indigenous inhabitants of the state.
- The identification of indigenous people among the Nagas of Nagaland is not a problem due to the involvement of the village councils, but identification of indigenous Nagas in other states is a problem.

**Highlights**

- ✓ The decision was taken at a meeting the government had organised with leaders of the community-based and social organisations as well as political parties in State capital Kohima on the issue of preparing the RIIN.
- ✓ The JCC will be headed by Home Commissioner and include members from the Central Nagaland Tribes' Council, Eastern Nagaland People's Organisation and the Tenyemie People's Organisation. The Government have kept open the option of co-opting members from organisations such as Nagaland Garo Tribal Council and Kuki Inpi Nagaland.
- ✓ The participants of the meeting agreed to take the RIIN forward but insisted on the government releasing an almost-two-year-old report before the exercise is undertaken.
- ✓ A commission on the RIIN, headed by retired Chief Secretary Banuo Z. Jamir, was formed on July 27, 2019, to examine all aspects of the proposed exercise.
- ✓ The meeting also decided to constitute sub-committees at the district level with the Deputy Commissioners as the convenors.

**How will the RIIN be updated?**

Once the RIIN is finalised, no fresh indigenous inhabitant certificates will be issued except to new-born babies born to the indigenous inhabitants of Nagaland.

What about those excluded from the list?

The notification issued by Nagaland Chief Secretary last year states "... in case anyone who is left out of the RIIN, he/she will need to file an application before Home Commissioner who will get the matter verified and take necessary action for updating the RIIN if needed."

**What will the unique identity look like?**

- Based on the adjudication and verification, a list of indigenous inhabitants will be finalised and each person will be given a unique ID.
- The final list or the RIIN will be created and its copies will be placed in all villages and ward. Electronic copies of the list will also be stored in the State Data Centre.
- A mechanism or electronic and SMS-based authentication will be put in place. All indigenous inhabitants of the state would be issued a barcoded and numbered Indigenous Inhabitant Certificate.
- The process will be conducted across Nagaland and will be done as part of the online system of Inner Line Permit (ILP), which is already in force in Nagaland.

**What is an Inner Line Permit (ILP)?**

- ✚ Inner Line Permit (ILP) is an official travel document required by Indian citizens residing outside certain "protected" states while entering them.
- ✚ The ILP is issued by the Government of India and is obligatory for all those who reside outside the protected states. With the ILP, the government aims to regulate movement to certain areas located near the international border of India.



- ✚ ILP's origin dates back to the Bengal Eastern Frontier Regulations, 1873, which protected the British Crown's interest in tea, oil and elephant trade. It prohibited "British subjects" or Indians from entering into these protected areas.
- ✚ After Independence, in 1950, the word "British subjects" was replaced by Citizens of India and the focus of the ban on free movement was explained as a bid to protect tribal cultures in north eastern India.

**How will be the process be monitored?**

- > The entire exercise will be monitored by the Commissioner of Nagaland. In addition, the state government will designate nodal officers of the rank of a Secretary to the state government.
- > Their role will be to monitor the implementation. However, they will have no say in the adjudication process. The nodal officers will submit monthly reports of their visits and their assessments to a permanent committee set up under the Home Department to monitor the whole exercise. Nagaland Chief Secretary too will monitor the entire process first-hand.
- > Many of the families fear separation from their near and dear ones, especially those who could not make it to the final list.
- > The government needs to promise that excluded persons would continue to enjoy all the rights of a citizen. If one has exhausted all other options, the government has also required to promised to provide the legal option to appeal for a redressal.

**The Naga Tribes**

- Of Nagaland's two million population, over 86 per cent are tribals from 16 major tribes and several sub-tribes.
- All the tribes have their own festivals which they hold sacrosanct and require compulsory participation.
- Nagas and other tribes celebrate their distinct seasonal festivals with a pageantry of colour and a feast of music.
- Each tribe in Nagaland has its own dialect. There are about 60 different spoken dialects which belong to the Tibeto-Burman family of languages and dialects. These dialects have no script of their own.
- Tribes speak to each other in Nagamese, an amalgamation of various other dialects.

**PEPPER IT WITH**

National Register of Indian Citizens, Salient features of the Citizenship Act, 1955 and the Foreigners Act, 1946, Tribal Autonomous Councils

**GNCT Act**

**News Excerpt**

The Ministry of Home Affairs (MHA) issued a gazette notification stating that the provisions of the Government of National Capital Territory (GNCT) of Delhi (Amendment) Act, 2021, deemed to have come into effect from April 27.

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**Pre-Connect**

- The 69th Constitutional Amendment Act of 1991 provided a special status to the Union Territory of Delhi, and redesignated it the National Capital Territory of Delhi and designated the administrator of Delhi as the lieutenant (lt.) governor.
- It created a legislative assembly and a council of ministers for Delhi. Previously, Delhi had a metropolitan council and an executive council.
- The strength of the assembly is fixed at 70 members, directly elected by the people. The elections are conducted by the election commission of India. The assembly can make laws on all the matters of the State List and the Concurrent List except the three matters of the State List, that is, public order, police and land. But, the laws of Parliament prevail over those made by the Assembly.
- The strength of the council of ministers is fixed at ten per cent of the total strength of the assembly, that is, seven—one chief minister and six other ministers. The chief minister is appointed by the President (not by the lt. governor). The other ministers are appointed by the president on the advice of the chief minister. The ministers hold office during the pleasure of the president. The council of ministers is collectively responsible to the assembly.
- The council of ministers headed by the chief minister aid and advise the lt. governor in the exercise of his functions except in so far as he is required to act in his discretion. In the

case of difference of opinion between the Lt. governor and his ministers, the Lt. governor is to refer the matter to the president for decision and act accordingly.

**Salient Features of the Government of National Capital Territory (GNCT) of Delhi (Amendment) Act, 2021**


- **Restriction on laws passed by the Assembly:** The Bill provides that the term “government” referred to in any law made by the Legislative Assembly will imply Lieutenant Governor (LG).
- **Rules of Procedure of the Assembly:** The Act allows the Legislative Assembly to make Rules to regulate the procedure and conduct of business in the Assembly. The Bill provides that such Rules must be consistent with the Rules of Procedure and Conduct of Business in the Lok Sabha.
- **Inquiry by the Assembly into Administrative decisions:** The Bill prohibits the Legislative Assembly from making any rule to enable itself or its Committees to: (i) consider the matters of day-to-day administration of the NCT of Delhi and (ii) conduct any inquiry in relation to administrative decisions. Further, the Bill provides that all such rules made before its enactment will be void.
- **Assent to Bills:** The Act requires the LG to reserve certain Bills passed by the Legislative Assembly for the consideration of the President. These Bills are those: (i) which may diminish the powers of the High Court of Delhi, (ii) which the President may direct to be reserved, (iii) dealing with the salaries and allowances of the Speaker, Deputy Speaker, and members of the Assembly and the Ministers, or (iv) relating to official languages of the Assembly or the NCT of Delhi. The Bill requires the LG to also reserve those Bills for the President which incidentally cover any of the matters outside the purview of the powers of the Legislative Assembly.
- **LG’s opinion for executive actions:** The Act specifies that all executive action by the government, whether taken on the advice of the Ministers or otherwise, must be taken in the name of the LG. The Bill adds that on certain matters, as specified by the LG, his opinion must be obtained before taking any executive action on the decisions of the Minister/ Council of Ministers.

**ANOTHER FRONT OPENS?**

GOVERNMENT OF NATIONAL CAPITAL TERRITORY OF DELHI (AMENDMENT) ACT, 2021 COMES INTO FORCE

**WHAT IT MEANS**

- The word, “government”, referred to in any law made by the legislative assembly, shall now mean “lieutenant governor”
- The elected government will need to obtain LG’s opinion before taking any executive action under any law
- The legislative assembly, or its committees, shall not consider matters of day-to-day administration or conduct inquiries in relation to the administrative decisions



➤ Amendment also seeks to ensure that the assembly is run in accordance with rules of procedure and conduct of business in Lok Sabha

➤ It will put an end to any scope for criticising any leader or person who is not member of the house

➤ In the past, there have been several instances where names of top central government ministers were taken on the floor of Delhi assembly

**LIKELY IMPACT**

- All files need to be sent to LG for approval
- No decision of the council of ministers can be implemented without LG’s approval
- Judgment of LG will prevail
- Powers delegated among HoDs and secretaries will remain unchanged
- Elected govt may raise an issue when LG does not approve its decisions
- There is ambiguity on what all falls under ‘matters of day to day administration’
- Volume of files going to LG office may increase and may require the LG to set up a mechanism for faster disposal
- LG versus elected govt tussle may become more frequent

**WHAT HAPPENS TO COVID MANAGEMENT?** Not likely to be affected much because all Delhi Disaster Management Authority decisions are already being taken with LG’s approval. LG is the chairman of DDMA

**PEPPER IT WITH**  
Creation of Union Territories, Administration of Union Territories, Advisory Committees of UTs

**The consequences of the new Amendments can be summarised as follows:**

- ✓ The committees of the Delhi assembly including the Public Accounts Committee, the Public Undertaking Committee etc. will cease to exist as the rules under which they are set up will become void because these committees scrutinise, inquire into or investigate the decisions of the government.
- ✓ The LG, who will be the government, is under no obligation to implement any law passed by the assembly or carry out the directions of the house as he is not responsible to the assembly.
- ✓ The elected government of Delhi will wait endlessly for the LG’s opinion without being able to execute their decision. So, the decisions of the cabinet or of the ministers will mostly remain on paper only. Thus, the government will become non-functional.

## Article 244 (A)

### News Excerpt

A prominent opposition leader promised to implement Article 244 (A) of the Constitution to safeguard the interests of the people in Assam’s tribal-majority districts.

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### Pre-Connect

- Article 244 in Part X of the Constitution envisages a special system of administration for certain areas designated as ‘scheduled areas’ and ‘tribal areas’.
- The Fifth Schedule of the Constitution deals with the administration and control of scheduled areas and scheduled tribes in any state except the four states of Assam, Meghalaya, Tripura and Mizoram.
- The Sixth Schedule of the Constitution, on the other hand, deals with the administration of the tribal areas in the four north-eastern states of Assam, Meghalaya, Tripura and Mizoram. The tribal areas in these 4 states have been constituted as autonomous districts (Presently there are a total of 10 tribal areas).
- Article 339 of the Constitution tells about the control of the Union over the administration of Scheduled Areas and the welfare of Scheduled Tribes.

Each autonomous district and regional council consists of not more than 30 members, of which four are nominated by the governor and the rest via elections. The councils are also empowered to make legislative laws on certain matter with due approval from the governor. The acts of parliament or the state legislature do not apply to autonomous districts and autonomous regions or apply with specified modifications and specifications. But, they do not fall outside the executive authority of the state concerned.

### What is Article 244(A) of the Constitution?

Article 244(A) allows for creation of an ‘autonomous state’ within Assam in certain tribal areas. Inserted into the Constitution in 1969, it also has a provision for a Legislature and a Council of Ministers.

### How is it different from the Sixth Schedule of the Constitution?

- The Sixth Schedule of the Constitution — Articles 244(2) and 275(1) — is a special provision that allows for greater political autonomy and decentralised governance in certain tribal areas of the Northeast through autonomous councils.
- Article 244(A) accounts for more autonomous powers to tribal areas. Among these the most important power is the control over law and order. In Autonomous Councils under the Sixth Schedule, tribals do not have the jurisdiction of law and order in that sense.

### How did the demand arise?

- In the 1950s, a demand for a separate hill state arose around certain sections of the tribal population of undivided Assam.
- In 1960, various political parties of the hill areas merged to form the All-Party Hill Leaders Conference, demanding a separate state. After prolonged agitations, Meghalaya gained statehood in 1972.
- The leaders of the KarbiAnglong and North Cachar Hills were also part of this movement.
- They were given the option to stay in Assam or join Meghalaya. They stayed back as the then Congress government promised more powers, including Article 244 (A). Since then, there has been a demand for its implementation.
- In the 1980s, this demand took the form of a movement with a number of Karbi groups resorting to violence.
- It soon became an armed separatist insurgency demanding full statehood and the entire political discourse here still revolves around the demand for grant of ‘autonomous state’ status to the region.

### What was agreed upon in the Assam Accord?

- At the heart of the Accord was the “Foreigners Issue” (Clause 5), and “Safeguards and Economic Development” (Clauses 6 and 7). There were some “Other Issues” (Clauses 8-12), and a section on “Restoration of Normalcy” (Clauses 13 and 14).

- The Home Ministry was the nodal Ministry for the implementation of the Accord. In 1986, a new Department was set up in the Government of Assam, called “Implementation of Assam Accord Department”, to implement the various clauses of the Memorandum of Settlement.

**Why is the Assam Accord so important to the state and its people?**

- ✚ The Assam Accord brought closure to a phase of great violence and anxiety in the modern history of Assam. The agitation was led by the youth, who saw a direct threat to their future from the illegal influx of foreigners into the state.
- ✚ The government of Assam describes the Assam movement as “historic”, and “one of the famous movements in post-colonial India mainly led by students of Assam”.

**PEPPER IT WITH**  
Lushai Hills District Act, 1954; Government of Union Territories (Amendment) Act, 1971, Tribal Advisory Council

**Issues with MCC, ECI and Political Parties**

**News Excerpt**

The recently conducted assembly elections in West Bengal and Assam, have been marked by vituperative campaigns and communally polarising statements in violation of the Election Commission’s Model Code of Conduct.

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**Pre-Connect**

- As per the Election Commission of India, the model code of conduct was first observed during the 1960’s polls.
- Historically, the credit of giving the idea of a model code of conduct for political parties should go to the State of Kerala, which adopted, for the first time, a code of conduct for observance for Political Parties during the general election to the State Legislative Assembly in 1960.
- Notably, the ECI in 2019 had decided to keep social media posts by the political parties and leaders under its vigil for detecting any MCC violation.

**PEPPER IT WITH**  
Recognition of National and State Parties, Election Laws, Union Public Service Commission, Election Commission,

**Model Code of Conduct**

- The Model Code of Conduct consists of a set of guidelines expected to be abiding by the political parties, their campaigners and the candidates. The Election Commission brings the Model Code of Conduct into effect to ensure free and fair elections.
- The Model Code of Conduct remains in place during the elections in respect of political parties and candidates which remains in force from the date the elections are announced by the Commission till the completion of elections.
- It is clarified that the provisions of MCC and related instructions of the Commission issued from time to time shall also apply to the content being posted on the internet, including social media websites, by candidates and political parties.
- The MCC can be classified broadly into three parts.

**A. Model Code of Conduct guidelines on General Conduct**

- No party or candidate shall include in any activity which may aggravate existing differences or create mutual hatred or cause tension between different castes and communities, religious or linguistic.
- Criticism of other political parties, when made, shall be confined to their policies and programme, past record and work. Parties and Candidates shall refrain from criticism of all aspects of private life.
- Criticism of other parties or their workers based on unverified allegations or distortion shall be avoided.
- There shall be no appeal to caste or communal feelings for securing votes. Mosques, Churches, Temples or other places of worship shall not be used as a forum for election propaganda.
- All parties and candidates shall avoid scrupulously all activities which are “corrupt practices” and offences under the election law, such as bribing of voters, intimidation of voters, impersonation of voters, canvassing within 100 meters of polling stations, holding



public meetings during the period of 48 hours ending with the hour fixed for the close of the poll, and etc.

- No political party or candidate shall permit its or his followers to make use of any individual's land, building, compound wall etc., without his permission for erecting flag-staffs, suspending banners, pasting notices, writing slogans etc.
- Political parties and candidates shall ensure that their supporters do not create obstructions in or break up meetings and processions organized by other parties.

**B. Model Code of Conduct guidelines on Meetings**

- The party or candidate shall inform the local police authorities of the venue and time of any proposed meeting well in time.
- A Party or candidate shall ascertain in advance if there is any restrictive or prohibitory order in force in the place proposed for the meeting if such orders exist, they shall be followed strictly.
- If permission or license is to be obtained for the use of loudspeakers or any other facility in connection with any proposed meeting, the party or candidate shall apply to the authority concerned well in advance.

**C. Model Code of Conduct guidelines on Processions**

- A Party or candidate organizing a procession shall decide beforehand the time and place of the starting of the procession, the route to be followed and the time and place at which the procession will terminate.
- The organizers shall give advance intimation to the local police authorities of the programme.
- The organizers shall ascertain if any restrictive orders are in force in the localities through which the procession has to pass, and shall comply with the restrictions unless exempted specially by the competent authority.
- If two or more political parties or candidates propose to take processions over the same route or parts thereof at about the same time, the organizers shall establish contact well in advance and decide upon the measures to be taken to see that the processions do not clash or cause hindrance to traffic.
- The political parties or candidates shall exercise control to the maximum extent possible in the matter of processionists carrying articles which may be put to misuse by undesirable elements especially in moments of excitement.
- The carrying of effigies purporting to represent members of other political parties or their leaders, burning such effigies in public and such other forms of demonstration shall not be countenanced by any political party or candidate.
- Though the ECI does not have a judicial ability to penalise the violators of the Model Code of Conduct, it generally issues show-cause notice to the violators and in some cases, bars them from the poll campaign.

**Conclusion**

- ✓ The ECI has remained averse to giving the MCC a statutory character, preferring the advantage of 'quick' executive action and also to retain Article 324 as the source of its authority rather than re-assign it to a pre-existing parliamentary statute. The compliance deficit being witnessed in the 2019 elections reflects the political parties' disregard towards the MCC, as well as the inability of the ECI to retain its constitutional advantage through constant vigilance and stern action.
- ✓ In the past, successive ECIs have elicited compliance by public censure and invoking sections of the IPC and the Representation of the Peoples Act. Elections have become the site of unprecedented display of money, muscle and technology as power. Its concentration in any party gives it extraordinary and unfair advantage in electoral competition. The ECI appears to have become increasingly cautious and even diffident in the exercise of its constitutional powers. This is especially true for cases where firm and quick intervention is required. The ECI must guard against ceding the space which it has extracted and affirmed by innovatively enhancing the residuary powers given to it in Article 324 of the Constitution of India.

## Police Reforms and the De-Politicisation of Police

### News Excerpt

The Centre has begun holding consultations with states to review the functioning of police forces and lend central assistance to meet the unique challenges faced by them.

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### Pre-Connect

- The National Police Commission (1977-81), the Ribeiro Committee (1998), the Padmanabhaiah Committee (200), the Malimath Committee (2002-2003), Police Act Drafting Committee (2005) and Supreme Court Guidelines (2006)—have all addressed the issue of reforms in the policing. The need for police reforms has long been acknowledged.
- In response to a PIL filed by two former DGPs, Prakash Singh and N.K. Singh, the Supreme Court in 2006 pronounced that police reform was essential and issued seven binding directives to states and union territories to kick-start the process of reforms.

### What is the SC’s Prakash Singh judgment on police reforms?

Prakash Singh, who served as DGP of UP Police and Assam Police besides other postings, filed a PIL in the Supreme Court post retirement, in 1996, seeking police reforms. In a landmark judgment, SC had directed all states and UTs to bring in police reforms. The ruling issued a series of measures that were to be undertaken by the governments to ensure the police could do their work without worrying about any political interference.

### What measures were suggested by the Supreme Court?

- The seven main directives from the Supreme Court in the verdict were fixing the tenure and selection of the DGP to avoid situations where officers about to retire in a few months are given the post.
- In order to ensure no political interference, a minimum tenure was sought for the Inspector General of Police so that they are not transferred mid-term by politicians.
- The SC further directed postings of officers being done by Police Establishment Boards (PEB) comprising police officers and senior bureaucrats to insulate powers of postings and transfers from political leaders.
- Further, there was a recommendation of setting up State Police Complaints Authority (SPCA) to give a platform where common people aggrieved by police action could approach.
- Apart from this, the SC directed separation of investigation and law and order functions to better improve policing, setting up of State Security Commissions (SSC) that would have members from civil society and forming a National Security Commission.

How has the government interfered in postings and transfers when there are Police Establishment Boards (PEB)?

1. The officers on the committee are ‘unofficially’ informed by the government about which officer would be preferred for which post.
2. Either that or in meetings to decide postings of senior IPS officers, when even the Additional Chief Secretary (home) is present, the officers go with what the ACS Home says. They believe that his say is what the government wants.
3. Among five officers, even if one or two do not agree, the majority usually sides with what the postings that the government of the day is interested in. Thus, in spite of PEB’s in place, the system has continued as before.

### Analytica

The Commonwealth Human Rights Initiative (CHRI), in its report in September, 2020 that tracked changes made in the police force following the 2006 judgment, found that not even one state was fully compliant with the apex court directives and that while 18 states passed or amended their Police Acts in this time, not one fully matches legislative models.

### Conclusion

Nearly five contempt petitions issued in the past decades to states found to be non-compliant. Bigger states like Maharashtra, Tamil Nadu and UP have been the worst when it comes to bringing about systemic changes in line with the judgment and that it is only the North-Eastern states that have followed the suggested changes in spirit. The need of the hour is an all-India Act that all states have to follow and small changes can be made in exceptional cases relating to the situation in a particular state.



## Appointment of Ad-Hoc Judges

### News Excerpt

The Supreme Court cleared the way for appointment of retired judges as ad-hoc judges in High Courts under Article 224A of the Constitution to deal with mounting backlog of cases.

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### Pre-Connect

- Articles 124 to 147 in Part V of the Constitution deal with the organisation, independence, jurisdiction, powers, procedures and so on of the Supreme Court. The Parliament is also authorised to regulate them.
- At present, the Supreme Court consists of thirty-four judges (one chief justice and thirty-three other judges). In 2019, the centre notified an increase in the number of Supreme Court judges from thirty-one to thirty-four, including the Chief Justice of India.
- In the Indian single integrated judicial system, the high court operates below the Supreme Court but above the subordinate courts.
- There are 25 high courts in the country. Out of them, only three high courts have jurisdiction over more than one state. Among the nine union territories, Delhi alone has a separate high court (since 1966).
- The union territories of Jammu and Kashmir and Ladakh have a common high court. The other union territories fall under the jurisdiction of different state high courts.
- The Parliament can extend the jurisdiction of a high court to any union territory or exclude the jurisdiction of a high court from any union territory.
- Articles 214 to 231 in Part VI of the Constitution deal with the organisation, independence, jurisdiction, powers, and procedures and so on of the high courts.

### Highlights

- A bench headed by Chief Justice of India S A Bobde said, “We have taken the first step with the hope and aspiration that all concerned would cooperate and retiring/retired judges would come forth and offer their services in the larger interest of the judiciary.”

#### Appointment of Judges

The judges of a high court are appointed by the President. The chief justice is appointed by the President after consultation with the chief justice of India and the governor of the state concerned. For appointment of other judges, the chief justice of the concerned high court is also consulted. In case of a common high court for two or more states, the governors of all the states concerned are consulted by the president.

- Deciding a plea by NGO Lok Prahari seeking appointment of ad-hoc judges to clear the case backlog, the apex court said “it is trite to say that we have a docket explosion in our country and that it is difficult for adjudication to take place within a reasonable period of time”.
- The bench said, “This crisis situation must be tackled. Some innovation is always the rule of the game. In the present context, maybe a slightly different view has to be taken in respect of the avowed purpose of Article 224A providing for ad-hoc judges. We say so as we are faced with the ground reality of almost 40% vacancies remaining in the regular appointments [both permanent and additional judges] over the last two years. A number of vacancies arising every year are barely filled in by fresh appointments. Thus, it remains an unfulfilled challenge to bring the appointment process to such numbers as would be able to cover the vacancies existing and arising.”
- The Chief Justice of a High Court may initiate the process of recommending a name if the number of judges’ vacancies is more than 20 per cent of the sanctioned strength, cases in a

1. In the Second Judges case (1993), the Supreme Court ruled that no appointment of a judge of the high court can be made, unless it is in conformity with the opinion of the chief justice of India.
2. In the Third Judges case (1998), the Supreme Court opined that in case of the appointment of high court judges, the chief justice of India should consult a collegium of two senior-most judges of the Supreme Court. Thus, the sole opinion of the chief justice of India alone does not constitute the ‘consultation’ process.
3. The fourth Judges case (2015) nullified the NJAC and opined that the new system would affect the independence of judiciary.

particular category are pending for over five years, more than 10 per cent of pending cases are over five years old, or percentage of the rate of disposal is lower than the institution of the cases either in a particular subject matter or generally in the court.

- The Chief Justice should prepare a panel of judges after personal interaction with the concerned judge to take their consent.
- The appointments can follow the procedure laid down in the Memorandum of Procedure for appointment of judges. Since the nominees have been judges before, the need to refer the matter to the IB or other agencies would not arise, shortening the time period.
- A period of about three months would be sufficient to process a recommendation for the appointment of ad-hoc judges. A Chief Justice will start the process three months in advance for such appointment. Their tenure may vary on the basis of the need but generally should be for a period between two and three years.
- Depending on the strength of the High Court and the problem faced by it, the number of ad-hoc judges in the court will be in the range of two to five for the time being.
- Since the goal was to clear the backlog, the ad-hoc judges will be assigned more than five-year-old cases. This will not, affect the High Court Chief Justice's discretion to allot any other matter.
- In case there is a need to constitute a Division Bench to hear a matter, it will comprise of only ad-hoc judges and not a mix of ad-hoc and sitting judges.
- It also barred ad-hoc appointees from performing any other legal work – advisory, arbitration or appearing in court for clients.

### **Ad hoc Judge of the Supreme**

When there is a lack of quorum of the permanent judges to hold or continue any session of the Supreme Court, the Chief Justice of India can appoint a judge of a High Court as an ad hoc judge of the Supreme Court for a temporary period. He can do so only after consultation with the chief justice of the High Court concerned and with the previous consent of the president. The judge so appointed should be qualified for appointment as a judge of the Supreme Court. It is the duty of the judge so appointed to attend the sittings of the Supreme Court, in priority to other duties of his office. While so attending, he enjoys all the jurisdiction, powers and privileges (and discharges the duties) of a judge of the Supreme Court.

### **Retired Judge of the Supreme Court**

At any time, the chief justice of India can request a retired judge of the Supreme Court or a retired judge of a high court (who is duly qualified for appointment as a judge of the Supreme Court) to act as a judge of the Supreme Court for a temporary period. He can do so only with the previous consent of the president and also of the person to be so appointed. Such a judge is entitled to such allowances as the president may determine. He will also enjoy all the jurisdiction, powers and privileges of a judge of Supreme Court. But he will not otherwise be deemed to be a judge of the Supreme Court.

### **Retired Judges of the High Court**

At any time, the chief justice of a high court of a state can request a retired judge of that high court or any other high court to act as a judge of the high court of that state for a temporary period. He can do so only with the previous consent of the President and also of the person to be so appointed. Such a judge is entitled to such allowances as the President may determine. He will also enjoy all the jurisdiction, powers and privileges of a judge of that high court. But he will not otherwise be deemed to be a judge of that high court.

### **Conclusion**

- ✓ Indian judiciary system is strong as compared to other judiciary system present in the world. But it is facing some challenges that are making it less effective. Society is losing hopes and faith towards judiciary because of the time taken by it in delivering justice. Judiciary must overcome from these challenges; peoples should not hesitate before going to court. In this world of technology, peoples are becoming aware of their rights, they know what remedies they have if their rights are infringed. They are approaching to court of law; this right is given by Article 39 (A) equal justice and free legal aid.

- ✓ What government should do is to make judiciary more compatible, so that can dispose of cases as soon as possible. The delay is caused mainly due to factors which are insufficiency of judicial officers, inadequate ministerial staff, personal factors, defects in the procedure, lack of infrastructure, abuse of process of law etc. Solutions like Alternative Dispute Resolution, Lok Adalats, Fast Track Courts, Gram Nyayalaya should be promoted by government to deliver justice in an effective way and reduce the workload of judiciary.

**PEPPER IT WITH**  
Supreme Court, Judicial Review, Judicial Activism

**Disaster Management Act, 2005**

News Excerpt

The Centre directed states to ensure uninterrupted production and supply of medical oxygen and its transport along inter-state borders and said the district magistrate and superintendent of police of the district concerned will be held responsible if there is any violation of its order.

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Pre-Connect


- COVID-19 is the first pan India biological disaster being handled by the legal and constitutional institutions of the country.
- Though the Constitution of India is silent on the subject 'disaster', the legal basis of the DM Act, is Entry 23, Concurrent List of the Constitution "Social security and social insurance". Entry 29, Concurrent List "Prevention of the extension from one State to another of infectious or contagious diseases or pests affecting men, animals or plants," can also be used for specific law making.

Ambit of the Disaster Management Act, 2005

- The legislative intent of the Act is to, "provide for the effective management of disasters".
- The National Disaster Management Authority (NDMA) under the DM Act is the nodal central body for coordinating disaster management, with the Prime Minister as its Chairperson.
- The NDMA lays down policies, plans and guidelines for management of disaster.
- Similarly, State, District and Local level Disaster Management Authorities were established, manned by high functionaries. All these agencies are envisaged to work in coordination.
- NDMA so far formulated about 30 guidelines on various disasters including the 'Guidelines on Management of Biological Disasters, 2008'.
- The 2019 National Disaster Management Plan, issued also deals extensively with Biological Disaster and Health Emergency. Power bestowed by DM Act on Central Government and NDMA are extensive.
- The Central Government, irrespective of any law in force (including over-riding powers) can issue any directions to any authority anywhere in India to facilitate or assist in the disaster management.

## DEC'S POWERS DURING DISASTERS

**The State Disaster Executive Committee (DEC) under Disaster Management Act, 2005, can:**



- Require any department of the state or any other body or authority or person in charge of any relevant resources to make available the resources for the purposes of emergency response, rescue and relief
- Control and restrict, vehicular traffic to, from or within, the vulnerable or affected area
- Control or restrict the entry of any person into, his/her movement within and departure from, a vulnerable or affected area
- Conduct search and carry out rescue operations
- Provide shelter, food, drinking water, essential provisions, healthcare and services in

accordance with the standards laid down by the national authority and state authority

- Give direction to the concerned department of the government of the state, any district authority or other authority, within the local limits of the state to take such measure or steps for rescue, evacuation or providing immediate relief for saving lives or property, as may be necessary in its opinion
- Require experts and consultants in the field of disasters to provide advice and assistance for rescue and relief
- Procure exclusive or preferential use of amenities from any authority or person as and when required



- Importantly, any such directions issued by Central Government and NDMA must necessarily be followed the Union Ministries, State Governments and State Disaster Management Authorities.
- In order to achieve all these, the prime minister can exercise all powers of NDMA. This ensures that there is adequate political and constitutional left behind the decisions made.
- To alleviate social sufferings, NDMA/SDMA are mandated to provide 'minimum standard of relief' to disaster affected persons, including relief in repayment of loans or grant of fresh loans on concessional terms.

### Way Ahead

Undoubtedly, India's large population poses an administrative challenge in dealing with any disasters, especially a pandemic such as the second wave of COVID-19 pandemic. However, overall management can be strengthened through three possible ways:

- ✓ Biological disaster of a national magnitude necessitates a close administrative and political coordination, led by Centre and followed by State governments, Disaster Management Authorities, and other stakeholders. In the true spirit of DM Act and federal structure, national and state political and administrative agencies should be more collaborative and consultative. Issues like movement of migrant labourers, availability of food, arranging livelihoods to daily wagers, relief camps, entitlement of statutory minimum relief, etc. that directly affects millions in the country needs special attention.
- ✓ Success of effective implementation of the national and state decisions under the DM Act is dependent on its ground level implementation; district administration and local self-government institutions remains the best bet. As per mandate of the DM Act, a concerted effort is required to ensure that these bodies are administratively, politically and financially empowered.
- ✓ In times such as these, constitutional courts must play its role. There are complaints of discrimination, police excesses, starvation, lack of medical aid etc. from various corners of the country. Pertinently, there is bar on jurisdiction of courts and there is no grievance redressal mechanism under DM Act. Having assumed the role of sentinel on the *qui vive*, it is obligatory on all the constitutional courts in the country to *suo motu* register PILs and closely monitor the implementation of DM Act, ensure rule of law and protection of human rights as guaranteed under the Constitution of India.

#### **PEPPER IT WITH**

Salient features of the Epidemics Diseases Act, 1897; VII<sup>th</sup> Schedule of the Constitution of India



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## SOCIAL ISSUES, SCHEMES, REPORTS & INDICES

### State of World Population 2021: UNFPA

#### News Excerpt

Recently, United Nations Population Fund’s (UNFPA) launched State of World Population Report titled ‘My Body is My Own’. This is the first time a United Nations report has focused on bodily autonomy, defined as the power and agency to make choices about your body without fear of violence or having someone else decide for you.

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#### Pre-connect

- UNFPA is formally named the United Nations Population Fund. The organization was created in 1969, the same year the United Nations General Assembly declared “parents have the exclusive right to determine freely and responsibly the number and spacing of their children.”
- UNFPA is the United Nations sexual and reproductive health agency. Their mission is to deliver a world where every pregnancy is wanted, every childbirth is safe and every young person's potential is fulfilled.

#### What is right to the autonomy of our bodies?

- The right to the autonomy of our bodies means that we have the power and agency to make choices without fear of violence or having someone else decide for us. It is “the power to say yes and the right to say no”.
- The report focuses on three dimensions of bodily autonomy: the right to decide whether to have sex, use contraception, or seek health care.

#### What is Bodily Autonomy and Why it matters?

- ✓ Bodily autonomy is not just a human right but the foundation upon which all other rights are built, reproductive choices and the power to make those choices impacts all other aspects of people’s lives.
- ✓ Without bodily autonomy and self-determination, women and girls are subject to virginity tests, to forced marriage, to forced pregnancy, to rape and violence.
- ✓ Their education may end and their employment prospects may diminish, leaving them increasingly dependent on others, potentially unsafe and without hope for a better future for them or for their own children.
- ✓ Individual bodily autonomy is also essential to the health, prosperity, and security of societies.

#### What report says?

- The report shows that in countries where data is available, only 55% of women are fully empowered to make choices over healthcare, contraception and the ability to say yes or no to sex. It also highlights that only 75% of countries legally ensure full and equal access to contraception.
- Some examples of violation of bodily autonomy include, child marriage, female genital mutilation, a lack of contraceptive choices leading to unplanned pregnancy, unwanted sex exchanged for a home and food or when people with diverse sexual orientations and gender identities cannot walk down a street without fearing assault or humiliation.
- Under its ambit also fall people with disabilities stripped of their rights to self-determination, to be free from violence and to enjoy a safe and satisfying sexual life.

#### India Scenario

- ✚ In India, according to NFHS-4 (2015-2016), only about 12% of currently married women (15-49 years of age) independently make decisions about their own healthcare, while 63% decide in consultation with their spouse.
- ✚ For a quarter of women (23%), it is the spouse that mainly takes decisions about healthcare. Only 8% of currently married women (15-49 years) take decisions on the use of contraception independently, while 83% decide jointly with their spouse.
- ✚ Information provided to women about use of contraception is also limited — only 47% women using a contraceptive were informed about the side effects of the method, and 54% women were provided information about other contraceptives.

#### Analytica

**What report suggested to ensure bodily autonomy?**

- > To help stakeholders translate bodily autonomy into reality for individuals worldwide, the report highlights three priorities.
- > The first is to end control over another individual’s decision-making. Women around the world are denied the fundamental right to make decisions over their bodies and futures and are controlled by men.
- > Second, access to sexual and reproductive health care must be guaranteed for all with zero tolerance for violence or discrimination. This means health care must be physically accessible and people-centered, laws to protect women must be created and enforced, and programs must be adequately funded.
- > Finally, women must be empowered to make autonomous and informed decisions, which will involve providing comprehensive sexuality education and shifting broader social and cultural norms. Engaging men and boys are critical, as their beliefs about masculinity and gender are at the core of many harmful practices.

**Conclusion**

Although the current state of bodily autonomy is bleak, the panelists saw signs of hope on the horizon. In one sign that political momentum is moving in the right direction as the United Nations Commission on Population and Development recently recognized the importance of bodily autonomy.

**World Press Freedom index**

**News Excerpt**

Recently, World Press Freedom Index has released and India retains 142 of 180 spot, remains “one of the world’s most dangerous countries” for journalists.

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**Pre-Connect**

Published annually by Reporters Sans Frontieres (RSF) or Reporters Without Borders since 2002, the World Press Freedom Index measures the level of media freedom in 180 countries and territories. It assesses the level of pluralism, media independence, the environment for the media and self-censorship, the legal framework, transparency, and the quality of infrastructure that supports the production of news and information. It does not evaluate government policy.

**What report says?**

- The latest index released ranks 180 countries, topped, yet again, by Norway followed by Finland and Denmark, while Eritrea is at the bottom. China is ranked 177, and is only above North Korea at 179 and Turkmenistan at 178.
- It also stated that the 2021 report “shows that journalism, the main vaccine against disinformation, is completely or partly blocked in 73% of the 180 countries ranked by the organisation.
- The “2021 Edelman Trust barometer reveals a disturbing level of public mistrust of journalists, with 59% of respondents in 28 countries saying that journalists deliberately try to mislead the public by reporting information they know to be false.
- The report noted that “only 12 of the Index’s 180 countries (7%) can claim to offer a favorable environment for journalism.
- According to the 2021 World Press Freedom Index, journalism is “totally blocked or seriously impeded” in 73 nations and “constrained” in 59 others.
- Countries around the world have used the coronavirus pandemic as grounds to block journalists’ access to information sources and reporting in the field.
- In the Asia-Pacific region, authoritarian regimes have used the pandemic to “perfect their methods of totalitarian control of information, while the ‘dictatorial democracies’ have used coronavirus as a pretext for imposing especially repressive legislation with provisions combining propaganda with suppression of dissent.



### India's Performance

- India is ranked 142, same as last year, after it had consistently slid down from 133 in 2016. In the South Asian neighborhood, Nepal is at 106, Sri Lanka at 127, Myanmar (before the coup) at 140, Pakistan at 145 and Bangladesh at 152.
- India shares the “bad” classification with Brazil, Mexico and Russia.
- In India, journalists are “exposed to every kind of attack, including police violence against reporters, ambushes by political activists, and reprisals instigated by criminal groups or corrupt local officials”.
- Criminal prosecutions are, meanwhile, often used to gag journalists critical of the authorities, with some authorities invoking draconian laws like Section 124a of the Indian Penal Code, under which sedition is punishable by life imprisonment.
- Journalists who dare to criticize the government are branded as ‘anti-state,’ ‘anti-national’ or even ‘pro-terrorist.’
- This exposes them to public condemnation in the form of extremely violent social media hate campaigns that include calls for them to be killed, especially if they are women.

#### Freedom of Press in India: Constitutional Perspective

- ❖ In India before Independence, there was no constitutional or statutory guarantee of freedom of an individual or media/press. At most, some common law freedom could be claimed by the press, as observed by the Privy Council in Channing Arnold v. King Emperor.
- ❖ With object and views, the Preamble of the Indian Constitution ensures to all citizens inter alia, liberty of thought, expression, belief, faith and worship. The constitutional significance of the freedom of speech consists in the Preamble of Constitution and is transformed as fundamental and human right in Article 19(1)(a) as freedom of speech and expression.
- ❖ Everyone has the right to freedom of opinion and expression, this right includes freedom to hold opinions without interference and to seek, receive and impart information and ideas through any media and regardless of frontiers.
- ❖ At last it can be concluded that, the Freedom of the Press is nowhere mentioned in the Indian constitution. It is believed that Freedom of Speech and Expression in Article 19 of the Indian constitution include freedom of the press.
- ❖ Freedom of expression enables one to express one’s own voices as well as those of others. But freedom of the press must be subject to those restrictions which apply to the freedom of speech and expression. The restrictions mentioned in Art. 19 are defamation, contempt of court, decency or morality, security of the state, friendly relations with other states, incitement to an offence, public order and maintenance of the sovereignty and integrity of India.
- ❖ The status of freedom of the press is the same as that of an ordinary citizen. The press cannot claim any immunity from taxation, is subject to the same laws regulating industrial relations, and press employees are subject to the same laws regulating industrial employment.

### Conclusion

Indian government need to be concerned about India’s low ranking in such international indices. Media is considered as the fourth pillar of democracy and it must be provided with enough freedom to play its role without any fear and partiality in a democratic country like India.

### Economic and Social Survey of Asia and the Pacific 2021

#### News Excerpt

Recently, United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP) has released report titled ‘Economic and Social Survey of Asia and the Pacific 2021.’

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**Pre-connect**

<p><b>Economic and Social Survey of Asia and the Pacific (ESCAP)</b></p> <p>Since its establishment in 1947, the UNESCAP, has issued this flagship publication annually.</p> <p>It is one of the longest, continuously running reports in the United Nations system, providing decision makers in the region with valuable information in forming development policy for decades.</p> <p>The Survey monitors regional progress, provides cutting-edge analyses and guides policy discussion on the current and emerging socio-economic issues and policy challenges to support inclusive and sustainable development in the region.</p> <p>Since 1957, the Survey has also contained a study or studies focusing on a significant aspect or challenge relevant to the economies of the Asia-Pacific region.</p>	<p><b>United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP)</b></p> <p>The ESCAP serves as the United Nations’ regional hub promoting cooperation among countries to achieve inclusive and sustainable development.</p> <p>The largest regional intergovernmental platform with 53 Member States and 9 associate members, ESCAP has emerged as a strong regional think-tank offering countries sound analytical products that shed insight into the evolving economic, social and environmental dynamics of the region.</p> <p>The overall objective of ESCAP is to promote inclusive and sustainable economic and social development in the Asia-Pacific region, with priority accorded to the implementation of the 2030 Agenda for Sustainable Development and the achievement of the Sustainable Development Goals.</p>
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**What survey says?**

- India’s economic output in 2021 is expected to remain below the 2019 level despite roll-out of the vaccine to deal with the menace of the coronavirus pandemic.
- India, according to the ‘ESAP 2021: Towards post-COVID-19 resilient economies’, is estimated to record an economic growth of 7 per cent in 2021-22, over a contraction of 7.7 per cent witnessed in the previous fiscal on account of the pandemic’s impact on normal business activity.
- Observing that India entered the pandemic with subdued GDP growth and investment. Following one of the most stringent lockdowns in the world, the economic disruptions that the country experienced mounted in the second quarter of 2020.
- Subsequent change in lockdown policies and success in reducing infection rates supported an impressive economic turnaround in the third quarter.
- However, the pace of recovery moderated in the fourth quarter with estimated year-on-year growth still close to zero.
- China’s swift and effective response to COVID-19 enabled it to become the only major economy worldwide to achieve a positive annual economic growth rate in 2020.
- The report forecasts that on an average, developing Asia-Pacific economies are expected to grow 5.9 per cent in 2021 and 5 per cent in 2022, after having experienced an estimated contraction of 1 per cent in 2020.
- Despite a reasonably strong rebound expected in 2021, a K-shaped recovery is likely with poorer countries and more vulnerable groups marginalised in the post-pandemic recovery and transition period.

**What need to be done?**

- The COVID-19 pandemic is a crisis like no other. It also offers opportunities like no other. In being forced to adjust, we have seen lives, workplaces and habits transformed in fundamental ways.
- Identifies existing socioeconomic fault lines and outlines how changes in economic policymaking can make a difference in building resilience. Even with the unprecedented economic and social damage that the COVID-19 pandemic brought to the region, it presents an opportunity to build forward better towards a resilient, inclusive and sustainable future.

# ENHANCING RESILIENCE IS CRITICAL TO SUSTAINABLE DEVELOPMENT OF ALL COUNTRIES

The pandemic will leave long-term scars on economies, societies and the environment



89 million people back to extreme poverty

The Asia-Pacific region faces a complex risk landscape



Adverse shocks reverse hard-won gains across the three dimensions



Vulnerabilities can amplify shocks, but policies can help reduce setbacks

ESCAP proposes a package

Reduce the number of poor by 180 million



Building Forward Better

=



Social services

+



Digital access

+



Green development

Selected policy options to meet financing needs



Debt service suspensions



Debt swaps for development



Sovereign bond financing



Public debt management



Emergency financing



Sustainable investing by institutional investors

- For a more robust and inclusive recovery, the survey calls for a more synchronised Covid-19 vaccination programme across countries and highlights opportunities to leverage regional cooperation.
- At the same time, it recommends that fiscal and monetary support should be sustained, as premature tightening could increase long-term scars.
- The time is now for Asia Pacific region to seize this opportunity to speed up and make its transition towards more resilient, equitable and green development the centrepiece of the post-pandemic economic recovery.

## Conclusion

- ✓ Looking beyond the pandemic, the survey examines the broader risk landscape facing Asia Pacific countries, including epidemics, natural disasters and financial crises.

- ✓ It finds that adverse shocks, both economic and non-economic, result in permanent economic, social and environmental losses, and advises countries to take a more comprehensive approach to building resilience against future shocks.
- ✓ Countries in the region should respond aggressively to adverse shocks to minimise the reversal of hard-won development gains. Swift and robust policy responses are needed to safeguard sustainable development in crisis times, and risk management must become central to development planning and policymaking.

## Maternal Death and COVID-19: Lancet Report

### News Excerpt

According to the study published in the Lancet Global Health Journal, the failure of the health system to cope with COVID-19 pandemic resulted in an increase in maternal deaths and stillbirths.

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### Pre-connect

#### Maternal deaths

The annual number of female deaths from any cause related to or aggravated by pregnancy or its management (excluding accidental or incidental causes) during pregnancy and childbirth or within 42 days of termination of pregnancy, irrespective of the duration and site of the pregnancy.

#### What is stillbirth?

A stillbirth is the death or loss of a baby before or during delivery. Both miscarriage and stillbirth describe pregnancy loss, but they differ according to when the loss occurs. In the United States, a miscarriage is usually defined as loss of a baby before the 20th week of pregnancy, and a stillbirth is loss of a baby at or after 20 weeks of pregnancy.

#### What study says?

- Overall, there was a 28% increase in the odds of stillbirth, and the risk of mothers dying during pregnancy or childbirth increased by about one-third. There was also a rise in maternal depression.
- COVID-19 impact on pregnancy outcomes was disproportionately high on poorer countries.
- The report is an analysis of 40 studies across 17 countries including Brazil, Mexico, the U.S., Canada, the U.K., Denmark, Netherlands, Italy, India, China and Nepal.
- The disruption caused by the COVID-19 pandemic has led to avoidable deaths of both mothers and babies.
- The study attributes the worsening trend to the failure of the “inefficiency of the healthcare system and their inability to cope with the pandemic” instead of strict lockdown measures. This resulted in reduced access to care.

#### What need to be done?

Policy makers and healthcare leaders must urgently investigate robust strategies for preserving safe and respectful maternity care, especially during the ongoing global emergency. Immediate action is required to avoid rolling back decades of investment in reducing mother and infant mortality in low-resource settings.

#### Situation in India

In the Indian context, an analysis of HMIS data by Population Foundation of India shows that during the months of national lockdown last year between April and June, compared to the same period in 2019, there was a 27% drop in pregnant women receiving four or more ante-natal check-ups, a 28% decline in institutional deliveries and 22% decline in prenatal services.

#### Situation in other countries

The impact was high among the marginalised across various settings such as in Nepal where hospital deliveries decreased most markedly among disadvantaged groups; and in the U.K., where 88% of pregnant women, who died during the first wave of the pandemic, were from black and minority ethnic groups.

#### Conclusion

Personnel for maternity services not be redeployed for other critical and medical care during the pandemic and in response to future health system shocks. Further, wider societal changes could have also led to deterioration in maternal health including intimate-partner violence, loss of employment and additional care-responsibilities because of closure of schools.



## National Policy for Rare Diseases 2021

### News Excerpt

Recently, Union health and family welfare minister has approved the National Policy for Rare Diseases 2021.

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### Pre-Connect

- Ministry of Health and family Welfare, Government of India formulated a National Policy for Treatment of Rare Diseases (NPTRD) in July, 2017. Implementation of the policy, however, faced certain challenges.
- A limiting factor in its implementation was bringing States on board and lack of clarity on how much Government could support in terms of tertiary care.
- Public Health and Hospitals is primarily State subject. Stakeholder consultation with the State Governments at the draft stage of formulation of the policy could not be done in an elaborate manner.
- When the policy was shared with State Governments, issues such as cost effectiveness of interventions for rare disease visa-vis other health priorities, the sharing of expenditure between Central and State Governments, flexibility to State Governments to accept the policy or change it according to their situation, were raised by some of the State Governments.

### Key highlights of National Policy for Rare Diseases

- Along with lowering the cost of treatment of rare diseases, the policy aims to increase focus on indigenous research and local production of medicines.
- Those who are suffering from rare diseases (diseases listed under Group 1 in the rare disease policy) that require one-time treatment will have the financial support of up to Rs. 20 lakh under the umbrella scheme of Rashtriya Arogya Nidhi. It will cover about 40 per cent of the population who are eligible under the Pradhan Mantri Jan Arogya Yojana.
- The policy will make use of a crowdfunding mechanism to cover the cost of treatment of rare diseases. As part of it, corporates and individuals will be encouraged to extend financial support through a robust IT platform.
- A national hospital-based registry of rare diseases will be created to ensure adequate data and comprehensive definitions of such diseases are available for those interested in research and development.
- Through the help of Health and Wellness Centres, District Early Intervention Centres and counselling, the policy aims to screen and detect rare diseases at early stages, which will in turn help in their prevention.
- A draft of the policy was put in the public domain on January 13, 2020, and comments from stakeholders, the general public, organisations, states and Union territories were invited on the same.
- The Supreme Court and various high courts expressed concern about the lack of a national policy for rare diseases. Rare diseases are difficult to research upon and availability and accessibility to medicines are important in the process of treatment. The policy aims to help the nation overcome these fundamental challenges.

### Analytica

#### Definition of Rare Diseases

- ✓ There is no universal or standard definition of rare disease. A disease that occurs infrequently is generally considered a rare disease, and it has been defined by different countries in terms of prevalence – either in absolute terms or in terms of prevalence per 10,000 population. A country defines a rare disease most appropriate in the context of its own population, health care system and resources.
- ✓ As mentioned above, India faces the limitation of lack of epidemiological data to be able to define rare diseases in terms of prevalence or prevalence rate, which has been used by other countries.
- ✓ To overcome this, a hospital based National Registry for Rare Diseases has been initiated by ICMR by involving centers across the country that are involved in diagnosis and management of Rare Diseases.
- ✓ This will yield much needed epidemiological data for rare diseases. In the absence of epidemiological data on diseases considered as rare in other countries, it is not possible to prescribe threshold prevalence rates to define a disease condition as rare.

### Rare Diseases: Issues and Challenges

- The field of rare diseases is complex and heterogeneous. The landscape of rare diseases is constantly changing, as there are new rare diseases and conditions being identified and reported regularly in medical literature.
- Apart from a few rare diseases, where significant progress has been made, the field is still at a nascent stage. For a long time, doctors, researchers and policy makers were unaware of rare diseases and until very recently there was no real research or public health policy concerning issues related to the field.
- This poses formidable challenges in development of a comprehensive policy on rare diseases. Nevertheless, it is important to take steps, in the short as well as long term, with the objective of tackling rare diseases in a holistic and comprehensive manner.

### Challenges in research and development

- ✚ A fundamental challenge in research and development for the majority of rare diseases is that there is relatively little known about the pathophysiology or the natural history of these diseases. Rare diseases are difficult to research upon as the patient pool is very small and it often results in inadequate clinical experience.
- ✚ Therefore, the clinical explanation of rare diseases may be skewed or partial. The challenge becomes even greater as rare diseases are chronic in nature, where long term follow-up is particularly important. As a result, rare diseases lack published data on long-term treatment outcomes and are often incompletely characterised.

### What need to be done?

- > This makes it necessary to explore international and regional collaborations for research, collaborations with the physicians who work on any rare disease and with patient groups and families dealing with the consequences of these disorders.
- > This will help gain a better understanding of the pathophysiology of these diseases, and the therapeutic effects that would have a meaningful impact on the lives of patients.
- > There is also a need to review and where possible modify, clinical trial norms keeping in mind the particular challenges in rare diseases, without compromising on the safety and quality of the drugs or diagnostic tools.

### The Indian Scenario

- » Data on how many people suffer from different diseases that are considered rare globally, is lacking in India. The cases identified so far have been diagnosed at tertiary hospitals.
- » The lack of epidemiological data on incidence and prevalence of rare diseases impedes understanding of the extent of the burden of rare diseases and development of a definition.
- » It also hampers efforts to arrive at correct estimation of the number of persons suffering from these diseases and describe their associated morbidity and mortality. In such a scenario, the economic burden of most rare diseases is unknown and cannot be adequately estimated from the existing data sets.
- » Although extremely challenging, considering the complexity of various diseases and the difficulty in diagnosis, there is a clear need to undertake systematic epidemiological studies to ascertain the number of people suffering from rare diseases in India.
- » So far only limited number of diseases has been recorded in India from tertiary care hospitals that are globally considered as rare diseases though ambit may encompass from 7000 to 8000 disorders. The commonly reported diseases include Primary immunodeficiency disorders, Lysosomal storage disorders (Gaucher's disease, Mucopolysaccharidoses, Pompe disease, fabry disease etc.) small molecule inborn errors of metabolism (Maple Syrup urine disease, organic acidemias etc.), Cystic Fibrosis, osteogenesis imperfecta, certain forms of muscular dystrophies and spinal muscular atrophy, etc.

### Way forward

- The Government will have a hospital based National Registry for Rare Diseases at ICMR with the objective of creating a database of various rare diseases. Steps have already been taken in this direction by ICMR. Over a period of time, the registry is expected to yield information on hospital based data and disease burden.
- The Government shall take steps to create awareness amongst all the levels of health care personnel as well as general public towards the rare diseases. This will encourage people to seek pre-marital genetic counselling, identification of high-risk couples & families and also result in prevention of births as well as early detection of cases of rare diseases.

- Public Health and hospitals being a State subject, the Central Government shall encourage and support the State Governments in implementation of a targeted preventive strategy
- The Government shall create a digital platform for bringing together notified Centres of Excellence where patients of rare diseases can receive treatment or come for treatment, on the one hand and prospective voluntary individual or corporate donors willing to support treatment of such patients. Funds received through this mechanism will be utilized for treatment of patients suffering from rare diseases.

## 'PRISM' scheme

### News Excerpt

Union Minister for Science & Technology, Earth Sciences and Health & Family Welfare recently inaugurated Alignment and Awareness Event for Publicity of the Department of Scientific and Industrial Research - Promoting Innovations in Individuals, Startups and MSMEs (DSIR-PRISM) scheme.

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### Pre-Connect

- PRISM scheme aims at to support individual innovators which will enable to achieve the agenda of inclusive development - one of the thrust areas of 12<sup>th</sup> five-year plan (2012-2017).
- It would also provide support to institutions or organizations set up as Autonomous Organization under a specific statute or as a society registered under the Societies Registration Act, 1860 or Indian Trusts Act, 1882 leading to development of state-of-art new technology solutions aimed at helping MSME clusters.

### About the PRISM Scheme

- PRISM' scheme of the DSIR has been instrumental in supporting individual innovators enabling inclusive development of India.
- It is interesting to note that PRISM extends its support to any citizen of the country through direct benefit transfer in the core technology areas such as Affordable Healthcare, Water, Sewage Management, Green Technology, Clean Energy, Industrially Utilizable Smart Materials, Waste to Wealth aligned with our National objectives.
- It is also appreciable that the Intellectual Property (IP) belongs to the innovators. The innovation movement by DSIR-PRISM making synergy with three National Initiatives like Unnat Bharat Abhiyan, Smart India Hackathon and Rural Technology Action Group (RuTAG) is unique.
- Under the initiative, an innovator of Indian nationality - student, professional and common citizen - is provided technical, strategic, and financial assistance by DSIR-PRISM for idea development, prototype development and pilot scaling, and patenting. The programme is implemented across various sectors from energy to healthcare to waste management and others.
- Many innovators have graduated as successful entrepreneurs through this scheme and many of them have made extreme socio-economic or techno commercial impact.

### Need for such Initiative

- ✓ This initiative is expected to help in generating rural livelihood, inclusive innovation & socio-economic benefit. Initiatives like these have tremendous potential to alter the techno-socio-economic landscape of our country.
- ✓ Collaboration of Ministry of Education, DSIR, RuTAG, Unnat Bharat Abhiyan, Smart India Hackathon, marrying technology with domain knowledge expertise, will enable and boost the technopreneurship in our country.
- ✓ Unnat Bharat Abhiyan must be used as a vibrant platform to unleash the innovative spirit of our students. It, along with Aatmanirbhar Bharat, should become the core ethos of our technical institutions.
- ✓ Digital India has proved that we can attain a global scale even when we use technology to address our own problems. For our innovators, 1.3 Billion people is a big market enough to work for.
- ✓ Our new National Education Policy 2020 envisages developing an education system that supports these values of scientific temper & rational thinking, keeping which are at the core of the ethos of our Indian culture.

### Benefits of the Scheme

- DSIR-PRISM helps generating rural livelihood and rural progress with innovations. He appreciated this as visible solution to various problems.
- Innovation may search solution for problem of pollution. Government is encouraging culture of innovations.

### Digital India Land Records Modernisation Programme (DILRMP)

#### News Excerpt

Recently, Central government plans to issues a 14-digit identification number to every plot of land in the country within a year’s time. It will subsequently integrate its land records database with revenue court records and bank records, as well as Aadhaar numbers on a voluntary basis.

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#### Pre-connect

The Unique Land Parcel Identification Number (ULPIN) scheme has been launched in ten States this year and will be rolled out across the country by March 2022.

#### About the new initiative

- “The Aadhaar for land”, a number that would uniquely identify every surveyed parcel of land and prevent land fraud, especially in the hinterlands of rural India, where land records are outdated and often disputed.

#### Unique Land Parcel Identification Number (ULPIN):

- ❖ The ULPIN System will have 14 digits - Alpha-numeric unique ID for each land parcel. The Unique IDs based on Geo reference coordinate of vertices of the parcel would be of international standard and compliance of the Electronic Commerce Code Management Association (ECCMA) standard and Open Geospatial Consortium (OGC) standards and it will provide compatibility so that all states can adopt it easily.
- ❖ Proper land statistics and land accounting through ULPIN will help develop land bank and lead towards Integrated Land Information Management System (ILIMS).
- ❖ Benefits are to ensure uniqueness in all transactions and keep the land records always up-to-date; a link of all property transactions get established; delivery of citizen services of land records through the single window; sharing of land records data across departments, financial institutions and all stakeholders; and standardization at data and application-level would bring in effective integration and interoperability across departments.
- ❖ The pilot test has been successfully carried out in 11 States namely Bihar, Haryana, Jharkhand, Odisha, Gujarat, Maharashtra, Karnataka, Madhya Pradesh, Sikkim, Andhra Pradesh and Goa.

- The identification will be based on the longitude and latitude coordinates of the land parcel, and is dependent on detailed surveys and geo-referenced cadastral maps.
- This Department has taken new initiatives under the programme like NGDRS [National Generic Document Registration System], ULPIN, linking of court to land records, integration of consent based Aadhaar number with land records etc.
- Linking Aadhaar with land records through ULPIN would cost ₹3 per record while seeding and authentication of landowner Aadhaar data would cost ₹5 each.
- Creating a modern land record room in every district would cost ₹50 lakh per district, while the integration of land records with the Revenue Court Management System would cost ₹270 crore.

### Digital India Land Records Modernisation Programme (DILRMP)

The Land Reforms (LR) Division was implementing two Centrally Sponsored Schemes viz.: Computerisation of Land Records (CLR) & Strengthening of Revenue Administration and Updating of Land Records (SRA&ULR). Later on, in 2008, the Cabinet approved merger of these schemes into a modified Scheme named Digital India Land Records Modernization Programme (DILRMP).

**Aim:** The main aims of DILRMP are to usher in a system of updated land records, automated and automatic mutation, integration between textual and spatial records, inter-connectivity between revenue and registration, to replace the present deeds registration and presumptive title system with that of conclusive titling with title guarantee.



**Implementation agency:** The State Governments/UT Administrations will implement the programme with financial and technical supports from the Dept. of Land Resources, Government of India. The district will be taken as the unit of implementation, where all activities under the programme will converge.

**Benefits to citizens**

The citizen is expected to benefit from DILRMP in one or more of the following ways-

- Real-time land ownership records will be available to the citizen.
- Since the records will be placed on the websites with proper security IDs, property owners will have free access to their records without any compromise in regard to confidentiality of the information
- Free accessibility to the records will reduce interface between the citizen and the Government functionaries, thereby reducing rent seeking and harassment.
- Public-private partnership (PPP) mode of service delivery will further reduce citizen interface with Govt. machinery, while adding to the convenience.
- Abolition of stamp papers and payment of stamp duty and registration fees through banks, etc. will also reduce interface with the Registration machinery.
- With the use of IT inter linkages; the time for obtaining RoRs, etc. will be drastically reduced.
- The single-window service or the web-enabled “anytime-anywhere” access will save the citizen time and effort in obtaining RoRs, etc.
- Automatic and automated mutations will significantly reduce the scope of fraudulent property deals.
- Conclusive titling will also significantly reduce litigation.
- This method will permit e-linkages to credit facilities.
- Market value information will be available on the website to the citizen.
- Certificates based on land data (e.g., domicile, caste, income, etc.) will be available to the citizen through computers.
- Information on eligibility for Government programs will be available based on the data.
- Issuance of land passbooks with relevant information will be facilitated.

**Status of Digital India Land Records Modernization Programme (DILRMP) in 2021**

- ✓ The DILRMP, a Central Sector scheme, has been extended up to 2020-21 at a total cost of Rs. 950 crores. It attempts to build upon the commonalities that exist in the arena of land records in various States to develop an appropriate ILIMS across the country, on which different States can also add State-specific needs as they may deem relevant and appropriate.
- ✓ Substantial progress has now been achieved in the prime components of computerization of Record of Rights - more than 90% in 24 States/UTs, digitization of cadastral maps - more than 90% in 22 States/UTs, computerization of Registration- more than 90% in 27 States/UTs, connectivity between Sub-Registrar Offices and Tehsils, integration of Registration and Land Records - more than 90% in 20 States/UTs.

**Conclusion**

The new initiative will enhance the service deliveries to the citizen of the country and will also function as inputs to the schemes of the other sectors like Agriculture, Finance Disaster Management etc.

**Global Gender Gap Report 2021**

**News Excerpt**

India has fallen 28 spots to rank 140<sup>th</sup> among 156 countries on the World Economic Forum’s Global Gender Gap index. In 2020, India had ranked 112<sup>th</sup> among 153 countries on the index.

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**Key finding of the report**

- Another generation of women must wait for gender parity as an extra 36 years are added to the time remaining to close the gender gap.
- Despite progress in education and health, women face economic hurdles, declining political participation and workplace challenges.

- Progress towards gender parity is stalling in several large economies and industries. This is partly due to women being more frequently employed in sectors hardest hit by lockdowns combined with the additional pressures of providing care at home.
- The deterioration in 2021 is partly attributed to a widening political gender gap in several large population countries. Despite over half of the 156 indexed countries registering an improvement, women still hold only 26.1% of parliamentary seats and 22.6% of ministerial positions worldwide. On its current trajectory, the political gender gap is expected to take 145.5 years to close, compared to 95 years in the 2020 edition of the report, an increase of over 50%.
- The economic gender gap has seen only a marginal improvement since the 2020 edition and is expected to take another 267.6 years to close. The slow progress is due to opposing trends – while the proportion of women among skilled professionals continues to increase, income disparities persist and few women are represented in managerial positions.
- Although these findings are sobering, gender gaps in education and health are nearly closed. In education, while 37 countries have reached gender parity, it will take another 14.2 years to completely close this gap due to slowing progress. In health, over 95% of this gender gap has been closed, registering a marginal decline since last year.

### **COVID-19's impact on women**

- The pandemic has had a more negative impact on women than men, with women losing jobs at higher rates (5% vs 3.9% among men, International Labour Organization), partly due to their disproportionate representation in sectors directly disrupted by lockdowns, such as the consumer sector. Data from the United States also indicates that women from historically disadvantaged racial and ethnic groups are worst affected.
- Women's representation in emerging jobs Sectors with historically low representation of women are also those with fast-growing “jobs of tomorrow”. In cloud computing, for example, women make up 14% of the workforce; in engineering, 20%; and in data and artificial intelligence, 32%; and it is more difficult for women to switch into these emerging roles than men.

### **Region wise analysis of report**

The five most improved countries in the overall index in 2021 are Lithuania, Serbia, Timor-Leste, Togo and United Arab Emirates, having narrowed their gender gaps by at least 4.4 percentage points or more. Timor-Leste and Togo also managed to close their economic gap by at least 17 full percentage points in the year. Three new countries have been assessed this year for the first time: Afghanistan (156th), Guyana (53rd) and Niger (138th).

- ✓ **Western Europe** continues to be the best-performing region and has further improved, with 77.6% of its overall gender gap now closed. At this rate, it will take 52.1 years to close the gender gap.
- ✓ **North America** (76.4%), comprising Canada and the United States, is the most improved region, with an increase of almost 3.5%. As a result, it will take 61.5 years to close the gender gap here. A significant part of this year's progress is related to improvements in the political gender gap, having narrowed from 18.4% to 33.4%.
- ✓ **Latin America and the Caribbean** (72.1%) has seen 15 of the 25 countries in the region improving their overall scores.
- ✓ **Eastern Europe and Central Asia** (71.2%) lags behind Western Europe not only on the proportion closed but also on the pace of progress. As such, the estimated time to close the gender gap is 134.7 years, more than twice that of Western Europe (52.1 years).
- ✓ **East Asia and the Pacific** (68.9%) is one of the three most-improved regions, having narrowed its gender gaps on three of the four sub-indexes (economic, education, health) but regressing on the political gender gap. On its current trajectory, it will take another 165.1 years to completely close the gap, almost 30 years longer than the global average.
- ✓ **South Asia** is the second-lowest performer, with 62.3% of its overall gender gap closed and progress going into reverse in the past year. A decline of 3.8 percentage points means that it is now expected to take 195.4 years to close the gender gap.
- ✓ **The Middle East and North Africa** region continues to have the largest gender gap (39.1%) yet to be closed. Despite a slight improvement (+0.5 percentage points), progress is slow, and it will take 142.4 years to close the gender gap.

### **India Specific**

- India had so far closed 62.5% of its gender gap. It noted that most of the decline was seen on the Political Empowerment sub-index, where India went back 13.5 percentage points.
- The main change that took place this year is the significant decline in the share of women among ministers, which halved, from 23.1% in 2019 to 9.1% in 2021.
- In addition, the share of women in parliament remains stagnant at 14.4% and the share of the last 50 years in which a woman has been head of state is 15.5%.
- Reduction in women's labour force participation rate was another reason for the drop in India's rank. The share of women in professional and technical roles declined further to 29.2% and the share of women in senior and managerial positions also remains low: only 14.6% of these positions are held by women and there are only 8.9% of firms with female top managers.
- The estimated earned income of women in India was one-fifth of men's, which put India among the bottom 10 countries globally on that indicator.
- With 93.7% of this gap closed to date, India ranks among the bottom five countries in this sub-index. Wide sex ratio at birth gaps is due to high incidence of gender-based sex-selective practices.
- The report showed that though India had closed 96.2% of the Educational Attainment sub-index gender gap, certain gaps existed in terms of literacy. "One third of women are illiterate (34.2%) compared to 17.6% of men.

**What need to be done?**

- The pandemic's combined effect of accelerated automation, the growing "double shift" of work and care, in parallel with other labour market dynamics such as occupational segregation, are likely to have a long-term impact on economic opportunities for women, risking inferior re-employment prospects and a persistent drop in income.
- The report offers ways for countries to work towards closing their gender gaps. These include further investment in the care sector and equitable access to care leave for working men and women, policies and practices that proactively focus on overcoming occupational segregation by gender, effective mid-career skills-development policies for women, and managerial practices that embed sound, unbiased hiring and promotion practices.

**Integrated Health Information Platform (IHIP)**

**News Excerpt**

The Union Minister of Health & Family Welfare recently launched the Integrated Health Information Platform (IHIP). It is the next generation highly refined version of the presently used Integrated Disease Surveillance Programme (IDSP).

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**About the platform**

- India is the first country in the world to adopt such an advanced disease surveillance system.
- The new version of IHIP will house the data entry and management for India's disease surveillance program.
- In addition to tracking 33 diseases now as compared to the earlier 18 diseases, it shall ensure near-real-time data in digital mode, having done away with the paper-mode of working.
- It is in sync with the National Digital Health Mission and fully compatible with the other digital information systems presently being used in India.

**Integrated Disease Surveillance Programme (IDSP)**

- IDSP was launched by Hon'ble Union Minister of Health & Family Welfare in November 2004 for a period up to March 2010. The project was restructured and extended up to March 2012.
- The project continues in the 12th Plan with domestic budget as IDSP under NHM for all States with Budgetary allocation of Rs. 640 Cr.
- A Central Surveillance Unit (CSU) at Delhi, State Surveillance Units (SSU) at all State/UT headquarters and District Surveillance Units (DSU) at all Districts in the country have been established.
- The objective was to strengthen/maintain decentralized laboratory-based IT enabled disease surveillance system for epidemic prone diseases to monitor disease trends and to detect and respond to outbreaks in early rising phase through trained Rapid Response Team (RRTs)

- The refined IHIP with automated data will help in a big way in real time data collection, aggregation & further analysis of data that will aid and enable evidence-based policy making.
- IHIP will provide health information system developed for real time, case-based information, integrated analytics, advanced visualization capability. It will provide analyzed reports on mobile or other electronic devices.
- In addition, outbreak investigation activities can be initiated and monitored electronically. It can easily be integrated with other ongoing surveillance program, while having the feature of addition of special surveillance modules.

**Significance of the Platform**

- ✓ It is an advanced digital platform for scouting the earliest signs of disease spread in the smallest of villages and blocks in the country and will immensely help in nipping in the bud any potential outbreak or epidemic.
- ✓ Accurate, reliable and timely information is crucial for a country such as India which has a population of 1.35 billion.
- ✓ India’s information system for precision public health is essential for delivering ‘the right intervention at the right time, to the right population.’
- ✓ Pointing out that in recent years, the use of technology to enhance precision in public health, including the use of pathogen genomics, enhanced surveillance and informatics, and targeted interventions has steadily gone up, the success of this platform will also depend primarily on the quality of data shared by the states.

- ✓ The terms of the geographical coverage of the surveillance, along with the number of diseases covered and the quantum of data generated, this makes IHIP one of the largest such digital health platforms globally.
- ✓ Data will be provided in real time through the grassroots healthcare workers through their gadgets (tablets); the doctors at the PHC/CHC/SHD/DH when the citizens seek healthcare; and the diagnostic labs which will provide data on the tests carried out.

**Aahaar Kranti**

- ❖ Recently Aahaar Kranti was launched as a public movement on the first day of Ma Annapurna’s Chaitra Navaratri by Harsh Vardhan.
- ❖ Vijnana Bharati (Vibha), ‘Global Indian Scientists and Technocrats’ Forum (GIST), Vigyan Prasar, and Pravasi Bharatiya Academic and Scientific Sampark (PRABHASS) have come together to launch the mission “Aahaar Kranti”, with the motto of ‘Uttam Aahaar- Uttam Vichaar’ or ‘Good Diet-Good Cognition.
- ❖ The movement is designed to address the peculiar problem being faced by India and the world-‘hunger and diseases in abundance’. Studies estimate that India produces as much as two times the number of calories it consumes. However, many in the country are still malnourished. The root cause of this strange phenomenon is a lack of nutritional awareness.
- ❖ The movement proposes to address the problem by working to rouse the people to the values and richness of India’s traditional diet, to the healing powers of local fruits and vegetables, and to the miracles of a balanced diet. It will renew the focus on nutritionally balanced diets replete in locally sourced fruits and vegetables.

**Conclusion**

The hard work and commitment of all the grassroots and frontline healthcare workers who have toiled the whole of last year during COVID pandemic, India has shown to the world that even during a pandemic, we are capable of developing such an advanced disease surveillance system.

**E9 Initiative: UNESCO**

**News Excerpt**

Nine countries including India, China and Brazil will explore possibility of co-creating and scaling up digital learning to achieve UN sustainable goal on quality education.

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### Pre-Connect

- While the nine countries may have less in common now than they did when the E9 Partnership was first established in 1993, their individual and collective influence has grown.
- So, too, has their representation in regional and global fora. More than ever, their voice, position and action matter considerably for the direction and success of the global education agenda.
- Mobilizing the full potential of the E9 Partnership is therefore vital for the achievement of SDG4 – Education 2030.

### About E9 initiative

- ✓ Called E9 initiative, the consultation is the “first of a three-phased process to co-create an initiative on digital learning and skills, targeting marginalised children and youth, especially girls. The initiative aims to accelerate recovery and advance the Sustainable Development Goal 4 agenda by driving rapid change in education systems.
- ✓ Spearheaded by the UN, the E9 countries -- Bangladesh, Brazil, China, Egypt, India, Indonesia, Mexico, Nigeria and Pakistan – will have the opportunity to benefit from this global initiative and accelerate progress on digital learning.
- ✓ The countries together will drive change in support to teachers; investment in skills; and narrowing of the digital divide.
- ✓ The consultation will highlight progress and share lessons learned regarding challenges on digital learning and skills.
- ✓ It will discuss the co-creation of the Digital Learning initiative by the nine countries. This Consultation will highlight progress, share lessons and explore opportunities for collaboration and scale-up to expand digital learning and skills.
- ✓ In addition, a Marketplace segment, for public-private partnership will focus on promising local and global solutions and opportunities for digital learning to strengthen local ecosystems.

#### AIM-PRIME

- ❖ In a major push towards deep technology and driving the country to become a digitally transformed nation, Atal Innovation Mission (AIM), NITI Aayog recently, launched AIM-PRIME (Program for Researchers on Innovations, Market-Readiness & Entrepreneurship), an initiative to promote and support science-based deep-tech start-ups & ventures across India.
- ❖ In this regard, AIM has joined hands with Bill & Melinda Gates Foundation (BMGF) to launch this nationwide program which will be implemented by Venture Center - a non-profit technology business incubator.
- ❖ The first cohort of the program is open to technology developers (early-stage deep tech start-ups, and scientists/ engineers/ clinicians) with strong science-based deep tech business ideas.
- ❖ Deep technology is an outcome of very intense research and development with high knowledge content. Consequently, the entrepreneurial journey emphasizes different aspects and requires a different approach to navigating the de-risking process and bringing such ideas to market.

#### Benefits

- ❖ The benefits of this program are aimed at addressing specific issues through training and guidance over a period of 12 months. Candidates selected for the program will get access to in-depth learning via a comprehensive lecture series, live team projects, exercises, and project-specific mentoring.
- ❖ They will also have access to a deep tech startup playbook, curated video library, and plenty of peer-to-peer learning opportunities. The AIM-PRIME program is specifically tailored for the rapid scaling up of deep-tech science ventures in India, providing not just the necessary intellect and support but also the exposure they rightly deserve.

### Conclusion

Covid-19 crisis and its learning offer a once-in-a generation opportunity to leap-frog children and youth into fast moving, competitive, interconnected and digitalized economies.

Lessons learned regarding progress and challenges in the nine countries, “And shall offer a roadmap to accelerate progress on digital learning and skills including closing the digital divide based on country context and led by countries”.

### Anamaya' Initiative

#### News Excerpt

Recently, Anamaya, the Tribal Health Collaborative was launched by Union Minister of Health and Family Welfare and Union Minister of Tribal Affairs.

The Collaborative is a multi-stakeholder initiative of Tribal Affairs Ministry supported by Piramal Foundation and Bill and Melinda Gates Foundation (BMGF).

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#### Pre-Connect

Recently, the Tribal TB Initiative was launched by both the Ministries to fulfil the Prime Minister’s goal of ‘TB Mukh Bharat’ by 2025, five years ahead of the global deadline.

#### Need of such initiative

- Though India has seen a significant improvement in access and quality of healthcare services in the last decade, this has not equitable across its diverse geographies and social welfare.
- The tribal population despite improvement over the years, disproportionately share the burden of poverty, death and diseases compared to their non-tribal counterparts and face a myriad of obstacles when accessing public health systems.
- These include the lack of health facilities in indigenous communities and cultural differences with the health care providers such as differences in languages, human resource shortages, poor treatment seeking behaviour, difficult terrain and infrequent transport among others.

#### About the Initiative

- "Anamaya" will bring together governments, philanthropists, national and international foundations, NGOs to end "all preventable deaths" among the tribal communities of India.
- The initiative aims to build a sustainable, high-performing health eco-system to address the key health challenges faced by the tribal population of the country.
- The THC will begin its operations with 50 tribal, aspirational districts (with more than 20 per cent ST population) across six high tribal population states.
- It will be extended to 177 tribal districts over the next 10 years.

### ‘SARTHAQ’ Plan

#### News Excerpt

Recently, in pursuance of the goals and objectives of the National Education Policy (NEP) 2020 the Department of School Education and Literacy has developed an indicative and suggestive Implementation Plan for School Education, called ‘Students’ and Teachers’ Holistic Advancement through Quality Education (SARTHAQ)’.

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#### Pre-Connect

The plan keeps in mind the concurrent nature of education and adheres to the spirit of federalism. States and UTs are given the flexibility to adapt this plan with local contextualization and also modify as per their needs and requirements. This implementation plan delineates the roadmap and way forward for implementation of NEP, 2020 for the next 10 years, which is very important for its smooth and effective implementation.

#### About SARTHAQ

- SARTHAQ has been developed through wide and intensive consultative process with States and UTs, Autonomous bodies and suggestions received from all stakeholders; around 7177 suggestions/inputs were received from them.
- The major focus of SARTHAQ is to define activities in such a manner which clearly delineate goals, outcomes and timeframe i.e., it links recommendation of NEP with 297 Tasks along with responsible agencies, timelines and 304 outputs of these Tasks.
- Attempt has also been made to propose activities in a manner, such that it will be built upon the existing structure rather than creating new structures. Thus, SARTHAQ takes

care of the spirit and intent of the Policy and is planned to be implemented in a phased manner.

- SARTHAQ has also been prepared as an evolving and working document and is broadly suggestive/indicative in nature and will be updated from time to time based on the inputs/feedback received from the stakeholders.

**Following outcomes have been envisaged for entire education system after implementation of SARTHAQ:**

- New National and State Curriculum Frameworks for School Education, Early Childhood Care and Education, Teacher Education and Adult Education will be developed encompassing the spirit of NEP and will pave way for curriculum reforms.
- Increase in Gross Enrolment Ratio (GER), Net Enrolment Ratio (NER), transition rate and retention rate at all levels and reduction in drop outs and out of school children.
- Access to quality ECCE and Universal Acquisition of Foundational Literacy and Numeracy by Grade 3.
- Improvement in Learning Outcomes at all stages with emphasis on teaching and learning through mother tongue/local/regional languages in the early years.
- Integration of vocational education, sports, arts, knowledge of India, 21st century skills, values of citizenship, awareness of environment conservation, etc. in the curriculum at all stages.
- Introduction of Experiential learning at all stages and adoption of innovative pedagogies by teachers in classroom transaction.
- Reforms in Board exams and various entrance tests.
- Development of high quality and diversified teaching-learning material.
- Availability of text books in Regional/local/home language.
- Improvement in quality of Teacher Education Programmes.
- Improvement in quality of newly recruited teachers and capacity building through Continuous Professional Development.
- Safe, Secure, inclusive and conducive learning environment for students and teachers.
- Improvement in infrastructure facilities including barrier free access and sharing of resources among schools.
- Uniform standards in learning outcomes and governance across public and private schools through setting-up of an online, transparent public disclosure system through establishment of SSSA in states.
- Integration of technology in educational planning and governance and availability of ICT and quality e-content in classrooms.

**Conclusion**

- ✓ SARTHAQ will pave the way for our children and youth to meet the diverse national and global challenges of the present and the future and help them to imbibe 21st century skills along with India’s tradition, culture and value system as envisioned in National Education Policy 2020.
- ✓ The implementation of SARTHAQ would benefit all stakeholders including 25 crore students, 15 lakh schools, 94 lakh teachers, Educational Administrators, Parents, and community as education is the backbone of an equitable and just society.

**MANAS: Mental-Health Digital platform**

**News Excerpt**

Recently, The Principal Scientific Adviser to the Government of India launched the “MANAS” App to promote wellbeing across age groups. MANAS which stands for Mental Health and Normalcy Augmentation System was endorsed as a national program by the Prime Minister’s Science, Technology, and Innovation Advisory Council (PM-STIAC).

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**About the App**

- MANAS is a comprehensive, scalable, and national digital wellbeing platform and an app developed to augment mental well-being of Indian citizens.

- MANAS App integrates the health and wellness efforts of various government ministries, scientifically validated indigenous tools with gamified interfaces developed/researched by various national bodies and research institutions.
- MANAS was initiated by the Office of the Principal Scientific Adviser to the Government of India. It was jointly executed by NIMHANS Bengaluru, AFMC Pune and C-DAC Bengaluru.

**Features of the App**

- The app must be integrated with the public health schemes like the National Health Mission, Poshan Abhiyan, e-Sanjeevani and others so that it is used widely. Besides, the application must be made multi-lingual.
- With a motto of Uttam Mann, Saksham Jan, MANAS as an initiative is intended to build a healthier and happier community, to empower it to nurture its innate potential for building a Swasth and Aatmanirbhar Bharat.
- MANAS is based on life skills and core psychological process, with universal accessibility, delivering age-appropriate methods and promoting positive attitude focusing on wellness.
- Catering to the overall wellbeing of people of all age groups, the initial version of MANAS focuses on promoting positive mental health in the age group of 15-35 years.



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## ECONOMY

### Suez Canal Blockage

#### News Excerpt

On March 23, 2021, the container ship *Ever Given*, one of the largest of the world, ran aground in the Suez Canal. When the Canal was re-opened on 29 March 2021, more than 350 ships were queuing at both ends. It took six days to bring queues to normal levels.

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#### Pre-Connect

#### Significance of the Suez Canal

- About 10% of all global trade flows through the 193-kilometer-long canal, which allows tankers and container ships to avoid a long trip around the southern tip of Africa.
- About 12% of global trade, around one million barrels of oil and roughly 8% of liquefied natural gas pass through the canal each day.
- In 2020, nearly 19,000 ships, or an average of 51.5 ships per day, with a net tonnage of 1.17 billion tonnes passed through the canal.

#### The Suez Canal

- It is an artificial sea-level waterway running north to south across the Isthmus of Suez in Egypt to connect the Mediterranean Sea and the Red Sea.
- The canal separates the African continent from Asia, and it provides the shortest maritime route between Europe and the lands lying around the Indian and western Pacific oceans. It is one of the world's most heavily used shipping lanes.
- Tolls paid by the vessels represent an important source of income for the Egyptian government.

#### Analytica

#### Impact on Global Supply Chains

- The United States and Western Europe were the regions most affected by the disruption. The latter experienced shortages of critical components such as vehicles, plastics and electronics materials for manufacturing. In the U.S., affected items included high-end kitchen and bathroom linens, construction materials, rubber, electrical items, some pharmaceutical supplies, and vehicle parts and accessories.
- The automotive industry was already suffering from a shortage of semiconductor chips, caused in part by a surge in demand for consumer electronics. The impact was especially felt due to the sector's reliance on just-in-time supply of parts to the factory, and the minimization of inventory.
- In response, companies and governments are looking to diversify sourcing of key materials, with the goal of near-shoring or on-shoring critical goods that have been exclusively produced in Asia. Such moves could result in permanent higher costs for global supply chains intent on mitigating the risk of future disruptions.
- Since *Ever Given*'s problems in the Suez Canal late March, container freight rates have surged more than 10% to a new high. This has forced companies to resort to airfreight which is substantially more expensive and rail transportation which is considerably slower. As such, global supply chains are still snarled up.
- The situation is exacerbated by a resumption in some manufacturing operations, which had been mired in the doldrums due to the coronavirus pandemic. This trade resumption had pushed the volume of container traffic from Asia to the U.S. to a record high in March.

#### India - The biggest importer via Suez Canal

India is the top importer of crude oil and products via the Suez Canal, higher than China, South Korea or Singapore, according to data from Vortexa, an oil and gas analytics platform. And more than two-thirds of India's crude comes from the Gulf region. According to Vortexa, India imports around 500,000 barrels per day of crude products via the Suez Canal, followed by China, which imports just above 400,000 barrels per day, and South Korea and Singapore, which import a little less than 400,000 barrels per day from the Suez Canal.

#### Suez Canal Blockage: A catalyst for Innovation

- ✓ Shipping is the world's largest and one of the oldest sharing economies. Infrastructure, resources, and the natural environment are co-used by many actors requiring coordination for optimal operations.

- ✓ During the Suez Canal blockage, ship queues increased quickly. The day after the Canal re-opened, maritime supply chain actors could not estimate when a ship waiting in line or heading towards the Canal would pass through. This uncertainty highlighted the need for better tools to establish situational awareness and forecast flows of ships.
- ✓ Assigning a queue number to each of the ships arriving at the Canal could improve operation. Expanding and predictions about ships heading towards the Canal, queue numbers might form a foundation for optimizing the timings for any ship to pass through the passage.
- ✓ Inspired by how human practices are arranged, it would be reasonable to consider implementing “virtual arrival and transit tickets”, awarded while the ship is en-route. This would be the first step towards a need-driven, slot-based model where queue numbers are determined prior to ship arrival. This would be a shift from governance based on actual arrivals to virtual arrivals adopting the appointment economy.
- ✓ The first-come, first-served principle may turn out to be outdated. Sharing data with trusted parties to build intelligence is an obvious goal in the digital age. Maritime digitalisation is accelerating and an essential part of the solution. A maritime chokepoint deblocking model allowing for coordination prior to the physical arrival seems a timely call to action in today’s turbulent times.

**WTO Peace Clause**

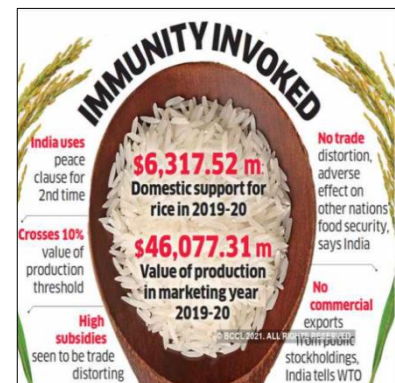
**News Excerpt**

India has recently invoked the peace clause at the World Trade Organization (WTO), for the second time, for exceeding the 10 per cent ceiling on support it offered to its rice farmers. The country informed the WTO that the value of its rice production in 2019-20 was \$46.07 billion while it gave subsidies worth \$6.31 billion, or 13.7 per cent as against the permitted 10 per cent.

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**Pre-Connect**

- The peace clause protects India’s food procurement programmes against action from WTO members in case the subsidy ceilings – 10 per cent of the value of food production in the case of India and other developing countries – are breached.
- India had earlier invoked the clause for 2018-19, when it became the first country to do so.
- The US, EU, Canada, Brazil, Japan and Paraguay had last year questioned India for invoking the peace clause for breaching the subsidy ceilings as subsidies are seen to be distorting global trade.



**Analytica**

**India’s Stand**

- India ensures food security through the minimum support price (MSP) programme, and Public Distribution System and National Food Security Act, 2013.
- It told the WTO that the main objectives of the food security programmes are ensuring MSP to farmers, stability in food grain prices and their equitable distribution at affordable prices to the marginalised and vulnerable sections of society throughout the year, maintaining an adequate buffer stock of foodgrains to deal with fluctuations in production and meeting unforeseen exigencies and natural calamities.
- India's breach of commitment for rice, a traditional staple food crop, under the Agreement on Agriculture arises from support provided in pursuance of public stockholding programmes for food security purposes which were in existence as on the date of the Bali Ministerial Decision on Public Stockholding for Food Security Purposes.
- Government does not undertake exports on a commercial basis from public stockholdings. Additionally, open market sales of food grains from public stockholding are made, provided the buyer gives an undertaking of not exporting from such purchase.
- In its notification to the organisation, India said that under its public stockholding programmes for food security purposes, rice, wheat, coarse cereals and pulses, among others, are acquired and released in order to meet the domestic food security needs of the

country's poor and vulnerable population, and “not to impede commercial trade or food security of others”. For these reasons, the breach of the de minimis limits for rice is covered by the peace clause.

- According to experts, the peace clause can't be challenged and because of this flexibility, distribution of food grains to the poor can be done for free which is crucial during the pandemic.

### The World Trade Organization (WTO)

- ✚ It is the only global international organization dealing with the rules of trade between nations. At its heart are the WTO agreements, negotiated and signed by the bulk of the world's trading nations and ratified in their parliaments. The goal is to ensure that trade flows as smoothly, predictably and freely as possible.
- ✚ The WTO has many roles: it operates a global system of trade rules, it acts as a forum for negotiating trade agreements, it settles trade disputes between its members and it supports the needs of developing countries.
- ✚ The WTO's top decision-making body is the Ministerial Conference. Below this is the General Council and various other councils and committees.
- ✚ Ministerial conferences usually take place every two years. The General Council is the top day-to-day decision-making body. It meets a number of times a year in Geneva.
- ✚ The WTO has over 160 members representing 98 per cent of world trade.
- ✚ To join the WTO, a government has to bring its economic and trade policies in line with WTO rules and negotiate its terms of entry with the WTO membership.
- ✚ The WTO derives most of the income for its annual budget from contributions by its members. These contributions are based on a formula that takes into account each member's share of international trade.
- ✚ Ngozi Okonjo-Iweala is the seventh Director-General of the WTO. She took office on 1 March 2021, becoming the first woman and the first African to serve as Director-General.

### ECGLS 3.0

#### News Excerpt

In recognition of the continuing adverse impact of COVID-19 pandemic on certain service sectors, the Government has extended the scope of Emergency Credit Line Guarantee Scheme (ECLGS) through introduction of ECLGS 3.0 to cover business enterprises in Hospitality, Travel & Tourism, Leisure & Sporting sectors.

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#### Pre-Connect

The ECLGS aims to provide 100 percent guaranteed coverage to the banks, non-banking financial institutions (NBFCs) and other lending institutions in order to enable them to extend emergency credit to business entities that have suffered due to the Covid-19 pandemic and are struggling to meet their working capital requirements.

#### ECGLS 1.0

- The ECLGS was launched as part of the Rs 20 lakh crore Covid-19 relief package called the Aatmanirbhar Bharat Abhiyan. The scheme aimed to provide Rs 3 lakh crore worth of collateral-free, government-guaranteed loans to micro, small and medium enterprises (MSMEs) across India to mitigate the distress caused by the coronavirus-induced lockdown
- ECLGS 1.0 had a 1-year moratorium period and a 4-year repayment period.
- Under the scheme, borrowers could avail of additional credit of up to 20 percent of their overall outstanding credit as on February 29, 2020. The scheme was envisaged to provide collateral-free and fully guaranteed credit to entities that had outstanding credit of up to Rs 25 crore as of February 29, 2020, with an annual turnover cap of Rs 100 crore for the financial year 2019-2020.
- The scheme was valid till October 2020 but was later extended till November end.

#### ECGLS 2.0

- In November 2020, Finance Minister announced the launch of ECLGS 2.0 by extending the Rs 3 lakh crore scheme to support 26 stressed sectors identified by the Kamath Committee and the healthcare sector. The scheme was valid till March 31, 2021.
- These sectors included power, construction, iron and steel manufacturing, roads, real estate, textiles, chemicals, consumer durables, non-ferrous metals, pharma manufacturing, logistics, gems and jewellery, cement, auto components, hotels-restaurants-tourism, mining, plastic product manufacturing, automobile manufacturing, auto dealerships, aviation, sugar, ports and port services, shipping, building materials, and corporate retail outlets.
- The tenor of the credit under ECLGS 2.0 was five years, including a one-year moratorium. Companies with dues of Rs 50-500 crore as on February 29, 2020 were eligible, as announced by Finance Minister.
- The ceiling for outstanding credit was increased from Rs 25 crore to Rs 50 crore under ECLGS 2.0.

### **ECGLS 3.0**

- ✓ In order to support the Hospitality, Travel and Tourism, Leisure, and Sporting sectors, which are among those most affected by the Covid-19 pandemic, the government on March 31 widened the scope of the Rs 3 lakh crore scheme by announcing ECLGS 3.0.
- ✓ ECLGS 3.0 would involve extension of credit of upto 40% of total credit outstanding across all lending institutions as on 29.02.2020. The tenor of loans granted under ECLGS 3.0 shall be 6 years including moratorium period of 2 years.
- ✓ Under ECLGS 3.0, business enterprises in the hospitality, travel and tourism, leisure and sporting sectors would be able to avail credit under the scheme.
- ✓ It also extended ECLGS 1.0 and ECLGS 2.0, along with ECLGS 3.0, to June 30, 2021.

### **Impact of the ECGL Scheme**

According to National Credit Guarantee Trustee Company (NCGTC), following are the impacts of the scheme:

1. The ECLGS has reduced borrowing costs for all firms.
2. It is perceived primarily as a tool for immediate liquidity support, up to three months, rather than business growth. The worst affected zones feel that a loan would benefit them more.
3. The majority of the eligible customers of Member Lending Institutions (MLIs) (60% - 90%) have utilized Guaranteed Emergency Credit Line (GECL). It is easy to obtain from the MLIs. Hence, it has become quite popular.
4. Econometric analysis suggests that an increase in the percentage of disbursement will not only enhance business volumes for all borrowers, but also be more effective for the smallest firms and the worst affected during the lockdown.
5. MLIs feel that GECL will improve their credit offtake as well.

### **NCGTC**

- ❖ Subsequent to the Central Budget announcements to set up various credit guarantee funds, a common trustee company in the name and style of National Credit Guarantee Trustee Company Ltd [NCGTC] was set up by the Department of Financial Services, Ministry of Finance, Government of India to, inter alia, act as a common trustee company to manage and operate various credit guarantee trust funds.
  - ❖ NCGTC was incorporated under the Indian Companies Act, 1956 on March 28, 2014 with a paid-up capital of ₹10 crore
- Current Trust Funds under the trusteeship management of NCGTC:
- 1) **Credit Guarantee Fund for Skill Development (CGFSD)**
  - 2) **Credit Guarantee Fund for Education loans (CGFEL)**
  - 3) **Credit Guarantee Fund for Factoring (CGFF)**
  - 4) **Credit Guarantee Fund for Micro Units (CGFMU)**
  - 5) **Credit Guarantee Fund for Stand-up India (CGFSI)**

### **Concerns Associated with the Scheme**



According to National Credit Guarantee Trustee Company (NCGTC), following are the concerns associated with the scheme:

1. The disbursement patterns are unequal – a large proportion of borrowers have received a small share of the total GECL.
2. The utilization rate is low for the smallest borrowers, manufacturing firms and those worst affected during the lockdown phase.
3. The utilization rate is lowest for customers of public sector banks, among all bank groups, though they offer the cheapest rates.

### Recommendations

Recommendations by the National Credit Guarantee Trustee Company (NCGTC) are as follows:

1. **Introduce progressive subsidization:** Most respondents observe that the amount disbursed is inadequate. As a result, many borrowers have not utilized GECL. The smallest of borrowers may be given a higher limit than 20% of their outstanding credit, to reverse the inequality in distribution and make the scheme more effective. For instance, Micro enterprises may be given a limit of 50% while medium enterprises may continue to attract 20%.
2. **Zero or simpler documentation:** Since second charge is available to NCGTC and banks get 100% loan guarantee, there should be no documentation for GECL. In case it is unavoidable, it should be simplified to reduce the cost and delay associated with procedures like registrations and payment of stamp duty.
3. **Based on sanctioned limit:** The disbursement may be linked to Working capital or CC limit.
4. **Moratorium on interest:** If the interest cannot be waived off during the lockdown phase, there may be a moratorium on it along with the principal component, during the first twelve months.
5. **Another loan:** There is clear evidence that GECL has provided valuable liquidity support. With the unlock process underway, throughout the country, a second loan may be given to improve business volumes and support growth prospects.

## Sudarshan Sen Committee

### News Excerpt

The RBI recently set up a committee to undertake a comprehensive review of the working of asset reconstruction companies (ARCs) in the financial sector ecosystem and recommend suitable measures for enabling them to meet the growing requirements.

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### Highlights

- The six-member committee will be headed by Sudarshan Sen, former executive director, Reserve Bank of India (RBI).
- As per the terms of reference of the committee, the panel will review the existing legal and regulatory framework applicable to ARCs and recommend measures to improve efficacy of ARCs.
- It will also review the role of ARCs in the resolution of stressed assets, including under the Insolvency and Bankruptcy Code (IBC), and give suggestions for improving liquidity and trading of security receipts.
- Besides, it has also been asked to review the business models of ARCs.
- The committee is expected to submit its report within three months from the date of its first meeting.

### Analytica

- While the Centre has announced an asset reconstruction (ARC) and asset management company backed by government guarantee to address the problem of NPAs with public sector banks, the existing ARC industry has registered a lacklustre performance so far.
- According to a Reserve Bank of India (RBI) report on ARCs, the growth of the ARC industry has not been consistent over time and not always been synchronous with the trends in non-performing assets (NPAs) of banks and non-banking financial companies (NBFCs). However, it supported the government’s proposal for a new ARC, saying that “such an entity will strengthen the asset resolution mechanism further.”

- During 2019-20, asset sales by banks to ARCs declined, which could probably be due to banks opting for other resolution channels such as IBC and SARFAESI. The acquisition cost of ARCs as a proportion to the book value of assets declined, suggesting lower realisable value of the assets.
- The ARC industry began with the establishment of the Asset Reconstruction Company India Ltd (ARCIL) in 2003. After remaining subdued in the initial years of their inception, a jump was seen in the number of ARCs in 2008, and then in 2016. Although the number of ARCs has risen over time, their business has remained highly concentrated.
- According to RBI report, of the total Assets under Management, about 62 per cent and 76 per cent was held by the top-three and top-five ARCs in March 2020, respectively. Furthermore, in terms of the capital base of the industry, 62 per cent was held by top three ARCs; the corresponding share was 67 per cent for the top five ARCs.
- Indian ARCs have been private sector entities registered with the Reserve Bank. Public sector AMC's in other countries have often enjoyed easy access to government funding or government-backed. By contrast, capital constraints have often been highlighted as an area of concern for ARCs in India.
- According to the RBI study, the movement in asset quality of banks and NBFCs following the Covid-19 pandemic could bring ARCs into greater focus and action.
- Introduction of a new asset reconstruction company for addressing the NPAs of public sector banks may also shape the operations of the existing ARCs
- There is a definite scope for the entry of a well-capitalised and well-designed entity in the Indian ARC industry. Such an entity will strengthen the asset resolution mechanism further.
- As per the World Bank and the Financial Stability Institute: a narrow mandate (such as resolving NPAs) with clearly defined goals; a sunset clause defining their lifespan; supportive legal infrastructure involving bankruptcy and private property laws; backing of a strong political will to recognise problem loans; a commercial focus of the AMC including governance, transparency, and disclosure requirements are essential for success of AMC.

## The Pre-pack under Insolvency and Bankruptcy Code

### News Excerpt

The central government has promulgated an ordinance allowing the use of pre-packs as an insolvency resolution mechanism for Micro, Small and Medium Enterprises (MSMEs) with defaults up to Rs 1 crore, under the Insolvency and Bankruptcy Code.

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### Pre-Connect

- The move comes soon after the end of a one-year suspension of insolvency initiation imposed by the government in light of the Covid-19 pandemic.
- The government had last year also increased the minimum default threshold for insolvency proceedings from Rs 1 lakh to Rs 1 crore.
- India currently has about 6-7 lakh companies that are classified as MSMEs and potentially these many could benefit from the newly introduced pre-packaged insolvency framework.
- The government has deemed it fit to first introduce pre-packs for MSMEs as they are critical for India's economy and they contribute significantly for the country's gross domestic product besides providing employment to a sizeable population.
- Also, MSMEs in India have relatively suffered most during the current pandemic times. Also, with threshold of debt default at ₹ 1 crore now under IBC, most of the MSMEs are out of this range.

### Analytica

#### What are the Pre Packs?

- A pre-pack is the resolution of the debt of a distressed company through an agreement between secured creditors and investors instead of a public bidding process.
- This system of insolvency proceedings has become an increasingly popular mechanism for insolvency resolution in the UK and Europe over the past decade.
- Under the pre-pack system, financial creditors will agree to terms with a potential investor and seek approval of the resolution plan from the National Company Law Tribunal (NCLT).

- The approval of a minimum of 66 per cent of financial creditors that are unrelated to the corporate debtor would be required before a resolution plan is submitted to the NCLT.
- Further NCLTs are also required to either accept or reject any application for a pre-pack insolvency proceeding before considering a petition for a Corporate Insolvency Resolution Process.
- According to sources aware of developments, pre-packs are largely aimed at providing MSMEs with an opportunity to restructure their liabilities and start with a clean slate while still providing adequate protections so that the system is not misused by firms to avoid making payments to creditors.

**The benefits of pre-packs over the Corporate Insolvency Resolution Process (CIRP)**

- ✓ One of the key criticisms of the CIRP has been the time taken for resolution. At the end of December 2020, over 86 per cent of the 1717 ongoing insolvency resolution proceedings had crossed the 270-day threshold. One of the key reasons behind delays in the CIRPs are prolonged litigations by erstwhile promoters and potential bidders.
- ✓ The pre-pack in contrast is limited to a maximum of 120 days with only 90 days available to the stakeholders to bring the resolution plan to the NCLT.
- ✓ Another key difference between pre-packs and CIRP is that the existing management retains control in the case of pre-packs while a resolution professional takes control of the debtor as a representative of financial creditors in the case of CIRP. Experts note that this allows for minimal disruption of operations relative to a CIRP.

**The Impact of the Pre Packs**

- Experts noted that the pre-pack provisions introduced by the central government also provided for adequate protection to ensure the provisions were not misused by errant promoters.
- The pre-pack mechanism allows for a swiss challenge for any resolution plans which proved less than full recovery of dues for operational creditors.
- Under the swiss challenge mechanism, any third party would be permitted to submit a resolution plan for the distressed company and the original applicant would have to either match the improved resolution plan or forego the investment.
- The option available to creditors to require the promoters dilute their shareholding in case the resolution plan provides for impairment of claims by creditors would also be a significant deterrent against “unreasonable terms” in resolution plans.
- Creditors are also permitted to seek resolution plans from any third party if they are not satisfied with the resolution plan put forth by the promoter.

**Way Forward**

- ✚ As with any legislation, this Ordinance will also need to evolve, as it goes along to address implementation issues which will arise. Illustratively, the payment/ restructuring terms to dissenting creditors may have to be dealt with soon.
- ✚ Currently government has restricted Prepacks provisions for MSME and will extend to other Corporates in sometime. Prepacks will help Corporate Debtors to enter into consensual restructuring with lenders and address entire liability side of the Company.
- ✚ Government needs to further augment the NCLT’s infrastructure so that prepacks can be implemented in time bound manner.
- ✚ Government may consider setting up specific benches looking at Prepack and Insolvency above certain size to expedite resolution of large cases in timebound manner.
- ✚ This newly introduced framework for MSMEs, inter alia providing for quicker & cost effective resolution and permitting debtor to be in control, may fairly be expected to further strengthen both the financial and operational position of MSMEs, importantly under prevailing Covid crises.

**World Economic Outlook**

**News Excerpt**

The Washington-based global financial institution, International Monetary Fund (IMF) in its annual World Economic Outlook ahead of the annual Spring meeting with the World Bank, said the Indian economy is expected to grow by 6.9 per cent in 2022.

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## Pre-Connect

- Notably in 2020, India's economy contracted by a record eight per cent. The International Monetary Fund (IMF) projected an impressive 12.5 per cent growth rate for the country in 2021.
- China, on the other hand, which was the only major economy to have a positive growth rate of 2.3 per cent in 2020, is expected to grow by 8.6 per cent in 2021 and 5.6 per cent in 2022.
- In 2020, the global economy contracted by 3.3 per cent.

## Analytica

- The outlook presents daunting challenges related to divergences in the speed of recovery both across and within countries and the potential for persistent economic damage from the crisis.
- According to the report, after an estimated contraction of 3.3 per cent in 2020, the global economy is projected to grow at 6 per cent in 2021, moderating to 4.4 per cent in 2022.
- The contraction for 2020 is 1.1 percentage points smaller than projected in the October 2020 World Economic Outlook (WEO), reflecting the higher-than-expected growth outturns in the second half of the year for most regions after lockdowns were eased and as economies adapted to new ways of working.
- The projections for 2021 and 2022 are 0.8 percentage point and 0.2 percentage point stronger than in the October 2020 WEO, reflecting additional fiscal support in a few large economies and the anticipated vaccine-powered recovery in the second half of the year.
- Global growth is expected to moderate to 3.3 per cent over the medium term, reflecting projected damage to supply potential and forces that predate the pandemic, including aging-related slower labour force growth in advanced economies and some emerging market economies.
- Pandemic recoveries are also diverging dangerously across and within countries, as economies with slower vaccine rollout, more limited policy support, and more reliant on tourism do less well.
- The average annual loss in per capita GDP over the 2020-24 period relative to pre-pandemic forecasts is expected to be 5.7% in low-income countries and 4.7% in emerging markets. For advanced economies, this number is a lower: 2.3%.
- Pandemic pushed another 95 million into extreme poverty in 2020.
- Such losses are reversing gains in poverty reduction, with an additional 95 million people expected to have entered the ranks of the extreme poor in 2020 compared with pre-pandemic projections.
- Women have suffered more, especially in emerging market and developing economies. Because the crisis has accelerated the transformative forces of digitalization and automation, many of the jobs lost are unlikely to return, requiring worker reallocation across sectors—which often comes with severe earnings penalties.
- The COVID-19 pandemic is expected to 'leave smaller scars' than the 2008 financial crisis, due to the unprecedented policy response. However, emerging markets and low-income countries are expected to suffer more medium-term than their high-income counterparts according to the IMF.

## What needs to be done?

- ✓ Policymakers will need to continue supporting their economies while dealing with more limited policy space and higher debt levels than prior to the pandemic.
- ✓ This requires better targeted measures to leave space for prolonged support if needed. With multi-speed recoveries, a tailored approach is necessary, with policies well-calibrated to the stage of the pandemic, the strength of the economic recovery, and the structural characteristics of individual countries.
- ✓ At present, the emphasis should be on escaping the health crisis by prioritising health care spending, on vaccinations, treatments, and health care infrastructure. Fiscal support should be well targeted to affected households and firms.
- ✓ The report called for international cooperation, specifically to ensure adequate vaccine access globally, including by sufficiently funding COVAX, the international vaccine facility.
- ✓ Monetary policy should remain accommodative (where inflation is well behaved), while proactively addressing financial stability risks using macroprudential tools.



- ✓ Once the health crisis is over, policy efforts can focus more on building resilient, inclusive, and greener economies, both to bolster the recovery and to raise potential output.
- ✓ The priorities should include green infrastructure investment to help mitigate climate change, digital infrastructure investment to boost productive capacity and strengthening social assistance to arrest rising inequality.
- ✓ The international community also needs to work together to ensure that financially constrained economies have adequate access to international liquidity so that they can continue needed health care, other social, and infrastructure spending required for development and convergence to higher levels of income per capita.

## Government Securities Acquisition Programme (G-SAP)

### News Excerpt

Keeping policy rates unchanged, the Reserve Bank of India recently sought to quell the concerns of market participants over rising bond yields. Reiterating the RBI's commitment to maintaining the current accommodative policy stance until the economy is back on track, the Governor enthused the markets with a new programme — Government Securities Acquisition Programme (G-SAP).

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### Highlights

- Through G-SAP, RBI will purchase government securities worth Rs 1 lakh crore in the first quarter of FY22.
- The RBI also announced that it will continue with a variable rate reverse repo to suck excess liquidity.
- RBI Governor declared that the RBI will conduct open market purchase of government securities (G-secs) of Rs 1 lakh crore under the G-SAP 1.0 in the first quarter of this financial year.
- G-SAP will run alongside RBI's regular operations, including Liquidity Adjustment Facility (LAF), open market operations (OMOs) and Operation Twist.

### Analytica

#### Benefits of G-SAP

- Market participants say they have always wanted to know the RBI's Open Market Operations (OMO) purchase calendar, and the RBI has now provided that to the market through this announcement on GSAP.
- A report by Edelweiss Mutual Fund states that it will provide certainty to the bond market participants with regard to RBI's commitment of support to the bond market in FY22.
- The RBI has purchased ~Rs. 3.13 trillion worth of bonds from the secondary market in FY21. However, it was carried out in an ad hoc manner with the market awaiting RBI OMO purchase announcements. A structured purchase program of similar size such as this will definitely calm investors' nerves and help market participants to bid better in scheduled auctions and reduce volatility in bond prices.
- The report notes that the announcement of this structured programme will help reduce the spread between the repo rate and the 10-year government bond yield. That, in turn, will help to reduce the aggregate cost of borrowing for the Centre and states in FY22.
- Experts say that the move to introduce G-SAP would rein in sharp spike in G-Sec bond yields. Introduction of long-term VRRR (variable rate reverse repo) is an extension towards normalising liquidity, liquidity surplus however will and is likely to continue. It is expected that the yield curve will flatten from the current levels with the longer end of the yield curve compressing faster than the short end.

## e-SANTA

### News Excerpt

Union Commerce and Industry Minister recently virtually inaugurated **e-SANTA**, an electronic marketplace providing a platform to connect aqua farmers and the buyers.

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### Highlights

- The term **e-SANTA** was coined for the web portal, meaning **Electronic Solution for Augmenting NaCSA farmers' Trade in Aquaculture**.

- National Centre for Sustainable Aquaculture (NaCSA) is an extension arm of Marine Products Export Development Authority (MPEDA), Govt. of India, Ministry of Commerce & Industry.
- e-Santa aims to enable the farmers to get a better price and the exporters to directly purchase quality products from the farmers enhancing traceability, a key factor in international trade.
- The platform aims to change the traditional way of carrying out business from a word-of-mouth basis to become more formalised & legally binding.
- Government believes that e-SANTA will **RAISE** the lives & income of farmers by:
  - **Reducing Risk**
  - **Awareness of Products & Markets**
  - **Increase in Income**
  - **Shielding Against Wrong Practice**
  - **Ease of Processes**

### **Benefits of e-SANTA**

- e-SANTA is a Digital Bridge to end the market divide and will act as an alternative marketing tool between farmers & buyers by eliminating middlemen.
- It will revolutionize traditional aquafarming by providing cashless, contactless and paperless electronic trade platform between farmers and exporters.
- e-SANTA can become a tool to advertise collectively the kind of products the buyers, fishermen & fish producing organisations are harvesting, so people in India & internationally can know what is available & in the future, it can become an auction platform.
- The Platform is available in many languages, which will help the local population.
- Farmers face monopoly and exploitation, exporters face inconsistency and quality gaps in the products purchased, and traceability is a big issue in international trade. e-SANTA aims to remove these hurdles.
- The farmers have the freedom to list their produce and quote their price while the exporters have the freedom to list their requirements and also to choose the products based on their requirements such as desired size, location, harvest dates etc. This enables the farmers and buyers to have greater control over the trade and enables them to make informed decisions.
- It is considered as another feather in the cap of Atmanirbhar Bharat Abhiyaan.

## **Agricultural Export**

### **News Excerpt**

India's export of Agricultural and allied commodities shows an impressive increase of 18.49 per cent during 2020-2021.

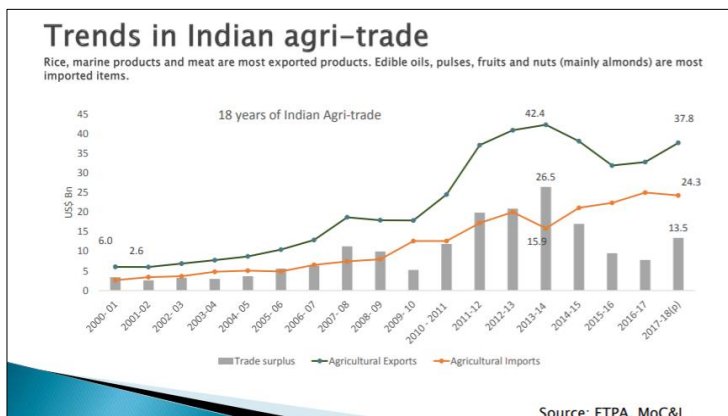
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### **Highlights of the Report**

- India has consistently maintained trade surplus in the agricultural products over the years. India's agricultural and allied exports during 2019-20 were Rs. 2.52 lakh Crores and imports were Rs. 1.47 lakh Crores.
- Even, during the difficult time of Pandemic, India took care not to disturb the world food supply chain and continued to export. The export of Agri and allied commodities during Apr,2020 - Feb,2021 were Rs. 2.74 lakh Crore as compared to Rs. 2.31 Crore in the same period last year indicating an increase of 18.49%.
- The commodities which posted significant positive growth in exports were wheat, Other Cereals, Rice (other than Basmati), Soya meal, Spices, Sugar, Raw Cotton, Fresh Vegetable, Processed Vegetables, and Alcoholic Beverages etc.
- Wheat and other cereals posted huge growth over last year, i.e., increasing from Rs. 425 Crore to Rs. 3283 Crore and Rs. 1318 Crore to Rs. 4542 Crore, respectively.

- On specific demand from countries, NAFED has exported 50,000 MT wheat to Afghanistan and 40,000 MT wheat to Lebanon under G2G arrangement. India has witnessed tremendous growth of 727 % for Wheat export.

- Country has witnessed significant growth of 132% in export of (Non-Basmati) Rice. Export of Non-Basmati Rice has gone up from Rs 13,030 crores in 2019-20 to Rs 30,277 crores in 2020-21. This increase in exports is on account of multiple factors, mainly being India capturing new markets namely, Timor-Leste, Papua New Guinea, Brazil, Chile, and Puerto Rico. Exports were also made to Togo, Senegal, Malaysia, Madagascar, Iraq, Bangladesh, Mozambique, Vietnam, Tanzania Rep and Madagascar.



- India also enhanced export of Soya meals by 132%. Soya meal has gone up from Rs 3087 crores in 2019-20 to Rs 7224 crores in 2020-21.

- Other commodities of Agri & Allied basket witnessing significant increase in export during April, 2020 to February, 2021 as compared to corresponding period during 2019-20, have been Spices (Rs 26257 crore vs Rs 23562 crore; growth 11.44%), Sugar (Rs 17072 crore vs Rs 12226 crore; growth 39.64%), Raw Cotton (Rs 11373 crore vs Rs 6771 crore; growth 67.96%), Fresh Vegetable (Rs 4780 crore vs Rs 4067 crore; growth 17.54%) and Processed Vegetables (Rs 2846 crore vs Rs 1994 crore; growth 42.69%)etc.

- The imports of Agri and allied commodities during April, 2020 – Feb, 2021 were Rs. 141034.25 Crore as compared to Rs. 137014.39 Crore in the same period last year witnessing a slight increase of 2.93%.

- Despite COVID-19, balance of trade in agriculture has favourably increased during April, 2020 – Feb, 2021 to Rs. 132,579.69 Crore as against Rs. 93,907.76 Crore during the same period in 2019-20.

### Analytica

#### Agriculture Export Policy

- A dynamic nation of around 1.3 billion consumers with rising discretionary incomes, changing food patterns, vast farming area, diverse agriculture and a large population dependent on agriculture has propelled India to the world’s centre stage as a big consumer market and also as a key supplier of food products.
- It has often been suggested that an essential element of “Make in India” has to be “Bake in India”, i.e. a renewed focus on value addition and on processed agricultural products.
- The rapidly growing global population and shrinking farmlands, coupled with changing socio-economic, agroclimatic and dietary patterns, have challenged scientists and policymakers to reconsider how we grow and feed 7.5 billion global citizens.
- India’s quest, then, is to grow sustainably, trade abundantly and progress harmoniously. Agriculture export, if properly supported by infrastructure, institutional back up, packaging, freight transport and connected to the internal production system backed by market access will be in a position to transform the agricultural economy.
- Challenges, however, are aplenty; from low farm productivity to poor infrastructure to global price volatility to market access. The vision of the present government to double farmer’s income by 2022 would require a series of interventions to improve production and productivity, better price realization for farm produce, along with economizing the cost of production. There has been a long felt need for a dedicated agricultural export policy in India.
- The Agriculture Export Policy is framed with a focus on agriculture export oriented production, export promotion, better farmer realization and synchronization within policies and programmes of Government of India.
- It is required to have a “Farmers’ Centric Approach” for improved income through value addition at source itself which will help to minimize losses across the value chain.

- India needs to have farmer-oriented strategy to achieve the twin objective of food security and a prominent agriculture exporter of the world.
- The policy will also give a big push to food processing/manufacturing to have much higher growth in food production which will increase India's share of value-added processed products in its Agriculture export basket at the global level. The broad objectives and vision are highlighted below:

### **India's Agriculture Export Policy- Objectives**

- ✓ To double agricultural exports from present ~US\$ 30+ Billion to ~US\$ 60+ Billion by 2022 and reach US\$ 100 Billion in the next few years thereafter, with a stable trade policy regime.
- ✓ To diversify our export basket, destinations and boost high value and value added agricultural exports including focus on perishables.
- ✓ To promote novel, indigenous, organic, ethnic, traditional and non-traditional Agri products exports.
- ✓ To provide an institutional mechanism for pursuing market access, tackling barriers and deal with sanitary and phytosanitary issues.
- ✓ To strive to double India's share in world agri exports by integrating with global value chain at the earliest.
- ✓ Enable farmers to get benefit of export opportunities in overseas market.

### **India's Agriculture Export Policy-Vision**

Harness export potential of Indian agriculture, through suitable policy instruments, to make India global power in agriculture and raise farmers income.

### **Challenges in Agri-Export**

#### **Challenge of Poverty**

- Tendulkar Committee estimated 21.9 per cent population was poor (2011-12)
- World Bank (2015) estimated 12.4 per cent poverty ratio at 1.9 USD per day for 2011-12 (PPP 2011)
- Differences in estimates due to various reasons including recall period
- Any hint of food inflation beyond 5% attracts action from Govt as it hits the poor
- Export of essential food items is discouraged when inflation/expectation is high

#### **Fragmented Nature of Indian Agriculture**

- Average land holding size 1.16 ha
- Small and marginal farmers (up to 2 ha) occupy 44% of operational area
- And the plots held by farmers may not be at one location
- Most of small farmers do not have access to bank credit
- These farmers are poorly placed to make required investments in farming

#### **Only Small Quantity of agri-items is available for exports**

- India has only marginal surpluses in most agri-products.
- Aggregation from small and marginal farmers is cumbersome and expensive
- Corporate agriculture is completely missing from Indian scene except for plantation crops
- Infrastructure for aggregation, assaying, storage and movement is rather poor to allow large exports from producing areas
- Uncertainty about Govt policies discourages private investment in value chain

#### **Emerging Threats for Rice Exports**

- Declining under-ground water level in most productive regions
- 52% of agriculture is rain-fed
- 78% of water resources used for agriculture
- 60% of irrigation water used for rice and sugar cane
- Punjab and Haryana-major rice exporting states are in acute crisis of under ground water
- When policies on free electricity and water reflect the true economic cost of water, production of rice will go down in north-west India.

#### **Challenges to Buffalo Meat Export**

- Restrictions were imposed in 2017 on trading of animals in markets
- Incentives for setting up integrated cold chains for meat withdrawn
- Exports are stagnating at about 4 billion USD for several years



### Policy Paralysis

- Exports of several commodities regulated through quotas, duties, minimum export prices, bans
- During FY 2002 to FY 2015, wheat and rice faced quantitative restrictions, Minimum Export Prices (MEPs), bans on future trading and exports
- Cotton export restricted through export duty and bans
- Export of pulses banned for several years
- Potato and onion subjected to MEP and bans in several years
- Edible oil exports restricted to small packs and in limited quantity

### Conclusion

- Major items of current agri-export basket are under threat due to ground water depletion and restrictive domestic policies
- Export clusters may be successful if high class infrastructure in built and trade policies remain predictable and stable
- Key to exports lies in domestic policies on subsidies, trade and infrastructure
- India unlikely to pose any serious threat to dominant players on global scene given the nature of its export regime.

## US puts India on Currency Watch list

### News Excerpt

India's Commerce Secretary recently questioned the rationale behind the U.S. government's decision to put India in the watchlist for currency manipulators, and said the list constituted an intrusion into the policy space needed by central banks around the world to meet their mandates.

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### Pre-Connect

- The U.S. Treasury Department had recently retained India in a watchlist for currency manipulators submitted to the U.S. Congress, citing higher dollar purchases (close to 5% of the GDP) by the Reserve Bank of India (RBI).
- Another trigger for the inclusion in the currency watchlist is a trade surplus of \$20 billion or more. India's trade surplus with the U.S. grew by about \$5 billion to \$23 billion in 2020-21 from around \$18 billion in the previous fiscal year as imports fell more sharply than exports in the COVID-affected year. India also ran an \$8 billion services trade surplus with the United States in 2020.
- The US treasury department puts a trading partner on the watchlist if that country had intervened in the currency market by higher levels than 2% of its GDP over a 12-month period, and had a current account surplus of 2% of GDP and a trade surplus with the US.
- In the latest semi-annual report submitted to US Congress, the monitoring list comprises China, Japan, Korea, Germany, Ireland, Italy, India, Malaysia, Singapore, Thailand and Mexico. All except Ireland and Mexico were covered in the December 2020 report as well.

### India's Stand

- The central bank's activity in the foreign exchange market has been perfectly balanced and completely legitimate within the accepted monetary policy mandate of central banks across the world.
- It is a mandate of the central bank to provide stability in the currency as a result of which central banks buy and sell foreign currency.
- Our overall reserves have been fairly steady at \$500 bn to \$600 bn. India is not accumulating reserves like China, which at one point had reserves of \$4 trillion.
- India had a steady holding pattern of forex reserves 'with ups and downs' based on market-based transactions that central banks may undertake.
- The RBI's official stand is that it would continue its intervention to avoid any undue volatility in the currency market.

### India-US trade in a nutshell

- ✓ India was the United States' 10th largest supplier of goods imports in 2019.
- ✓ India was the United States' 12th largest goods export market in 2019.
- ✓ India's export to US totalled \$57.7 billion in 2019, up 6.3% (\$3.4 billion) from 2018, and up 172.6% from 2009.

- ✓ The top export categories in 2019 were: precious metal and stone (diamonds) (\$11 billion), pharmaceuticals (\$7.6 billion), machinery (\$3.7 billion), mineral fuels (\$3.6 billion), and organic chemicals (\$2.8 billion).
- ✓ U.S. goods exports to India in 2019 were \$34.3 billion, up 3.3% (\$1.1 billion) from 2018 and up 108.5% from 2009.
- ✓ The top import categories in 2019 were: mineral fuels (\$8.2 billion), precious metal and stone (diamonds) (\$6.4 billion), aircraft (\$2.8 billion), machinery (\$2.4 billion), and organic chemicals (\$1.9 billion).
- ✓ Total export of agricultural products from India totalled \$2.6 billion in 2019. Leading categories include: spices (\$271 million), rice (\$230 million), essential oils (\$184 million), processed fruit & vegetables (\$142 million), and other vegetable oils (\$133 million).
- ✓ U.S. total exports of agricultural products to India totalled \$1.8 billion in 2019. Leading domestic export categories include: tree nuts (\$823 million), cotton (\$587 million), fresh fruit (\$62 million), dairy products (\$60 million), and pulses (\$37 million).
- ✓ U.S. imports of services from India were an estimated \$29.7 billion in 2019, 3.0% (\$864 million) more than 2018, and 143% greater than 2009 levels. Leading services imports from India to the U.S. were in the telecommunications, computer, and information services, research and development, and travel sectors.
- ✓ U.S. exports of services to India were an estimated \$24.3 billion in 2019, 4.8% (\$1.1 billion) more than 2018, and 144% greater than 2009 levels. Leading services exports from the U.S. to India were in the travel, intellectual property (computer software, audio and visual related products), and transport sectors.
- ✓ U.S. foreign direct investment (FDI) in India (stock) was \$45.9 billion in 2019, an 8.1% increase from 2018. U.S. direct investment in India is led by professional, scientific, and technical services, manufacturing, and wholesale trade.
- ✓ India's FDI in the United States (stock) was \$5.0 billion in 2019, down 2.3% from 2018. India's direct investment in the U.S. is led by professional, scientific, and technical services, manufacturing, and depository institutions.

### **Steps Taken to Improve Indo-US Trade Ties**

- India and the US appear to be considering ways to improve their bilateral trade matters. They look forward to revitalizing engagement through the US-India Trade Policy Forum, discover directions to expand trade relationships, and cooperate on a broad set of issues.
- Assessing the gamut of bilateral and multilateral exercises, the two sides have placed three foundational agreements – LEMOA allowing sharing of logistics, BECA geospatial mapping, and COMCASA allowing real-time information sharing to realize strong hold partnership.
- Modern sectors of coalitions including information-sharing, logistics cooperation, AI, space, and cyber are being advanced to strengthen their stature.
- Furthermore, consolidating the synergy and interoperability accomplished during the Malabar exercise, India and the US also undertook a two-day naval exercise in the eastern Indian Ocean Region, expressing the growing congruence in their defense and military partnership.
- The White House is also considering supporting the move of India and South Africa seeking a time-limited waiver of the Trade-Related Aspects of Intellectual Property Rights (TRIPS) agreement which would allow countries and manufacturers to directly access and share technologies to produce vaccines and therapeutics without causing trade sanctions or international disputes.
- As the United States and India get closer, they also appear to be taking their space cooperation to a higher orbit. NASA and ISRO collaboration on satellites to support the NISAR mission marks another partnership deal to enhance management of the world's natural resources and disaster preparedness.
- India and the US have decided to revise the existing energy cooperation framework to focus more on clean energy maintaining advanced American technology and the rapidly growing Indian energy market in mind to indicate new priorities set by the two nations.

### **What Needs to be Done?**

- ✚ Galvanizing efforts by the major economies to tackle the climate crisis, the US president has invited 40 world countries to the Leaders' Summit on Climate. India being one of them needs to outline its contribution towards a stronger climate ambition. It should focus on spurring transformational technologies, strengthening capacity to protect lives and livelihoods from the impacts of climate change, and address the global security challenges.

- ✚ There is also an opportunity for both countries in the shipbuilding industry. Utilizing the strategic trade authorization license exemption granted by the US to India in 2018, and the bilateral Industrial Security Annex Agreement signed in 2019, India and the US can join efforts to produce the world's finest and most economical platforms for their partners and friendly nations.
- ✚ Experts believe AI and emerging technologies will further define relationships between countries. India should look for opportunities to use its potential and establish its 'footprint' in AI and emerging technology. Proactive regulation that protects data privacy; prevents inequitable mergers, anti-competitive practices, and competition law; guarantees free and fair taxation should be the steps ahead.
- ✚ Fair regulations eliminating uncertain and excessive control in a manner that protects the rights of citizens, while businesses are not severely impacted will bring different stakeholders to the common table of discussion.
- ✚ The US must be more considerate of the immigration laws. At a juncture where US Prez opts to lift the ban on H1-B visa in an attempt to reverse the curbs, greater inclusiveness between Indian IT firms and the US territory are to be seen.
- ✚ Moreover, the Federal Government's order to combat racism, xenophobia, and intolerance against Asian Americans and Pacific Islanders will further advance inclusion and belonging for people of all races, national origins, and ethnicities.

**Conclusion**

- > Under Biden and Harris's presidency, US-India relations prove to be the defining alliance among global powers.
- > The "Stellar" partnership between the two countries, will help optimize global resources and drive-in development.
- > The US and India are in a position where they both need each other. The successful association will depend upon how the US engages with India.
- > The US should look at India as an equal partner rather than a subordinate. Going forward, strategic cooperation between the two will create a "win-win" situation for both countries.
- > As India and the U.S. grow closer, engaging in economical parameters, democracy projects demand high cooperation and collaboration on the global front.
- > It is the time when the coalition should take a step ahead from a people-to-people strategy to ground-led strategies.
- > Both the nations should come on a common platform to address rising socio-economic and geopolitical issues sharing a unified vision. Advancing on present bonding between the two countries, powerful ties will be witnessed in times to come.

**Ways and Means Advances (WMA)**

**News Excerpt**

The Reserve Bank of India (RBI), in consultation with the Government, has decided that the limits for Ways and Means Advances (WMA) for the first half of the financial year 2021-22 (April 2021 to September 2021) will be ₹1.20 lakh crore.

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**Pre-Connect**

- The central bank had set up an advisory committee in August 2019 to review the Ways and Means Advances (WMA) limits for state governments and union territories and examine other related issues.
- The committee has recommended an overall revised limit of Rs 47,010 crore for all states, as against the current limit of ₹32,225 crore, fixed in February 2016.
- That apart, the committee has also recommended the continuation of the enhanced interim WMA limit of Rs51,560 crore, allowed by the RBI during the last fiscal to help states and union territories tide over the difficulties faced by them during the pandemic, till 30 September.
- The WMA limit was hiked to ₹2 lakh crore from ₹1.20 lakh crore on April 20, 2020 for the remaining part of the first half of the financial year 2020-21 (April 2020 to September 2020) to tide over the situation arising from the outbreak of the Covid-19 pandemic.
- RBI also mentioned that it might trigger fresh floatation of market loans when the Government of India utilises 75 per cent of the WMA limit.

- The interest rate on WMA will be the repo rate (currently at 4 per cent). The interest rate on the overdraft will be two per cent above the repo rate.

### Analytica

- The central bank, as the banker to the central and state governments, provides financial accommodation to the Government to tide over temporary mismatches in the cash flow of its receipts and payments as WMA.
- This is intended to provide a cushion to the Government to carry on its essential activities and normal financial operations.
- There are two types of WMA — normal and special. While normal WMA are clean advances, special WMA are secured advances provided against the pledge of the Government of India dated securities.
- According to RBI rules, normal WMA limits are based on a three-year average of a state’s actual revenue and capital expenditure, and withdrawals beyond the limit is considered an overdraft. States pay interest linked to the repo rate on WMA withdrawals.

## **SEBI rules for provisional debt rating**

### News Excerpt

Markets regulator SEBI recently came out with a new framework to strengthen policies on provisional rating by credit rating agencies (CRAs) for debt instruments.

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### Highlights

- Under the framework, all provisional ratings (‘long term’ or ‘short term’) for debt instruments need to be prefixed as ‘provisional’ before the rating symbol in all communications — rating letter, press release and rating rationale.
- Further, a rating will be considered provisional in cases where certain compliances that are crucial to the assignment of credit rating are yet to be complied with or certain documentations remain to be executed at the time of rating.
- In no case shall a rating, including provisional rating, be assigned by a credit rating agency for an issuer or client evaluating strategic decisions such as funding mix for a project, acquisition, debt restructuring, scenario-analysis in loan refinancing.
- On validity period, provisional rating will be converted into a final rating within 90 days from the date of issuance of the instrument.
- The final rating assigned after the end of 90 days will be consistent with the available documents.
- An extension of 90 days may be granted on a case-to-case basis by the CRA's rating committee in accordance with the policy framed by the CRA in this regard.
- SEBI further stressed "No CRA shall assign any provisional rating to a debt instrument upon the expiry of 180 days from the date of its issuance."
- Besides the disclosures already made by CRAs, the new guidelines ask for disclosure relating to pending documentation considered while assigning 'provisional' rating need to be included in press release or rating rationale.
- Additionally, risks associated with the provisional nature of the credit rating, including risk factors that are present in the absence of completed documentation need to be disclosed.
- SEBI has also indicated that rating that would have been assigned in absence of the pending documentation considered while assigning provisional rating should be disclosed.
- Further, in cases where the absence of such documentation would not result in any rating being assigned by the CRA, for instance, in case of provisional rating for real estate investment trust (REIT) or infrastructure investment trust (InvIT)—pending formation of trust, the CRA would need to specify the same in the press release.
- While assigning provisional rating to a debt instrument proposed to be issued, SEBI stated that the press release will have to specify that in case the debt instrument is subsequently issued, the provisional rating would have to be converted into final rating as per the validity period ordained.
- In case of provisional ratings, the press release needs to mention about the broad details of the assets that are proposed to be held by the REIT/ InvIT, and the proposed capital structure.



- The rating rationale should also disclose that the CRA has taken an undertaking from the sponsor stating that the key assumptions (relating to the assets and capital structure, are in consonance with the details filed by the sponsor with SEBI).
- In case of change in provisional rating due to change in key assumptions, the press release needs to mention that the rating by the CRA is based on a declaration from the issuer that similar changes have been made in the filing with the regulator.
- Finally, in case the provisional rating assigned is not accepted by the issuer (or sponsor, in case of REITs/InvITs), then in the 'non- accepted ratings' published by credit rating agencies on their website, certain supplementary disclosures, including details of the steps taken for assigning the provisional ratings, need to be made.

**Analytica**

- Credit rating is a qualitative & quantitative assessment of the probability of default on payment of interest and principal on a debt instrument. It is not a recommendation to buy, sell or hold a debt instrument.
- Credit Rating only provides an additional input to the investor and the investor is required to make his own independent and objective analysis before arriving at an investment decision.
- Ratings are based on a comprehensive evaluation of the strengths and weaknesses of the company fundamentals including financials along with an in-depth study of the industry as well as macroeconomic, regulatory and political environment.
- Credit rating agencies are regulated by Securities and Exchanges Board of India (SEBI). The SEBI (Credit Rating Agencies) Regulations, 1999 govern the credit rating agencies and provide for eligibility criteria for registration of credit rating agencies, monitoring and review of ratings, requirements for a proper rating process, avoidance of conflict of interest and inspection of rating agencies by SEBI, amongst other things.
- Where a rating is prefixed as [Provisional], it indicates that a full rating has been assigned based upon the agency’s expectations regarding final documentation or certain steps pending, typically based upon a review of the final draft documentation provided by the issuer.
- If such final documentation is received or steps pending are executed as expected, the provisional rating will typically be converted to a final rating. Provisional ratings are not conditional upon receipt of further analytical information. By the time a provisional rating is assigned to a transaction, no change is anticipated to that opinion other than in exceptional circumstances.
- While provisional ratings typically convert to final ratings within a short time, determined by timing of transaction closure, in the period between assignment of a provisional rating and a final rating, provisional ratings may be raised, lowered or placed on Rating Watch or withdrawn, as with final ratings.

**PEPPER IT WITH**  
REITs, InvITs, SEBI Regulations,  
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**RTGS, NEFT for payment system operators**

**News Excerpt**

Reserve Bank of India (RBI) recently extended the National Electronic Funds Transfer (NEFT) and Real-Time Gross Settlement (RTGS) facilities to non-bank payment system operators.

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**Highlights**

- Membership to the RBI-operated Centralised Payment Systems (CPSs) – RTGS and NEFT – is currently limited to banks, with a few exceptions.
- It is now proposed to enable non-bank payment system operators like Prepaid Payment Instrument (PPI) issuers, card networks, White label ATM operators and Trade Receivables Discounting System (TReDS) platforms regulated by the Reserve Bank, to take direct membership in CPSs.
- The central bank also increased the maximum end of day balance for payment banks to ₹2 lakh. Earlier, the limit was ₹1 lakh. Payments banks have been asking a hike in deposit limit for a long time.

**Benefits of the Move**

- The Central bank's aim is to encourage participation of non-banks across payment systems.
- This facility is expected to minimise settlement risk in the financial system and enhance the reach of digital financial services to all user segments. These entities will, however, not be eligible for any liquidity facility from the Reserve Bank to facilitate settlement of their transactions in these CPSs.
- Experts believe that this is a very positive development by RBI and will give a big impetus to online payments and the digitisation of the Indian economy. 24 x 7 enabling of NEFT, RTGS etc gives a big boost to commerce which will have a multiplier effect on our economic growth and GDP.
- Alongside, it also strengthens India's position globally as the flagbearer of the most advanced digital payments and fastest settlement cycles after UPI.
- Move will help non-bank players drive more customer traction and recover from last year's losses in the wake of COVID-19. Earlier, customers had to rely on banks for these services, but with this initiative, they can use it on other platforms as well.
- Experts believe that increasing the maximum end of day balance for payment banks to ₹2 lakhs is a massive move in the direction to help MSMEs, unorganised entities and other small businesses. This also shows the trust that RBI has placed on payments banks to make this a move in right direction. There are still 20 percent of unbanked citizens in the country and this will help them avail better, faster and safer services of the bank.

**National Electronic Funds Transfer (NEFT)**

- NEFT is a mode of online funds transfer that is introduced by the RBI. It quickly transfers money between banks throughout India. A bank branch must be NEFT-enabled for a customer to be able to transfer the funds to another party.
- In late 2019, the RBI introduced the all-new NEFT Payment System that is active and up 24\*7 and 365 days a year. The objective behind this new clearance system is to promote digital transactions and the global integration of Indian financial markets.

**Real-Time Gross Settlement (RTGS)**

- Real-time gross settlements are a process that is used for high-value inter-bank transactions. These transactions typically need instant and full clearing and are generally done by the central bank of the country.
- RTGS reduces the overall risk as these settlements are made almost instantly throughout the day. It is not like NEFT in which settlements are made in batches. Hence, the charges involved in the real-time gross transfer of funds may incur higher costs to customers.

**The Startup India Seed Fund Scheme**

**News Excerpt**

Minister of Commerce & Industry recently launched the Startup India Seed Fund Scheme (SISFS).

**Highlights**

- The Fund aims to provide financial assistance to startups for proof of concept, prototype development, product trials, market entry, and commercialization.
- The Scheme was announced by the Hon'ble Prime Minister in January 2021 in his Grand Plenary address of 'Prarambh: Startup India International Summit', marking the five-year anniversary of the Startup India initiative.
- Rs. 945 Crore corpus will be divided over the next 4 years for providing seed funding to eligible startups through eligible incubators across India.
- The scheme is expected to support an estimated 3,600 startups through 300 incubators.
- The SISFS aims to **S**ecure seed funding, **I**nspire innovation, **S**upport transformative ideas, **F**acilitate implementation, and **S**tart startup revolution.
- It aims to create a robust startup ecosystem, particularly in Tier 2 and Tier 3 towns of India, which are often deprived of adequate funding.
- The online portal created by DPIIT, for the scheme, will allow incubators to apply for funds under it. An Experts Advisory Committee (EAC) has been created by DPIIT to execute and monitor the Startup India Seed Fund Scheme.

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- Grants of upto Rs 5 Crores shall be provided to the eligible incubators selected by the EAC. The selected incubators shall provide grants of up to Rs 20 lakhs for validation of Proof of Concept, or prototype development, or product trials to startups.
- Furthermore, investments of up to Rs 50 lakhs shall be provided to the startups for market entry, commercialization, or scaling up through convertible debentures or debt-linked instruments.
- The promising startups that are supported at their early stages shall create huge employment opportunities for everyone. The Seed Fund Scheme also envisions to promote virtual incubation for startups by enabling 300 incubators to support startups from all corners of the country. The impact of this will be visible by the spur of innovations in tier 2 and tier 3 regions of India.

## Analytica

### Indian Startup Ecosystem

- India has the **3<sup>rd</sup> largest startup ecosystem in the world**; expected to witness YoY growth of a consistent annual growth of 12-15%
- India has about 50,000 startups in India in 2018; around 8,900 – 9,300 of these are technology led startups 1300 new tech startups were born in 2019 alone implying there are 2-3 tech startups born every day.
- The pace of growth in the startup ecosystem has increased to 15% year-on-year in 2018, while the growth of the number of incubators and accelerators has grown to 11%
- Significantly, the number of women entrepreneurs stood at 14%, up from 10% and 11% in the previous two years.
- Startups in the country have been able to create an estimated 40,000 new jobs over the year, taking the total jobs in the start-up ecosystem to 1.6-1.7 lakh
- Bangalore has been listed within the world's 20 leading startup cities in the 2019 Startup Genome Project ranking. It is also ranked as one of the world's five fastest growing startup cities.
- The Indian startups have gone on to raise sizeable ticket sizes from various global and domestic funds. The top 15 deals constituted about 40% of total deal value, demonstrating that most funds are valuing deal quality more than quantity.
- Private equity deal volume in India rose for the second straight year, and while the average deal size declined slightly from the prior year, the total value of \$26.3 billion in 2018 was the second-highest of the last decade. The number of deals greater than \$50 million increased from the previous year.
- **Drivers of Startup Ecosystem:**
  - **Corporate Connect**
  - Enterprises are realizing the disruptive potential of start-ups and are thus, partnering/investing in them. Examples of corporate support:
  - Facebook in partnership with Startup India disbursed cash grants of \$50,000 each to the top 5 selected startups
  - 10000 Women program by Goldman Sachs is providing women entrepreneurs all around the world with a business and management education, mentoring and networking and access to capital.
  - Microsoft Ventures Accelerator Program in India has recently picked up 16 startup
  - Government Support
  - Government of India is understanding the value of working with disruptive innovators across the value chain and using their innovations to improve public service delivery.
  - Department of Animal Husbandry and Dairying has conducted a grand challenge in association with Startup India to award top startups in 5 categories 10 lakhs INR.
  - SIDBI has launched a scheme to provide assistance to existing Small and Medium Businesses in need of capital for growth

### Issues and Challenges of Startups

Some of the major issues and challenges are discussed below:

1. **Financial resources:** Availability of finance is critical for the startups and is always a problem to get sufficient amounts. The requirement starts increasing as the business progresses. Scaling of business requires timely infusion of capital. A 2016 report paints a

gloomy picture with 85% of new company's reportedly underfunded indicating potential failure.

2. **Revenue generation:** Several startups fail due to poor revenue generation as the business grows. The challenge is not to generate enough capital but also to expand and sustain the growth.
3. **Team members:** Assembling a good team is the first major requirement, failure to have one sometimes could break the startup.
4. **Supporting infrastructure:** There are a number of support mechanisms that play a significant role in the lifecycle of startups which include incubators, science and technology parks, business development centers etc.
5. **Creating awareness:** In markets, Startups fail due to lack of attention to limitations in the markets. The environment for a startup is usually more difficult than for an established firm due to uniqueness of the product.
6. **Exceed customer expectations:** The next most important challenge is gauging the market need for the product, existing trends, etc. Innovation plays an important role, since, that the startup has to fine-tune the product offerings to suit the market demands.
7. **Regulations:** Starting a business requires a number of permissions from government agencies. Although there is a perceptible change, it is still a challenge to register a company. Regulations pertaining to labor laws, intellectual property rights, dispute resolution etc. are rigorous in India.
8. **Lack of mentorship:** Lack of proper guidance and mentorship is one of the biggest problems that exist in the Indian startup ecosystem.
9. **Lack of a good branding strategy:** Absence of an effective branding strategy is another issue that prevents startups from flourishing at a faster pace.

### Opportunities for Startups in India

1. **India's Large Population:** The population of India is a huge asset for the country. This unique demographic advantage will offer a great opportunity to any startup. Various infrastructure issues and the bottom- of the- pyramid market would provide huge opportunities for the startups.
2. **Change of Mind Set of Working Class:** Traditional career paths will be giving way to Indian startup space. Challenging assignments, good compensation packages would attract talented people to startups. Also, it is seen that several high-profile executives are quitting their jobs to start or work for startups.
3. **Huge Investments in Startups:** Huge investment in Indian startups from foreign and Indian investors is taking place. India is the most sought-after destination for investments.

### Government Initiatives

There are numerous government and semi-governmental initiatives to assist startups.

1. **Start-Up India:** This initiative provides three-year tax and compliance breaks intended for cutting government regulations and red tapism.
2. **Mudra Yojana:** Through this scheme, startups get loans from the banks to set up, grow and stabilize their businesses.
3. **SETU (Self-Employment and Talent Utilization) Fund:** Government has allotted Rs 1,000 Cr in order to create opportunities for self-employment and new jobs mainly in technology-driven domains.
4. **E-Biz Portal:** Government launched e-biz portal that integrates 14 regulatory permissions and licenses at one source to enable faster clearances and improve the ease of doing business in India.
5. **Royalty Tax:** Indian government has reduced the royalty tax paid by businesses and startup firms from 25 per cent to 10 per cent.

### Conclusion

While in the country like India, government alone cannot fulfill the employment opportunities, so individuals need to come forward to help themselves, given the viable business atmosphere by the government. Adam Smith, an 18th century economist and author, in his book Wealth of Nations has talked about the "Invisible Hand" that Individuals pursuing their best self Interest would result in greater overall good to the society. If India wants to mark its presence in the global arena, this Invisible hand would be none other than our budding entrepreneurs and start-ups which can make the elephant dance again!



### INTERNATIONAL RELATIONS

## South China Sea: Whitsun Reef

### News Excerpt

China's aggressive expansion in the South China Sea has found a new ground, Whitsun Reef, where 220 Chinese vessels are currently moored though the area, which comes under the Philippines' Exclusive Economic Zones (EEZ).

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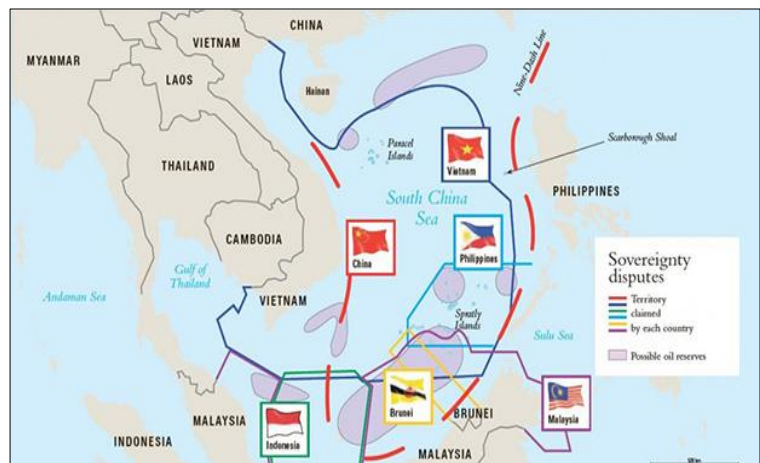
### Highlights

- Once again, the South China Sea finds itself closer to becoming a security flashpoint amidst rising concerns over a military conflict.
- China claims the Whitsun reef, which falls under the EEZ of Philippines, under their nine-dash line.
- If China is successful with its moves, the Philippines may lose another fishing ground, similar to what happened in 2012 when China took control of Scarborough Shoal.
- The Whitsun Reef belongs to the Spratly archipelago, the territory of which is claimed by Brunei, China, Malaysia, the Philippines, Taiwan, and Vietnam.
- China considers the Spratly archipelago to be its territory, despite the Hague-based Permanent Court of Arbitration ruling, which said there was no legal basis for China's maritime claims.



### Analytica

- China and the Philippines, along with other Southeast Asian countries, have long been part of disputes over sovereign claims over the region's islands, reefs and seabeds.
- A third of the world's maritime trade travels through the South China Sea annually. The seabeds here are believed to be reserves of oil and natural gas while being home to fisheries essential for the food security of millions in South Asia.
- Majority of the disputes concern the lack of adherence to the international 'Exclusive Economic Zones' which stretch up to 200 nautical miles from the coast of any state. China, especially, has been notorious for disregarding the law on various occasions.
- In 2020, at the height of the global pandemic, China has been accused of exploiting the crisis to advance its actions in the region. In April last year, China sank a Vietnamese fishing vessel and also disrupted Malaysian oil exploration. This prompted the United States to deploy aircraft and navy vessels to assess the situation. The present situation is already grave and international involvement will lead to increased hostility.
- To back their claim to the majority of the South China Sea, Beijing has long cited the 'Nine-dash line', based on unverified historical accounts.



- In January 2013, the Philippines formally led the arbitration proceedings against this claim at the Hague, and in 2016, the court ruled in favour of the Philippines and declared the nine-dash line to be unlawful under the United Nations Convention on the Law of the Sea (UNCLOS). The landmark ruling infuriated China, which rejected it as “ill-founded” and continues to maintain presence in the undisputed territories.
- While China prefers engaging in bilateral negotiations, its neighbors claim Beijing has an advantage because of its size and global dominance.
- As the majority of the Southeast Asian countries are members of the ASEAN, China is working to develop a Code of Conduct for the region through the organization. China has been engaging in economic cooperation with countries in the region to coordinate efforts for oil and natural resources exploration.
- The West, on the other hand, feels threatened as it finds China’s approach to be a direct threat to its policies. China’s defiance of international mandates is evidence of its increasing power and weakening of international regimes as they struggle to enforce authority.
- There is no doubt that China is shaping international law to suit its needs, it has been strategically investing in research and scholarly works to reflect its national interests.

**Conclusion**

Geostrategic realities have brought the Indo-Pacific region at the centre stage. The shifting of the economic centre of gravity from the Atlantic to Asia has reinforced the importance of geo-economics in a connected and globalized world. China’s geographical location, its extensive economic bandwidth and ruthless pursuit for preeminence will inevitably cause turbulence. The perception is reinforced by its hegemonistic actions in the SCS, Taiwan straits, Hong Kong, Himalayas and Xinjiang. Russia’s diminishing stature and the rise of China will reflect in the future world order.

**Freedom of Navigation Operations**

**News Excerpt**

Recently, The US Navy announced that their warship has sailed 130 nautical miles inside India’s exclusive economic zone (EEZ), without any intimation to India.

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**Pre-Connect**

- Under UNCLOS, member states have the right to conduct military manoeuvres and movements within the 200 nm EEZ of a state. Indeed, they have the right of “innocent passage” where they can come into the territorial waters within just 12 nm of the country, if they sail straight through without turning on their weapons-related sensors.
- Simple transit is permitted to all countries but, as per the United Nations Convention for the Law of the Sea, no military operation or economic activity is permitted without the permission of the littoral nation.
- India ratified the UNCLOS in 1982, the US is not a signatory.

- ❖ As per India’s Territorial Waters, Continental Shelf, Exclusive Economic Zone and Other Maritime Zones Act, 1976, the EEZ of India is an area beyond and adjacent to the territorial waters, and the limit of such zone is two hundred nautical miles from the baseline.
- ❖ India’s limit of the territorial waters is the line every point of which is at a distance of twelve nautical miles from the nearest point of the appropriate baseline.
- ❖ Under the 1976 law, “all foreign ships (other than warships including sub-marines and other underwater vehicles) shall enjoy the right of innocent passage through the territorial waters”, innocent passage being one that is “not prejudicial to the peace, good order or security of India”.

**Freedom of Navigation Operations (FONOPs)**

- Freedom of Navigation Operations are operations by U.S. naval and air forces that reinforce internationally-recognized rights and freedoms by challenging excessive maritime claims.
- The particulars of each operation are determined by the excessive maritime claim that is being protested.
- FONOPs include passages lead by the US Navy through waters claimed by coastal nations as their exclusive territory.

- FONOPs reaffirm the US policy of exercising and proclaiming its navigation and over flight rights and freedoms across the globe.

**PEPPER IT WITH**  
Territorial Sea, Contiguous Zone,  
Innocent Passage, UNCLOS  
Maritime Zones

**EEZ:** According to UNCLOS, the EEZ is an area beyond and adjacent to the territorial sea, subject to the specific legal regime under which the rights and jurisdiction of the coastal State and the rights and freedoms of other States are governed by the relevant provisions of this Convention.

**Key Issue**

India's View	USA's View
<ul style="list-style-type: none"> <li>○ India cited that that 7th fleet patrol in India's EEZ is violation of Indian domestic law.</li> <li>○ India follows UNCLOS, and the convention doesn't authorize other States to conduct operation in EEZ and on continental shelf, military exercise in particular those involving the use of weapons or explosives, without the consent of the littoral state.</li> <li>○ In case of any kind of "military manoeuvres" in Indian EEZ that nations need to seek India's permission and not if they are simply transiting through.</li> <li>○ The term military 'manoeuvres' is not defined anywhere.</li> </ul>	<ul style="list-style-type: none"> <li>○ U.S. defends its actions saying they were in compliance with international laws.</li> <li>○ India's claim to EEZ is fickle with international law i.e.- UNCLOS.</li> <li>○ FONOP upheld the rights, freedoms, and lawful uses of the sea recognized in international law by challenging India's excessive maritime claims.</li> <li>○ As per USA, India wants prior consent for military exercises or maneuvers in its EEZ or continental shelf.</li> </ul>

**US foreign policy and India**

**News Excerpt**

As is customary, a new face in the White House has brought with it a deluge of analyses on India-US relations.

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**Recent instances of US foreign policy shift**

- Unlike in the antiquated rational-actor paradigm where there is imagined trade-offs across issues, in the new framework the US engages with countries on parallel lines.
- US foreign policy is no longer based on the antiquated friend-or-foe classification under which transgressions by a "friend" or an "ally" were overlooked if the country was helpful to US self-interests.
- Instead, and as has been the case at least for the last decade, the US foreign policy paradigm has shifted to one where a country's stance on an issue — trade, climate change, security, or human rights — is the categorizing principle and not the country.
- If others, including India, do not adapt to this paradigm shift, then they will find engagement with the US starkly different and surprisingly difficult.
- The new US Secretary of State, Antony Blinken, unambiguously clarified this shift in the paradigm while talking about the US-China relationship. He called it "arguably the most important relationship that we have in the world. Going forward it's going to shape a lot of the future that we all live and increasingly that relationship has some adversarial aspects to it. It has competitive ones and it also still has cooperative ones."
- Put differently, engagement with countries will be done on issues with little or no trade-off among them.
- Competition, cooperation, and confrontation can all characterize the US's bilateral engagement depending on the specific issue. For example, trade will involve competition while climate change and pandemics will necessitate cooperation. At the same time, human rights and national security issues could be confrontational.
- Arguably, the COVID-19 pandemic has only added further strain to American alliances, as multiple countries—including the United States—prioritize domestic interests over alliances. The United States' adversaries will likely remain constant, but its allies may change, particularly when it comes to use of force.

**Impacts on India including south Asia and changes in global power order**

- A key instrument of foreign policy is system of “smart” sanctions. In its latest version, smart sanctions do not target countries, but specific individuals, firms, and institutions for a variety of alleged transgressions as assessed by the hegemon.
- US businesses and individuals cannot transact with sanctioned entities. US residents also cannot transact with third parties who have relationships with the sanctioned persons. For instance, secondary sanctions on Turkey for purchase of Russian S-400.
- The deeper forces unsettling American global alliances include the populism riling Europe, continued turmoil and sectarian violence in the Middle East, and the angst in Asia stemming from a more powerful, more assertive China will continue to make US engagement with the rest of world much more dynamic and transactional in nature.

**US-India Cooperation during Covid and other challenges in bilateral relations**

- ✓ The new administration also brought a tectonic shift in the U.S.-India partnership expectations, which has been conducive for the past 15 years in the forefronts of bilateral trades, R&D, defence, climate change and finance.
- ✓ However, the latest pandemic dynamics around the world have cornered the United States into a vaccine nationalism discourse. The United States, on the other hand, has maintained restrictions on critical exports, which are essential in the manufacturing of vaccines, imposed under the Defense Production Act, to prioritize the needs of Americans.
- ✓ The comments out of China, coupled with the severity of the crisis in India, show how the imbalance in vaccinations between richer and poorer nations has the potential to reshape geopolitics as parts of the world start to reopen.
- ✓ Moreover, the U.S. has also denied sharing the doses from its own supply of Oxford-AstraZeneca and Johnson & Johnson vaccines.
- ✓ On April 7, USS John Paul Jones (DDG 53) transgressed India’s Exclusive Economic Zone (EEZ), with utter disregard of the Indian policy requiring prior intimation. Earlier, a US Human Rights watchdog, Freedom House, downgraded India’s status from “Free” to “Partly Free”, attributing it to India’s current policies.
- ✓ Washington has been reluctant to include India in the Afghanistan negotiations and has not been forthcoming about waiving the provisions of CAATSA (Countering America Adversaries Through Sanction Act) to accommodate India’s past contractual obligations. This insensitivity creates doubts about the US’s unconditional support to India when the chips are down.

**Way Forward**

- India-USA needs to work closely on areas where they find relative convergence of interests while trying to find effective ways to cooperate on others.
- Mutual interest has led to a positive new chapter in Indo-US relationship. India must prioritise its own interests and not become dependent.
- Concurrently, urgent structural reforms are required in international multilateral institutions to address the aspirations of the majority from Asia and Africa, instead of only pandering to the whims of the developed world or being a puppet of China. India will require US support to become a part of these rule-making institutions.

**Conclusion**

Over-dependence on the US will always have the downside of being left in the lurch when its interests have been served. Therefore, pragmatism demands that we give primacy to our national interests in this evolving relationship, and not burn our bridges elsewhere.

**Supply Chain Resilience Initiative**

**News Excerpt**

India, Japan and Australia formally launched the Supply Chain Resilience Initiative (SCRI) to build resilient supply chains in the Indo-Pacific region as they seek to reduce dependence on China.

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### Pre-Connect

- In the context of international trade, supply chain resilience is an approach that helps a country to ensure that it has diversified its supply risk across a clutch of supplying nations instead of being dependent on just one or a few.
- The Supply Chain Resilience Initiative aims to create a virtuous cycle of enhancing supply chain resilience with a view to eventually attaining strong, sustainable, balanced and inclusive growth in the Indo-pacific region
- Possible policy measures may include: (i) supporting the enhanced utilization of digital technology; and (ii) supporting trade and investment diversification.
- Initially, SCRI will focus on sharing best practices on supply chain resilience and holding investment promotion events and buyer-seller matching events to provide opportunities for stakeholders to explore the possibility of diversification of their supply chains.

### Analytica

- The covid-19 pandemic has revealed supply chain vulnerabilities both globally and, in the region, and highlights an urgent need for global cooperation to maintain and strengthen the resilience of international supply chains
- With COVID-19 and trade tensions between China and the United States threatening supply chains or actually causing bottlenecks, Japan has mooted the Supply Chain Resilience Initiative (SCRI) as a trilateral approach to trade, with India and Australia as the other two partners.
- Following the border tensions between the two highly populous Asian neighbours, partners such as Japan have sensed that India may be ready for dialogue on alternative supply chains. Earlier, India would have done little to overtly antagonize China.
- Chinese supplies dominate segments of the Indian economy. Sectors that have been impacted by supply chain issues arising out of the pandemic include pharmaceuticals, automotive parts, electronics, shipping, chemicals and textiles.
- Over time, if India enhances self-reliance or works with exporting nations other than China, it could build resilience into the economy's supply networks.
- Greater weaponization of trade and technology is here to stay. It is in this context that India, Japan and Australia initiated the Supply Chain Resilience Initiative (SCRI) in September this year, focusing on automobiles and parts, petroleum, steel, textiles, financial services and IT sectors.
- A large emerging economy such as India can ill-afford the shocks of disruption in supply chains. Nor can it allow itself to be held hostage due to an over-reliance on imports. For instance, the pandemic caused a breakdown in global supply chains in the automotive sector since most global manufacturers in China abruptly went offline.
- For India, which imports 27% of its requirement of automotive parts from China, this quandary was a wake-up call, given the sudden shortage of braking components, electrical components, interiors and lighting fixtures.
- What is noteworthy is that despite being the fourth largest market in Asia for medical devices, India has an import dependency of 80%.

### Way Forward

- ✓ India needs to accelerate progress in ease of doing business and in skill building.
- ✓ The SCRI may be bolstered by the future involvement of France, though this might depend on the European Union's position. The United Kingdom has also shown interest in the SCRI.
- ✓ Risk mitigation through the "China Plus One" business strategy, aimed at diversification of investments to the Association of Southeast Asian Nations (ASEAN), India and Bangladesh.
- ✓ Given the renewed thrust in the health-care sector, this is the right time to fill gaps through local manufacturing.
- ✓ Today, India is seeking to enhance its presence substantially in the global supply chains by attracting investments in the semiconductor components and packaging industry. In this context, there is a need to gradually shift away from completely knocked down (CKD) assembly to high value addition.
- ✓ Companies need to build resilience of supply chains in preparing for disruptions while at the same time guarding against complacency, refraining from investing disproportionately and also weighing the trade-offs.

- ✓ Blockchain technology can help tackle supply chain failures exposed by the coronavirus (COVID-19) pandemic and also boost the economic recovery process, according to the World Economic Forum (WEF).

**Conclusion**

A key lesson learnt by the world during the COVID-19 pandemic has been the importance of creating resilient supply chains that can withstand disruptions and ensure reliability for the global economy.

**Deepening NATO's Dialogue with India**

**News Excerpt**

Ukrainian President Volodymyr Zelensky has urged NATO to speed up his country's membership in the alliance, saying it was the only way to end fighting with pro-Russia separatists.

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**Pre-Connect**

- The North Atlantic Treaty Organization also called the North Atlantic Alliance, is an intergovernmental military alliance between 30 European and North American countries.
- The organization implements the North Atlantic Treaty that was signed on 4 April 1949.
- NATO constitutes a system of collective defense whereby its independent member states agree to mutual defense in response to an attack by any external party.
- NATO's Headquarters are located in Haren, Brussels, Belgium, while the headquarters of Allied Command Operations is near Mons, Belgium.

**Significance and relevance of NATO**

- For over 70 years, NATO has provided unprecedented peace and security for the Euro-Atlantic area. As a fundamental pillar of the international order, it continues to contribute to global stability.
- Today, NATO Alliance represents 30 nations, one billion people, and half of the world's economic and military might.
- It is the most successful Alliance in history, because of unity, values and its ability to adapt as the world changes.
- NATO is not only a military Alliance, but also a political Alliance. Political dialogue and security cooperation are important tools to address global challenges, beyond purely military responses.



**Why should India deepen its engagement with NATO?**

- ✓ Freedom, democracy and the rule of law are at the core of the NATO Alliance. As the world's largest democracy, these values matter to India, too. Protecting our values and way of life is our shared global responsibility. So, it makes sense for NATO and India to deepen dialogue to protect the international rules-based order and address jointly shared challenges to the security.
- ✓ India should work closely with like-minded countries to protect the rules-based international order and defend our shared interests and values.
- ✓ India is a pivotal regional player, a growing economy, and an important global actor. It is one of the largest troop contributors to United Nations peacekeeping missions. It is currently a member of the UN Security Council and it will hold the G20 presidency in 2023.
- ✓ Many NATO Allies have well established partnerships with India and they are enhancing their engagement in the Indo-Pacific. At the same time, India is increasing its contacts with Europe and the United States.
- ✓ India is at the forefront of many of the shared challenges, from Afghanistan, to terrorism, and maritime security. Thus, cooperation on these issues is crucial to ensure the stability and security of Indo-Pacific.
- ✓ The international rules-based order is facing unprecedented pressure from increasing geopolitical competition and mounting authoritarianism, led by countries like Russia and China, who do not share democratic values. And other challenges like sophisticated cyberattacks, more brutal forms of terrorism, disruptive technologies, nuclear proliferation, and the security impacts of climate change.

- ✓ If Delhi is eager to draw a reluctant Russia into discussions on the Indo-Pacific, it makes little sense in avoiding engagement with NATO.

### India's view about NATO and its relations with Europe

- Any suggestion that India should engage the NATO is usually met with a cold stare in Delhi.
- During the Cold War, India's refusal was premised on its non-alignment. That argument had little justification once the Cold War ended during 1989-91. Since then, NATO has built partnerships with many neutral and non-aligned states. NATO has regular consultations with both Russia and China, despite the gathering tensions with them in recent years.
- An India-NATO dialogue would simply mean having regular contact with a military alliance, most of whose members are well-established partners of India.
- The fall of the Berlin Wall and the collapse of the Soviet Union demanded a fresh approach to Europe. But Delhi could not devote the kind of strategic attention that Europe demanded.
- The bureaucratization of the engagement between Delhi and Brussels and the lack of high-level political interest prevented India from taking full advantage of a re-emerging Europe.
- To play any role in the Indo-Pacific, Europe and NATO need partners like India, Australia and Japan. Delhi, in turn, knows that no single power can produce stability and security in the Indo-Pacific. India's enthusiasm for the Quad is a recognition of the need to build coalitions.

### India-Europe relations in present times

- ✚ In recent times India has certainly sought to end its prolonged political neglect. The deepening maritime partnership with France since 2018 is an example. Joining the Franco-German Alliance for Multilateralism in 2019 is another.
- ✚ PM's first summit with Nordic nations in 2018 was a recognition that Europe is not a monolith but a continent of sub-regions. So was the engagement with Central Europe's Visegrad Four.
- ✚ Delhi appears to be poised for a vigorous new push into Europe this year. A pragmatic engagement with NATO must be an important part of India's new European orientation especially amidst the continent's search for a new role in the Indo-Pacific.

### Way Forward

- NATO is and will remain a regional alliance for Europe and North America. However, the challenges it face are global, so it need to adopt a more global approach.
- Significantly ramping up engagement on sharing information and expertise, and coordinating common approaches on shared interests, from the changing geopolitical landscape to the role of new technologies, and from safeguarding cyberspace to strengthening global governance, including on arms control.
- A pragmatic engagement with NATO must be an important part of India's new European orientation, especially amidst the continent's search for a new role in the Indo-Pacific.
- A sustained dialogue between India and NATO could facilitate productive exchanges in a range of areas, including terrorism, changing geopolitics; the evolving nature of military conflict, the role of emerging military technologies, and new military doctrines.
- More broadly, an institutionalized engagement with NATO should make it easier for Delhi to deal with the military establishments of its 30 member states. On a bilateral front, each of the members has much to offer in strengthening India's national capabilities.

### Conclusion

NATO provides a strong platform on which to build a global community of democracies to defend our values and way of life. As we look to a more uncertain future, India-NATO should strengthen their partnerships and enhance their engagement, including in the Indo-Pacific, to protect the international rules-based order that benefits everyone.

### India's refugee and illegal immigrant policies

#### News Excerpt

The Myanmar's military's ruthless crackdown after its coup has left more than 500 people dead, according to a local monitoring group, triggering international outrage.

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### Pre-Connect

- Under the 1951 UN Convention on the Status of Refugees and the subsequent 1967 Protocol, the word refugee pertains to any person who is outside their country of origin and unable or unwilling to return owing to well-founded fear of persecution for reasons of race, religion, nationality, membership of a particular social group or political opinion.
- Stateless persons may also be refugees in this sense, where country of origin (citizenship) is understood as 'country of former habitual residence'.
- Non-refoulement means no refugee shall be returned in any manner to any country where he or she would be at risk of persecution.

### Analytica

- India has welcomed refugees in the past, and on date, nearly 300,000 people here are categorized as refugees.
- But India is not a signatory to the 1951 UN Convention or the 1967 Protocol. Nor does India have a refugee policy or a refugee law of its own.
- This has allowed India to keep its options open on the question of refugees. The government can declare any set of refugees as illegal immigrants — as has happened with Rohingya despite the UNHCR verification — and decide to deal with them as trespassers under the Foreigners Act or the Indian Passport Act.
- The closest India has come to a refugee policy in recent years is the Citizenship Amendment Act, 2019, which discriminates between refugees on the basis of religion in offering them Indian citizenship.
- When it comes to dealing with some 40,000 Rohingyas who fled to India, the government's response has been ambiguous. The government had allowed the UN High Commissioner for Refugees (UNHCR) to carry out verification and provide some of them with identity cards. Some 14,000 Rohingyas have been identified as refugees in this way.



### Challenges: present crisis and India's response

- ✓ Since the Myanmar Army seized power on February 1, there has been an influx of people into Mizoram. Many of them are democracy activists belonging to the Chin ethnic group, or policemen who said they disobeyed orders to shoot at protesters.
- ✓ So far, New Delhi has directed security forces to stop more people from crossing over, a decision opposed by the Mizoram government. In Manipur, a government order asking people not to provide food or shelter to anyone from Myanmar had to be hastily withdrawn after it was widely criticized.
- ✓ Cross-border ethnic ties are also a reason why residents of Mizoram and Manipur have opposed proposals to send refugees back to the strife-torn country. Several parts of the two northeastern states have Chin communities, who share ethnic ties with community members across the border.
- ✓ The Ministry of External Affairs has underlined the government's changing position on the Myanmar crisis, moving to a more pro-active stand as concerns grow worldwide about growing internal strife and instability there.
- ✓ While calls for India to take a humanitarian approach to the refugees have grown, it will not be easy for New Delhi to confront Myanmar's military. For India, the support from the Tatmadaw has been crucial to take on insurgents whose bases were located in Myanmar's jungles.
- ✓ Further, for New Delhi, antagonizing the ruling regime in Myanmar runs the risk of ceding space to China to expand its influence in the country.
- ✓ The future stability and security of the North-east as well as the policies that have been emphatically espoused at the highest levels of government — the Act East and Neighborhood First policies are anchored in the eight states of the North-east.



### Issues with India's refugee policy

- While the Supreme Court has ordered “deportation” of Rohingya “following all procedures” under the Foreigners Act, this is much more complex than it sounds. The bottom line to legal deportation — as opposed to just pushing people back over the border — is that the other country must accept the deportee as its national.
- In terming Rohingyas in India as “illegal” (in contrast to calling them refugees in Bangladesh) and pledging to send them back to Myanmar, India is going against the principle of “non-refoulement”, to which it is bound as a signatory to other international treaties such as the International Covenant on Civil and Political Rights.
- Our policies and remedies to deal with these issues suffer from a lack of clarity as well as policy utility. Needless to say, that there are fundamental differences between illegal immigrants and refugees, but India is legally ill-equipped to deal with them separately due to a lack of legal provisions. For instance, both categories of people are viewed as one and the same and are covered under the Foreigners Act, 1946 which offers a simple definition of a foreigner — “foreigner” means “a person who is not a citizen of India”.
- India is not a party to the 1951 Refugee Convention and its 1967 Protocol, the key legal documents pertaining to refugee protection. The absence of such a legal framework also leads to policy ambiguity whereby India’s refugee policy is guided primarily by ad-hocism.
- The absence of a legal framework increases the possibility of the domestic politicization of refugee protection and complicates its geopolitical fault lines. For instance, the absence of a clearly laid down refugee protection law also opens the door for geopolitical considerations while deciding to admit refugees or not as in the case of Myanmar, China factor plays a crucial role.

### Way Forward

- India can follow the policy it adopted in the case of Sri Lankan Tamil refugees. After the end of the Sri Lanka civil war in 2009, India has encouraged return through the method of voluntary repatriation — they decide for themselves in consultation with an agency like the UNHCR, if the situation back home is safe.
- India should pursue all diplomatic measures to ensure a safe return for Rohingya and pro-democracy refugees. UNHCR says it is its priority “to create an enabling environment for voluntary repatriation and to mobilize support for returnees.”
- The answer perhaps lies in a new domestic law aimed at refugees. It is equally important that such a domestic refugee law should allow for temporary shelter and work permit for refugees.
- New Delhi must also make a distinction between temporary migrant workers, illegal immigrants and refugees and deal with each of them differently through proper legal and institutional mechanisms.
- A national mechanism needs to be developed which goes beyond short-term measures and takes into account a needs-based assessment of how best to handle inflow of persecuted persons.

### Conclusion

In any case, refugee flows to India are unlikely to end any time soon given the geopolitical, economic, ethnic and religious contexts of the region. There is, therefore, an urgent need today to clinically address the issue of refugee protection in India and put in place appropriate legal and institutional measures.

## Non-Alignment, Quad & Great Power Triangle and India

### News Excerpt

The recent visit of Russian foreign minister Sergei Lavrov to Delhi and Islamabad is among multiple signs of India’s changing relations with the great powers. The others include the dramatic rise of China and Beijing’s new assertiveness. At the same time, Delhi’s growing strategic partnerships with the US and Europe have begun to end India’s prolonged alienation from the West.

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### Analytica

- The new geography of the Indo-Pacific and the emerging Quad coalition—comprising of Australia, India, Japan and the United States—are widely seen as a profound discontinuity in the evolution of India’s international relations.

- Even as India reframes its foreign policy away from the traditional framework of non-alignment, it has a big task in persuading Asian nations on the merits of the Indo-Pacific and the Quad. For there are deep anxieties across Asia about the potential for confrontation between the Quad and China.
- Many in the region have embraced the language of non-alignment in coping with the new geopolitical divide in Asia. Their concerns are similar to those that Delhi had invented and popularised in the years after the Second World War.
- It is clear that the U.S. continues to view China as its principal adversary on the world stage and that it will use the Quad to challenge China in the Indo-Pacific, possibly as part of a “new Cold War”.
- U.S. animosity has encouraged China and Russia to solidify their relations. Besides significantly expanding their bilateral ties, the two countries have agreed to harmonize their visions under the Eurasian Economic Union sponsored by Russia and China’s Belt and Road Initiative (BRI). Both have condemned the Quad for “undermining global strategic stability”. Thus, the new Cold War is now being reflected in a new geopolitical binary — the Indo-Pacific versus Eurasia.
- The US, to counter intensifying strategic competition with China, needed a partner in the region and India was the logical choice. For Delhi, closer relations with Washington served its interests.

### **Great power triangle (US, Russia and China) and India**

- Delhi has successfully managed the changing dynamics between the great powers, and is now in an even better position to do so thanks to the size of the Indian economy.
- The continuous calibration of India’s great power relations was not driven by abstract notions of non-alignment and strategic autonomy but on the assessment of concrete conditions confronting India.
- Delhi’s growing strategic partnerships with the US and Europe have begun to end India’s prolonged alienation from the West. Meanwhile, New Delhi’s own relative weight in the international system continues to increase and give greater breadth and depth to India’s foreign policy.
- If Moscow was the big brother in the 1950s, Beijing is the senior partner today. It is a reminder that power balances will inevitably change over time. Delhi has no reason to rule out important changes in the way the US, Russia and China relate to each other in the near and medium-term.
- In the last few years, India has finally overcome its historic hesitations in partnering with the US. Delhi has also intensified its efforts to woo European powers, especially France. India is also expanding its ties with middle powers like Japan, Korea and Australia.
- The current troubles with China seem to be an unfortunate exception to the upswing in India’s bilateral ties with global actors.
- Despite the current differences over Afghanistan and the Indo-Pacific, Delhi and Moscow have no reason to throw away their mutually beneficial bilateral partnership.
- Cracks in the Russia-China relationship are beginning to show and there is a small though distinct possibility that Moscow might seek to pivot back to the West. And this is where India could serve as a valuable link to the United States — and the Indian decision to persuade Russia to accept the Indo-Pacific construct finds its proper context.

### **Challenges**

- ✓ Many in Southeast Asia, despite their close ties with the West, affirm their opposition to a new Cold War and refuse to choose sides between China and the Quad.
- ✓ That brings us to the far more complex dynamic that presents itself in Asia today. This time, Asia and its waters are the main sites for great power confrontation. The conditions that Asia confronts today could increasingly look like the situation in Central Europe that bore the brunt of the US-Soviet confrontation.
- ✓ China is at the heart of Asia. Moreover, Asia today is deeply tied to the Chinese economy in a manner that Europe was never connected to Russia.
- ✓ Even more important, deep economic interdependence between the US and China adds a more complex layer to the relations between Washington and Beijing.
- ✓ Moreover, India’s decision to stay out of the Kavkaz-2020 (In Russia) once again brings to question why India decided to join the SCO – or why it has accorded notional importance to groupings like BRICS as well as the Russia-India-China (RIC) trilateral – in the first place

even as it deepens its strategic relationship with the United States and allied powers in the Indo-Pacific.

- ✓ The final shape of the divide caused by the new cold war will be determined by four nations, namely Japan, Iran, Turkey and India, which, as “middle powers”, have the capacity to project power regionally, build alliances, and support (or disrupt) the strategies of international powers pursuing their interests in the region. However, the four nations are not yet prepared to join immutable alliances.
- ✓ While the Quad has made India a valuable partner for the U.S. in the Indo-Pacific, neither the U.S. nor the Quad can address the challenges it faces at its 3,500-kilometre land border with China.
- ✓ The ‘revenge of geography’ and concerns relating to the U.S.’s intrusive approach on human rights issues ensure that India will need to manage its ties with China largely through its own efforts, while retaining Russia as its defense partner.

### Way Forward

- As India has demonstrated in the great Himalayas during 2020, its own nationalism offers a powerful anti-dote to Chinese nationalism.
- To succeed in Asia, US needs to stand by the nationalist forces that have a stake in defending their territorial integrity and strategic autonomy.
- The success of the Quad depends on two important factors. One is to offer alternatives to the deepening regional economic reliance on China and the other is to buttress its formulations on the rules-based order with tangible political and security support to those nations that are at the receiving end of Chinese power.
- The key to the Indian efforts to win over the region to its point of view lies in the effective mobilisation of Asian nationalism. A close look at the evolution of India’s own non-alignment, which morphed into strategic autonomy after the Cold War, underlines the centrality of nationalism in navigating the shifting currents of great power relations.
- While Cold War advocates in home capitals and in the U.S. will continue to promote ever-tighter alliances, emerging powers could find salvation in “strategic autonomy” — defined by flexible partnerships, with freedom to shape alliances to suit specific interests at different times. Thus, four middle powers have the potential to make multipolarity, rather than a new Cold War, the defining characteristic of the emerging global order.

### Conclusion

Delhi has successfully managed the past flux in the great power politics; it is even better positioned today to deal with potential changes among the great powers, thanks to the size of the Indian economy — it is the sixth-largest in the world — and a more broad-based foreign policy.

## The BIMSTEC and issue of regional integration

### News Excerpt

The virtual meeting of the Foreign Ministers of Bay of Bengal Multi-Sectoral Technical and Economic Cooperation (BIMSTEC) grouping finalized a major Connectivity master plan for the Bay of Bengal region.

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### Pre-Connect

- The BIMSTEC came into being on 6 June 1997, through the Bangkok declaration.
- A sub-regional organization with seven South and Southeast Asian countries, it has an aim to create an enabling environment for rapid economic development; to accelerate social progress; and to promote collaboration on matters of common interest in the Bay of Bengal.
- In 2004, the members decided to hold the Summit every two years as far as possible, and four Summits have been held — in 2004, 2008, 2014 and 2018 — so far.
- Headquartered in Dhaka, BIMSTEC is an inter-regional grouping that seeks to foster regional and economic cooperation among nations in the littoral and adjacent areas of the Bay of Bengal — India, Thailand, Myanmar, Nepal, Bangladesh, Sri Lanka and Bhutan.
- The BIMSTEC region is home to roughly 22 per cent of the global population with a combined GDP of over \$2.7 trillion.

### Highlights

- India was a part of the 17th BIMSTEC meet on 1st April. Sri Lanka was the host nation.

- Some key agreements signed by BIMSTEC members include a convention for combating terrorism, transnational organised crime and illicit drug trafficking. However, this awaits ratification.
- Another is the BIMSTEC Grid Interconnection, signed during the BIMSTEC Summit in Kathmandu, Nepal, in 2018, which aims to promote an optimal power transmission in the BIMSTEC region.
- In a recent virtual meeting of the Foreign Ministers BIMSTEC finalised a major Connectivity master plan for the Bay of Bengal region.
- The meeting also endorsed three MoUs/agreements relating to convention on Mutual Legal Assistance in Criminal matters, cooperation between diplomatic and training academies and establishment of BIMSTEC Technology Transfer Facility in Colombo.

### **Analytica**

- ✓ Due to setbacks to the South Asian Association of Regional Cooperation (SAARC), particularly when its 2016 summit scheduled to be held in Pakistan was suspended after member countries declined to participate, BIMSTEC has emerged as the “preferred platform” for regional cooperation in South Asia.
- ✓ Later in 2016, India held a joint BRICS-BIMSTEC Summit in Goa for the latter’s regional outreach. After this, the support for BIMSTEC gained further momentum.
- ✓ After twenty-three years and a sluggish pace of growth, the BIMSTEC has gained salience in recent times against the backdrop of changing geopolitical dynamics in the Bay of Bengal region.
- ✓ The Bay of Bengal has grown in strategic significance within the Indo-Pacific, especially due to the contest between India and China. What was once a region bereft of any major conflicts is now poised to become “a zone of geopolitical rivalry among major powers and of regional conflict”.
- ✓ The reason small nations in the Bay of Bengal, Indian Ocean and Pacific Ocean are turning to regional blocs like BIMSTEC is because they gain higher economic dividends from regional blocks than fragmented multilateralism promoted by the World Trade Organization (WTO).
- ✓ Bangladesh views BIMSTEC as a platform to strengthen its economic development while Sri Lanka intends to fulfill its aspirations to emerge as a major trans-shipment hub for the wider Indo-Pacific region.
- ✓ For the two landlocked Himalayan member states, Nepal and Bhutan, BIMSTEC is an opportunity to get access to the Bay of Bengal. For Myanmar and Thailand, connecting more closely with India across the Bay is an opportunity to get access to India’s consumer market and to address overdependence on China.
- ✓ For India, BIMSTEC is a platform to fulfill India’s key foreign policy priorities of ‘Neighborhood First’ and ‘Act East.’

### **Challenges in regional integration**

- BIMSTEC has come under scrutiny mainly due to dormancy in initial years and a stalled FTA process. In 2018, India aggressively pushed for the conclusion of a long-pending FTA among BIMSTEC nations but differences between India and Thailand over market access for professionals, duty cuts on traded goods and policy relaxation stalled the process.
- The fact that other countries in the Bay of Bengal like Malaysia, Singapore and Indonesia have not been involved even as dialogue partners has also been a point of contention.
- BIMSTEC has been slow on the come-up because unlike bodies like the EU or ASEAN, it is based on consensus-building which takes time.
- BIMSTEC has not really offered a very positive ray of hope as it has not even held its regular high level submits. The BIMSTEC established its Permanent Secretariat only after 17 years.
- Other weaknesses of BIMSTEC is a great amount of flexibility in the conduct of its process without having a proper Charter and vision documents.
- It is often said that BIMSTEC has a leadership problem as well. Speculations are that the major stakeholders, namely India, Thailand and Myanmar, may talk about BIMSTEC but they have not been enthusiastically engaged to strengthen its initiatives. Rather, they favour a closer bond with ASEAN (Association of Southeast Asian Nations). The question that arises is whether countries like Nepal, Bhutan and Sri Lanka will benefit if BIMSTEC is under the shadow of ASEAN and pro-ASEAN members.



### Way Forward

- ✦ A well-established transport network is a prerequisite to reap the benefits of a free trade area, promote trade and investment, and enhance cooperation in areas such as tourism, people-to-people contact and cultural exchanges.
- ✦ Also, the concept of the “mountain economy” was brought to the discussion table by the ministerial meetings held in August 2017 in Kathmandu. It was a good initiative to integrate the mountain regions of India (including Uttarakhand, Himachal Pradesh and Northeast India) with Bhutan, Nepal and parts of Myanmar.
- ✦ There is a need to establish a BIMSTEC Permanent Working Committee (BPWC) to deal with administrative and financial matters of the Secretariat and to prepare a preliminary draft of the Charter for the organization defining a long-term vision and priorities for cooperation, to develop the Rules of Procedure (RoP) for BIMSTEC Mechanisms, and to explore the possibility of establishing a BIMSTEC Development Fund (BDF).
- ✦ Members have to clarify what additional benefit they offer to the people, including those of the landlocked Member States. For instance, how can the people of Nepal and Bhutan benefit from inland fisheries, as they don’t have access to the sea.
- ✦ Unless the member states think of initiatives to engage with the common man to strengthen people-to-people relations within the region, the agenda of regional integration under BIMSTEC will also be an incomplete dream.

### Conclusion

To conclude, the big challenge before BIMSTEC is to muster public support for the regional forum as people are not very optimistic about the idea of regional integration considering the failure of SAARC to deliver on its promises. Therefore, much more focused and intensified commitment is needed to make BIMSTEC a dynamic, more effective and result-oriented organization.

## Data and a New Global Order

### News Excerpt

Regardless of where one stands, amidst a pandemic that has wreaked havoc on the global economy, digitalization and data led governance are as welcome as ever. However, the growing digital divide across themes like regulation of digital content, big tech and data governance will have a decisive impact on the global order that is emerging. India, being a digital power has a key role to play in the hyper-connected world.

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### Analytica

- The Industrial Revolution restructured the global manufacturing order to Asia’s disadvantage. But in the ‘Digital Data Revolution’, algorithms requiring massive amounts of data determine innovation, the nature of productivity growth, and military power.
- Mobile digital payment interconnections impact society and the international system, having three strategic implications.
- First, because of the nature and pervasiveness of digital data, military and civilian systems are symbiotic. Cybersecurity is national security, and this requires both a new military doctrine and a diplomatic framework.
- Second, the blurring of distinctions between domestic and foreign policy and the replacement of global rules with issue-based understanding converge with the growth of smartphone-based e-commerce, which ensures that massive amounts of data give a sustained productivity advantage to Asia.
- Third, data streams are now at the center of global trade and countries’ economic and national power. India, thus, has the capacity to negotiate new rules as an equal with the U.S. and China.
- Innovation based on data streams has contributed to China’s rise as the second-largest economy and the “near-peer” of the U.S. The U.S. Indo-Pacific Commander recently said the erosion of conventional deterrence capabilities was the greatest danger in the strategic competition with China.
- China’s digital technology-led capitalism is moving fast to utilize the economic potential of data, pushing the recently launched e-yuan and shaking the dollar-based settlement for global trade.

- The global strategic balance will depend on new data standards. Earlier this year, China formed a joint venture with SWIFT for cross-border payments and suggested foundational principles for interoperability between central bank digital currencies at the Bank for International Settlements. The U.S., far behind in mobile payments, is falling back on data alliances and sanctions to maintain its global position.
- Indeed, a small number of actors lead the tech world, and U.S. tech giants Alphabet (Google), Intel, Amazon, Cisco, and Facebook in particular have a near-global monopoly in their respective domains. For example, by the end of 2018, content providers such as Microsoft, Facebook, and Amazon owned or leased more than half of the undersea cable bandwidth. These cables carry close to 98 percent of international internet data and telephone traffic. Such dominance is not healthy and several actors, including the EU and Australia, have taken steps to curb these tech giants' sway.
- China's Digital Silk Road (DSR) is an ambitious vision to catalyze global digitalization. It aims to improve digital connectivity in participating countries, with China as the main driver of the process.
- The DSR is far more than just an infrastructure project. For China, the DSR is a solution that engenders a less U.S.-centric and a more Sino-centric Asian and global digital order. In turn, these goals are part of an overarching vision of the Chinese government for tech primacy and greater autonomy in the global digital order.
- Many countries practice a restrictive view on digital governance, and different countries enforce different types and levels of restrictions over cyberspace. Countries like Singapore and India tend to enforce controls on content too, and the EU, for instance, is increasingly regulating content. So, it is important to note that there are no universal global cyber governance values. Perhaps this is reflective of the diversity of cultures and socio-political values on the human canvas – both online and offline.

### Way Forward

- India's goal is to become a \$5-trillion economy by 2025. While the country is fast-tracking its digital rupee, the challenge is promoting engagement with major powers while retaining its data for innovation and competitive advantage.
- India needs to build and offer digital backbones that are almost entirely homegrown. The backbones are the infrastructure that makes digital communication possible, such as data cables, cellular networks, and data storage centers. The more backbone it builds, the more it can build on and connect to that foundation – thus strengthening its position in the global digital order.
- India must strive to set standards for digital infrastructure and next-generation tech such as artificial intelligence, robotics, the Internet of Things, blockchain, serverless computing, and so on. Setting standards brings considerable strategic advantages with it.
- India needs to create digital arteries that are likely to boost supply chains, its economy, and, therefore, its overall global economic influence.
- India needs to work with like-minded countries towards broader objective of narrowing the global digital divide. It also challenges the existing dominance of the U.S. digital value system and dominant market share of its tech companies.
- India must present itself, both serious partners in digital transformation for those countries in need of competitively priced digital products and services, as well as competition to existing tech leaders.

### Conclusion

India alone straddles both U.S. and China-led strategic groupings, providing an equity-based perspective to competing visions. It must be prepared to play a key role in Moulding rules for the hyper-connected world, facing off both the U.S. and China to realize its potential of becoming the second-largest economy.

## ENVIRONMENT

### Amendments to the Forest (Conservation) Act, 1980

#### News Excerpt

The Union Ministry of Environment, Forest and Climate Change (MOEFCC) has proposed several amendments to the Forest (Conservation) Act, 1980, to facilitate infrastructure projects.

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#### Pre-Connect

- The Forest (Conservation) Act (FCA), 1980 is the foremost legislation that regulates deforestation in the country. It prohibits the felling of forests for any “non-forestry” use without prior clearance.
- Supreme Court in 1996 had extended the coverage of FCA to all areas that satisfied the dictionary definition of a forest; earlier, only lands specifically notified as forests were protected by the enforcement of the FCA.
- The FCA is legislation with five sections. The government seeks to amend section 1 and 2 of FCA–
  - Section 1: It defines the extent of coverage of the law
  - Section 2: It restricts activities in forest areas and
  - The rest deals with the creation of advisory committees, powers of rule-making and penalties.

#### Proposed Amendments

- The amendment proposed to grant exemptions to railways, roads, tree plantations, oil exploration, wildlife tourism and ‘strategic’ projects in forests.
- The proposals intended to empower state governments to lease forest land to private individuals and corporations. The amendment proposes changes to strengthen the applicability of the FCA–
  - To complete the process of forest identification in a time-bound manner
  - To enable the creation of ‘no-go’ areas, where specific projects would not be allowed
- A provision has been added to exempt application of FCA on forest land that is used for underground exploration and production of oil and natural gas through Extended Reach Drilling (ERD) originating outside forest land.
- A new explanation added to Section 2 stated that survey, reconnaissance, prospecting, exploration or investigation for a future activity in the forest will not be classified as a “non-forestry activity”. Such survey works would not require any prior permission from the government.
- Several key amendments are—

<b>Leases on forest land</b>	<b>Exemptions to plantations</b>
<ul style="list-style-type: none"> <li>○ Section 2 of the FCA requires the central Government’s approval before assigning forest lands on lease to any private person / corporation / organisation not owned or controlled by the central government.</li> <li>○ This clause, however, has purportedly been deleted in the proposed amendment.</li> <li>○ This may mean that state governments can issue leases for the use of forest land without the Centre’s prior approval.</li> </ul>	<ul style="list-style-type: none"> <li>○ Section 2 proposes to exempt plantation of native species of palm and oil-bearing trees from the definition of “non-forest purpose”.</li> <li>○ Since the FCA applies to conversion of forest land to “non-forest purpose”, this proposed amendment would effectively mean that anyone who wants to clear a natural forest to raise such plantations would not require any approval from the government.</li> <li>○ The government will only impose conditions for compensatory afforestation and payment of other levies and compensations.</li> </ul>
<b>Exemptions to wildlife tourism, training infrastructure</b>	<b>States may grant forest clearance for strategic projects</b>
<ul style="list-style-type: none"> <li>○ The FCA classifies activities related to wildlife conservation as “non-forestry” purposes, which means activities such as building check posts, communication</li> </ul>	<ul style="list-style-type: none"> <li>○ The proposed Section 2A may empower the central government to provide for state government approval for projects on forest land for “strategic” or security projects of</li> </ul>

infrastructure, fencing, boundary, etc do not need a forest clearance.

“national importance”, according to the documents accessed.

- There is no clarity on the scope of these terms, or on the determination of national importance, or illustrative examples of such projects.

**Creation of ‘No-Go areas’**

- The proposed amendment inserts a new Section (2B), which will allow the central government to delineate forest areas where conversion to specific non-forest uses would not be permitted for a fixed period of time.
- The delineation would be based on the basis of pre-defined criteria. This could mean, for instance, that a certain dense forest would not be allowed to be converted to a coal mine for the next 30 years, but it could be allowed to be cleared for a thermal power plant.
- The proposed section 1A claims to seek completion of this process within a year of the commencement of the amendment.

**Expected Outcomes**

- ✓ This move will facilitate rapid infrastructure growth, which is imperative for economic growth, along with that it would also enable ease of doing business in diverse sector. Amendments will also ensure that projects of strategic importance can be carried out without any legal and procedural hurdle.
- ✓ The move is likely to reduce the burden of environmental litigation and facilitate the private sector in managing the forest patches with best available standards of conservation.
- ✓ Proposed Amendments will reduce the time delay during the consideration of advisory committee regarding the forest clearance, management and diversion for its use in non-forest purpose.
- ✓ Infrastructure growth is likely to generate livelihood opportunities for marginalized forest dwellers, development of transport line will help to integrate forest communities with mainstream society.

**Protection status of Andaman and Nicobar Islands**

- Recently, through a series of de-notifications and amendments in rules, the Centre is prepping the islands for mega projects.
- With the new projects that have been proposed, the government claims it will bring growth and employment to the islands.
- The plan is likely to cause irreversible damage to the unique biodiversity and fragile ecosystems, with little hope for the islanders to benefit from the development plans.
- Over half the species of butterflies, 40% of birds and 60% of mammals found here are endemic.
- It is also home to particularly vulnerable tribal groups such as the Great Andamanese, Jarawas, Onges, Sentinelese and Shompen.

**Key Concerns**

- This move would discourage people’s collective participation in conservation and management of forest and forest land. Rights provided under the Forest Rights Act (FRA), 2006 will be undermined and opinion of indigenous people may not be considered, and this may create a political and governance challenge.
- Interference in forest’s tribal communities would invite resistance from tribal communities. De-regulating several regulations may invite corrupt practices, illegal exploitation of forest resources and timber extraction.
- This move aimed to give exemptions to railways, roads, tree plantations, oil exploration and wildlife tourism. Such steps could have severe impact on forest diversity and could cause large scale deforestation which could become beyond management.
- Generally, Forest is always considered as collective right. Transferring its ownership right to private entities may invite resistance from active citizenry.

**PEPPER IT WITH**  
CAMPA funds, EIA, Environment Protection Act, 1986, National green Mission, NGT

**Way Forward**

- ✚ Community-led approach is much needed. Community-led initiatives have successfully regenerated forests by adopting sustainable- use practices, regeneration through traditional knowledge of forests and species, guarding and penalizing poachers, among others.



✚ There is dire need to standardize the process of environmental impact assessment (EIA) in order to reduce faulty and arbitrary assessment reporting, meanwhile there is need to streamline the process of clearance by state government and other key authorities.

**Agreement on ‘Cities combating plastic entering the marine environment’**

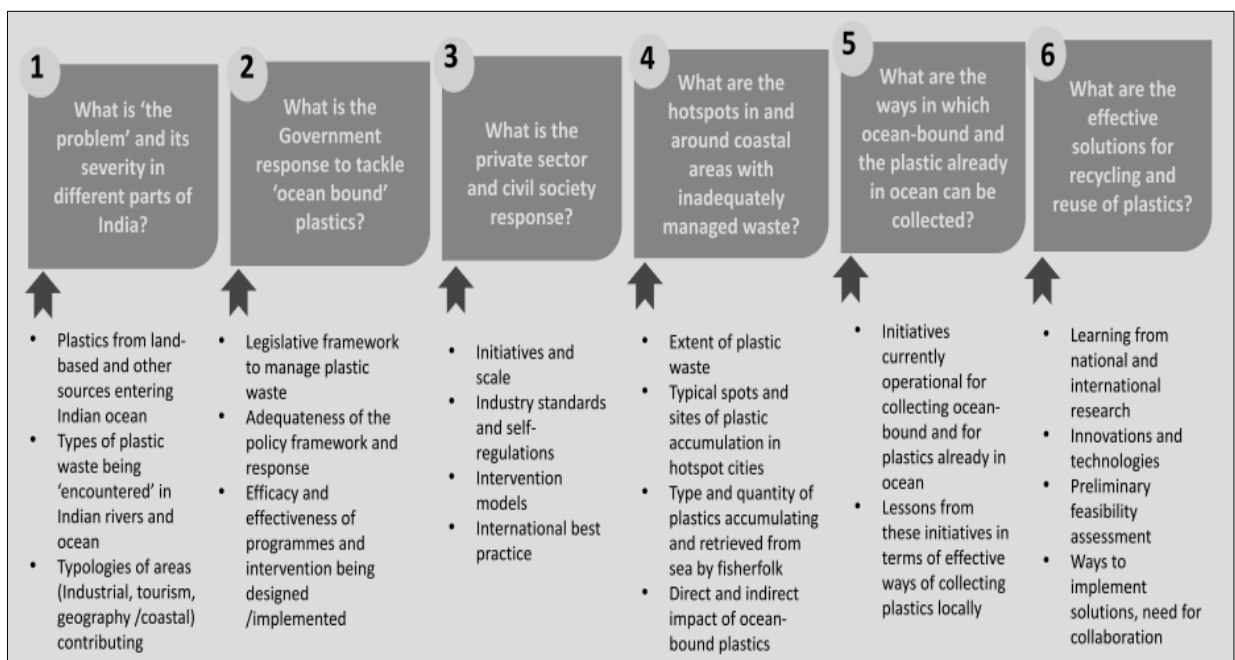
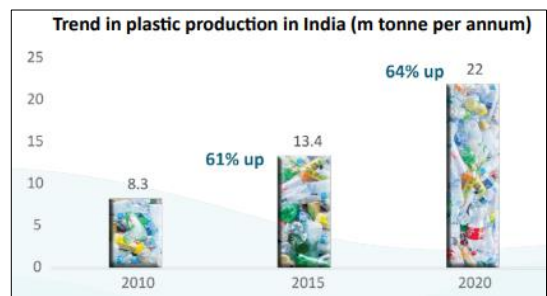
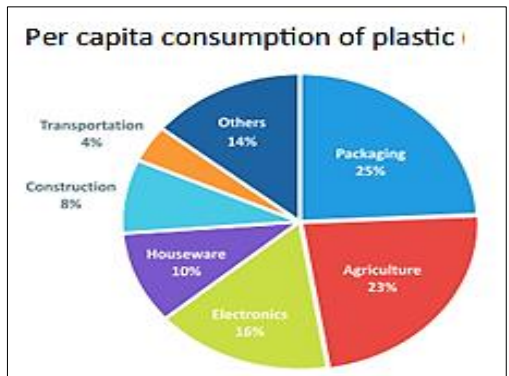
**News Excerpt**

The Ministry of Housing and Urban Affairs and the German Ministry of Environment, Nature Conservation and Nuclear Safety signed an agreement on technical cooperation titled—‘Cities Combating Plastic Entering the Marine Environment’ at a virtual ceremony.

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**About**

- This project is envisioned under the joint declaration of intent regarding cooperation in the field of ‘Prevention of Marine Litter’ signed between India and Germany in 2019.
- The project, aimed at enhancing practices to prevent plastic entering the marine environment, and will be undertaken at the national level, and selected states such as—Uttar Pradesh, Kerala and Andaman & Nicobar Islands and in the cities of Kanpur, Kochi and Port Blair for a period of three and a half years.
- This project is expected to foster improvements in segregation, enable cities to improve collection, segregation and marketing of plastic waste, to prevent plastic disposal to water bodies, and to improve handling of port and marine waste collection, transportation, treatment and disposal of waste in municipalities, thereby establishing an efficient system, that ensures no waste finds its way into rivers or oceans.
- This will be combined with data management and reporting systems, civil society involvement and increased cooperation with recyclers and the recycling industry through a digital platform.
- The project’s outcomes are completely in line with the objectives of Swachh Bharat Mission-Urban focusing on sustainable solid waste management.



### State of Plastic and Marine Pollution in India

- In India, plastic has quickly replaced usage of other materials including rubber, metal, stone, concrete, wood, etc. The growth of the petrochemical industry and the increased per capita consumption of plastic accelerated the plastic production in India.
- In recent times, the level of plastic waste that has accumulated in oceans and marine ecosystems through the increasing production and use of durable synthetic materials has alarmed the public and policy makers alike.
- It is estimated that 15-20% of all plastics are entering oceans via riverine ecosystems of which 90% are contributed by 10 of the world’s most polluting rivers. **Two of these river systems are located in India, namely Ganga and Brahmaputra.**
- Ocean bound plastic waste has two main sources namely land based and sea based. Several reports suggested that about 80% of ocean bound plastic is land based and 20% is sea based.

### Impacts of plastic on marine life

- ✓ Marine litter threatens ecosystems and adversely affects fishery and tourism industries around the globe.
- ✓ In addition to negative economic impact, it affects public health with increased concerns about micro-plastic and risk of particles entering the food chain.
- ✓ Plastic waste kills up to a million seabirds a year. As with sea turtles, when seabirds ingest plastic, it takes up room in their stomachs causing starvation.
- ✓ Plastic pollution threatens food safety and quality, human health, coastal tourism, and contributes to climate change.

### Way Forward

- To effectively address the issue of marine plastics, research and innovation should be supported and augmented. Knowledge of the full extent of plastic pollution and its impacts would provide policy-makers, manufacturers and consumers with scientific evidence needed to spearhead appropriate technological, behavioural and policy solutions. It would also accelerate the conceptualisation of new technology, materials or products to replace plastics.
- Adopting Zero waste approach- The zero-waste hierarchy is defined as the “progression of policies and strategies to support the Zero Waste system, from highest and best to lowest use of materials”. The 5 levels are: Reduce (Most preferred), Reuse, Recycle, Recover, and Landfill (Least preferred).
- Governments, research institutions and industries also need to work collaboratively redesigning products, and rethink their usage and disposal, in order to reduce microplastics waste for instance—from pellets, synthetic textiles and tyres.
- Recycling and reuse of plastic materials are the most effective actions available to reduce the burden of domestic waste. Along with that genuine legal effort should be adopted to combat the marine pollution.

**PEPPER IT WITH**  
 Microbeads, Bio-remediation, Solid Waste Management Rules, Extended producer responsibility (EPR), Blue flag certification

### Protection Rules for Exotic Animals not included in WPA

#### News Excerpt

Recently, Delhi High Court issued an order guiding the Union Government to take a decision on framing rules to provide protection to exotic animals which are currently not under the ambit of the Wildlife (Protection) Act (WPA), 1972.

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#### Pre-Connect

- Wildlife (Protection) Act (WPA), 1972 is aimed to protect animal and plants species. It restricts the hunting of wild animal, prohibits the uprooting, damage, collection, possession or selling of any specified plant from any forest land and has various schedules to protect species.

Schedule-I	It cover species under 'endangered species' Absolute protection is provided to listed species.
Schedule II	Animals listed under this schedule are also conferred high protection.

	Their trade is prohibited.
Schedule III & IV	These schedule provided protection to species but the penalty for any violation is less.
Schedule V	It contains animals that can be hunted. When any species is declared vermin, it is considered to be placed in Schedule V.
Schedule VI	This schedule provides for regulation in cultivation of a specified plant and restricts its possession, sale and transportation. Both cultivation and trade of specified plants can only be carried out with prior permission of competent authority.

- A wild animal covered under above schedules can be hunted or killed with the prior permission of the Chief Wildlife Warden (CWLW) of the state under certain condition.

**Importance of the Ruling**

- Animals and many species are protected under WPA. Many of birds and animals are out from the ambit of WPA. Consequently, birds and animals are possessed by individuals, some of which may be invasive species and have adverse impact on the exiting eco-system. Such ruling may force government to create a database of such species, ensure adequate protection and lastly illegal trafficking can be checked.
- Along with reduced instances of trafficking, such move will help to check exposure to the Zoonotic disease. Additionally, illegal trade can also be checked.
- Proper strategy and programmes can be implemented to save ecosystem from the threat of invasive species. Habitat destruction can also be checked.

**Menace of Exotic Animal Trafficking in India**

- ✓ Since there is a complete ban on selling Indian species under the Wildlife Protection Act, smugglers have shifted to the exotic animal trade.
- ✓ There have been multiple instances in the last one year when exotic animals have been seized by different enforcement agencies across northeast India.
- ✓ Exotic animals including rare species like leopard tortoise, red-footed tortoise, yellow, orange and green iguana, bearded dragon and albino iguana around the Friendship Bridge over the Tayo river near the India-Myanmar border in Champai district of Mizoram has been seized by authorities.
- ✓ India is now slowly emerging as a major demand market for exotic animals

**PEPPER IT WITH**

Vermin Animal, National Biodiversity Authority, National Park, Wildlife Sanctuaries, CITES

**Government Advisory**

- To regulate this growing undocumented market of exotic animals in the country, the Ministry of Environment, Forest and Climate Change last year issued an advisory for dealing with the declaration of stock of exotic live species (species listed under Appendix I, II and III of CITES), import of exotic live species, registration of progeny of previously held stock and transfer/transport of stock in India.
- According to a report published recently in India-Spend, 32,645 Indians declared their stock of exotic animals till February. Initially, a six-month window open till December 15, 2020, was given to Indians willing to voluntarily declare their stock of exotic pets, though later the window was extended till March 15, 2021.

**Way Forward**

- ✚ United efforts are required to ban and restrict illicit wildlife trade by Governments at international level; this would reduce the demand and hence reduce the trade itself.
- ✚ Bringing in a stricter domestic trade regulation can help to boost the population of endangered animals. Moreover, the funding needs to be increased for tackling the poachers.
- ✚ People's empowerment and engagement needs to be enhanced to widen the scope of 'people participation' in order to track, report and monitor the instances of illicit wildlife trade.

**Net Zero Emission Targets**

**News Excerpt**

Over 100 countries have pledged to get to net-zero emissions in the next 30 years. Several countries requires India's support to adopt net zero emissions— as India is believed to be third largest emitter of GHG.

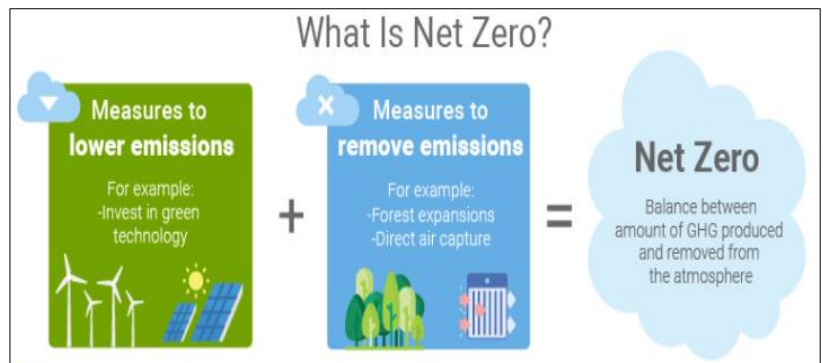
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## Pre-Connect

- Under the Paris Agreement, countries agreed to limit warming well below 2 degrees C and ideally 1.5 degrees C. Climate impacts that are already unfolding around the world, even with only 1.1 degrees C of warming — from melting ice to devastating heat waves and more intense storms — show the urgency of minimizing temperature increase to no more than 1.5 degrees C.
- To meet the Paris Agreement's temperature goals, the world will need to reach 'net-zero emissions'.
- The Special Report on Global Warming of 1.5°C, from the Intergovernmental Panel on Climate Change (IPCC), finds that if the world reaches 'net-zero emissions' one decade sooner, by 2040, the chance of limiting warming to 1.5 degrees C is considerably higher.
- Achieving a net-zero or close to net-zero target is necessary to arrest global warming at 1.5 degrees Celsius, and to achieve this, the world has time only till 2050.

## About Net Zero Emissions Targets (NZET)

- Net zero refers to the balance between the Greenhouse Gases (GHG) emissions produced vs taken out from the atmosphere.
- Net-zero is also referred to as carbon-neutrality, does not mean that a country would bring down its emissions to zero.
- Rather, net-zero is a state in which a country's emissions are compensated by absorption and removal of greenhouse gases from the atmosphere. Absorption of the emissions can be increased by creating more carbon sinks such as forests, while removal of gases from the atmosphere requires futuristic technologies such as carbon capture and storage.
- This way, it is even possible for a country to have negative emissions, if the absorption and removal exceed the actual emissions.
- The idea is to reduce the amount of human caused emissions to as low as possible, and remove CO2 emissions from the atmosphere with initiatives such as reforestation or direct carbon removal. GHG emission with present conventional mitigation techniques may take more time to reach to the level of near zero emissions, while by using carbon removal techniques the climate change ambition targets can be fulfilled early as compared to the convention mitigation targets.



## NZETs and India

- ✓ India—as the world's third largest emitter and a country highly vulnerable to climate risks, India needs to take bold climate action. However, given its livelihoods and economic growth concerns, India may not be in a position to pledge net-zero targets yet. Furthermore, on the basis of past experience regarding climate change actions, India is not ready to believe the ideas shared under NZETs.
- ✓ India is opposing NZETs because it is likely to be the most impacted by it. India's position is unique. Over the next two to three decades, India's emissions are likely to grow at the fastest pace in the world (For instance- INDC targets under Paris agreement), as it presses for higher growth to pull hundreds of millions of people out of poverty. No amount of afforestation or reforestation would be able to compensate for the increased emissions. Most of the carbon removal technologies right now are either unreliable or very expensive.
- ✓ Amid pandemic and economic recession, India cannot carry on the twin burden of Carbon-free development while dodging and surviving the impacts of Climate change as it falls prey to Nature's fury. Although Sustainability is highly desirable, Climate change impacts not only economic structure of the country, rather socio-cultural bases are also destroyed.

## Analytica

- India has repeatedly noted in climate negotiations that the developed countries have historically consumed far more than their fair share of the global carbon budget. India



continues to uphold the need for equitable access to carbon space as among the key principles guiding implementation of the Paris Agreement, as well as the achievement of the larger.

- Net-zero as an idea itself is flawed. It means that countries will emit more; but they will mop up these emissions to say “net-net”. The net-zero formulation does not assign any quantifiable emission reduction targets on any country. Net-zero plans relies on promises of future carbon removal – instead of reducing emissions now, Therefore, placing a risky bet.
- Net-zero is intrinsically inequitable. Against the dictum of ‘Common but differentiated responsibilities’ Under Paris Agreement. There is a huge and completely disproportionate difference in the emissions of the old-developed world and now newly developed China and the rest of the world, it would be logical to say that if the world needs to be net-zero by 2050, then these countries needed to have already turned net-zero or do so by 2030.
- Net zero targets typically assume that it is possible to deliver vast amounts of negative emissions, meaning—removal of carbon dioxide from the atmosphere through storage in vegetation, soils and rocks. However, deployment of the technologies needed for negative emissions at the required scale remains unproven (efficiency of technologies are yet to be test on ground level); affordability and access to technologies is also a barrier especially for developing countries. Therefore, NZET may not replace real emissions reductions.
- The net zero formulation at this stage doesn’t cast responsibilities in terms of sectorial quantified targets. Failure to make such a separation has already hampered climate policy, exaggerating the expected future contribution of negative emissions in climate models.
- Although a net zero targets may sound vibrant when the severe impacts of the climate crisis is already being felt across the world. It is extremely difficult to achieve and will have long lasting implications for socio-economic development of developing and least developing countries.

### Way Forward

- ✚ Policy, technology and behavior need to shift across the global scale to reach collectively towards the target of ‘net zero emissions’. Energy efficiency and fuel-switching measures are required for transportation.
- ✚ Improving the efficiency of food production, changing dietary choices, halting deforestation, restoring degraded lands, and reducing food loss and waste also have significant potential to reduce emissions. It is critical that the structural and economic transitions are necessary to limit warming to 1.5 degrees C.
- ✚ Corporations can fast-track individual action and commit to meaningful short- and long-term absolute emission reductions. All companies should actively monitor and manage their climate-related risks and increase their efforts to achieve a 1.5°C world.
- ✚ Ecosystem actions can overcome barriers, through collaborations along value chains or with industry peers. It will take a joint effort to overcome existing transformation barriers in sectors where decarbonization costs are too high for individual companies to bear alone.
- ✚ Ultimately, individuals need to drive climate action in their roles as consumers, voters, leaders and activists.
- ✚ Governments should unilaterally enact national regulations to reduce emission immediately while providing incentives in terms of technology transfer.

**PEPPER IT WITH**  
Paris Treaty, Common but differentiated responsibilities, climate vulnerability index

### Forest Fires

#### News Excerpt

Uttarakhand has seen more than 1,000 instances of forest fire during the last six months. Along with this, similar instances have been reported in Himachal Pradesh (Kullu Valley) and Nagaland-Manipur border (Dzukou Valley) in January.

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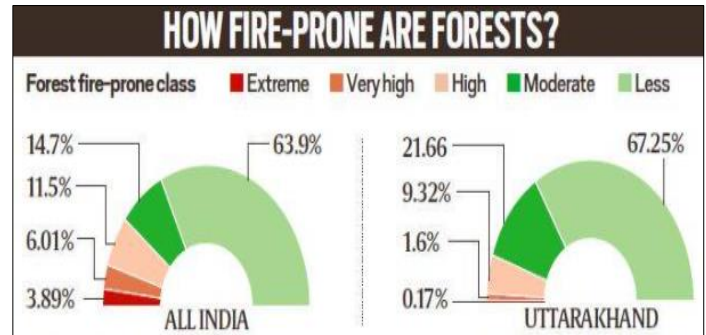
#### Pre-Connect

- Since the beginning of 2021, there have been several instances of forest fires in Himachal Pradesh, Nagaland-Manipur border, Odisha, Madhya Pradesh, and Gujarat, including in wildlife sanctuaries.

- April-May is the season when forest fires take place in various parts of the country. But forest fires have been more frequent than usual in Uttarakhand and have also taken place during winter.

### **Forest Fire in Uttarakhand**

- In Uttarakhand, 24,303 sq km (over 45 per cent of the geographical area) is under forest cover.
- The Forest Survey of India has identified forests along the south, west and southwest regions of Uttarakhand — comprising Dehradun, Haridwar, Garhwal, Almora, Nainital, Udham Singh Nagar, Champawat districts — as being prone to varying intensities of forest fires.
- In Uttarakhand, the lack of soil moisture is being cited as a key factor responsible for forest fire. In last two consecutive monsoon seasons (2019 and 2020), rainfall has been deficient by 18% and 20% of the seasonal average, respectively.



### **Analytica**

#### **Indian Forest's Proximity to Fire**

- ✓ The forests of the Northeast and central India regions are the most vulnerable areas to forest fires.
- ✓ Forests in Assam, Mizoram and Tripura have been identified as ‘extremely prone’ to forest fire.
- ✓ States with large forest areas under the ‘very highly prone’ category include Andhra Pradesh, Manipur, Meghalaya, Mizoram, Nagaland, Odisha, Maharashtra, Bihar and Uttar Pradesh.
- ✓ Western Maharashtra, Southern Chhattisgarh and areas of Telangana and Andhra Pradesh, along with central Odisha, are turning into ‘extremely prone’ forest fire hotspots.
- ✓ Areas under the ‘highly prone’ and ‘moderately prone’ categories make up about 26.2% of the total forest cover.

### **Causes of fire**

- Forest fires can be caused by a number of natural causes but major fires in India are triggered mainly by human activities.
- Climate change is fuelling the instances of forest fires globally, especially the massive fires of the Amazon forests in Brazil and in Australia in the last two years. Fires of longer duration, increasing intensity, higher frequency and highly inflammable nature are all being linked to climate change.
- In India, forest fires are more frequent during the month of March and April. During this period, the ground has large quantities of dry wood, logs, dead leaves, stumps, dry grass and weeds that can make forests easily go up in flames.
- Under natural circumstances, extreme heat and dryness, friction created by rubbing of branches with each other also have been known to initiate fire.

### **Challenges of forest fire**

- ✦ The locality of the forest and access to it pose hurdles in initiating firefighting efforts. During peak season, shortage of staff and lack of adequate resources is another challenge in dispatching firefighting teams.
- ✦ Timely mobilization of fuel and equipment, depending on the type of fire, through the thick forests remain challenges.
- ✦ It is very difficult to transport heavy vehicles loaded with water into the thick forests, a majority of fire dousing is initiated manually, using blowers and similar devices. But there have been incidents when forest fires were brought under control using helicopter services.
- ✦ Wind speed and direction play a critical role in bringing a forest fire under control. The fire often spreads in the direction of the winds and towards higher elevations.

### Impacts of Forest Fire

- > Forest fires can have multiple adverse effects on the forest cover, soil, tree growth, vegetation, and the overall flora and fauna. Fires render several hectares of forest useless and leave behind ash, making it unfit for any vegetation growth.
- > Heat generated during the fire destroys animal habitats. Soil quality decreases with the alteration in their compositions. Soil moisture and fertility, too, is affected. Thus forests can shrink in size. The trees that survive fire often remain stunted and growth is severely affected. Other impact are—

Soil and Nutrients	Vegetation
<ul style="list-style-type: none"> <li>○ Changes the rate of formation of soil organic matter.</li> <li>○ Affects the availability of minerals</li> <li>○ Affects population of Micro-organism</li> <li>○ Increases soil erosion with loss of vegetation</li> </ul>	<ul style="list-style-type: none"> <li>○ Curtailment of Natural Succession and forest regeneration</li> <li>○ Affects plant Bio-mass, structure and shape</li> <li>○ Affects plant nutrient uptake</li> </ul>
Water circulation	Species
<ul style="list-style-type: none"> <li>○ Changes rate of evaporation and transpiration</li> <li>○ Changes rate of permeability and sub-surface flow</li> <li>○ Changes the rate of sediment and water</li> <li>○ Changes the stream and river structure</li> </ul>	<ul style="list-style-type: none"> <li>○ Alters the pattern of resources like-food and water</li> <li>○ Alters pattern of distribution of species</li> <li>○ Possibility of early mortality</li> </ul>

### Way Forward

- » Preventive steps to reduce the risk of forest fire must be cemented in a holistic way. The Forest Fire Alert System to monitor forest fires in real time is a need of the hour. Real-time fire information from identified fire hotspots can be electronically transmitted to concerned authority and General public. SMS based alerts can also be initiated in order to invite faster action.
- » Mapping of Eco-fragile zone’s resources such as water sources, roads and staging areas can help to contain fires in a limited landscape and with in-situ resources, So that damage can be minimized and managed efficiently.
- » A broad and comprehensive policy is much needed to deal with the instances of forest fires. Convergence of academia, researchers, fire fighters and people’s participation is prerequisite to manage the instances of forest fires.

**PEPPER IT WITH**  
Carbon Sink, Forest conservation act, climate change, CAMPA

### Asian desert and Indian summer monsoon

#### News Excerpt

A new study now details how dust coming from the deserts in the West, Central and East Asia plays an important role in the Indian Summer Monsoon. The study showcases that the Indian monsoon is intensified by atmospheric dust particles swept up by the winds from deserts in the Middle East.

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#### Pre-Connect

- The Indian monsoon system is vital to our social, economic, and environmental progress.
- Dust swarms can influence moisture transport, increase precipitation, rainfall.
- Asia is the world’s second largest dust source—with major deserts in the Middle East, Central and East Asia.



#### About Study

#### The Dust particles and winds from the Middle East

- The dust particles when carried by strong winds into the atmosphere (from the Middle East) absorb solar radiation and become extremely hot.

- The heat from these particles raises the heat of its surrounding environment enough to change air pressure and circulation patterns of the wind. This phenomenon is termed an “elevated heat pump” that is responsible for driving moisture from the sea to the Indian subcontinent. So, Asian dusts enhance Indian summer monsoon via the “elevated heat pump” (EHP) effect.
- The atmospheric dust plays a major role in deciding the radiation balance over the earth. The dust scatters the light, acts as cloud condensation nuclei, and hence helps in the formation of different types of clouds.

**Positive feedback**

A positive feedback loop plays a role when the dust particles boost the power of Indian monsoons, and the monsoons increase the winds in the Middle East and subsequently produce more dust aerosols.

**Role of the Iranian Plateau**

- ✓ Meanwhile, another Asian source fueling the impact of aerosolized dust upon the Indian summer monsoons is the Iranian Plateau, located between the Middle East and the Tibetan Plateau. This region is at a higher elevation which makes it easier for solar radiation to reach its surface and increase its temperature.
- ✓ An increase in surface temperature causes lower tropospheric winds to flow towards heated regions away from the colder oceanic regions of the winter hemisphere. This leads to an accumulation of hot air above the Iranian Plateau which strengthens the monsoon circulation over the deserts of the Arabian Peninsula.
- ✓ Thus, the Iranian Plateau’s role in increasing the monsoon circulation as well as monsoon precipitation aids in explaining the relationship between Middle East dust and Indian summer monsoon.

**Analytica**

**Impacts of Dust on Indian summer monsoon (ISM)**

- The Indian summer monsoon is characterized by strong winds in the summer. So once the winds change, the moisture transport from ocean to land will change, and consequently they will increase the precipitation.
- Dust particles can modulate the circulation and precipitation of the ISM through absorption of solar and terrestrial radiation when suspending in the atmosphere and when deposited in snow and ice at surface and by acting as nuclei of liquid and ice clouds. In turn, the ISM can affect dust emissions, transport, and deposition through atmospheric circulation and wet scavenging.
- The monsoon can get influenced by dust emission. If there is stronger monsoon, there will be heating in upper atmosphere. The convection associated with the monsoon can go up to a very high elevation, as much as 10 kilometres.
- When this pattern of air over the monsoon is heated, something like a wave is produced. These waves have distinct parts facing either high pressure or low pressure and are responsible for transporting air back to the Middle East. This air goes downwards and strikes the surface to pick up more dust particles, in turn starting the process again.

**Other influences on the Indian summer monsoon**

<u>Snow-darkening effect</u>	<u>The solar-dimming effect</u>	<u>Aerosolized dust</u>
<ul style="list-style-type: none"> <li>○ When black carbon and dust particles suspended in the air (known as aerosols) land in snow-covered regions.</li> <li>○ This in turn darkens the snow, reducing their reflectivity and leading to more absorption of sunlight.</li> <li>○ The process increases the warming of the land and the troposphere above, which leads to enhanced low-level southwesterly winds that amplify the dust accumulation over the Himalayas–Indo-Gangetic Plain.</li> </ul>	<ul style="list-style-type: none"> <li>○ When aerosols block the solar radiation from reaching the land surface.</li> <li>○ This causes the surface temperature to cool down which interferes with hydrological processes by reducing evaporation and in turn reducing rainfall.</li> </ul>	<ul style="list-style-type: none"> <li>○ It can serve as ice-cloud nuclei, also known as the seeds for rain droplets.</li> <li>○ This phenomenon changes the amount or type of precipitation that falls from a cloud and can "alter the microphysical properties of ice clouds and consequently the Indian summer monsoon rainfall</li> </ul>



### Conclusion

Understanding these mechanisms will prove to be of increasing importance in the face of global climate change, especially for Asia, as projections forecast that the land will become drier which will amplify dust emissions. Monsoon has significant impact on Indian agriculture and Indian economy, therefore modeling new mechanism will helps to understand the phenomena better. Additionally, With air pollution worsening in Indian cities, and as residents try to improve air quality, the ratio between natural dust to anthropogenic aerosols will also increase, prompting dust to play a central role in the future.

**PEPPER IT WITH**  
Indian Ocean dipole, ITCZ, El Nino, Solar Flares, Ambient air quality standards

### Mahendragiri Hills

#### News Excerpt

Recently, Odisha Government proposed state’s second biosphere reserve at Mahendragiri. The Mahendragiri hills host a rich biodiversity of fauna and flora and are part of the Eastern Ghats.

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#### Pre-Connect

- Biosphere Reserve (BR) is an international designation by UNESCO for representative parts of natural and cultural landscapes extending over large area of terrestrial or coastal/marine ecosystems or a combination thereof.
- BRs are designated to deal with one of the most important questions of reconciling the conservation of biodiversity, the quest for economic and social development and maintenance of associated cultural values.
- A biosphere reserve is a three-tier system, having the central core zone with concentration of indigenous species, the peripheral zone and the outer transition zone.
- All kinds of eco-development activities including eco-tourism, tourism would be allowed in the periphery as well as the transition zones.

#### About Mahendragiri Hills

- The hill ecosystem (Mahendragiri hills) acts as a transitional zone between the flora and fauna of southern India and the Himalayas, making the region an ecological estuary of genetic diversities.
- The area of the proposed Mahendragiri Biosphere Reserve is around 470,955 hectares and is spread over Gajapati and Ganjam districts in the Eastern Ghats.
- A biosphere reserve in Mahendragiri is urgently needed for the conservation of the landscape, ecosystems, and rare and threatened plant species in the hill system, which is now under severe degradation including habitat destruction.
- Mahendragiri is inhabited by the Soura people, a particularly vulnerable tribal group as well as the Kandha tribe. The other tribes include Kondh, Gond, Santal and Kolh. Their livelihood security is intricately linked to the biodiversity and other local natural resources of the hill complex.
- The vegetation of Mahendragiri hill complex could be classified broadly into four types-Sal forests, mixed forests, grassland, and the scrubs. It is rich with medicinal plants and orchids. The hills have diverse vegetation; The rich flora in Mahendragiri represents 40 per cent of the reported flora of Odisha, with around 1,358 species of plants. Twenty-nine of the 41 species of threatened medicinal plants found in Odisha are found in this biosphere reserve area, according to the International Union for the Conservation of Nature.
- The faunal diversity of the hills consists of 388 species of animals, including 27 species of mammals, 165 species of birds, 23 species of snakes, 15 species of amphibians, three species of turtles and 19 lizards.

India has 12 internationally recognized BRs. They are as follows.

Nilgiri	Similipal
Gulf of Mannar	Achanakmar-Amarkantak
Sunderban	Great Nicobar
Nanda Devi	Agasthyamala
Nokrek	Khangchendzonga
Pachmarhi	Panna

**PEPPER IT WITH**  
Man & Biosphere Network, Western Ghats, Eastern Ghats, Biodiversity Hotspots

**Conclusion**

Such a step will help promote sustainable development of this withering unique ecosystem of Mahendragiri hill complex on the Eastern Ghats as well as enhance the socio-economic-cultural condition of the locals.

**National Climate Vulnerability Assessment Report**

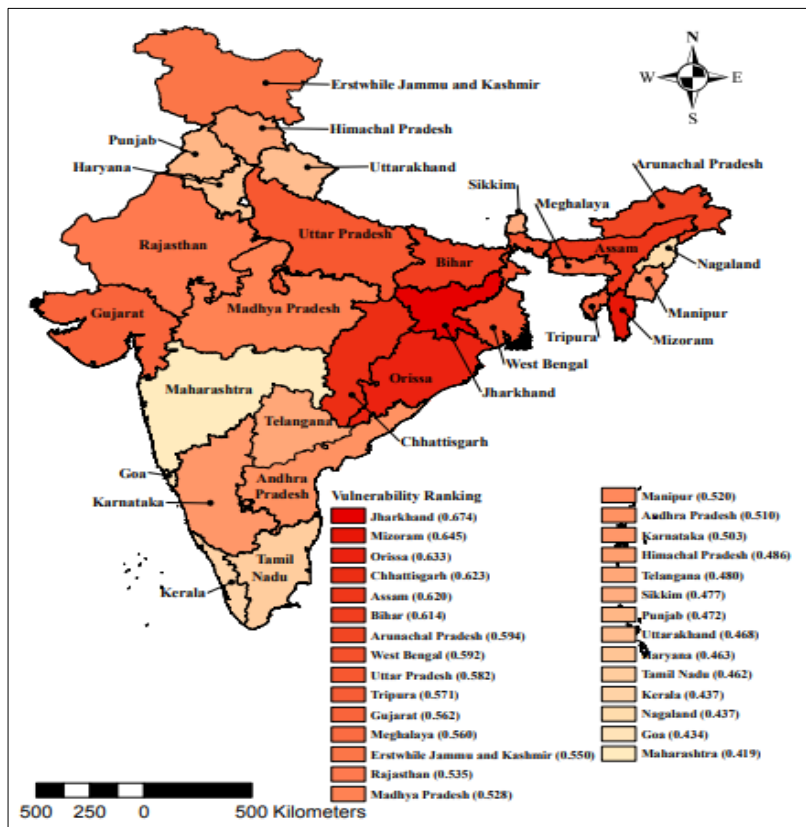
**News Excerpt**

The National climate vulnerability assessment report has been released by Department of Science and Technology. It has identified eight eastern states as highly vulnerable.

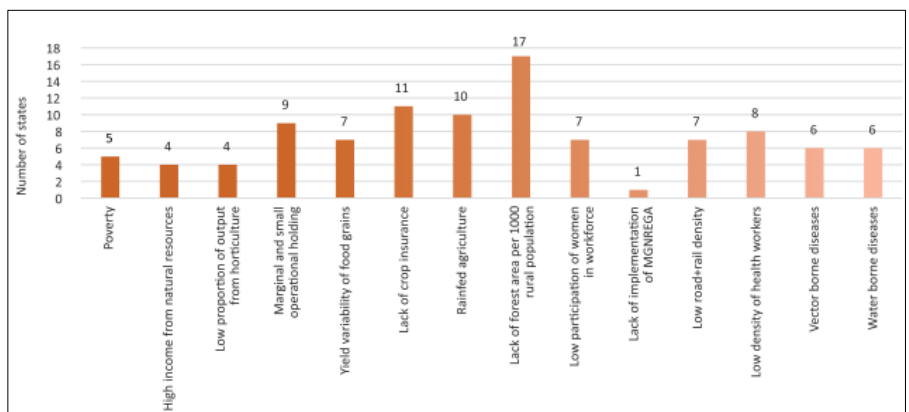
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**Key findings of the vulnerability assessment**

- Based on an all-India assessment, this report identifies the most vulnerable states and districts in India with respect to current climate risk and the main drivers of vulnerability.
- Eastern states like Assam, West Bengal among 8 states highly vulnerable to climate change. Himachal Pradesh, Telangana, Sikkim and Punjab have been categorised as lower-middle vulnerable states. Uttarakhand, Haryana, Tamil Nadu, Kerala, Nagaland, Goa and Maharashtra have been categorised as states with low vulnerability.
- The assessment is based on a set of common indicators and common methodology.
- States also carried out district-level vulnerability assessments individually.
- State-level vulnerability indices developed in this report vary over a small range: 0.42-0.67. This means all states must deal with concerns related to vulnerability.
- The states with a relatively high vulnerability, Jharkhand, Mizoram, Orissa, Chhattisgarh, Assam, Bihar, Arunachal Pradesh, and West Bengal, are mostly in the eastern part of the country, requiring prioritization of adaptation interventions.
- District-level vulnerability indices are also within a small range: 0.34 - 0.75. Assam, Bihar, and Jharkhand have over 60% districts in the category of highly vulnerable districts.



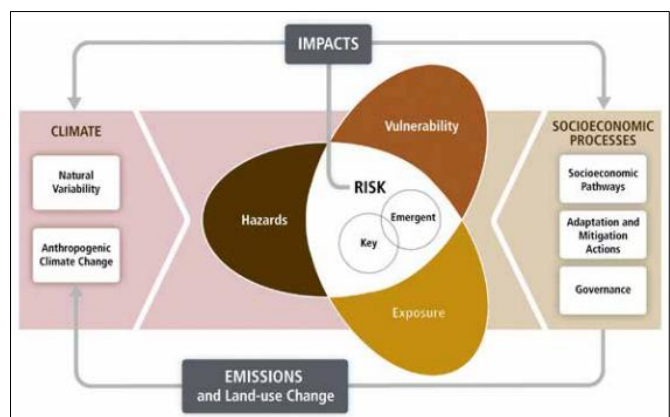
- Vulnerability indices are relative measures. This means, all districts or states are vulnerable, but some are relatively more vulnerable than others, requiring prioritized adaptation interventions.



### Major Drivers of Vulnerability

#### Importance of Assessment

- The vulnerability assessment can assist in ranking and identification of the most vulnerable districts and states and help states prioritize adaptation planning and investments.
- It is critical for developing adaptation projects for the Green Climate Fund, Adaptation Fund, and funds from multilateral and bilateral agencies.
- The vulnerability assessments carried out by the states could become a chapter in their revised State Action Plan on Climate Change, as per the outline provided by the Ministry of Environment, Forest and Climate Change.
- It will also facilitate Nationally Determined Contributions, which aims to adapt better to climate change by enhancing investments in development programmes in sectors vulnerable to climate change, particularly agriculture, water resources, health sector and regions such as Himalayan region, coastal regions, etc. It may also aid to plan disaster management.
- A vulnerability assessment contributes to reporting under the Paris Agreement, Article-9 through the assessment of climate change impacts and vulnerability; the formulation and implementation of a National Adaptation Plan, monitoring and evaluation of adaptation plans, policies and programmes; and the development and implementation of resilience of socio-economic and ecological systems.



#### Way forward

- » A vulnerability assessment is a first step towards adaptation planning. Development of a common framework, methodology and guidelines for risk assessment can help to adapt as well as manage disaster.
- » Generation of data for risk assessment is important. There is need of a strategy for data generation for climate change risk and vulnerability assessment and adaptation planning. There is need of capacity augmentation of all state climate change centres in developing a Risk Index for states. It requires adaptation planning, adequate funding and enough physical infrastructures as well.
- » Assessing vulnerability to climate change is important as it helps to understand climate risks and provides information, on the location specific measures to be taken to adapt to climate change.

**PEPPER IT WITH**  
 Climate Extremes, Flash Floods, Urban Floods, Urban heat island, Green Urban areas

### Global Energy Review 2021

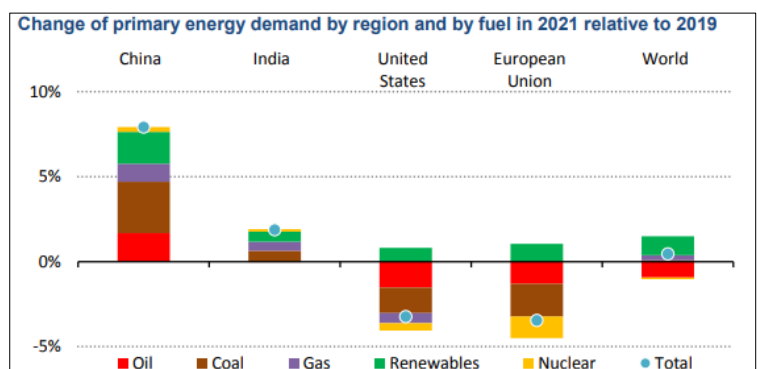
#### News Excerpt

The Global Energy Review 2021 has been released by International Energy Agency (IEA). It evaluated the effects of economic recoveries on global energy demand and CO2 emissions in 2021.

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#### Key points

- Global energy demand to fall 6 per cent in 2020 and all fuels except renewables are set to experience their greatest contractions in demand for decades.
- The Covid-19 pandemic continues to impact global energy demand. But stimulus packages and vaccine rollouts provide a beacon of hope.



- Global economic output is expected to rebound by 6% in 2021, pushing the global GDP more than 2% higher than 2019 levels.
- Global energy demand is set to increase by 4.6% in 2021, more than offsetting the 4% contraction in 2020 and pushing demand 0.5% above 2019 levels.
- Almost 70% of the projected increase in global energy demand is in emerging markets and developing economies, where demand is set to rise to 3.4% above 2019 levels. Energy use in advanced economies is on course to be 3% below pre-Covid levels.
- Global energy-related CO2 emissions are heading for their second-largest annual increase ever. Demand for all fossil fuels is set to grow significantly in 2021.
- Coal demand alone is projected to increase by 60% more than all renewables combined, underpinning a rise in emissions of almost 5%, or 1500 Mt.
- Sluggish demand for transport oil is mitigating the rebound in emissions. Despite an expected annual increase of 6.2% in 2021, global oil demand is set to remain around 3% below 2019 levels.
- Oil use for road transport is not projected to reach pre-Covid levels until the end of 2021. Oil use for aviation is projected to remain 20% below 2019 levels even in December 2021, with annual demand more than 30% lower than in 2019.
- A full return to pre-crisis oil demand levels would have pushed up CO2 emissions a further 1.5%, putting them well above 2019 levels.
- Global coal demand in 2021 is set to exceed 2019 levels and approach its 2014 peak. Coal demand is on course to rise 4.5% in 2021, with more than 80% of the growth concentrated in Asia. China alone is projected to account for over 50% of global growth.
- The power sector accounted for only 50% of the drop in coal-related emissions in 2020. But the rapid increase in coal-fired generation in Asia means the power sector is expected to account for 80% of the rebound in 2021.
- Among fossil fuels, natural gas is on course for the biggest rise relative to 2019 levels. Natural gas demand is set to grow by 3.2% in 2021.
- Electricity demand is heading for its fastest growth in more than 10 years. Electricity demand is due to increase by 4.5% in 2021, or over 1 000 TWh.
- This is almost five times greater than the decline in 2020, cementing electricity's share in final energy demand above 20%.
- Almost 80% of the projected increase in demand in 2021 is in emerging market and developing economies, with the People's Republic China ("China") alone accounting for half of global growth. Demand in advanced economies remains below 2019 levels.
- Demand for renewables grew by 3% in 2020 and is set to increase across all key sectors – power, heating, industry and transport – in 2021. The power sector leads the way, with its demand for renewables on course to expand by more than 8%, to reach 8 300 TWh, the largest year-on-year growth on record in absolute terms.
- Renewables are set to provide more than half of the increase in global electricity supply in 2021. Solar PV and wind are expected to contribute two thirds of renewables' growth. The share of renewables in electricity generation is projected to increase to almost 30% in 2021.
- Wind is on track to record the largest increase in renewable generation, growing by 275 TWh, or around 17%, from 2020.
- Solar PV electricity generation is expected to rise by 145 TWh, or almost 18%, and to approach 1 000 TWh in 2021.

**Launch of India Energy Dashboards (Version 2.0)**

- ❖ India Energy Dashboards (IED) is an endeavour to provide single-window access to the energy data for the country.
- ❖ The IED provides time series data from FY 2005-06 until FY 2019-20.
- ❖ It enables easy downloading of data into convenient spreadsheet formats in a cleaner, more intuitive way.
- ❖ The monthly data is sourced from the monthly reports that are regularly published for the electricity, petroleum and natural gas sectors. UJALA, PRAAPTI, and Vidyut PRAVAH have been incorporated in the portal.

**PEPPER IT WITH**

Nationally Determined Contributions, International Solar Alliance, Energy Security



## The State of the Global Climate 2020

### News Excerpt

World Meteorological Organization (WMO) released its annual State of the Global Climate for 2020. It has cited that the world has seen the very high temperature in 2020.

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### Key Points of the Report

The State of the Global Climate 2020 lists the major global warming milestones such as–

- The WMO report listed key indicators of irreversible changes in the global climate. Such as–
- **Greenhouse Gases:** Notwithstanding the economic slowdown due to the COVID-19 pandemic, emission of major greenhouse gases increased in 2019 and 2020. More to it, the level of greenhouse gas emission will be higher in 2021. Concentrations of the major greenhouse gases continued to increase in 2019 and 2020. “Globally averaged mole fractions of carbon dioxide (CO<sub>2</sub>) have already exceeded 410 parts per million (ppm), and if the

CO<sub>2</sub> concentration follows the same pattern as in previous years, it could reach or exceed 414 ppm in 2021

- **Oceans:** In 2019, the oceans had the highest heat content on record. In 2020, it has broken this record further. Over 80 per cent of the ocean area experienced at least one marine heatwave in 2020. The percentage of the ocean that experienced “strong” marine heat waves (45 per cent) was greater than that which experienced “moderate” marine heat waves (28 per cent)

	Concentrations of the major greenhouse gases, CO <sub>2</sub> , CH <sub>4</sub> , and N <sub>2</sub> O, continued to increase despite the temporary reduction in emissions in 2020 related to measures taken in response to COVID-19
	2020 was one of the three warmest years on record. The past six years, been the six warmest years on record. Temperatures reached 38.0 °C in Russia, the highest recorded temperature anywhere.
	The trend in sea-level rise is accelerating. In addition, ocean heat storage and acidification are increasing, diminishing the ocean’s capacity to moderate climate change
	The Arctic minimum sea-ice extent in September 2020 was the second lowest on record. The sea-ice retreat in the Laptev Sea was the earliest observed in the satellite era.
	The Antarctic mass loss trend accelerated around 2005, and currently, Antarctica loses approximately 175 to 225 Gt of ice per year.
	The 2020 North Atlantic hurricane season was exceptionally active. Hurricanes, extreme heatwaves, severe droughts and wildfires led to tens of billions of US dollars in economic losses and many deaths
	Some 9.8 million displacements, largely due to hydrometeorological hazards and disasters, were recorded during the first half of 2020.

- **Sea-level rise:** Since record-taking started in 1993 using the satellite altimeter, sea-level has been rising. However, there was a blip in summer of 2020 that recorded a drop in sea level. The WMO report says it is due to the La Niña induced cooling. “Sea level has recently been rising at a higher rate partly due to the increased melting of the ice sheets in Greenland and Antarctica.”

- **The Arctic and the Antarctica:** In 2020, the Arctic sea-ice extent came down to second lowest on record. The 2020 Arctic sea-ice extent minimum after the summer melt was 3.74 million square kilometre, marking only the second time on record that it shrank to less than 4 million sq km. The Antarctic sea-ice extent remained close to the long-term average. However, the Antarctic ice sheet has exhibited a strong mass loss trend since the late 1990s. This trend accelerated around 2005, and currently, Antarctica loses approximately 175 to 225 Gt per year, due to the increasing flow rates of major glaciers in West Antarctica and the Antarctic Peninsula

**PEPPER IT WITH**  
GEF, Paris Treaty, Adaptation Fund, Small Island Developing states, CBDR

### Way Forward

- ✓ Adaptation policies aimed at enhancing resilience to a changing climate, such as investing in disaster-proof infrastructure and early warning systems, risk sharing through financial markets, and the development of social safety nets should be adopted.
- ✓ It can limit the impact of weather-related shocks and help the economy recover faster.
- ✓ Adaptation strategies play a key role in countries that are particularly vulnerable to climate change, such as low-income countries located in hot regions and areas exposed to more frequent or severe natural disaster risks.

## Push for Green hydrogen

### News Excerpt

Recently, the Government scales up the target of producing 450 GW of renewable energy by 2030. A push for green hydrogen will help India to meet with its aspiration.

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### Pre-Connect

- The National Hydrogen Energy Mission was announced in the Union Budget 2021. It will draw up a road towards using Hydrogen as an energy source.
- According to an analysis by the Council on Energy, Environment and Water (CEEW), green hydrogen demand could be up to 1 million tonnes in India across application in sectors such as ammonia, steel, methanol, and transport and energy storage.
- India will soon join 15 other countries in the hydrogen club as it launched the National Hydrogen Energy Mission (NHEM).

### About Green Hydrogen

- It is based on the generation of hydrogen (a universal, light and highly reactive fuel) through a chemical process known as electrolysis. This method uses an electrical current to separate the hydrogen from the oxygen in water. If this electricity is obtained from renewable sources it will be known as green hydrogen. Produced energy will be without emitting carbon dioxide into atmosphere.
- The IEA points out, this method of obtaining green hydrogen would save the 830 million tonnes of CO2 that are emitted annually when this gas is produced using fossil fuels. Likewise, replacing all grey hydrogen in the world would require 3,000 TWh/year from new renewables — equivalent to current demand of Europe.

### Challenges involved in scale up

- ✓ **Decentralize green hydrogen production:** Decentralized hydrogen production must be promoted through open access of renewable power to an electrolyser
- ✓ **Ensure access to renewable power:** To minimize intermittency associated with renewable energy, for a given level of hydrogen production capacity, a green hydrogen facility will store hydrogen to ensure continuous hydrogen supply.
- ✓ **Blending green hydrogen in industrial sector:** Improving the reliability of hydrogen supply by augmenting green hydrogen with conventionally produced hydrogen will significantly improve the economics of the fuel. This will also help build a technical understanding of the processes involved in handling hydrogen on a large scale.

**PEPPER IT WITH**  
Paris Agreement, INDC, IPCC, ISA, Hydrogen Club, Energy Transition in India

### Way Forward

India must learn from the experience of the National Solar Mission and focus on domestic manufacturing of Green Hydrogen. Establishing an end-to-end electrolyser manufacturing facility would require measures extending beyond the existing performance-linked incentive programme. India needs to secure supplies of raw materials that are needed for the production of Green hydrogen.

## Monitoring of Himalayan Glacial Catchments

### News Excerpt

A study has been carried out by scientists from IIT Kanpur in Himalayan glacial catchments to minimize disaster risk.

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### Key Points of the study

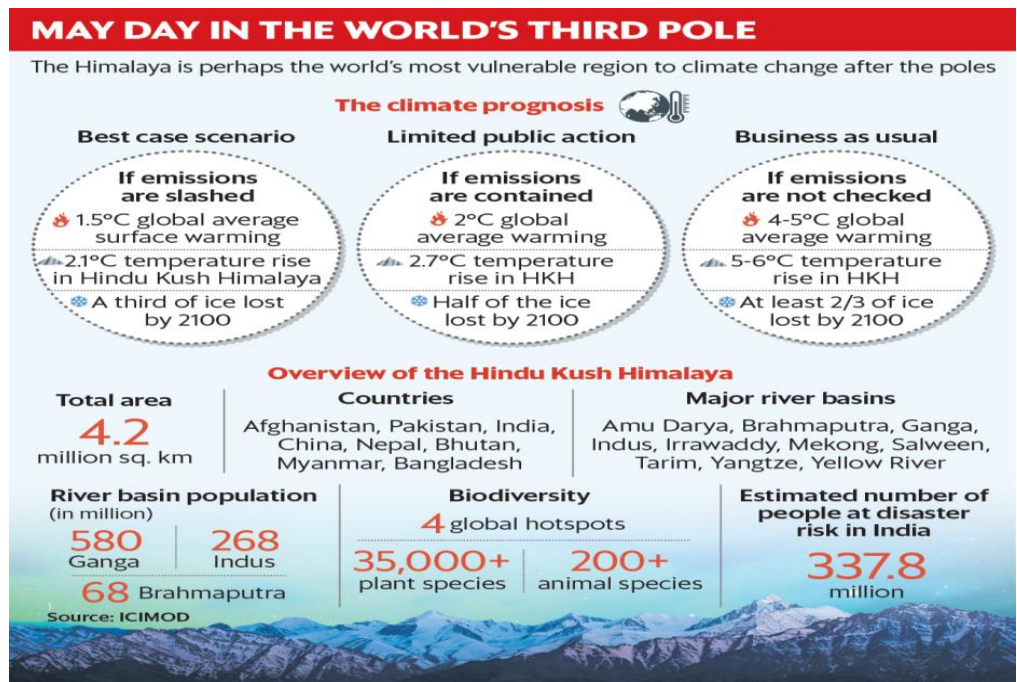
- The study says that Satellite-based real-time monitoring of Himalayan glacial catchments would improve understanding of flood risk in the region and help to inform an early flood warning system that could help curb disaster and save human lives.
- The IIT Kanpur team suggests that efforts to help mitigate glacial lake outburst flood (GLOF) events in the future should include the creation of a network of satellite-based monitoring stations that could provide in situ and real-time data on GLOF risk.
- The integration of monitoring devices with satellite networks will not only provide telemetry support in remote locations that lack complete cellular connectivity but will also provide greater connectivity in coverage in the cellular dead zones in extreme topographies such as valleys, cliffs, and steep slopes.

### Himalayan Region and its proximity to disaster

- ✓ Himalayan region is vulnerable to glacial lake outburst floods (GLOF), cloud-burst events during the monsoon, scorching heat waves during summer and excessive rainfall that causes floods. Therefore, convergence of all lead to disasters.
- ✓ Temperature and the numbers of extreme rainfall events are rising at an increased rate because of climate change. Suitably called Earth's "Third Pole", the Himalayan region is home to the largest ice mass outside of the planet's Polar Regions.
- ✓ The glaciers in the Himalayas are melting at a faster rate creating new lakes and expanding the existing ones. Besides, the rising temperatures and extreme precipitation events make the region increasingly prone to a variety of natural hazards, including devastating glacial lake outburst floods (GLOFs).
- ✓ GLOFs occur when either a natural dam containing a glacial lake bursts or when the lake's level suddenly increases and overflows its banks, leading to catastrophic downstream destruction.

**Doomsday Glacier**

- ❖ The melting of Antarctica's Thwaites Glacier – also called the “Doomsday Glacier”– has long been a cause of concern because of its high potential of speeding up the global sea level rise happening due to climate change.
- ❖ Today, Thwaites’s melting already contributes 4% to global sea level rise each year. It is estimated that it would collapse into the sea in 200-900 years.
- ❖ Studies have found the amount of ice flowing out of it has nearly doubled over the past 30 years.
- ❖ Warm water is approaching the pinning points of the glacier from all sides, impacting these locations where the ice is connected to the seabed and where the ice sheet finds stability.
- ❖ This has the potential to make things worse for Thwaites, whose ice shelf is already retreating.



## Global Energy Transition Index

### News Excerpt

India has been ranked at the 87<sup>th</sup> position among 115 countries in the Energy Transition Index (ETI) 2021, released by World Economic Forum. It tracks nation's current performance of their energy system.

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### Key Highlights of the report

- The top 10 countries in the index are Western and Northern European countries, with Sweden in the first place, followed by Norway and Denmark.
- The index benchmarks 115 countries on the current performance of their energy systems across three dimensions -- economic development and growth, environmental sustainability, and energy security and access indicators -- and their readiness to transition to secure, sustainable, affordable, and inclusive energy systems.
- Despite coal having to play a significant role in energy mix for China (68) and India (87), which together account for a third of global energy demand, have both made significant progress over the past decade.
- The latest report is based on a revised ETI methodology that takes into account recent changes in the global energy landscape and the increasing urgency of climate change action.
- As per the report, 92 out of 115 countries tracked on the ETI increased their aggregate score over the past 10 years, which affirms the positive direction and steady momentum of the global energy transition.
- This report identifies three imperatives to increase the resilience of the energy transition-

<b><u>Deliver a “just transition” for all</u></b>	<b><u>Accelerate electrification and go beyond</u></b>	<b><u>Double-down on public-private sector collaboration</u></b>
<ul style="list-style-type: none"> <li>▪ Inequality is on the rise and broad stakeholder buy-in is a prerequisite for resilience.</li> <li>▪ The energy transition itself will change resource flows and reset sectors of the energy system in ways that, if not planned for, could lead to unintended consequences and leave entire communities adrift.</li> <li>▪ Policy-makers should prioritize measures to support the economy, workforces and society at large as countries shift to a low-carbon energy system.</li> <li>▪ This will require an inclusive approach to evaluating energy policy and investment decisions.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Electrification and the scaling up of renewables are critical pillars of the energy transition and need to be ramped up quickly.</li> <li>▪ Coordination on the demand side and the contribution of other energy sources are necessary to achieve the full impact required.</li> <li>▪ Increased R&amp;D funding and cross-sector collaboration are needed to fully decarbonize energy systems, from green hydrogen and negative emission technologies to digitally enabled demand optimization.</li> </ul>	<ul style="list-style-type: none"> <li>▪ The UN Intergovernmental Panel on Climate Change (IPCC) estimates that annual investments in clean energy and energy efficiency need to increase by a factor of six by 2050, compared with 2015 levels, to limit warming to 1.5°C.</li> <li>▪ Despite the growing inflow of capital into the sector, significant funding gaps remain, particularly in emerging markets and nascent technologies.</li> <li>▪ Collaboration between public and private sectors, including risk-sharing as low-carbon solutions mature, will attract the diversified, resilient sources of capital needed for multi-year and multi-decade investments into energy systems.</li> </ul>

### Report and India

- As per the report, India has targeted improvements through subsidy reforms and rapidly scaling energy access, with a strong political commitment and regulatory environment for the energy transition.
- Countries with rising energy demand, such as India have registered the largest gains, but their scores on the ETI remain low in absolute terms.



- India is leading renewable energy independent power producer.

### India's and Energy Transition

- ✓ India has set ambitious targets towards the achievement of the dual goals of climate action and sustainable development through its nationally determined contributions and energy access commitments. As India starts a new decade of energy transition the key focus should be on sustainable growth.
- ✓ India's energy transition is characterized by its ambitious targets. By the year 2022, India seeks to provide all households in the country 24x7 power. By 2030, India also seeks to install 450 GW of new renewable energy (RE) in the country.
- ✓ India in its Nationally Determined Contributions (NDCs) committed to three targets, which are to be achieved by the year 2030. First, by 2030, 40% of India's cumulative electric power installed capacity will come from non-fossil fuel-based energy sources. Second, India will reduce the emission intensity of its gross domestic product (GDP) by 33–35% (vis-à-vis 2005 levels). Third, India will create an additional carbon sink of 2.5–3 billion tonnes of CO2 equivalent (through additional forest and tree cover).

### Conclusion

Building an effective and resilient energy transition requires all hands on deck. As countries seeks to recover from the impact of COVID-19, there is an opportunity to reset and rethink the way we power our economies, produce materials and even how we travel and live. It is critical to root the energy transition in economic, political and social practices so that progress becomes irreversible.



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## SCIENCE & TECHNOLOGY

### Covid-19 Second Wave

#### News Excerpt

Like the 1918-20 Spanish flu, the second all-India surge of the Covid-19 pandemic has been more devastating than the first. It has also appeared to be different from last year's surge in several ways, increasing worries and anxiety.

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#### Factors Responsible for Outbreak of Second Wave

- In India, experts say, 80-85% of the population are asymptomatic. They continue to be the largest carrier of the virus, and in a closed indoor setting, asymptomatic person will transmit the virus even when he or she is talking. Also, asymptomatic people don't isolate themselves in a home setting.
- A combination of a large asymptomatic population and the presence of more infectious variants of the virus during the second wave, which is much steeper than the first wave that peaked in September, continues to transmit the virus even to those who are staying indoors. For instance, the UK strain detected in a significant proportion during genome surveillance in Delhi and Punjab, has shown a 50% higher transmission, according to the US Centers for Disease Control and Prevention (CDC).
- The L452R mutation found in the variant B.1.617.1, first detected in India, too has been associated with increased infectivity.
- In the current wave, the marking of containment zone has been less strict. In cities, the government has asked civil authorities to adopt micro-containment: with perhaps just a floor or a house defined as a containment zone. If there is no effective monitoring in micro-containment zones, containing the virus becomes a challenge.
- Earlier, an entire apartment or area would be made a containment zone, reducing the chances of transmission of the virus. Now, central teams have red-flagged the fact that high-risk contacts in workplace, social and family settings were not investigated and listed in Maharashtra, resulting in a surge. This is happening across the country.
- Super-spreading events in indoor settings — house parties, social gatherings — can trigger local outbreaks if Covid-appropriate behaviours are not followed.
- Contact tracing guidelines are not being followed as rigorously as last time. All asymptomatic direct and high-risk contacts of confirmed cases are to be tested once between day 5 and day 10 of coming into contact, but they can continue spreading the infection if they return a false negative result.
- Also, during this surge, there has been a long waiting period for testing. Until the results are available, many asymptomatic persons violate isolation guidelines and spread the infection.
- The infection is spreading at a faster pace in every age group. At present, there is very little data that shows how long immunity lasts in the younger population. However, those who have comorbidities at a young age at high risk.
- Data released by the Centre shows that in seven age groups up to 70 years, the prevalence of deaths in this wave is comparable to the prevalence in the last wave. However, in the age groups 70-80 and above 80, mortality rates are higher in the second wave.
- The two vaccines approved for emergency use in India don't stop transmission of the virus, and at present can only reduce severe disease or hospitalisation. Data released by the government show that post-vaccination, around 2-4 persons per 10,000 have tested positive.

#### Catastrophic Situation of Medical Oxygen in India

- In the second wave, critical data has emerged from hospitals being tracked by the government — that 54.5% of admissions during the second wave required supplemental oxygen during treatment. This marked a 13.4-percentage-point increase from the peak during September and November last year, according to data from 40 centres across the country.
- Also, shortness of breath is the most common clinical feature among symptomatic patients in the second wave.
- For moderate cases, India's clinical management protocol recommends oxygen therapy as the primary form of treatment: the target is to achieve 92-96% SpO<sub>2</sub>, or 88-92% in patients

with Chronic Obstructive Pulmonary Disease. It is this category that requires oxygen beds. While the proportion of those requiring oxygen beds is still hovering around under 10%, this number is at an all-time high with India's active caseload crossing 26 lakh.

- In the last week of April, the demand for medical oxygen has increased by 18% across 12 states, which account for 83% of India's active cases.

### Production of Medical Oxygen

- ✓ Oxygen has applications in the iron and steel industry, hospitals, pharmaceutical units that manufacture vials, and the glass industry. Currently, most states have diverted their entire oxygen production for medical use.
- ✓ Industry experts said India has the capacity to produce more than 7,000 metric tonnes of medical oxygen.
- ✓ During the first wave of the pandemic last year, smaller manufacturers that produced industrial oxygen, too, were allowed to produce medical oxygen by changing certain specifications. This has helped expand the medical oxygen production capacity.
- ✓ Manufacturers prepare liquid oxygen with 99.5% purity, which is stored in jumbo tankers, and transported to distributors in cryogenic tankers at a specified temperature.
- ✓ At distributor level, a process of regasification is followed to convert the oxygen into gaseous form and fill it in jumbo cylinders and dura cylinders. These cylinders then go to smaller suppliers or directly to hospitals.

### Oxygen Express

In a bid to meet the high demand of the critical gas meant for the treatment of coronavirus patients, the Indian Railways has started "Oxygen Express" trains to ferry oxygen tankers from one region to another.

The Railways are running the "Oxygen Express" train from steel plants that produce oxygen to different parts of the country.

### Constraints in the Supply

- Demand is high, but there are not enough cylinders and tankers to store and transport oxygen.
- It is not possible to immediately set up new oxygen manufacturing plants or expand existing ones. The process of installing one plant takes around 24 months.
- India does not have enough cryogenic tankers to ensure 24x7 road transport of medical oxygen. Now when oxygen is being transported from one state to another, the travel time it takes from the manufacturer to a patient's bed has increased from 3-5 days to 6-8 days. The smaller a hospital or the more remote its location, the longer the time taken for the oxygen to reach there.
- Smaller suppliers have also complained they do not have enough jumbo and dura cylinders to keep the flow steady.
- The increase in cost for transport and logistics has increased the cost of refilling cylinders. A cylinder that would earlier cost Rs 100-150 for refiling, now costs Rs 500-2000.

### Initiatives

- ✚ The Empowered Group plans to identify 100 hospitals in far-flung areas to install pressure swing absorption (PSA) plants, which can manufacture their own oxygen and make the hospitals self-reliant. This will cut transportation costs and delays in oxygen supply to remote parts. Another 162 PSA plants are in the process of completion.
- ✚ Hospitals are setting up huge storage tanks to store supplies that can last at least 10 days. In the last one year, several civil hospitals have set up such jumbo tankers to avoid their daily wait for cylinders.
- ✚ The Empowered Group-2 has also decided that argon and nitrogen tankers be diverted for oxygen transport. For this, the Petroleum and Safety Organisation has issued orders. The Group has also advised use of industrial cylinders for refilling.
- ✚ The Health Ministry has repeatedly warned against oxygen wastage and unnecessary use. Industrial experts have raised concerns over possible leakages in hospital pipelines that supply oxygen.
- ✚ Last year, an expert committee under the Health Ministry fixed oxygen supply to 40 litres in intensive care units and 15 litres in normal wards per patient per minute. It has advised monitoring of patients on oxygen support daily, and that only those with oxygen saturation levels below 94% be put on oxygen support.

### Herd Immunity

- › Herd immunity refers to preventing an infectious disease from spreading by immunising a certain percentage of the population. While the concept is most commonly used in the context of vaccination, herd immunity can also be achieved after enough people have become immune after being infected.
- › The premise is that if a certain percentage of the population is immune, members of that group can no longer infect another person. This breaks the chain of infection through the community (“herd”), and prevents it from reaching those who are the most vulnerable.

### **How Does Herd Immunity Work?**

- › To estimate the extent of spread and immunity, epidemiologists use a measure called the ‘basic reproductive number’ (R0). This indicates how many persons will be infected when exposed to a single case; an R0 of more than 1 indicates one person can spread the infection to multiple persons.
- › Scientific evidence shows that a person with measles can infect around 12-18 persons; and a person with influenza can infect around 1.2-4.5 persons, depending on the season. On the basis of the available evidence from China, and according to various experts, R0 COVID-19 ranges between 2 and 3.
- › There are three ways in which an infection can spread in a community. The first scenario looks at a community that is not immunised. When two infectious cases, both with an R0 value of 1, are introduced, there is a possibility of the entire community being infected, with a few exceptions.
- › In the second scenario, there may be some persons who have been immunised; and only these immunised persons will not be infected when at least two infectious cases are introduced in the community.
- › The third scenario is when the majority of the community is immunised. So, when two infectious cases are introduced, the spread can take place only in exceptional cases, like in the elderly or other vulnerable persons. Even in such a situation, the immunised persons protect the non-immunised by acting as a barrier — which is herd immunity.

### **When do we know that a population has achieved herd immunity?**

- It depends on multiple factors: how effective the vaccine for a given disease is, how long-lasting immunity is from both vaccination and infection, and which populations form critical links in transmission of the disease.
- Mathematically, it is defined on the basis of a number called “herd immunity threshold”, which is the number of immune individuals above which a disease may no longer circulate.
- The higher the R0, the higher the percentage of the population that has to be immunised to achieve herd immunity.
- Polio has a threshold of 80% to 85%, while measles has 95%. With the current data for COVID-19, experts have estimated a threshold of over 60%. That means more than 60% of the population needs to develop immunity to reach the stage of herd immunity.

### **The Complexities of Herd Immunity**

- Despite serosurveys indicating many metros such as Delhi, Mumbai, and Pune having reached high levels of immunity, the same cities are seeing an explosive surge.
- The number of daily cases depends on three factors: The number of infectious people in the population, the number of susceptible individuals, and the rate of transmission of the virus.
- The rate of transmission is dependent on the nature of the virus and the extent of contact between individuals.
- The prediction for future cases, unfortunately, is not that simple. If the rate of transmission increases (due to change in social behaviour and increased contact) then even with a large percentage of the immune population, a significant number of daily cases can result.
- The reasons behind the recent surge are not fully understood. The one factor that is not in doubt, however, is that interaction and contact with the population has increased since February. Such increased contact increased the virus in circulation and led to increased cases in the susceptible population.

### **Future Scenario**

- a. The future trajectory depends on the nature of the virus causing this recent surge – in addition to behaviour patterns.



- b. If the virus, even in the form of a new strain, is not infecting the prior infected population, then the good news is that we have dealt with this situation last year and managed to control it (even though the scientific reasons behind the control are not completely understood).
- c. The implication is that current cases are only amongst the susceptible population, and, therefore, lowering activity (to levels similar to last year) will lead to control.
- d. There is some reason to believe that this is the case, based on anecdotal evidence that this wave is disproportionately affecting the higher socio-economic segments.
- e. A new virus strain indifferent to the past exposure of an individual would have resulted in all sections getting affected equally.
- f. In the other scenario, however, the fight is much tougher and questions loom about current vaccines as effective tools to fight this strain.

### **Ct Value: RTPCR Test**

- I. Ct value was the subject of a recent request sent by the Maharashtra government to the Indian Council of Medical Research (ICMR).
- II. The state sought clarity whether it was advisable to treat a person as Covid-negative if the Ct value is more than 24 and the person is asymptomatic.
- III. State officials said various ICMR documents had mentioned different Ct values and there were divergent views even among Niti Aayog and the National Centre for Disease Control.
- IV. Short for cycle threshold, Ct is a value that emerges during RT-PCR tests, the gold standard for detection of the SARS-CoV-2 coronavirus.
- V. In an RT-PCR test, RNA is extracted from the swab collected from the patient. It is then converted into DNA, which is then amplified. Amplification refers to the process of creating multiple copies of the genetic material — in this case, DNA. This improves the ability of the test to detect the presence of virus.
- VI. According to the ICMR advisory, the Ct value of an RT-PCR reaction is the number of cycles at which fluorescence of the PCR product is detectable over and above the background signal.
- VII. In simple terms, the Ct value refers to the number of cycles after which the virus can be detected. If a higher number of cycles is required, it implies that the virus went undetected when the number of cycles was lower. The lower the Ct value, the higher the viral load — because the virus has been spotted after fewer cycles.

### **Importance of the Ct Value**

- 1) According to the ICMR, a patient is considered Covid-positive if the Ct value is below 35. In other words, if the virus is detectable after 35 cycles or earlier, then the patient is considered positive.
- 2) If the benchmark were to be lowered to 24 — the value mentioned in Maharashtra's letter — it would mean that Ct values in the range 25-34 would not be considered positive.
- 3) A benchmark of 35, therefore, means that more patients would be considered positive than we would get if the benchmark were 24.
- 4) The ICMR has said lowering Ct threshold parameter may lead to missing several infectious persons.

### **Covid-19: Third Wave**

- i. Principal Scientific Advisor to Centre has recently warned that a third wave of Covid infections is inevitable given the higher levels of circulating virus but it is not clear on what time scale this phase three will occur.
- ii. Vaccines are effective against current variants. New variants will arise all over the world and in India too but variants that increase transmission will likely plateau. Immune evasive variants and those which lower or increase disease severity will arise going ahead.
- iii. According to All India Institute of Medical Sciences (AIIMS) Director, India will possibly see another wave if the virus continues to evolve further and develops an immune escape mechanism.
- iv. But, since a large number of people will get vaccinated, the wave may not be as big as the current wave of coronavirus. Improvement in the hospital infrastructure and decreasing the number of cases in an aggressive way are also cited as the reasons behind the comparatively reduced scale of the third wave if it occurs in future.
- v. However, focus can't only be continued on hospital infrastructure unless the focus is also on decreasing the number of Covid-19 cases.

- vi. Experts are of the view that weekend lockdowns and night curfews will not be effective and suggested aggressive lockdown for a sufficient period of time in such scenario.

### The Baikal Gigaton Volume Detector

#### News Excerpt

Recently, Russian scientists launched one of the world’s biggest underwater neutrino telescopes called the Baikal-GVD (Gigaton Volume Detector) in the waters of Lake Baikal, the world’s deepest lake situated in Siberia.

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#### Pre-Connect

- The construction of this telescope, which started in 2016, is motivated by the mission to study in detail the elusive fundamental particles called neutrinos and to possibly determine their sources.
- Studying this will aid scientists’ understanding of the origins of the universe since some neutrinos were formed during the Big Bang, others continue to be formed as a result of supernova explosions or because of nuclear reactions in the Sun.

#### Analytica

##### What are the Fundamental Particles?

- Generally, the understanding is that the universe is made of some fundamental particles that are indivisible.
- Broadly, particles of matter that scientists know about as of now can be classified into quarks and leptons. But this only applies to “normal matter” or the matter that scientists know that five per cent of the universe is made up of.
- Not much is known about the remaining 95 per cent of the universe, which is classified by experts into dark matter (27 percent) and the remaining 68 per cent of the universe of which scientists have “no idea” about yet.
- But in the universe scientists know about, exploration in the field of physics so far has led to the discovery of over 12 such quarks and leptons, but three of these (protons, neutrons and electrons) is what everything in the world is made up of.
- Protons (carry a positive charge) and neutrons (no charge) are types of quarks, whereas electrons (carry a negative charge) are types of leptons.
- These three particles make what is referred to as the building block of life– the atom. In different combinations, these particles can make different kinds of atoms, which in turn make up molecules that form everything.

##### Neutrinos

- ✓ Neutrinos are also a type of fundamental particles and are available in abundance in nature with about a thousand trillion of them passing through a human body every second.
- ✓ In fact, they are the second most abundant particles, after photons, which are particles of light. But while neutrinos are abundant, they are not easy to catch, this is because they do not carry a charge, as a result of which they do not interact with matter.
- ✓ Just like the subatomic particles of the so-called “normal matter” can be classified into electrons, protons and neutrons, the subatomic particles that make up antimatter have properties that are opposite to the normal matter.
- ✓ While it is known that antimatter exists, we do not yet know why it exists or how different the properties of its subatomic particles are from those of normal matter.
- ✓ One way of detecting neutrinos is in water or ice, where neutrinos leave a flash of light or a line of bubbles when they interact. To capture these signs, scientists have to build large detectors. An underwater telescope such as the GVD is designed to detect high-energy neutrinos that may have come from the Earth’s core, or could have been produced during nuclear reactions in the Sun.

##### About Baikal GVD

- The Baikal deep underwater neutrino telescope (or Baikal-GVD – Gigaton Volume Detector) is an international project in the field of astroparticle physics and neutrino astronomy.
- The construction of Baikal-GVD is motivated by its discovery potential in astrophysics, cosmology and particle physics. Its primary goal is the detailed study the flux of high-energy cosmic neutrinos and the search for their sources.
- Baikal-GVD will also search for dark matter candidates, for neutrinos from the decay of super heavy particles, for magnetic monopoles and other exotic particles. It will also be a platform for environmental studies in Lake Baikal.

- The preparatory phase of the project was concluded in 2015 with the deployment of a demonstration cluster comprising 192 optical modules. The construction of the first phase of Baikal GVD (GVD-I) was started in 2016 by deploying the first of eight cluster in their baseline configuration, consisting of 288 optical modules. Completion of GVD-I (8 clusters, volume 0.4 km<sup>3</sup>) is envisaged for 2021.
- The Baikal-GVD Collaboration includes 9 institutions and organizations from 4 countries. The telescope is one of the three largest neutrino detectors in the world along with Ice Cube at the South Pole and ANTARES in the Mediterranean Sea.
- Baikal-GVD is located at the southern part of Lake Baikal, almost 4 km away from the shore station which houses the control and data taking system.
- The place was chosen due to the depth of the lake (1366 meters) and its flat bottom, the transparency of water, the existence of a railway connection, and the possibility to assemble all the telescope equipment right on the ice during late winter.

## National Supercomputing Mission

### News Excerpt

The second phase of the National Supercomputing Mission (NSM) will be completed by September this year, taking India's total computational capacity to 16 Petaflops.

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### National Supercomputing Mission (NSM)

- NSM was launched in 2015.
- The Mission envisages empowering our national academic and R&D institutions spread over the country by installing a vast supercomputing grid comprising of more than 70 high-performance computing facilities.
- These supercomputers will also be networked on the National Supercomputing grid over the National Knowledge Network (NKN).
- The NKN is another programme of the government which connects academic institutions and R&D labs over a high speed network.
- Academic and R&D institutions as well as key user departments/ministries would participate by using these facilities and develop applications of national relevance.
- The Mission also includes development of highly professional High-Performance Computing (HPC) aware human resource for meeting challenges of development of these applications.
- The Mission implementation would bring supercomputing within the reach of the large Scientific & Technology community in the country and enable the country with a capacity of solving multi-disciplinary grand challenge problems.
- The Mission would be implemented and steered jointly by the Department of Science and Technology (DST) and Department of Electronics and Information Technology (DeitY) at an estimated cost of Rs.4500 crore over a period of seven years.
- **Application areas:** Climate Modelling, Weather Prediction, Aerospace Engineering including CFD, CSM, CEM; Computational Biology, Molecular Dynamics, Atomic Energy Simulations, National Security/ Defence Applications, Seismic Analysis, Disaster Simulations and Management, Computational Chemistry, Computational Material Science and Nanomaterials, Discoveries beyond Earth (Astrophysics), Large Complex Systems Simulations and Cyber Physical Systems, Big Data Analytics, Finance, Information repositories/ Government Information Systems.

### Analytica

#### India: Emerging Leader in Supercomputing

- ✓ India is fast emerging a leader in high power computing with the National Super Computing Mission (NSM) boosting it to meet the increasing computational demands of academia, researchers, MSMEs, and startups in areas like oil exploration, flood prediction as well as genomics and drug discovery.
- ✓ Computing infrastructure has already been installed in four premier institutions and installation work is in rapid progress in 9 more. Completion in of Phase II of NSM in September 2021 will take the country's computing power to 16 Petaflops (PF).
- ✓ MoUs have been signed with a total of 14 premier institutions of India for establishing Supercomputing Infrastructure with Assembly and Manufacturing in India. These include IITs, NITs, National Labs, and IISERs.

- ✓ Infrastructure planned in NSM Phase I has already been installed and much of Phase II will be getting in place soon. Phase III, initiated this year, will take the computing speed to around 45 Petaflops. This will include three systems of 3 PF each and one system of 20 PF as a national facility.
- ✓ The NSM is setting up a grid of supercomputing facilities in academic and research institutions across the country. Part of this is being imported from abroad and part built indigenously. The mission is implemented by the Centre for Development of Advanced Computing (C-DAC), Pune, and the Indian Institute of Science (IISc), Bengaluru.
- ✓ PARAM Shivay, the first supercomputer assembled indigenously, was installed in IIT (BHU), followed by PARAM Shakti, PARAM Brahma, PARAM Yukti, PARAM Sanganak at IIT-Kharagpur IISER, Pune, JNCASR, Bengaluru and IIT Kanpur respectively.
- ✓ A new dimension has now been added in India's march towards leadership position in supercomputing with the convergence of HPC and Artificial Intelligence (AI). A 200 AI PF Artificial Intelligence supercomputing system has been created and installed in C-DAC, which can handle incredibly large-scale AI workloads increasing the speed of computing-related to AI several times.
- ✓ PARAM Siddhi - AI, the high-performance computing-artificial intelligence (HPC-AI) supercomputer, has achieved global ranking of 62 in top 500 most powerful supercomputer systems in the world, released on 16th November 2020.
- ✓ The mission has also created the next generation of supercomputer experts by training more than 4500 HPC aware manpower and faculties till date.
- ✓ To expand the activities of the HPC training, four NSM Nodal Centres for training in HPC and AI have been established at IIT Kharagpur, IIT Madras, IIT Goa and IIT Palakkad. These centres have conducted online training programs in HPC and in AI.
- ✓ Powered by the NSM, India's network of research institutions, in collaboration with the industry, is scaling up the technology and manufacturing capability to make more and more parts in India.
- ✓ While in Phase I, 30 percent value addition is done in India that has been scaled up to 40 percent in Phase II. India has developed an Indigenous server (Rudra), which can meet the HPC requirements of all governments and PSUs.
- ✓ The three phases will provide access to High-Performance Computing (HPC) Facilities to around 75 institutions and more than thousands of active researchers, academicians working through Nation Knowledge Network (NKN) - the backbone for supercomputing systems.

**Light Pollution**

**News Excerpt**

Recently, a new study showed that Objects sent to space that orbit the Earth can increase the overall brightness of the night sky by 10 per cent above natural levels. This additional light pollution has an impact over a larger part of the globe than ground-based sources.

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**Highlights**

- The scientists from institutions in Slovakia, Spain and the US considered the active satellites as well as artificial space debris in their calculations.
- “Large fleets of communication satellites” that have been unleashed in space not just add to the light pollution but also collide and form more debris.
- The study explained that light from this piling debris cloaks astronomical bodies like ‘the glowing clouds of stars in the Milky Way’ from human sight.
- While telescopes and sensitive cameras often resolve space objects as discrete points of light, low-resolution detectors of light such as the human eye see only the combined effect of many such objects.
- Astronomers have complained that the growing number of artificial space objects choke the sky and disturb observations. They usually set up observatories far from city lights to get a good look at the dark sky. The scatter of lights from space objects, however, have a large geographic reach.
- The researchers hope their findings will change the course of the dialogue between satellite operators and astronomers in how to tackle challenges like growing space debris and light dispersion from artificial moving space objects.



## Analytica

### What is Light Pollution?

- ✓ **Light pollution** is excessive, misdirected, or obtrusive artificial (usually outdoor) light. Components of light pollution include:
  - **Glare** – excessive brightness that causes visual discomfort
  - **Skyglow** – brightening of the night sky over inhabited areas
  - **Light trespass** – light falling where it is not intended or needed
  - **Clutter** – bright, confusing and excessive groupings of light sources
- ✓ Light pollution is a side effect of industrial civilization. Its sources include building exterior and interior lighting, advertising, commercial properties, offices, factories, streetlights, and illuminated sporting venues.
- ✓ The fact is that much outdoor lighting used at night is inefficient, overly bright, poorly targeted, improperly shielded, and, in many cases, completely unnecessary. This light, and the electricity used to create it, is being wasted by spilling it into the sky, rather than focusing it on to the actual objects and areas that people want illuminated.
- ✓ With much of the Earth’s population living under light-polluted skies, over lighting is an international concern. According to the 2016 ground breaking “World Atlas of Artificial Night Sky Brightness,” 80 percent of the world’s population lives under skyglow. In the United States and Europe 99 percent of the public can’t experience a natural night!

### Impact of Light Pollution

- In **disrupting ecosystems**, light pollution poses a serious threat in particular to nocturnal wildlife, having negative impacts on plant and animal physiology. It can confuse the migratory patterns of animals, alter competitive interactions of animals, change predator-prey relations, and cause physiological harm. The rhythm of life is orchestrated by the natural diurnal patterns of light and dark; so disruption to these patterns impacts the ecological dynamics.
- With respect to **adverse health effects**, many species, especially humans, are dependent on natural body cycles called circadian rhythms and the production of melatonin, which are regulated by light and dark (e.g., day and night). If humans are exposed to light while sleeping, melatonin production can be suppressed. This can lead to sleep disorders and other health problems such as increased headaches, worker fatigue, medically defined stress, some forms of obesity due to lack of sleep and increased anxiety. There are also effects of glare on aging eyes. Health effects are not only due to over-illumination or excessive exposure of light over time, but also improper spectral composition of light (**e.g., certain colours of light**).
- **With respect to energy** wastage, lighting is responsible for at least one-fourth of all electricity consumption worldwide. Over illumination can constitute energy wastage, especially upward directed lighting at night. Energy wastage is also a waste in cost and carbon footprint.
- **Light pollution can be reduced** fairly easily by shielding lights properly, by only using light when and where it is needed, by only using the amount that is needed, by using energy efficient bulbs, and by using bulbs with appropriate spectral power distributions for the task at hand.

## Wolf-Rayet Stars

### News Excerpt

Indian astronomers have tracked a rare supernova explosion and traced it to one of the hottest kind of stars called Wolf-Rayet *stars or WR stars*.

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### What are WR Stars?

- Massive stars which are at an advanced stage of stellar evolution and losing mass at a very high rate are known as Wolf-Rayet stars.
- With masses typically greater than 25 times that of the Sun, they have brief lifetimes and are therefore quite rare objects.
- We know of about 220 in our own Galaxy, but astronomers have estimated that the Milky Way may contain between 1,000 and 2,000 such objects, the majority hidden by dust.
- Given that the average temperature of a Wolf-Rayet star is greater than 25,000 Kelvin, and they can have luminosities of up to a million times that of the Sun, it is thought that the powerful winds emitted by these objects are driven by intense radiation pressure.

- These winds eject about 10 solar masses of material per million years at speeds of up to 3,000 km/s, resulting in the characteristic broad emission lines in the spectra of these stars (normal stars have narrow emission lines).

**Analytica**

- The rare Wolf–Rayet stars are highly luminous objects a thousand times that of the Sun and have intrigued astronomers for long.
- They are massive stars and strip their outer hydrogen envelope which is associated with the fusion of Helium and other elements in the massive core.
- Tracking of certain types of massive luminous supernovae explosion can help probe these stars that remain an enigma for scientists.
- A team of astronomers from **Aryabhata Research Institute of Observational Sciences (ARIES)**, Nainital an autonomous institute under the Department of Science & Technology, Govt. of India with international collaborators have conducted the optical monitoring of one such stripped-envelope supernova called SN 2015dj hosted in the galaxy NGC 7371 which was spotted in 2015.
- They calculated the mass of the star that collapsed to form the supernovae as well as the geometry of its ejection.
- The scientists also found that the original star was a combination of two stars – one of them is a massive WR star and another is a star much less in mass than the Sun.
- Supernovae (SNe) are highly energetic explosions in the Universe releasing an enormous amount of energy.
- Long-term monitoring of these transients opens the door to understand the nature of the exploding star as well as the explosion properties. It can also help enumerate the number of massive stars.

**Xenobots**

**News Excerpt**

Researchers at Tufts University have recently developed robots from stem cells of frogs. These are the world's first living and self-healing robots.

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**Highlights**

- Named xenobots after the African clawed frog (*Xenopus laevis*) from which they take their stem cells, the machines are less than a millimeter (0.04 inches) wide -- small enough to travel inside human bodies.
- They can walk and swim, survive for weeks without food, self-heal after damage, record memories and work together in groups.
- These biological robots can record information about their surroundings and move using cilia -- minute hairlike particles present on their surface.
- Researchers say the soft-body living machines can have several applications in biomedicine and the environment.

**Analytica**

- Stem cells are unspecialized cells that have the ability to develop into different cell types.
- The researchers scraped living stem cells from frog embryos, and left them to incubate. Then, the cells were cut and reshaped into specific "body forms" designed by a supercomputer.
- The cells then began to work on their own skin cells bonded to form structure, while pulsing heart muscle cells allowed the robot to move on its own.
- Xenobots don't look like traditional robots, they have no shiny gears or robotic arms. Instead, they look more like a tiny blob of moving pink flesh.
- The researchers say this "biological machine" can achieve things typical robots of steel and plastic cannot.
- Traditional robots degrade over time and can produce harmful ecological and health side effects. As biological machines, xenobots are more environmentally friendly and safer for human health.
- The organisms come pre-loaded with their own food source of lipid and protein deposits, allowing them to live for a little over a week -- but they can't reproduce or evolve. However, their lifespan can increase to several weeks in nutrient-rich environments.

## Applications

- ✓ Xenobots could be used to clean up radioactive waste, collect microplastics in the oceans, carry medicine inside human bodies, or even travel into our arteries to scrape out plaque.
- ✓ The xenobots can survive in aqueous environments without additional nutrients for days or weeks making them suitable for internal drug delivery.
- ✓ Aside from these immediate practical tasks, the xenobots could also help researchers to learn more about cell biology, opening the doors to future advancement in human health and longevity.

## Narrow-Line Seyfert 1 (NLS1) galaxy

### News Excerpt

Astronomers have recently discovered a new active galaxy identified as the farthest gamma-ray emitting galaxy that has so far been stumbled upon. This active galaxy called **the Narrow-Line Seyfert 1 (NLS1) galaxy**, which is about 31 billion light-years away, opens up avenues to explore more such gamma-ray emitting galaxies that wait to meet us.

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### Pre-Connect

- Ever since 1929, when Edwin Hubble discovered that the Universe is expanding, it has been known that most other galaxies are moving away from us.
- Light from these galaxies is shifted to longer (and this means redder) wavelengths - in other words, it is red-shifted. Scientists have been trying to trace such red-shifted galaxies to understand the early Universe.
- Scientists from ARIES, an autonomous institute of the Department of Science & Technology (DST), Government of India, in collaboration with researchers from other institutions, studied around 25,000 luminous Active galactic nuclei (AGN) from the Sloan Digital Sky Survey (SDSS), a major optical imaging and spectroscopic survey of astronomical objects in-operation for the last 20 years and found a unique object that emits high-energy gamma rays located at a high redshift (more than 1). They identified it as a gamma-ray emitting NLS1 galaxy, which is a rare entity in space.

### Analytica

- ✓ Powerful relativistic jets, or sources of particles in the Universe traveling nearly at speed to light, are usually produced by AGN powered by large black holes and hosted in a giant elliptical galaxy.
- ✓ However, detection of gamma-ray emission from NLS1 challenges the idea of how relativistic jets are formed because NLS1s are a unique class of AGN that are powered by black hole of low mass and hosted in spiral galaxy.
- ✓ As of today, gamma-ray emission has been detected in about a dozen NLS1 galaxies, which are a separate class of AGN identified four decades ago.
- ✓ All of them are at redshifts lesser than one, and no method was present till date to find NLS1 at redshifts larger than one. This discovery opens up a new way to find gamma-ray emitting NLS1 galaxies in the early Universe.
- ✓ For the research, the scientists used one of the largest ground-based telescopes in the world, the 8.2 m Subaru Telescope located at Hawaii, USA.
- ✓ They helped establish a new method to find high redshift NLS1 galaxies that were not known previously by comparing different emission lines in their spectra.
- ✓ The new gamma-ray emitting NLS1 was formed when the Universe was only about 4.7 billion years old as compared to its current age of about 13.8 billion years.

### What are Active Galactic Nuclei (AGN)?

- Many galaxies have very bright nuclei, so bright that the central region can be more **luminous** than the remaining galaxy light.
- These nuclei are called **active galactic nuclei**, or AGN for short. Much of the energy output of AGNs is of a non-thermal (non-stellar) type of emission, with many AGN being strong emitters of **X-rays, radio** and **ultraviolet** radiation, as well as **optical radiation**.
- AGN can vary in luminosity on short (hours or days) timescales. This means that the light or energy emitting source must be of order light hours or light days (respectively) in size, and gives clues as to the energy mechanism.

- Carl Seyfert discovered the first class of AGN, that are now named after him. The nuclei of Seyfert galaxies display emission lines.
- Type 1 Seyfert galaxies have both narrow and broadened optical spectral emission lines. The broad lines imply gas velocities of 1000 – 5000 km/s very close to the nucleus.
- Seyfert type 2 galaxies have narrow emission lines only (but still wider than emission lines in normal galaxies) implying gas velocities of ~ 500-1000 km/s. These narrow lines are due to low density gas clouds at larger distances (than the broad line clouds) from the nucleus.
- Seyfert galaxies comprise ~ **10%** of all galaxies. As well as Seyferts, other galaxies are also classified as AGN. These include radio galaxies, quasars, blazars and LINERs.
- AGN are thought to be powered by centrally located, **supermassive black holes**.

## Discovery of New Particles

### News Excerpt

Recently, CERN announced the discovery of four brand new particles at the Large Hadron Collider (LHC) in Geneva. This means that the LHC has now found a total of 59 new particles, in addition to the Nobel prize-winning Higgs boson, since it started colliding protons – particles that make up the atomic nucleus along with neutrons – in 2009. While some of these new particles were expected based on established theories, some were altogether more surprising.

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### Analytica

- The LHC is the world’s largest and most powerful particle accelerator.
- The LHC’s goal is to explore the structure of matter at the shortest distances and highest energies ever probed in the lab, testing our current best theory of nature: the Standard Model of Particle Physics.
- And the LHC has enabled scientists to discover the Higgs boson, the last missing piece of the model. The theory is still far from being fully understood.
- One of its most troublesome features is its description of the strong force which holds the atomic nucleus together. The nucleus is made up of protons and neutrons, which are in turn each composed of three tiny particles called quarks (there are six different kinds of quarks: up, down, charm, strange, top and bottom).
- If the strong force is switched off for a second, all matter would immediately disintegrate into a soup of loose quarks, a state that existed for a fleeting instant at the beginning of the universe.
- The theory of the strong interaction, pretentiously called “quantum chromodynamics” describes how quarks interact through the strong force by exchanging particles called gluons. Gluons are analogs of the photon, the particle of light and carrier of the electromagnetic force.
- However, the way gluons interact with quarks makes the strong force behave very differently from electromagnetism.
- While the electromagnetic force gets weaker as two charged particles are pulled apart, the strong force actually gets stronger as two quarks are pulled apart. As a result, quarks are forever locked up inside particles called hadrons – particles made of two or more quarks – which includes protons and neutrons.
- To complicate matters further, all the particles in the standard model have antiparticles which are nearly identical to themselves but with the opposite charge (or other quantum property).
- If a quark is pulled out of a proton, the force will eventually be strong enough to create a quark-antiquark pair, with the newly created quark going into the proton. It results in a proton and a brand new “meson”, a particle made of a quark and an antiquark.
- This has been shown repeatedly by experiments. We have never seen a lone quark. An unpleasant feature of the theory of the strong force is that calculations of what would be a simple process in electromagnetism can end up being impossibly complicated. We therefore cannot (yet) prove theoretically that quarks can’t exist on their own. Worse still, we can’t even calculate which combinations of quarks would be viable in nature and which would not.
- When quarks were first discovered, scientists realised that several combinations should be possible in theory. This included pairs of quarks and antiquarks (mesons); three quarks



(baryons); three antiquarks (antibaryons); two quarks and two antiquarks (tetraquarks); and four quarks and one antiquark (pentaquarks), as long as the number of quarks minus antiquarks in each combination was a multiple of three.

- For a long time, only baryons and mesons were seen in experiments. But in 2003, the Belle experiment in Japan discovered a particle that didn't fit in anywhere. It turned out to be the first of a long series of tetraquarks.
- In 2015, the LHC experiment at the LHC discovered two pentaquarks. The four new particles discovered recently are all tetraquarks with a charm quark pair and two other quarks.
- All these objects are particles in the same way as the proton and the neutron are particles. But they are not fundamental particles: quarks and electrons are the true building blocks of matter.

**Charming new particles**

- The LHC has now discovered 59 new hadrons. These include the tetraquarks most recently discovered, but also new mesons and baryons. All these new particles contain heavy quarks such as “charm” and “bottom”.
- These hadrons are interesting to study. They tell us what nature considers acceptable as a bound combination of quarks, even if only for very short times.
- They also tell us what nature does not like. For example, why do all tetra- and pentaquarks contain a charm-quark pair (with just one exception)? And why are there no corresponding particles with strange-quark pairs? There is currently no explanation.
- Another mystery is how these particles are bound together by the strong force. One school of theorists considers them to be compact objects, like the proton or the neutron.
- Others claim they are akin to “molecules” formed by two loosely bound hadrons. Each newly found hadron allows experiments to measure its mass and other properties, which tell us something about how the strong force behaves.
- This helps bridge the gap between experiment and theory. The more hadrons we can find, the better we can tune the models to the experimental facts.
- These models are crucial to achieve the ultimate goal of the LHC: find physics beyond the standard model. Despite its successes, the standard model is certainly not the last word in the understanding of particles. It is for instance inconsistent with cosmological models describing the formation of the universe.
- The LHC is searching for new fundamental particles that could explain these discrepancies. These particles could be visible at the LHC, but hidden in the background of particle interactions. Or they could show up as small quantum mechanical effects in known processes.
- In either case, a better understanding of the strong force is needed to find them. With each new hadron, we improve our knowledge of nature's laws, leading us to a better description of the most fundamental properties of matter.

**Muon g-2 Experiment**

**News Excerpt**

According to scientists, newly published results of an international experiment hint at the possibility of new physics governing the laws of nature. The results of the experiment, which studied **a subatomic particle called the muon**, do not match the predictions of the Standard Model, on which all particle physics is based, and instead reconfirm a discrepancy that had been detected in an experiment 20 years previously.

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**What is the Standard Model?**

- The Standard Model is a rigorous theory that predicts the behaviour of the building blocks of the universe.
- It lays out the rules for six types of quarks, six leptons, the Higgs boson, three fundamental forces, and how the subatomic particles behave under the influence of electromagnetic forces.
- The muon is one of the leptons. It is similar to the electron, but 200 times larger, and much more unstable, surviving for a fraction of a second.
- The experiment, called Muon g-2 (g minus two), was conducted at the US Department of Energy's Fermi National Accelerator Laboratory (Fermilab).

### Muon g-2 Experiment

- It measured a quantity, relating to the muon, following up a previous experiment at Brookhaven National Laboratory, under the US Department of Energy.
- Concluded in 2001, the Brookhaven experiment came up with results that did not identically match predictions by the Standard Model.
- The Muon g-2 experiment measured this quantity with greater accuracy. It sought to find out whether the discrepancy would persist, or whether the new results would be closer to predictions. As it turned out, there was a discrepancy again, although smaller.
- The measured quantity is called as g-factor- a measure that derives from the magnetic properties of the muon. Because the muon is unstable, scientists study the effect it leaves behind on its surroundings.
- Muons act as if they have a tiny internal magnet. In a strong magnetic field, the direction of this magnet “wobbles” — just like the axis of a spinning top. The rate at which the muon wobbles is described by the g-factor, the quantity that was measured. This value is known to be close to 2, so scientists measure the deviation from 2. Hence the name g-2.
- The g-factor can be calculated precisely using the Standard Model.
- In the g-2 experiment, scientists measured it with high-precision instruments. They generated muons and got them to circulate in a large magnet.
- The muons also interacted with a “quantum foam” of subatomic particles “popping in and out of existence”.
- These interactions affect the value of the g-factor, causing the muons to wobble slightly faster or slightly slower. Just how much this deviation will be (this is called anomalous magnetic moment), too, can be calculated with the Standard Model.
- But if the quantum foam contains additional forces or particles that are not accounted for by the Standard Model, that would tweak the g-factor further.
- The results of the Fermilab experiment while diverging from the Standard Model prediction, strongly agree with the Brookhaven results.

### Implications

The results from Brookhaven, and now Fermilab, hint at the existence of unknown interactions between the muon and the magnetic field — interactions that could involve new particles or forces. To claim a discovery, scientists require results that diverge from the Standard Model by 5 standard deviations. The combined results from Fermilab and Brookhaven diverge by 4.2 standard deviations. While this may not be enough, it is very unlikely to be a fluke. This in fact is considered as the strong evidence that the muon is sensitive to something that is not in our best theory.



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## SECURITY

### Military Farm Service

#### News Excerpt

Recently, Military farms have been closed after 132 years of glorious service to the Nation.

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#### Pre-Connect

- The farms were set up with the sole requirement of supplying hygienic cow milk to troops in garrisons across British India. The first military farm was raised on February 1, 1889 at Allahabad.
  - This was the time when the country had neither adequate milk supply, nor was there any technology to increase the shelf life of milk.
- Post-independence, the farms flourished with 30,000 heads of cattle in 130 farms all over India.
- Initially, the military farms were mostly located in the Central, Southern and Western Commands of the Army and subsequently, when Northern and Eastern Commands were raised, new Military Farms were set up in these areas too.
- The Indian Council for Agricultural Research (ICAR) acknowledged that the Military Farms had the largest holders of cattle in the country.
- Military Farms are pioneers in introduction of Artificial Insemination (AI) in cattle in the early 20th century (1925).
- The Military Farms catalysed the growth of organised cattle farms and dairy development in the country.

#### Highlights

- The basic aim with which these farms were subsequently set up across the length and breadth of the country was to ensure nutritious milk supply to the troops deployed in India.
- Apart from supplying milk and butter, the Military Farms also supplied hay to the Animal Transport units of the Indian Army.
  - The farms supplied 3.5 crore litres of milk and 25,000 MT of hay yearly.
- Gradually, the role of Military Farms had expanded from only milk production to artificial insemination of cows too and the first pioneering steps in this regard were taken as early as in 1925.
  - This challenge was met through a mix of modern practices and innovative protocols, which not just made the exotic stock thrive but also scaled up the milk production to unprecedented levels.

#### Project Frieswal

- ✓ It is a collaborative project of national importance being undertaken by Military Farms with Indian Council of Agriculture Research (ICAR), Min of Agriculture. It is the world's biggest cross breeding programme that envisages to evolve a milch breed of cattle for tropical world.
- ✓ Its aim was to produce and rear Holstein Friesian cross breed with Sahiwal breed for high milk productivity.
- ✓ A MoU had been signed between the Ministry of Agriculture and the Ministry of Defence in this regard in 1991.
- ✓ The aim of the project is to develop a milch breed yielding 4000 kgs in 300 days lactation with 4% butter fat.
- ✓ Technical Activities under Frieswal Project: Semen freezing, planned breeding, progeny testing and gene mapping were some of the other areas in which the research for the project was undertaken.

#### Collaborative Bio Fuel Generation Programme of DRDO:

Under the joint collaborative Project with Military Farms, the DRDO has carried out large scale plantation of Jatropha in the following Military Farms for bio diesel production as an alternative source of energy.

#### Issues

- The proliferation of dairy business in the country had ensured that fresh milk could be procured in every corner of the country and there was no longer any forced dependence on Military Farms.
- The farms were a necessity as cantonments were located far away from urban areas. However, with urban expansion, cantonments have come well within towns and cities and milk procurement is being increasingly done from the open market.
- India became the world’s highest milk producer thanks to ‘Operation Flood’ and related programmes.
- The soldiers’ accessibility to fresh milk, even in remote corners and difficult borders of the country, became easier than before.
- The necessity, thus, of having a separate setup just to meet the dairy needs of the Army gradually became redundant.

**The genesis of the decision to close military farms**

- ✚ It was in June 2013 that the Quarter Master General’s branch of the Army Headquarters, under which Military Farms fell, issued a direction that the farms will be closed in a phased manner.
- ✚ In June 2014, another order was issued by the Deputy Director-General Military Farms that the responsibility of supply of milk and milk products was being shifted from Military Farms to Army Service Corps (ASC).
- ✚ In 2016, Lt. Gen. DB Shekatkar (retd) committee which was appointed to recommend measures to enhance combat capability and rebalance defence expenditure of the armed forces.
  - In 2016, a committee under Lt Gen DB Shekatkar (retd) submitted a report on reorganisation of several branches of the Army in which it was recommended that the Military Farms be closed down.

**PEPPER IT WITH**  
Shekatkar committee

**Analytica**

- There is nearly 20,000 acres of land which belongs to Military Farms throughout the country and most of it is in prized locations. The utilisation of this land will be decided by the Ministry of Defence but it is very likely that it will be disposed of so as to utilise the proceeds for capital acquisitions by the three services.
- The government saves a huge amount (nearly Rs 280 crores per year) which was spent on the upkeep of the farms, the cattle and for salaries to the staff.
- The Army has decided to "transfer" all the cattle kept in the farms to government departments or dairy cooperatives at a nominal cost.
- The permanent staff (mostly civilian personnel) got transferred to other departments of the Ministry of Defense while the temporary workers were kept for the farms’ upkeep until they closed down.

**Joint logistics facility**

**News Excerpt**

The Chief of Defence Staff General Bipin Rawat has operationalized the third joint logistics node (JLN) in Mumbai.

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**Pre-Connect**

- This is the third JLN to be set up in three months, with the aim of integrating the military’s logistics set-up and improving its war-fighting ability.
- The JLN in Guwahati and Tri-Services, Andaman and Nicobar Command, Port Blair were operationalised on January 01, 2021.

**Analytica**

- It is a very important first step in the direction of logistics integration of our three Services.
- It will provide integrated logistics cover to the armed forces for their small arms ammunition, rations, fuel, general stores, civil hired transport, aviation clothing, spares and also engineering support in an effort to synergise their operational efforts.
- The initiative would accrue advantages in terms of saving of manpower, economise utilisation of resources, besides financial savings.
- This is the precursor to the joint logistics command which is being planned and is imperative for the optimization of the combat potential of integrated theatres.



- This important milestone is a harbinger of further strengthening of integrated logistics in the Armed Forces and will enable them to operate in all areas and across all spectrum of warfare seamlessly.
  - The next logical step in the process of defence reforms is the formation of Integrated Theatre Commands to synergise the capabilities and combat potential of the three Services during war and peace.

**What is an integrated theatre command?**

- ✓ An integrated theatre command envisages a unified command of the three Services, under a single commander, for geographical theatres that are of security concern.
- ✓ The commander of such a force will be able to bring to bear all resources at his disposal — from the IAF, the Army and the Navy — with seamless efficacy.
- ✓ The integrated theatre commander will not be answerable to individual Services, and will be free to train, equip and exercise his command to make it a cohesive fighting force capable of achieving designated goals.
- ✓ The Shekatkar committee has recommended the creation of 3 integrated theatre commands — northern for the China border, western for the Pakistan border and southern for the maritime role.

**Present tri-service theatre command:**

- The Andaman and Nicobar Command (ANC) is the first and only tri-service theater command of the Indian Armed Forces, based at Port Blair in the Andaman and Nicobar Islands, a Union Territory of India.
- It was formed in 2001, following the Group of Ministers’ report on national security, after the Kargil War.
- The other tri-service command, the Strategic Forces Command (SFC), looks after the delivery and operational control of the country’s nuclear assets.
- It was created in 2003, but because it has no specific geographic responsibility and a designated role, it is not an integrated theatre command but an integrated functional command.

**Left wing extremism**

**News Excerpt**

Recently, a combing operation in the Tekulguda region of Bastar, Chhattisgarh went terribly wrong and resulted in the death of 22 security personnel and many more wounded. This tragic incident is a major and embarrassing setback to the internal security (IS) capability of India at many levels and highlights the challenge that left-wing extremism (LWE) continues to pose.

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**Pre-Connect**

- A joint team was dispatched to Tarrem as they wanted to corner People’s Liberation Guerrilla Army (PLGA) chief Madvi Hidma.
- Madvi Hidma heads the PLGA Battalion 1, one of the most lethally armed and trained unit of the Maoists active in southern Chhattisgarh.
- Hidma involved in one of the worst attacks on security personnel in 2010 when 76 CRPF jawans were killed at Tadmetla in Dantewada district. His involvement is also suspected in the March 2017 incident when 12 CRPF jawans were ambushed as they had gone to secure a road-construction party near Bhejji in Sukma.
- It appears that Maoists continue to hold on to their key strengths which include: (i) a robust and efficient intelligence network; (ii) the devolution of authority to local commanders; (iii) an ability to quickly readjust their strategy; (iv) extensive support from local tribes and the ability to organise them into a tribal militia for short-term tactical purposes and (v) domination of the local landscape.
- Since a crackdown on Maoists starting 2005 in Left Wing Extremism (LWE) states, other states have largely tackled the problem. The number of districts declared Naxal-affected is now just 90, down from over 200 in the early 2000s. Yet Chhattisgarh struggles.

**Highlights**

- India has been dealing with three variants of the IS challenge for decades and each has its own complexities — a proxy war and terrorism in Kashmir, sub-national separatist movements in the Northeast and the Naxal-Maoist insurgency (aka LWE) in the Red Corridor.

- The red corridor is the region in the eastern, central and the southern parts of India that experience considerable Naxalite–Maoist insurgency
- The first two strands have been reasonably contained, but still, a lot needs to be done for eliminating LWE.

### Chhattisgarh:

- ✓ Chhattisgarh is today considered the epicentre of Maoist insurgency in India. At their pinnacle, the Naxalites had influence over as many as 18 districts in the state, out of a total 27.
- ✓ Indeed, beginning in the late 1980s, the 40,000-sq-km Bastar region—made up of the Dantewada, Bijapur, Narayanpur, Bastar and Kanker districts—became the nerve centre of Maoist militancy in India.
- ✓ Between 2018 and 2020, Chhattisgarh has accounted for 45% of all incidents in the country and 70% of security personnel deaths in such incidents.
- ✓ The Chhattisgarh police too have raised a special counter-Maoist force, called District Reserve Guards (DRG). It is, however, relatively new and constituted differently than the Greyhounds. It has tribal recruits from Bastar and employs surrendered Maoists too.
  - It has its advantages vis-à-vis local knowledge and intelligence gathering. They are trained well too. But they lack the sharp combat capabilities of the Greyhounds.
- ✓ The reason we are not succeeding in Chhattisgarh is because the local police have not yet taken the leadership position, although things have improved over the years.

### Left Wing Extremism (LWE)

- Left wing extremism, also known by various other names such as naxalism and Maoism, is a form of armed insurgency against the State motivated by leftist ideologies.
- Naxalism has been operating in several parts of the country. It has been there from the late 60s and 70s and different parts of the country have been affected with different levels of naxal violence.
  - The States of Chhattisgarh, Jharkhand, Odisha, Bihar, West Bengal, Andhra Pradesh, Telangana, Maharashtra, Madhya Pradesh, Uttar Pradesh and Kerala are considered LWE affected, although in varying degrees.
- A significant change came about with the merger of the Peoples War Group and the MCC to form the CPI (Maoist) in 2004.
  - The objective of the CPI (Maoist) Party is the armed overthrow of the Indian State. They do not have any belief in parliamentary democracy.
  - The CPI (Maoist) Party, is the major Left Wing Extremist outfit responsible for a majority of incidents of violence and killing of civilians and security forces and has been included in the Schedule of Terrorist Organizations along with all its formations and front organizations under the Unlawful Activities (Prevention) Act, 1967.
- In 2005, then PM, Manmohan Singh described the LWE challenge as the most serious security threat to India.
- LWE has its genesis in poor governance, lack of development in the tribal belt and an oppressive/exploitative hierarchy of the state and society that has pushed the tribal population, the landless and the socio-economically backward sections to the margins of survival.

### Issues Related to Dealing With LWE

1. **Absence of effective leadership:** In the current scenario, barring a few exceptions, many of the senior police officers (IPS cadre) who are parachuted into the central police forces at senior ranks have little or no platoon/battalion experience.
  - By training, the police officer is expected to be a competent Superintendent and to maintain law and order.
  - This is not the skill-set that is relevant when an officer has to “command” and lead his men into insurgency operations.
  - These led to as many as 15,000 lives being lost due to Maoist/Naxal violence over the last three decades.
2. **Threatening Democracy:** Guerrilla warfare, which primarily aims at creating a vacuum at the grass-roots level of the existing governance structures.
  - The Peoples Liberation Guerilla Army (PLGA), the armed wing of CPI (Maoist), has been created with this purpose in mind.

- This is achieved by killing lower-level government officials, police-personnel of the local police stations, the workers of mainstream political parties and the people's representatives of the Panchayati Raj system.
- After creating a political and governance vacuum, they coerce the local population to join the movement. A strident propaganda is also carried out against the purported and real inadequacies of the existing state structure.

### Government Strategy to Curb LWE

- ✚ **Operation Green Hunt** was the unofficial name for major operation undertaken by security forces in September 2009 under MHA's guidance to "flush out" insurgents from Naxal affected border areas of states in 'Red Corridor'
  - The operation met with success but as a response to the offensive, the Naxals too launched violent attacks on the security forces, the worst being ambush on CRPF troops in April 2010 which cost lives of 75 policemen/CRPF men, the maximum number ever killed by the Maoists in any single conflict.
- ✚ **The National Policy and Action Plan formed in 2015** to address left Wing Extremism', aimed at eliminating the menace in the "shortest possible timeframe by using any element of the country's national power".
  - The plan envisaged adopting a four pronged strategy in the areas of 'security, development, ensuring rights & entitlement of local communities and management of public perception' with the focus towards addressing the existing deficits in LWE affected areas.
  - On the security front the Government laid emphasis on capacity building of the concerned State Governments and improving the security environment through various schemes such as Security Related Expenditure (SRE) scheme, construction of fortified police stations, construction of critical roads etc.
- ✚ **Operation 'Samadhan'**: An integrated strategy through which LWE can be countered with full force and competence'. This is a compilation of short term and long-term policies formulated at different levels. SAMADHAN Stand for:-
  - S- Smart Leadership
  - A- Aggressive Strategy
  - M- Motivation and Training
  - A -Actionable Intelligence
  - D- Dashboard Based KPIs (Key Performance Indicators) and KRAs (Key Result Areas)
  - H- Harnessing Technology
  - A-An Action plan for each Theatre
  - N- No Access to Financing
- ✚ **Current Strategy: The Government's approach is to deal with Left Wing Extremism in a holistic manner, in the areas of security, development, ensuring rights and entitlements of local communities, improvement in governance and public perception management.**
- ✚ Despite the need to adopt an integrated approach, the Centre believes that action on maintenance of law and order lies with the State governments as 'Police' and 'Public Order' remain State subjects. The Central Government, on its part, closely monitors the situation and supplements and coordinates the efforts of affected states in following ways:-
  - These include providing the Central Armed Police Forces (CAPFs); sanction of India Reserve (IR) battalions, setting up of Counter Insurgency and Anti-Terrorism (CIAT) schools; modernisation and upgradation of the State Police and their Intelligence apparatus; reimbursement of security related expenditure under the Security-related Expenditure (SRE) Scheme; providing helicopters for anti-LWE operations, assistance in training of State Police through the Ministry of Defence, the Central Police Organisations and the Bureau of Police Research and Development; sharing of Intelligence; facilitating inter-State coordination; assistance in community policing and civic action programmes etc.
  - The underlying philosophy is to enhance the capacity of the State Governments to tackle the Maoist menace in a concerted manner.

### Important Initiatives for LWE affected States:

In order to holistically address the LWE problem in an effective manner, Government has formulated National Policy and Action Plan adopting multi-pronged strategy in the areas of security, development, ensuring rights & entitlement of local communities.

1. **Security Related Expenditure (SRE) Scheme:** The SRE Scheme aims at strengthening of the capacity of the LWE affected States to fight the LWE menace effectively.
2. **LWE Mobile Tower Project:** To improve mobile connectivity in the LWE areas.
3. **Road Connectivity Project for LWE affected areas (RRP-II):** for improving road connectivity in LWE affected States.
4. **Special Central Assistance (SCA):** The main objective of the Scheme is to fill the critical gaps in Public infrastructure and Services, which are of emergent nature.

**Way Forward**

- > It is the belief of the Government of India that through a holistic approach focusing on development and security-related interventions, the LWE problem can be successfully tackled.
- > Para-military reforms: the Kargil Review Committee (KRC) report noted that the new situation of proxy war and large scale terrorism that the country faces, the role and the tasks of the para-military forces have to be restructured particularly with reference to command and control and leadership functions.
- > Modernization of Police Forces: State plays vital role in maintaining law and order. Central forces have the numbers and the training, but they have no local knowledge or intelligence. Only local police can drive out Maoists.

**Exercise ‘Shantir Ogroshena’**

**News Excerpt**

Exercise Shantir Ogroshena, a 10 day long multinational military exercise, concluded on 12 April 2021 at Bangabandhu Sena nibas (BBS), Bangladesh.

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**Pre-Connect**

The year 2021 marks the 50th anniversary of diplomatic relations between India and Bangladesh, the liberation of Bangladesh from Pakistan and the birth centenary of ‘Bangabandhu’ Mujibur Rahman.

**Highlights**

- The Exercise was organized to commemorate the birth centenary of Bangladesh’s ‘Father of the Nation’ Bangabandhu Sheikh Mujibur Rahman and mark 50 years of the country’s liberation from Pakistan.
- The Shantir Ogroshena 2021 means Frontrunners of Peace.
- The aim of the exercise is to strengthen the procedures and enhance interoperability amongst neighborhood countries to ensure robust peacekeeping operations in the region.
- The Armies of all participating nations shared their wide experiences and enhanced their situational awareness through robust information exchange platforms.
- Troops from India, Bangladesh, Bhutan and Sri Lanka participated in the exercise with observers from USA, UK, Russia, Turkey, Kingdom of Saudi Arabia, Kuwait and Singapore.

**PEPPER IT WITH**  
Exercise Sampriti

**The La Pérouse joint exercise**

**News Excerpt**

Recently, The Navy has deployed two ships and a P-8I long range maritime patrol aircraft for the France-led multi-lateral maritime exercise La Pérouse which began in the Eastern Indian Ocean.

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**Highlights**

- The first edition of the La Pérouse joint exercise, initiated by France in 2019, included ships from Australia, Japan and the USA.
- For the first time India will join its Quad partners — Australia, Japan, and the United States — in the France-led joint naval exercise, La Pérouse.
- Exercise La Pérouse will witness complex and advanced naval operations including surface warfare, anti-air warfare and air defence exercises, weapon firing exercises, cross deck

**PEPPER IT WITH**  
Exercise Desert Knight-21, Exercise Shakti



flying operations, tactical manoeuvres and seamanship evolutions such as replenishment at sea.

### Analytica

- The exercise will showcase high levels of synergy, coordination and inter-operability between the friendly navies.
- It will provide an opportunity for these five like-minded, high-end naval forces to develop closer links, sharpen their skills, and promote maritime cooperation throughout a free and open Indo-Pacific.
- Participation by the Navy in the exercise

### Exercise Varuna

Recently, the 19th edition of the Indian and French Navy bilateral exercise 'VARUNA-2021' concluded in in the Arabian Sea.

- ❖ VARUNA-21 highlights growing bonhomie and showcases increased levels of synergy, coordination and inter-operability between the two friendly navies.
- ❖ These interactions further underscore the shared values as partner navies, in ensuring freedom of seas and commitment to an open, inclusive Indo-Pacific and a rules-based international order.
- ❖ Units of both navies honed and enhanced their war-fighting skills to demonstrate their ability as an integrated force to promote peace, security and stability in the maritime domain.
- ❖ Indian Navy's guided missile frigate Tarkash will continue to exercise with the French Navy's Carrier Strike Group (CSG) from 28th April to 1st May 2021 participating in advanced surface, anti-submarine and air-defence operations with the French CSG.

demonstrates the shared values with friendly navies ensuring freedom of seas and commitment to an open, inclusive Indo-Pacific and a rules-based international order.

## **NanoSniffer: A Microsensor based Explosive Trace Detector**

### News Excerpt

The Union Minister has launched NanoSniffer, the world's first Microsensor-based Explosive Trace Detector (ETD).

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### Highlights

- The Nanosniffer has been developed by NanoSniff Technologies which is an IIT Bombay incubated startup.
- NanoSniffer can detect explosives in less than 10 seconds and it also identifies and categorizes explosives into different classes.
- It can accurately detect a wide range of military, commercial, and home-made explosives threats.
- Further analysis of the algorithms also helps in the categorization of explosives into the appropriate class.
- NanoSniffer provides trace detection of the nano-gram quantity of explosives, and delivers results in seconds.
- NanoSniffer gives visible & audible alerts with a sunlight-readable color display.
- NanoSniffer is a 100 per cent Made in India product in terms of research, development & manufacturing. The core technology of NanoSniffer is protected by patents in the U.S. & Europe.

### Analytica

- NanoSniffer is a step towards Prime Minister Narendra Modi's vision of a self-reliant India.
- This affordable device will reduce our dependency on imported explosive trace detector devices.
- It will also encourage other institutions, startups and medium-scale industries to research & develop products indigenously.

## Advanced Chaff Technology

### News Excerpt

The Defence Research and Development Organisation (DRDO) has developed an Advanced Chaff Technology to safeguard the naval ships against enemy missile attack.

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### Highlights

- Chaff is an electronic countermeasure technology used by militaries worldwide to protect naval ships or other sensitive targets from radar and radio frequency (RF) guiding mechanisms of the enemy missile.
- Chaff rocket is primarily a mechanism that when fired acts as a decoy to deflect the guiding mechanism of enemy missiles.
- The chaff rockets deployed in the air reflect as multiple targets for the missile guidance systems and deflecting adversary missiles, thus protecting own assets.
- Defence Laboratory Jodhpur (DLJ), a DRDO laboratory, has indigenously developed three variants of this critical technology namely:
  1. Short Range Chaff Rocket (SRCR),
  2. Medium Range Chaff Rocket (MRCR) and
  3. Long Range Chaff Rocket (LRCR)

### Chaff v/s flares:

- Chaff — which comprises “millions of tiny aluminum or zinc-coated fibers” — is stored onboard an aircraft in tubes and ejected behind the plane to confuse radar-guided missiles.
- Meanwhile, flares distract heat-seeking, infrared-guided missiles “by ejecting magnesium pellets from tubes to ignite in the wake behind an aircraft.

### Analytica

- ✓ The successful development of Advanced Chaff Technology is another step towards Atmanirbhar Bharat.
- ✓ The DRDO has gained expertise to meet futuristic threats from adversaries.

## Dhruv MK III: Advanced Light Helicopter

### News Excerpt

Hindustan Aeronautics Limited (HAL) had recently delivered Advanced Light Helicopter (ALH) Dhruv Mk III MR to Indian Coast Guard.

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### Highlights

- The indigenously designed and developed Advanced Light Helicopter (ALH-DHRUV) is a twin engine, multi-role, multi-mission new generation helicopter in the 5.5 ton weight class.
- Hindustan Aeronautics Limited (HAL) is an Indian state-owned aerospace and defence company, headquartered in Bangalore (Bengaluru), India. It is governed under the management of the Indian Ministry of Defence.
- HAL conceptualised the Advanced Light Helicopter programme in 1984. The major variants of Dhruv are classified as Dhruv Mk-I, Mk-II, Mk-III & Mk-IV.
- The aircraft, a step up from Mk 1, will be able to mitigate low visibility during search and rescue operations even at night.

### Features

- It will be used for search and rescue, special operations and coastal surveillance.
- The helicopter is equipped with the Shakti engines and an advanced glass cockpit.
- Dhruv Mk III MR is equipped with the surveillance radar that can detect and identify ships and boats up to a range of 120 nautical miles to enable the Indian Coast Guard in its duty to secure the nation from threats
- Coupled with an electro-optical sensor that can closely monitor even the smallest of the vessels at distances as far as 30 nautical miles, ALH Dhruv will boost the capabilities of the Indian Coast Guard.

## Project DANTAK

### News Excerpt

Recently, Project DANTAK which is one of the oldest projects of the Border Roads Organisation (BRO) commemorated its Diamond Jubilee in Bhutan.

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### Pre-Connect

- Project DANTAK was established on April 24, 1961 as a result of the visionary leadership of His Majesty the Third King and the then Prime Minister Jawahar Lal Nehru.
- It was raised with its Headquarters at Deothang. In 1997, the Project Dantak Head Quarters moved to its present location at Simtokha (Thimphu) from Deothang.
- DANTAK was tasked to construct the pioneering motorable roads in the Kingdom.
- Over 1,200 DANTAK personnel laid down their lives while constructing important infrastructure in Bhutan.

### Highlights

- It completed the road connecting Samdrup Jongkhar to Trashigang in 1968. In the same year, Thimphu was connected to Phuentsholing by DANTAK.
- The notable projects executed by the project include the construction of Paro Airport, Yonphula Airfield, Thimphu – Trashigang Highway, Telecommunication & Hydro Power Infrastructure, Sherubtse College, Kanglung and India House Estate.
- The medical and education facilities established by DANTAK in far flung areas were often the first in those locations.
- The food outlets along the road introduced the Bhutanese to Indian delicacies and developed a sweet tooth in them.

### India-Bhutan relations

- ✓ India and Bhutan share a unique and time tested bilateral relationship, characterized by utmost trust, goodwill and mutual understanding.
- ✓ The basic framework of India Bhutan bilateral relations is the Treaty of Friendship and Cooperation signed in 1949 between the two countries and revised in February 2007.
- ✓ Mutually beneficial hydro-power cooperation with Bhutan forms the core of bilateral economic cooperation.
- ✓ India is Bhutan's largest trading partner.
- ✓ India is the most popular educational destination for Bhutanese students.
- ✓ There are vibrant cultural exchanges between the two countries.
- ✓ The two countries share an open border with regular exchange of travelers in both directions for work, tourism, shopping, medical care etc.

## Chenab Arch Bridge

### News Excerpt

Recently, Indian Railways completed the construction of the arch of Chenab Bridge in the union territory of Jammu and Kashmir.

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### Pre-Connect

- The preparations of the rail link began in 2002 and the initial plan was to connect Kashmir's northernmost city Baramulla to New Delhi.
- The project was given high priority by the Bharatiya Janata Party (BJP)-led Atal Bihari Vajpayee government but the project suffered several delays owing to the weather conditions and contractual issues.

### Highlights

- This is the highest Railway Bridge in the world being 359m above the river bed level. It is a National project of India.
- Indian Railways is constructing the iconic Arch Bridge on River Chenab as a part of the Udhampur-Srinagar-Baramulla rail link (USBRL) project.
- The length of the Chenab bridge will be 1,315 metres with 17 spans, of which the span of the main arch across Chenab river will be 467m.
- Steel was specifically chosen for the construction of the bridge as it will make the project more economical.

### Analytica

- ✓ It will have a 14-metre dual carriageway and a 1.2-metre-wide central verge, with a speed of around 100 kilometres per hour.
- ✓ With a design life of the bridge at 120 years, it can withstand wind speed up to 266km/hr and temperatures of minus 20 degree Celsius
- ✓ It can withstand earthquakes with a magnitude of up to eight and high-intensity blasts.
- ✓ Bridge designed for blast load in consultation with DRDO for the first time in India.
- ✓ It is the biggest civil engineering challenge faced by any railway project in India.

**Chenab River:** The river Chenab (or Chandra Bhaga) is formed after the two streams the Chandra and the Bhaga merge with each other. The Chandra and the Bhaga originate from the south-west and north-west faces of Baralacha pass respectively in the Himalayan canton of Lahul and Spiti valley in Himachal Pradesh.

It flows through the Jammu region of Jammu and Kashmir into the plains of Punjab, Pakistan, before flowing into the Indus river.



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**ART & CULTURE**

**Jyotirao Phule birth anniversary**

**News Excerpt**

The 'Tika Utsav', vaccination festival, started on the birth anniversary of Mahatma Jyotiba Phule (11<sup>th</sup> April) and will continue till the birth anniversary of Babasaheb Ambedkar on April 14. The aim of the festival is to achieve maximum vaccination coverage for the priority groups and move towards zero vaccine wastage.

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**About Jyotirao Govindrao Phule**

- Phule was born on April 11, 1827 in present-day Maharashtra and belonged to the Mali caste of gardeners and vegetable farmers.
- In 1841, Jyotirao got admission in the Scottish Mission's High School, Poona, and completed his education in 1847.
- Jyotirao Govindrao Phule was a social reformer who worked against social evils like untouchability and caste system, and was a strong advocate of women empowerment and education of girl child.
- Apart from being a social activist and reformer, he was also a businessman. He was also a cultivator and contractor for the Municipal Corporation.
- He served as Commissioner of the Poona Municipality between 1876 and 1883.
- After reading Thomas Paine's famous book 'The Rights of Man', Jyotirao was greatly influenced by his ideas. He believed that enlightenment of the women and lower caste people was the only solution to combat the social evils.
- Phule along with his followers formed Satyashodhak Samaj in 1848 which meant 'Seekers of Truth' in order to attain equal social and economic benefits for the lower castes in Maharashtra.
- He dedicated his book Gulamgiri (slavery) to the African American movement to end slavery.
- He was bestowed with the title of Mahatma on May 11, 1888 by a Maharashtrian social activist Vithalrao Krishnaji Vandekar.
- On 28 November, 1890, the great social reformer, Mahatma Jyotirao Phule, passed away.

**His works:**

- He and his wife Savitrirao Phule battled for the education of girl students and opened a school in 1848.
  - He was a believer in gender equality and he exemplified his beliefs by involving his wife in all his social reform activities.
- Jyotiba realised the pathetic conditions of widows and established an ashram for young widows and eventually became advocate of the idea of Widow Remarriage.
- Jyotirao attacked the orthodox Brahmins and other upper castes and termed them as "hypocrites"
- In 1868, Jyotirao decided to construct a common bathing tank outside his house to exhibit his embracing attitude towards all human beings and wished to dine with everyone, regardless of their caste.
- It is believed by many that it was Phule who first used the term 'Dalit' for the depiction of oppressed masses often placed outside the 'varna system'.
- He worked for abolishment of untouchability and caste system in Maharashtra
- He wrote 16 books that contributed to the social awakening of the downtrodden masses who were subject to the atrocities of the upper castes and the British administrators at that time.
- Major Publication: Shetkaryacha Asud(1881), Gulamgiri (1873) and also penned some stories like 'Tritiya Ratna', 'Brahmananche Kasab', 'Ishara'.

**Dr. Sree Sree Sree Sivakumara Swamigalu Jayanti**

**News Excerpt**

Recently, the Prime Minister paid tribute to Dr. Sree Sree Sree Sivakumara Swamigalu on his Jayanti.

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**Highlights**

- Born on April on April 1, 1907, in Veerapura village of Ramanagara, the Lingayat religious head was well known for his philanthropic activities.
- His interest in religion began in his childhood when he accompanied his parents to religious centers.
- After completing his elementary education in the village, he was born in, he moved to Nagavalli to complete his middle school. Simultaneously, he also became a resident student at the Siddaganga Math for a brief period.
- In 1930, Shivakumara earned a bachelor's degree in arts from the Central College in Bangalore. He was proficient in English, Kannada, and Sanskrit.
- Shivakumara Swami of Siddhaganga Mutt in Tumakuru was a revered seer of the Lingayat-Veerashaiva faith.
- Shivakumara Swamiji was considered as the incarnation of Basavanna, the 12th century social reformer, as he accepted all irrespective of their religion or caste.
- The Swamiji, who was known as the 'Walking God' among his countless followers, had passed away in January, 2019 at the age of 111.

### Social Work

- ✓ The pontiff was also the head of Sree Siddaganga Education Society which runs close to 125 educational institutions in Karnataka.
  - Here, the children are provided free shelter, food, and education.
  - Visitors and pilgrims coming to the Math also receive free food.
- ✓ Under the swami's guidance, an agricultural fair was also held annually to help the local people.

### Awards

- ✓ The humanitarian work of Shivakumara Swami was recognized by people of all communities. To this effect, he was honored with a number of awards.
  - In 1965, he was awarded an honorary Doctor of Literature degree by Karnataka University.
  - In 2007 he was awarded the Karnataka Ratna (highest civilian award in Karnataka).
  - In 2015, he was awarded the Padma Bhushan (the third highest civilian award in India).

## **World Cities Cultural Forum**

### News Excerpt

The Chief Minister of Delhi will represent the Capital and India at the World Cities Cultural Forum (WCCF).

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### Highlights

- The Forum was founded in 2012 by London, New York City, Shanghai, Paris, Tokyo, Sydney, Johannesburg and Istanbul. It is unique in bringing city leaders, senior policymakers, and people of influence together to develop strategies aimed at supporting cultural activity and the creative economy - with a long-term view.
  - It is a network of 38 key cities, including London, Hong Kong, Amsterdam, Cape Town, Dakar, Edinburgh, Lisbon, San Francisco, Shanghai, Singapore, Toronto and many others.
  - Delhi is invited this year but it is not a part of member cities.
- The WCCF enables the policy makers of member cities to share research and intelligence, and explore the vital role of culture in their future prosperity.
- WCCF members share the belief that culture is the key to their future as sustainable urban centres.
- BOP Consulting manages the World Cities Culture Forum (WCCF) on behalf of the Greater London Authority (GLA), London's municipal government.
- BOP conducts comparative research to measure the impact and importance of culture and creativity, and shares it with the Forum so members can make evidence-based policy decisions.

### World Cities Culture Summit

- WCCF members collaborate via a programme of events including themed symposia, regional summits and workshops. These events feed in to the annual World Cities Culture Summit.
- Hosted on a rotating basis by member cities, this unique gathering allows city leaders to share ideas and knowledge about the role of culture as an organising principle for the sustainable city of the future.
- The annual Summit, attended by Deputy Mayors for Culture and Heads of Culture from the member cities.
- This year's theme is "The Future of Culture".
- The date for this year's annual summit is yet to be announced in the forum's website.

The World Cities Culture Forum has launched its landmark publication – the World Cities Culture Report 2018. Supported by Bloomberg Philanthropies and published every three years, this report is the world's most comprehensive cultural report, featuring data and innovative projects from cities across the globe.

## Lingaraj Temple

### News Excerpt

The Bhubaneswar Municipal Corporation has restricted public entry into the 11th century Lingaraj Temple after four sevayats (priests) tested positive for the novel coronavirus.

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### Pre-Connect

In August 2020, the Odisha government announced to give a facelift to the 11th century Lingaraj Temple, akin to its pre-350-year structural status.

### Highlights

- Lingaraj Temple, built in 11th century, is dedicated to Lord Shiva and is considered as the largest temple of the city Bhubaneswar, Odisha.
  - Built by king Jajati Keshari of Soma Vansh, the main tower of this temple measures 180-feet in height.
  - It is built in red stone and is a classic example of Kalinga style of architecture.
  - The sprawling temple complex has one hundred and fifty subsidiary shrines.
- The temple can broadly be divided into four main halls. The Garba Griha (Sanctum Sanctorum), the Yajana Mandapa (the hall for prayers) the Natya Mandapa (dance and music hall) and the Bhoga Mandapa (where devotees can have the Prasad (offering) of the Lord).
- In the sanctum sanctorum, the linga of Lord Shiva is regarded as 'Swayambhu' (self-originated) and worshipped as both Lord Shiva and Lord Vishnu.
- Another important aspect of the temple is that it signifies the synchronization of Shaivism and Vaishnavism sects in Odisha.
  - The Shivling is known as Hari Hara. Perhaps the rising cult of Lord Jagannath which coincided with the completion of the Lingaraja Temple had a role to play.
  - The presiding deity here is known as Hari-Hara; Hari denotes Lord Vishnu and Hara meaning Lord Shiva.
- The temple is out of bounds for non-Hindus.
- The other attraction of the temple is the Bindusagar Lake, located in the north side of the temple. The pond has religious relationship with the main temple.
- On the western banks of Bindu Sagar, lies the beautiful garden of Ekamra Van named after the Hindu mythological texts where Bhubaneswar the capital city of Odisha was referred as Ekamra van or a forest of a single mango tree.
- Lingaraj Temple is the second-most visited temple by devotees in Odisha after Shree Jagannath Temple, Puri.

**PEPPER IT WITH**  
Sun Temple, Jagannath Temple, Konark temple, Udayagiri and Khandagiri caves.

**Kalinga Architecture:** Kalinga style is identified as a sub-class under the Nagara category. As the name suggests, this temple style was mostly confined within the then Kalinga region, present Odisha.

The main architectural features of Odisha temples are classified in three orders, i.e., rekhapida, pidhadeul and khakra.

In general, here the shikhara, called deul in Odisha, is vertical almost until the top when it suddenly curves sharply inwards. Deuls are preceded as usual, by mandapas called jagamohana in Odisha.

The ground plan of the main temple is almost always square, which, in the upper reaches of its superstructure becomes circular in the crowning mastaka. This makes the spire nearly cylindrical in appearance in its length. Compartments and niches are generally square, the exterior of the temples are lavishly carved, their interiors generally quite bare. Odisha temples usually have boundary walls.

### International Day for Monuments and Sites

#### News Excerpt

Every year, the United Nations marks April 18 as the International Day for Monuments and Sites, also celebrated as World Heritage Day in many countries.

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#### Highlights

- The theme for 2021 is “Complex Pasts: Diverse Futures”.
- International Council on Monuments and Sites (ICOMOS) in 1982 had decided to celebrate April 18 as the International Day for Monuments and Sites or World Heritage Day. It was approved by UNESCO in 1983 during its 22nd General Conference.
- The day is dedicated to recognizing sites of historical importance, raising awareness regarding them, and stressing the need to restore and preserve them.
- Globally, the day is promoted by ICOMOS.
- Together with ICOMOS, the UNESCO World Heritage Centre supports inclusive and diverse points of view in heritage identification, conservation and transmission to future generations.

**PEPPER IT WITH UNESCO & ICOMOS**

#### World Heritage

- The United Nations Educational, Scientific and Cultural Organization (UNESCO) seeks to encourage the identification, protection and preservation of cultural and natural heritage around the world considered to be of outstanding value to humanity.
- This is embodied in an international treaty called the Convention concerning the Protection of the World Cultural and Natural Heritage, adopted by UNESCO in 1972.

#### World Heritage Sites in India

- ✓ India is home to 38 UNESCO World Heritage Sites, out of the 1121 such spots identified around the world. So far, only China, Italy, Spain, Germany, and France have more locations on the list than India.
- ✓ Currently, there are 38 World Heritage Sites located in India. Of these, 30 are ‘cultural’, such as the Ajanta Caves, Fatehpur Sikri, Hampi monuments and the Mountain Railways of India, and 7 are ‘Natural’, including Kaziranga, Manas and Nanda Devi National Parks.
- ✓ One is classified as ‘Mixed’, the Khangchendzonga National Park.
- ✓ In 2019, ‘Jaipur City’ became the 38th addition to the India list under Culture.

### Mahavir Jayanti

#### News Excerpt

In 2021, Mahavir Jayanti, celebrated on 25th April, is one of the most auspicious festival in the Jain community.

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#### Highlights

- Mahavir Jayanti celebrates the birth of Mahavira, a contemporary of the Buddha, and the 24th and last Tirthankara who succeeded the 23rd Tirthankara, Parshvanatha.
- Mahavir Jayanti takes place in March or April, as per the Gregorian calendar. It also marks the 13th ‘sud’ day of the Chaitra month of the Jain calendar.
- On this day, a procession is carried out with the idol of Mahavir on a chariot is called “rath yatra”.
- Reciting religious rhymes or stavans, Mahavir idols are also given a ceremonial anointment called abhisheka.



### Lord Mahavira

- Lord Mahavira was born on the 13th day of waxing moon on the Chaitra month of Hindu calendar to King Siddhartha and Queen Trishala in Kundalagrama (Kundalpur in Champaran district) in Bihar.
- He was kshatriya prince of the Lichchhavis, a group that was part of the Vajji sangha.
- It is believed that he was born in a place called “Ahalya bhumi” which has not been ploughed for hundreds of years by the family that owns it.
- At the age of 30, Mahavir have abandoned all worldly possessions in pursuit of spiritual awakening.
- He practiced intense meditation and austerity for almost 12 years before attaining “Kevala Jnana” or omniscience.
- After achieving Kevala Jnana, he travelled throughout the Indian subcontinent to teach Jain philosophy for the next 30 years.
- His teachings were compiled by his chief disciple Indrabhuti Gautama as the Jain Agamas.
- Ordinary people could understand the teachings of Mahavira and his followers, because they used Prakrit.
- He attained moksha shortly after his final discourse, finally liberated from the cycle of life, death and rebirth during 527 B.C. at the age of 72.
- His final discourse was at Pavapuri which lasted for 48 hours.
- Mahavir taught the vows of ahimsa or non-violence, satya or truth, asteya or non-stealing, brahmacharya or chastity and aparigraha or non-attachment.

**PEPPER IT WITH**  
Jainism, Buddhism

### Miscellaneous

#### Jallianwala Bagh massacre

- The Rowlatt Act (Black Act) was passed on March 10, 1919, authorizing the government to imprison or confine, without a trial, any person associated with seditious activities. This led to nationwide unrest.
- Gandhi initiated Satyagraha to protest against the Rowlatt Act.
- Dr Saifuddin Kitchlew and Dr Satyapal, the two prominent leaders who were a symbol of Hindu-Muslim unity, organised a peaceful protest against the Rowlatt Act in Amritsar.
- The massacre took place at Jallianwala Bagh in Punjab’s Amritsar during the Baisakhi festival on April 13, 1919 when the British Indian Army under the command of Colonel Reginald Dyer opened fire at a crowd staging a pro-Independence demonstration.
- Two days after the massacre, Martial Law was clamped down on five districts - Lahore, Amritsar, Gujranwala, Gujarat and Lyallpore.
  - The declaration of Martial Law was to empower the Viceroy to direct immediate trial by court-martial of any person involved in the revolutionary activities. As the news of the massacre spread across the nation, Tagore renounced his Knighthood.
- The official count was 379 dead, even though the real numbers were probably much more.
- On October 14, 1919, the Disorders Inquiry Committee was formed to inquire about the massacre. It later came to be known as the Hunter Commission.

#### B R Ambedkar: 130th Birth Anniversary

- The year 2021 marks his 130th birthday celebration. The day is also known as ‘Bhim Jayanti’, and it is annually observed on April 14.
- Dr. Bhimrao Ramji Ambedkar, popularly known as Babasaheb Ambedkar, was a jurist, social reformer and politician.
- Bhimrao Ambedkar was born on 14 April 1891 in Mhow, Central Provinces (Madhya Pradesh).
- He is also known as the Father of Indian Constitution.
- He was the chairman of the draft committee of the Indian Constitution.
- He was a well-known statesman who fought for the rights of the Dalits and other socially backward classes.
- The Reserve Bank of India was conceptualised from the Hilton Young Commission’s recommendation, which considered Ambedkar’s guidelines laid out in The Problem of the Rupee: Its Origin and Its Solution.

- Ambedkar was appointed as India's first Law Minister in the Cabinet of Jawaharlal Nehru. He was posthumously awarded the Bharat Ratna, India's highest civilian honor, in 1990.
- By 1927, Ambedkar launched full-fledged movements for Dalit rights. He demanded public drinking water sources open to all and right for all castes to enter temples.
- In 1932, the Poona Pact was signed between Dr. Ambedkar and Mahatma Gandhi, which abandoned the idea of separate electorates for the depressed classes (Communal Award).
- Later, he converted to Buddhism. He passed away on 6 December, 1956.
- He launched a newspaper called "Mooknayaka" (leader of the silent) in 1920.
- Important Books: The Buddha or Karl Marx, The Buddha and His Dhamma

### **Babu Jagjivan Ram**

- Recently, the Prime Minister paid tributes to freedom fighter and former Deputy Prime Minister Babu Jagjivan Ram his 113th birth anniversary.
- Jagjivan Ram, popularly known as Babuji was a national leader, a freedom fighter, a crusader of social justice, a champion of depressed classes, an outstanding Parliamentarian.
- Jagjivan Ram, a Dalit leader popularly referred to as 'Babuji', was born on 5 April 1908 in Bihar.
- He attended high school at Arrah Town School, Bihar. Despite facing caste based discrimination, Jagjivan Ram successfully completed the Inter Science Examination from the Banaras Hindu University and later graduated from Calcutta University.
- He was active in the nationalist movement as a student. He worked on the emancipation of the Depressed Classes.
- In the 1930s, he was extensively involved in social work like setting up relief camps for victims of the Bihar earthquake in 1934.
- He participated in mainstream and popular movements like the Civil Disobedience movement, Salt Satyagraha and Quit India movement. He was imprisoned twice for his involvement in these movements.
- 19 October, 1935, Babuji appeared before the Hammond Commission at Ranchi and demanded, for the first time, voting rights for the Dalits.
- He was of the view that Dalit leaders should not only fight for social reforms but, also demand political representation.
- In 1935, Jagjivan Ram played an important role in establishing the All-India Depressed Classes League for the upliftment of the downtrodden castes.
- Babuji had a long and distinguished political career of over five decades. In 1936, he was nominated to the Bihar legislative council.
- He also held more than half a dozen Union ministerial positions after Independence including as labour minister (1946-52), communications minister (1952-56), transport and railways (1956-62), food and agriculture minister (1967-70) and defence minister (1970-74, 1977-79).
- When he was food and agriculture minister, he had to contend with the 1967 famine. It was during his tenure as agriculture minister that India's Green Revolution began.
- He also served as the defence minister in the Indira Gandhi cabinet during the 1971 Bangladesh Liberation War.
- He passed away on 6 July 1986. His memorial at his cremation place is named Samta Sthal (Place of Equality).

### **Dolphin Population in Odisha**

- The population of dolphins in Chilika, India's largest brackish water lake, and along the Odisha coast has doubled this year compared with last year.
- The rise in the Irrawaddy dolphin population in Chilika can be attributed to the eviction of illegal fish enclosures.
- Irrawaddy dolphin is the flagship species inhabiting the lake. The species is spotted only in Asia — from Chilika to Indonesia.
- Three species were recorded during the census, with 544 Irrawaddy, bottle-nose and humpback dolphins sighted this year, compared with 233 last year.
- The highest growth has been noticed in the case of humpback dolphins.

- The number of bottle-nose dolphins grew from 23 in 2020 to 54 this year.
- The 2021 dolphin census report also revealed that Gahiramatha is the home of the state's largest population of dolphins.
- Gahiramatha was declared a marine sanctuary in 1997 to protect the endangered Olive Ridley sea turtles in the Gahirmatha beach, the world's largest rookery of sea turtles.
- Dolphins have been included in Schedule I of the Indian Wildlife (Protection) Act 1972, in Appendix I of the Convention on International Trade in Endangered Species (CITES), in Appendix II of the Convention on Migratory Species (CMS) and categorised as 'endangered' on the International Union for the Conservation of Nature's Red List.
- The annual population estimation survey of Irrawaddy dolphins has been conducted by Chilika Development Authority (CDA) since 2003. This year's annual survey was conducted by the 'Transact Survey Method', followed worldwide for the population of aquatic mammals.

### **India's first bat with sticky disks**

- The bat species *Eudiscopus denticulus*, aptly called disk-footed bat, is very distinctive in appearance with prominent disk-like pads in the thumb and bright orange colouration.
- The newly-recorded bat was presumed to be a bamboo-dwelling species.
- The disk-footed bat was also found to be genetically very different from all other known bats bearing disk-like pads.
- The species is known to thrive in a few localities in southern China, Vietnam, Thailand and Myanmar.
- Meghalaya has yielded India's first bamboo-dwelling bat with sticky disks, taking the species count of the flying mammal in the country to 130.
  - In Meghalaya, it was recorded in the north-eastern State's Lailad area near the Nongkhylllem Wildlife Sanctuary, about 1,000 km west of its nearest known habitat in Myanmar.
  - The disk-footed bat has raised Meghalaya's bat count to 66, the most for any State in India.

### **Madhu Kranti Portal & Honey Corners**

- Recently, the Union Minister for 'Agriculture and Farmers' has launched Madhukranti portal and Honey Corner.
- It is an initiative of National Bee Board (NBB), Ministry of Agriculture and Farmers Welfare under National Beekeeping & Honey Mission (NBHM).
- This portal is being developed for online registration to achieve a traceability source of Honey and other beehive products on a digital platform.
- This will also help in checking the quality and source of adulteration of honey.
- It will lead to increase in income of farmers, employment generation and increase in exports.
- Necessary functionalities are being developed on the Portal to create a database of all stakeholders involved in Honey and other hive products' production, sales and marketing chain.

### **Honey Corners**

- Honey Corners are specially designed space in NAFED's stores dedicated to sale of honey.
- It is operated by National Agricultural Cooperative Marketing Federation (NAFED).

### **National Panchayati Raj Day**

- India commemorates the 12th National Panchayati Raj Day virtually on 24th April, 2021.
- The Prime Minister has launched distribution of e-property cards under the Central Sector Scheme, "Survey of Villages and Mapping with Improvised Technology in Village Areas' (SVAMITVA).
- National Panchayat Raj Day is celebrated on April 24, marking the coming into force of the Constitution (73rd Amendment) Act, 1992, that vests certain powers with the local bodies.
- Former Prime Minister Manmohan Singh had declared the first National Panchayati Raj Day on 24 April in the year 2010.

- The mission of the Panchayati Raj system is to empower, enable and establish accountable Panchayati Raj institutions to ensure inclusive development and efficient delivery of services along with social justice.
- The Constitution of India recognizes Panchayats as 'Institutions of self-government'. These Panchayati Raj Institutions play a major role in the socio and economic development of people at the grassroots level.
- Ministry of Panchayati Raj has been awarding the best performing Panchayats/States/UTs across the country in recognition of their good work for improving delivery of services and public goods. Awards are given under various categories namely,
  1. Deen Dayal Upadhyay Panchayat Sashaktikaran Puraskar (DDUPSP),
  2. Nanaji Deshmukh Rashtriya Gaurav Gram Sabha Puraskar (NDRGGSP),
  3. Child-friendly Gram Panchayat Award (CFGPA),
  4. Gram Panchayat Development Plan (GPDP) Award and
  5. e-Panchayat Puraskar (given to States/UTs only).
- Prime Minister transfer the award money (as Grants-in-Aid) directly to the bank account of the Panchayats concerned in real time.



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## Concept Clearing Assignment

1. Considering the regional context, what are the challenges for India to become a NATO ally? Do you think that being a NATO ally could be cited as a radical shift from India's decade-long non-alignment policy?
2. Although digitalizing and data led governance minimize the wreaked havoc cause by COVID-19, but the growing 'digital divide' may exclude the 'vulnerable people'. Discuss. And what kind of decisive impacts can be delivered by data driven governance?
3. 'Net-Zero' as an idea itself is flawed and intrinsically inequitable. Assess its feasibility in developing countries, including India. Do you think that 'Net Zero' is against the dictum of 'Common but differentiated responsibilities' Under Paris Agreement? Substantiate your views.
4. Highlight the contribution of Jyotirao Govindrao Phule in socio religious reforms and women empowerment?
5. Enactment of uniform civil code in a pluralist society like India may prove counterproductive. Comment?
6. The Menace of Exotic Animal Trafficking in India has increased in the recent years. What are the reasons associated with it? Suggest way forward to tackle this problem.
7. Explain the mechanism of Monsoon with special reference to the dust particles, phenomena of 'positive feedback' and winds from the Middle East. Also highlight the role played by Iranian Plateau in this context.
8. The growing demand and use of fossil fuels causes plethora of irreversible environmental problems. In this context, Discuss India's progress for energy transition in securing its energy needs.
9. Agriculture is a sector where farming techniques and financial interventions play an imperative role in determining yield outcomes. Highlight the potential of entrepreneurship, startups and e-tech in aiding the farm sector. Suggest way forward.
10. Discuss the role of e-SANTA initiative in doubling farmer's income and assuring food security.
11. Do you think that the need of the hour to make India a hub for a startup can be complemented by the Startup India Seed Fund Scheme? Substantiate your views.
12. Highlight the key aspects of National Policy for Rare Diseases. Discuss the challenges associated with research and development regarding rare diseases. Suggest Way forward.
13. Explain the key features of PRISM Scheme. Do you think that such schemes are instrumental in supporting individual innovators and enabling inclusive development of India? Substantiate your views.
14. During recent years, India has seen unprecedented instances of massive forest fires. Do you think that abrupt fires can be linked to man-made hazards? Justify your answer.
15. India has neither ratified the UN convention of refugees nor does it have a national-level vibrant policy. What kinds of consequences are inevitable due to the vacuum generated by the absence of such policies? Suggest measures to overcome such challenges.

**P.T. Oriented Questions**

1. Consider the following pairs regarding Wildlife (Protection) Act, 1972:

**Sections                      Subject Matter**

- 1. Schedule-I                      It covers species under 'endangered species'.
- 2. Schedule-II                      It contains animals that can be hunted.
- 3. Schedule-III                      It provides for regulation in cultivation of a specified plant and restricts its possession.

Which of the pairs given above is/are correctly matched?

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

2. With reference to the 'Net zero' emission, consider the following statements:

- 1. It implies that a country would bring down its emissions to zero.
- 2. It refers to the balance between the Greenhouse Gases (GHG) emissions produced and taken out from the atmosphere.
- 3. It is well defined in article 4 of Paris agreement.

Which of the statements given above is/are correct?

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

3. Which of the following can be cited as possible implications of forest fires?

- 1. Affects the availability of minerals
- 2. Increases soil erosion with loss of vegetation
- 3. Affects the plant nutrient uptake
- 4. Alters the pattern of distribution of species

Select the correct answer using the code given below:

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

4. Recently, Terms like elevated heat pump, Positive feedback and

Aerosolized dust was seen in the news. These are mostly related to—

- (a) Indian Summer Monsoon
- (b) Influence of walker cell on El Nino
- (c) Warming of west Pacific Ocean
- (d) None of the above

5. Consider the following statements regarding United Nations Convention on the Law of the Sea (UNCLOS):

- 1. Under UNCLOS, member states have the right to conduct military movements within the 200 nm Exclusive Economic Zone of a state
- 2. India ratified the UNCLOS while the US is not a signatory.

Which of the statements given above is/are correct?

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

6. In context of influences on the Indian Summer Monsoon, Consider the following pairs:

<b>Theory/ Effect/ Phenomena</b>	<b>Description</b>
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- |                             |  |
|-----------------------------|--|
| 1. Snow-darkening effect    | This effect is related to aerosols which block the solar radiation from reaching the land surface and this causes the surface temperature to warm up abruptly. |
| 2. The solar-dimming effect | The process decreases the warming of the land and the troposphere above, which leads to enhanced very high-level southwesterly winds.                          |
| 3. Aerosolize d dust        | This phenomenon changes the  |

amount or type of precipitation that falls from a cloud and can "alter the microphysical properties of ice clouds.

Which of the pairs given above is/are correctly matched?

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

7. Consider the following statements regarding Mahendragiri Hills:

- 1. This hill ecosystem acts as a transitional zone between the flora and fauna of southern India and the Himalayas.
- 2. This region is inhabited by the Soura tribe which is designated as PVTG (particularly vulnerable tribal group).
- 3. This region is influenced only by Sal forests or vegetation.

Which of the statements given above are correct?

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

8. Consider the following statements regarding Global Energy Review 2021:

- 1. As per the report, Global energy demand is set to increase by 49% in 2021.
- 2. According to the report, Renewables are set to provide more than half of the increase in global electricity supply in 2021.

Which of the statements given above is/are correct?

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

9. The 'Global Energy Transition Index' is launched by which of the following?

- (a) International Energy Agency
- (b) Organisation for Economic Co-operation and Development
- (c) World Economic Forum
- (d) International Solar alliance

10. Which of the following countries has formally launched the Supply Chain Resilience Initiative?

- 1. India
- 2. China
- 3. Australia
- 4. Japan

Select the correct answer using the code given below:

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

11. Consider the following statements regarding refugees:

- 1. India is a founding signatory to the 1951 UN Convention for refugee.
- 2. The Citizenship Amendment Act, 2019 provided for comprehensive refugee policy of India, irrespective of religion.

Which of the statements given above is/are correct?

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

12. Recently, 'the Whitsun reef' was seen in the news. Which among the following is correct regarding this?

- (a) It belongs to the Spratly archipelago, the territory of Andaman and Nicobar Island.
- (b) It falls under the open sea area defined by International Maritime laws.
- (c) It falls under the exclusive economic zone of Philippines.
- (d) It is jointly claimed by the member States of ASEAN+6.

13. Consider the following statements regarding the Startup India Seed Fund Scheme:

- 1. It aims to create a robust startup ecosystem, particularly in Tier 2 and Tier 3 towns of India.
- 2. Under the Scheme, 10000 Crore rupees corpus will be divided over the next 7 years for providing seed funding to eligible startups.

Which of the statements given above is/are correct?

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

14. With reference to the WTO Peace Clause, consider the following statements:
1. The peace clause protects India's food procurement programmes against action from WTO members in case of subsidy ceilings.
  2. First time, India has invoked peace clause amid pandemic (COVID-19) to support food programmes.
- Which of the statements given above is/are correct?
- (a) 1 only
  - (b) 2 only
  - (c) Both 1 and 2
  - (d) Neither 1 nor 2
15. Consider the following statements regarding Sudarshan Sen Committee:
1. The panel will review the existing legal and regulatory framework applicable to ARCs (Asset Reconstruction Companies).
  2. The Panel will also review the business model of ARCs.
  3. The Panel is headed by the last chairman of Monetary Policy Committee of RBI.
- Which of the statements given above are correct?
- (a) 1 and 3 only
  - (b) 2 and 3 only
  - (c) 1 and 2 only
  - (d) 1, 2 and 3
16. Consider the following statements regarding the Government Securities Acquisition Programme (G-SAP):
1. G-SAP will subsume RBI's regular operations like Liquidity Adjustment Facility (LAF) and open market operations (OMOs).
  2. Through G-SAP, RBI will purchase government securities worth Rs 100 lakh crore in the first quarter of FY22.
- Which of the statements given above is/are correct?
- (a) 1 only
  - (b) 2 only
  - (c) Both 1 and 2
  - (d) Neither 1 nor 2
17. The 'e-SANTA' platform is intended to—
- (a) Provide institutionalize access to the credit for farming purposes.
  - (b) Provide a platform to connect aqua farmers and the buyers.
  - (c) Provide on demand-on location seeds and fertilizers to farmers.
  - (d) Provide government sponsored logistics support directly in farms.
18. Consider the following statements regarding Agricultural Trade of India:
1. India's agricultural and allied exports during 2019-20 were around Rs. 2.50 lakh Crores and imports were Rs. 1.47 lakh Crores
  2. India has witnessed significant shrink in export of (Non-Basmati) Rice.
- Which of the statements given above is/are correct?
- (a) 1 only
  - (b) 2 only
  - (c) Both 1 and 2
  - (d) Neither 1 nor 2
19. Consider the following statements regarding 'PRISM' scheme:
1. It is instrumental in supporting individual innovators by enabling inclusive development of India.
  2. It would provide support to institutions or organizations set up as Autonomous Organization under the Societies Registration Act, 1860 or Indian Trusts Act, 1882.
- Which of the statements given above is/are correct?
- (a) 1 only
  - (b) 2 only
  - (c) Both 1 and 2
  - (d) Neither 1 nor 2
20. Consider the following statements regarding Chaff Technology:
1. Chaff is a nuclear led countermeasure technology used by militaries worldwide to protect high orbit satellites from radar.
  2. Chaff rocket is primarily acts as a decoy to deflect the guiding mechanism of enemy missiles.
- Which of the statements given above is/are correct?
- (a) 1 only
  - (b) 2 only
  - (c) Both 1 and 2
  - (d) Neither 1 nor 2
21. Which of the following statements are correct regarding Jyotirao Govindrao Phule?
1. He along with his followers formed Satyashodhak Samaj in 1848.



2. He dedicated his book Gulamgiri to the African American movement to end slavery.
3. He strongly advocated the women empowerment and education of girl child.

Select the correct answer using the code given below:

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

22. Consider the following statements regarding Lingaraj Temple:

1. It is built in red stone and is a classic example of Nagara style of architecture.
2. It signifies the synchronization of Shaivism and Vaishnavism sects in Odisha

Which of the statements given above is/are correct?

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

23. Consider the following statements regarding the Uniform Civil Code:

1. It would be applicable to all religious communities in their personal matters such as marriage and divorce.
2. Article 43 of the Constitution lays down that the state shall endeavour to secure a Uniform Civil Code for the citizens.

Which of the statements given above is/are correct?

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

24. Which of the following statements best describe the features of the Government of National Capital Territory (GNCT) of Delhi Amendment Act 2021?

1. The Bill prohibits the Legislative Assembly from making any rule to enable itself.
2. The Act requires the LG to reserve bill dealing with the salaries and allowances of the members of the Assembly and the Ministers.

Select the correct answer using the code given below:

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

25. With reference to “Blockchain Technology”, consider the following statements: (UPSC-2020)

1. It is a public ledger that everyone can inspect, but which no single user controls.
2. The structure and design of blockchain is such that all the data in it are about cryptocurrency only
3. Applications that depend on basic features of blockchain can be developed without anybody's permission.

Which of the statements given above is/are correct?

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

26. With reference to the recent developments in science which one of the following statements is not correct? (UPSC-2019)

- (a) Functional chromosomes can be created by joining segments of DNA taken from cells of different species.
- (b) Pieces of artificial functional DNA can be created in laboratories.
- (c) A piece of DNA taken out from an animal cell can be made to replicate outside a living cell in a laboratory.
- (d) Cells taken out from plants and animals can be made to undergo cell division in laboratory petri dishes.

27. What is the importance of using Pneumococcal Conjugate Vaccines in India? (UPSC-2020)

1. These vaccines are effective against pneumonia as well as meningitis and sepsis.
2. Dependence on antibiotics that are not effective against drug-resistant bacteria can be reduced.
3. These vaccines have no side effects and cause no allergic reactions.

Select the correct answer using the code given below :

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

28. In the context of wearable technology, which of the following tasks is/are

accomplished by wearable devices?  
(UPSC-2019)

1. Location identification of a person
2. Sleep monitoring of a person
3. Assisting the hearing impaired person

Select the correct answer using the code given below.

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

29. Recently, scientists observed the merger of giant 'blackholes' billions of light-years away from the earth. What is the significance of this observation?  
(UPSC-2019)

- (a) 'Higgs boson particles' were detected.
- (b) 'Gravitational waves' were detected.
- (c) Possibility of inter-galactic space travel through 'wormhole' was confirmed.

(d) It enabled the scientists to understand to 'singularity'.

30. Under the Kisan Credit Card scheme, short-term credit support is given to farmers for which of the following purposes? (UPSC-2020)

1. Working capital for maintenance of farm assets
2. Purchase of combine harvesters, tractors and mini trucks
3. Consumption requirements of farm households
4. Post-harvest expenses
5. Construction of family house and setting up of village cold storage facility

Select the correct answer using the code given below:

- (a) 1, 2 and 5 only
- (b) 1, 3 and 4 only
- (c) 2, 3, 4 and 5 only
- (d) 1, 2, 3, 4 and 5

**ANSWERS KEY**

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