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# CURRENT CONNECT

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# Prelims 2021

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## 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.

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Team KSG

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<b>GS - I</b>	Culture-Art Forms, Literature and Architecture from ancient to modern times.	Indian history significant events, person	Post independence issues, National boundary and disputes	Indian society features, issues, globalization and diversity	Women - issues and developments	Urbanization – problems and remedies	Distribution of industries and resources – India and world	Geophysical phenomena such as earthquakes, Tsunami, Volcanic			
<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-government issues, self-help groups and role of civil society	Vulnerability of our society and social sector issues and initiatives	International Relation -India and other countries, various Indian and international agreements, effects of other countries on		
<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 space, robotics and computer	Disease, biotechnology and human welfare	Innovations, intellectual property, Awards, POI and other import and export aspects of S&T	Environment: government initiatives, various judgments, pollution, degradation and conservation efforts	Disaster & Management	Challenges to internal security, Various Security forces and agencies and their mandate. Cybersecurity; moneylaundering and its prevention.
<b>GS - IV</b>	Ethical issues related to family society, education, Corruption etc.	Ethics in public and private administrative	Issues	Related laws and rules	Governance/ Governance	Ethics in international issues	Personalities and their	Other important topics			
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## POLITY

## Decriminalisation of Politics

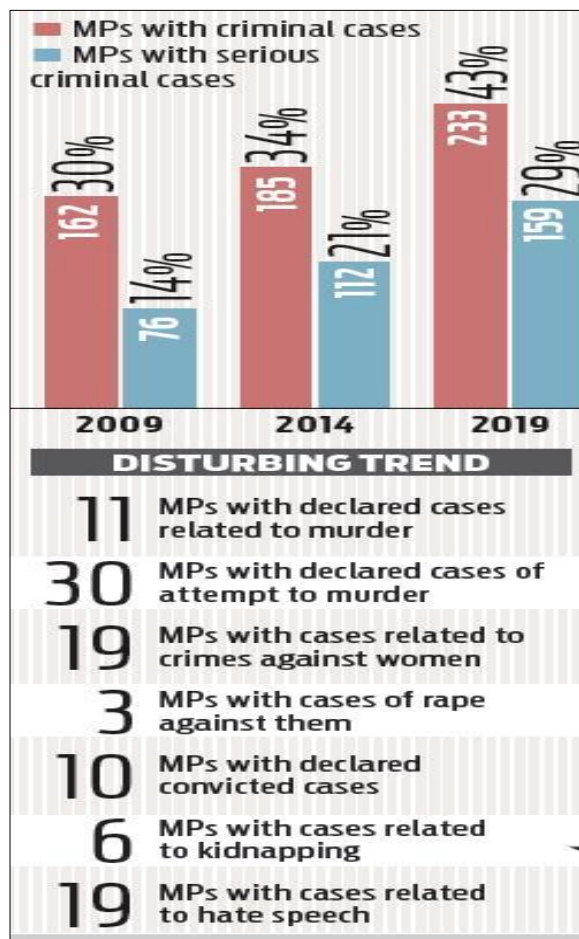
## News Excerpt

Supreme Court had directed political parties to list out reasons on their website including their social media platforms for nominating candidates with criminal background.

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## Pre-Connect

- The court asked the political parties to publish reasons as to why they are selected, as also for not giving ticket to those without criminal antecedents.
- The top court noted that 24 per cent of the MPs had criminal cases pending against them in 2004, while in 2009, it went to 30 per cent. Further, in 2014, 34 per cent of MPs had pending criminal cases against them, which increased to 43 per cent in 2019.
- Section 8 of the Representation of People Act, 1951** lays down certain rules for disqualification of MP's and MLA's. It says that a person convicted by court and sentenced to imprisonment for a term of more than 2 years is disqualified from contesting elections for the imprisoned period and a further period of 6 years since his release.



## Analytica

- When it comes to crimes against women, the number of candidates facing such charges has sky rocketed over the years. As many as 76 lawmakers across the country have declared cases related to crimes against women.
- Supreme Court in **Union of India vs. Association for Democratic Reforms, 2002** held that the voters enjoy right to make informed choices during elections and hence directed Election Commission to make it mandatory for contesting candidates to declare their assets and liabilities, also that of their spouses and dependent children, any criminal conviction in the court of law, any criminal case pending and the educational qualifications at the time of filing the nomination papers.
- In 1997, Supreme Court directed the High Courts to not suspend the conviction of a person if he is convicted under **The Prevention of Corruption Act, 1988**.
- Supreme Court in **Lily Thomas vs. Union of India, 2013** held Section 8(4) as unconstitutional and void. Hence, now if a sitting Member of Parliament or state legislature is convicted and sentenced to not less than 2 years of imprisonment, he will get immediately disqualified from being member of house. This is a crucial judgment and will go a long way in cleaning our political system.
- In another recent judgment, Supreme Court held that a voter could exercise the option of negative voting (NOTA) and reject all candidates as unworthy of being elected.

## Way Forward

For a true decriminalization of politics, the instant need is to abolish the patronage to criminals which is often given by politicians and political parties. A strong political will is required on the part of government to decriminalize the entire political system by taking stringent measures as



well as by enactment of required legislations. Supreme Court has also held that free and fair election is a part of the basic structure of the Constitution. There is an urgent need to break the criminal-political nexus. Unless some decisive action is taken soon, the public will lose all faith in politics, politicians and democracy itself. This will do irreparable damage to our republic and its integrity.

## Disqualification of MLCs

### News Excerpt

While holding that MLC A.H. Vishwanath is ex-facie disqualified under the anti-defection law for being considered for appointment as a minister, the Karnataka High Court has left it to the Chief Minister and the Governor to consider this aspect as per the Constitutional mandate when considering him to induct into the council of ministers.

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### Pre-Connect

- Qualifications & disqualifications for contesting elections to Parliament and State Legislature are given in Articles 84, 102, 173 & 191 of the Constitution and Sections 3 to 10A of the Representation of the People Act, 1951.
- Article 191-Disqualification for membership-
- A person shall be disqualified for being chosen as a member of the Legislative Assembly or Legislative Council of a State-
  - If he holds any office of profit under the Government of India or the Government of any State specified in the First Schedule, other than an office declared by the Legislature of the State by law not to disqualify its holder;
  - If he is of unsound mind and stands so declared by a competent court;
  - If he is an undischarged insolvent;
  - If he is not a citizen of India, or has voluntarily acquired the citizenship of a foreign State, or is under any acknowledgment of allegiance or adherence to a foreign State;
  - If he is so disqualified by or under any law made by the Parliament.
- Under Sections of the RP Act, 1951-
  - On conviction for certain offences
  - On ground of corrupt practices
  - For Government contracts
  - For office under Government company
  - For failure to lodge account of election expenses
- According to X<sup>th</sup> Schedule of the Indian Constitution (Anti-Defection Law), a person shall be disqualified as Member of Legislative Assembly (MLA) or Member of Legislative Council (MLC) if:
  - An elected member voluntarily gives up his membership of a political party,
  - An elected member votes or abstains from voting in such House contrary to any direction issued by his political party or anyone authorized to do so, without obtaining prior permission.
  - The Supreme Court in Speaker Manipur Assembly case on January 21, 2020 had directed that disqualification petition be decided by Speaker within a period of four weeks. Also, the outer limit of three months was fixed for deciding disqualification petitions from the date of filing of disqualification petitions

### PEPPER IT WITH

Article 164, 361 B, X<sup>th</sup> Schedule

## Issues with Justice Delivery System

### News Excerpt

Several lawyers wrote to Chief Justice of India seeking to resume regular physical hearing, saying that the virtual hearing system has failed to adequately serve the effective justice delivery system.

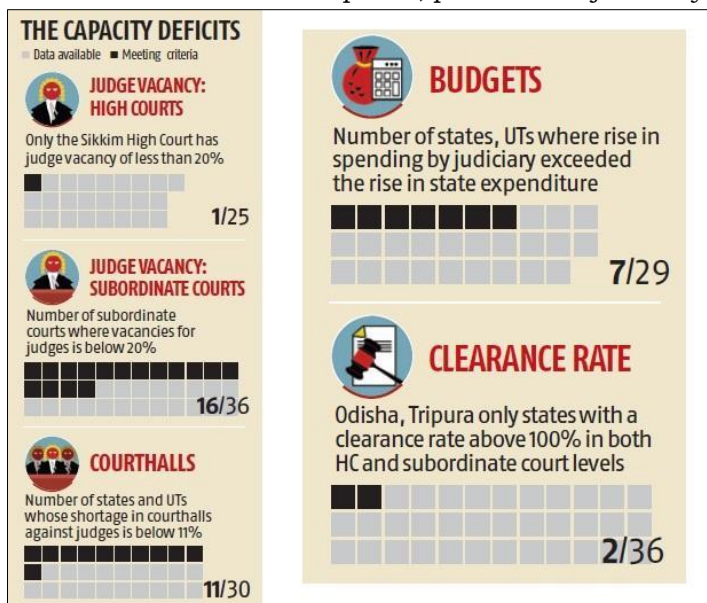
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### Analytica

- Lawyers feel helpless because they have no accessibility to the judges, which they used to have earlier, to express their concerns before the judges.
- Majority of members of the Bar are not well versed with this virtual system due to which they are suffering the most and also defeating the purpose of free and fair justice delivery system.
- Network connectivity issues, no proper management by the Registry regarding virtual hearing, no response to the calls by the dealing officers, dismissal of mentioning of urgent matters by the mentioning branch without providing any justifiable reason.

### Other issues

- Comprehensive analysis of India's manpower and capacity for justice delivery has painted a bleak picture of the ecosystem in terms of its various elements —police, prisons and judiciary.
- The country's capacity to deliver justice has serious deficits with under-capacity and gender imbalance plaguing these three pillars and a funding crunch affecting state services like free legal aid.
- Women are poorly represented in police, constituting only 7% of the force in 2017. They accounted for 10% of prison staff in 2016 and 26.5% of judges in high courts and subordinate courts in 2017-18.
- There is a high level of vacancies in the justice delivery system ranging from 22% in police, 33-38.5% in prisons and 20-40% in judiciary. Prisons are over-occupied and 68% of the occupants are undertrials awaiting investigation, inquiry or trial.
- The legal aid system mandates that 80% of the Indian population is eligible to avail free legal services. But unfortunately, from the 1.25 billion population, only 15 million have been able to avail its benefit since 1995," says the report, adding that the per capita spend on legal aid was just ₹0.75 in 2017-18.
- Poor Judge to people ratio; frequent adjournments due to inexplicable reasons; incompetent/unethical lawyers; fraudulent litigations; under-resourced and overburdened system; poor infrastructure; delay on the part of investigative agencies.
- Lack of court management systems: Courts have created dedicated posts for court managers to help improve court operations, optimise case movement and judicial time. However, only few courts have filled up such posts so far.
- **Malimath Committee Report on police:** Excessive workload; Inadequacy of logistical and forensic backup support; Interrupting investigation by being withdrawn for L&O work during investigation (National Police Commission Recommendation); Lack of coordination with prosecution.



### Steps taken in recent times

- ✓ National e-Court Project
- ✓ Court Cases Monitoring System
- ✓ CCTNS
- ✓ National Legal Services Authority (NALSA) Act, 1987 which provides for organizing Lok Adalats.

### Way Forward

- Re-engineer procedures: Identify & remove bottlenecks; Categorization & clubbing of cases; Greater requirement of financial resources.
- Leverage ICT tools: Database; Modernization and digitization; E-courts
- Focus on HRD: Staffing & recruitment; Bridging the demand & supply; Training & performance management
- Increasing access by reducing delay.
- Enhancing accountability through structural changes & setting benchmarks.
- Strengthening the Institutional framework at 3 stages i.e., awareness generation, acceptance, and implementation, in order to make ADRs more effective and successful.
- As per the recent gender equality policy of the Punjab government it has become mandatory to include women judges in the local administration committee of district judges. Such steps will bridge the gap.
- Raise the retirement age of the High Court judges to 65 years from the current 62 years.

### Conclusion

An effective and inclusive justice delivery system is crucial to ensure the constitutional guarantee of speedy, free and fair trial, which is a fundamental right under Article 21.

## VIIth Schedule of the Indian Constitution

### News Excerpt

Recently enacted the farm legislations gave rise to serious issues. The Delhi Legislative Assembly passed a resolution, rejecting the three farm laws, which said that the laws should be “repealed” by the Central government.

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### Pre-Connect

- The constitutional provisions on the subject of distribution of legislative powers between the Union and the States are defined under several articles; the most important in this regard being specifically under Articles 245 & 246.
- Article 245 holds about the distribution of legislative power between the Union and State with respect to the territory.
- While Article 246 read with the VII<sup>th</sup> Schedule defines and specifies the allocation of powers and functions between Union and states.
- Union List (List I) contains 97 items and comprises of the subjects which are of national importance and demands uniform laws for the nation.
- State List (List II) contains 66 items and have provisions with respect to the matters relating to local or state interest hence it directly falls within the legislative competence of state legislature.
- Concurrent List (List III) have provisions of the common interests between the centre and the state. Among the 47 items enumerated in the list, all can be legislated by parliament and the state legislature.
- It is mostly reckoned as the twilight zone of the constitution as it allows legislative power to vary from state legislature to parliament based on the importance of the matters.
- Also, in terms of amplification of laws passed by parliament and state legislatures do have the rights to introduce supplementary laws for the same.
- Usually, when a state wants to amend a central law made under one of the items in the concurrent list, it needs the consent of the centre.
- When a state law contradicts a central law on the same subject, the law passed by Parliament prevails.
- Agriculture with all its associated, ancillary and subsidiary enterprises – including education and research, livestock, fisheries, irrigation etc. – is a state subject. ‘Markets and fairs’ are also a state subject (Entry 28 of the state list). Even trade and commerce

within a state is also a state subject (Entry 27). However, it is subject to Entry 33 of the concurrent list. It is this Entry 33 of the concurrent list which has been put to use by the centre to bring these farm Bills.

### Analytica

- According to experts, recently enacted agriculture laws are a clear infringement on the states' right to legislate. The main subjects of the three acts are agriculture and market that are essentially state subjects as per the VII<sup>th</sup> schedule of the Constitution.
- However, the central government finagled its way into the legislation by misconstruing its authority on food items, a subject in the concurrent list, as authority over the subject of agriculture.
- However, food items and agricultural products are distinct categories as many agricultural products in their raw forms are not food items and vice versa.

### What are the options available with the states?

- ✓ Article 131 of the Constitution provides exclusive jurisdiction to the Supreme Court to adjudicate matters between the states and the centre.
- ✓ The competence of the union government to legislate on matters which are fundamentally state subjects is examined by the Supreme Court in the light of known principles of interpretation, judicial precedents and historical background of Entry 33.
- ✓ In the past, we had witnessed various kinds of responses against central legislations; partaking in the protest demonstrations, passing of resolutions, moving to the Supreme Court, etc. However, none of these responses mark state governments' constitutional authority. It is in this background that the Congress party's advice to its state governments to pass state legislations to annul the agriculture acts passed by the centre is significant.
- ✓ States are planning to take recourse to Article 254 (2) which empowers state governments to pass legislations which negate the central acts in the matters enumerated under the concurrent list.

### Can states challenge central laws in Supreme Court under Article 131?

- Earlier, Kerala has filed a suit in the Supreme Court seeking to declare the CAA as unconstitutional. Meanwhile, Chhattisgarh has also filed a similar suit, challenging the constitutional validity of the National Investigation Agency Act.
- Both have invoked Article 131, which confers exclusive jurisdiction on the top court to adjudicate disputes between two or more States, or between States and the Centre.
- There are two conflicting opinions of the Supreme Court on this point. In 2011, *State of Madhya Pradesh v. Union of India and Another*, the court said: "...when the Central laws can be challenged in the State High Courts as well and also before this Court under Article 32, normally, no recourse can be permitted to challenge the validity of a Central law under the exclusive original jurisdiction of this Court provided under Article 131."
- However, in *State of Jharkhand vs. State of Bihar and Another* (2014), another Bench said it was unable to accept the view that the constitutionality of a law cannot be raised in a suit under Article 131.

### Way Forward

- ✚ The Rajamannar Committee spurred other states
  - to voice their opposition to the Centre's
  - encroachment on subjects that were historically
  - under the state's purview.

- ✚ According to the Finance Commission, there is a need to fundamentally revisit the VII<sup>th</sup> Schedule and have a holistic view. Second, the misuse of Article 282, read with the VII<sup>th</sup> Schedule, which says that the central government or the states may make any grant for any scheme or project in public interest.

#### **PEPPER IT WITH**

Subordinate legislation, Delegated legislation, Article 256, Article 282

- ✚ Punchhi Commission recommended in 2010 that there should be a consultation process between the union and the states via an Interstate Council for legislation on concurrent subjects.
- ✚ Constitution of a high-powered committee of domain experts who will recognise the contemporary context of technology, global interdependence and changes in our national priorities and recommend amendments to the VII<sup>th</sup> schedule.

## Role of Governor in the State Assembly

### News Excerpt

In yet another tug-of-war between Kerala Governor and Chief Minister, the Governor has turned down a request to summon a special sitting of the Assembly to debate the new three central farm laws.

The state government had written to the Governor and, after the denial, is mulling approaching him again with the same request. The episode raises questions on the role of a Governor and the contours of the powers he or she has under the Constitution.

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### Pre-Connect

- Article 174 of the Constitution puts on the Governor the responsibility of ensuring that the House is summoned at least once every six months. Governor is also vested with the power prorogue and dissolve the assembly.
- Although it is the Governor's prerogative to summon the House, according to Article 163, the Governor is required to act on the "aid and advice" of the Cabinet. So, when the Governor summons the House under Article 174, this is not of his or her own will but on the aid and advice of the Cabinet.
- There are a few instances when the Governor can summon the House despite the refusal of the Chief Minister who heads the Cabinet. When the Chief Minister appears to have lost the majority and the legislative members of the House propose a no-confidence motion against the Chief Minister, then the Governor can decide on his or her own on summoning the House.
- But the actions of the Governor, when using his discretionary powers can be challenged in court.

### Analytica

- In this particular instance, since the Governor's powers are limited with regard to summoning the House, there can be no legal ground to deny a request for summoning the session.
- Governor of Kerala has in the past criticized the Kerala Assembly's resolution against the centre's Citizenship Amendment Act of 2019.
- These actions are an encroachment upon the powers of the legislature and the democratically elected government and an abuse of authority as a nominal head under the Constitution. Such conduct by a Governor can weaken the spirit of federalism.
- The political nature of the office of the Governor, especially in opposition-ruled states, has been underlined in several instances by courts.
- The misuse of the Governor's office to undermine duly elected State governments is a particularly mischievous disruption of federalism.
- The constitutional checks and balances and landmark judicial rulings account for this and limit the discretionary powers of the Governor.
- SC has noted that the theory of Cabinet responsibility is decisively ingrained in our constitutional democracy and that our Constitution does not accept any "parallel administration" or "diarchy"
- In another instance of strained ties between the two constitutional functionaries. Chief Minister and the Governor of Puducherry have been at loggerheads over many matters, most recently on the appointment of the State Election Commissioner, an office critical to holding elections to local bodies. But the principal issue of contention is the implementation of direct benefit transfer in the public distribution system using cash, instead of free rice, being given to the beneficiaries.



## Way Forward

Judiciary read the power to summon the House as a “function” of the Governor and not a “power” he enjoys. Even the Sarkaria Commission of 1983, which reviewed the arrangements between the Centre and the states, had said that “so long as the Council of Ministers enjoys the confidence of the Assembly, its advice in these matters, unless patently unconstitutional must be deemed as binding on the Governor. The post of Governor is invested with dignity and decorum unique to our Constitution. It demands commendable personal integrity and character on the individuals who functions to prove their mettle and merit.

## Judicial disqualification or recusal

### News Excerpt

There is an inflamed controversy as to when judges should recuse themselves from hearing a case. It has been brought to the fore by unhappiness that Justice Arun Mishra refused to recuse himself in a case on which he had admittedly strong views stated in a Supreme Court judgment on the subject of the manner of payment of compensation to be awarded in certain classes of cases under the old Land Acquisition Act, 1894.

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### Pre-Connect

- **Judicial disqualification**, referred to as **recusal**, is the act of abstaining from participation in an official action such as a legal proceeding due to a conflict of interest of the presiding court official or administrative officer.
- Recusal usually takes place when a judge has a conflict of interest or has a prior association with the parties in the case.
- **Other reasons for recusal from a case include:** Interest in the subject matter, or relationship with someone who is interested in it; Background or experience, such as the judge's prior work as a lawyer; Personal knowledge about the parties or the facts of the case; Ex-parte communications with lawyers or non-lawyers; Rulings, comments or conduct.
- There are no written rules on the recusal of judges from hearing cases listed before them in the constitutional courts. It is left to the discretion of a judge.
- The reasons for recusal are not disclosed in an order of the court.
- SC in the NJAC judgment noted that, a judge may be required to step down in one of two scenarios: cases of presumed bias, where the judge has a pecuniary interest in the outcome of a case (extended, through the Pinochet judgment to other similar non-pecuniary interests); or in the cases of apparent bias, where a reasonable, fair-minded observer would believe there is a real possibility that the judge is biased.

#### PEPPER IT WITH

Article 124, 129, 214, 215,  
Impeachment process of a Supreme Court Judge and High Court Judge

### Issues related with recusal

- At times, parties involved raise apprehensions about a possible conflict of interest. For example, if the case pertains to a company in which the judge holds stakes, the apprehension would seem reasonable. Similarly, if the judge has, in the past, appeared for one of the parties involved in a case, the call for recusal may seem right.
- A recusal inevitably leads to delay.
- Some have argued that, because the current Bench will be indirectly ruling on the rectitude of the *Indore Development Authority* judgment, Justice Mishra is, in effect, sitting on appeal over his own judgment.
- Justice J. Chelameswar in his opinion in *Supreme Court Advocates-on-Record Association v. Union of India* (2015) held that “Where a judge has a pecuniary interest, no further inquiry as to whether there was a ‘real danger’ or ‘reasonable suspicion’ of bias is required to be undertaken.

### Why should Justice Mishra not recuse himself of the proceedings?

- ✓ Judges are permitted to have pre-existing opinions on legal issues they decide. Indeed, such opinions are often acknowledged as expertise and rewarded through appointment to

specialised benches and tribunals. It is only when such opinions acquire a certain severity, such that the judge closes their mind and refuses to be persuaded by reason that the question of impartiality arises.

- ✓ It is only when such opinions acquire a certain severity, such that the judge closes their mind and refuses to be persuaded by reason, that the question of impartiality arises.
- ✓ Such a recusal would set a dangerous precedent for future litigants to cherry-pick their benches and coerce judges they find unfavourable into stepping down. Such a position would severely undermine the administration of justice in the Indian legal system.
- ✓ Justice Arun Mishra said acquiescing to the wishes of parties to recuse himself would sound the death-knell for judicial independence.

### Way Forward

- India does not have a method to deal with complaints with regard to the conduct of the judges, short of impeachment. Other jurisdictions have effective systems of complaint and discipline. We don't. This is an important area to develop to prevent our judges becoming arrogant, indisciplined and a law unto themselves with disastrous effects on the faith of people in the judiciary to dispense justice.
- In the National Judicial Appointments Commission judgment in 2015, former Justice Kurian Joseph, who was a member of the Constitution Bench, highlighted the need for judges to give reasons for recusal as a measure to build transparency. "It is the constitutional duty, as reflected in one's oath, to be transparent and accountable, and hence, a judge is required to indicate reasons for his recusal from a particular case,"
- One of his companion judges on the Constitution Bench, former Justice Madan B. Lokur, agreed that specific rules require to be framed on recusal.

### Lok Adalat

#### News Excerpt

The last national Lok Adalat of the year 2020 held settled 10,42,816 cases, out of which 5,60,310 were at the pre-litigation stage and 4,82,506 were pending in courts.

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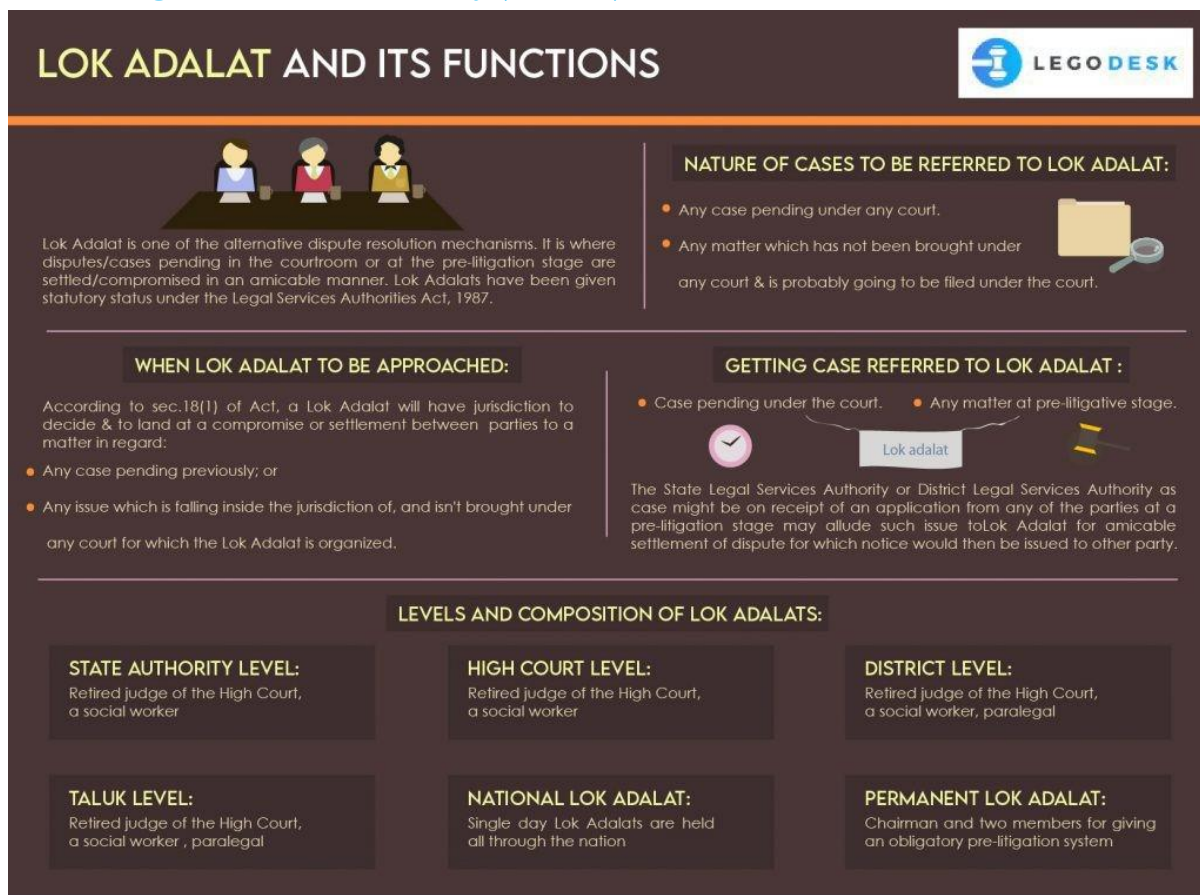
#### Pre-Connect

- Lok Adalat, conducted by National Legal Services Authority (NALSA) is an alternative method of dispute resolution. It is a forum where disputes pending in courts or at pre-litigation stage are settled or compromised amicably.
- Lok Adalats have been given statutory status under the Legal Services Authorities Act, 1987.
- Under the Act, the decision made by Lok Adalats is deemed to be a decree of a civil court and is final and binding on all parties and no appeal lies against such an award before any court.
- National Lok Adalats are conducted quarterly for settlement of cases, both pre-litigation and post-litigation in all the courts from the Supreme Court to the taluk courts on a single day.
- If the parties are not satisfied with the award of the Lok Adalat though there is no provision for an appeal against such an award, but they are free to initiate litigation by approaching the court of appropriate jurisdiction by filing a case after following the required procedure, in exercise of their right to litigate.
- The persons deciding the cases in the Lok Adalats are called the Members of the Lok Adalats, they have the role of statutory conciliators only and do not have any judicial role; therefore, they can only persuade the parties to come to a conclusion for settling the dispute outside the court in the Lok Adalat and shall not pressurize or coerce any of the parties to compromise or settle cases or matters either directly or indirectly.
- Lok Adalat shall have no jurisdiction in respect of matters relating to divorce or matters relating to an offence not compoundable under any law.
- The other type of Lok Adalat is the Permanent Lok Adalat, organized under Section 22-B of the Legal Services Authorities Act, 1987.
- Permanent Lok Adalats have been set up as permanent bodies with a Chairman and two members for providing compulsory pre-litigative mechanism for conciliation and settlement of cases relating to public utility services like transport, postal, telegraph etc.



- Here, even if the parties fail to reach to a settlement, the Permanent Lok Adalat gets jurisdiction to decide the dispute, provided, the dispute does not relate to any offence. Further, the Award of the Permanent Lok Adalat is final and binding on all the parties.
- The jurisdiction of the Permanent Lok Adalats is up to Rs. Ten Lakhs.
- **Composition of Lok Adalats at state level:** Each bench comprising of a sitting or retired judge of the High Court or a sitting or retired judicial officer and any one or both of a member from the legal profession; a social worker engaged in the upliftment of the weaker sections and interested in the implementation of legal services schemes or programmes.

### National Legal Services Authority (NALSA)



- The National Legal Services Authority (NALSA) has been constituted under the Legal Services Authorities Act, 1987 to provide free legal services to the weaker sections of the society.
- The Chief Justice of India is the Patron-in-Chief and the senior most Hon'ble Judge of the Supreme Court is the Executive Chairman of the Authority.
- Public awareness, equal opportunity and deliverable justice are the cornerstones on which the edifice of NALSA is based. The principal objective of NALSA is to provide free and competent legal services to the weaker sections of the society and to ensure that opportunities for securing justice are not denied to any citizen by reason of economic or other disabilities, and to organize Lok Adalats for amicable settlement of disputes. Functions of NALSA include spreading legal literacy and awareness, undertaking social justice litigations etc.

### Way Forward

It is crucial to strengthen the system of Lok Adalats and other Alternate Dispute Resolution mechanisms in order to provide for informal, quick, inexpensive and effective resolution of disputes and minimize the load of adjudication on the overburdened judiciary.

The High Court of Karnataka and the Karnataka State Legal Services Authority (KSLSA) have created history in settlement of cases, with a record 2,61,882 cases being settled in a single day at the mega Lok Adalat held on December 19. This has resulted in a 12.17% reduction of cases pending before courts in taluks and districts, apart from the High Court.

## Anti-Conversion laws of various states

### News Excerpt

Madhya Pradesh has approved a bill to prevent “forceful” religious conversions. The research organisation, the PRS Legislative Research recently released a report comparing various existing anti-conversion laws in several states.

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### Pre-Connect

- According to research paper of the US Library of Congress (LOC), laws restricting religious conversions were originally introduced by princely states during the British colonial period — particularly during the latter half of the 1930s and 1940s. These states enacted the laws “in an attempt to preserve their religious identity in the face of British missionaries”.
- Following India’s independence, parliament introduced a number of anti-conversion bills, but none were enacted.
- There is no central anti-conversion law. The states that have enacted anti-conversion laws make religious conversion by force or allurement a punishable offence.
- Over the years, several states enacted “Freedom of Religion” legislation to restrict religious conversions carried out by force, fraud, or inducements.
- “Freedom of Religion laws” are currently in force in eight states — (i) Odisha (1967), (ii) Madhya Pradesh (1968), (iii) Arunachal Pradesh (1978), (iv) Chhattisgarh (2000 and 2006), (v) Gujarat (2003), (vi) Himachal Pradesh (2006 and 2019), (vii) Jharkhand (2017), and (viii) Uttarakhand (2018).
- The laws passed in Himachal Pradesh (2019) and Uttarakhand also declare a marriage to be void if it was solemnised for the sole purpose of conversion, or a conversion was done solely for the purpose of marriage.
- While a common feature of all three laws (MP, HP and UP) is the declaration of such marriages as “null and void” and the penalising of conversions done without the prior approval of the state, they differ in the quantum of punishment prescribed, and in attributing the burden of proof that a conversion is lawful.
- Also, the MP Law seeks to protect the rights of women of such marriages.
- The MP law places on the person converted the burden of proving that the conversion was done without any coercion or illegality. The Himachal law has a similar provision. The UP law goes further, placing this burden of proof on people who “caused” or “facilitated” the conversion and not on the individual.

### Analytica

- In 1977, a priest from Raipur named Rev Stanislaus challenged MP’s law in Supreme Court. In the case, court made a clear distinction between the right to propagate one’s religion or faith and the right to convert. The former is guaranteed by Article 25 of the Constitution. Conversion enjoys no such protection.
- The court held that conversion isn’t a fundamental right and so could be regulated by the state. Both the Odisha and MP laws were upheld. This provided the legal basis of other laws that followed.
- At least 10 states including MP and Himachal Pradesh already have anti-conversion laws. The key difference in the new laws is that they seek to criminalise conversions solely for the purpose of marriage.
- According to the United States Commission on International Religious Freedom (USCIRF) reports of 2016 and 2018, observers have noted that there are very few arrests or prosecutions under these laws but they “create a hostile, and on occasion violent, environment for religious minority communities because they do not require any evidence to support accusations of wrong doing”.
- More recent reports by USCIRF have highlighted certain incidents of arrests, including an incident in 2017, where religious minority leaders and adherents faced intimidation and arrest as a result of these laws.

- An analysis of the legislations reveals that the language used is often extraordinarily broad and vague, posing serious challenges to religious freedom as guaranteed by the Indian Constitution and enshrined in international human rights instruments.

### Way Forward

Historically, India has never witnessed persecution purely on religious grounds. Compared with Europe, the Middle East and elsewhere, India has had a benign environment in this respect. Religious wars are alien to India. But the country has not been immune from religious violence due to flaring up of passions among different communities.

## Article 293 and borrowing by states

### News Excerpt

In a recent report the CAG has mentioned that "KIIFB has taken foreign loans violating the Indian Constitution under Article 293 (1)".

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### Pre-Connect

- Article 293(4) of the Constitution enables the Centre to impose conditions on State borrowing when it is granting consent for the same under Article 293(3). This applies in cases where States are indebted to the Centre.
- Article 293 covers borrowing by State Governments. Under clauses (3) and (4) of Article 293, State Governments need to obtain the consent of the Centre for raising fresh loans in case they are indebted to the latter, and such consent may be granted, subject to certain conditions.
- A relevant question for consideration is, what is the scope of the conditions which may be imposed under clause (4) of Article 293. This clause has not been interpreted by courts so far, and it appears that different interpretations may be possible.
- Additionally, and unlike in the case of the Centre under Article 292, the borrowing power of States under this clause is applicable only "within the territory of India".
- Therefore, from a plain reading of Article 293, it follows that the executive borrowing power of the State has been limited by making it subject to their legislatures, limiting it to within India, and subjecting it to the consent and conditions of the Centre when States are indebted to it.
- FRLs have been passed at the Central and State levels to regulate borrowing, which indirectly and directly has an effect on sub-national borrowing.
- Article 293(1) provides that State legislatures have the power to limit, by law, the State's executive powers of borrowing and giving guarantees. It is worth noting that the Kerala High Court in *Mathew v Union of India* held that Article 293 is an enabling provision authorising state borrowing as well as laws regulating the same, but such limits on borrowing are not embodied in the Article itself. Clearly, by virtue of this constitutional provision, the states are empowered to pass their own FRLs
- Role of FC:** FC-XIV in its report stated that it is expected the Central Government to enforce the fiscal roadmap outlined by it through the latter's powers to approve state borrowings under Article 293(3). It does appear that the power conferred upon the Central Government under Article 293(3) is, indeed, being used for this purpose. Therefore, it may be said that indirectly, the Finance Commission plays an integral role in regulating subnational borrowing.
- The terms of reference of FC-XV require it to make recommendations regarding the conditions that the centre may impose on the states while providing consent under Article 293(3).
- Role of RBI:** RBI evidently plays a very important role in the regulation of subnational debt. In this regard, it also coordinates with the Central Government. The centre in exercise of its powers under Article 293(3) indicates the state-wise net allocation of market borrowings to the RBI at the beginning of the financial year. Accordingly, the RBI decides the timing, tenure, and notified amounts of the SDLs.

#### PEPPER IT WITH

Art. 292, Exemption of property of the Union from state taxation, Exemption of property and income of a state from Union taxation

### What are the changes made to the borrowing limit of states?

- For 2020-21, states had budgeted a gross borrowing of ₹7 lakh crore. Under the AatmaNirbhar Package in May 2020, states are allowed to increase their borrowing limits from 3 per cent to 5 per cent for 2020- 21. This is expected to provide extra resources of ₹4.28 lakh crore.
- While the increase from 3 to 3.5 per cent of GDP is unconditional, which states can access after suitable revision of their FRLs (Fiscal Responsibility Legislations), the balance increase in market borrowing was initially made conditional.
- As per the specific scheme notified by the Department of Expenditure, an additional 1 per cent of GDP will be provided in four tranches of 0.25 per cent, with each tranche linked to clearly specified, measurable and feasible reform actions in four areas: universalisation of 'One Nation One Ration card'; ease of doing business; power distribution; and urban local body revenue reforms.
- This is, however, expected to have a limited impact on the fiscal deficit of state governments that are likely to borrow a considerably lesser amount from the additional borrowing facility of 2 per cent of GSDP under the AatmaNirbhar Package.
- On the whole, given states past track record of not being able to access market borrowings despite higher limits, and considering the meticulous process that states need to adhere to in order to get the clearance certificate from respective Ministries/ Departments with regard to achievement of the specified reform measures for the conditional part of the borrowing, they may be able to utilise only half of the additional borrowing given to them - conditional and unconditional on an average.
- With borrowings financing about 90 per cent of states' fiscal deficit, on an average, borrowing limits under Article 293 (3) act as soft constraint.
- Thus, from the financing side, states' combined GFD-GDP ratio is likely to remain around 4 per cent with a bias tilted to the upside, higher than the budgeted 2.8 per cent of GDP, albeit with state-wise variations.

### Two borrowing options to meet GST Compensation requirement for 2020-21

#### Option 1

- ✓ The shortfall arising out of GST implementation (calculated at Rs 97,000 crore approximately) will be borrowed by States through issue of debt under a Special RBI Window coordinated by the ministry of finance.
- ✓ The government will endeavour to keep the cost at or close to the G-sec yield, and in the event of the cost being higher, will bear the margin between G-secs and average of State Development Loan yields up to 0.5% (50 basis points) through a subsidy.
- ✓ A special borrowing permission will be given by the government under Article 293 for this amount, over and above any other borrowing ceilings eligible under any other normal or special permission notified by the department of expenditure.
- ✓ The borrowing under the Special Window will not be treated as debt of the state for any norms which may be prescribed by the Finance Commission etc.

#### Option 2

- ✓ The entire shortfall of Rs 2,35,000 crore (including the Covid-impact portion) may be borrowed by the states through issue of market debt.
- ✓ The interest shall be paid by the states from their resources.
- ✓ The principal on the amount under will, after the transition period, be paid from proceeds of the cess. The states will not be required to repay the principal from any other source.

### Way Forward

Article 293 should not impinge on the federal character of the Constitution, beyond what is strictly required for the purposes of that provision, which is to protect the Central Government's rights as a creditor, and to provide a mechanism for regulation of sub-national debt in the interest of maintaining macroeconomic fiscal stability.



## SOCIAL ISSUES, SCHEMES, REPORTS & INDICES

### Recognition of Prior Learning (RPL)

#### News Excerpt

Ministry of Skill Development and Entrepreneurship (MSDE) conducted a special **Recognition of Prior Learning (RPL)** program for workers, with the Department of Panchayati Raj (DoPR) in Chandauli and Varanasi. The programme is implemented under SANKALP Programme of MSDE.

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#### Pre-Connect

- Skill Acquisition and Knowledge Awareness for Livelihood Promotion ("SANKALP") is a programme of the Ministry of Skill Development **with loan assistance from the World Bank.**
- SANKALP has four key result areas viz: (i) Institutional Strengthening at Central, State & District level; (ii) Quality Assurance of skill development programmes; (iii) Inclusion of marginalized population in skill development programmes; and (iv) Expanding Skills through PPPs.
- SANKALP is funded through three major parts: (i) World Bank loan assistance (ii) States' contribution and (iii) Industry contribution.

#### About Recognition of Prior Learning (RPL)

- The programme promote decentralization and local governance for better planning and implementation of skill development programmes.
- The implementing agency for the programme is National Skill Development Corporation (NSDC).
- Under the partnership, MSDE is supporting the State Skill Development Missions (SSDMs)/District Skill Committees (DSCs) in selection and onboarding of the PIAs and facilitating successful execution of the programme.

#### Analytica

##### Importance of RPL

- ✓ About 70% of our country's population resides in rural India and hence the inclusion of gram panchayats is crucial for the success of District Skill Development Plans and will provide a huge fillip to the Skill India Mission.
- ✓ Through RPL, aim is to align the competencies of the pre-existing workforce of the country to the standardized framework.
- ✓ Certification builds confidence, brings respect and provides recognition to the candidates, it has the potential to make skills aspirational.
- ✓ Supporting formalization of the informal learning of youth will supplement their efforts in finding sustainable livelihood opportunities and reduce inequalities based on privileging certain forms of knowledge over others.

#### Conclusion

- Recognition of Prior Learning (RPL) programme **recognizes the value of learning acquired outside a formal setting and provides a government certificate for an individual's skills.**

#### National Skill Development

**Corporation (NSDC)** is a not-for-profit public limited company incorporated on July 31, 2008 under section 25 of the Companies Act, 1956 (corresponding to section 8 of the Companies Act, 2013). NSDC was set up by Ministry of Finance as Public Private Partnership (PPP) model. The Government of India through Ministry of Skill Development & Entrepreneurship (MSDE) holds 49% of the share capital of NSDC, while the private sector has the balance 51% of the share capital.

NSDC aims to promote skill development by catalyzing **creation of large, quality and for-profit vocational institutions**. Further, the organisation provides funding to build scalable and profitable vocational training initiatives.

Its mandate is also to enable support system which focuses on quality assurance, information systems and train the trainer academies either directly or through partnerships.

#### PEPPER IT WITH

SSDMs, DSCs, SANKALP and Disbursement Linked Indicators (DLIs)

- Candidates receive exposure to concepts of digital and financial literacy and an accidental insurance coverage for three years at free of cost.'
- This initiative is part of a larger programme on 'Skill Development Planning at the level of 'Gram Panchayat' that focuses on introducing Recognition of Prior Learning (RPL) in a structured manner in GPs of various districts across the country.

## Human Freedom Index

### News Excerpt

The Human Freedom Index 2020, a worldwide ranking of civil, economic and personal freedom, placed India at the 111<sup>th</sup> spot out of 162 countries. India ranked 94 on the index in 2019.

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### Pre-Connect

- The Human Freedom Index presents the state of human freedom in the world based on a broad measure that encompasses personal, civil, and economic freedom.
- Human freedom is a social concept that recognizes the dignity of individuals and is defined in this index as negative liberty or the absence of coercive constraint.
- Because freedom is inherently valuable and plays a role in human progress, it is worth measuring carefully.
- The Human Freedom Index is a resource that can help to more objectively observe relationships between freedom and other social and economic phenomena, as well as the ways in which the various dimensions of freedom interact with one another.

### About Human Freedom Index 2020

- The index was **published by American think tank Cato Institute and Fraser Institute in Canada.**
- It presents a broad measure of human freedom, understood as the absence of coercive constraint.
- This is the sixth annual index that uses 76 distinct indicators of personal and economic freedom in the following areas:
  - Rule of Law
  - Security and Safety
  - Movement
  - Religion
  - Association, Assembly, and Civil Society
  - Expression and Information
  - Identity and Relationships
  - Size of Government
  - Legal System and Property Rights
  - Access to Sound Money
  - Freedom to Trade Internationally
  - Regulation of Credit, Labour, and Business

The HFI is the most comprehensive freedom index so far created for a globally meaningful set of countries. The HFI covers 162 countries for 2018, the most recent year for which the sufficient data are available. The index ranks countries beginning in 2008.

### What the Index Says?

- **India is ahead of China and Bangladesh**, which ranked 129 and 139 on the 2020 index respectively. **New Zealand, Switzerland and Hong Kong bagged the first three spots.**
- India's scored **6.30 out of 10 in personal freedom and 6.56 in economic freedom.** The country's overall human freedom score was 6.43.
- Only 15% of the world's population lives in the top quartile of countries in the HFI, and 34% live in the bottom quartile. The gap in human freedom between the most free and the least

free countries has widened since 2008, increasing by 6% when comparing the top and bottom 10% of nations in the HFI.

- Out of 10 regions, the regions with the highest levels of freedom are North America (Canada and the United States), Western Europe, and East Asia. The lowest levels are in the Middle East and North Africa, sub-Saharan Africa, **and South Asia**
- Countries in the top quartile of freedom enjoy a significantly higher average per capita income (\$50,340) than those in other quartiles; the average per capita income in the least-free quartile is \$7,720.
- The HFI also finds a strong relationship between human freedom and democracy. Hong Kong is an outlier in this regard.

### Analytica

- ✓ Personal freedom around the world has seen a “notable decline since 2008”. Overall freedom has also declined, though to a lesser degree, over the same time period.” Of the 12 major categories that measure in the report, all but five have seen some deterioration, with freedom of religion, identity and relationship freedoms, and the rule of law seeing the largest decreases.
- ✓ **India was ranked 142nd in the Press Freedom Index**, followed by a fall of 26 spots in the global economic freedom index in September 2020. India has also registered low scores on indices on academic freedom and internet freedom.

### Conclusion

The findings in the HFI suggest that freedom plays an important role in human well-being, and they offer opportunities for further research into the complex ways in which freedom influences, and can be influenced by, political regimes, economic development, and the whole range of indicators of human well-being.

## Silver Economy

### News Excerpt

As the number of senior citizens increase – from 10.38 Crore in 2011 to an estimated 17.3 Crore in 2026 and 30 Crore in 2050, the government is exploring ways to promote the idea of '**Silver Economy**' by developing residential and infrastructure facilities of different grades for senior citizens through public-private partnership for a dignified and safe aging experience.

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### Pre-Connect

#### **What is the silver economy?**

- The Silver Economy is dedicated to the elderly in our societies. As its name suggests, the Silver Economy is not a “market” but a cross “economy”.
- The population ageing process is real and impacts every market and industry, such as: home accommodation, transport, food industry, insurance, robotics, health and e-health, communications, Internet, sports and leisure.
- The silver economy is analysed in the field of social gerontology not as existing economic system but as an instrument of ageing policy and the political idea of forming a potential, needs-oriented economic system for aging population.

**Social gerontology** is a specialization that centers on the social aspects of growing old. The goal of social gerontologists is to help older adults improve their communication and interactions with others. Ideally, they will be able to help older adults live active, independent lifestyles.

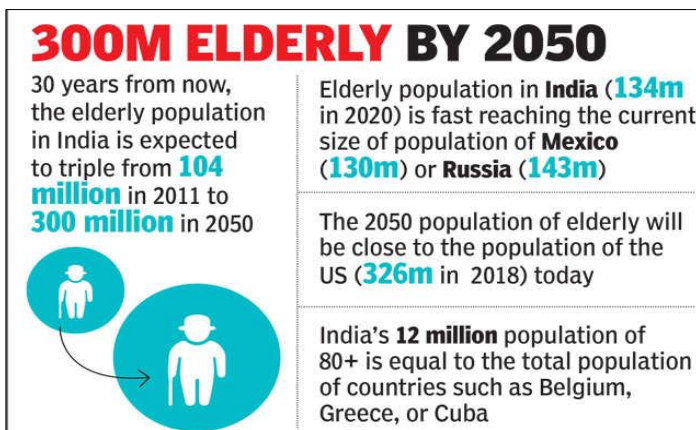
### Problems Faced by the Aged People in India

- **Lack of Infrastructure:** With increasing longevity and debilitating chronic diseases, many elder citizens will need better access to physical infrastructure in the coming years. Lack of physical infrastructure is a major deterrent to providing comfort to the aged. Many elder citizens need better access to physical infrastructure, both in their own homes and in public spaces.
- **Healthcare Issues:** Unattended chronic disease, unaffordable medicines and treatment and malnutrition are part of old age life in India as there is no system of affordable health care.



Emphasis on geriatrics in the public health system is limited with few dedicated geriatric services. The other issues of the public health system are lack of infrastructure, limited manpower, poor quality of care and overcrowding of facilities due insufficient focus on elderly care.

- **Changing Family Structure:** The traditional Indian society with an age-old joint family system has been instrumental in safeguarding the social and economic security of the elderly people. The traditional norms and values of Indian society also laid stress on showing respect and providing care for the elderly. However, **with the emerging prevalence of nuclear family** set-ups in recent years, the elderly is likely to be exposed to emotional, physical and financial insecurity in the years to come.
- **Lack of Social Support:** The elderly in India is much more vulnerable because of the less government spending on **social security system**. The elderly in urban area relies primarily on hired domestic help to meet their basic needs in an increasingly-chaotic and crowded city. Social isolation and loneliness have increased. Insurance cover that is elderly sensitive is virtually non-existent in India. In addition, the pre-existing illnesses are usually not covered making **insurance policies unviable for the elders**. Pension and social security is also restricted to those who have worked in the public sector or the organized sector of industry.
- **Social Inequality:** Elderly are a heterogeneous section with an **urban and rural divide**. They are less vulnerable in rural areas as compared to their urban counterparts, due to the still holding values of the joint family system. All the elderly are not seen in the same view as the needs and problems of elderly are rejected to a vast extent as government classifies these people based on caste and other socio-cultural dimensions.
- **Economic Dependency:** The elders living with their families are largely contingent on the economic capacity of the family unit for their economic security and well-being. Elderly often do not have financial protection such as sufficient pension and other form of social security in India. The single most pressing challenge to the welfare of older person is poverty, which is a multiplier of risk for abuse. **Also due to their financial dependence, elderly persons though are most vulnerable to infections have low priority for own health.** Migration of younger generation, lack of proper care in the family, insufficient housing, economic hardship and break-up of joint family have made the old age homes seem more relevant even in the Indian context.



## Analytica

### Shifting demographic trends demand policy reforms and cultural change

- ✓ The demographic changes in the country call for appropriate economic and social innovation underpinned by adequate policy reform and profound cultural transformation.
- ✓ While the Draft National Policy for Senior Citizens 2020 has been brought out at the right time with strong recommendations to promote the silver economy, a lot more needs to be done to drive the silver economy and to cater to the diverse needs of the senior population.
- ✓ We need innovative models of finance to drive the silver market and provide tailor-made services to seniors.

### Silver Economy: A potential driver for India's growth

- ✓ The longevity of the economy is about leveraging a healthy population's potential to drive demand while also extending the earning cycle beyond the traditional age bar of 60.
- ✓ Being a consumption driven economy, India will benefit immensely from increased consumption of goods and services by the senior segment.
- ✓ Keeping a vast population healthy, however, will be a major economic activity. There will be enormous opportunities for those investing in the silver economy such as social upkeep,

health, recreation, and asset management. The new-age economy will also ensure a large supply of skilled and experienced workforce.

- ✓ However, there is evidence to suggest that unlike in the West, due to existing socio-cultural norms; retirees in India tend to go into a shell, which further aggravates their health issues.
- ✓ Given the job challenges in India, conventional reemployment format may not be a viable solution but there is still a need to tap into the vast talent pool of retirees. This will only happen if millions of retirees are encouraged to take up new responsibilities in the formal sector.

#### What need to be done?

- The rising demands of senior care can be met only if there are enough businesses that offer specialised, senior-specific services. But for such services to evolve, government intervention is critical in the following areas:
  - Recognising Senior Care as a Sector: Senior Care needs to be recognised as a sector with appropriate regulations, policy support, tax structures, availability of subsidised financing, and appropriate governance mechanisms. This would attract greater investments and encourage private sector participation.
  - **Tax incentives:** Expenses on senior care solutions (like home care, care homes etc.) should be exempted of any taxes to enable faster penetration of such products and services. This will increase private sector participation and enhance the overall quality of service.
  - **Providing access to low cost funding:** Currently the senior living players find it difficult to raise funds for development of senior living communities. Developers either have to rely on advances from customers or infuse equity. Higher input costs lead to higher price for seniors. It therefore allows only a small segment to buy or lease senior communities. Lower financing costs would allow for more affordable senior living and senior care projects.
  - **Preferred status for land allocation and payments:** Availability of land at lower prices than market prices and the option of staggered payments at lower interest would also help in keeping the cost of living arrangements, especially in metros, at an affordable level. This will further help in removing entry barriers and bolster growth of the silver economy.

#### Conclusion

- ✚ As India is poised to witness a surge in its senior population, policy support will be required to promote both the demand and supply of senior specific services to tap the economic potential of this segment. Governments, businesses, and individuals must work together to adapt policies and behaviours to ensure individual and national fiscal sustainability as the population starts ageing.

#### HelpAge India

- ❖ HelpAge India is a leading charity in India working with and for disadvantaged elderly for nearly 4 decades. It was set up in 1978 and is registered under the Societies' Registration Act of 1860. There are an estimated 106 million elderly in India. HelpAge advocates for their needs such as for Universal Pension, quality healthcare, action against Elder Abuse and many more at a national, state and societal level with Central and State governments. It advocates for elder friendly policies and their implementation thereof. It works hand-in-hand with Senior Citizens Associations understanding elder needs working with and for them.
- ❖ The aim is to serve elder needs in a holistic manner, enabling them to live active, dignified and healthier lives.
- ❖ HelpAge's focus over the years has moved from Welfare to Development. It provides elderly relief through various age care interventions such as – it runs one of the largest mobile healthcare programs through its Mobile Healthcare Units spanning the country providing free healthcare services to destitute elders, it helps elders earn their livelihood through the formation of Elder-Self-Help Groups making self-reliant, it conducts cataract surgeries to restore their sight, looks after their basic needs through its Support-a-Gran program, runs Elder Helplines across the country, provides relief & rehabilitation for elders post disasters and provides active-ageing opportunities.

- A critical step in this direction will be allowing people to work longer and helping them plan better for their retirements, while offering critical support to the senior care industry to provide necessary services at affordable rates. This will not only create a win-win model for the consumers and the industry but will also create a national ecosystem that manages the population ageing smoothly.

## PM KUSUM

### News Excerpt

Recently, Finance Minister announced expansion of Pradhan Mantri Kisan Urja Suraksha Utthan Mahabhiyan (PM KUSUM) Scheme under which 20 lakh farmers would be provided funds to set up standalone solar pumps.

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### Pre-Connect

The farmer focus of Budget 2018 gave a fillip to the farmer-oriented scheme involving decentralised solar power production up to 28,250 MW over a period of five years, known as KUSUM Scheme. The Kisan Urja Suraksha evam Utthaan Mahabhiyan (KUSUM) scheme would provide additional income to farmers, by giving them the option to sell additional power to the grid, through solar power projects set up on their barren lands.

### What are the objectives of KUSUM?

#### The objectives are:

- Promote decentralised solar power production; reduce transmission losses; support the financial health of Discoms by reducing the burden of subsidy to the agriculture sector;
- Help States meet the RPOs (renewable purchase obligation) targets; promote energy efficiency and water conservation; provide water security to farmers through provision of assured water sources through solar water pumps — both off-grid and grid connected;
- Provide reliable power to utilise the irrigation potential created by State irrigation departments; and fill the void in solar power production in the intermediate range between rooftops and large parks.

**PM-KUSUM** consists of three components and aims to add a solar capacity of 30.8 GW by 2022:

- Component-A: 10,000 MW of decentralised ground mounted grid connected renewable power plants.
- Component-B: Installation of two million standalone solar powered agriculture pumps.
- Component-C: Solarisation of 1.5 million grid-connected solar powered agriculture pumps.

### Benefits of Scheme

- The scheme will open a stable and continuous source of income to the rural land owners for a period of 25 years by utilisation of their dry/uncultivable land. Further, in case cultivated fields are chosen for setting up solar power project, the farmers could continue to grow crops as the solar panels are to be set up above a minimum height.
- The scheme would ensure that sufficient local solar/ other renewable energy based power is available for feeding rural load centres and agriculture pump-set loads, which require power mostly during the day time. As these power plants will be located closer to the agriculture loads or to electrical substations in a decentralized manner, it will result in reduced Transmission losses for STUs and Discoms. Moreover, the scheme will also help the Discoms to achieve the RPO target
- The solar pumps will save the expenditure incurred on diesel for running diesel pump and provide the farmers a reliable source of irrigation through solar pump apart from preventing harmful pollution from running diesel pump. In light of the long waiting list for electric grid connection, this scheme will benefit 17.5 lakh farmers over a period of four years, without adding to the grid load.

### Concerns

- In the context of 100 per cent electrification of villages under DeenDayal Upadhyaya Gram Jyoti Yojana (DDUGJY) the government's push for solar off-grid pumps seems unnecessary.

- ✓ The document mentions the inability of distribution companies (Discoms) in energising 10 million diesel pumps through grid connection given the long waiting lists for electricity connections.
- ✓ Under Saubhagya (Pradhan Mantri Sahaj Bijli Har Ghar Yojana), the government has electrified more than 20 million households in almost a year.
- ✓ The discoms should be able to electrify 10 million diesel pumps in a short time as the grid has already reached the hinterlands.
- ✓ Component C of PM-KUSUM will require metering which seems to be a humungous task as the agricultural sector largely relies on un-metered connections. **Net-metering** is yet a big challenge even in urban areas.
- ✓ Hardly any on-grid pump beneficiary has received any payment from discoms for generating excess power and supplying it to the grid, according to a survey by New Delhi-based non-profit Centre for Science and Environment.
- ✓ It raises a serious question on the discoms' ability to pay to millions of additional prosumers (on-grid pump beneficiaries who are both producers and consumers of solar power) for the next 25 to 28 years.

### Way forward

- Standalone solar pumps are used only for 100-150 days in a year and solar energy generated during the balance period is not utilised. In order to make effective use of solar energy it was proposed to introduce Universal Solar Pump Controller, which will not only run the water pump but can also run other electric equipment like cold storage, battery charging, flour mill, etc.
- As regards what happens to similar schemes run by some States, the Centre has left it to the States to decide. This, critics feel, will be one of the reasons for the scheme not taking off as desired. Besides, there are too many layers to deal with — at the Centre as well as States. Any reform in India's power space cannot take place unless there is consensus between the Centre, States and stakeholders.

## Culture of Peace Session of UN

### News Excerpt

In a strong statement at the UN General Assembly discussing resolutions of the UN Alliance of Civilizations (UNAOC) on the 'Culture of Peace', India criticised the world body for what it called "selectivity" in seeking to protect Abrahamic religions — Islam, Christianity and Judaism — over others.

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### Pre-Connect

On 13 September 1999, the UN General Assembly adopted, by consensus and without reservation, its pioneering resolution 53/243 on the Declaration and Programme of Action on a Culture of Peace. Asserting and reaffirming the commitment of all the UN membership for building the culture of peace, the General Assembly has been adopting resolutions on this issue every year since 1997. Through annual substantive resolutions for the last 20 years as well as annual High-Level Forums since 2012, the General Assembly has highlighted the priority it attaches to the full and effective implementation of these decisions and recommendations, which serve as a universal mandate for the international community, particularly the UN system, for the promotion of a culture of peace and non-violence that benefits humanity, in particular future generations.

### About the Culture of Peace

- This year's High-Level Forum is intended to be an opportunity for an exchange of views on possible ways to further promote the culture of peace, while the world is striving to recover and respond to the global pandemic and trying to address other pressing issues affecting the lives of many people around the globe.
- The COVID-19 situation has underscored the urgent need to leverage a culture of peace as a means of bridging divides across and within societies, as well as ensuring peaceful coexistence as a foundation for advancing the Sustainable Development Goals.



- The theme for the 2020 High-Level Forum will be “The Culture of Peace: Change our world for the better in the age of COVID-19”. Building global solidarity is the need of the time and can be achieved through promoting inter-cultural and inter-religious dialogue that enable communities to come together to better understand each other and stand against the spread of hate, intolerance, division, and discrimination.

### What was the issues?

- The Indian delegate pointed out that previous resolutions of the UNAOC dating back to 2006 had repeatedly decried the hatred against those religions — “Islamophobia, Christianophobia and anti-Semitism” — but didn’t condemn attacks on other religious groups including Hindus, Sikhs and Buddhists, who have suffered terror strikes and seen their shrines destroyed in Afghanistan and Pakistan.
- The UNGA statement welcomed the Kartarpur Gurdwara corridor agreement between India and Pakistan, but failed to note that Pakistan’s government has taken over the management of the Sikh shrine, which it called a contravention of the agreement and a violation of Sikh beliefs. India’s delegate also accused Pakistan of a “culture of hatred” against “religions in India” and fostering cross-border terrorism and said a culture of peace cannot exist until that is changed.
- The UN’s selectivity under the aegis of the UNAOC, an organisation that was set up in 2005 to prevent polarisation between societies and cultures and to bridge differences between them, only serves to further the theory of an inevitable “clash of civilisations” instead.
- India’s concerns over the UN resolutions that portray only three religions as victims of religious hatred are completely valid, and it is important that they are broadened to include every community that faces religion-based violence.

#### **The United Nations Alliance of Civilizations (UNAOC)**

was established in 2005, as the political initiative of Mr. Kofi Annan, former UN Secretary-General and co-sponsored by the Governments of Spain and Turkey.

A High-Level Group of experts was formed by Mr. Annan to explore the roots of polarization between societies and cultures today, and to recommend a practical programme of action to address this issue. The Report of the High-Level Group provided analysis and put forward practical recommendations that form the basis for the implementation plan of the United Nations Alliance of Civilizations.

The United Nations Alliance of Civilizations High Representative and Secretariat are based and operating from New York. The Alliance maintains a global network of partners including states, international and regional organizations, civil society groups, foundations, and the private sector to improve cross-cultural relations between diverse nations and communities.

### Why is this selectivity?

Overall, Hinduism has more than 1.2 billion followers, Buddhism has more than 535 million followers, and Sikhism has around 30 million followers. It is time attacks against these religions are also added to earlier list of the three Abrahamic religions when such resolutions are passed. Culture of peace cannot be only for Abrahamic religions.

### Inter-religious dialogue

Pakistan and the Philippines co-sponsored a resolution dated December 1 on inter-religious dialogue while Bangladesh with other countries had co-sponsored a resolution (India supported this resolution alone) on the programme for the “Culture of Peace.”

### Conclusion

India has provided shelter to waves of those persecuted in foreign lands, and allowed them to thrive in India. “And our tradition of inter-culture dialogue goes right to the time when ancient Indian thinkers had a flourishing dialogue with the ancient Greeks. India is not just a culture, but a civilisation in itself.

Underlining that culture of peace is the cornerstone of the foundation of a global order of peace and tolerance, India has tried to foster this culture through tolerance, understanding, respect for differences, respect for other religions and cultures, respect for human rights, gender equality — all this under the overarching umbrella of pluralistic ethos and democratic principles.

## Atmanirbhar Bharat RojgarYojna

### News Excerpt

Union Ministry of Labour and Employment has issued guidelines for the AatmaNirbhar Bharat Rozgar Yojana, clarifying that the government would only contribute to new employees earning up to Rs 15,000 a month as defined under the Employees Provident Fund & Miscellaneous Provisions Act.

### Pre-Connect

The scheme was announced in November 2020 to incentivise formal job creation in the country and subsequently approved by the Cabinet in the early December of the same year.

### About the Scheme

#### What does it offer?

Under the scheme, govt will give subsidy to establishments for new hiring. The subsidy would be to cover for provident fund contributions by employees as well as employers for two years.

#### Government's contribution:

The organisations of up to 1000 employees would receive employee's contribution (12 per cent of wages) & employer's contributions (12 per cent of wages), totalling 24 per cent of wages, for two years. Employers with over 1,000 employees will get employees' EPF contribution of 12 per cent from the central government. The subsidy support will be credited upfront in Aadhar seeded EPFO account (UAN) of an eligible new employee.

#### Eligibility criteria for establishments

- Establishments registered with EPFO will be eligible for the benefits if they add new employees compared to reference base of employees as in September 2020. In order to avail the benefits, establishments, with up to 50 employees, would have to add a minimum of two new employees. The organisations, with more than 50 employees, would have to add at least five employees to avail the benefits. The establishments registering with EPFO after the commencement of scheme will get subsidy for all new employees and the scheme will remain operational till June 30, 2021.
- EPFO will credit the contribution in Aadhaar seeded account of members in electronic manner. EPFO shall develop a software for the scheme and also develop a procedure which is transparent and accountable at their end. The fund shall work out modality to ensure that there is no overlapping of benefits provided under ABRY with any other scheme implemented by EPFO.

### Employees Provident Fund & Miscellaneous Provisions Act

The Employees' Provident Fund and Miscellaneous Provisions Act, 1952 aims to provide a kind of social security to the industrial workers. The Act mainly provides retirement or old age benefits, such as Provident Fund, Superannuation Pension, Invalidation Pension, Family Pension and Deposit-Linked Insurance.

The Act provides for payment of terminal benefits on the happening of various contingencies such as retirement, closure, retirement on attainment of the age of superannuation, voluntary retirement and retirement due to factors which result in incapacity of the employee to work.

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## OCI Cardholders

### News Excerpt

The Karnataka High Court recently held that Overseas Citizens of India (OCI) cardholders need not seek admission only under the quota meant for Non-Resident Indian (NRI) students in professional educational institutions

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(medical/dental or engineering colleges), but are eligible for admission under institutional as well as State Government quota seats.

### **Pre-Connect**

- The Ministry of Home Affairs defines an OCI as a person who was a citizen of India on or after January 26, 1950; or was eligible to become a citizen of India on that date; or who is a child or grandchild of such a person, among other eligibility criteria.
- According to Section 7A of the OCI card rules, an applicant is not eligible for the OCI card if he, his parents or grandparents have ever been a citizen of Pakistan or Bangladesh. This is the ground cited by the government in revoking the OCI card granted to Taseer, whose father was a Pakistani national. Taseer grew up in India, and holds a British passport and a Green Card in the US.
- OCI cardholders can enter India multiple times, get a multipurpose lifelong visa to visit India, and are exempt from registering with Foreigners Regional Registration Office (FRRO) no matter how long their stay.

### **Overseas Citizenship of India Scheme**

- In response to persistent demands for "dual citizenship" particularly from the Diaspora in North America and other developed countries and keeping in view the Government's deep commitment towards fulfilling the aspirations and expectations of Overseas Indians, the Overseas Citizenship of India (OCI) Scheme was introduced by amending the Citizenship Act, 1955 in August 2005.
- The Scheme was launched during the Pravasi Bharatiya Divas convention 2006 at Hyderabad. The Scheme provides for registration as Overseas Citizen of India (OCI) of all Persons of Indian Origin (PIOs) who were citizens of India on 26th January, 1950 or there after or were eligible to become citizens of India on 26th January, 1950 except who is or had been a citizen of Pakistan, Bangladesh or such other country as the Central Government may, by notification in the Official Gazette, specify.
- OCI is not to be misconstrued as 'dual citizenship'. OCI does not confer political rights. The registered Overseas Citizens of India shall not be entitled to the rights conferred on a citizen of India under article 16 of the Constitution with regard to equality of opportunity in matters of public employment.

### **Constitutional rights of overseas citizens of India**

Notwithstanding anything contained in any other law for the time being in force, an overseas citizen of India shall be entitled to such rights other than the rights specified under sub-section (2) as the Central Government may, by notification in the Official Gazette, specify in this behalf.

An overseas citizen of India shall not be entitled to the rights conferred on a citizen of India.

- under article 16 of the Constitution with regard to equality of opportunity in matters of public employment.
- under article 58 of the Constitution for election as President.
- under article 66 of the Constitution for election of Vice-President.
- under article 124 of the Constitution for appointment as a Judge of the Supreme Court.
- under article 217 of the Constitution for appointment as a Judge of the High Court.
- under section 16 of the Representation of the People Act, 1950(43 of 1950) in regard to registration as a voter.
- under sections 3 and 4 of the Representation of the People Act, 1951 (43 of 1951) with regard to the eligibility for being a member of the House of the People or of the Council of States, as the case may be.
- under section 5, 5A and 6 of the Representation of the People Act, 1951 (43 of 1951) with regard to the eligibility for being a member of the Legislative Assembly or a Legislative Council, as the case may be, of a State.
- for appointment to public services and posts in connection with the affairs of the Union or of any State except for appointment in such services and posts as the Central Government may by special order in that behalf specify.

Every notification issued under sub-section shall be laid before each House of Parliament.



### What was the issues?

- ✓ OCI Cardholders had approached the High Court against the State Government for not permitting them to participate in online counselling for Government/private quota seats for MBBS/BDS/Engineering courses.
- ✓ According to the state, only citizens of India were eligible to be registered for the purpose of counselling by the Examination Authority. In one of the cases, a single bench had held that OCI card holders are eligible for general quota seats under Karnataka's Common Entrance Test.
- ✓ The writ appeal filed by the State against the single bench judgment and the writ petition raising similar issues were heard together by the division bench of the High Court.
- ✓ Referring to statutory provisions under the Citizenship Act and notifications issued thereunder, the court observed that the amendment made to Section 2(1)(n) of 2006 Act is contrary to the Central Law and therefore, has to be struck down on the ground of repugnancy as per Article 254 of the Constitution.
- ✓ The court said that the inclusion of the expression OCI Cardholder in the definition of Non-Resident Indian under Section 2(1)(n) of the 2006 Act being contrary to Notification dated 05/01/2009 is held to be repugnant and has to yield to the Central law.
- ✓ The bench further noted that as per the Scheme of National Eligibility cum Entrance Test (NEET) 2016, there is no distinction made in eligibility and qualification in respect of the seats under the control of the States, deemed universities, Central Universities etc., under which Indian nationals, Non-Resident Indians, OCI Cardholders, Persons of Indian Origin and foreign nationals and are treated on par
- ✓ Thus, an OCI Cardholder cannot be treated on par with the Non-Resident Indian under Section 2(1)(n) of 2006 Act (State law), on account of the interpretation given to Notification dated 05/01/2009 and the State law will have to yield to the Central law, due to applicability of doctrine of occupied field and having regard to the repugnancy under Article 254 of the Constitution

### Vision 2035: Public Health Surveillance in India

#### News Excerpt

NITI Aayog released a white paper on more responsive and citizen-friendly public health surveillance system which would have a better data-sharing mechanism between the Centre and states while ensuring individual privacy and confidentiality.

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#### Pre-Connect

NITI Aayog's mandate is to provide strategic directions to the various sectors of the Indian economy. In line with this mandate, the Health Vertical released a set of four working-papers compiled in a volume entitled 'Health Systems for New India: Building blocks – Potential Pathways to Reforms' during November 2019.

#### What was the need?

- Multiple disease outbreaks have prompted India to proactively respond with prevention and control measures. These actions are based on information from public health surveillance.
- India was able to achieve many successes in the past. Smallpox was eradicated and polio was eliminated. India has been able to reduce HIV incidence and deaths and advance and accelerate TB elimination efforts.
- Many outbreaks of vector-borne diseases, acute encephalitis syndromes, acute febrile illnesses, diarrhoeal and respiratory diseases have been promptly detected, identified, and managed. These successes are a result of effective community-based, facility-based, and health system-based surveillance.
- The COVID19 pandemic has further challenged the country. India rapidly ramped up its diagnostic capabilities and aligned its digital technology expertise.
- This ensured that there was a comprehensive tracking of the pandemic. As well, relevant information was widely shared with the public. India rapidly instituted both case-based

(Trace, Test, Treat) and population-based measures (wear masks, wash hands, maintain distance, avoid crowding and closed spaces) for COVID19 prevention, management, containment, and control.

### About India's Public Health Surveillance by 2035

- This paper is a joint effort of Health Vertical, NITI Aayog, and Institute for Global Public Health, University of Manitoba, Canada with contributions from technical experts from the Government of India, state governments, and the International agencies.
- India's Public Health Surveillance will be a predictive, responsive, integrated, and tiered system of disease and health surveillance that is inclusive of prioritized, emerging, and re-emerging communicable and non-communicable diseases and conditions.
- Surveillance will be primarily based on de-identified (anonymised) individual-level patient information that emanates from health care facilities, laboratories, and other sources.
- Public Health Surveillance will be governed by an adequately resourced effective administrative and technical structure and will ensure that it serves the public good.
- India will provide regional and global leadership in managing events that constitute a Public Health Emergency of International Concern.

This vision document on India's Public Health Surveillance by 2035 builds on opportunities that include the Ayushman Bharat scheme that establishes health and wellness centers at the community level- to strengthen non-communicable disease prevention, detection, and control and assures government payment for hospitalization- to reduce out of pocket expenses of individuals and families at the bottom of the pyramid.

- It builds on initiatives such as the Integrated Health Information Platform of the Integrated Disease Surveillance Program.
- It aligns with the citizen-centricity highlighted in the National Health Policy 2017 and the National Digital Health Blueprint. It encourages the use of mobile and digital platforms and point of care devices and diagnostics for amalgamation of data capture and analyses.
- It highlights the importance of capitalizing on initiatives such as the Clinical Establishments Act to enhance private sector involvement in surveillance. It points out the importance of a cohesive and coordinated effort of apex institutions including the National Centre for Disease Control, the Indian Council of Medical Research, and others. As well, there may be a need to create an independent Institute of Health Informatics.

#### Four building blocks are envisaged for this vision:

1. An interdependent federated system of Governance Architecture between the Centre and States,
2. Enhanced use of new data collection and sharing mechanisms for surveillance based on unitized, citizen-centric comprehensive Electronic Health Records (EHR) with a unique health identifier (UHID). As well, existing disease surveillance data and information from periodic surveys will complement this information
3. Enhanced use of new data analytics, data science, artificial intelligence, and machine learning, and
4. Advanced health informatics.

#### The document identifies gap areas in India's Public Health Surveillance that could be addressed.

- India can create a skilled and strong health workforce dedicated to surveillance activities.
- Non-communicable disease, reproductive and child health, occupational and environmental health and injury could be integrated into public health surveillance.
- Morbidity data from health information systems could be merged with mortality data from vital statistics registration.
- An amalgamation of plant, animal, and environmental surveillance in a One-Health approach that also includes surveillance for anti-microbial resistance and predictive capability for pandemics is an element suggested within this vision document.
- Public Health Surveillance could be integrated within India's three-tiered health system.
- Citizen-centric and community-based surveillance, and use of point of care devices and self-care diagnostics could be enhanced.

- Laboratory capacity could be strengthened with new diagnostic technologies including molecular diagnostics, genotyping, and phenotyping. To establish linkages across the three-tiered health system, referral networks could be expanded for diagnoses and care.

## Challenges in India's existing Public Health Surveillance

**Implementation challenges – patchy surveillance, not comprehensive:** The IHIP is not yet fully operational across the country. There are a number of notable implementation challenges.

**Surveillance functions in vertical siloes of programs and institutions:** Vertical programs such as the National AIDS Control Program and the National TB Elimination Program have achieved significant success in reducing disease transmission, increasing the proportion of people who know their HIV or TB status, enhancing the coverage of treatment among those infected or confirmed with disease and reducing mortality from the disease.

**Private sector involvement in surveillance is limited:** The private sector is not a homogenous entity; it includes unregistered practitioners, stand-alone clinics, pharmacies and laboratories, smaller nursing homes, medium to large hospitals, medical colleges, corporate institutions and apex institutions.

**Inadequate linkage of morbidity with mortality data:** The RCH program has begun focusing on enhancing maternal and neonatal death review to enable the identification of contributing factors and potential solutions to inform health care service deliveries and prevent future deaths.

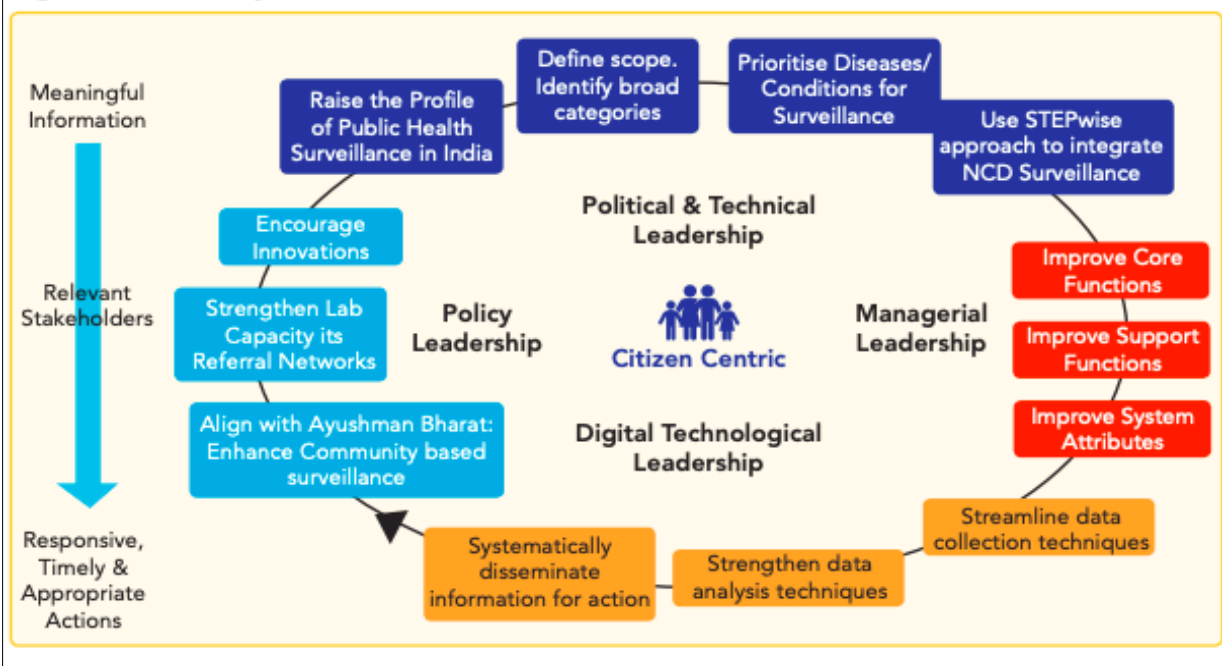
**Human resource challenges:** The recruitment of human resources for state and district level surveillance units has been devolved to states, however, the response of states to address these human resource gaps is varied. Health is a state subject, while Health Surveillance is a national prerogative. Human resource vacancies and staff capacity continue to plague the system.

**Training of Public Health Core-Capacity:** There are many examples of training programs for public health professionals specifically in the area of surveillance.

**Limited use of digital, social and print media in surveillance:** Social and print media are increasingly being piloted for use in surveillance. Few states do have operational media scanning cells or media-advocacy initiatives that help highlight disease outbreaks, or help identify a sudden increase in hospitalisation or death due to an unusual event.

**Limited focus on non-communicable disease surveillance:** Non-communicable disease (NCD) surveillance was introduced in many developed countries almost 35- 40 years ago. India faces the dual burden of non-communicable and communicable diseases. The WHO predicted that by 2020, NCD would account for 73% deaths and 60% of morbidity globally. (WHO 2003).

**Figure 3: The Way Forward: Public Health Surveillance in India**



**Fragmented and minimalistic approach in Occupational Health Surveillance:** Occupational Health Surveillance in India falls into two broad categories: Hazard surveillance and health surveillance. The NCDC has a division of Occupational and Environmental Health.

### Conclusion

India's Vision 2035 for Public Health Surveillance envisions integration within the three-tiered health system, strengthened community based surveillance, expanded referral networks and enhanced laboratory capacity. The EHR becomes the main basis of surveillance and is complemented by periodic national/state/district level surveys, special studies and research in order to reconcile the threshold and redefine standard definitions of cases, as disease patterns evolve. Surveillance is not solely dependent on individual disease driven active or passive surveillance systems, though these may remain important contributors to surveillance information. The building blocks for this vision are an interdependent federated system of Governance between Centre and States, new data sharing that is not dependent on traditional systems of data entry, but one that is positioned over and above existing disease surveillance programs. Surveillance uses new analytics, health informatics and data science and innovative ways of disseminating 'information for action'. This will further thrust India to be a global/regional leader in Public Health Surveillance.

## PM WANI

### News Excerpt

The Union cabinet approved a framework to usher in a "massive Wi-Fi revolution in the country", in the words of Union Telecom Minister, by accelerating the proliferation of broadband internet services via a public Wi-Fi network.

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### PM-WANI – key features

The operational ecosystem of PM-WANI will include the following:

**Public Data Office (PDO):** This will establish, maintain and operate Wi-Fi Access Points that are WANI compliant and provide broadband services to subscribers.

**Public Data Office Aggregator (PDOA):** An aggregator of PDOs, it will perform crucial authorization and accounting functions.

**App Provider:** It will develop an app for registration of users and help discover WANI compliant Wi-Fi hotspots in the vicinity. These areas will be displayed in the app in order to access the internet service.

**Central Registry:** Its aim is to maintain the details of PDOAs, PDOs and app providers. Initially, the Central Registry will be maintained by Centre for Development of Telematics (C-DoT).

### PM-WANI – Aims and Benefits

- It is anticipated that PM-WANI will be business-friendly and complement the government's ease of doing business initiatives.
- The COVID-19 pandemic and the disruptions it has caused, made it clear that delivery of high-speed broadband internet to subscribers is important including in areas which have no 4G mobile coverage. This is where a public Wi-Fi network service like PM-WANI will come in handy.
- Besides generating employment, such a public Wi-Fi network will boost disposable incomes of small and medium entrepreneurs, which in turn will have a positive impact on the GDP, the government believes.
- Crucially, there is no license fee for providing broadband internet services. This is expected to encourage the proliferation of public Wi-Fi hotspots across the length and breadth of the country.

### Public Wi-Fi – the big picture

India added more than 300 million internet subscribers between 2005 and 2020, making it amongst the world's fastest-growing internet markets. However, only 23 million have a wired internet connection. So, the next revolution in connectivity necessitates reliable and inexpensive internet for the masses, enabling India to leapfrog from the current digital divide, which has important social and economic implications.

## Conclusion

his is where PM-WANI can make a crucial intervention. Because it essentially gives anyone – the local paan shop or kirana store owner, for instance – the right to resell bandwidth and become a mini-ISP without having to worry about licence or fees. This will potentially democratise the entire ecosystem of internet connectivity as communities set up internet bandwidth according to the local needs of their areas, instead of a one-size-fits-all approach.

Imagine a situation in a few years when millions of Wi-Fi hotspots spring up across the country, driving small businesses, powering rural education and connecting Indians like never before.

## Electricity (Rights of Consumer Rules) 2020

### News Excerpt

The government notified the Electricity (Rights of Consumers) Rules, 2020. These rules serve to “empower” consumers with rights that would allow them to access continuous supply of quality, reliable electricity. This is because the provisions make distribution companies more accountable to consumers.

Following key areas are covered in the Electricity (Rights of Consumers) Rules:

- Rights of consumers and Obligations of Distribution licensees
- Release of new connection and modification in existing connection
- Metering arrangement
- Billing and Payment
- Disconnection and Reconnection
- Reliability of supply
- Consumer as Prosumer
- Standards of Performance of licensee
- Compensation Mechanism
- Call Centre for Consumer Services
- Grievance redressal mechanism

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### Rights and Obligations

- It is the duty of every distribution licensee to supply electricity on request made by an owner or occupier of any premises in line with the provisions of Act.
- It is the right of consumer to have minimum standards of service for supply of electricity from the distribution licensee.

### Release of new connection and modification in existing connection

- ✓ Transparent, simple and time bound processes,
- ✓ Applicant has option for online application,
- ✓ Maximum time period of 7 days in metro cities and 15 days in other municipal areas and 30 days in rural areas identified to provide new connection and modify an existing connection:

### Metering

- No connection shall be given without a meter
- Meter shall be the smart pre-payment meter or pre-payment meter.
- Provision of Testing of meters
- Provisions for replacement of defective or burnt or stolen meters specified

### Billing and payment

- Transparency in applicable consumer tariff and bills
- Consumer shall have the option to pay bills online or offline.
- Provision for advance payment of bills
- Disconnection and reconnection provisions



### Reliability of supply

- The distribution licensee shall supply 24x7 power to all consumers. However, the Commission may specify lower hours of supply for some categories of consumers like agriculture.
- The distribution licensee shall put in place a mechanism, preferably with automated tools to the extent possible, for monitoring and restoring outages.

### Consumer as prosumer

- While the prosumers will maintain consumer status and have the same rights as the general consumer, they will also have right to set up Renewable Energy (RE) generation unit including roof top solar photovoltaic (PV) systems – either by himself or through a service provider.
- Net metering for loads up to ten kW and for gross metering for loads above ten kW.
- Standards of performance.
- The Commission shall notify the standards of performance for the distribution licensees.
- Compensation amount to be paid to the consumers by the distribution licensees for violation of standards of performance

### Compensation mechanism

- Automatic compensation shall be paid to consumers for which parameters on standards of performance can be monitored remotely.
- The standards of performance for which the compensation is required to be paid by the distribution licensee include, but are not limited to, the following, namely:-
- No supply to a consumer beyond a particular duration, to be specified by the Commission;
- Number of interruptions in supply beyond the limits as specified by the Commission;
- Time taken for connection, disconnection, reconnection, shifting;
- Time taken for change in consumer category, load;
- Time taken for change in consumer details;
- Time taken for replacement of defective meters;
- Time period within which bills are to be served;
- Time period of resolving voltage related complaints; and
- Bill related complaints.

### Call Centre for Consumer Services

- Distribution licensee shall establish a centralised 24x7 toll-free call centre
- Licensees shall endeavour to provide all services through a common Customer Relation Manager (CRM) System to get a unified view

### Grievance redressal mechanism

- Consumer Grievance Redressal Forum (CGRF) to include consumer and prosumer representatives.
- The consumer grievance redressal has been made easy by making it multi-layered and the number of consumer's representatives have been increased from one to four.
- The licensee shall specify the time within which various types of grievances by the different levels of the forums are to be resolved. Maximum timeline of 45 days specified for grievance redressal.

### General Provisions

- Use of online access to various services such as application submission, monitoring status of application, payment of bills, status of complaints raised, etc., to consumers through its website, web portal, mobile app and its various designated offices area-wise.
- The distribution licensee shall provide all services such as application submission, payment of bills, etc., to senior citizens at their door-steps.
- The details of scheduled power outages shall be informed to the consumers. In case of unplanned outage or fault, immediate intimation shall be given to the consumers through SMS or by any other electronic mode along with estimated time for restoration.

## Conclusion

These rules are also an important step towards furthering the ease of doing business across the country. Implementation of these Rules shall ensure that new electricity connections, refunds and other services are given in a time bound manner. Wilful disregard to consumer rights will result in levying penalties on service providers.

This is one of the major initiatives and yet another step by the Union Government to put consumer in the centre-stage of public utility services. The Rules will benefit about 30 crores existing and the prospective consumers in the country. Stressing upon the need for awareness of all consumers especially in rural areas/villages, he said, States and DISCOMs are being advised to provide wide publicity to these highly consumer friendly Rules of the Government.

## Human Development Index

### News Excerpt

Recently, the Human Development Report (HDR) 2020 was released by the United Nations Development Program (UNDP).

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### Pre-Connect

- The HDI was created to emphasize that people and their capabilities should be the ultimate criteria for assessing the development of a country, not economic growth alone.
- The HDI can also be used to question national policy choices, asking how two countries with the same level of GNI per capita can end up with different human development outcomes.
- These contrasts can stimulate debate about government policy priorities.
- The Human Development Index (HDI) is a summary measure of average achievement in key dimensions of human development: a long and healthy life, being knowledgeable and have a decent standard of living.
- The HDI is the geometric mean of normalized indices for each of the three dimensions.

### How HDI measures?

- HDI measures average achievement on three basic aspects of human development, life expectancy, education, and per capita income.
- India's gross national income (GNI) per capita on the basis of purchasing power parity (PPP), too, fell from \$6,829 in 2018 to \$6,681 in 2019

### How this index is different from previous index?

- For the first time, the United Nations Development Programme introduced a new metric to reflect the impact caused by each country's per-capita carbon emissions and its material footprint, which measures the amount of fossil fuels, metals and other resources used to make the goods and services it consumes.
- This paints a "less rosy, but clearer assessment" of human progress.

### Miles to go

Though India improved its absolute value of the Human Development Index (0.645 in 2019 from 0.642 the previous year), it dropped a place in the overall ranking

Country	HDI rank (2019)	Change from 2018
Russia	52	-3
Sri Lanka	72	1
Brazil	84	0
China	85	2
South Africa	114	1
<b>India</b>	<b>131</b>	<b>-2</b>
Bangladesh	133	1
Nepal	142	1
Pakistan	154	0

### Global Report

- ✓ Norway, which tops the HDI, falls 15 places if this metric is used, leaving Ireland at the top of the table followed by Ireland and Switzerland. Hong Kong and Iceland complete the top five.
- ✓ In fact, 50 countries would drop entirely out of the "very high human development group" category, using this new metric, called the Planetary Pressures-adjusted HDI, or PHDI.



- ✓ Australia falls 72 places in the ranking, while the United States and Canada would fall 45 and 40 places respectively, reflecting their disproportionate impact on natural resources.
- ✓ The oil and gas-rich Gulf States also fell steeply. China would drop 16 places from its current ranking of 85.
- ✓ China's net emissions (8 gigatonnes) are 34% below its territorial emissions (12.5 gigatonnes) compared with 19% in India and 15% in Sub-Saharan Africa.

### India's Performance

- India's HDI value for 2019 is 0.645, which put the country in the medium human development category, positioning it at 131 out of 189 countries and territories.
- Between 1990 and 2019, India's HDI value increased from 0.429 to 0.645, an increase of 50.3%.
- HDI is a summary measure for assessing long-term progress in three basic dimensions of human development: a long and healthy life, access to knowledge, and a decent standard of living.
- Between 1990 and 2019, India's life expectancy at birth increased by 11.8 years, mean years of schooling increased by 3.5 years, and expected years of schooling increased by 4.5 years. India's GNI per capita increased by about 273.9% between 1990 and 2019.
- Life expectancy for Indian's at birth was 69.7 years in 2019, slightly lower than the south Asian average of 69.9 years, but slightly higher than the average of medium human development index groupings in the world at 69.3 years.
- In terms of GNI per capita, India at \$6,681 fared better than some others in 2019, despite a fall over the previous year. In South Asia, the average was \$6,532 and among medium HDI countries it was \$6,153. The expected years of schooling in India was 12.2 years, compared with 11.2 years in Bangladesh and 8.3 years in Pakistan.
- From Colombia to India indicates that financial security and ownership of land improve women's security and reduce the risk of gender-based violence, clearly indicating that owning land can empower women.
- Under the Paris Agreement, India pledged to reduce the emission intensity of its GDP from the 2005 level by 33-35% by 2030 and to obtain 40% of electric power capacity from non-fossil fuel sources by 2030.

### Conclusion

- ✚ COVID, it projected that in 2020, global HDI would fall below for the first time in the three decades since the Index was introduced.
- ✚ No country has yet been able to achieve a very high level of development without putting a huge strain on natural resources. We have to be the first generation to do things right.
- ✚ India's record in achieving its carbon emissions goals so far, and urged Indian policy makers to take the path of sustainable development.

## Cannabis and recent issues

### News Excerpt

In a decision that could influence the global use of medicinal marijuana, the United Nations Commission on Narcotic Drugs (CND) voted to remove cannabis and cannabis resin from Schedule IV of the 1961 **Single Convention on Narcotic Drugs**, decades after they were first placed on the list.

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### Pre-Connect

- Till 1985, the recreational use of marijuana was not a criminal offence in India. The Narcotic Drugs and Psychotropic Substances (NDPS) Act, 1985, was brought in to fulfil India's international obligations as a signatory to Single Convention on Narcotic Drugs, Convention on Psychotropic Substances, and United Nations Convention Against Illicit Traffic in Narcotic Drugs and Psychotropic Substances.
- Cannabis has been in use in India for over 2,000 years. The Sushruta Samhita, an ancient medical treatise, recommends cannabis plant extract for treating respiratory ailments and

diarrhoea. In 1798, the British parliament enacted a tax on cannabis by products to reduce consumption.

### **The Cannabis plant**

- According to the WHO, cannabis is a generic term used to denote the several psychoactive preparations of the plant *Cannabis sativa*. The major psychoactive constituent in cannabis is Delta-9 tetrahydrocannabinol (THC). The Mexican name 'marijuana' is frequently used in referring to cannabis leaves or other crude plant material in many countries.
- Most species of cannabis are dioecious plants that can be identified as either male or female. The unpollinated female plants are called hashish. Cannabis oil (hashish oil) is a concentrate of cannabinoids — compounds which are structurally similar to THC — obtained by solvent extraction of the crude plant material or of the resin.

### **How does the NDPS Act define cannabis?**

- ✓ According to the NDPS Act "cannabis plant" means any plant of the genus cannabis. The legislation that was enacted in 1985 succeeded the Dangerous Drugs Act, 1930. It was introduced as lawmakers felt that the older legislation that entailed a maximum punishment of up to four years was not strict enough to check drug trafficking.
- ✓ Under section 2 (iii), the Act defines cannabis (hemp). The sub-sections refer to parts of the plant that come under the purview of the Act.
- ✓ 'Charas' is the separated resin extracted from the cannabis plant. The NDPS Act covers separated resin, in whatever form, whether crude or purified, obtained from the cannabis plant and also includes concentrated preparation and resin known as hashish oil or liquid hashish.
- ✓ Section 2(iii)(b) of the NDPS Act defines 'ganja' as the flowering or fruiting tops of the cannabis plant but it clearly excludes the seeds and leaves, when not accompanied by the tops, by whatever name they may be known or designated. Street names for the drug include 'weed' and 'marijuana'.
- ✓ The Act also illegalises any mixture with or without any neutral material, of any of the two forms of cannabis – charas and ganja — or any drink prepared from it.

### **Effect on India**

- The rationale for the legalisation of marijuana goes far beyond the legalities of India's international obligations. Culturally, marijuana has been a part of India's religious and social fabric, used for medicinal purposes, in cuisines, at festivals and, of course, recreationally.
- As recently as 2019, the 'Magnitude of Substance Use in India' report found that "about 2.8 per cent of the population (3.1 crore individuals) reports having used any cannabis product within the previous year.
- That such a large number of people willingly admitted to using cannabis products in a government survey should signal both the prevalence and acceptability of the substance.
- Criminalising the use of such a widespread substance — one whose effects on mental and physical health have been proven to be far less harmful than legal stimulants like alcohol and tobacco — only serves to burden an overworked criminal-justice system and, in many cases, gives undue powers to police agencies like the Narcotics Control Board.

### **What this could mean for the cannabis industry?**

- The reclassification of cannabis by the UN agency, although significant, would not immediately change its status worldwide as long as individual countries continue with existing regulations. Still, Wednesday's vote could impact this process, as many nations follow the lead of international protocols while legislating.
- As per drug policy experts, the CND decision would add momentum to efforts for decriminalising cannabis in countries where its use is most restricted, while further legalising the substance in others. Scientific research into marijuana's medicinal properties is also expected to grow.

### **Conclusion**

- There is no doubt that marijuana use has its risks, as do all other substances which affect the brain. One has to be particularly concerned that, with legalisation in wealthy countries,

newer hybrid strains of marijuana which contain much higher concentrations of the active ingredient (THC) are beginning to swamp the market.

- As with alcohol and tobacco products, the use of cannabis must be regulated, taxed and monitored. Addiction, when it occurs, must be treated as and for what it is — a mental health issue. The international conventions which forced the promulgation of the NDPS Act were, in many ways, an off-shoot of the US's "war on drugs" which began in the 1960s. After decades of incarcerating its own people, a majority of Americans voted recently to legalise cannabis. There is no need for the world's largest democracy to repeat the oldest democracy's mistakes.

## WHO World Malaria Report 2020

### News Excerpt

Recent World Malaria Report 2020 released by WHO which provides estimated cases for malaria across the world based on mathematical projections, indicates that India has made considerable progress in reducing its malaria burden.

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### Pre-Connect

- The 2020 edition of the World malaria report takes a historical look at key milestones that helped shape the global response to the disease over the last 2 decades – a period of unprecedented success in malaria control. The report features a detailed analysis on progress towards the 2020 milestones of WHO's global malaria strategy and a special section on malaria and the COVID-19 pandemic.
- As in past years, the report provides an up-to-date assessment of the burden of malaria at global, regional and country levels. It tracks investments in malaria programmes and research as well as progress across all intervention areas. This latest report draws on data from 87 countries and territories with ongoing malaria transmission.

### About the report

- India has also contributed to the largest drop in such cases region-wide, from approximately 20 million to about 6 million.
- The percentage drop in the malaria cases was 71.8 per cent and deaths was 73.9 per cent between 2000 to 2019.
- India achieved a reduction of 83.34 per cent in malaria morbidity and 92 per cent in malaria mortality between the year 2000 (20,31,790 cases, 932 deaths) and 2019 (3,38,494 cases, 77 deaths), thereby achieving Goal 6 of the Millennium Development Goals (50-75 per cent decrease in case incidence between 2000 and 2019).
- Decrease in incidence of malaria cases is also exhibited in the year-on-year tally. The cases and fatalities have declined significantly by 21.27 per cent and 20 per cent, respectively in the year 2019 (3,38,494 cases, 77 deaths) as compared to 2018 (4,29,928 cases, 96 deaths).
- The total number of malaria cases reported in 2020 till October (1,57,284) has further decreased by 45.02 per cent as compared to the corresponding period of 2019 (2,86,091).
- The states of Odisha, Chhattisgarh, Jharkhand, Meghalaya and Madhya Pradesh disproportionately accounted for nearly 45.47 per cent (1,53,909 cases out of India's 3,38,494 cases) of malaria cases and 70.54 per cent (1,10,708 cases out of India's 1,56,940 cases) of falciparum malaria cases in 2019.

### Analytica

#### How India able to control this disease?

- Malaria elimination efforts were initiated in the country in 2015 and intensified after the launch of the National Framework for Malaria Elimination (NFME) in 2016 by the Ministry of Health and Family Welfare.
- The National Strategic Plan for Malaria Elimination (2017-22) was launched by the health ministry in July, 2017 which laid down strategies for the next five years. The first two years saw a 27.7 per cent decline in cases and 49.5 per cent reduction in fatalities; 11,69,261 cases and 385 deaths in 2015, and 8,44,558 cases and 194 deaths in 2017.
- Due to the efforts made by the Government of India in provision of microscopes, rapid diagnostics Long Lasting Insecticidal Nets (LLINs) – about 5 crore of them have been distributed in seven northeast states, Chhattisgarh, Jharkhand, Madhya Pradesh and

Odisha up to 2018-19 and another 2.25 crore LLINs are being supplied/distributed during the current financial year to high burden areas leading to reduction in endemicity in these otherwise very high endemic states.

- ✓ The World Health Organisation (WHO) has initiated the High Burden to High Impact (HBHI) initiative in 11 high malaria burden countries, including India. The implementation of the 'High Burden to High Impact (HBHI)' initiative was started in four states, namely, West Bengal, Jharkhand, Chhattisgarh and Madhya Pradesh in July, 2019.
- ✓ A key strategy to reignite progress is the HBHI response, catalysed in 2018 by WHO and the RBM Partnership to End Malaria continued to make impressive gains in India, with 18 per cent reductions in cases and 20 per cent reduction in deaths over the last two years.
- ✓ Malaria has been made notifiable in 31 states and UTs and the decline has been observed in the hitherto high endemic states. Percentage of decline in the year 2019 as compared to 2018 is as follows: Odisha – 40.35 per cent, Meghalaya- 59.10 per cent, Jharkhand – 34.96 per cent, Madhya Pradesh –36.50 per cent and Chhattisgarh –23.20 per cent.

Malaria is caused by the bite of the female *Anopheles* mosquito, if the mosquito itself is infected with a malarial parasite. There are five kinds of malarial parasites — *Plasmodium falciparum*, *Plasmodium vivax* (the commonest ones), *Plasmodium malariae*, *Plasmodium ovale* and *Plasmodium knowlesi*. Therefore, to say that someone has contracted the *Plasmodium ovale* type of malaria means that the person has been infected by that particular parasite.

### Conclusion

The figures and trends between the last two decades clearly show the drastic decline in malaria. The malaria elimination target of 2030 looks achievable building on the Union government's strategic interventions in this regard.

## Disability in India

### News Excerpt

December 3 is marked by the UN as International Day of Persons with Disabilities in a bid to promote a more inclusive and accessible world for the differently-abled and to raise awareness for their rights. In India, the Ministry of Social Justice and Empowerment observed the day with essay and painting competitions among other events.

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### Pre-Connect

- Any restriction or lack of ability to perform an activity in a manner or within the range considered normal for the human beings, resulting from impairment is termed as disability. Impairment concerns the physical aspects of health; disability is the loss of functional capacity resulting from an impairment organ; handicap is a measure of the social and cultural consequences of an impairment or disability.
- The 2011 census estimated that the number of people with disabilities in India is close to 2.68 crore (or 2.2% of the population) — that is more than the entire population of Australia.
- Until the 2011 census, there were questions on seven kinds of disabilities in the questionnaire. This list of disabilities was expanded to 21 when the Rights of People with Disabilities was introduced in 2016.

### Who are disabled and in what way?

- Rural men had the highest prevalence of disability in India, according to the NSO report. A higher proportion of men were disabled in India compared with women, and disability was more prevalent in rural areas than in urban areas.
- Inability to move without assistance was the most common disability. More men experienced locomotor disability than women.

### Issues related to Disabilities in India

- ✓ Persons with disabilities are considered as one of the marginalized groups in the whole world. They have the same kind of health needs like non-disabled ones — for health screening, immunization etc.

- ✓ They may even experience a narrower health margin, both because of social exclusion and poverty.
- ✓ They are disabled not only by their bodies but by society as well. Thus, disability isn't only a health problem. It's a complex phenomenon that reflects the interaction between the features of an individual's body & characteristics of the society in which the person lives in.
- ✓ A large number of children with disabilities (CWDs) remain out of school.
- ✓ Although the Sarva Shiksha Abhiyan has made an effort to promote the inclusion of children with disabilities, the system faces a lot of challenges in identifying these children as well as responding to their needs.
- ✓ A number of disabilities in India can be avoided and prevented including those that arise from medical issues during pre-natal, natal and post-natal conditions, injuries, accidents and malnutrition.
- ✓ But the health sector hasn't yet reacted proactively to disability, particularly in rural regions.
- ✓ Even though many persons with disabilities are capable of productive work they remain unemployed. Forget about the private sector offering employment to these people even the public sector hardly does.
- ✓ Despite of the fact that 3% is reserved for PWDs, only ten percent posts are identified as suitable. The quota policy even covers only three kinds of disability — hearing, visual and locomotor.
- ✓ Evidence suggests that PWDs face different kinds of barriers in accessing the health as well as rehabilitation services they require in several settings.
- ✓ Overcoming all kinds of difficulties faced by persons with disabilities needs interventions for removing environmental & attitudinal barriers.

### Constitution Rights

- Article 15(1) enjoins on the Government not to discriminate against any citizen of India (including disabled) on the ground of religion, race, caste, sex or place of birth.
- There shall be equality of opportunity for all citizens (including the disabled) in matters relating to employment or appointment to any office under the State.
- No person including the disabled irrespective of his belonging can be treated as an untouchable. It would be an offence punishable in accordance with law as provided by Article 17 of the Constitution.
- Every person including the disabled has his life and liberty guaranteed under Article 21 of the Constitution.
- Article 25 guarantees to every citizen (including the disabled) the right to freedom of religion. Every disabled person (like the non-disabled) has the freedom of conscience to practice and propagate his religion subject to proper order, morality and health.
- No disabled person can be compelled to pay any taxes for the promotion and maintenance of any particular religion or religious group.
- The right to education is available to all citizens including the disabled. Article 29(2) provides that no citizen shall be denied admission into any educational institution maintained by the State or receiving aid out of State funds on the ground of religion, race, caste or language.
- Article 45 directs the State to provide free and compulsory education for all children (including the disabled) until they attain the age of 14 years.

#### Government Initiatives for Disabled in India

1. Accessible India Campaign which will focus on making India a disabled-friendly country.
2. ADIP Scheme
3. Composite Regional Centre for Skill Development, Rehabilitation and Employment of Persons with Disabilities.
4. Deendayal Disabled Rehabilitation Scheme

### Other major problems

- The 2011 census estimated that the number of people with disabilities in India is close to 2.68 crore (or 2.2% of the population).



- This number was based on the older definition of disability, yet the proportion of disabled people in the population is not different from the 2019 NSO report, which used the expanded definition of disability.
- However, the 2019 edition of disability statistics reported a slightly higher prevalence than those reported in earlier editions of the survey.
- Other metrics for evaluating disability have provided different estimates. A 2019 study by the Public Health Foundation of India found that the use of the Annual Health Survey's metrics results in a lower prevalence.
- Similarly, a group of doctors from AIIMS found that alternate questionnaires like the Rapid Assessment of Disability have resulted in a prevalence ranging from 1.6%-43.3%.
- Similarly, a group of doctors from AIIMS found that alternate questionnaires like the Rapid Assessment of Disability have resulted in a prevalence ranging from 1.6%-43.3%.

### Conclusion

- In India, the numbers of disabled are so large, their problems are complex, available resources also scarce, social stigma still attached and people attitudes so damaging.
- Attitudinal barriers engrained as part of India's historical response to disability must be changed through education programs for both teachers and the general populace. These programs require financial and collaborative commitment from key national and state education stakeholders, and partnership with universities to support research-based initiatives.
- It is the only legislation which can eventually bring about a substantial change in a uniform manner.
- Therefore, in country like India mainstreaming of these people is challenging issue. For achieving this task it's necessary to change public attitudes, remove social stigma, provide barrier free environment, needs reformation in the area of policy and institutional level.



**Prelims 2021**

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## ECONOMY

### 100% FDI in DTH Services

#### News Excerpt

The Union Cabinet has approved 100% FDI in Direct to Home (DTH) services. Cabinet also approved extension of license period from 10 to 20 years and reduced license fee.

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#### Prelims Bites

- The first DTH service in the country was launched by Dish TV on 2 October 2003.
- DD Free Dish, the first free DTH service in India, was launched by public broadcaster Prasar Bharati in December 2004.
- Presently, India is the largest DTH market in the world by number of subscribers.
- The Department of Space (DoS) requires all DTH operators in India to only use satellites commissioned by the Indian Space Research Organisation (ISRO). DTH operators may use capacity leased by ISRO from foreign satellites only if sufficient capacity is not available on ISRO satellites.
- Satellite transmission of television channels is usually done using two types of bands: **C band** with frequencies ranging from 4.0 to 8.0 gigahertz and **Ku Band** with frequencies ranging between 12 to 18 gigahertz.
- Apart from approving 100% FDI in DTH service, the government has also extended the license period from 10 to 20 years and reduced the license fee.

#### Analytica

DTH services were permitted by the NDA government in November 2000. The ministers made key recommendations to governing DTH services:

- No single entity, either private or state-owned, should be permitted a monopoly in DTH services;
- The vertical integration of DTH and cable television services should be monitored in order to prevent the formation of a monopoly in television distribution;
- The vertical integration of DTH operators and television channels should be avoided in order to ensure fair competition among TV channels.

#### **PEPPER IT WITH**

OTT Platform, Communication Satellite by ISRO, Bharat Net, Ghartak Fiber Scheme.

In recent past the Commerce Ministry had already spoken of 100% FDI in the DTH sector, but because of the guidelines issued by the Information and Broadcasting [I&B] Ministry, the FDI was limited to 49%.

- This aberration was now corrected by Information and Broadcasting Ministry through this fresh approval.
- The licence fee had also been reduced in keeping with the rates in the telecom sector.
- A statement from the Information and Broadcasting Ministry said the proposed reduction was intended to align the licence fee regime applicable to the telecom sector and would be prospectively applied.

#### DTH vs Cable TV

- ✓ *DTH* is an acronym for 'Direct to Home' service. It is a digital satellite service that provides television viewing services directly to subscribers through satellite transmission anywhere in the country.
- ✓ Before DTH, most households used cable TV for broadcasting services. One of the perk which the cable TV subscribers enjoy is continued entertainment. While during heavy rains, DTH connections might be disturbed and could go through some trouble, cable TV connections don't go through this problem, and even in bad weather, the subscribers can be assured of a continued stream of channels on their TV screen.
- ✓ On the technical side of things, the difference between cable TV and DTH appears in the transmission methods of both, as the former still uses analogue transmission while the latter solely depends on digital transmission.

## Ponzi Schemes

### News Excerpt

The Navi Mumbai Crime Branch has recently arrested nine people, including a Goa policeman, for allegedly running a Ponzi investment scheme in Mumbai and Navi Mumbai.

The accused told people that if they invested ₹13,000, the company would take ₹3,000 while the remaining amount would be used in a multi-level marketing programme. Hence, with an investment of ₹13,000, one could get ₹1 lakh in return within one-and-a-half months using the investor's referrals.

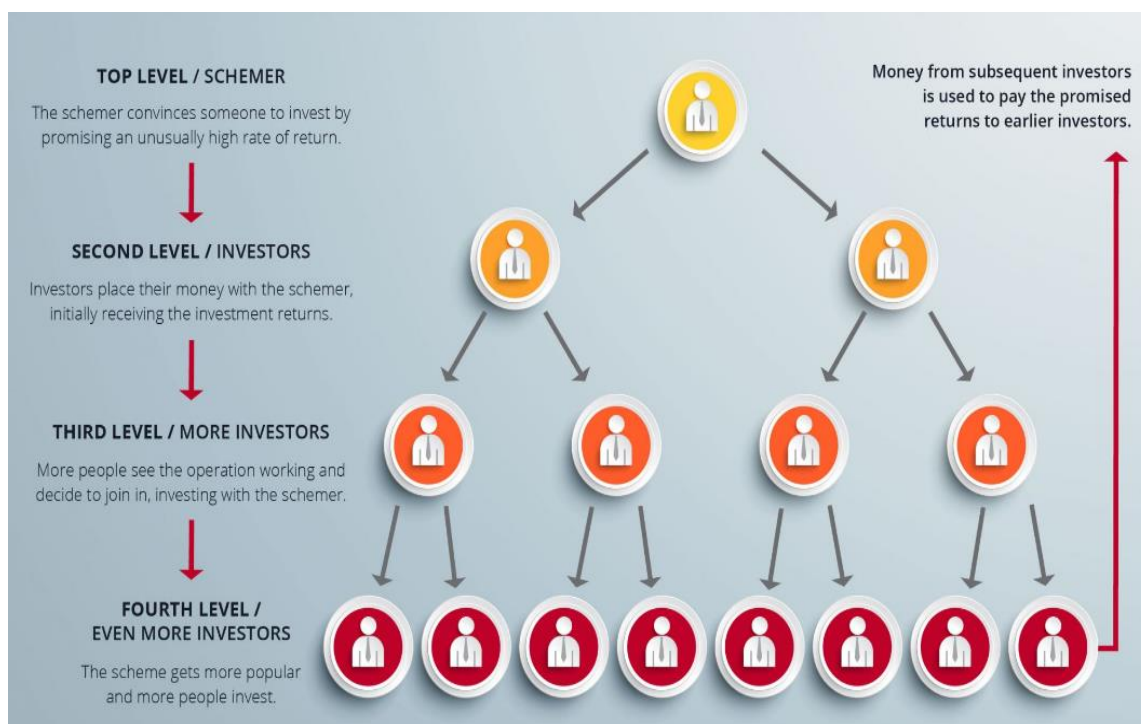
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### What is a Ponzi scheme?

- Ponzi scheme is named after Charles Ponzi, who used to dupe investors and became notorious for using the technique in the 1920s.
- A Ponzi scheme is a fraudulent investing scam which generates returns for earlier investors with money taken from later investors. This is similar to a pyramid scheme in that both are based on using new investors' funds to pay the earlier backers.
- The scheme is dependent on maximizing profit from new investors. The scheme leads victims to believe that profits are coming from product sales or other means, and they remain unaware that the later investors are the source of their returns.
- What makes them attractive is the promise of high returns in short period. The people who run such schemes try to win the trust of their investors by conducting various seminars in five starhotels, offering holiday packages and gifts to relatively new investors on old investor's money.
- Often an investor is given a target to associate certain number of new investors in order to claim their money or to gain any package or gift.

#### PEPPER IT WITH

Chit Fund Schemes, Peer to Peer lending, Economic Bubble, and Pyramid scheme.



### Government measures to stop such schemes

- The Banning of Unregulated Deposit Schemes Bill, 2019 was introduced in Lok Sabha by the Minister of Finance in 2019. The Bill provides for a mechanism to ban unregulated

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deposit schemes and protect the interests of depositors. It also seeks to amend three laws, i.e., the Reserve Bank of India Act, 1934, the Securities and Exchange Board of India Act, 1992 and the Multi-State Co-operative Societies Act, 2002.

- The bill seeks to prevent unregulated entities from collecting deposits and duping the poor and the gullible of their hard earned savings, such as Ponzi schemes. The Bill covers previously existing gaps in legislation that had been exploited by various parties to siphon large amounts of money away from small investors.
- The Parliament also passed the Chit Funds (Amendment) Bill, 2019. It will streamline operations of **collective investment schemes or chit funds**, with the aim to protect investors that primarily comprises economically weaker sections of the society.
- Better regulation and banning some of the schemes is the first step.

### Zero coupon bonds: Innovative Govt tool to fund PSBs, keep deficit in check

#### News Excerpt

The Centre has resorted to a novel recapitalisation exercise to provide ₹5,500-crore support to state-owned listed Punjab & Sind Bank to shore up its regulatory capital and help enhance exposure limits, thereby improving the lending capacity of the bank.

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#### Prelims Bites

- A zero-coupon bond is also known as an accrual bond.
- These bonds are not tradable; the lender has kept them in the HTM bucket (**HTM** securities are purchased to be **owned until maturity**), not requiring it to book any mark-to-market gains or losses from these bonds.
- There is no coupon that is no interest attached to the bond, it is zero coupons, and it is issued at par and will be paid at the end of the specified period.
- The difference between the purchase price of a zero-coupon bond and the par value indicates the investor's return.

#### Analytica

- The significant aspect of issuing such bond is that the capital support will be achieved without the government really infusing funds (no cash outgo) in the bank.
- Thus, the issuance of these special bonds will **not affect the fiscal deficit** while at the same time **provide much needed equity capital to the bank**.
- Unlike the recapitalisation bonds which carried interest and were sold to different banks, these “non-interest bearing, non-transferable special GOI securities” have a maturity of 10-15 years and issued specifically to Punjab & Sind Bank.
- Zero coupon bonds by private companies are normally issued at discount and are tradable, but since these special bonds are not tradable these can be issued at par.
- The government’s move to inject equity in banks have received praise as it buys time for the ailing banking sector but still this doesn’t solve the problem permanently. It is a financial illusion which buys you time to put your house in order. It doesn’t solve the problem permanently but gives you more time to solve it.

#### PEPPER IT WITH

Hundi, Treasury Bill, Government Security, Debentures, LoU and LoC.

### National Infrastructure Pipeline

#### News Excerpt

Recently, Union Minister Nitin Gadkari said that there are huge investment opportunities for India especially in its vibrant infrastructure sector where projects worth Rs 44 lakh crore are under implementation as part of the National Infrastructure Pipeline (NIP) of Rs 111 lakh crore.

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#### What is National Infrastructure Pipeline?

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The National Infrastructure Pipeline (NIP) is a group of social and economic infrastructure projects in India over a period of five years with an initial sanctioned amount of ₹102 lakh crore (US\$1.4 trillion). The pipeline was first made public by the Prime Minister of India during his 2019 Independence Day speech.

The government constituted a task force under **Atanu Chakraborty**, to study the prospect of National Infrastructure Project. Important recommendations and observations made was submitted on 29<sup>th</sup> April 2020. They were:

- Investment needed: ₹111 lakh crore (US\$1.6 trillion) over the next five years (2020-2025) to build infrastructure projects and drive economic growth.
- Energy, roads, railways and urban projects are estimated to account for the bulk of projects (around 70%).
- The centre (39 percent) and state (39 percent) are expected to have an almost equal share in implementing the projects, while the private sector has 22 percent share. Aggressive push towards asset sales.
- Monetisation of infrastructure assets. Setting up of development finance institutions.
- Strengthening the municipal bond market.

#### PEPPER IT WITH

Sagarmala project, Bharatmala project, SetuBharatam project, Golden Quadrilateral, Dedicated Freight Corridor

The task force has also recommended setting up of the following three committees:

Committee to monitor NIP progress and eliminate delays. Steering Committee at each ministry level to track implementation. Steering Committee in DEA for raising financial resources for the NIP.

#### Recent developments

- The NIP fund has been revised to Rs 111 lakh crore on infrastructure projects by the year 2024-25.
- Projects worth Rs 44 lakh crore are under implementation as part of the National Infrastructure Pipeline (NIP) of Rs 111 lakh crore.
- At present the framework of NIP includes 39% investment by the central government, 40% investment by states and 21% by the private sector.
- Under the programme, investments worth Rs 25 lakh crore are envisaged in the energy sector, Rs 16 lakh crore is envisaged in irrigation, rural agriculture and food processing, 20 lakh crore is envisaged in the highways sector, Rs 16 lakh crore each in mobility and railways and an investment of Rs 14 lakh crore is envisaged on digital infra among others.

#### Way Forward

Infrastructure is the lifeline of a flourishing economy as it is responsible for establishing effective and efficient forward and backward linkages, storage facilities, communication channels etc. Thus National Infrastructure Project is an ambitious step in right direction which will help India to boost its economic potential.

#### Bad Bank

##### News Excerpt

The banking sector, led by the Indian Banks Association, had recently submitted a proposal for setting up a bad bank to the finance ministry and the RBI.

##### Why Bad Bank now?

- The Corona Virus pandemic will have negative effect on growing NPAs. This soaring NPA will affect bank's balance sheet and their function of lending will get affected because they will have to maintain healthy Capital Adequacy Ratio.
- Various analysts suggest that India may undergo a phase of recession during post-Covid, the proportion of stressed assets in the banking system could jump to as high as 18 per cent from around 11 per cent at present. To tackle this upcoming challenge, the banking industry has proposed the setting up of a government-backed bad bank.

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- A bad bank buys the bad loans and other illiquid holdings of other banks and financial institutions, which clears their balance sheet.
- This was based on an idea proposed by a panel on faster resolution of stressed assets in public sector banks headed by former PNB Chairman Sunil Mehta.

### Benefits

- Banks can better focus on lending: High level of non-performing assets (NPAs) makes the lending difficult for banks, as they have to keep supplementary capital (CAR) as per Basel Accord.  
The NPA reduces its capital base i.e. money available for lending and the resulting losses erode depositor confidence — the lifeblood of any bank.
- Banks themselves hesitate to lend money because they may fall into Prompt Corrective Action of RBI. Thus there is slump in investment which in turn affects the GDP, job creation and the economic development.
- Bad bank absorbs NPAs of all Banks, will ease the provisioning requirement by the banks and help them to get on with business as usual. Also these banks work as Asset Reconstruction Company having expertise in managing and selling NPAs.
- The creation of a bad bank allows the segregation of a bank's good assets from its bad assets. This allows investors to assess its financial health with greater clarity and for banks to grow financially.
- Further a government-led initiative may make it more attractive opportunity for investors to invest their money.

### Not a solution to underlying problem

- ✓ Creation of bad banks shifts NPAs from one government pocket to another. It does not deal with the main problem-creation of NPAs.
- ✓ Without required reforms in the banking sectors, the banks will continue lending in previous manner creating new NPAs.
- ✓ Thus more concerted reforms are required in the banking sector. Insolvency and Bankruptcy Code like reforms in Banking sector and reducing government interference in public sector banks will go a long way to address the real issues.

#### PEPPER IT WITH

Prompt Corrective Action, Basel Accord, CAR, Asset Reconstruction Company, Insolvency and Bankruptcy Code

## Assets Under Management (AUM)

### News Excerpt

CRISIL top executives have observed that first time in more than a decade, assets under management (AUM) of non-banking financial companies (NBFCs) heading for a contraction in the current fiscal are set to grow again at a relatively subdued 5-6% next fiscal. The turnaround will be led by larger entities with stronger parentage.

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### Highlights

- Despite an estimated GDP growth of 10% next fiscal, the overall NBFC sector growth is likely to be slower because access to funding remains a challenge due to concerns about the impact of the pandemic on asset quality.
- Additionally, competition is expected to be more intense from banks which are flush with low-cost deposits and better placed with improved capital buffer than in the previous years.

### What is Asset Under Management?

Assets under management (AUM), also called funds under management, is the total market value of the securities a financial institution (such as a bank, mutual fund, or hedge fund) owns or manages on behalf of its clients. In the calculation of AUM, generally financial institutions include bank deposits, mutual funds, and cash in their calculations.

#### PEPPER IT WITH

Rating Agencies, Purchaser Manager's Index, Index of Industrial Production, CRISIL

### Why Assets Under Management are Calculated

- The total value of AUM is a measure of the size of a financial institution and a key performance indicator of success, as a larger AUM generally translates into larger revenue in the form of management fees.
- That's why financial institutions look at the value of AUM and compare it to competitors and to their own history to assess business trends.
- The way institutions or investors calculate assets under management can differ slightly. Some banks may include deposits and cash, mutual funds, and their calculations. Other institutions consider only the funds under discretionary management, which the institution can use to trade on behalf of the clients.

### Assets Under Management as a Measure of Success

Whether we are dealing with banks, asset managers, insurance companies, or other financial institutions, the size of AUM is a measure of the company's success. That's because it is generally correlated with other (Key Performance Indicator) KPIs.

- ✓ A larger AUM is generally correlated with higher revenue if ROA is constant or doesn't change significantly.
- ✓ The size of AUM is also a measure of prestige for the institution and its management, as asset managers and banks will usually be ranked based on this metric.
- ✓ Moreover, the management's compensation and bonus packages often depend on the size of AUM.

## Economy on path of V shaped recovery

### News Excerpt

Recently a Finance Ministry Report stated that the Indian economy is witnessing V-shaped recovery. Finance ministry's monthly outlook report for November also observed another wave of Covid is a downside risk, but there's growing optimism thanks to vaccines and other factors.

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### Important observations

- The year-on-year GDP contraction of 7.5 per cent in Q2 of 2020-21 underlies a quarter-on-quarter surge in GDP growth of 23 per cent. This V-shaped recovery, evident at the half-way stage of 2020-21, reflects the resilience and robustness of the Indian economy.
- The fundamentals of the economy remain strong as gradual scaling back of lockdowns, along with the support of the Atmanirbhar Bharat Mission, has placed the economy firmly on the path to recovery.
- There is a downside risk of the spread of a second wave of Covid-19, but said there is a growing optimism that the Indian economy will not see the sharp contraction of 23.9 per cent seen in the April-June quarter.
- The prospects of a vaccine are encouraging but we need to remain on guard till it is approved and permeates to a large section of the population.
- Growth drivers for the Indian economy have been agriculture, followed by construction and manufacturing, and added that "services dependent on human mobility and contact will bide their time to reach pre-pandemic levels before the fear of contagion declines to manageable levels, addressed among others, by the emergence of a vaccine".

#### PEPPER IT WITH

Cyclic nature of recession, Philip curve, Lafer curve, Lorenz curve, Ginni Index

### Types of Economic Recession Recoveries

**V shaped recovery:** A V-shaped recovery is characterized by a quick and sustained recovery in measures of economic performance after a sharp economic decline. Because of the speed of economic adjustment and recovery in macroeconomic performance, a V-shaped recovery is a best case scenario given the recession.

**U shaped recovery:** A U-shaped recovery represents the shape of the chart of certain economic measures, such as employment, GDP, and industrial output. This shape occurs when the economy experiences a sharp decline in these metrics without a clearly defined trough but instead a period of stagnation followed by a relatively healthy rise back to its previous peak.

**J shaped recovery:** A J-shaped recession implies a steep drop in growth followed by a slow rebound over a long period of time; if the drop-off in growth occurs over two quarters, the rebound in growth usually takes place over several years thereafter.

**L shaped recession:** An L-shaped recession implies a steep drop in growth followed by no recovery. Consumers and businesses are irreparably harmed, and the economy enters into a 'new normal' of lower output for a number of years. This is also known as 'the hockey stick pattern.' The Great Depression is an example of an L-shaped recession (a depression is a severe, prolonged recession). High unemployment reigns while bankruptcies and insolvencies are persistent. This would be the worst case scenario for any economy emerging from a recession.

**Prelims  
2021**

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**INTERNATIONAL RELATIONS****India-Bangladesh****News Excerpt**

India's Prime Minister Narendra Modi and his Bangladeshi counterpart Sheikh Hasina recently launched a railway link between the two countries. This new railway link highlights the warm ties between the two countries.

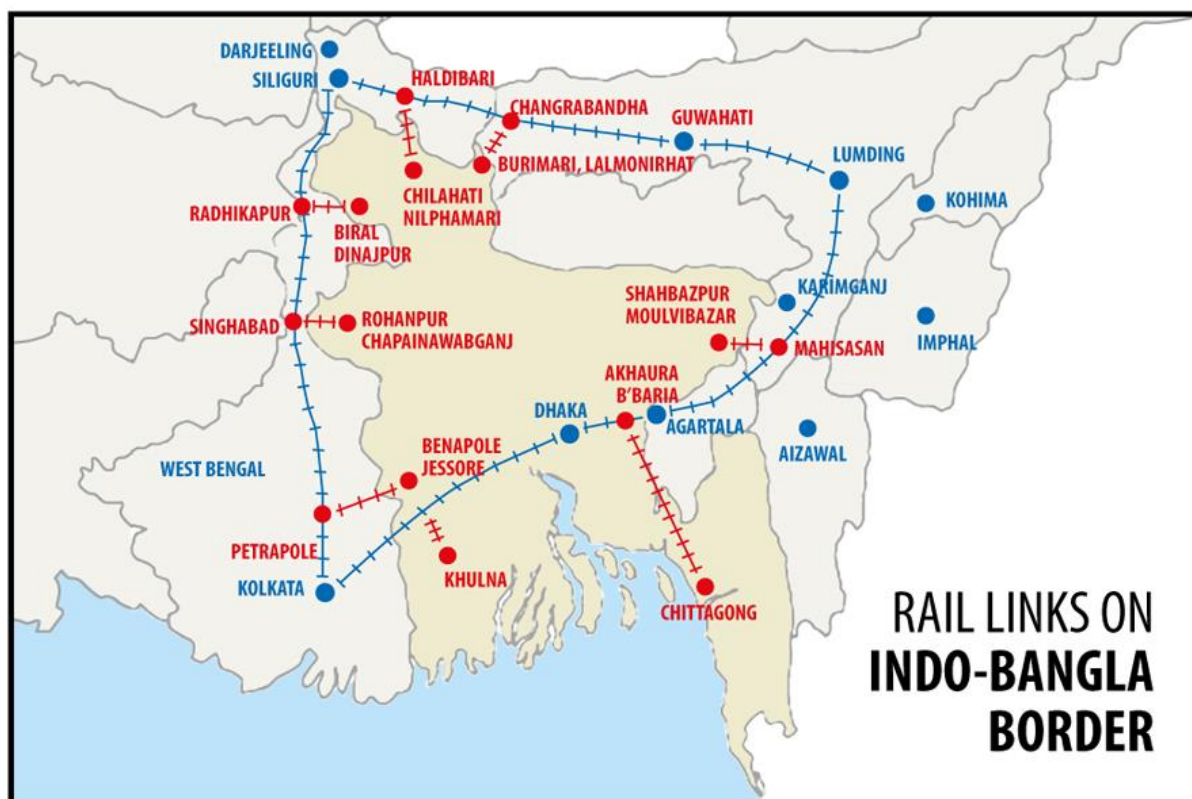
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**Background of India-Bangladesh relations**

- India and Bangladesh share historical, civilizational and cultural ties; Bengali, which is spoken in both countries, is a strong bond. Humanitarian approach has been the foundation of the bilateral relationship, and at the same time celebrating shared heritage and culture bonds the two countries.
- Even after it broke away from Pakistan to emerge an independent country in 1971, trans-border links remained severed, a reflection of the deeply troubled bilateral ties between India and Bangladesh in the period between 1975 and 1996.
- It was only after the Awami League came to power in Bangladesh in 1996 that bilateral ties began improving. Bilateral relations have generally been warm, especially when the Awami League has been in power in Bangladesh.

**India-Bangladesh Bilateral ties in recent times**

- Some of the areas of cooperation are connectivity, infrastructure, maritime security and development partnerships, amongst others. In this regard, a 12-km Chilahati-Haldibari rail link will be jointly inaugurated by the two prime ministers — making it the 5th railway link between the two countries.



- The development partnership forms a crucial part of the bilateral engagements. Today, India is a major development partner in Bangladesh with a promised assistance of US\$10 billion. Bangladesh is the highest recipient of India's developmental assistance abroad.
- Dhaka has acted robustly to address India's concerns with regard to anti-India militant groups taking shelter on Bangladeshi soil.



- However, India has failed to address Bangladesh's concerns over river water sharing; an agreement on sharing of the waters of the River Teesta remains elusive. While the question of illegal immigration from Bangladesh to India has dogged bilateral relations for decades.
- The Modi government's enactment of the Citizenship Amendment Act (CAA) and plans to implement the National Register of Citizens (NRC) has triggered apprehension over an impending exodus of Bengali-speaking people from Assam to Bangladesh.
- Pursuit of policies harmful to Bangladesh and derisive remarks about Bangladeshis by Indian ministers have severely undermined public goodwill for India in Bangladesh.
- Growth of pockets of radicalism if the repatriation of the Rohingya refugees are delayed further is a possibility. The lingering of the issue may hamper peace and stability of the region.
- The two countries have not allowed these issues to hijack the feelings of bonhomie and friendship and has always emphasized on amicably resolving their differences.
- The Chinese game of seeking to influence India's neighbours has been visible in Bangladesh too, through measures like enhancing the list of products for duty-free access into its markets and providing massive loans for development projects.

### Conclusion

During the recent India-Bangladesh virtual summit, PM described Bangladesh as "a major pillar" of India's "neighborhood first" policy. New Delhi will have to do much more than merely providing road and rail routes to improve people-to-people contact between India and Bangladesh. Close cooperation between India and Bangladesh, the two growing economies of South Asia, could significantly contribute to the peace and development of the region.

## Information Fusion Centre for Indian Ocean Region

### News Excerpt

At the Navy's Information Fusion Centre for the Indian Ocean Region (IFC-IOR) which is meant to promote Maritime Domain Awareness, three more International Liaison Officers (ILO) are expected to join soon. ILOs from France, Japan and the U.S. have already joined the centre.

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### Pre-Connect

- IFC-IOR is established with the vision of strengthening maritime security in the region and beyond, by building a common coherent maritime situation picture and acting as a maritime information hub for the region.
- The IFC has been established at Gurugram, India and is collocated with Information Management and Analysis Centre which is jointly administered by the Indian Navy and Indian Coast Guard.
- Its task is to go beyond the bilateral and collate, fuse and disseminate intelligence on 'White Shipping' in the Indian Ocean.
- Establishment of IFC- IOR would ensure that the entire region is benefitted by mutual collaboration and exchange of information and understanding the concerns and threats which are prevalent in the region.
- In addition to utilising the collective wisdom and resources towards addressing myriad challenges in the region, IFC-IOR will help interface and integrate, wherein, all partners and stakeholders would benefit from each other's best practices and expertise.
- India has launched its own Indian Ocean Region-Information Fusion Centre (IFC-IOR), which has established linkages with over 18 countries and 15 maritime security agencies.
- Information sharing can be done through direct communication and by sharing agreements between the respective maritime agencies or could find new mechanisms to work with regional information fusion centers.
- The information Exchange at the IFC-IOR would be initially undertaken by virtual means, using telephone calls, faxes, emails and video conferencing over internet. Subsequently, to enable better interconnection, quicker analysis of information and provide timely inputs, the IFC-IOR would host Liaison Officers from partner countries. Additionally, towards enhancing



capability building, the IFC-IOR would undertake conduct of exercises and training capsules in maritime information collection and sharing.

### Analytica

- The Indian Ocean Region, in view of its strategic location as also being home to a vast majority of world's population, can be considered as the economic highway that drives global commerce. With over 75% of the world's maritime trade and 50% of daily global oil consumption passing through the region; IOR is vital to world trade and the economic prosperity of many nations.
- The IOR is also a fragile environment, with threats such as maritime terrorism, piracy, human and contraband trafficking, illegal and unregulated fishing, arms running and poaching being prevalent. Hence, facilitating a conducive environment to undertake legitimate maritime activities in this region is a necessity.
- The virtual launch of the IFC-IOR centre will mark a beginning of a new era wherein collaborative, inclusive and high tech approach would be adopted to detect and deter maritime security threats of the region. The entire mechanism would comprise of ideology supported by following three pillars:-
  1. Confidence and capacity building amongst partner nations, thereby ensuring swift and accurate exchange of information pertaining to maritime security.
  2. Maintaining extensive and continuous linkages to ensure comprehensive Maritime Domain Awareness (MDA) of the region thereby achieving transparency of maritime environment.
  3. Use of high-tech including state of the art methods and analytic tools to undertake traffic analysis thereby ensuring that any emerging threats and trends are predicted in time.

#### **PEPPER IT WITH**

White shipping agreements, coastal radar chain network, India's Indo-Pacific Oceans Initiative

### Conclusion

The IFC-IOR stems from the importance of the Indian Ocean to world trade and security, and the need for the various maritime nations and organisations to collaborate towards enhancing maritime safety and security on the seas of this region. The setting up of IFC-IOR underscores the governmental approach and effort in line with the vision of Security and Growth of All in the Region (SAGAR).

## **Post-Brexit Deal**

### News Excerpt

Recently Britain's House of Commons voted to approve a trade deal with the European Union, paving the way for an orderly break with the bloc that will finally complete the U.K.'s years-long Brexit journey.

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### Pre-Connect

- The deal which was announced recently, sets out the terms for Britain's relationship with the EU after it left the trading bloc on January 31, 2020.
- The U.K.-EU Trade and Cooperation Agreement, which came into force on January 1, 2021, retains the 'zero tariffs' and quotas trade regime of the past on all imports of goods. The deal protected trade in goods but did not cover services, which account for 80% of Britain's economy.
- Northern Ireland will continue to remain within EU jurisdiction, avoiding a hardening of its border with the Republic of Ireland.
- On access for EU fisheries to British seas — a contentious issue — the agreement "recognizes U.K. sovereignty over our fishing waters".

### Analytica

- It has been four and a half years since Britain voted 52% to 48% to leave the bloc it had joined in 1973. Brexit started on Jan. 31 of this year, but the real repercussions of that decision have yet to be felt, since the U.K.'s economic relationship with the EU remained unchanged during the 11-month transition period that ends Dec. 31.

- The objective behind Brexit was to allow UK to trade and cooperate with our European neighbors on the closest terms of friendship and goodwill, whilst retaining sovereign control of our laws and our national destiny.
- According to the U.K.'s fiscal watchdog, the Office for Budget Responsibility, the current arrangement could limit the potential economic impact from Brexit to a loss of 4% of the Gross Domestic Product over the medium term, compared to a possible 6% reduction had there been no agreement.
- But the end to Britain's membership in the EU's vast single market and customs union will still bring inconvenience and new expense for both individuals and businesses — from the need for tourists to have travel insurance to the millions of new customs declarations that firms will have to fill out.
- The deal will mean profound changes for Britain's economy and society.
- The latest agreement cannot shield Britain from a costly disruption to the frictionless trade flows during the past 47 years of its EU membership, because of its decision to leave the EU's single market and customs union. An exit from the customs union means the return of customs controls at the U.K. borders and checks on rules of origin to prevent abuse of the zero-tariffs regime.
- Given London's status as the premier global financial hub, the exclusion of financial services from the agreement is likely to cause uncertainty.
- In the four-and-a-half years since the vote, Brussels has largely achieved its overarching objective of ensuring that Brexit does not set a precedent for other member states.

### Conclusion

It seems future relationship entailing a cost of exit for the U.K., just as its 47-year membership of the bloc brought vast benefits. Britain may discover that striking pragmatic compromises is the way forward to protect sovereignty and national self-interest. The latest agreement erects new barriers, rather than remove existing ones, in trade ties between London and Brussels. Even so, this limited deal is better than a "no deal" for both parties. It lays the foundation for a future partnership between Brussels and London.

## Global Alliance for Vaccines and Immunization (GAVI)

### News Excerpt

Recently the Union Health Minister Harsh Vardhan has been nominated by the Global Alliance for Vaccines and Immunisation (GAVI) as a member on its board. The GAVI Board is responsible for strategic direction and policy-making, oversees the operations of the Vaccine Alliance and monitors programme implementation.

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### Pre-Connect

- The Bill and Melinda Gates Foundation and a group of founding partners brought to life an elegant solution to encourage manufacturers to lower vaccine prices for the poorest countries in return for long-term, high-volume and predictable demand from those countries. In 2000, that breakthrough idea became the Global Alliance for Vaccines and Immunization.
- GAVI is an international organisation that was created in the year 2000 to improve access to new and underused vaccines for numerous vaccine-preventable diseases for children who live in the world's poorest countries.
- GAVI now vaccinates almost half of the world's children, giving it tremendous power to negotiate vaccines at prices that are affordable for the poorest countries and to remove the commercial risks that previously kept manufacturers from serving them.
- The GAVI Board provides a forum for balanced strategic decision making, innovation and partner collaboration.
- GAVI launched the COVID-19 Vaccines Advance Market Commitment (COVAX AMC) as the first building block of the COVAX Facility. The GAVI COVAX AMC is the innovative financing instrument that will support the participation of low- and middle-income economies in the COVAX Facility – enabling access to donor-funded doses of safe and effective COVID-19 vaccines.

### Analytica

- GAVI, the Vaccine Alliance as part of its mission to save lives, reduce poverty and protect the world against the threat of epidemics, has helped vaccinate more than 822 million children in the world's poorest countries.
- **More children survive.** The increase in immunisation has helped halve childhood mortality by preventing more than 14 million future deaths and dramatically driven down the incidence of deadly and debilitating infectious diseases.
- **Nation building thrives.** As children become healthier, they, their families, communities and countries are more able to be economically prosperous and socially stable. For every US\$ 1 invested in vaccines in Gavi-supported countries, there is a US\$ 54 return in savings from averted illness and broader societal benefits of people living longer, healthier lives. To date, GAVI supported vaccines have helped generate more than US\$ 150 billion in economic benefits since 2000.
- **Global health security improves.** In the face of global challenges, such as climate change, urbanisation, human migration, fragility and conflict, Gavi has helped countries broaden vaccine coverage and improve their health systems. This makes them less susceptible and better able to prevent disease outbreaks that pose a threat to people in these countries, protecting millions of others around the world.
- The AMC, combined with additional support for country readiness and delivery, will make sure the most vulnerable in all countries can be protected in the short term, regardless of income level.

### US Puts India on currency Manipulator Watchlist

#### News Excerpt

The United States has once again included India in its monitoring list of countries with potentially “questionable foreign exchange policies” and “currency manipulation”. This comes a year after India was removed from the watchlist in the US Treasury Department’s semi-annual foreign-exchange report to the US Congress.

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#### Pre-Connect

- This is a label given by the US government to countries it feels are engaging in “unfair currency practices” by deliberately devaluing their currency against the dollar.
- The practice would mean that the country in question is artificially lowering the value of its currency to gain an unfair advantage over others. This is because the devaluation would reduce the cost of exports from that country and artificially show a reduction in trade deficits as a result.
- The Treasury also said its “monitoring list” of countries has hit 10, with the additions of Taiwan, Thailand and India. Others on the list include China, Japan, Korea, Germany, Italy, Singapore and Malaysia.
- An economy meeting two of the three criteria in the Trade Facilitation and Trade Enforcement Act of 2015 is placed on the Monitoring List. This includes:
  1. A “significant” bilateral trade surplus with the US — one that is at least \$20 billion over a 12-month period.
  2. A material current account surplus equivalent to at least 2 percent of gross domestic product (GDP) over a 12-month period.
  3. “Persistent”, one-sided intervention — when net purchases of foreign currency totalling at least 2 percent of the country’s GDP over a 12 month period are conducted repeatedly, in at least six out of 12 months.
- The administration will also add and retain on the Monitoring List any major US trading partner that accounts for a “large and disproportionate” share of the overall US trade deficit, “even if that economy has not met two of the three criteria from the 2015 Act”.

### Analytica

- India, which has for several years maintained a “significant” bilateral goods trade surplus with the US, crossed the \$20 billion mark, according to the latest report.

- Based on the central bank's intervention data, India's net purchases of foreign exchange accelerated notably in the second half of 2019.
- In order to prevent sudden appreciation in the rupee, which in the past has led to disruptive corrections, the RBI has absorbed a large chunk of forex inflows. Since April the foreign exchange reserves have risen from \$475.6 billion to \$579 billion now. The purchase of these forex flows in turn have added to the liquidity surplus in the domestic market, prompting analysts to question whether the RBI should permit more appreciation in the rupee.
- With the tag back on, bankers now believe that it could lead to the rupee appreciating as the RBI is likely to step back from its dollar purchases. For the economy, a stronger rupee would partially offset the impact of rising oil prices on imports.
- Further, the central bank is also expected to increase diversification of its reserves.
- The RBI has stated that the value of the rupee is broadly market-determined, with intervention used only to curb undue volatility in the exchange rate.

### Conclusion

The designation of a country as a currency manipulator does not immediately attract any penalties, but tends to dent the confidence about a country in the global financial markets.

## Vodafone arbitration ruling

### News Excerpt

Recently India has challenged in a Singapore court, the international arbitration tribunal verdict that overturned its demand for ₹22,100 crore in back taxes from Vodafone Group Plc.

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### Background

- Vodafone had challenged before the arbitration tribunal the demand for ₹7,990 crore in capital gains taxes (₹22,100 crore after including interest and penalty) under the Netherlands-India Bilateral Investment Treaty (BIT).
- The demand pertained to Vodafone's \$11-billion acquisition of 67% stake in the mobile phone business owned by Hutchison Whampoa in 2007.
- In September, an international arbitration court ruled that the Indian government seeking ₹22,100 crore in taxes from Vodafone using retrospective legislation was in "breach of the guarantee of fair and equitable treatment" guaranteed under the bilateral investment protection pact between India and the Netherlands.
- The government had used a 2012 law that gave tax authorities the power to reopen past cases, to seek taxes from Vodafone and Cairn over alleged capital gains made several years ago. Both Vodafone and Cairn had challenged the tax demands under bilateral investment protection treaties and initiated arbitration.

### Analytica

- This appeal also sets the stage for the government to challenge the order of a three-members tribunal at the Permanent Court of Arbitration in The Hague that asked India to return \$1.4 billion to British oil and gas company Cairn Energy plc.
- The government believes that taxation is not covered under investment protection treaties with various countries and the law on taxation is a sovereign right of the country. While the treaties are primarily aimed at protection of investments, the tax is levied on 'returns' earned by entities.

#### PEPPER IT WITH

Permanent court of arbitration, international dispute settlement mechanism, capital gains tax, Bilateral investment treaty

### Conclusion

Any failure to learn a salutary lesson from this loss would only serve to undermine overseas investors' faith in India's commitment to international treaties and the rule of law. Such whimsical and retrospective laws will only erode India's attractiveness as destination for foreign investment that it sorely needs to create millions of missing jobs.



## OPEC+

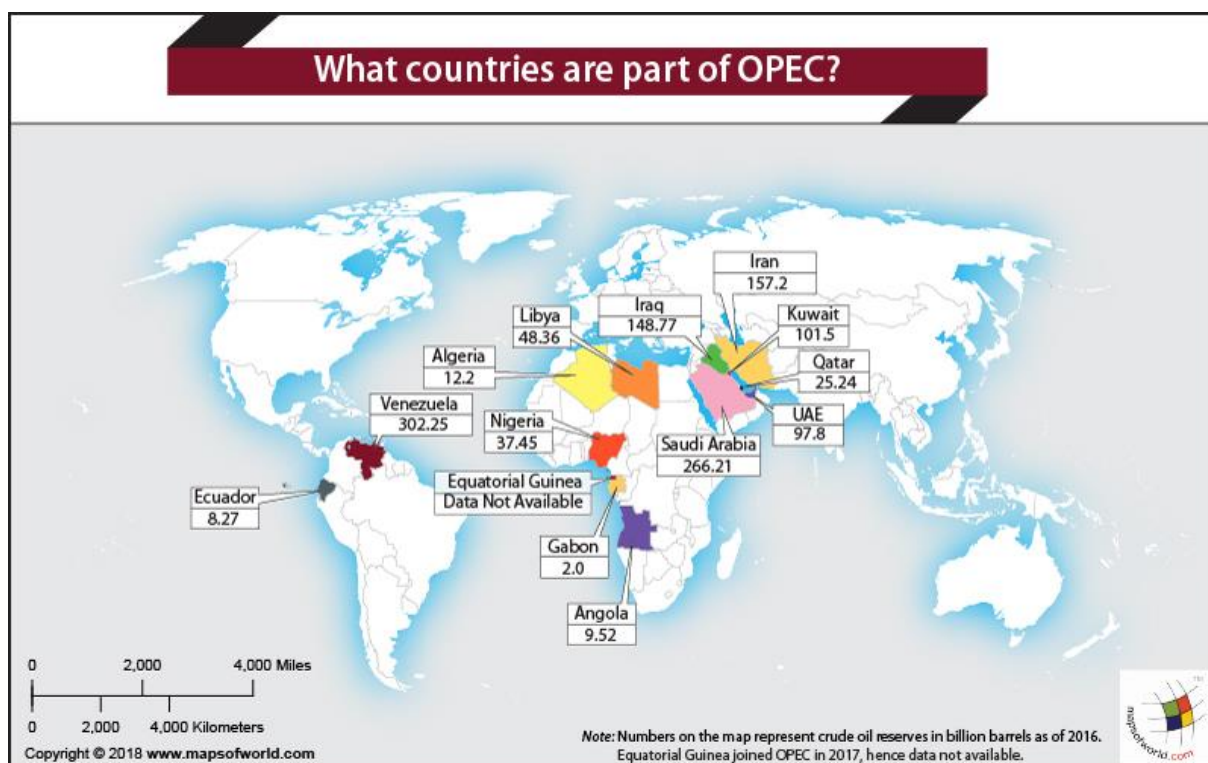
### News Excerpt

Recently talks between OPEC and its allies led by Russia was held with a majority of the group's members including Saudi Arabia opposed to Moscow's proposal to increase oil output next month.

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### Pre-Connect

- The Organization of the Petroleum Exporting Countries (OPEC) is a permanent, intergovernmental organization, created at the Baghdad Conference in 1960, by Iran, Iraq, Kuwait, Saudi Arabia, and Venezuela.
- OPEC membership is open to any country that is a substantial exporter of oil and which shares the ideals of the organization.
- As of 2019, OPEC has a total of 14 Member Countries viz. Iran, Iraq, Kuwait, United Arab Emirates (UAE), Saudi Arabia, Algeria, Libya, Nigeria, Gabon, Equatorial Guinea, Republic of Congo, Angola, Ecuador and Venezuela are members of OPEC.
- The non-OPEC countries which export crude oil are termed as OPEC plus countries.
- OPEC plus countries include Azerbaijan, Bahrain, Brunei, Kazakhstan, Malaysia, Mexico, Oman, Russia, South Sudan and Sudan.
- Russia and Saudi Arabia are respectively the second and third-biggest oil producers in the world after the United States.
- The 13 members of the OPEC cartel, led by Saudi Arabia, and their six allies led by Russia.



### Analytica

- Crude oil is almost always a basic supply and demand equation: how much oil does the marketplace need, and how much is available? This balance determines prices which, in turn, influence trade dynamics, policy decisions, environmental effects, and the bottom line for manufacturers, retailers, and shippers who are key consumers of crude oil products.
- Prior to OPEC's formation, price dynamics were often determined by a series of U.S.-dominated multinational oil companies. As OPEC has grown to include a contingent of allies, like Russia, OPEC (+), or the Vienna Alliance, now includes over 18 countries, supplying over one-third of the world's crude oil production and controlling more than 80 percent of the world's proven crude oil reserves.



- Today, these representatives meet twice a year in Vienna, Austria, where they collectively decide whether to raise or lower oil output to maintain a stable market. Such manipulation of supply has historically been an effective means of oil price control for the cartel. But this is changing in today's U.S.-centric oil market and amid crude oil price disruptions caused by the pandemic.
- With this in mind, OPEC has recently transitioned to become OPEC+. The addition of the "+" contingent of non-members indicate countries who agree to team up on organizational decisions but are not bound by true membership. The alliance now includes Kazakhstan, Mexico, and perhaps most importantly, Russia – among others.
- Historically, OPEC nations and Russia viewed each other as rivals instead of allies, with the latter as the world's third-largest oil producer behind the US and Saudi Arabia. Since December of 2018, OPEC+ members once again control most of the world's crude oil supply, combining their respective influences on the global market to influence prices.
- While this new partnership may offer additional leverage to OPEC+, fears of global economic slowdown amidst the US-China trade war may continue to overshadow the upward momentum of supply cuts.
- The OPEC+ ministerial meeting comes after oil consumption tanked in 2020 due to the COVID-19 pandemic and a price war between Saudi Arabia and Russia.
- Finally, we saw a strong demonstration of OPEC+ will and capability to manage the market, laying the groundwork for Brent's recovery to over \$50 per barrel despite remaining demand uncertainty in the market
- Russia is currently focusing on market share while a number of other countries value prices.

### Conclusion

Despite OPEC's influential history of price control, new dynamics in the global economy, and continued growth from the U.S. and other oil producers may continue to reduce OPEC's ability to manipulate prices. Regardless of how these dynamics change, understanding who OPEC is, what its role in the market intends to be, and how they make their decisions will remain important for organizations whose budgets depend on its refined products and prices.

## Refugee Crisis in Bangladesh

### News Excerpt

Bangladesh started moving a second group of Rohingya Muslim refugees to a low-lying Bhasan Char island in the Bay of Bengal, despite opposition from rights groups worried about the new site's vulnerability to floods.

### Pre-Connect

- Since 2017, more than 700,000 Rohingya refugees from Myanmar have fled to Bangladesh. This Rohingya refugee crisis is among the largest, fastest movements of people in recent history.
- The Rohingya, a mostly-Muslim minority ethnic group in predominantly Buddhist Myanmar (Rakhine state), are escaping what the United Nations has described as genocidal violence that follows decades of persecution and human rights abuses.

### Analytica

- Today, about 860,000 stateless Rohingya refugees live in the world's largest and most densely populated



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refugee camp, Kutupalong. About half of the refugees are children.

- Despite this help, the Rohingya people remain at risk, and their future is uncertain. Without recognized refugee status in Bangladesh or legal citizenship in Myanmar, they are citizens of nowhere.
- Essentially stateless, without legal rights and protection, Rohingya children and families are vulnerable to human trafficking, child labor, child marriage, gender-based violence, and other forms of exploitation and abuse.
- The influx of almost 1 million Rohingya profoundly affected local communities — already among the poorest in Bangladesh. The refugee population is now almost triple that of the host community.
- The crisis has also acquired a security dimension with concerns being raised over the infiltration of Islamic extremism amongst the Rohingyas, who have grown increasingly desperate over their plight. The massive refugee outflow has created a serious humanitarian crisis that carries implications on regional stability and security.

### India's approach towards the refugee crisis

- ✓ Geopolitics, security and economic interests and humanitarian concerns were key in moulding India's Rohingya response during this phase.
- ✓ In the second phase, apart from geopolitics, humanitarian concerns and non-interference in internal affairs, two other factors appeared to have driven the Indian approach—the growing security concerns and the need for diplomatic balancing between Bangladesh and Myanmar.
- ✓ Delhi's approach in the third phase was probably driven by the need to find a role for itself in finding a resolution to the crisis by strengthening its quiet diplomacy. The phase began soon after China stepped in with its “three-step solution” to the Rohingya crisis and the subsequent signing of the repatriation agreement between Bangladesh and Myanmar. Delhi's assessment perhaps was shaped by its calculation that any delay in stepping up its role might allow other players to leverage the situation for geopolitical gains, at the cost of its own interests.
- ✓ Lack of a national policy framework on refugees has complicated India's handling of the Rohingya crisis.
- ✓ Three issues emerge from the above analysis of the two views on India's Rohingya approach.
  1. The way India has handled the Rohingya crisis has raised questions on its democratic credentials.
  2. India's reservations in taking the lead may have already undermined its regional and global leadership aspirations.
  3. The approach may have served short-term security goals, but concentration of thousands of desperate people in the neighbourhood could create a fertile breeding ground for radicalisation.

### Conclusion

- At the national level, India needs to ensure that no Rohingya refugee in India is deported back to Myanmar until it is safe to do so. At the same time, ensuring basic amenities in refugee camps will be critical.
- At the bilateral level, while maintaining a constructive engagement with Myanmar, Delhi has to convey to the Myanmar that the only solution to the Rohingya crisis is the safe return of the refugees to Myanmar. Towards this end, India has operationalised the MoU on Rakhine State Development Programme signed in December 2017.
- On a regional level, Delhi may use BIMSTEC as platform to strengthen the grouping's growing security cooperation with the member states and offer financial assistance to the BIMSTEC Secretariat to play a role in humanitarian assistance and socio-economic development in Bangladesh and Myanmar.
- Such a symbolic gesture may provide an opportunity for Delhi to stress the role of cooperation among the BIMSTEC members and create a precedent on how the subregional grouping approaches bilateral issues affecting its member-states.

## ENVIRONMENT

### E20 Fuel and bio-Ethanol

#### News Excerpt

Recently, the government has proposed the adoption of E20 Fuel standards to promote bio fuel like ethanol.

#### Pre-Connect

#### **Ethanol Blending Programme of India:**

- Ethanol Blended Petrol (EBP) programme was launched in 2003. The programme sought to promote the use of alternative and environment friendly fuels and to reduce import dependency for energy requirements.
- The Government directed the Oil Marketing Companies (OMCs) to sell 5% Ethanol Blended Petrol subject to commercial viability as per Bureau of Indian Standards specifications in notified 20 States and 4 UTs with effect from 2006.
- The current permissible level of blending is 10% of ethanol though India reached only 5.6% of blending.

#### About E20 Fuel

- E20 is a blend of 20% ethanol with 80% of gasoline and can be used as an alternate to the fuels currently available.
- Ethanol is a biofuel (bio-ethanol) and a common by-product of biomass left by agricultural feedstock such as corn, sugarcane, hemp, potato, etc.
- E20 fuel is likely to emit less emission, less primary pollutants, reduced amount of carbon mono oxide and hydrocarbons which can attributed to the secondary pollutants whose are more harmful for environment including human.

Biofuel is a type of renewable energy source derived from microbial, plant, or animal materials. Biofuels can be solid, liquid, or gaseous.

1. Ethanol: often made from corn in the United States and sugarcane in Brazil
2. Biodiesel: sourced from vegetable oils and liquid animal fats
3. Green diesel: derived from algae and other plant sources

#### Benefits of E20 fuel

- In long term this initiative would reduce import dependency on oil. For instance- One crore lit of E10 saves Rs.28 crore of forex at current rates. The ethanol supply year 2017-18 is likely to see a supply of around 150 crore litres of ethanol which will result in savings of over Rs.4000 crore of forex. Thus, proving economic security along with energy security. Adoption of E20 standards will fetch the more sustainability.
- This initiative would contribute more to the Cleaner Environment. For instance- One crore lit of E-10 saves around 20,000 ton of CO2 emissions. There will be lesser emissions of CO2 to the tune of 30 lakh ton. By reducing crop burning & conversion of agricultural residues/wastes to biofuels there will be further reduction in Green House Gas emissions. E20 will save twice of CO2 emissions, as compared to the present level.
- By adopting new standards, agricultural residues/waste which otherwise are burnt by the farmers can be converted to ethanol and can fetch a price for these waste if a market is developed for the same. Also, farmers are at a risk of not getting appropriate price for their produce during the surplus production phase. E20 initiative would encourage the demand to supply more and more agricultural residues/waste. Hence the issue of air pollution can be curbed to some extent.
- India's dependency on fossil fuels to meet its growing energy demands has been on the decline owing to their limited supply and concerns about associated pollutants. Having ratified the Paris Climate Agreement, this initiative would support India's commitment to transition to a low carbon economy.

#### **PEPPER IT WITH**

NBCC, Bio-crops, jatropha cultivation, automobile Industry emission standards, mass emission standards (BS emission)

- Biofuels in India are of strategic importance as it augers well with the ongoing initiatives of the Government such as Make in India, Swachh Bharat Abhiyan, Skill Development and offers great opportunity to integrate with the ambitious targets of doubling of Farmers Income, Import Reduction, Employment Generation, Waste to Wealth Creation and it would promote Indigenizing of Ethanol technologies.

### Key Concerns

- ✓ Currently, domestic production is not sufficient to meet the demand for bio-ethanol for blending with petrol at Indian OMCs. Any disruption in sugar mills supply chain would have a direct implications on availability of bio-ethanol, and consequently on E20 fuel.
- ✓ Sugar mills are the key domestic suppliers of bio-ethanol to OMCs, were able to supply only 57.6% of the total demand. Moreover, Sugar mills do not have the financial stability to invest in biofuel plants.
- ✓ The prices of both sugarcane and bio-ethanol are set by the central government. Sugar and Sugarcane both have political mileage; any political move would create greater disruption and can give deep blow to the initiative like E20 Fuel.
- ✓ Achieving 20% blend rate would require India to divert an extra one-tenth of its net sown area towards non-food crops.
- ✓ Recently, Government allows use of food crop to produce bio-ethanol. This seems to be contentious because on Global Hunger Index, the performance of India is not optimal. Diversion of food crops may invite serious implications not only on food security but also on access to food.
- ✓ Although the end product-Ethanol is a cleaner fuel but the process involve in its processing for instance-distilling fermentation have some negative consequences on environment.
- ✓ Water footprint, that is water required to produce a litre of ethanol, includes rainwater at the root zone used by ethanol-producing plants such as sugarcane, and surface, ground water, and fresh water required to wash away pollutants.
- ✓ Adoption of E20 fuel standards will require some up gradation in automobile engines. This move raise concern as the automobile industry already suffers due to low demand resulted out from economic contraction. Additionally, up gradation will enhance the cost of raw material and Thus the demand could be less. So the employment opportunities created by E20 Fuels' Infrastructure could offshoot if economy and demand could not revive.

### Way Forward

- To ensure sustainability, there is dire need to bridge the gap in oil supply value chain. This technology needs to be picked up to make it as a game changer. Moreover, only surplus food crops should be used for fuel production, if at all. Producing ethanol from crop residue will then be a good alternative.
- Government should put forth concerted efforts to either increase sugarcane yield and decrease water usage through better irrigation practices, or increase the ethanol production capacity of bio-refineries. Trying to increase blending without these efforts can encroach upon land and water available for food production.

## Tso Kar Wetland Complex

### News Excerpt

Ladakh's Tso Kar wetland has been added to the list of recognised sites of international importance under the treaty of Ramsar Convention. Now, India has 42 wetlands, the highest in South Asia.

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### Pre-Connect

- The Ramsar Convention on Wetlands defines wetlands as “areas of marsh, fen, peat, and or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed six meters.
- The Ramsar Convention, signed in 1971 in the Iranian city of Ramsar, is one of the oldest accords for preserving wetlands.



- The Montreux Record is a register of wetland sites on the List of Wetlands of International Importance where changes in ecological character have occurred, are occurring, or are likely to occur as a result of technological developments, pollution or other human interference. It is maintained as part of the Ramsar List.

### About Newly Added Wetlands

- The latest site to be added in the list is a high-altitude wetland complex in Changthang region of Ladakh. The complex is a notable example of two connected lakes in Upper Indus Biogeographic region, **the freshwater Startsapuk Tso and the hypersaline Tso Kar**.
- The name Tso Kar refers to the white salt efflorescence on the margins of the lake caused by the evaporation of the saline waters.
- The local climate is arid, and glacial meltwater is the primary water source for the lakes.
- The Tso Kar Basin is an A1 category Important Bird Area (IBA) as per Bird Life International and a key staging site in the Central Asian Flyway.
- The site is also one of the most important breeding areas of the black-necked crane (*Grus nigricollis*) in India.
- This IBA is also the major breeding area for great crested grebe (*Podiceps cristatus*), bar-headed geese (*Anser indicus*), ruddy shelduck (*Tadorna ferruginea*), brownheaded gull (*Larus brunnicephalus*), lesser sand-plover (*Charadrius mongolus*) and many other species.
- The lakes and in particular the presence of fresh water attract biodiversity in a biologically sparse region. Inhabiting the Site are numerous threatened species including the endangered saker falcon (*Falco cherrug*) and Asiatic wild dog or dhole (*Cuon alpinus laniger*), and the vulnerable snow leopard (*Panthera uncia*).
- During autumn migration, the Tso Kar Basin becomes an assembling place for local breeding birds as well as a major staging spot for migrants, congregations of thousands of birds can be observed here. Apart from water birds the Tso Kar basin has been documented as the only known breeding site in India of the endangered, saker falcon (*Falco cherrug*).
- In addition to avifauna, a wide range of mammals such as the Tibetan argali (*Ovis ammon hodgsoni*), Tibetan wolf (*Canis lupus chanco*), snow leopard (*Panthera uncia*), Tibetan wild ass (*Equus kiang*) use this site and its resources.

### Role of Wetlands in Ecosystem

- Wetlands are vital for human survival. Wetlands provide values that no other ecosystem can. They are among the world's most productive environments; cradles of biological diversity that provide the water and productivity upon which countless species of plants and animals depend for survival.
- Wetlands are indispensable for the countless benefits or "ecosystem services" that they provide humanity, ranging from freshwater supply, food and building materials, and biodiversity, to flood control, groundwater recharge, and climate change mitigation.
- The combination of shallow water, high levels of nutrients and primary productivity is ideal for the development of organisms that form the base of the food web and feed many species of fish, amphibians, shellfish and insects. Many species of birds and mammals rely on wetlands for food, water and shelter, especially during migration and breeding.
- Wetlands' microbes, plants and wildlife are part of global cycles for water, nitrogen and sulfur. Wetlands store carbon within their plant communities and soil instead of releasing it to the atmosphere as carbon dioxide. Thus wetlands help to moderate global climate conditions.
- Wetland is important for water quality improvement, flood protection, shoreline erosion control, opportunities for recreation and aesthetic appreciation and natural products for our use at no cost. Protecting wetlands can protect our safety and welfare.

#### PEPPER IT WITH

National Lake conservation programme, wetland conservation rules, Wildlife (Protection) Act - 1972, National Biodiversity Authority

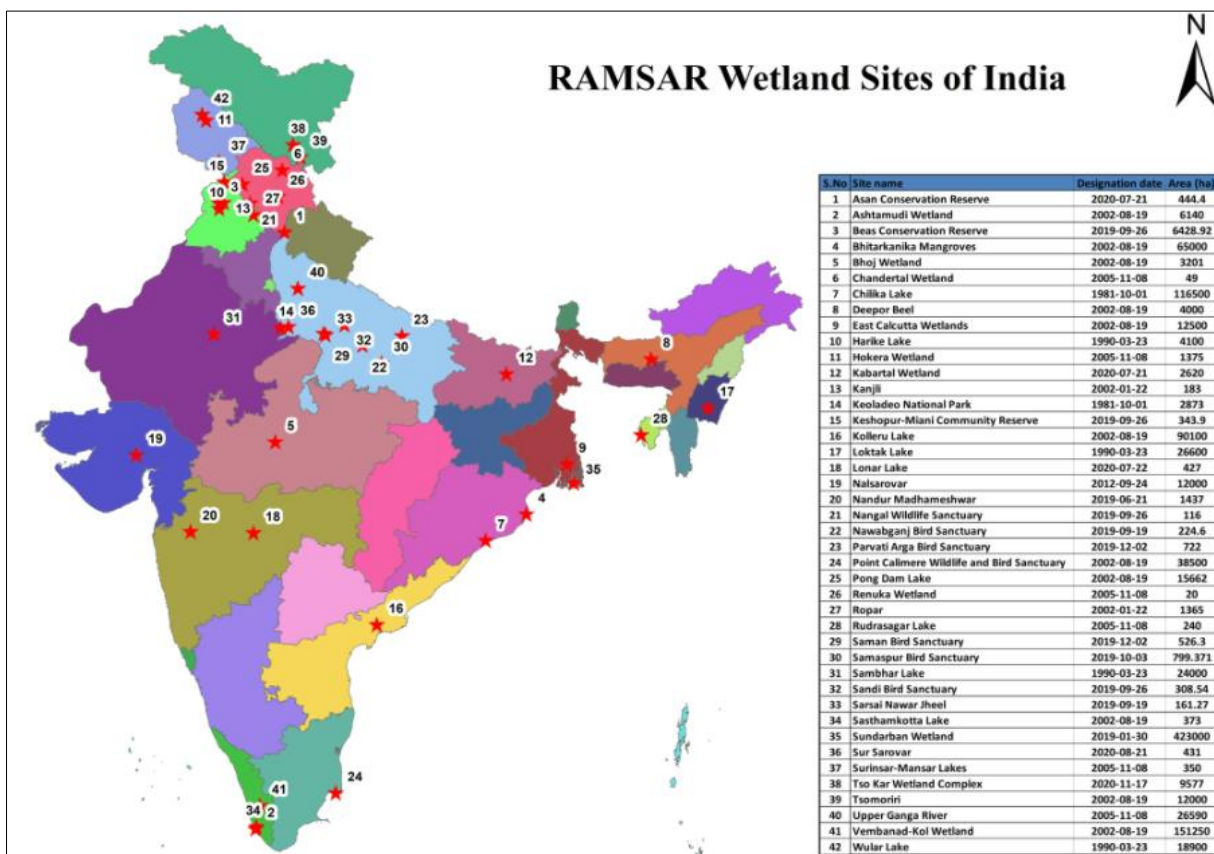
### Way Forward

- ✓ India, in spite of being a signatory to the Ramsar Convention on Wetlands and the Convention of Biological Diversity, there is no significant development towards sustaining these



ecosystems, either due to lack of coordination among agencies involved or lack of awareness of the values of wetlands among the policy makers and implementation agencies. The entire concerned void needed to be filled with pro-active approach.

- ✓ Apart from government regulation, better monitoring mechanisms are needed to increase the knowledge of the physical, chemical and biological characteristics of wetland resources, their values and a better understanding of wetland dynamics.
- ✓ Management based on accurate knowledge and increased awareness of wetland issues involving all stakeholders and all components of ecosystem help in long term sustenance involving restoration and conservation. This would enhance the function and value of the system in terms of natural and socioeconomic factors to satisfy critical resource needs of the human population.



## Winter Solstice

### News Excerpt

Every year in the month of December an event of Winter Solstice took place, and on December 21/22—the shortest day of the year in the Northern Hemisphere is being noticed.

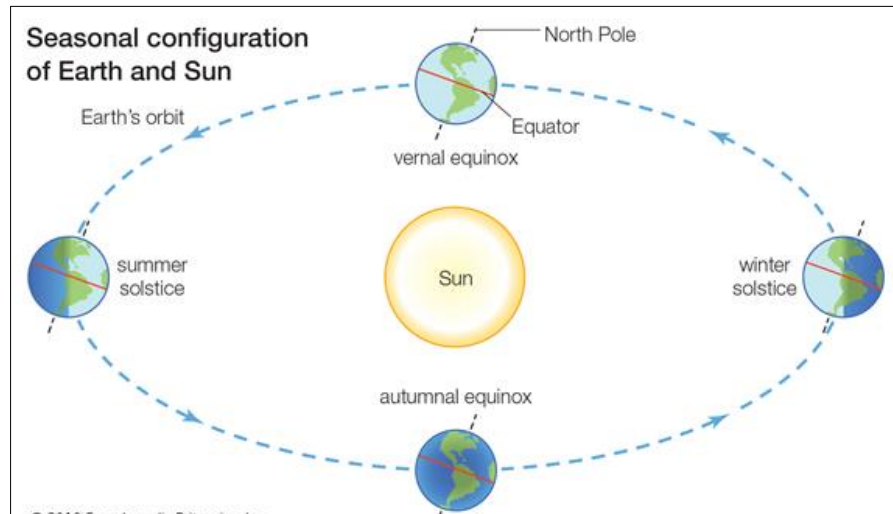
### Pre-Connect

- Solstices occur at the same time around the world, but their local times vary with time zones.
- Traditionally, summer and winter solstices helped mark the changing of the seasons—along with their counterparts, the spring and autumnal equinoxes.
- Solstices occur because Earth's axis of rotation is tilted about 23.4 degrees relative to Earth's orbit around the sun. This tilt drives our planet's seasons, as the Northern and Southern Hemispheres get unequal amounts of sunlight over the course of a year.
- From March to September, the Northern Hemisphere is tilted more toward the sun, driving its spring and summer. From September to March, the Northern Hemisphere is tilted away, so it feels like autumn and winter. The Southern Hemisphere's seasons are reversed.

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### About Winter Solstice

- In the Northern Hemisphere, the December solstice marks the longest nights and shortest days of the year. Meanwhile, the Southern Hemisphere is having short nights and long days.
- During the Northern Hemisphere's summer solstice—which always falls around June 21/22—the Southern Hemisphere gets its winter solstice. Likewise, during the Northern Hemisphere's winter solstice—which falls around December 21—the Southern Hemisphere gets its summer solstice.



- Earth's axis is tilted most closely toward the sun. The hemisphere tilted most toward our home star sees its longest day, while the hemisphere tilted away from the sun sees its longest night.

- When it's a summer solstice in the Northern Hemisphere, the sun appears directly over the Tropic of Cancer, the latitude line at 23.5 degrees North. (That's as far north as you can go and still see the sun directly overhead.)

- During the Northern Hemisphere's winter solstice, the sun appears directly over the Tropic of Capricorn, the Tropic of Cancer's southern mirror image.

- Earth's axial tilt plays a much bigger role than its near-circular orbit in governing annual seasons. Earth makes its closest annual approach of the sun about two weeks after the December solstice, during the Northern Hemisphere's winter. Earth is farthest from the sun about two weeks after the June solstice, during the Northern Hemisphere's summer.

- In the Southern Hemisphere, conversely, Summer Solstice — in places like Australia, New Zealand, or South Africa, therefore, December 22 is the year's longest day.

### Northern lights

- ❖ Northern lights are also called by their scientific name, aurora borealis, and southern lights are called aurora australis.
- ❖ The origin of the aurora begins on the surface of the sun when solar activity ejects a cloud of gas. It is referred as coronal mass ejection (CME).
- ❖ When CME collides with the Earth's magnetic field, it causes complex changes to happen to the magnetic region.
- ❖ These changes generate currents of charged particles, which then flow along lines of magnetic force into the Polar Regions.
- ❖ The Northern Lights are actually the result of collisions between gaseous particles in the Earth's atmosphere with charged particles released from the sun's atmosphere.
- ❖ Variations in colour are due to the type of gas particles that are colliding.
- ❖ The most common auroral color, a pale yellowish-green, is produced by oxygen molecules. Rare, all-red auroras are produced by high-altitude oxygen, at heights of up to 200 miles. Nitrogen produces blue or purplish-red aurora.
- ❖ These are more frequent at higher latitudes and places like Alaska, Canada, and Antarctica, closer to the Earth's poles. Occasionally, they have been seen closer to the equator, and even as far south as Mexico.
- ❖ Auroras have been observed since ancient times. The height of the displays can occur up to 1000 km (620 miles), although most are 80-120 km.
- ❖ Auroras tend to be more frequent and spectacular during high solar sunspot activity, which cycles over approximately eleven years.

### Why are the hours of daylight not the same every day?

- The reason lies in Earth's tilt. And it's not just the Earth — every planet in the Solar System is tilted, all at different angles.
- The Earth's axis of rotation is tilted at an angle of 23.5 degrees away from the perpendicular. This tilt — combined with factors such as Earth's spin and orbit — leads to variations in the duration of Sunlight that any location on the planet receives on different days of the year.
- The Earth's North Pole points towards the North Star over an extended period, as the Earth moves around the Sun through the course of a year.
- The Northern Hemisphere spends half the year tilted in the direction of the Sun, getting direct sunlight during long summer days. During the other half of the year, it tilts away from the Sun, and the days are shorter.
- Winter Solstice, December 21, is the day when the North Pole is most tilted away from the Sun.
- The tilt is also responsible for the different seasons that we see on Earth. Day occurs on the side facing the Sun, and changes to night as Earth continues to spin on its axis.
- On the Equator, day and night are equal. The closer one moves towards the poles, the more extreme the variation. During summer in either hemisphere, that pole is tilted towards the Sun and the polar region receives 24 hours of daylight for months. Likewise, During winter, the region is in total darkness for months.
- The Earth's tilt helps define some familiar imaginary lines, which are also key to determining when a Solstice occurs. These are latitudes, which are a measure of a location's distance from the Equator.
- At latitudes of 23.5° (matching the tilt) are the Tropics of Cancer and Capricorn, north and south of the Equator. At 66.5° (or 90° minus 23.5°) are the Arctic and Antarctic Circles, to the north and south. It is at latitudes higher than 66.5° (in either direction) that days of constant darkness or light occur.

#### PEPPER IT WITH

Equinox, solar flares, aphelion and perihelion, apogee and perigee of earth

#### Solar Eclipse

- ❖ A solar eclipse occurs when the moon gets between Earth and the sun, and the moon casts a shadow over Earth.
- ❖ A solar eclipse can only take place at the phase of new moon, when the moon passes directly between the sun and Earth and its shadows fall upon Earth's surface.
- ❖ There are four types of solar eclipses: total, partial, annular and hybrid. Total solar eclipses happen when the sun is completely blocked by the moon.
- ❖ Total solar eclipses are very rare events for any given place on Earth because totality is only seen where the Moon's umbra touches the Earth's surface.
- ❖ Viewing the Sun during partial and annular eclipses (and during total eclipses outside the brief period of totality) requires special eye protection, or indirect viewing methods.

#### Solstices and Eclipse

- ❖ Solstices occur twice a year — once in each hemisphere. For there to be a solar eclipse, there has to be a new moon in the sky, which happens once every 29 days. There's a 3.4% chance that both of those events will occur together.
- ❖ For solstice there is no need of a new moon (it is independent from the phases of moon), but for eclipse moon must be there in perfect alignment between the earth and the sun.

### Ammonia and its danger

#### News Excerpt

A major ammonia gas leakage was happened at Indian farmer's fertilizer Cooperative (IFFCO) unit located at Prayagraj.

#### About

- Ammonia is stored for industrial use in liquid form under high pressure or in gaseous form at low temperature, as was the case in the IFFCO unit where the accident took place.

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- The victims had come in contact with the concentrated form of ammonia gas that leaked heavily from the plant.
- A tri-hydride of nitrogen ( $\text{NH}_3$ ), ammonia is a building block for ammonium nitrate ( $\text{NH}_4\text{NO}_3$ ) that is used in agriculture as a high-nitrogen fertiliser.

### Ammonia related info

- Ammonia is one of the most widely produced chemical. In pure form, it is known as anhydrous ammonia.
- Ammonia is also produced in the human body and is commonly found in nature. It is essential in the body as a building block for making proteins and other complex molecules. In nature, ammonia occurs in soil from bacterial processes. It is also produced when plants, animals and animal wastes decay.
- Ammonia is a colorless highly irritating gas with a sharp suffocating odor.
- It dissolves easily in water to form ammonium hydroxide solution which can cause irritation and burns. Ammonia gas is easily compressed and forms a clear, colorless liquid under pressure. It is usually shipped as a compressed liquid in steel cylinders.
- Ammonia is not highly flammable, but containers of ammonia may explode when exposed to high heat.

### Ammonia gas's effects on human body

- In moderate concentration, ammonia gas can cause irritation to eyes, skin, nose and throat.
- Ammonia interacts immediately upon contact with moisture present in the skin, eyes, oral cavity, and respiratory tract to form ammonium hydroxide, which is very caustic and disrupts the cell membrane lipids, ultimately leading to cellular destruction. As cell proteins break down, water is extracted, resulting in an inflammatory response that causes further damage.
- Ammonia is highly soluble in water, is found in soil, air, and water; it is naturally present in the body and secreted by the kidneys to neutralise excess acid. However, it is highly diluted when in the environment and does not affect the human body to a noticeable level.
- This gas is toxic and affects the lungs with a possibility of causing chemical pneumonitis — inflammation of the lung caused by aspirating or inhaling irritants. Inhaling ammonia instead of oxygen can result into oxygen deficiency and death due to suffocation.

### Main uses of ammonia

- About 80% of the ammonia produced in industry is used in agriculture as fertilizer. Ammonia is also used as a refrigerant gas, to purify water supplies, and in the manufacture of plastics, explosives, fabrics, pesticides, dyes and other chemicals. It is found in many household and industrial-strength cleaning solutions. Cleaning solutions for industrial use contain higher concentrations of ammonia and can quickly cause irritation and burns.
- Ammonia is critical in the manufacturing of fertilizers, and is one of the largest-volume synthetic chemicals produced in the world. Most of the ammonia also used for the production of formaldehyde.

## International Blue Flag Certification

### News Excerpt

India eyes international Blue Flag certification for 20 more beaches.

### Key Highlights

- With the aim of turning around the 'Blue economy', India has set its eyes on winning the iconic 'blue flag' certification for maximum number of beaches to not only win the ecofriendly status but also draw more international tourists.
- While eight Indian beaches made the debut this year on the 'blue flag' certification list, the Centre is now eyeing the coveted certification for 20 more beaches.

### About Blue Flag Certification

- The 'Blue Flag' is a certification that can be obtained by a beach, marina, or sustainable boating tourism operator, and serves as an eco-label.

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- The Blue Flag is a coveted status awarded by an eminent international jury under the aegis of the Denmark based Foundation for Environmental Education.
- Stringent environmental, educational and safety criteria on 33 parameters have to be met in order to qualify for the Blue Flag status.
- The certification is awarded by eminent international jury, which comprises members of the United Nations Environment Programme (UNEP), United Nations World Tourism Organization (UNWTO), Foundation for Environmental Education (FEE) and International Union for Conservation of Nature (IUCN).
- Currently, there are over 4,600 'blue flag' sites in about 50 countries.
- India entered the 'Blue flag' league only this year with eight of its nominations—Kappad beach (Kerala), Shivrajpur (Gujarat), Ghoghla (Diu), Kasarkod and Padubidri (Karnataka), Rushikonda (Andhra Pradesh), Golden (Odisha) and Radhanagar (Andaman & Nicobar Islands)- accepted in October.
- The only other countries in Asia which have the blue flag status for its beaches are Japan, UAE and South Korea.

**INDIAN BEACHES AMONGST THE WORLD'S BEST**

1<sup>st</sup> Country to Be Awarded Blue Flag Certification for 8 Beaches in a Single Attempt



Blue Flag is awarded to the cleanest, safest & environment-friendly beaches of the world

New 'Blue Flag' beaches of India are:

1 Shivrajpur (Dwarka-Gujarat)	5 Kappad (Kerala)
2 Ghoghla (Diu)	6 Rushikonda (Andhra Pradesh)
3 Kasarkod (Karnataka)	7 Golden (Puri-Odisha)
4 Padubidri (Karnataka)	8 Radhanagar (A&N* Islands)

\*Andaman and Nicobar

### Significance

The certification also gives a big boost to the local economy and ancillary activities in the area. The Environment ministry has also launched the Beach Environment & Aesthetic Management Services (BEAMS) programme for sustainable environment management measures, pollution abatement and safety/surveillance of beachgoers. This also directly feeds into the larger effort at winning the 'blue flag' certification.

**PEPPER IT WITH**  
Coastal Regulation Zone,  
Coastal Economic Zone,  
Sagarmala Project, Blue  
Economy

## Waste to Energy

### News Excerpt

Bengaluru will begin turning a portion of its waste into energy, enabling the city to reduce the amount of garbage that ends up in landfills and reduce the burden on waste management plants.

### Key Highlights

- This plant is expected to process 600 tonnes per day of inorganic waste. Bengaluru generates close to 5,000 tonnes of waste daily, of which about 2,500 tonnes is organic, about 1,000 tonnes inert material (sweeping waste) and 1,500 tonnes inorganic.
- This inorganic material, which consists of bad quality plastics and used cloth pieces, can be processed as Refuse Derived Fuel (RDF).
- Indian entrepreneur named among 'Young Champions of the Earth' winners by UN environment agency.
- Vidyut Mohan, an engineer, is the co-founder of "Takachar", a social enterprise enabling farmers to prevent open burning of their waste farm residues and earn extra income by converting them into value-added chemicals like activated carbon on-site.

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- This material has a calorific value of more than 2,500 kJ/kg, and can be used to generate steam energy, which can be converted into electric energy.

### What is Refuse Derived Fuel

- Refuse-derived fuel (RDF) is a fuel produced from various types of waste such as municipal solid waste (MSW), industrial waste or commercial waste.
- RDF consists largely of combustible components of such waste, as non-recyclable plastics, paper cardboard, labels, and other corrugated materials.
- These fractions are separated by different processing steps, such as screening, air classification, ballistic separation, separation of ferrous and non-ferrous materials, glass, stones and other foreign materials and shredding into a uniform grain size, or also pelletized in order to produce a homogeneous material which can be used as substitute for fossil fuels.
- RDF is an useful feed for pyrolysis, gasification, and combustion since it grants a reasonably high heating value, easy transport, proper size, and a more constant and homogeneous composition.
- Different waste requires different treatments from pyrolysis to combustion, from fluffy material in fluidized bed to pellets, or briquettes in grate reactors. Thus, together with the combustion of different waste, the pyrolysis of waste tires to produce valuable oil, char, and gas products is of growing interest. Again, the most common reactors used are fixed-bed, screw and rotary kiln, vacuum, and fluid bed.

#### PEPPER IT WITH

Cyclic Economy, Pyrolysis,  
Young Champion of Earth  
Award, Stubble burning,  
recycling code

## Meteor Shower

### News Excerpt

The month of December saw Geminid meteor shower which has been considered a unique phenomenon unlike other meteor showers like Usrid, Perseid etc.

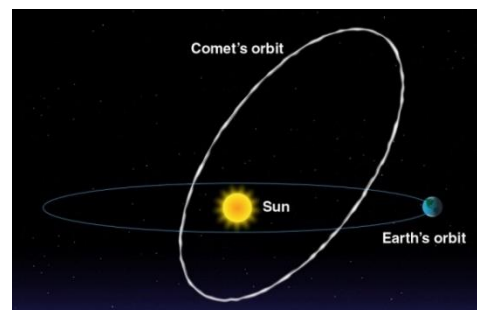
### About Meteor shower

- A meteor shower is a celestial event in which a number of meteors are observed to radiate, or originate, from one point in the night sky.
- These meteors are caused by streams of cosmic debris called meteoroids entering Earth's atmosphere at extremely high speeds on parallel trajectories.
- Most meteors are smaller than a grain of sand, so almost all of them disintegrate and never hit the Earth's surface.

### Uniqueness of Geminid

- The Geminids meteor showers are unique because their origin does not lie in a comet, but what is believed to be an asteroid or an extinct comet. The Geminids emerge from 3200 Phaethon, which meteor scientists consider to be an asteroid.
- According to NASA, the Geminids rate will be better this year because the shower's peak overlaps with a nearly

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### Meteor, Meteorite, Meteorite, Comets and Asteroids

- Comets:** Comets are dirty space snowballs of mostly ice and dust that formed during the birth of the solar system 4.6 billion years ago. Most comets have stable orbits in the outer reaches of the solar system past the planet Neptune.
- Asteroids:** These are the rocky and airless leftovers from the formation of planets in our solar system. They mostly orbit our sun in the asteroid belt between Mars and Jupiter and range from the size of cars to dwarf planets.
- Meteoroids, Meteors, Meteorites:** Meteoroids are tiny asteroids or the broken-off crumbs of comets and sometimes planets. They range in size from a grain of sand to boulders 3 feet (1 meter) wide. When meteoroids collide with a planet's atmosphere, they become **meteors**. If those meteors survive the atmosphere and hit the planet's surface, their remains are called **meteorites**.

new moon, which means there will be darker skies and no moonlight to wash out the fainter meteors.

### Why would Earth encounter many meteoroids at once?

- A *meteor shower* occurs in the year when Earth passes nearest to the band of material associated with a comet's orbit. Well, comets, like Earth and the other planets, also orbit the sun. Unlike the nearly circular orbits of the planets, the orbits of comets are usually quite lop-sided.
- As a comet gets closer to the sun, some of its icy surface boils off, releasing lots of particles of dust and rock. This comet debris gets strewn out along the comet's path, especially in the inner solar system as the sun's heat boils off more and more ice and debris.
- Then, several times each year as Earth makes its journey around the sun, its orbit crosses the orbit of a comet, which means Earth smacks into a bunch of comet debris.

**PEPPER IT WITH**  
Asteroid belt, Kuiper belt, Halley comet, Murchison meteorite

### Firefly Bird Diverters for Great Indian Bustard

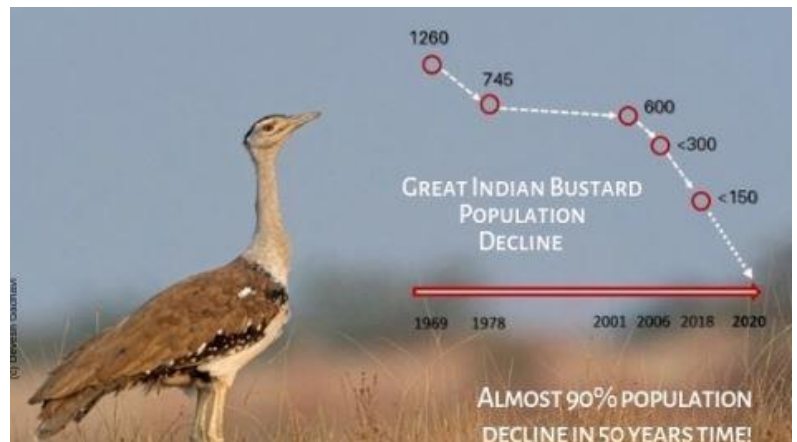
#### News Excerpt

The Ministry of Environment Forest and Climate Change (MoEFCC) along with the Wildlife Conservation Society (WCS) India has come up with a unique initiative — a “firefly bird diverter” for overhead power lines in areas where Great Indian Bustard (GIB) populations are found in the wild.

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#### Key Highlights

- Firefly bird diverters by the flaps installed on power lines. They work as reflectors for bird species like the GIB. Birds can spot them from a distance of about 50 meters and change their path of flight to avoid collision with power lines.
- The diverters are called fireflies because they look like fireflies from a distance, shining on power lines in the night.
- Smaller birds can change their direction [swiftly] but for larger bird species, it is difficult because their body weight and other factors.
- GIBs are one of the heaviest flying birds in India. Therefore, when they encounter these wires, they are unable to change the direction of their flight. Death is most cases is due to impact with the wires and not due to electrocution.
- GIB is one of the most critically threatened species in India, with less than 150 birds left in the wild.
- Earlier, a report by the Ministry, submitted to the National Green Tribunal in 2019, pointed out that power lines, especially high-voltage transmission lines with multiple overhead wires, are the most important current threat for GIBs in the Thar region, and are causing unsustainably high mortality in about 15% of their population.
- The Supreme Court of India, in a recent hearing, directed that power lines in GIB landscapes should be placed underground. Experts said that the innovative firefly diverter installation could serve as an alternative means to species conservation.



**PEPPER IT WITH**  
Godavan, Bengal Florican, Plan BEE, CMS, Gibi

- Experts say only two districts in Rajasthan — Jaisalmer and Barmer — have a breeding GIB population in the wild. The bird can also be found in very small numbers in Gujarat, Madhya Pradesh, Karnataka, Maharashtra and Andhra Pradesh.

## Mount Everest's new Height

### About

The world's highest mountain is now officially a little higher. China and Nepal agreed this week on a new standard height for Mount Everest, the rugged Himalayan peak that straddles their border. They jointly presented a new official figure of 8,848.86 meters (29,031.69 feet) above sea level.

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### Pre-Connect

- Mount Everest** is Earth's highest mountain above sea level, located in the Mahalangur Himal sub-range of the Himalayas. The China-Nepal border runs across its summit point.
- As measured from the Earth's core, Ecuador's Mount Chimborazo is the world's highest, standing more than 2,072 meters (6,800 feet) above Everest. Because the Earth bulges in the middle, mountains along the equator are farther from the core.
- Measuring from the foot of the mountain to the peak, Hawaii's Mauna Kea is the tallest. Most of it, however, is under the sea.

### Key Highlights

- The mountain's height changes. The movement of tectonic plates can lift it up ever so gradually, while earthquakes can bring it down. The countervailing forces may help maintain a degree of stability over time.
- In 1934, a massive earthquake wiped out 150 years of steady height increase in a few moments.
- Measuring the height above sea level has always been tricky because ocean levels vary considerably depending on tides, magnetism and other factors. Rising sea levels are creating another factor for future measurements.

### Ways employed to measure the height of Mt. Everest:

- Last year, a Nepalese team set up a satellite navigation marker on Everest's peak to gauge its exact position via GPS satellites. A Chinese team undertook a similar mission this spring, though it used the Chinese-made Beidou constellation of navigation satellites, along with other equipment.
- At the same time, Nepalese crews took measurements with modern, laser-equipped versions of instruments called theodolites, first used to gauge the mountain's height in 1856 by measuring angles using trigonometry.
- The Nepalese team also used ground penetrating radar to measure the amount of snow and ice that sits on top of its highest rock.

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Plan BEE, CMS, Gibi

## Prelims 2021

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## SCIENCE AND TECHNOLOGY

### Geosynchronous Transfer Orbit

#### News Excerpt

The Indian Space Research Organisation (ISRO) successfully placed into a transfer orbit India's 42nd communications satellite, CMS-01, carried on board the PSLV-C50, from the second launch pad of the Satish Dhawan Space Centre, Sriharikota Range.

#### Pre-Connect

CMS-01 is a communications satellite envisaged for providing services in extended C Band of the frequency spectrum and its coverage will include the Indian mainland and the Andaman & Nicobar and Lakshadweep islands.

- The satellite was injected precisely into its pre-defined sub-GTO orbit.
- The satellite is expected to have a life of over seven years.
- The PSLV-XL upgraded variant used for the mission includes six, extended length side boosters.

#### Analytica

- A geosynchronous orbit (GEO) is a prograde, low inclination orbit about Earth having a period of 23 hours 56 minutes 4 seconds. A spacecraft in geosynchronous orbit appears to remain above Earth at a constant longitude, although it may seem to wander north and south. The spacecraft returns to the same point in the sky at the same time each day.
- To attain geosynchronous (and also geostationary) Earth orbits, a spacecraft is first launched into an elliptical orbit with an apoapsis altitude in the neighborhood of 37,000 km. This is called a Geosynchronous Transfer Orbit (GTO). The spacecraft then circularizes the orbit by turning parallel to the equator at apoapsis and firing its rocket engine. That engine is usually called an apogee motor. It is common to compare various launch vehicles' capabilities according to the amount of mass they can lift to GTO.

#### All related orbits

- ❖ A **Geosynchronous Orbit (GEO)** takes a satellite around the Earth at a rate of once per day, keeping it roughly in the same area over the ground.
- ❖ A **Geostationary Orbit (GSO)** is a geosynchronous orbit with an inclination of zero, meaning it lies on the equator.
- ❖ **All geostationary satellites are geosynchronous. Not all geosynchronous satellites are geostationary.**
- ❖ **Polar Orbits:** Polar orbits are 90 degree inclination orbits, useful for spacecraft that carry out mapping or surveillance operations. Since the orbital plane is nominally fixed in inertial space, the planet rotates below a polar orbit, allowing the spacecraft low-altitude access to virtually every point on the surface.
- ❖ **Sun-synchronous orbit (SSO):** It is a particular kind of polar orbit. Satellites in SSO, travelling over the polar regions, are synchronous with the Sun. This means they are synchronised to always be in the same 'fixed' position relative to the Sun. This means that the satellite always visits the same spot at the same local time – for example, passing the city of Paris every day at noon exactly.

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### Shigella Infection

#### News Excerpt

Recently shigella infection- a new bacterial infection has been reported from Kozhikode district of Kerala.

#### Pre-Connect

- Shigellosis, or shigella infection, is a contagious intestinal infection caused by a genus of bacteria known as shigella.
- Symptoms include diarrhoea, fever, stomach cramps which can last for seven days.
- Shigella bacteria spread from one person to another person through various means- even after the infected person is cured of diarrhoea.

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- It takes a small number of bacteria to make someone ill.
- Contaminated food, water are the source of the infection.
- This infection can be prevented by maintaining proper hygiene. Washing hands properly is known to ward off the bacteria.
- The bacteria spreads not only through surfaces, touching an infected surface and then touching the mouth, but also from eating food prepared by someone carrying the infection.
- Treatment is generally done through antibiotics, which can shorten the duration of the illness.
- There is no vaccine to prevent shigellosis.

### Analytical

- Shigella infection, is a contagious intestinal infection caused by a genus of bacteria known as shigella. The bacteria is one of the prime pathogens responsible for causing diarrhea, fluctuating between moderate and severe symptoms, especially in children in African and South Asian regions.
- The bacteria, after entering the body through ingestion, attacks the epithelial lining of the colon resulting in inflammation of the cells and subsequently the destruction of the cells in severe cases. It takes only a small number of shigella bacteria to enter a person's system and get her sick.
- Though people of all ages can get infected, children are more susceptible to the infection. In Kerala too, those who have reported the infection are mostly children. People who are travelling are also vulnerable to the infection as they may get exposed to contaminated water during travelling. Sexual contact with those infected can also cause the disease.

### Is shigella severe in most cases?

- ✓ No. In most cases, the patient may experience diarrhoea lasting for a couple of days and then the symptoms subsiding gradually. If diarrhoea persists for more than a week and if the patient suffers from fever and stomach pain, it is advisable to consult a doctor. Complications don't usually occur in most cases.
- ✓ In certain cases, however, if left undiagnosed even after a week of severe symptoms, shigella can cause complications like seizures, rectal prolapse and reactive arthritis, resulting in even death.

## Hypothermia

### News Excerpt

Few incidents of soldiers dying of Hypothermia in high altitude areas have occurred in a few months. Also, some farmers protesting at Delhi-Uttar Pradesh border against the three contentious agriculture laws, died because of hypothermia.

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### Pre-Connect

- Hypothermia (abnormally low body temperature) and frostbite are both dangerous conditions that can happen when a person is exposed to extremely cold temperatures.
- While hypothermia is most likely at very cold temperatures, it can occur even at cool temperatures (above 40°F) if a person becomes chilled from rain, sweat, or submersion in cold water.

### Analytica

Hypothermia is caused by prolonged exposures to very cold temperatures. When exposed to cold temperatures, our body begins to lose heat faster than it's produced. Lengthy exposures will eventually use up our body's stored energy, which leads to lower body temperature.

### Symptoms of hypothermia

Shivering, Exhaustion or feeling very tired, Confusion, Fumbling hands, Memory loss, Slurred speech, Drowsiness are common symptoms among adults. While bright red cold skin and very low energy are symptoms among babies.

### Victims of hypothermia are often



1. Older adults with inadequate food, clothing, or heating
2. Babies sleeping in cold bedrooms
3. People who remain outdoors for long periods—the homeless, hikers, hunters, etc.
4. People who drink alcohol or use illicit drugs.

### Preventing strategy

1. For mild hypothermia, treatment can be as easy as getting the victim to a sheltered spot and wrapping them in blankets. The added insulation gives their body a much needed boost against heat loss, and they will eventually warm themselves back up.
2. For severe hypothermia an external heat source like an electric blanket, warm water bottles, or even skin-to-skin contact with a warm person, will be required to prevent further damage and reverse the condition.

## Mock Eggs

### News Excerpt

Recently Centre for Rural Development and Technology, IIT Delhi has secured first prize at Innovate4SDG contest by 'UNDP (United Nation Development Program) Accelerator Lab India for innovation of plant-based mock egg.

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### Pre-Connect

- The mock egg has been developed from very simple farm-based crop proteins, which not only looks and tastes like egg but also very close in nutritional profile to a poultry egg.
- The development of the mock egg meets the protein needs of the diet-specific, health conscious, vegan and vegetarian people.

### Analytica

#### **Need for mock eggs:**

1. The plant based textured foods which resemble egg, fish and chicken have been developed with an aim to address the longstanding battle for malnutrition and clean protein food for people.
2. This innovation will addresses SDG 2 and 3 (zero hunger and good health and well-being).

For this vegan egg protein isolation technology and extrusion technology for meat has been used.

### Importance

1. It will be a cleaner source of protein; the egg, for instance, has zero cholesterol and is gluten-free. There is no risk of animal-based diseases, such as bird flu, and the concept prevents cruelty to animals as well.

2. Meat production through animal slaughter is one of the biggest causes of greenhouse emission. This product would not only be a tastier, healthier alternative for nonvegetarian dishes but also save the environment.

**Lab grown meat:** Rather than slaughtering animals, scientists will use the animal's stem cells to create meat. Stem cells are the building blocks of cells and tissues, and by feeding them amino acids and carbohydrates, the muscle cells will be multiplied and grown in the lab. Once muscle fibers start growing, the result is an artificially created meat that resembles actual meat in terms of appearance, texture, and nutrient profile.

#### **Benefits of lab grown meat:**

- Lab-grown meat is **more eco-friendly** as compared to regular meat.
- It eliminates the need for livestock, which could reduce the use of energy by as much as 45%, reduce the use of land by 99%, and produce up to 96% **fewer greenhouse gases**.
- It will **also be animal-friendly as no animals will be harmed** or treated unethically.
- Moreover, it will significantly **reduce the amount of water usage**, as the standard production of just half a kilo of meat requires around 9000 litres of water, as compared to 94 litres required for cultured meat.

In regard to health, it is too soon to be able to determine any benefits from lab-grown meat, and only time will tell if it possesses any health benefits.

## Eluru Mystery Disease

### News Excerpt

Recently eluru mystery disease was found in Eluru town of Andhra Pradesh's West Godavari district.

### Pre-Connect

- Probable causes of disease outbreak:
  1. Water contamination by heavy metals
  2. Excessive use of bleaching powder and chlorine in sanitation programmes
  3. Residues of pesticides used in agriculture and aqua processing sectors
- Poor hygiene has augmented the disease outbreak: the general hygiene conditions and management of garbage in Eluru are alarming. Almost all the canals are filled with garbage, still water, and plastic materials, which are a potential threat to general health.
- Symptoms of disease: convulsions, seizures, dizziness and nausea.

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## Quantum Key Distribution(QKD) Technology

### News Excerpt

Recently DRDO team has successfully demonstrated QKD communication.

### Pre-Connect

- Quantum cryptography is a technology that uses quantum physics to secure the distribution of symmetric encryption keys. A more accurate name for it is quantum key distribution (QKD). It works by sending photons, which are "quantum particles" of light, across an optical link.
- QKD technology will be used to enable start-ups and small and medium enterprises in the domain of quantum information technologies.
- The technology is expected to help define standards and formulate crypto technology related policies that can use the QKD system in a unified Cipher Policy Committee (CPC) framework in the country for more secure 'key management' for current and future military cryptographic systems.

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### Analytica

- Quantum key distribution (QKD) uses individual photons for the exchange of cryptographic key data between two users, where each photon represents a single bit of data. The value of the bit, a 1 or a 0, is determined by states of the photon such as polarization or spin.
- At the sender's end, a laser generates a series of single photons, each in one of two polarizations: horizontal or vertical. The polarization of the photon is measured at the receiver's end. If an eavesdropper(third party) intercepts the photon to determine its polarization, the photon is destroyed in the process, and the eavesdropper would have to generate a new, duplicate photon to pass on to the receiver.
- QKD works by transmitting millions of polarized light particles (photons) over a fiber optic cable from one entity to another. Each photon has a random quantum state, and collectively all the photons create a bit stream of ones and zeros.
- When the photons arrive at the endpoint, the receiver uses beam splitters (horizontal/vertical and diagonal) to "read" the polarization of each photon. The receiver does not know which beam splitter to use for each photon and has to guess which one to use. After the receiver tells the sender which beam splitter was used for each of the photons in the sequence they were sent, the sender then compares that information with the sequence of polarizers used to send the photons. The photons that were read using the wrong beam splitter are discarded, and the resulting sequence of bits becomes a unique optical key that can be used to encrypt data.

### What makes QKD unbreakable?

- The security of QKD stems from the ability to detect any intrusion on the QKD transmission. Because of the unique and fragile properties of photons, any third party (or eavesdropper) who tries to read or copy the photons in any way will change the photons' state.

- The change will be detected by the endpoints, alerting them that the key has been tampered with and must be discarded. A new key is then transmitted. Moreover, since the keys generated are truly random, they are protected from future hacking attempts.

### Uses of QKD

1. QKD is one of the technologies “to protect and future-proof data against developments to computer power, new attack strategies, weak random number generators, and the emergence of quantum computers.”
2. QKD is primarily a mechanism to undertake secure communication which utilises a cryptographic protocol involving various components of quantum mechanics.
3. The technology enables two communicating sides to come up with random secret keys shared by both of them and known exclusively to them, so only they can use it to encrypt and decrypt messages, thus achieving highly-secure communication.
4. It is useful in designing cryptographic algorithms that adequately scramble the target data.
5. It helps in developing strong encryption keys to lock and unlock the algorithm, and securely distributing the keys between communicating devices.

## Facial Recognition Technology

### News Excerpt

The central government has approved the deployment of its Automated Facial Recognition System (AFRS) across the nation beginning early this year, allowing facial biometrics to be extracted from video and CCTV which will be matched with the image of individuals whose photos and identity information are already housed in a database maintained by the National Crime Records Bureau (NRCB).

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### Pre-Connect

- Facial recognition as a technology used to analyze human faces for the purposes of ‘verification’ and ‘identification’ of individuals. It is based on the application of Machine Learning (ML) which is the most common technique of A.I.
- The face technology has many variants like **Face detection technology** determines whether the image contains a face. **Face analysis technology** aims to identify attributes such as gender, age, or emotion from detected faces. **Face recognition technology** compares an individual’s facial features to available images for verification or identification purposes.

### Analytica

#### How a facial recognition application works?

Facial recognition is a category of biometric software (Biometrics is the measurement and statistical analysis of people's unique physical and behavioral characteristics) that maps an individual's facial features mathematically and stores the data as a faceprint. The software uses deep learning algorithms to compare a live capture or digital image to the stored faceprint in order to verify an individual's identity.

- The software identifies 80 nodal points on a human face. In this context, nodal points are endpoints used to measure variables of a person’s face, such as the length or width of the nose, the depth of the eye sockets and the shape of the cheekbones.
- The system works by capturing data for nodal points on a digital image of an individual’s face and storing the resulting data as a faceprint. The faceprint is then used as a basis for comparison with data captured from faces in an image or video.
- Even though the facial recognition system only uses 80 nodal points, it can quickly and accurately identify target individuals when the conditions are favorable.

### Automated facial recognition systems in use in India

The Request for Proposal (RPF) released by the NCRB last year stated the Automated Facial Recognition System will provide a vital and necessary role in improving criminal identification and verification by way of the system’s rapid recording, processing, analysis, retrieval, and sharing of biometric identity information between different law enforcement and India’s intelligence services.

- The NCRB, which manages crime data for police, would like to use automated facial recognition to identify criminals, missing people, and unidentified dead bodies, as well as for “crime prevention”.
- In 2018, the Delhi police became one of the first law enforcement agencies in the country to start using the technology to identify protesters during protest by use of facial recognition technology.
- Ministry of Civil Aviation’s “DigiYatra” using facial recognition for airport entry.
- It requests proposals for gathering CCTV footage, as well as photos from newspapers, raids, and sketches.
- It is aimed at being compatible with other biometrics such as iris and fingerprints.
- NCRB has proposed integrating this facial recognition system with multiple existing databases like:
  1. Crime and Criminal Tracking Network & Systems (CCTNS)
  2. Integrated Criminal Justice System (ICJS)
  3. State- specific systems, the Immigration, Visa and Foreigners Registration & Tracking (IVFRT)
  4. The KoyaPaya portal on missing children.
- NCRB is developing a National Automated Facial Recognition System for facial recognition across the nation.
- NCRB is currently rolling out the National Automated Fingerprint Identification System (NAFIS) and its integration with CCTNS on home ministry proposal for integrating the database with the fingerprint database.

#### **Benefits of Facial Recognition Technology:**

- **Facial recognition is used when issuing identity documents** and, most often, combined with other biometric technologies such as fingerprints (preventing ID fraud and identity theft).
- **No need to physically contact a device for authentication-** compared to other contact-based biometric authentication techniques such as fingerprint scanners.
- **Face match is used at border checks** to compare the portrait on a digitized biometric passport with the holder's face. It can also be employed in police checks.
- **Drones combined with aerial cameras** offer an interesting combination for facial recognition applied to large areas during mass events.
- **Facial recognition CCTV systems** can improve performance in carrying public security missions like:
  1. Finding missing children and disoriented adults, examples from Chennai and Nepal show how facial recognition has played a critical role in finding missing children, preventing human trafficking, and curbing crime.
  2. Identify and track criminals.
  3. Support and accelerate investigations.
- **In health:** track a patient's use of medication more accurately, detect genetic diseases, support pain management procedures.
- **In Marketing and retail:** By placing cameras in retail outlets, it is now possible to analyze shoppers' behavior and improve the customer purchase process. Eg, Since 2017, KFC, the American king of fried chicken, and Chinese retail and tech giant Alibaba have been testing a face recognition payment solution in Hangzhou, China.

#### **Concerns about Facial Recognition Technology**

- It poses a threat to the fundamental rights to privacy and freedom of speech and expression because it does not satisfy the threshold the Supreme Court had set in its landmark privacy judgment in the ‘Justice K.S. Puttaswamy Vs Union of India’ case.
- Issue of not conducting “privacy impact assessment” prior to deployment of the facial recognition system (FRS) by agencies.

- Issue of 'function creep'- A function creep happens when someone uses information for a purpose that is not the original specified purpose.
- Threat to intensify mass surveillance by government and security agencies.
- The accuracy of the facial recognition software is questionable. It was found that when the Delhi Police applied the facial recognition technology to find missing children, the success rate was less than 1 percent.
- The technology could not even differentiate between genders.
- The technology suffers from ethnic and racial biases globally.

The current application of facial recognition for public services does raise reasonable questions and concerns about privacy and rights. However, given this technology's potential to solve problems, if applied properly in specific cases and contexts and with proper regulatory mechanisms, it can be leveraged in a beneficial manner and used in many sectors ranging from security to health.

## Great Conjunction or Christmas Star

### News Excerpt

On December 21, after nearly 400 years, Saturn and Jupiter - the two largest planets in our solar system, were brought closest in the night sky by an astronomical event called the "great conjunction" and popularly referred to as the "Christmas Star".

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### Pre-Connect

- A conjunction is not unique to Saturn and Jupiter however, it is the name given to any event where planets or asteroids appear to be very close together in the sky when viewed from the Earth.
- In June 2005 for instance, as a result of the "spectacular" conjunction, Mercury, Venus and Saturn appeared so close together in the sky that the patch of sky where the three planets were could be covered by a thumb.
- Astronomers use the word "great" for the conjunction of Jupiter and Saturn because of the planets' sizes.
- The "Great Conjunction" happens once in about 20 years because of the time each of the planets take to orbit around the Sun. Jupiter takes roughly 12 years to complete one lap around the Sun and Saturn takes 30 years (Saturn has a larger orbit and moves more slowly because it is not as strongly influenced by the Sun's gravitational force as planets that are closer to the Sun). As the two planets move along their orbits, every two decades, Jupiter catches up with Saturn resulting in what astronomers call the great conjunction.

### Analytica

#### What makes the conjunction rare this year?

- While Jupiter and Saturn have been moving along on their orbits all throughout this year, since the beginning of December Jupiter has been moving closer to Saturn and on December 21, it will take over Saturn as it orbits around the Sun.
- Jupiter and Saturn are bright planets and can be typically seen with the naked eye even from cities. But during a conjunction, they appear to be close to each other, which is what makes the event noteworthy.
- This year, however, the event is rare because the planets will come the closest to each other in nearly four centuries.
- Further, this year, the alignment of Saturn and Jupiter will occur at night, which has not happened in over 800 years. It is because of the timing of this alignment that viewers from nearly all over the world can expect to see this event.



## TiHAN and CPS

### News Excerpt

Recently the Department of Science and Technology has sanctioned ₹135 crore to IIT Hyderabad under the National Mission on Interdisciplinary Cyber-Physical Systems (NM-ICPS) to set up a Technology Innovation Hub on Autonomous Navigation (TiHAN) and Data Acquisition Systems.

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### Pre-Connect

- TiHAN Foundation at IIT Hyderabad is a multi departmental initiative, including researchers from electrical, computer science, mechanical and aerospace, civil, mathematics and Design with collaboration and support from reputed institutions and industry.
- It is a step towards 'Aatmanibhar Bharat' with a focus on the R&D of interdisciplinary technologies in the domain of Autonomous Navigation and Data Acquisition Systems.
- This hub focuses on addressing various challenges hindering the real-time adoption of unmanned autonomous vehicles for both terrestrial and aerial applications.

### National Mission on

### Interdisciplinary Cyber Physical Systems

The NM-ICPS is a comprehensive Mission aimed at complete convergence with all stakeholders by establishing strong linkages between academia, industry, Government and International Organizations. The Mission will have four major activities i.e., Technology Development, Human Resource & Skill Development, Innovation, Entrepreneurship & Start-Up Ecosystem and International Collaborations.

- **Cyber-Physical System (CPS)** combines digital/ cyber elements with physical objects (e.g. machines, autonomous vehicles) and data with capabilities of communication, data collection & processing, computing, decision making and action.
- Cyber-Physical Systems allow organizations to take timely and optimal interventions/ actions.
- CPS is an integrated system involving Sensors, Communication, Actuators, Control, interconnected computing networks and data analytics. Therefore, there is a need to create an integrated and overarching National platform to bring convergence among all stakeholders towards CPS technology development and effective implementations.

### Analytica

- DST NM-ICPS Technology Innovation Hub on Autonomous Navigation and Data Acquisition Systems (UAVs, ROVs, etc.) – TiHAN at IIT Hyderabad will be the source for fundamental knowledge and technologies (IPs, Publications, Products, Commercialisation as Licencing, etc) in the technology vertical of Autonomous Navigation and Data Acquisition Systems (UAVs, ROVs, etc.).
- The hub aims at translational technology research and development along with commercialization in the areas of autonomous navigation and data acquisition systems.
- The R&D focuses on addressing the challenges in realizing the adoption of autonomous vehicles and navigation systems (UAVs, ROVs, etc.) in real-time use cases.
- Its Primary focus includes:
  1. Research & Technology development in the area of Autonomous Navigation and Data Acquisition Systems (UAVs, RoVs)
  2. Industry Collaborations – Joint R&D Initiatives, Consultancy, Cost Sharing Basis R&D, Technology Outreach Schemes, Training of Industry Personnel, Continuing Education
  3. Human resource & Skill development
  4. Innovation, Entrepreneurship & Start-up Ecosystem.

## Optical Fibre Cable

### News Excerpt

The Union Cabinet has recently given its approval for Provision of Submarine Optical Fibre Cable Connectivity between Mainland (Kochi) and Lakshadweep Islands (KLI Project).

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### Pre-Connect

- The Project envisioning provisions of a direct communication link through a dedicated submarine Optical Fibre Cable (OFC) between Kochi and 11 Islands of Lakshadweep viz. Kavaratti, Kalpeni, Agati, Amini, Androth, Minicoy, Bangaram, Bitra, Chetlat, Kiltan&Kadmat.
- The Project would be funded by Universal Service Obligation Fund.
- Bharat Sanchar Nigam Ltd. (BSNL) has been nominated as Project Execution Agency and Telecommunications Consultant India Ltd. (TCIL) as the Technical Consultant of the Project to assist Universal Service Obligation Fund, Department of Telecommunications.

### Analytica

- An optical fiber cable is a type of cable that has a number of optical fibers bundled together, which are normally covered in their individual protective plastic covers.
- Optical cables are used to transfer digital data signals in the form of light up to distances of hundreds of miles with higher throughput rates than those achievable via electrical communication cables.
- All optical fibers use a core of hair-like transparent silicon covered with less refractive indexed cladding to avoid light leakage to the surroundings. Due to the extreme sensitivity of the optical fiber, it is normally covered with a high-strength, lightweight protective material like Kevlar.
- Optical fiber cable is widely used in fiber optic communications.

### Reason for adoption of submarine optical fibre connectivity

- Lack of bandwidth is a major constraint in providing data services, which is a pre-requisite for providing e-governance, e-education, e-banking etc. for inclusive growth of society.
- At the moment, the only medium of providing telecom connectivity to Lakshadweep is through satellites, but the bandwidth available is limited to 1 gbps.

### Importance of this submarine connectivity project

- The submarine connectivity project will have a vital role for the delivery of e-governance services at the doorstep of citizens, potential development of fisheries, coconut-based industries and high-value tourism, educational development in term of tele-education and healthcare in terms of telemedicine facilities.
- It will help in the establishment of numerous businesses, augment e-commerce activities and provide adequate support to educational institutes for knowledge sharing. The Lakshadweep Islands have the potential to become a hub of logistic services.

## LiDAR Technology

### News Excerpt

In recent technological advancement in India, National High Speed Rail Corporation Limited has announced that it will adopt Light Detection and Ranging Survey (LiDAR) technique using Laser enabled equipment mounted on a Helicopter for conducting ground survey for the preparation of Detailed Project Report for the proposed Delhi-Varanasi HSR corridor.

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### Pre-Connect

- This technique uses a combination of Laser data, GPS data, flight parameters and actual photographs to give accurate survey data.

- Based on the findings of the survey, designing of the vertical & horizontal alignment, structures, location of the stations and depots, Land requirement for the corridor, identification of project affected plots/structures, Right of Way etc are decided.
- The aerial LiDAR survey technique, for the first time for any railway project in India, was adopted for the Mumbai- Ahmedabad High Speed Rail Corridor primarily because of its high accuracy.

### Analytica

- Lidar, which stands for *Light Detection and Ranging*, is a remote sensing method that uses light in the form of a pulsed laser to measure ranges (variable distances) to the Earth.
- These light pulses—combined with other data recorded by the airborne system — generate precise, three-dimensional information about the shape of the Earth and its surface characteristics.
- A lidar instrument principally consists of a laser, a scanner, and a specialized GPS receiver.
- Airplanes and helicopters are the most commonly used platforms for acquiring lidar data over broad areas.
- Two types of lidar are topographic and bathymetric. Topographic lidar typically uses a near-infrared laser to map the land, while bathymetric lidar uses water-penetrating green light to also measure seafloor and riverbed elevations.
- Lidar systems allow scientists and mapping professionals to examine both natural and manmade environments with accuracy, precision, and flexibility.

### Anthrax

#### News Excerpt

Recently the carcass of a wild elephant found inside Joypur reserve forest in Assam's Dibrugarh district has been tested positive for Anthrax -according to the Wildlife Trust of India (WTI).

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#### Pre-Connect

- Anthrax is a serious infectious illness caused by the **microbe *Bacillus anthracis*. This microbe resides in soil.**
- Anthrax can be transmitted through indirect or direct contact by touching, inhaling, or ingesting anthrax spores. Once anthrax spores get inside body and activate, the bacteria multiply, spread, and produce toxins.
- It is primarily a disease of herbivorous mammals, although other mammals and some birds have been known to contract it.
- Until the introduction and widespread use of effective veterinary vaccines, it was a major cause of fatal disease in cattle, sheep, goats, camels, horses, and pigs throughout the world.
- Humans generally acquire the disease directly or indirectly from infected animals, or occupational exposure to infected or contaminated animal products.
- Control in livestock is therefore the key to reduced incidence.
- The disease is generally regarded as being non-contagious.
- Records of person-to-person spread exist, but are rare.

#### Elephant corridors In India

Elephant is a "Keystone Species" in the forest ecosystem and are termed as the "National Heritage Animal of India" by the Union Ministry of Environment, Forest and Climate Change. **Elephant corridors** are narrow strips of land that connect two large habitats. Elephant corridors are linear, narrow, natural habitat linkages that allow elephants to move between secure habitats without being disturbed by humans. A total of 88 elephant corridors were identified as being currently in use in the country. Of these, 12 are in north-western India, 20 in central India, 14 in northern West Bengal, 22 in north-eastern India and 20 in southern India. Of the total, 77.3% of the corridors are being regularly used by elephants.

## Havana Syndrome

### News Excerpt

In 2016 a mysterious neurological illness, referred to as “Havana syndrome”, started to afflict American diplomats and intelligence operatives in Cuba, China, and other countries.

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### Pre-Connect

- It is a mysterious neurological illness whose symptoms included nausea, severe headaches, fatigue, dizziness, sleep problems, and hearing loss.
- It first occurred among US diplomats posted in Cuba and China.
- It was perceived as directed ‘microwave radiation’ but neither the State Department of US nor the FBI have publicly pointed to “microwave weapons” as being the cause of the “syndrome”, while National Academies of Sciences (NAS) has found “directed” microwave radiation to be its “plausible” cause.

### Analytica

- In late 2016, US diplomats and other employees stationed in Havana reported feeling ill after hearing strange sounds and experiencing odd physical sensations in their hotel rooms or homes. The symptoms included nausea, severe headaches, fatigue, dizziness, sleep problems, and hearing loss, which have since come to be known as “Havana Syndrome”.
- The more chronic problems suffered by Havana personnel included mainly “vestibular processing and cognitive problems as well as insomnia and headache”.
- While the symptoms have resolved for some of the affected employees, for others, the effects have lingered and posed a significant obstacle to their work and affected normal functioning of lives.
- The report by NAS concluded that “directed pulsed RF energy appears to be the most plausible mechanism in explaining these cases among those who are affected.

#### Microwave Weapon

“Microwave weapons” are supposed to be a type of direct energy weapons, which aim highly focused energy in the form of sonic, laser, or microwaves, at a target. People exposed to high-intensity microwave pulses have reported a clicking or buzzing sound, as if seeming to be coming from within your head. It can have both acute and long-term effects — without leaving signs of physical damage.

## Surgery as part of Ayurveda

### News Excerpt

Recently the Central Council of Indian Medicine, a statutory body set up under the AYUSH Ministry to regulate Indian systems of medicine, issued a gazette notification allowing postgraduate (PG) Ayurvedic practitioners to receive formal training for a variety of general surgery, ENT, ophthalmology and dental procedures.

The notification has invited sharp criticism from the Indian Medical Association, which questioned the competence of Ayurveda practitioners to carry out these procedures.

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### Pre-Connect

- Sushruta, an ancient Indian sage and physician, whose comprehensive medical treatise Sushruta Samhita has, apart from descriptions of illnesses and cures, also detailed accounts of surgical procedures and instruments.
- There are two branches of surgery in Ayurveda — Shalya Tantra, which refers to general surgery, and Shalakya Tantra which pertains to surgeries related to the eyes, ears, nose, throat and teeth.

### Analytica

- Postgraduate education in Ayurveda is guided by the Indian Medical Central Council (Post Graduate Education) Regulations framed from time to time. Currently, the regulations



formulated in 2016 are in force for postgraduate education in Ayurveda. The latest notification of November 19 is an amendment to the 2016 regulations.

- The 2016 regulations allow postgraduate students to specialise in Shalya Tantra, Shalakya Tantra, and PrasutievamStreeRoga (Obstetrics and Gynecology), the three disciplines involving major surgical interventions. Students of these three disciplines are granted MS (Master in Surgery in Ayurveda) degrees.
- The new notification mentions 58 surgical procedures that postgraduate students in Ayurveda must train themselves in, and acquire skills to perform independently. These include procedures in general surgery, urology, surgical gastroenterology, and ophthalmology.

### Criticism of new notification

- The new notification was immediately opposed by many allopathic professionals, with the Indian Medical Association (IMA) decrying it as a mode of allowing mixing of systems of medicine by using terms from allopathy.
- IMA doctors insist that they are not opposed to the practitioners of the ancient system of medicine. But they say the new notification somehow gives the impression that the skills or training of the Ayurveda doctor in performing modern surgeries are the same as those practising modern medicine. The IMA says the notification as an “encroachment into the jurisdiction and competencies of modern medicine”.
- The fact that Ayurveda institutions prescribe textbooks from modern medicine, or that they carry out surgeries with the help of practitioners of modern medicine, is not reason enough to allow this encroachment.

The AYUSH Ministry subsequently clarified that the ‘Shalya’ and ‘Shalakya’ postgraduates were already learning these procedures in their (surgical) departments in Ayurvedic medical colleges as per their training curriculum, and the amendment merely added clarity and definitions to the 2016 regulations concerning post-graduate Ayurveda education.



## SECURITY

### Updated Crime Manual of CBI

#### News Excerpt

The Central Bureau of Investigation (CBI) has brought out a revised crime manual after 15 years by keeping sight of latest developments in law, investigation techniques and procedures.

The crime manual, which has **Standard Operating Procedures** for the officials of the premier investigating agency, was released by Minister of State for Personnel Jitendra Singh.

#### Pre-Connect

- The agency had set up a task force under Additional Director Praveen Sinha to make necessary changes in the crime manual, a set of guidelines for the investigating officer to follow while probing a case, which was last revised in 2005.
- The changes were proposed after factoring in the changing crime landscape, evidence collection, international treaties, emergence of new avenues to track criminals among others.
- **CBI's crime manual:** It lays down the standard operating procedures for the agency to implement in matters pertaining to special investigations, economic offences and cyber-crimes. The crime manual dictates the working of the investigative agency and lays down procedures on how the agency is expected and supposed to act in its investigations.

#### Highlights

- A separate chapter dedicated to investigations in foreign jurisdictions and coordinating and operating with Interpol.
  - It also covers how to expedite issuance of Interpol notices against accused who have absconded from India and sought refuge abroad.
- **Changes in the standard operating procedures:** specially to probe digital crimes in the cyber world and those across national boundaries.
  - so as to enhance speed and quality of investigation in consonance with global best practices
- Considering the strides in the information-communication technology, the updated procedures in collection and analysis of digital evidence and for the handling of complex cybercrime cases have also been incorporated in the manual.
- Under the revised guideline, the Head of a Branch is required to complete the necessary process in six months and the Head of the Zone has to sum it up by nine months in usual cases.

#### Analytica

- ✓ The new manual provides information about the laws, procedures and their interpretations in a format to assist the investigating officers in their day-to-day work.
- ✓ It has also discussed the team approach of investigation to be adopted in larger and complex cases.
- ✓ The standard operating procedures pertaining to cybercrime cases have been comprehensively revised to enhance the speed and quality of investigation, in consonance with the global best practices.
- ✓ Since the last update, there has been amendments in the Prevention of Corruption (PC) Act, the Criminal Procedure Code (CrPC) and a number of judgments passed by the Supreme court underscored the need for update of the manual especially keeping in view the rising cyber crime so that the premier agency can coordinate effectively with other agencies.

**PEPPER IT WITH**  
The Central Bureau of Investigation (CBI)

### PASSEX

#### News Excerpt

Indian and Vietnamese Navy undertook the PASSEX or Passage Exercise in the South China Sea recently. Reinforcing maritime interoperability and jointness, it will enhance both sides ability to counter threats at sea, from piracy to violent extremism.

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### Pre-Connect

- Indian Navy Ship (INS) Kiltan reached NhaRong Port, Ho Chi Minh City under **Mission Sagar-III** with 15 tonnes of Humanitarian Assistance and Disaster Relief (HADR) stores for flood-affected people of Central Vietnam.
- This mission of INS Kiltan is part of India's HADR assistance to Vietnam during the ongoing pandemic.
- A passage exercise is normally undertaken** whenever an opportunity arises, in contrast to pre-planned maritime drills.
- Recently, the Indian Navy had **also conducted similar PASSEXs with the Royal Australian Navy (RAN) in the East Indian Ocean Region.**

#### PEPPER IT WITH

Exercise  
Malabar, SLINEX, Naseem-Al-Bahr (or Sea Breeze), ASEAN-India Space cooperation

### Analytica

- The PASSEX exercise is aimed at reinforcing Maritime Interoperability between the Indian Navy and the Vietnam People's Navy.
- PASSEXs are conducted regularly by *IN* with units of friendly foreign navies, whilst visiting each other's ports or during a rendezvous at sea.
- India and Vietnam have increased high-level engagement including defence engagement.
  - At the recently held India-Vietnam virtual summit handed over the first of the 12 High-Speed Guard Boat to the country.
- The Passex exercises are a first since the Galwan incident earlier this year. China has also been violative of Vietnam's sovereignty in the South China sea trying to claim large swathes of the sea-based on its so-called '**nine-dash line**'.
- It seeks to enhance maritime cooperation between the two Navies and will further bolster the strong bonds of friendship between the two countries and contribute to security and stability in the region."

## AFSPA and Nagaland

### News Excerpt

The Ministry of Home Affairs (MHA) has declared the entire State of Nagaland as a "**disturbed area**" for six more months, under the Armed Forces (Special Powers) Act (AFSPA).

The Ministry had made a similar announcement on June 30, when it had declared the state as a disturbed area for six months.

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### Pre-Connect

- The Armed Forces (Special Powers) Act (AFSPA) has been in force in the Northeast since 1958 and Nagaland had acquired statehood in 1963.
- Hence, Nagaland has been under the Armed Forces (Special Powers) Act for almost six decades.
- The draconian act has not been withdrawn despite a framework agreement being signed in 2015 between Naga insurgent group NSCN-IM general secretary Thuingaleng Muivah and government interlocutor R.N. Ravi in the presence of central government.
- The Act came into force in the context of increasing violence in the North-eastern States decades ago, which the State governments found difficult to control.

### Analytica

The MHA said the central government is of the opinion that the area comprising the whole state of Nagaland is in such a "disturbed and dangerous condition" that the use of armed forces in aid of the civil power is necessary.

In simple terms, AFSPA gives armed forces the power to maintain public order in "disturbed areas".

- They have the authority to prohibit a gathering of five or more persons in an area, can use force or even open fire after giving due warning if they feel a person is in contravention of the law.
- If reasonable suspicion exists, the army can also arrest a person without a warrant; enter or search premises without a warrant; and ban the possession of firearms.
- Any person arrested or taken into custody may be handed over to the officer in charge of the nearest police station along with a report detailing the circumstances that led to the arrest.
- A disturbed area is the one which is declared by notification under Section 3 of the AFSPA. It can be invoked in places where the use of armed forces in aid of civil power is necessary.
- The Central Government, or the Governor of the State or administrator of the Union Territory can declare the whole or part of the State or Union Territory as a disturbed area. A suitable notification would have to be made in the Official Gazette.
- As per Section 3, it can be invoked in places where “the use of armed forces in aid of the civil power is necessary”.
- Presently, AFSPA, 1958, is operational in the entire States of Assam, Nagaland, Manipur (except Imphal Municipal area), three districts namely Tirap, Changlang and Longding of Arunachal Pradesh and the areas falling within the jurisdiction of the eight police stations in the districts of Arunachal Pradesh, bordering the State of Assam.
- The notification declaring Manipur and Assam as “Disturbed Areas” has been issued by the State governments. For Nagaland, the notification is issued by the MHA.



## Hydrowarfare

### News Excerpt

Recently, China announced that it is planning to build a major hydropower project as a part of its 14th Five-Year Plan (2021-25), on the YarlungZangbo River, in Mêdog County in Tibet.

China in 2015 operationalised its first hydropower project at Zangmu in Tibet, while three other dams at Dagü, Jiexu and Jiacha are being developed, all on the upper and middle reaches of the river.

### Pre-Connect

- The hydropower generation station is expected to provide 300 billion kWh of electricity annually. The Chinese authorities say the project will help the country realise its goal of reaching a carbon emission peak before 2030 and carbon neutrality before 2060.
- The “**Great Bend**” of the Brahmaputra and at the YarlungZangbo Grand Canyon in Medogcounty, where the river falls spectacularly over a 2,000 metre-drop and turns sharply to flow across the border into Arunachal Pradesh.

### Highlights

- Such ‘super’ dams projects are very unviable as they are being planned in an area that is geologically unstable.

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- There are two hydropower projects being built in Arunachal Pradesh on the tributaries of the Brahmaputra: the 600 MW Kameng project on the Bichom and Tenga Rivers and the 2,000 MW Subansiri Lower Hydroelectricity Project.
- China has already completed 11 out of 55 projects that are planned for the Tibetan region. In this race, the two countries overestimate their economic potential and grossly underestimate the earthquake vulnerability of the region.

### Way Forward

Rather than engaging in unsustainable dam-building activities, India and China, the major players in the region, would be well advised to disengage from military adventurism and seek ways of transforming this 'roof of the world' into a natural reserve for the sake of humanity. Carbon neutrality should not be at the expense of the environment.

## Biological Warfare

### News Excerpt

Recently, Vice Chief of Army Staff Lieutenant General S.K. Saini said that "future wars may gravitate towards zero cost wars, wherein a very virulent pathogen may immobilise high-technology arsenal".

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### Pre-Connect

- These are microorganisms like virus, bacteria, fungi, or other toxins that are produced and released deliberately to cause disease and death in humans, animals or plants.
- It is a subset of a larger class of weapons referred to as weapons of mass destruction, which also includes chemical, nuclear and radiological weapons. The use of biological agents is a serious problem, and the risk of using these agents in a bioterrorist attack is increasing.
- The **Biological Weapons Convention (BWC)**: It is the first multilateral disarmament treaty banning the development, production and stockpiling of an entire category of weapons of mass destruction entered into force in 1975.

### Details

The BWC bans:

- The development, stockpiling, acquisition, retention, and production of:
- Biological agents and toxins "of types and in quantities that have no justification for prophylactic, protective or other peaceful purposes;"
- Weapons, equipment, and delivery vehicles "designed to use such agents or toxins for hostile purposes or in armed conflict."
- The transfer of or assistance with acquiring the agents, toxins, weapons, equipment, and delivery vehicles described above.

### Biological Warfare Agents

- Biological warfare agents differ greatly in the type of organism or toxin used in a weapons system, lethality, length of incubation, infectiousness, stability, and ability to be treated with current vaccines and medicines. There are five different categories of biological agents that could be weaponized and used in warfare or terrorism. These include:
- Bacteria—single-cell organisms that cause diseases such as anthrax, brucellosis, tularemia, and plague.
- Rickettsiae—microorganisms that resemble bacteria but differ in that they are intracellular parasites that reproduce inside cells. Typhus and Q fever are examples of diseases caused by rickettsia organisms.
- Viruses—intracellular parasites, about 1/100 the size of bacteria, that can be weaponized to cause diseases such as Venezuelan equine encephalitis.
- Fungi—pathogens that can be weaponized for use against crops to cause such diseases as rice blast, cereal rust, wheat smut, and potato blight.
- Toxins—poisons that can be weaponized after extraction from snakes, insects, spiders, marine organisms, plants, bacteria, fungi, and animals. An example of a toxin is ricin, which is derived from the seed of the castor bean.

### Way Forward

- The direct use of infectious agents and poisons against enemy personnel is an ancient practice in warfare. Lethal biological weapons may be capable of causing mass deaths, but they are incapable of mass destruction of infrastructure, buildings, or equipment.
- “weaker militaries will continue to seek an asymmetric advantage in an unrestricted warfare milieu” while “social media will continue to be the vector of choice for the battle of narratives”.

## Tour of Duty recruitment model

### News Excerpt

Army's proposed 'Tour of Duty' recruitment model may be expanded to Navy and IAF too. India's defence establishment is actively considering expanding the scope of the 'Tour of Duty' model of recruitment to the Air Force and Navy as well.

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### Pre-Connect

- Bringing the Central Armed Police Forces under the same scheme or a similar one is also under consideration.
- Three-year volunteer scheme is being designed to attract more youth to Army, fill up officers' vacancies, and reduce ballooning defence pensions.
- This engagement based on the pattern adopted by the Israel Defence Forces (IDF), excluding the conscription clause, is considered to accrue benefits to Army as well as the individual.
- This proposal keeps the engagement as voluntary unlike Israel's practice of necessary three years of military service for every able-bodied person.

### Highlights

- ToD is expected to result in a significant reduction in the expenditure on pay and pensions and free up funds for the Army's modernization.
- The overall purpose of the ToD concept is 'internship/temporary experience'.
- This scheme is for those who did not want a full career in the Army but still wanted to put on the uniform.
- They would also have an edge after leaving the service and going to the corporate sector.
- In case of any unfortunate eventuality, all the benefits will get extended to the person or the next of kin as is due to a regular officer or jawan.

### Analytica

- ✓ India's political leadership is keen on the scheme, given its future potential to generate large-scale employment, and is pushing to working out its modalities.
- ✓ There are plans to expand the scheme over the next few years to ensure that close to 40 per cent of the strength of the Army is recruited through it.
- ✓ The proposal is deemed to be equally beneficial for the youth, nation and corporates as they will get trained, disciplined, confident, diligent and committed young men and women after their ToD.
- ✓ Analysing the cost of training incurred on each personnel compared with the limited employment of the manpower for three years, the proposal calculates that it will indeed have a positive benefit.
- ✓ No concrete decision has yet been taken on the implementation of the scheme, and the idea is currently at the discussion stage.

## SIPRI report on arms market

### News Excerpt

SIPRI Yearbook 2020 presents a combination of original data in areas such as world military expenditure, international arms transfers, arms production, nuclear forces, armed conflicts and multilateral peace operations with state-of-the-art analysis of important aspects of arms control, peace and international security.

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### Pre-Connect

- U.S. and Chinese companies dominated the global arms market in 2019, while the West Asia made its first appearance among the 25 biggest weapons manufacturers, according to a report by the SIPRI research institute.
- The SIPRI Arms Industry Database was created in 1989. At that time, it excluded data for companies in countries in Eastern Europe, including the Soviet Union. The current version contains data from 2015, including data for companies in China and Russia.
- Stockholm International Peace Research Institute (SIPRI) is an **international institute based in Sweden**, dedicated to research into conflict, armaments, arms control and disarmament.
- Established in 1966, SIPRI provides data, analysis and recommendations, based on open sources, to policymakers, researchers, media and the interested public.

### Highlights

- The U.S. arms industry accounted for 61% of sales by the world's "Top 25" manufacturers last year, ahead of China's 15.7%.
- China and the United States are the two biggest states in terms of global arms spending.
- Airbus and Thales have the strongest international presence — each is represented in 24 countries. European companies are more internationalised than others.
- For the first time, a company from West Asia made it into the "Top 25": EDGE, of the United Arab Emirates. EDGE is a good illustration of how the combination of high national demand for military products and services with a desire to become less dependent on foreign suppliers is driving the growth of arms companies in the Middle East.
- SIPRI also noted that French group Dassault had shot up from 38th to 17th place, boosted by exports of its Rafale fighter jets in 2019.

### Analytica

- ✓ India is the world's second largest arms importer.
- ✓ Nineteen of the top 25 arms companies increased their arms sales in 2019 compared with 2018.
- ✓ The largest percentage increase in annual arms sales—105 per cent—was reported by French producer Dassault Aviation Group, which was the supplier of Rafale to India.
- ✓ The U.S. has dominated the market for decades, but for China — whose companies' sales rose by almost 5% in 2019 — "this increase corresponds to the implementation of reforms to modernise the People's Liberation Army underway since 2015.
- ✓ The report says that mapping has shown that Global South is becoming integrated into the global arms industry.
- ✓ This is the first of three major data launches in the lead-up to the publication of SIPRI's flagship publication in mid-2021, the annual SIPRI Yearbook. Ahead of this, SIPRI will release its international arms transfers data (details of all international transfers of major arms in 2020) as well as its world military expenditure data (comprehensive information on global, regional and national trends in military spending).

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## ART & CULTURE

### Khudiram Bose

#### News Excerpt

One of the youngest leaders of the Independence movement, Bengali revolutionary Khudiram Bose is highly regarded for his fearless spirit.

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#### Pre-Connect

- Shaheed Khudiram Bose was born on 3rd December 1889, in a tiny village of Midnapore district, West Bengal.
- Khudiram Bose had just crossed 18 years of age when he was sentenced to death for an attack to the British and was hung on 11th August 1908 at Muzaffarpur, Bihar.

#### Analytica

- ✓ From his adolescent years, he was drawn towards revolutionary activities, being inspired by a series of public lectures given by Sri Aurobindo and Sister Nivedita, when the duo visited Midnapore in the early 1900s.
- ✓ In 1905, when Bengal was partitioned, he actively participated in protests against the British.
- ✓ He was part of the **Anushilan Samiti** that was active in the first quarter of 20th century in Bengal advocating the revolutionary idea for freedom movement. The Samiti was led by nationalists like Rishi Aurobindo Ghosh, and his brother Sri Barindra Ghosh.
- ✓ Within a year, he had learnt how to make bombs and would plant them in front of police stations.

#### Revolutionary activities

- The deciding moment of Bose's life came in 1908 when he along with another revolutionary, **Prafulla Chaki** were assigned the task of assassinating the district magistrate of Muzaffarpur, Kingsford. Before being transferred to Muzaffarpur, Kingsford was a magistrate in Bengal.
- His tortuous clamping down on revolutionaries, had earned him the ire of this young group of nationalists who decided to hurl a bomb on him.
- There were multiple attempts to assassinate Kingsford. Initially the plan was to throw the bomb in the court. However, after much deliberation it was decided to avoid the court since a lot of civilians might get injured.
- On April 30, 1908, Bose threw a bomb on a carriage which he suspected was carrying Kingsford. But it turned out that it was carrying the wife and daughter of a barrister named Pringle Kennedy, who lost their lives, as Kingsford escaped.
- Bose was arrested from a railway station called Waini where he had reached next morning after having walked 25 miles. Chaki on the other hand, killed himself before he could get arrested.
- On May 21, 1908, the historic trial of Bose began presided by Judge Corndoff, Nathuni Prasad and Janak Prasad in the Jury. Bose's lawyer Narendra Kumar argued that he was too young to be able to make bombs. However, the judges had evidence of more revolutionary activities planned.
- On July 13, 1908, Bose was finally sentenced to death.

**Anushilan Samiti:** Anushilan Samiti means "Self-Culture Association". Inspired by thoughts, speeches and writings of Swami Vivekananda and influenced by Bankim Chandra Chatterjee's 'Anandmath', the concept was formulated with its roots in Sashakta Hinduism. Their main aim was to create urge amongst the Hindus to become vigorous spiritually, physically and intellectually. As a result, unnumbered youth clubs denominated as Anushilan Samiti were formed.

In the initial phase, Anushilan Samiti was established in 1902, in Kolkata under the headship of Barindra Kumar Ghosh, younger brother of Sri Aurobindo Ghosh. Pramatha Nath Mitra, Sri Aurobindo, and Deshabandhu Chittaranjan Das were made the vice-presidents of the Samiti. Its two arms were the Dhaka Anushilan Samiti centred in Dhaka, and the Jugantar Group centred at Calcutta. The expansion of the Samiti was promoted through formation of 'akhadas' (gymnasiums) across Bengal.

## Battle of Panipat

### News Excerpt

Manoj Dani, an independent U.S.-based researcher of art history, has painstakingly assimilated rare paintings pertaining to the battle and its key players in a work titled **Battle of Panipat: In Light of Rediscovered Paintings**.

The book, which was recently launched at the Bhandarkar Oriental Research Institute (BORI), casts a fresh light on the fateful day of battle on January 14, 1761 and the politics of the Deccan and North India through rare paintings, several of which are published in book-form for the first time.

### Pre-Connect

#### Third Battle of Panipat (1761):

- The Third Battle of Panipat took place on 14 January 1761, at Panipat, about 60 miles (95.5 km) north of Delhi between a northern expeditionary force of the Maratha Empire and a coalition of the King of Afghanistan, Ahmad Shah Durrani with two Indian Muslim allies—the Rohilla Afghans of the Doab, and Shuja-ud-Daula, the Nawab of Oudh.
- The battle is considered one of the largest fought in the 18th century.
- The decline of the Mughal Empire following the 27-year Mughal-Maratha war (1680–1707) had led to rapid territorial gains for the Maratha Empire. Under Peshwa Bajji Rao, Gujarat and Malwa came under Maratha control.
- Finally, in 1737, Bajji Rao defeated the Mughals on the outskirts of Delhi, and brought much of the former Mughal territories south of Delhi under Maratha control. Bajji Rao's son, Balaji Bajji Rao (popularly known as Nana Saheb), further increased the territory under Maratha control by invading Punjab in 1758. This brought the Marathas into direct confrontation with the Durrani empire of Ahmad Shah Abdali.
- In 1759 he raised an army from the Pashtun tribes and made several gains against the smaller Maratha garrisons in Punjab. He then joined with his Indian allies—the Rohilla Afghans of the Gangetic Doab—forming a broad coalition against the Marathas.
- The Marathas, under the command of Sadashivrao Bhau, responded by gathering an army of between 45,000–60,000

- ❖ **First Battle of Panipat: 1526**
- ❖ **Battle of Ghaghra: 1529**
- ❖ **Second Battle of Panipat: 1556**
- ❖ **Battle of Rakshasbhuvan: 1763**

### Analytica

- ✓ Before Waterloo 1815, there was Panipat 1761 – the dreadful battle where the Maratha army led by Sadashivrao Bhau was defeated by the forces of the Afghan invader Ahmad Shah Durrani, and left an indelible scar on the Maratha psyche. The word 'Panipat' has since entered the vernacular lexicon to signify a spectacular debacle.
- ✓ While the battle and its complicated run-up has been analysed in such monumental works as James Grant Duff's History of the Mahrattas (1826), the second volume of Jadunath Sarkar's opus Fall of the Mughal Empire (1934) and in T. S. Shejwalkar's classic monograph Panipat 1761 (1946), this critical event in modern Indian history has lacked serious visual appreciation in form of contemporary paintings till date.
- ✓ The result of the battle was the halting of further Maratha advances in the north, and a destabilization of their territories, for roughly 10 years. This period of 10 years is marked by the rule of Peshwa Madhavrao, who is credited with the revival of Maratha domination following the defeat at Panipat.
- ✓ In 1771, 10 years after Panipat, he sent a large Maratha army into North India in an expedition that was meant to
  - (a) re-establish Maratha domination in North India, and
  - (b) Punish refractory powers that had either sided with the Afghans, such as the Rohillas, or had shaken off Maratha domination after Panipat.
  - The success of this campaign can be seen as the last saga of the long story of Panipat.

## Hampi and its significance

### News Excerpt

The Archaeological Survey of India (ASI) has placed wooden barricades around the famous stone chariot at Vijaya Vittala Temple Complex in Hampi for protection. To avoid the monument from getting damaged, the ASI placed the barricades around the heritage structure that was built in the 16th century.

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### Pre-Connect

- Hampi is the town of ruins of Vijayanagara Empire. It is one of the UNESCO recognized world heritage sites in India. The place is one of India's most known archaeological destinations.
- The heritage site is located near the **River Tungabhadra**. Hampi was known by various names at different points of time: Hosapattana (New City), Vijayanagara (City of Victory), Vidyanagara (City of Learning) or Hampe, Pampa-kshetra and Pampa-pura—after the local goddess Pampa, who was worshipped even before the seventh century C.E.
- Hampi was the capital of the mighty Vijaynagar Empire in the 14th century.
- Vijaynagar was one of the largest Hindu empires in India. Two brothers, **Harihar and Bukka**, founded it in 1336. Krishnadevaraya (1509-1529) was the greatest ruler and controlled almost all of peninsular India south of Tungabhadra River.
- The chariot inside the temple complex is a shrine dedicated to Garuda, but the sculpture of Garuda is now missing. The Hampi chariot is among three famous stone chariots in India, the other two being in Konark, Odisha, and Mahabalipuram, Tamil Nadu. The delicately carved chariot at Hampi, art historians say, reflects the skill of temple architecture under the patronage of the Vijayanagara rulers who reigned from 14th to 17th century CE.

### Analytica

- The temples of Hampi, its monolithic sculptures and monuments, attract the traveler because of their excellent workmanship.
- Hampi is an ancient village that has remained important for its variety of religious and secular structures. In the epic Ramayana, it is identified as Kishkinda.
- Hampi remained in central importance in the medieval times as the second capital of the Vijayanagara Empire.
- Vijaynagar Empire flourished, as it controlled both cotton and spice trade routes of southern India, attracting traders from Persia and Portugal.
- Medieval historians refer to Hampi as an important center of trade.
- However, the glory of Vijaynagar was short-lived. With the death of Krishnadevaraya, the combined armies of the Muslim kingdoms-Bidar, Bijapur, Golconda, Ahmednagar and Berar-destroyed this mighty empire in 1565.
- Hampi-Vijayanagara was also at one point one of the richest cities in the world after Beijing when it was at its peak and India's richest at that time.

Hampi is famous for **Purandara Festival**. This annual festival is held in January-February in the Vittala temple to celebrate the birth anniversary of the medieval poet-composer, Purandar.

- ❖ **Battle of Talikota (1565)**, confrontation in the Deccan region of southern India between the forces of the Hindu raja of Vijayanagar and the allied Muslim sultans of Bijapur, Bidar, Ahmadnagar, and Golconda.
- ❖ The battle was fought on January 23, 1565, at a site southeast of Bijapur, in what is now northern Karnataka state.
- ❖ The capital city of Vijayanagar was captured, destroyed over a period of five months, and never reoccupied. The raja and Rama Raya's brother Tirumala retired to Penukonda, where the latter usurped the throne in 1570.
- ❖ The battle was decisive in breaking up the Vijayanagar empire, a domination by Telugu speakers over the Tamil- and Kannada-speaking south.
- ❖ It also began a final Muslim penetration of southern India that lasted until the end of the 18th century.

## Miscellaneous

### DibruSaikhowa National Park

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- The Gauhati High Court has stayed the environmental clearance given to Oil India Limited (OIL) for extended-reach drilling (ERD) operations at seven locations beneath the Dibru-Saikhowa National Park in eastern Assam.
- Dibru-Saikhowa National Park is designated as a biosphere reserve situated in the south bank of the river Brahmaputra in the extreme east of Assam state in India.
- Created to help conserve the habitat of the **rare white-winged wood duck**, the park is home to the water buffalo, black-breasted parrot bill, tiger and capped langur.
- A major attraction at the park is a sizeable population of feral horses that have descended from trained horses abandoned by the Allied forces during World War II.
- The forest type of Dibru-Saikhowa comprises of semi-evergreen forests, deciduous forests, littoral and swamp forests and patches of wet evergreen forests.
- It is an identified Important Bird Area (IBA) having more than 382 species of Birds.
- The Park is renowned for natural regeneration of Salix trees.

### Kilauea Volcano

- The Kilauea volcano in Hawaii's Big Island erupted on December 20 which was followed by an earthquake.
- On Hawaii's Big Island, Kilauea volcano erupted for the first time in more than two years. The crater named Halemaumau illuminated by the hot lava as plumes of hot gas and steam burst out of the crater.
- The crater is located within Hawaii's Volcanoes National Park and was home to a longstanding lava lake that was present for years before a 2018 eruption caused it to drain.
- Kilauea is one of the most active volcanoes on earth.

### Yogasana is now a sport

- The Sports Ministry recently formally recognised yogasana as a competitive sport, which will enable the ancient practice to avail government funding.
- The move is aimed at encouraging yoga, spread awareness about its benefits and to help improve physical and mental wellbeing of the people.
- Last year, an International Yogasana Sports Federation was formed under the presidentship of yoga guru Baba Ramdev.
- A National Yogasana Sport Federation of India (NYSFI) was also established for preservation and development of yoga as a competitive sport. It was recognised by the sports ministry as a National Sports Federation (NSF) recently.
- Yogasana will be inducted in future **Khelo India Games programme**.
- For competitions, 51 medals have been proposed in four events and seven categories in the sport.
- A pilot championship — National Individual Yogasana Sport Championship — has also been proposed to be organised, followed by district, state, national and World Championships.
- Having yogasana as a part of international event like Olympics etc would provide an opportunity to spread the awareness of Indian yoga and its innumerable health benefits.

### Sinai Peninsula

- Sinai Peninsula, Arabic ShibhJaziratSinā', is a triangular peninsula linking Africa with Asia and occupying an area of 23,500 square miles (61,000 square km).
- The Sinai Desert, as the peninsula's arid expanse is called, is separated by the Gulf of Suez and the Suez Canal from the Eastern Desert of Egypt, but it continues eastward into the Negev desert without marked change of relief.
- Usually regarded as being geographically part of Asia, the Sinai Peninsula is the northeastern extremity of Egypt and adjoins Israel and the Gaza Strip on the east.



- The Sinai Peninsula lies between the Gulf of Suez and the Suez Canal on the west and the Gulf of Aqaba and the Negev on the east, and it is bounded by the Mediterranean Sea on the north and the Red Sea to the south.
- The peninsula was occupied by Israeli forces during the Six-Day War of June 1967 but was returned to Egypt in 1982 under the terms of the peace treaty concluded between those countries in 1979.



### Nuclear Magnetic Resonance Technology

- Recently several new players have entered into the growing domestic honey market after pandemic as people are now focusing on wellness products post-pandemic.
- Environment watchdog CSE had issued a study report claiming leading honey makers' products were adulterated with sugar syrup.
- Most of the brands passed muster but when subjected to one test, called Nuclear Magnetic Resonance (**NMR**), **that can ascertain the composition of a product at the molecular level, that was done at a lab in Germany, only three brands passed.**
- An NMR instrument allows the molecular structure of a material to be analyzed by observing and measuring the interaction of nuclear spins when placed in a powerful magnetic field.
- For the analysis of molecular structure at the atomic level, electron microscopes and X-ray diffraction instruments can also be used, but the advantages of NMR are that sample measurements are non-destructive and there is less sample preparation required.
- Fields of application include bio, foods, and chemistry, as well as new fields such as battery films and organic EL, which are improving and developing at remarkable speed. NMR has become an indispensable analysis tool in cutting-edge science and technology fields.
- Among the tests employed as per Indian regulations is one to check whether the honey is adulterated with C4 sugar (cane sugar) or C3 sugar (rice sugar). Most samples cleared these tests but failed another test called the Trace Marker for Rice test, to test for rice syrup adulteration.

### Partnership in Population Development

- Dr. Harsh Vardhan, Union Minister for Health and Family Welfare digitally addressed the Inter Ministerial Conference by Partners in Population and Development (PPD).
- India is steadfast in its reaffirmation of the commitments made at the **Nairobi Summit**, to work towards ending all maternal deaths, fulfilling unmet needs for family planning, reducing

gender-based violence and ending harmful practices against women and girls. The timeline for achieving these targets has been stipulated at 2030.

- We have been making continuous efforts to substantially reduce the unmet need for contraception by increasing the range of contraceptives and improving accessibility and quality of family planning services. Through mass awareness campaigns, strong advocacy & counseling.
- For achieving the Sustainable Development Goal target for reducing Maternal Mortality Rate(MMR) to less than 70 by 2030 we have implemented a program called (SurakshitMatritvaAashwasan)SUMAN which means Safe Motherhood Assurance.
- With aspirations of achieving Universal Health care, India's National Health Policy 2017 aims at raising public health expenditure to 2.5 percent of the GDP.

#### **About Partners in Population and Development (PPD)**

- It is an intergovernmental initiative created specifically for the purpose of expanding and improving South-to-South collaboration in the fields of reproductive health, population, and development. Represented by 27 developing countries including India.
- Secretariat: Dhaka, Bangladesh
- PPD was launched at the 1994 International Conference on Population and Development (ICPD), when ten developing countries from Asia, Africa and Latin America formed an intergovernmental alliance to help implement the Cairo Program of Action (POA).
- This POA, endorsed by 179 nations, stresses the need to establish mechanisms to promote development through the sharing of experiences in reproductive health (RH) and family planning (FP) within and among countries.

#### **ParaySamadhan**

- West Bengal government launched "ParayParaySamadhan [Resolving problems in neighbourhoods]" to address small grievances at the community level and to address small infrastructural gaps.
- This will be a supplementary initiative of 'Duare Sarkar'.
- While 'Duare Sarkar' is individual-oriented, neighbourhood problems will be addressed by this scheme. Like the "Duare Sarkar" scheme, "ParayParaySamadhan" would also operate in a real-time mode and people would be able to track their applications.
- The "Duare Sarkar" programme was started to help people receive the benefits of at least 11 state-run schemes.

#### **Mini Kaziranga**

- Assam's Pobitora Wildlife Sanctuary, has the highest concentration of one-horned rhinos in the world and is often called 'Mini Kaziranga' due to similar landscape and vegetation. It is landlocked by Assamese villages from every side of it with the traditional Assamese culture.
- Besides one horned rhino, the protected area is a paradise for both resident and migratory birds at Pobitora Wildlife Sanctuary. This area is also identified as an important Bird Areas in the country by Bombay Natural History Society (BNHS). The presence of migratory water fowl during winter is quite significant in Pobitora.
  - Water hyacinth (an invasive aquatic plant) is a major problem to the area especially to waterfowl, as it forms thick mats on the water surface.
- Pobitora Wildlife Sanctuary is one of the major living areas of the fresh water Dolphins or South Asian River Dolphins, which are primarily found in the rivers of Ganga and Brahmaputra in India. It is often called as 'Susu' or 'Hihu' in the local dialect and is recognized by the Government of India as the National Aquatic Animal.
- Assam is the most species-rich State in India in terms of turtle diversity. It is home to 20 species of freshwater turtles and tortoises out of 29 species found in India. But, 80% of these species are threatened with extinction.

#### **New Parliament Building**

- New Parliament will be a monument to cultural diversity of Indian democracy and will be a fitting tribute to Indian democracy on its 75th year of independence.

- Under the Central Vista redevelopment project, the new Parliament building's indigenous architecture will represent the cultural diversity and strengthen the "Ek Bharat-Shrestha Bharat" spirit.
- Indian Parliament's new building will have a triangular shape to reflect the importance of triangles being a sacred geometry in various religions, while its interiors will have three national symbols as their main themes -- Lotus, Peacock and Banyan Tree.
- The new building, being constructed by Tata Projects Ltd, will come up in front of the existing Parliament House that was built nearly 100 years ago at a cost of Rs 83 lakh at that time and would eventually be turned into a museum.
- In the Lok Sabha chamber, we have used the national bird Peacock as its theme, in Rajya Sabha chamber we have used the national flower Lotus as its theme and in Central Lounge courtyard we have used the national tree Banyan as its theme.
- The new building will house larger Lok Sabha and Rajya Sabha Halls, with capacities of 888 seats and 384 seats respectively, to accommodate an expanded Parliament after the freeze on its expansion lifts in 2026. The Lok Sabha Hall will also have additional capacity, up to 1272 seats, to host joint sessions.
- The new Parliament building will use green construction materials as an eco-friendly building. Devices will be installed which will save 30 per cent of electricity. There will also be arrangements for rainwater harvesting and solar power generation.
- The new building has been designed by Ahmedabad-based HCP Design and Management Pvt Limited and the construction would be carried out by Tata Projects Ltd.
- Edwin Lutyens and Herbert Baker designed the present Parliament building.

### Dak Pay

- The Department of Posts and the India Post Payments Bank (IPPB) unveiled a new digital payment application "DakPay" as part of its ongoing efforts to provide digital financial inclusion at the last mile across the country.
- This innovative service will not only give access to banking services and postal products online, but also is a unique concept where one can order and avail postal financial services at doorsteps.
- DakPay is a suite of digital financial and assisted banking services provided through the postal network to cater to the financial needs of various sections of society, particularly those living in rural areas.
- The services include free-of-cost money receipts and transfers at doorsteps, and scanned QR codes, to make payments for a range of utility and banking services.
- Postmen and women, and Gramin Dak Sevaks, have been equipped with smartphones and biometric devices to provide doorstep banking services.
- Under the DakPay umbrella brand, India Post aims to provide facilities such as
  - checking bank balances;
  - transactions through multiple bank accounts;
  - the payment facility through the IPPB mobile banking application for postal products' making payments using DakPay virtual debit card; and cash withdrawal and deposit using the Aadhaar-enabled payment system.
  - The government is also contemplating a provision for credit facilities.

### Tharu Tribe

- The Tharu community belongs to the Terai lowlands, amid the Shivaliks or lower Himalayas. According to the 2011 census, the Scheduled Tribe population in Uttar Pradesh was more than 11 lakh; this number is estimated to have crossed 20 lakh now.
- The word tharu is believed to be derived from sthavir, meaning followers of Theravada Buddhism.
- Most of them are forest dwellers, and some practice agriculture.
- They speak various dialects of Tharu, a language of the Indo-Aryan subgroup, and variants of Hindi, Urdu, and Awadhi. In central Nepal, they speak a variant of Bhojpuri, while in eastern Nepal, they speak a variant of Maithili.

- Tharu women have stronger property rights than is allowed to women in mainstream North Indian Hindu custom.
- The Uttar Pradesh government has recently embarked upon a scheme to take the unique culture of its ethnic Tharu tribe across the world. The intention is to put Tharuvillages on the tourism map, and to create jobs and bring economic independence to the tribal population.
- The state government is working to connect Tharu villages in the districts of Balrampur, Bahraich, Lakhimpur and Pilibhit bordering Nepal, with the home stay scheme of the UP Forest Department. The idea is to offer tourists an experience of living in the natural Tharu habitat, in traditional huts made of grass collected mainly from the forests.

### Cryogenic Technology

- Cryogenic technology involves the use of rocket propellants at extremely low temperatures. The combination of liquid oxygen and liquid hydrogen offers the highest energy efficiency for rocket engines that need to produce large amounts of thrust.
- But oxygen remains a liquid only at temperatures below minus 183 0 Celsius and hydrogen at below minus 253 0Celsius. Building a rocket stage with an engine that runs on such propellants means overcoming engineering challenges.
- Cryogenic stage is technically a much more complexed system with respect to solid or liquid propellant (stored on earth) stages due to the usage of propellants at extremely low temperatures.
- A cryogenic engine provides more force with each kilogram of cryogenic propellant it uses compared to other propellants, such as solid and liquid propellant rocket engines and is more efficient

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### Concept Clearing Assignment

1. What are Ponzi investment schemes? Discuss the steps taken by government to discourage such schemes.
2. Do you think that the insurmountable issue of Non-performing Assets (NPA) can be effectively dealt by the formation of Bad banks? Also bring out issues, challenges and opportunities related to it.
3. Despite an estimate of decent GDP growth in the next fiscal, the overall NBFC sector growth is likely to be slower. Discuss the causative factors associated with it? Also suggest long term financially prudent measures to deal with the situation?
4. Do you agree that Indian economy is witnessing V-shaped recovery? Substantiate your views with suitable examples. Also examine the role of Atmanirbhar Bharat Mission in this context.
5. Bio-fuels generate less pollution and reduce GHGs than conventional fossil fuels, but in practice it results in negative consequences on environment. Discuss the impacts of bio-fuel production on biosphere. Examine the suitability of adoption of E20 Fuel standards in India?
6. Highlights the contributions of Bengali revolutionary Khudiram Bose in the Indian Nation Movement.
7. Explain Quantum Key Distribution technology. What makes this technology unbreakable? And also explain its possible application.
8. Explain the physical features of Tso Kar Wetland Complex? How it can be called as birds' paradise? Also explain the role of Wetlands in functioning of ecosystem.
9. Highlight the differences between Solstices and Eclipse. Why are the hours of daylight not the same every day?
10. Explain the Refuse Derived Fuel. How it can enable the mega-cities of India to reduce the amount of garbage that ends up in landfills?
11. Examine the India's Neighbourhood first policy in context of India-Bangladesh Bilateral ties in recent times? To what extent do you think that Close cooperation between India and Bangladesh could significantly contribute to the peace and development of the region. Justify your views.
12. After years of bitter arguments Brexit Deal has been finally concluded. What are the major terms of agreement between Britain and EU? What is the controversy about Northern Ireland in the Brexit deal?
13. Do you think criminalization of politics could strike irreparable damage to our republic, its integrity and people's faith in democracy? Justify your views. Also, analyze the patterns of contemporary criminal-political nexus.
14. Explain the key sections of Representation of people act dealing with the disqualification of Member of legislative council. Also discuss the role of judiciary in such instances.
15. The development of the mock egg could meet the protein needs of the diet-specific, health conscious, vegan and vegetarian people. Elucidate. Explain the mock egg's potential contribution in achieving sustainable development goals?

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### P.T Oriented Questions

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| <p>1. Which of the following can be cited as possible advantages of E20 Fuel?</p> <ol style="list-style-type: none"> <li>1. It would reduce import dependency on oil.</li> <li>2. It would reduce the water footprint significantly.</li> <li>3. It would support India's commitment to transition to a low carbon economy.</li> </ol> <p>Select the correct answer using the code given below:</p> <ol style="list-style-type: none"> <li>(a) 1 and 3 only</li> <li>(b) 2 and 3 only</li> <li>(c) 1 and 2 only</li> <li>(d) 1, 2 and 3</li> </ol> <p>2. In which of the following regions/States Ramsar recognized wetlands <i>cannot</i> be noticed?</p> <ol style="list-style-type: none"> <li>1. Arunachal Pradesh</li> <li>2. Telangana</li> <li>3. Changthang region of Ladakh</li> </ol> <p>Select the correct answer using the code given below:</p> <ol style="list-style-type: none"> <li>(a) 2 and 3 only</li> <li>(b) 1 and 3 only</li> <li>(c) 1 and 2 only</li> <li>(d) 1, 2 and 3</li> </ol> <p>3. Consider the following statements regarding Winter Solstice:</p> <ol style="list-style-type: none"> <li>1. In the Northern Hemisphere, the winter solstice marks the longest nights and shortest days of the year</li> <li>2. During the Northern Hemisphere's winter solstice, the sun appears directly over the Tropic of Capricorn.</li> </ol> <p>Which of the statements given above is/are correct?</p> <ol style="list-style-type: none"> <li>(a) 1 only</li> <li>(b) 2 only</li> <li>(c) Both 1 and 2</li> <li>(d) Either 1 or 2</li> </ol> <p>4. Which of the following statements are correct regarding Refuse Derived Fuel?</p> <ol style="list-style-type: none"> <li>1. It is a fuel produced from selected industrial waste only.</li> </ol> | <p>2. It is useful feed for pyrolysis, gasification, and combustion.</p> <p>3. It utilizes non-recyclable plastics, paper cardboard, labels, and other corrugated materials.</p> <p>Select the correct answer using the code given below:</p> <ol style="list-style-type: none"> <li>(a) 2 and 3 only</li> <li>(b) 1 and 3 only</li> <li>(c) 1 and 2 only</li> <li>(d) 1, 2 and 3</li> </ol> <p>5. Consider the following statements regarding Great Indian Bustard:</p> <ol style="list-style-type: none"> <li>1. It is a critically threatened species in India.</li> <li>2. It is one of the heaviest flying birds in India.</li> <li>3. Its population in the wild is confined to western Rajasthan only.</li> </ol> <p>Which of the statements given above are correct?</p> <ol style="list-style-type: none"> <li>(a) 1 and 3 only</li> <li>(b) 1 and 2 only</li> <li>(c) 2 and 3 only</li> <li>(d) 1, 2 and 3</li> </ol> <p>6. Which of the following beaches in India are certified with International Blue Flag certification?</p> <ol style="list-style-type: none"> <li>1. Kappad Kerala</li> <li>2. Ghoghla Diu</li> <li>3. Padubidri Karnataka</li> </ol> <p>Select the correct answer using the code given below:</p> <ol style="list-style-type: none"> <li>(a) 2 and 3 only</li> <li>(b) 1 and 3 only</li> <li>(c) 1 and 2 only</li> <li>(d) 1, 2 and 3</li> </ol> <p>7. Bhasan Char Island in the Bay of Bengal was seen in the news recently due to:</p> <ol style="list-style-type: none"> <li>(a) India has decided to deliver this island to US-Army</li> <li>(b) Myanmar has purposed to settle refugees on this Island</li> </ol> |
|---|--|

- (c) India has invited a bid to deliver this island to private space companies
- (d) Bangladesh started to move a group of refugees on this Island

8. Consider the following statements regarding the Organization of the Petroleum Exporting Countries (OPEC)

1. It is a permanent and intergovernmental organization which was created at the Baghdad Conference.
2. The non-OPEC countries which import crude oil are termed as OPEC plus countries.

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. Consider the following statement regarding the Human Freedom Index 2020:

1. It is jointly released by the institutes of America and Canada.
2. In the South Asian region India's performance is worst.

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

10. Consider the following statements regarding the Silver Economy recently seen in news:

1. Silver economy is analysed in the field that centers on the social aspect of growing old.
2. Silver economy helps elders to use market so it is market economy not cross economy.

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

11. With reference to the AtmaNirbhar Bharat Rozgar Yojana, consider the following statements:

1. Under the scheme, govt will give subsidy to establishments for new hiring's.
2. Organization with over 1000 employees' get employees EPF contribution from the central government.

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. Consider the following statements regarding the PM WANI:

1. PM WANI aims to set strong Wi-fi set up in rural areas due to COVID-19.
2. It is anticipated that PM-WANI will be business-friendly and complement the government's ease of doing business initiatives.
3. PM WANI aims to cover all rural areas of India by 2022.

Which of the statements given above is/are correct?

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

13. Consider the following statement regarding the Ponzi Schemes recently seen in news:

1. A Ponzi scheme is a fraudulent investing scam which generates returns for earlier investors with money taken from later investors.
2. The scheme guarantees high return for short and low return for long period of time.

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 zero-coupon bonds, consider the following statements:
1. There is very low interest attached to the bond and it is issued at par and will be paid at the end of the specified period.
  2. Zero coupon bonds by private companies are normally issued at discount and are tradable.
  3. The issuance of these special bond will not affect the fiscal deficit.
- Which of the statements given above is/are correct?
- (a) 1 and 2 only  
(b) 2 and 3 only  
(c) 2 only  
(d) 1 and 3 only
15. Recently, Indian Banks Association proposed for setting up a bad bank, in this context consider the following statements:
1. The bad banks help other banks to clear their balance sheets which was affected by Non-Performing Assets (NPA).
  2. The creation of a bad bank allows the segregation of a bank's good assets from its bad assets.
- 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
16. Consider the following statements regarding the Assets Under Managements (AUM):
1. Recently a report suggested that AUM of non-banking financial companies (NBFCs) heading for a contraction in the current fiscal are set to grow again at a relatively subdued.
  2. AUM is the total market value of the securities a financial institution owns or manages on behalf of its clients.
- Which of the following statements is/are correct?
- (a) 1 only  
(b) 2 only  
(c) Both 1 and 2  
(d) Neither 1 nor 2
17. Recently, a Finance Ministry Report stated that the Indian economy is witnessing V-shaped recovery, in this context consider the following statements:
1. A V-shaped recovery represents the shape of the chart of certain economic measures, such as employment, GDP, and industrial output.
  2. V-shaped recovery is a best-case scenario given the recession.
- Which of the following statements given above is/are correct?
- (a) 1 only  
(b) 2 only  
(c) Both 1 and 2  
(d) Neither 1 nor 2
18. Which of the following is incorrect about quantum key distribution (QKD) technology?
1. It is a technology that uses quantum physics to secure the distribution of symmetric encryption keys.
  2. It uses individual photons for the exchange of cryptographic key data between two users.
- 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
19. Which of the following protected areas has the highest concentration of one-horned rhinos in the world?
- (a) Barail Wild Life Sanctuary  
(b) Campbell Bay National Park  
(c) Govind PashuVihar National Park  
(d) Pobitora Wildlife Sanctuary

20. Which of the following statements is/are correct?

1. Hampi is located near the River Tungabhadra.
2. Vijaynagar empire was founded by Krishnadevaraya.

Select the correct answer using the code given below:

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

21. Recently, China announced that it is planning to build a major hydropower project as a part of its 14th Five-Year Plan (2021-25), in this context consider the following statements:

1. The hydropower project is built on the YarlungZangbo River, in Mêdog County in Tibet.
2. It is first operationalized hydropower project in Tibet.

Which of the following statements is/are correct?

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

22. Consider the following statements regarding communications satellite CMS-01:

1. It envisaged for providing services in extended X Band of the frequency spectrum.
2. It was injected precisely into its pre-defined sub-GTO orbit and it is expected to have a life of over fifty years.

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 Shigella Infection:

1. It is a contagious intestinal infection caused by a genus of bacteria.

2. It can infect people of all ages and children are less susceptible to the infection.

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 are correct regarding Mock Eggs?

1. It is lab-based protein derived by reactions of amino acids of dead organisms.
2. It is gluten free and has zero cholesterol.
3. It will reduce the risk of animal-based diseases.

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

25. Which of the following can be cited as Probable causes of Eluru Mystery Disease outbreak?

1. Water contamination by heavy metals.
2. Excessive use of bleaching powder and chlorine in sanitation programmes.
3. Residues of pesticides used in agriculture and aqua processing sectors.

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

26. Which of the following is/are the aim/aims of "Digital India" Plan of the Government of India? (UPSC-2018)

1. Formation of India's own Internet companies like China did.
2. Establish a policy framework to encourage overseas multinational corporations that collect Big Data to build their

- large data centers within our national geographical boundaries.
3. Connect many of our villages to the Internet and bring Wi-Fi to many of our schools, public places and major tourist centers.
- Select the correct answer using the code given below:
- (a) 1 and 2 only  
(b) 3 only  
(c) 2 and 3 only  
(d) 1, 2 and 3
27. In which of the following areas can GPS technology be used? (UPSC-2018)
1. Mobile phone operations
  2. Banking operations
  3. Controlling the power grids
- Select the correct answer using the code given below:
- (a) 1 only  
(b) 2 and 3 only  
(c) 1 and 3 only  
(d) 1, 2 and 3
28. Which reference to Indian history, who among the following is a future Buddha, yet to come to save the world? (UPSC-2018)
- (a) Avalokiteshvara  
(b) Lokeshvara  
(c) Maityera  
(d) Padmapani
29. Consider the following statements: (UPSC-2018)
1. Capital Adequacy Ratio (CAR) is the amount that banks have to maintain in the form of their own funds to offset any loss that banks incur if the account-holders fail to repay dues.
  2. CAR is decided by each individual bank.
- 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
30. Consider the following statements: (UPSC-2018)
1. The Food Safety and Standards Act, 2006 replaced the Prevention of Food Adulteration Act, 1954.
  2. The Food Safety and Standards Authority of India (FSSAI) is under the charge of Director General of Health Services in the Union Ministry of Health and Family Welfare.
- 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

### Answer Key

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



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# OUR TOPPERS

**KANISHAK KATARIA**  
(AIR - 1)



**TESTIMONIAL**

I am highly indebted to Khan Sir and KSG for their guidance and feedback, especially for the interviews. Khan Sir was very nurturing and available for one-to-one interactions. His critical analysis and pinpoint identification of my strengths and weaknesses helped me a lot. I also followed his videos on Youtube which were quite beneficial. Thank You Sirs for your support & guidance.

Signature: 

**AKSHAT JAIN**  
(AIR - 2)




**TESTIMONIAL**

I would like to thank KSG and Khan Sir for their guidance and motivation. The mock interviews at KSG were particularly helpful in understanding the intricacies of the interview/personality test. It helped me identify my strengths and weaknesses in a timely manner, and work upon them accordingly.

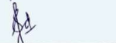
Signature: 

**SRUSHTI JAYANT DESHMUKH**  
(AIR - 5)




**TESTIMONIAL**

Thank you so much to the entire team of Khan Study Group! KSG's foundation course has been my starting point. It has helped me a lot. The focus on answer writing from Day-1 really contributed a lot. A special thanks to Khan Sir, for his motivating aura and good words.

Signature: 

**SHUBHAM GUPTA**  
(AIR - 6)




**TESTIMONIAL**


Khan Sir,

Thank you so much for always being encouraging and keeping a positive mindset. Your guidance for the personality test has helped me significantly in attaining the success that I have been able to. Your personal interactions with me has always motivated me to keep an inquisitive mindset and optimistic attitude.

Thanks again to you Sir and the entire KSG team.

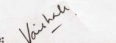
Signature: 

**VAISHALI SINGH**  
(AIR - 8)



**TESTIMONIAL**

I cannot thank KSG & Khan Sir enough for their guidance throughout the interview process. It was much needed and, it were his words which inspired me to perform well. Thank you so much!

Signature: 

**GUNJAN DWIVEDI**  
(AIR - 9)



**TESTIMONIAL**

KSG played a very important role in my preparation. The excellent guidance I received from Khan Sir helped me achieve my childhood dream. Thank you for all the support.

Signature: 

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9811 293 743

## JAIPUR TONK ROAD

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Jaipur- 302015

8290 800 441

## BHOPAL M.P NAGAR, ZONE II

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Bhopal- 462011

7509 975 361

## PATNA EXHIBITION ROAD

Above Toyota  
Showroom,  
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Exhibition Road,  
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7463 950 774

## INDORE BHAWAR KUAN

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Indore- 452001

9893 772 941

## BENGALURU KORAMANGALA CHANDRA LAYOUT

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behind Airtel office  
2nd Cross Road,  
KHB Colony,  
5<sup>th</sup> Block,  
Koramangala  
Bengaluru- 560095

7619 166 663

94, 2<sup>nd</sup> floor,  
Kasabha Hobli,  
Above Domino's  
Pizza, 4<sup>th</sup> Main Rd.,  
Maruthi Nagar,  
Chandra Layout,  
Bengaluru,  
Karnataka-560040

7619 136 662

## RANCHI SIRAM TOLI CHOWK

3<sup>rd</sup> floor  
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7463 950 774