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Comprehensive **NEWS** Analysis

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Polity and Governance

1. Landmark electoral reforms in Maharashtra

Context:

This year marks the 25th anniversary of the historic 73rd and 74th amendments to the constitution of India. These amendments gave constitutional status to village, city and district level local self- governments. Yet, the fulfillment of the dream of true panchayati raj remains distant.

Challenges faced by the Acts:

- The devolution of the three “F”s—funds, functions and functionaries—from state capitals and secretariats to local municipal and village councils is a highly unfinished business.
- Either the representatives and officers at the state level are unwilling to relinquish power and resources to municipalities and panchayats, or they don’t have the confidence in the capacity of the third tier.

State Election commission Vs Election commission of India:

- The law arising from the amendments also requires setting up of the state election commissions (SECs), which have power and status on par with the central Election Commission of India (ECI), a fact also reiterated by the Supreme Court.
- The ECI, however, looms much larger in the public’s consciousness, because it is in charge of electing members of Parliament and state legislatures, where most power resides. The true spirit of the two amendments would be served only when there is genuine decentralization of power down to the third tier.
- The SEC conducts elections to local bodies like village panchayats, zilla parishads, municipal councils and corporations. The SEC’s job is messier than the ECI’s because local elections are close contests and winning margins can be very slim.
- Unlike the ECI, the SEC is also entrusted with drawing boundaries of wards, which has to be done every 10 years. This is a tricky and thankless job, since politicians and elected officials are very possessive of their “ward” and electors.
- The ECI does not have to redraw boundaries of constituencies unlike the SEC.
- The SEC also has to ensure the code of conduct for each of the 29,000 elections (in Maharashtra). But imagine the complexity of imposing the code in one village where an election is imminent, and not in the adjacent village where no election is scheduled.

Maharashtra electoral Reforms

- The SEC of Maharashtra has blazed a trail in a series of electoral

reforms in the last few years. It is the first one to go fully digital in the filing of nomination papers and affidavits of all candidates.

- This has eliminated most errors and enabled instant dissemination of information to the voters.
- It is the first SEC in the country to cancel registration of more than 250 political parties for failure to submit audited accounts in time. It is also the first one to disqualify an elected representative for failure to comply with expense disclosure rules.
- Most importantly, it took a giant step recently by giving teeth to the idea of the NOTA (none of the above) button. If NOTA is the winner in any election in Maharashtra, there will be a mandatory re-poll.
- The governor of Maharashtra, speaking at an international conference in Mumbai to commemorate 25 years of the amendments, opined that parties should not give tickets to candidates with a criminal record.
- For instance, in the list pasted outside the polling booth, the names can be in bold red letters (or at least with a red dot beside the name).
- In order to reduce criminality in legislatures, the apex court had asked for special fast track courts to be set up to dispose of all pending criminal cases against legislators in a year's time.
- The law to disqualify anyone with a pending criminal case, especially if charged with heinous crimes like murder, rape or assault, can only be passed by Parliament.

Way forward:

The journey of electoral reforms is a long one. The traditional duo of the challenge of money and muscle power has now been joined by a third "M", i.e. media power. By this is meant the unhealthy influence of paid news and fake news, magnified by social media. The power of the ECI and SEC seems hopelessly inadequate to battle this tsunami of challenges. Even so, India's democracy has progressed and is more robust. Ultimately, there is no substitute for an educated, enlightened and vigilant voter.

2. The Odisha Land Rights Act: Technology for all

CONTEXT:

The Odisha Land Rights to Slum Dwellers Act, 2017, intended to provide titles to over 200,000 households, is a landmark legislation for many reasons. It is a multi-stakeholder endeavour that leverages unique capacities for effective implementation, adopts a community-centric lens and leverages technology as an integral tool to drive efficiency and fidelity.

OBJECTIVES:

- The Act does not end only at land rights, but also extends to providing slum dwellers with livable habitats that will play an important role in driving social and economic mobility.

- The objective of this article is to focus on technology, particularly unmanned aerial vehicles or drones that have been used in the implementation process.
- Drones have been used for geospatial mapping by expert organizations, such as the Spatial Planning and Analysis Research Centre, Transerve and Surbana Jurong, with technical and strategic direction from Omidyar Network.
- The geospatial mapping by drones yields aerial images of the slums. Maps are created by collating aerial images. These maps are used to identify slum households eligible for land rights and draw up house and plot boundaries.
- They are also shared with non-governmental organizations to carry out the verification process—including determining eligibility for title and measuring area that will be settled, according to the provisions in the legislation.

SIGNIFICANCE:

- This is the first large-scale documented use of drones in mapping informal settlements towards the delivery of land rights in India. Our learnings on the ground and experience of stakeholders demonstrate that geospatial technology can be a significant lever in delivering land and property rights in multiple ways.
- First, high-resolution geospatial technology improves the fidelity of the mapping process.
- The drone maps generated have high resolution and can tell apart two distinct points as close as 2 cm easily. Similar resolution can also be achieved through other traditional surveying means such as Differential Global Positioning System (DGPS), which is an enhancement to GPS, or Total Station Survey (TSS), another alternative system of mapping land. However, drones are a much faster and cheaper alternative
- Second, the use of drones improves the efficiency of the process. In Odisha, over 100,000 households were mapped in less than two months.
- The efficiency brought in by the use of drones has proved to be a key enabler in Odisha, which wants to complete the project in 18 months.
- It is an incredible feat considering that titling programmes involving far fewer beneficiaries can take 5-10 years.
- Third, technology promotes inclusivity for all and not exclusivity for a few. This is especially important since the legislation by design intends to incorporate communities at the centre of the process.

WAY FORWARD:

The Odisha model also has some important lessons for the use of

geospatial technology. As Odisha leads the way in becoming the first state to validate the need for future-forward technologies, such as drones and geospatial tools, in delivery and implementation of large-scale systemic programmes such as land rights, policymakers in India must take note of the lessons learnt and work towards a technology-enabled, citizen-centric delivery of economic growth through critical assets such as land and property.

3. Witness protection scheme

Context:

The Supreme Court has directed all the states to implement the draft witness protection scheme framed by the centre in consultation with the National Legal Services Authority (NALSA). The court said that the draft scheme which has now been finalized, would be made into a law “in due course”, but till then the states should start implementing it.

Background:

- The issue of witness protection scheme had cropped up earlier when the SC was hearing a PIL seeking protection for witnesses in cases involving self-styled preacher Asaram Bapu.
- In April this year, the Centre had informed the top court that it had framed a draft witness protection scheme and it was circulated among the states and Union Territories administration for comments. The court had asked the Centre to finalize the scheme after getting response from the states and Union Territories.
- In November last year, the court had asked the Centre as to why a draft scheme cannot be formulated for witness protection in the country when specific provisions in this regard were already there in the National Investigation Agency (NIA) Act.

What is Importance of witness protection?

- The importance of a witness can be gauged from the observation of Supreme Court in the Himanshu Singh Sabharwal Vs. State of Madhya Pradesh and Ors. 2008 case, whereby the court observed that witnesses are the eyes and ears of the justice system and when a witness is threatened or killed or harassed, it is not only the witness who is threatened but also the fundamental right of a citizen to a free and fair trial is vindicated.
- Protection of the witness is the duty of the state and when state fails to protect a witness, it actually fails to uphold the national motto – Satyameva Jayathe. Similarly, in the Neelam Katara versus Union of India case, SC observed that the edifice of administration of justice is based upon witnesses coming forward and deposing without fear or favour, without intimidation or allurements in court of law.
- If witnesses are intimidated or allured, the foundation of administration of justice gets weakened and even obliterated.

What are key Witness Protection Laws around the world?

- Witness protection laws are not in all countries, however, in most countries, the local police may provide some kind of protection when needed.
- A few countries where there are proper witness protection laws include Canada (Witness Protection Program Act), Ireland (Witness Security Programme), Israel (Witness protection law and Authority), Italy (Central Protection Department), UK (United Kingdom Protected Persons Service), Thailand (Witness Protection Office), United States (Federal Witness Protection Program) etc.

What did various committees say about witness protection?

- In a first, the 14th Report of the Law Commission (1958) had addressed the inadequate arrangements for witnesses and recommended some travel allowances and facilities for witnesses. The report said that if the witness is not taken care of, he or she may develop an attitude of indifference to the question of bringing guilty to justice.
- The issue was also addressed by 4th National Police Commission (1980) report which said that while a prisoner suffers from some act, witness suffers from some act, witness suffers for no fault of his own. The report advocated removing inconveniences / handicaps and also a daily allowance payable to witnesses for appearance in the Courts.
- Similarly, the Law Commission in its 178th report, 2001 addressed the issue of preventing witnesses turning hostile. This report suggested that Police should take precautions during investigations to prevent prevarication by witnesses when they are examined. The most significant recommendation of this report was to amend the Code of Criminal Procedure, 1973 and insert a new section 164-A which would provide for recording of the statement of material witnesses in the presence of Magistrates where the offences were punishable with imprisonment of 10 years and more. On the basis of this recommendation, the Criminal Law (Amendment) Bill, 2003 was introduced to make it mandatory to record statement before a Magistrate where the sentence for the offence could be seven years or more.
- The Justice Malimath Committee on Reforms of Criminal Justice System also addressed the issue and said that a law should be enacted for giving protection to the witnesses and their family members on the lines of the laws in USA and other countries.
- The 198th report of Law Commission most elaborately addressed the issue covering various aspects such as Witness Identity Protection v. Rights of accused, Witness Protection Programmes on the lines of existing laws in New Zealand and Portugal.

Some salient features of the Witness Protection Scheme 2018

- The scheme categorizes witnesses as per threat perception. The different categories as are follows :-

Category-A	Category-B	Category-C
Threat extends to life of witness or family members and their normal way of living is affected for a substantial period during or after the investigation/trial.	Threat extends to safety, reputation or property of the witness or family only during the investigation process or trial.	Threat is moderate and extends to harassment or intimidation of the witness or his family member's reputation or property during the investigation process.

- State Witness protection fund:** The expenses incurred during the implementation of the witness protection order passed by the competent authority and other related expenditure shall be met from this fund.
- Protective measures available:** Ensuring that the witness and accused do not come face to face during the investigation or trial, monitoring of mail and telephone calls, arrangement with the telephone company to change the witness's telephone number or assign him or her an unlisted number, installation of security devices in the witness's home, Concealment of identity of the witness, emergency contact persons for the witness, close protection and regular patrolling around the witness's house, temporary change of residence, escort to and from the court and provision of government vehicle on the date of hearing, holding of in-camera trials, allowing a support person to remain present during recording of statement and deposition, usage of specially designed vulnerable witness court rooms, ensuring expeditious recording of deposition without adjournments and any other form of protection measures and financial aid.

Objectives of the Witness Protection Scheme-2018:

- To enable a witness to give testimony in a judicial setting or to cooperate with law enforcement and investigations without fear of intimidation or reprisal.
- To ensure that the investigation, prosecution and trial of criminal offences is not prejudiced because witnesses are intimidated or frightened to give evidence without protection from violent or other criminal recrimination.
- To promote law enforcement by facilitating the protection of persons who are involved directly or indirectly in providing assistance to criminal law enforcement agencies and the overall administration of Justice.
- To give witnesses the confidence to come forward to assist law enforcement and Judicial Authorities with full assurance of safety.

- To identify a series of measures that may be adopted to safeguard witnesses and their family members from intimidation and threats against their lives, reputation and property.

Way Forward

- Victims and witnesses of serious crimes are particularly at risk when the perpetrator is powerful, influential, or rich and the victims or witnesses belong to a socially or economically marginalized community.
- Girls and women who report sexual violence are often even more vulnerable and face extreme pressure or direct threats from the accused.
- Also, witnesses need to have the confidence to come forward to assist law enforcement and prosecutorial authorities. They need to be assured that they will receive support and protection from intimidation and the harm that criminal groups may seek to inflict upon them in attempts to discourage or punish them from co-operating.
- Hence, legislative measures to emphasize prohibition against tampering of witnesses have become the imminent and inevitable need of the day.

4. UNESCO's Global Education Monitoring Report 2019

UNESCO global education monitoring report 2019 has been released. The 2019 GEM Report continues its assessment of progress towards Sustainable Development Goal 4 (SDG 4) on education and its ten targets, as well as other related education targets in the SDG agenda.



The Report examines the education impact of migration and displacement across all population movements: within and across borders, voluntary and forced, for employment and education. It also reviews progress on education in the 2030 Agenda for Sustainable

Development.

Key Issues discussed in the report (India specific)

Literacy levels in rural households of India dip with seasonal migration:

- In India, 10.7 million children aged 6 to 14 lived in rural households with a seasonal migrant in 2013. About 28% of youth aged 15 to 19 in these households were illiterate or had not completed primary school, compared to 18% of the cohort overall.
- About 80% of seasonal migrant children in seven cities lacked access to education near work sites, and 40% are likely to end up in work rather than education, experiencing abuse and exploitation.

Inter-State Migration:

- Inter-State migration rates have doubled between 2001 and 2011. An estimated 9 million migrated between States annually from 2011 to 2016. The report also warns of the negative impact on education for children who are left behind as their parents migrate.

The worst hit- Construction labors:

- The construction sector absorbs the majority of short-term migrants. A survey in Punjab state of 3,000 brick kiln workers in 2015-16 found that 60% were inter-State migrants. Between 65% and 80% of all children aged five to 14 living at the kilns worked there seven to nine hours per day. About 77% of kiln workers reported lack of access to early childhood or primary education for their children.

What has been done in this regard?

India has taken steps to address the issue.

- The Right to Education Act in 2009 made it mandatory for local authorities to admit migrant children.
- National-level guidelines were issued, allowing for flexible admission of children, providing transport and volunteers to support with mobile education.
- The policies were attempted to create seasonal hostels and aiming to improve coordination between sending and receiving districts and states.
- Some State governments have also taken steps for migrant children's education.



Pending Issues:

- Most interventions are focused on keeping children in home communities instead of actively addressing the challenges faced by those who are already on the move.
- There is growth of slums and informal settlements where schools are often scarce due to migration as a challenge. The report shows there is only one urban planner for every 1, 00,000 people in India, while there are 38 for every 1, 00,000 in the United Kingdom.

Recommendations of the Report

1. Protect the right to education of migrants and displaced people. Discriminatory barriers, such as birth certificate requirements, should be explicitly prohibited in national law. Governments must protect migrants' and refugees' right to education irrespective of identification documents or residence status and apply laws without exception. National authorities should mount awareness-raising campaigns to inform migrant and displaced families of their rights and of school registration processes. Planning authorities should ensure that public schools are within reach of informal settlements and slums and that they are not neglected in urban regeneration plans.
2. Include migrants and displaced people in the national education system. Some education systems treat immigrants and refugees as temporary or transient populations, different from natives which is wrong. Public policy must include them in all levels of national education. Inclusion of immigrants has several dimensions. While a new language of instruction necessitates preparatory classes, students should be separated as little as possible from their native peers.
3. Understand and plan for the education needs of migrants and displaced people. Countries with large immigrant and refugee inflows need to capture data on these populations in management information systems to plan and budget accordingly.
4. Represent migration and displacement histories in education accurately to challenge prejudices. Governments must review education content and delivery, adapting curricula and rethinking textbooks to reflect history and current diversity. Education content needs to bring to the fore migrant's contribution to wealth and prosperity. It also needs to recognize the causes of tension and conflict, as well as the legacy of migrations that displaced or marginalized populations.
5. Prepare teachers of migrants and refugees to address diversity and hardship. Current teacher education programmes addressing migration tend to be ad hoc and not part of the main curricula. Governments need to invest in initial and ongoing teacher education that builds core competences and ability to manage diverse, multilingual and multicultural contexts, which also affect native students. Raise

awareness of all teachers about migration and displacement, not just those who teach diverse classrooms.

6. Harness the potential of migrants and displaced people. Migrants and refugees possess skills that can help transform not only their and their families' lives but also both host and home economies and societies, whether they return or support from a distance. Using this potential requires simpler, cheaper and more transparent and flexible mechanisms to recognize academic qualifications and professional skills (including those of teachers) and to account for prior learning that was not validated or certified.
7. Support education needs of migrants and displaced people in humanitarian and development aid. While two-thirds of international migrants are destined for high income countries, 9 out of 10 refugees are hosted by low and middle income countries, which require support from international partners. Meeting needs would require a tenfold increase in the share of education in humanitarian aid.

Way Forward

In view of increasing diversity, the report analyses how education can build inclusive societies and help people move beyond tolerance and learn to live together. Education provided equally builds bridges; unequal provision raises walls between migrants and refugees and their host communities.

5. The post and the person

CONTEXT:

The Constitution Bench of the Supreme Court is examining public interest litigation (PIL) that could be critical for Indian democracy. The PIL, which seeks the strengthening of the Election Commission of India (ECI), includes a proposal to create an independent mechanism to appoint the Chief Election Commissioner (CEC) and Election Commissioners (ECs) who are, at present, simply appointed by the government of the day, without any defined criteria or processes.

PUBLIC INTEREST LITIGATION:

Public Interest Litigation (PIL), means a legal action initiated in a court of law for the enforcement of public interest or general interest in which the public or class of the community have pecuniary interest or some interest by which their legal rights or liabilities are affected.

ELECTION COMMISSION OF INDIA:

It is a permanent and independent body formed to ensure free and fair elections in the country under **Article 324**. EC conducts elections of office of president, vice president, parliament and state legislatures. Elections of Panchayats and municipality are handled by state election commissions formed under 73rd amendment.

COMPOSITION:

- It is a multi-member body of chief election commissioner [C.E.C] and as many commissioners as the president determines. Both are equal in powers and duties and removal procedures similar to judge of SC.
- President can also appoint regional election commissioners after recommendation of C.E.C. The matters / decisions of election commission are determined by majority.
- Term of office is 6 years or till age of 65.
- The term is decided by the president.

They can resign by writing to president and can be removed by president too but the removal process is same as judge of Supreme Court. Grounds for removal are incapacity or proved misbehavior.

Any other election commissioner can be removed from office only after recommendation of CEC.

POWERS AND FUNCTIONS:

- 1.Determine areas of territorial constituencies with consultation of delimitation commission.
- 2.Prepare and revise electoral rolls
- 3.Notify dates of elections, scrutinise nominations, allot symbols to political parties and recognise them. Grant status of national or state parties.

MISCELLANEOUS:

- 1.Determine areas of territorial constituencies with consultation of delimitation commission.
- 2.Prepare and revise electoral rolls
- 3.Notify dates of elections, scrutinise nominations, allot symbols to political parties and recognise them. Grant status of national or state parties.

FLAWS:

- 1.Constitution doesn't prescribe qualifications for members of the EC.
- 2.Term of the members of EC isn't specified.
- 3.They are not debarred from future appointments after retiring or resigning.
- 4.Election commissioners aren't constitutionally protected with security of tenure.

WAY FORWARD:

- To create an independent mechanism to appoint the Chief Election Commissioner (CEC) and Election Commissioners (ECs) who are, at present, simply appointed by the government of the day, without any defined criteria or processes.

- Safeguards are needed to ensure that institutions like the Election Commission are headed by capable people.

6. Limits of CBI jurisdiction

Why in news?

Andhra Pradesh and West Bengal have withdrawn their general consent to the CBI to operate within their territories, thereby effectively curtailing the agency's powers in the State without prior permission.

Can States bar the Central Bureau of Investigation (CBI) from functioning in their territory?

- The CBI is a national agency with police powers and its primary jurisdiction is confined to Delhi and Union Territories.
- As policing (detecting crime and maintaining law and order) is a State subject, the law allows the agency to function outside only with the consent of the States.

Has it happened before? And why?

- There are several instances of State governments withdrawing their consent.
- For example, In Sikkim, when the State withdrew its consent after the CBI registered a case against former Chief Minister Nar Bahadur Bhandari, and before it could file a charge sheet.
- The most common reason for withdrawal of consent is a strain in Centre-State relations, and the oft-repeated allegation that the agency is being misused against Opposition parties.
- So, the decision by Andhra Pradesh and West Bengal has come amid concerns being voiced by Opposition parties that Central agencies such as the CBI, Enforcement Directorate and Income Tax Department are being used against them.

Under what law is it done?

- The Home Ministry, through a resolution, set up the CBI in April 1963 and draws its power from the Delhi Special Police Establishment (DSPE) Act.
- Under Section 5 of the Act, the Central government can extend its powers and jurisdiction to the States, for investigation of specified offences.
- However, this power is restricted by Section 6, which says its powers and jurisdiction cannot be extended to any State without the consent of the government of that State.

What is the impact of States taking back their consent?

- The withdrawal of general consent restricts the CBI from instituting new cases in the State concerned. However, as decided by the Supreme Court in Kazi Lhendup Dorji (1994).

- The withdrawal of consent applies prospectively and therefore, existing cases will be allowed to reach their logical conclusion.
- The CBI can also seek or get specific consent in individual cases from the State government.

How has the consent issue played out?

- In most cases, States have given consent for a CBI probe against only Central government employees.
- The agency can also investigate a Member of Parliament.
- Apart from Mizoram, West Bengal and Andhra Pradesh, the agency has consent in one form or the other for carrying out investigations across the country.

What happens to cases in which there is a demand for a CBI probe?

- The Supreme Court has made it clear that when it or a High Court directs that a particular investigation be handed over to the CBI, there is no need for any consent under the DSPE Act.
- A landmark judgment in this regard was the 2010 Supreme Court decision by which the killing of Trinamool Congress workers in West Bengal in 2001 was handed over to the CBI.

About CBI:

- The CBI owes its origin to the Delhi Special Police Establishment, established in 1941, to enquire into cases of corruption in the procurement during the Second World War.
- Later, based on the recommendations of the Santhanam Committee on Prevention of Corruption, CBI was established by a resolution of the Ministry of Home Affairs. Later, it was transferred to the Ministry of Personnel and now it enjoys the status of an attached office.
- The CBI is not a statutory body. It derives its powers from the Delhi Special Police Establishment Act, 1946. The CBI is the main investigating agency of the Central Government.
- It plays an important role in the prevention of corruption and maintaining integrity in administration. It works under the overall superintendence of Central Vigilance Commission in matters related to the Prevention of Corruption Act, 1988.

International Relations

7. Preserving the taboo

Background:

- The Joint Comprehensive Plan of Action, commonly known as the Iran deal, was signed on July 14, 2015 between Iran, the U.S., China, France, Russia, the U.K., Germany and the European Union.



- Under this deal, Iran agreed not to build any more heavy water facilities, eliminate its stockpile or medium-enriched uranium, cut its stockpile of low-enriched uranium, and reduces the number of its gas centrifuges. Other nuclear facilities in Iran would have to be converted into non-nuclear facilities.

- In return, Iran will recover assets worth \$100 billion frozen in overseas banks, and sanctions on the country by the U.S., the U.N. and the E.U. will be lifted.
- President Donald Trump recently decided to unilaterally pull the U.S. out of the Iran nuclear deal and to re-imposing nuclear sanctions against that country.
- It is a huge setback to multilateral diplomacy and the rules-based international order. The re-imposed sanctions will target critical sectors of Iran's economy, such as its energy, petrochemical, and financial sectors

Politics of negotiations:

- The INF Treaty was widely welcomed, especially in Europe because these missiles were deployed in Europe and the treaty was signed on December 8, 1987 in Washington by U.S. President Ronald Reagan and Soviet General Secretary Mikhail Gorbachev.
- By the early 1980s, the U.S.S.R. had accumulated nearly 40,000 nuclear weapons, exceeding the U.S. arsenal.
- To reassure its North Atlantic Treaty Organization (NATO) allies about its nuclear umbrella, the U.S. began deploying Pershing IIs and GLCMs in the U.K., Belgium, Italy and West Germany, setting off a new arms race.

- In the 1980s, the U.S. and the U.S.S.R. began three sets of parallel negotiations —
 1. on strategic weapons leading to the Strategic Arms Reduction Treaty (START)
 2. on intermediate-range weapons leading to the INF and
 3. The Nuclear and Space Talks to address Soviet concerns about Reagan's newly launched 'space wars' programme (Strategic Defence Initiative).
- The INF talks originally considered equal ceilings on both sides but then moved to equal ceilings and non-deployment in Europe to address the sensitivities of allies.
- The U.S.S.R. wanted British and French missiles of similar ranges to be covered but the U.S. rejected the idea as also the inclusion of older 72 Pershing I missiles already deployed in Germany.
- To break the stalemate, German Chancellor Helmut Kohl made an announcement that Germany would unilaterally dismantle the Pershing 1s while the U.S.S.R. came up with a double global zero covering both shorter-range and intermediate-range missiles.
- The U.S. agreed, the INF Treaty did not restrict other countries but this hardly mattered as it was the age of bi-polarity and the U.S.-U.S.S.R. nuclear equation was the only one that counted.

Changing political backdrop:

- Since 2008, the U.S. has voiced suspicions that with the Novator 9M729 missile tests, Russia was in breach; in 2014, U.S. President Barack Obama formally accused Russia of violating the INF Treaty.
- China has always had a number of Chinese missiles in the 500-5,500 km range but its modernization plans, which include the commissioning of the DF-26, today raise the U.S.'s concerns.
- Russia is blamed for seeking the break-up of NATO and a re-ordering of 'European and Middle East security and economic structures in its favour'.
- China is identified for the first time as a strategic competitor seeking regional hegemony in the Indo-Pacific region in the near-term and 'displacement of the U.S. to achieve global pre-eminence in the future'.

Preserving the nuclear taboo:

- The key difference with today's return of major power rivalry is that it is no longer a bi-polar world, and nuclear arms control is no longer governed by a single binary equation.
- There are multiple nuclear equations — U.S.-Russia, U.S.-China, U.S.-North Korea, India-Pakistan, India-China, but none is standalone.
- The INF Treaty is not the first casualty of unravelling nuclear arms

control. In December 2001, the U.S. unilaterally withdrew from the 1972 Anti-Ballistic Missile (ABM) Treaty with the U.S.S.R. which limited deployment of ABM systems thereby ensuring mutual vulnerability, a key ingredient of deterrence stability in the bipolar era.

- The next casualty is likely to be the New START agreement between the U.S. and Russia, which will lapse in 2021, unless renewed for a five-year period.
- This limits both countries to 700 deployed intercontinental ballistic missiles (ICBMs), submarine-launched ballistic missile (SLBMs) and heavy bombers and 1,550 warheads each.

The most important achievement of nuclear arms control is that the taboo against use of nuclear weapons has held since 1945. Preserving the taboo is critical but this needs realization that existing nuclear arms control has to be brought into line with today's political realities.

8. India, Russia to build stealth frigates

Context:

India recently signed a \$500 mn deal with Russia to locally manufacture two stealth frigates with technology transfer. The agreement was signed between Goa Shipyard Limited (GSL) and Rosoboron export of Russia.

Background:

- In October 2016, India and Russia signed an Inter-Governmental Agreement (IGA) for four Krivak or Talwar stealth frigates two to be procured directly from Russia and two to be built by Goa Shipyard Limited (GSL).
- India had earlier procured six frigates weighing 4000 tonnes of the same class in two different batches, the Talwar class and the upgraded Teg class.
- The navy's medium term plans envisage increasing warship strength from the current 140-odd, to 198 warships by 2027.
- Russia was declared the lowest bidder in the Army's Very Short Range Air Defence (VSHORAD) deal and recently India signed a \$5.43 bn deal for five S-400 long range air defence regiments.

VSH VSHORAD Deal:

- It seeks to replace the aging Russian made Igla-M air defence systems with man- portable systems weighing less than 25 kilograms, with fire and forget capability.
- When inducted, VSHORAD man-portable systems will be employed in varied terrains including high altitude areas, plains, desert areas, coastal areas and maritime and integrated to a passive/active sensor for mounting on a platform with facility to mount on light vehicles.
- These systems will also have a dedicated command, control &

communication (C3) unit for detection processing and engaging aerial targets such as unmanned aerial vehicles and helicopters.

About the recent deal:

- The deal is part of the umbrella agreement to acquire four such warships for the Indian Navy.
- Construction of frigates at Goa shipyard will begin in 2020, with first one being delivered in 2026 and the second a year later.
- Frigates will be armed with the BrahMos supersonic cruise missiles, apart from other weapon systems and sensors.
- The work on the two frigates will start in two years by mid-2020 and is expected to be completed by 2026- 2027.
- India will separately acquire the Zorya gas-turbine engines to power the frigates four for each warship at a total cost of around Rs 1,000 crore from Ukraine.

Significance:

- The series of deals with Russia come in the backdrop of looming US sanctions under the Countering America's Adversaries through Sanctions Act (CAATSA) law.
- CAATSA seeks to prevent countries from buying Russian weapons or Iranian oil.
- The four warships will add to the six such Russian stealth frigates, three Talwar-class and three Teg-class warships, already inducted into the Indian Navy from 2003-2004 onwards.

9. Developing nations wary of WTO's reforms proposals

Context:

Recently, WTO report failed to answer how the rules were going to be enforced and if there will be any system to settle disputes.

Why in news?

- Several developing countries are concerned over a set of sweeping reforms advocated by the World Trade Organization Secretariat, along with the World Bank and the International Monetary Fund, which seeks to terminate the principle of consensus-based multilateral rule-making for pursuing plurilateral negotiations in new issues.
- The WTO Secretariat has "opted" for a change by setting aside the consensus principle on grounds that it is disrupting the negotiating activity at the global trade body.
- Clearly, the WTO Secretariat has crossed the "Marrakesh-Rubicon", which had clearly laid out the rules for the conduct of business for the Secretariat, the envoy suggested.

What does the proposed reform include?

- It includes jettisoning the consensus principle.
- Launching plurilateral negotiations on new issues and
- Introducing a case-by-case approach for availing special and differential flexibilities.

Marrakesh agreement:

According to the Marrakesh agreement, the WTO Secretariat, unlike the Secretariats in the World Bank and the IMF, is required to remain neutral in negotiating new trade rules without advancing the positions of any one country or groups of countries, and is expected to respect rules in a member-driven, inter-governmental organization.

Significance of the report:

The report titled as Reinvigorating trade and Inclusive Growth, has called for negotiating new “rules” in five areas:

- Electronic commerce
- Investment facilitation
- Disciplines for micro, small and medium enterprises (MSMEs)
- domestic regulation for services
- Gender

These would penetrate into the autonomous space of domestic regulatory structures.

What report failed to answer?

The report has failed to answer the vital question as to how these rules were going to be enforced and whether there will be a dispute settlement system to oversee trade disputes arising from these rules in these areas.

Conclusion:

The report explained the core features of the GATS, but did not reveal the gross asymmetries in market access commitments of Mode 3 concerning commercial participation and Mode 4 dealing with the movement of natural persons.

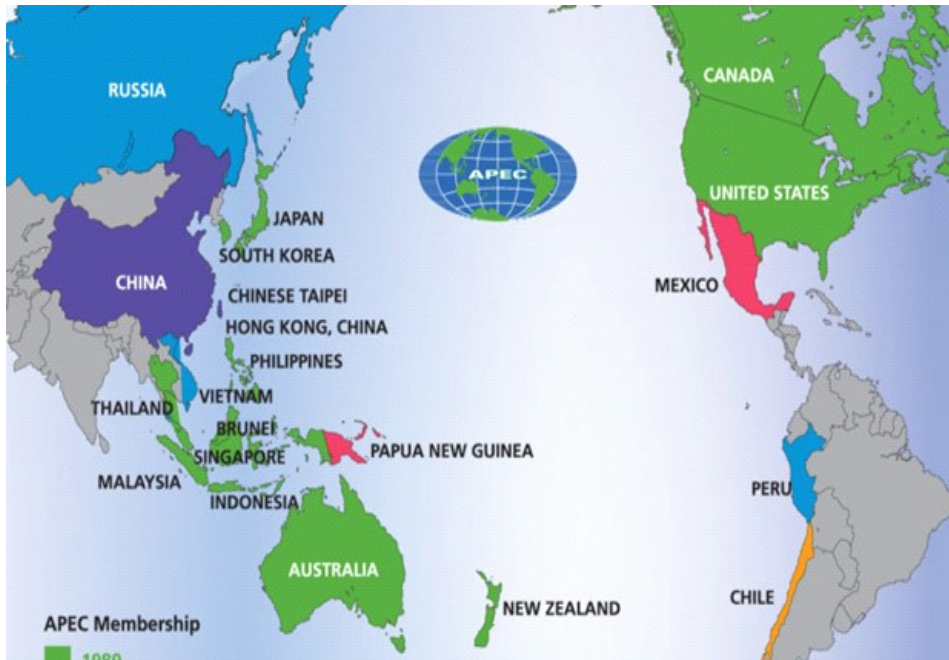
On electronic commerce, the report advocated that members must be guided by the Comprehensive Progressive Trans-Pacific Partnership (CPTPP), which had replaced the TPP (Trans-Pacific Partnership) Agreement.

10. Asia-Pacific Economic Cooperation (APEC)**Context:**

The 2018 Apec summit was held recently held in Papua New Guinea.

Outcome of the summit:

- It ended with no joint statement from the leaders – a first in Apec



history – and with the fight for dominance in the Pacific region between Australia, the US and Japan on one side and China on the other, coming out into the open.

APEC:

- The Asia-Pacific Economic Cooperation (APEC) is a regional economic forum

established in 1989 to leverage the growing interdependence of the Asia-Pacific. APEC has 21 members.

- **Aim:** to create greater prosperity for the people of the region by promoting balanced, inclusive, sustainable, innovative and secure growth and by accelerating regional economic integration.
- **Functions:**
 - APEC works to help all residents of the Asia-Pacific participate in the growing economy. APEC projects provide digital skills training for rural communities and help indigenous women export their products abroad.
 - Recognizing the impacts of climate change, APEC members also implement initiatives to increase energy efficiency and promote sustainable management of forest and marine resources.
 - The forum adapts to allow members to deal with important new challenges to the region's economic well-being. This includes ensuring disaster resilience, planning for pandemics, and addressing terrorism.
- **Members:**
 - APEC's 21 member economies are Australia; Brunei Darussalam; Canada; Chile; People's Republic of China; Hong Kong, China; Indonesia; Japan; Republic of Korea; Malaysia; Mexico; New Zealand; Papua New Guinea; Peru; The Philippines; The Russian Federation; Singapore; Chinese Taipei; Thailand; United States of America; Viet Nam.
 - APEC Members account for approximately 40% of the world's population, approximately 54% of the world's gross domestic product and about 44% of world trade.

Economy

11. Make it the Indian way: Why the country must adapt to additive technologies

Context:

If 'Make in India' is to succeed, it needs to encompass 'Make it the Indian Way'. It need not emulate mass production technologies, fuelled in Detroit by massive capital investment or in Beijing by cheap labour. We are fortunate to be in a historic moment when the manufacturing sector is about to go through a transformation wrought by disruptive technologies — we have to find a way of making it work in India's favour rather than against it.

About 3D printing:

- 3D printing or additive manufacturing is a process of making three dimensional solid objects from a digital file.
- The creation of a 3D printed object is achieved using additive processes. In an additive process an object is created by laying down successive layers of material until the object is created. Each of these layers can be seen as a thinly sliced horizontal cross-section of the eventual object.

Traditional Vs Additive Manufacturing:

- Traditional manufacturing of mechanical parts involves making a mould and then stamping out parts by thousands every day.
- The equipment to make these parts and moulds is expensive, thus the cost of the first hundred units is high.
- Per unit costs decline only when they are mass produced. Because of limitations of how this technology works, one typically builds many small parts, which are later on assembled on an assembly line using unskilled labour or robots to build an entire system.
- Traditional manufacturing leads to high inventory costs of multiple parts that need to be produced and stored before being assembled.
- This makes the design phase complex and costly, rendering it expensive to redesign to correct initial mistakes or innovate to meet changing consumer needs.
- In additive manufacturing, the physical object to be built is first designed in software and fed to computerized machines, which build that object layer by layer.
- The technology is suitable for building the entire system in one go, with hollow interiors without assembly or interlocked parts.
- Changing features or tweaking shapes is a simple software change effected in minutes.
- Retooling of machines is not required and each unit can be customised.

- By eliminating the need to hold a large inventory of parts, set up an assembly line and purchase costly machines, adaptive manufacturing reduces capital and space requirements as well as the carbon footprint.

Evidences to support 3D printing:

- Rapid progress in technology over the last five years has employed it to varied uses from nozzle and simple resin materials to multiple nozzles, diverse materials and materials with different hardness in the same system.
- The global manufacturing giants like Adidas and Nike may well start manufacturing en masse by 3D-printing.
- One recent survey of U.S. manufacturers shows that about 12% have started using additive manufacturing for their products and expectations are that this will result in about 25% of products in the next three-five years.
- This technology is used to build helmets, dental implants, medical equipment, parts of jet engines and even entire bodies of cars.
- In some industries, the progress is astonishing. Nearly all hearing aid manufacturers now use additive manufacturing.

Challenges for developing nations:

- 3D printing carries dangerous implications for developing nations as it decreases reliance on assembly workers and bypasses the global supply chain that has allowed countries like China to become prosperous through export of mass-produced items.
- This may well lead to the creation of software-based design platforms in the West that distribute work orders to small manufacturing facilities, whether located in developed or developing countries, but ultimately transfer value creation towards software and design and away from physical manufacturing.
- This would imply that labour intensive manufacturing exports may be less profitable.

Opportunities in India:

- Additive manufacturing eliminates large capital outlays as machines are cheaper, inventories can be small and space requirements are not large.
- Thus, it reduces the hurdle of large capital requirement in jump-starting manufacturing and the traditional small and medium enterprises can easily be adapted and retooled towards high technology
- Owing to the well-established Indian software industry and plans to increase connectivity are well under way as part of 'Digital India', 3D Printing could lead to the creation of manufacturing facilities in small towns and foster industrial development outside of major cities.

- Additive manufacturing allows to build products (which require assembly of fewer parts) that are better suited for use in harsh environmental conditions, to withstand dust and moisture prevalent in our tropical environment and be more durable.
- Maintaining old products is far easier because parts can be manufactured as needed and product life-cycles can be expanded more so in a country like India where use-and-throw is an anathema
- Also maintaining uniform product quality is far easier because the entire system is built at the same time and assembly is not required in 3D printing.

Make it Indian Way:

- The “Make it the Indian Way” approach needs public-private partnership and multi-pronged efforts.
- To implement it, research at our premier engineering schools on manufacturing machines need to be accelerated and formation of product design centres should be encouraged so that the products built suit the Indian environment and consumers.
- Government support is also needed to provide incentives for distributed manufacturing in smaller towns, and for the IT industry to work on creating platforms and marketplaces that connect consumer demands, product designers and manufacturers in a seamless way.

Way Forward:

- A combination of science and art, with Indian entrepreneurship can develop a manufacturing ecosystem that will not only allow India to compete with global manufacturing, but will also create products that are uniquely suited to Indian conditions.
- The Industrial revolution somehow bypassed India, but now is a unique opportunity to catch the wave of the manufacturing revolution.

12. Going beyond the credit requirements of MSMEs

Context:

Prime Minister Narendra Modi on November 2, 2018 announced a dozen measures for small and medium enterprises, including loans of up to Rs 1 crore in 59 minutes, relaxed labour laws and easier compliance with environment laws, to perk up the big job-generator sector.

About the MSME sector:

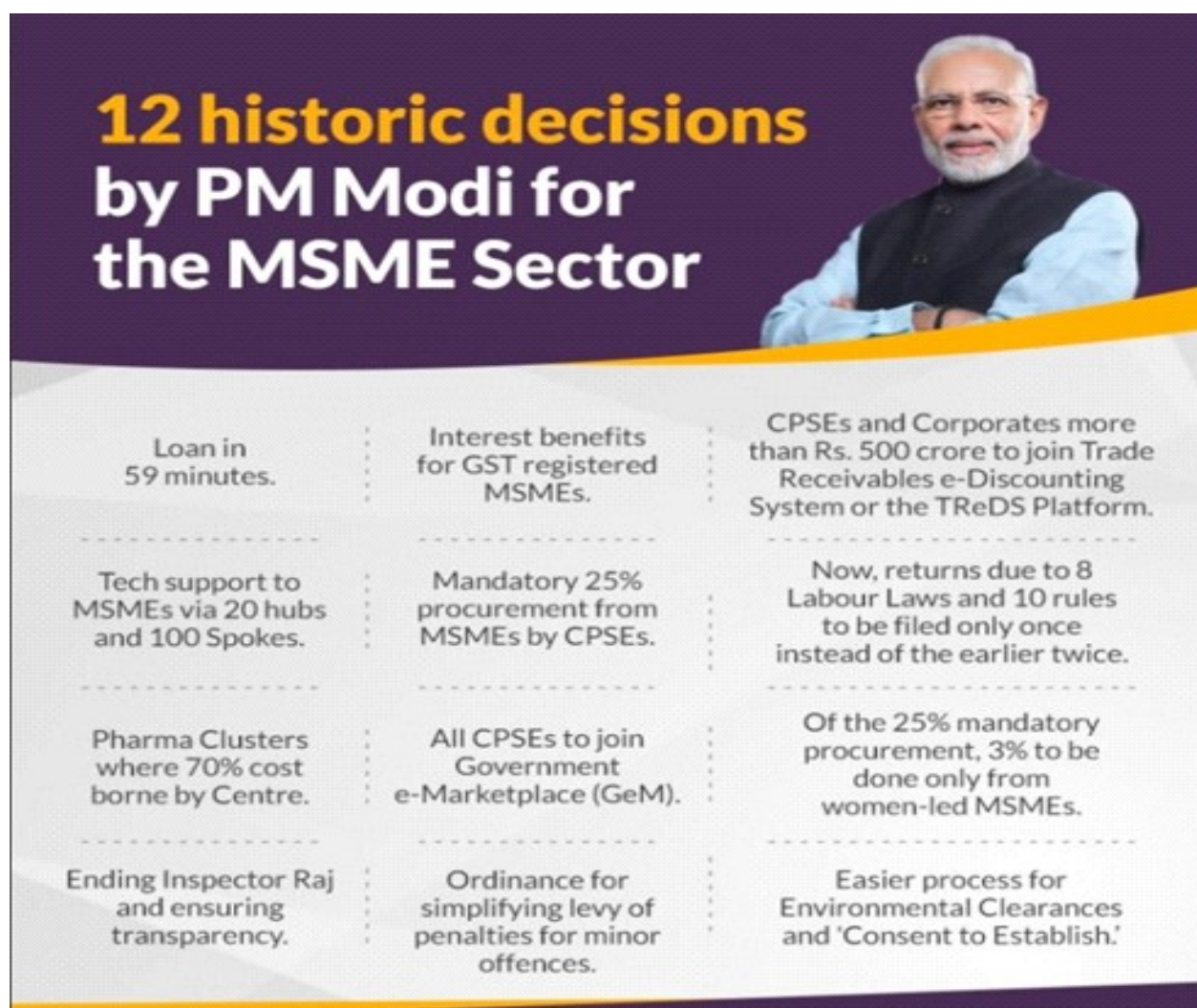
- The Indian MSME sector provides maximum opportunities for **both self-employment and wage employment** outside the agricultural sector
- The sector **generates around 100 million jobs through over 46 million** units situated throughout the geographical expanse of the country

- With **38 per cent contribution to the nation's Gross Domestic Product** (GDP) and 40-45 per cent share of the overall exports and manufacturing output respectively, the sector plays a key role in our economy
- Besides the wide range of services provided by the sector, it is engaged in the **manufacturing of over 6000 products** ranging from traditional to hi-tech items.
- As part of the programme, prime minister unveiled **12 key initiatives** which will help the growth, expansion, and facilitation of MSMEs across the country.

Modi announced **59-minute loan sanctions, relaxation in labour laws, easier compliance with environmental rules and changes in company laws for small and medium enterprises** to give a boost to the nation's second-biggest employment sector.

Challenges associated with this move:

- Availability of credit from formal sources has been a problem for the sector. The problem is that, more than 90% of MSMEs operate in the informal sector. These firms largely depend on informal sources of credit at higher interest rates. It is difficult for these firms to get loans from banks because they do not maintain proper documents and records.



12 historic decisions by PM Modi for the MSME Sector

Loan in 59 minutes.	Interest benefits for GST registered MSMEs.	CPSEs and Corporates more than Rs. 500 crore to join Trade Receivables e-Discounting System or the TReDS Platform.
Tech support to MSMEs via 20 hubs and 100 Spokes.	Mandatory 25% procurement from MSMEs by CPSEs.	Now, returns due to 8 Labour Laws and 10 rules to be filed only once instead of the earlier twice.
Pharma Clusters where 70% cost borne by Centre.	All CPSEs to join Government e-Marketplace (GeM).	Of the 25% mandatory procurement, 3% to be done only from women-led MSMEs.
Ending Inspector Raj and ensuring transparency.	Ordinance for simplifying levy of penalties for minor offences.	Easier process for Environmental Clearances and 'Consent to Establish.'

- At a broader level, since most firms are very small, besides non-availability of formal finance, they are also not in a position to adopt technology to improve productivity.
- Further, most firms in the informal sector are unlikely to attract skilled labour. This has not only affected growth and output, particularly in the manufacturing sector, but also employment generation
- MSME credit is also one of the reasons behind the ongoing rift between the government and the Reserve Bank of India (RBI).
- In terms of financing, the share of non-banking financial companies (NBFCs) has gone up in recent years, given that banks saddled with high non-performing assets (NPAs) are reluctant to lend. But since NBFCs are now facing a liquidity crunch, it is likely that the flow of credit would have been affected.
- Although government intervention will help the sector, the actual impact for a large number of small firms will remain limited. Public sector banks already have significant NPAs in the MSME sector and a push by the government can increase the risk.

Way forward:

Thus, what is needed is a simplification of processes so that more firms can access formal finance. Also, banks should improve their credit appraisal capability to work with firms that are perhaps dealing with a financial institution for the first time. Meanwhile, the government should work to improve the overall regulatory architecture that would incentivize smaller firms to scale up.

13. Rethinking the CRA regulatory framework

Context:

The Securities and Exchange Board of India (SEBI), in its continued effort to improve the functioning of credit rating agencies (CRAs), came up with a fresh set of guidelines for enhanced disclosures on rating rationales.

Problem in enhancing regulations:

- Debt investors remain a worried lot since there have been four defaults among borrowers rated at AA and above.
- The frequency and intensity of such events are increasing, with the most recent being an AAA-rated borrower defaulting.
- While there has been no dearth of effort from Sebi, it does call for a rethink on the regulatory approach to CRAs, as well as the efficacy and sufficiency of the regulations.

The general criticism of 'issuer pays' model:

- The general criticism of 'issuer pays' model as the crux of CRA performance may be missing the complexity of the matter.

- Globally, this model goes back to the 1970s. The alleged slippage of India CRAs is a more recent phenomenon despite them having been around since 1990.
- The evaluated-pays-the-evaluator model is not unique to CRAs.
- If more questions are raised on CRAs than on universities, then one may need to look beyond popular but over-simplistic explanations.
- Sebi's regulatory approach to CRAs has been more inclined to a rule-based approach as opposed to a principle-based approach.

Principle-based approach:

The regulator states the desired outcome, leaving it to the regulated firms to figure out the steps they need to take to achieve the regulator-mandated end-state.

Rule-based approach:

- The regulator specifies the action to be taken by the firms to be considered compliant.
- Rule-based regulations, despite their appearance of regulatory micro-management, tend to be preferred by firms relative to principle-based regulations.
- Firms prefer less ambiguity associated with the rule-based approach. Additionally, they are relieved of the burden of proof of being compliant, as may be required in a principle-based approach.
- If there is a failure in a rule-based regulatory framework, it is the system that tends to bear the cost. Firms, to the extent that they remain compliant, do not share the downside and, arguably, have limited skin in the game.

Sebi's following alterations and additions may be considered:

A.Quantitative disclosure: The CRA may be required to publish the median values of the critical ratio of their choice, for a specific industry, across various rating levels and for the last five years. This will allow an investor to compare whether the current rating is more or less stringent, and whether, over the period, the CRA's standards have been consistent.

B.Enhanced transition matrix: This should track default rates over multiple years. Investors need to know the default rate of AAA/AA/A ratings over three to five years from issuance, and not just one year. Sebi may consider independently calculating the default transition matrix by accessing data from a commercial credit bureau or Reserve Bank of India's central repository of information on large credits database and not depend on the CRAs at all.

C.Cursory disclosure of all ratings: CRAs may be required to also summarily refer in the press release to the outstanding ratings of other CRAs for the same borrower and the previously withdrawn rating of

the same borrower from other CRAs and the reason for the rating withdrawal. The palpable reputation risk that errant CRAs will face may go a long way towards preventing rating shopping.

D. Legal protection for CRAs: Most critics tend to forget that instances of Indian CRAs being sued by the company it rates, in a bid to prevent the rating downgrade, are not unknown. The regulator should consider framing laws that allow CRAs to express their rating opinion without fear of being sued.

Without these measures the CRAs will continue to remain compliant, but frequent, high-investment-grade defaults will continue to erode investor confidence.

14. Lack of political will behind India's agrarian crisis

Context:

Recently, the agrarian crisis has taken a political turn with every party trying to portray itself as the saviour of the farming community, there is no serious thought from any of them on how to revive the agrarian economy.

What's the crisis?

- All of them have been parroting for farm loan waiver and a better implementation of minimum support price (MSP).
- The irony is also that most political activists and farmers' organizations have also bought these ideas as the only ways of saving the farmer and agriculture.

Farm loan waivers are no solution to the problem of credit defaults in agriculture:

- Between 2008, when one of the largest farm loan waivers was announced by the United Progressive Alliance (UPA), and 2018, nothing seems to have changed.
- Neither did the 2008 loan waiver do anything to improve repayment rate of farm loans, nor did it prevent farmers from falling into debt trap a decade later.
- It has become a competitive game with every party trying to outsmart the other by being generous in waiving farm loans.
- The cycle continues because it is always accompanied by a decline in investment in agriculture.

MSP announcements:

- MSP announcements, which have remained paper tigers except in the case of rice and wheat.
- But even for these two crops, the regional variation in the beneficiaries has always been skewed in favour of richer states of Punjab, Haryana and Andhra Pradesh and, within them; it has always been the rich surplus farmers who have benefited out of it.

- For the remaining 23 crops, for which MSP is announced, there has neither been a stable policy nor been any substantial effort in ensuring availability of marketing infrastructure.
- The announcement of MSP for kharif crops this year with an eye on the election has not managed to raise prices for a majority of crops, whose prices have declined in recent years.
- For a majority of these crops, including pulses and garlic, the market prices continue to remain below the MSP in the absence of market intervention by the government.

Unawareness of state and central governments:

- Madhya Pradesh tried the 'bhavantar' scheme— to provide income support by providing the price differential to farmers. Within two years, the scheme is on the verge to close down with many farmers yet to get the promised money, but also because the cost has been too much for the government with no impact on market prices.
- The income transfer scheme of Telangana, which promised to pay ¹ 8,000 per acre. The scheme, expected to cost ¹ 10,000 crore to the state government, hasn't cheered farmers with claims of exclusion and inadequate payment troubling the scheme.

Real problem in agriculture:

- Lack of acknowledgement that the crisis in agriculture is not about incomes alone.
- Those who are focussing on doubling farmer incomes and providing income support to farmers are only looking at the short-term palliatives.
- Understanding of the changing nature of agriculture.
- Increasing monetization and mechanization of agriculture has also increased the cost of cultivation
- Lack of political will to solve the agrarian crisis.

Conclusion:

The long-term solution requires investment in agriculture to make it viable, along with a price support mechanism which takes care of the market inefficiencies. Such a policy will require large scale investments in building infrastructure, market access, storage, technology and revival of non-farm sector to absorb the excess labour from agriculture.

15. 'Corruption no longer among top 3 hurdles to doing business in India'

Context:

The perception among U.K. businesses that corruption is a major barrier in doing business in India has halved, according to the latest edition of the U.K. India Business Council's Ease of Doing Business report compared with what it was in 2015.

Facts in the report:

- There has been a considerable year-on-year fall in the number of companies that viewed 'corruption' as a major barrier from 34% in 2016 to 25% in 2017, halving since 2015, where it stood at 51%.
- This decline shows a major improvement, indicating that the current government's efforts to mitigate corruption appear to be delivering tangible and much-desired results.
- Those identifying 'corruption' as a major barrier has declined far more dramatically over the four-year course of this survey among those currently doing business in India [decline of 27% in the last two years] where it is no longer considered a 'top-three' barrier compared to those not currently active in India
- The report noted those initiatives such as Aadhaar, electronic submission of government documents, acceptance of electronic signatures, and the push to file taxes online, have all reduced face-to-face interactions where corruption is most likely to take place.

Conclusion:

Taxation issues' and 'price points' overtook 'corruption' as major barriers identified by 36% and 29% of respondents. However, the proportion of respondents identifying 'taxation issues' was 3% lower in 2018 than 2017, which, the report said, suggests that businesses may be starting to adjust to the GST.

16. In case of a split vote, Governor holds the ace**Context:**

Section 13 of the RBI Act gives Governor the deciding vote.

What's in news?

- It's the first time the body has met since the 'RBI vs Finance Ministry' tussle broke out in the open.
- Criticism began with RBI Deputy Governor Viral Acharya firing the first salvo, saying the government was encroaching on the central bank's independence and autonomy.

Opinion's on the matter:

The government had no business to engage in monetary policy decisions to opining that the RBI was never really independent of the government due to the way the RBI Act is worded, and still others pointing out that the whole issue were not a tussle between institutions but between two particular individuals.

Decisions by committee:

- One of the main issues with bodies like the RBI Board and the Monetary Policy Committee is whether decision making by committee is preferable to one man calling the shots.

- The government prefers decisions by committee, as can also be seen by how it pushed to install a Monetary Policy Committee to replace the Governor as the sole arbiter of monetary policy decisions.

Section 13 of the RBI Act:

- Section 13 of the RBI Act says: “The Governor, or if for any reason, he is unable to attend, the Deputy Governor authorized by the Governor under the proviso to subsection (3) of section 8 to vote for him, shall preside at meetings of the Central Board, and, in the event of an equality of votes, shall have a second or casting vote.”
- In other words, the Governor is the tie-breaker in all decisions of the Board (that is he has deciding vote).

Gibbard–Satterthwaite theorem:

In social choice theory, the Gibbard–Satterthwaite theorem is a result published independently by philosopher Allan Gibbard in 1973 and economist Mark Satterthwaite in 1975. It deals with deterministic ordinal electoral systems that choose a single winner. It states that for every voting rule, one of the following three things must hold:

1. The rule is dictatorial, i.e. there exists a distinguished voter who can choose the winner; or
2. The rule limits the possible outcomes to two alternatives only; or
3. The rule is susceptible to tactical voting: in certain conditions some voter's sincere ballot may not defend their opinion best.

While the scope of this theorem is limited to ordinal voting, Gibbard's theorem is more general, in that it deals with processes of collective decision that may not be ordinal: for example, voting systems where voters assign grades to candidates.

Conclusion:

The only way to counter this is something the government seems to have realized — empowering a single individual in the voting system more than the others. In both the RBI Board and the MPC, that person is the Governor, who has been given the deciding vote in the case of a tie.

17. Treasury Bill

Context:

The National Stock Exchange (NSE) has launched an app and web-based platform, 'NSE goBID', for retail investors to buy government securities.

About 'NSE goBID':

- The app would allow investors to invest in treasury bills (T-Bills) of 91 days, 182 days and 364 days and various government bonds from one year to almost 40 years.

- The retail investors would be able to make payment directly from their bank accounts using Unified Payments Interface (UPI) and Internet banking.
- While investment could be done almost every week after a one-time registration, the app would be available to all investors registered with NSE's trading members.

Significance:

- The launch assumes significance as government securities are among the safer investment options available to retail investors as such securities are credit risk free instruments while providing portfolio diversification with longer investment durations.

What you need to know about Treasury bills?

- T-bills are short term securities issued on behalf of the government by the RBI and are used in managing short term liquidity needs of the government.
- 91-day T-bills are auctioned every week on Wednesday and 182-day and 364-day T-bills are auctioned every alternate week on Wednesdays.
- Treasury bills are issued at a discount and are redeemed at par.



Geography and Environment

18. Heat is an invisible climate risk

Context:

In response to the heat wave trends, the ministry of environment, forests and climate change (MoEFCC) recently released a draft of the India Cooling Action Plan (ICAP) for public comment and suggestions.

Heat wave trends:

- Heat is an invisible climate risk that catches communities unaware. In most cases, vulnerable people have limited or no knowledge of how they can protect themselves from heat stress or treat themselves when exposed to extreme heat.
- The latest Intergovernmental Panel for Climate Change (IPCC) special report presents the difference between two scenarios of global warming at 1.5°C and at 2°C above pre-industrial levels. Under the 1.5°C scenario, 14% of the global population will be exposed to severe heat at least once in five years. This increases 2.6 times under a 2°C scenario, exposing 37% of the world's population to severe heat.
- Recent research shows that over the last decade, heat waves have impacted the mortality of more urban than rural residents. Studies show that urban heat islands may result in a projected 8°C increase in temperature in cities by the end of the century.

India Cooling Action Plan (ICAP):

- The ICAP is an opportunity for cities, state governments and policy makers to address 'cooling' as a national adaptation need to develop an institutionally coherent approach, addressing technology, regulating future urban growth, protecting natural ecosystems, retrofitting existing built forms and planning for vulnerable people.
- However, the ICAP in its current form fails to move beyond the first—that is, addressing future cooling demand through technology innovations.
- It must consider three critical interventions to integrate heat action and cooling strategies towards a sustainable, equitable and climate resilient future.

Challenges in implementing ICAP:

- The ICAP fails to integrate future climate trends in its projection of heat risk under different geographic conditions. Cooling requirements in dry and arid regions as opposed to humid coastal regions will vary drastically so will the technology and planning.
- Heat is an invisible and slow-moving climate hazard that is yet to be recognized as a 'natural calamity' by the National Disaster Management

Act, 2005. Currently, most disaster preparedness action focuses on flood risk and other natural disasters (sudden shocks).

- Even citizens perceive heat as an inconvenience or health risk at best. They retrofit their homes, buildings and neighborhoods in response to flood risk, but rarely come together to plant trees and plan for long-term heat resilience.
- Focus on the needs of vulnerable people living and working in highly exposed places. A recent study conducted in poor and vulnerable communities in Surat showed that residents living in poor communities lack the information, awareness, and understanding of the severity of heat risk on their bodies and their lives

Mitigation strategies:

- Integrating climate projections in city and regional plans can emphasize the need for climate sensitive urban environments and potentially reduce ambient temperatures.
- In addition to land use plans, cities can use remote sensing data to produce vulnerability maps that correlate urban heat islands with depleted tree covers, under different temperature scenarios. This can help cities identify highly exposed areas and target interventions such as increasing tree cover and mandating building regulations towards climate sensitive urban development.
- Mandate retrofitting guidelines for existing buildings, infrastructure and services to potentially reduce urban heat island effects
- Create awareness and encourage informed participation to plan for collective heat resilience rather than focusing on a greater reliance on personal cooling solutions
- Ensure early warning alerts include heat warnings and personal resilience strategies that are responsive to dry and humid heat conditions, factoring temperature and humidity as two simultaneous risk factors.

Way forward:

The ICAP is an opportunity for cities to leverage existing adaptation potential in poor communities and channel this towards long-term cooling action. It would do this by way of planting more trees in the neighborhood, identifying common institutions to be designed as 'cooling shelters' and mandating improved labour and housing conditions through labour unions, companies and pro-poor housing authorities. Addressing heat risk through long-term heat resilience strategies will result in more sustainable and long-term cooling actions for all.

19. BASIC nations push for 'climate finance'

Context:

- Ahead of the United Nations Conference of Parties (COP) in December, Environment Ministers and top climate change negotiators from Brazil, **South Africa**, China and India (BASIC) convened in Delhi on and said the countries — as a group — would continue to push for developed countries on their earlier commitment to providing \$100 billion annually from 2020.
- The meet was held ahead of the United Nations Conference of Parties (COP24) to be held in December, in Katowice, Poland.

Katowice Conference:

- The representatives from at least 190 countries, think-tanks, and activists will converge in Katowice, Poland to try to agree on a Rule Book that will specify how countries will agree to take forward commitments taken at the 21st COP in Paris in 2015.
- In CoP21 in Paris, the countries had agreed to take steps to limit global warming to 2C below pre-industrial levels and “as far as possible” limit it to 1.5C before the end of the century.

BASIC meeting:

- This **27th BASIC meet** chaired by Minister of Environment, Forest and Climate Change of India expressed their “deepest concern” over some developed nations’ attempting at unilaterally applying new eligibility criteria for developing countries’ access to funding under the **Global Environmental Facility and the Green Climate Fund**.
- Such criteria, according to the ministers, “are not compatible with guidance from the Conference of the Parties and are a departure from the letter and spirit of the Convention and its Paris Agreement.
- The BASIC ministers urged developed countries to honor their commitments and increase climate finance towards at least \$100 billion per annum goal by 2020, to be scaled up significantly thereafter.
- The BASIC group also encouraged developed countries to progressively and substantially scale up their financial support and finalize a new collective finance goal to inform parties for future action through NDCs (nationally determined contributions).The NDCs are the commitments made by countries to adapt to climate change and reduce emissions.
- In the post-2020 period, the ministers called upon developed countries to provide financial resources to assist developing countries with respect to both mitigation and adaptation in continuation of their existing obligations under the convention.
- The ministers also called upon to clarify about what constitutes climate financing whether investments made by private companies in

developed countries in new green technology or improving efficiency in a thermal plant count as climate finance.

Global Environmental Facility:

- The GEF unites 182 countries in partnership with international institutions, civil society organizations (CSOs), and the private sector to address global environmental issues while supporting national sustainable development initiatives.
- Today the GEF is the largest public funder of projects to improve the global environment. An independently operating financial organization, the GEF provides grants for projects related to biodiversity, climate change, international waters, land degradation, the ozone layer, and persistent organic pollutants.
- Since 1991, the GEF has achieved a strong track record with developing countries and countries with economies in transition, providing \$10.5 billion in grants and leveraging \$51 billion in co-financing for over 2,700 projects in over 165 countries.
- Through its Small Grants Programme (SGP), the GEF has also made more than 14,000 small grants directly to civil society and community based organizations, totaling \$634 million.

The GEF also serves as financial mechanism for the following conventions:

- Convention on Biological Diversity (CBD)
- United Nations Framework Convention on Climate Change (UNFCCC)
- Stockholm Convention on Persistent Organic Pollutants (POPs)
- UN Convention to Combat Desertification (UNCCD)
- The GEF, although not linked formally to the Montreal Protocol on Substances That Deplete the Ozone Layer (MP) supports implementation of the Protocol in countries with economies in transition

Green Climate Fund:

- The Green Climate Fund (GCF) was adopted as a financial mechanism of the UN Framework Convention on Climate Change (UNFCCC) at the end of 2011 in CoP 16.
- The GCF is intended to support projects, programmes, policies and other activities in developing country for combating climate change.
- The GCF finances activities to enable and support adaptation, mitigation (including REDD+), technology development and transfer (including CCS), capacity-building and the preparation of national reports.
- The important distinction of GCF is that it has an independent legal status and personality and nationally designated authorities have a

paramount role to play. This has been achieved after many rounds of different negotiations.

- The GCF follows a 'country-driven approach', which envisages effective involvement of various stakeholders at all levels and also enables the developing countries to evolve their climate policy keeping in consideration their immediate development priorities like poverty reduction and improving standards of living for a large proportion of their population. The effectiveness with which a country is able to tap the resources from the GCF and use them effectively is dependent on how well the country's government and its various institutions have prepared themselves to access the Fund.
- India has moved forward in this regard by selecting the Ministry of Environment, Forests and Climate Change as India's Nationally Designated Authority (NDA) for the GCF, which will recommend to the Board of the GCF funding proposals in the context of national climate strategies.
- Further NABARD has been accredited by Green Climate Fund (GCF) Board as one of the National Implementing Entity (NIE) for GCF in India.
- NABARD will be responsible for management and oversight of project implementation, which includes the origination and preparation of a funding proposal, the subsequent management of the necessary stages of the implementation process until its conclusion (project management) on behalf of GCF, and reporting obligations.
- It is based in South Korea and governed by a Board of 24 members and initially supported by a Secretariat.
- The World Bank serves as the interim trustee of the GCF, and the Fund functions under the guidance of and remains accountable to the UNFCCC Conference of Parties.
- The Fund will promote the paradigm shift towards low-emission and climate-resilient development pathways by providing support to developing countries to limit or reduce their greenhouse gas emissions and to adapt to the impacts of climate change, taking into account the needs of those developing countries particularly vulnerable to the adverse effects of climate change.

20. China begins building on 'Bombay Reef' in SCS:

Context:

- China has installed a new platform on a remote part of the Paracel Islands in the disputed South China Sea which could be used for military purposes, according to recent satellite images reviewed by a US think tank.
- The Asia Maritime Transparency Initiative of Washington's Center for



Strategic and International Studies said the images showed a “modest new structure” on Bombay Reef, topped by a radome and solar panels.

Strategic significance of Bombay Reef:

- The reef is directly adjacent to the major shipping lanes that run between the Paracels and the Spratly Islands to the south, making it an attractive location for a sensor array to extend Chinese radar or signals intelligence collection over that important sea lane.
- The development is interesting given Bombay Reef’s strategic location,

and the possibility that the structure’s rapid deployment could be repeated in other parts of the South China Sea.

Paracel Islands:

- The Paracel Islands are an archipelago in the South China Sea
- It is controlled by the People’s Republic of China, and also claimed by Taiwan (Republic of China) and Vietnam.

21. Eco-Sensitive Zones

Context:

- The National Green Tribunal (NGT) has asked the Ministry of Environment, Forests and Climate Change (MoEF&CC) to consider declaring **all elephant corridors in the country as eco-sensitive zones**.
- NGT has given two weeks’ time to the Ministry to look into the issue and to proceed in the matter for declaration of such areas as eco sensitive zones.

Background:

The observations came while the green panel was hearing a plea that highlighted the increasing number of unnatural elephant deaths taking place in the state. The petition said, “Owing to the increased denudation and loss of their forest habitats, elephants have come increasingly into conflicts with humans and faced deliberate retaliatory killings and accidents at railway crossings, high tension power lines, power fences and trenches.”

What are Eco-Sensitive Zones?

- Section 3 of the Environment (Protection) Act 1986 (EPA) gives power to the Central Government i.e. the Union Ministry of Environment and Forests to take all measures that it feels are necessary for protecting and improving the quality of the environment and to prevent and control environmental pollution.

- To meet this objective, the Central Government can restrict areas in which any industries, operations or processes or class of industries, operations or processes shall not be carried out or shall be carried out subject to certain safeguards thus the government came up with the concept of Eco Sensitive Zones.
- ESAs are defined as those areas ‘that are ecologically and economically important, but vulnerable even to mild disturbances, and hence demand careful management’. Therefore ‘ecologically and economically important’ areas are those areas that are biologically and ecologically ‘rich’, ‘valuable’ and or ‘unique’, and are largely irreplaceable if destroyed.
- Further, by virtue of their biological richness, they could be potentially of high value to human societies, help in maintaining the ecological stability of the area, and be significant in conserving biological diversity.
- Similarly, their ‘uniqueness’ may be recognized either by the rarity of the living systems they harbour, that are difficult to replace if lost, or by the uniqueness of the services they offer to human society.
- Their ‘vulnerability’ could be determined by physiographic features that are prone to erosion or degradation under human and other influences such as erratic climate, and on the basis of historical experience.

Criteria for demarcating ESAs:

There are three important categories of attributes that need to be considered in defining the ecological salience/significance/sensitivity of an area: physico-climatic features (geo-climatic features), biological features and social relevance (including cultural, economic and historical importance) of the area. All these may be grouped as (a) abiotic attributes, (b) biotic attributes and (c) anthropological or socio-cultural attributes.

- **Biological attributes:** The demarcation of an ESA shall consider the following components of biological and cultural uniqueness and richness.
- **Biodiversity richness:** Richness in diversity for all taxonomic groups and hierarchies.
- **Species rarity:** Rarity in terms of population size, extent of geographical distribution, and also rarity in taxonomic representation in terms of paucity of closely related taxa.
- **Habitat richness:** Spatial heterogeneity of landscape elements.
- **Productivity:** Total biomass productivity.
- **Estimate of ecological resilience:** Level of persistence of original climax vegetation.
- **Cultural and historical significance:** Evolutionary– historical value and cultural–historical value of the area.

- **Geo-climatic layers attributes:** These include layers that permit assessment of the innate or natural vulnerability of the area. Obviously features such as slope, aspect, altitude, precipitation, etc. shall be used under the following component attributes:
- **Topographic features:** Slope, altitude, aspect, etc.
- **Climatic features:** Precipitation, number of wet days, etc.
- **Hazard vulnerability:** Natural hazards such as landslides and fires.
- **Stakeholders' valuation:** It is important to take on board perceptions of the civil society and local bodies, especially the zilla, taluk and gram panchayats, to decide on areas that they consider to be ecologically and environmentally sensitive. Of course, these perceptions will depend on the proposed management regime.

22. How do you solve India's air pollution problem?

Context:

World Health Organization (WHO) chief Tedros Adhanom Ghebreyesus described air pollution as “the new tobacco”.

In news:

- According to WHO report in its list of the world's 20 most-polluted cities in terms of PM2.5 levels, 14 are located in a belt that extends from Punjab to Bihar.
- One of the cities on this belt is New Delhi, the biggest battleground of this crisis is Diwali, which enters another state of emergency
- The current poison of Delhi's air—the fire set to crop residue by farmers in neighbouring states every year.

Measures taken by NGT:

- In December 2015, the National Green Tribunal (NGT) ordered the governments of Haryana, Punjab, Rajasthan and Uttar Pradesh to enforce a ban on stubble burning.
- Another policy intervention has targeted vehicular emission, which accounts for 25% of PM2.5 concentrations in the winter months and 8.5% in summer.
- In 2002, the Supreme Court ordered the conversion of public transport vehicles to compressed natural gas.
- More stringent pollution tests were introduced in 2006.

Drawbacks on policy action:

- There have been no upgrades to cleaner fuel emission norms. It is only this year that cleaner Bharat Stage-VI October (BS-VI) fuels have been introduced in Delhi. The SC has also mandated that starting April 2020 new vehicles should meet BS-VI norms (chart 3).

- Industries in and around Delhi contribute to this by using coal, furnace oil or pet coke as fuel. This has been an area of policy neglect with no action targeting industries taken between 2006 and 2016.
- An Environment Pollution (Prevention and Control) Authority report shows that there is no status report on the implementation of SO_x and NO_x standards yet.

Way forward:

- India clearly requires more policies that target all the major sources of emissions—but these policies should also provide alternatives.
- Bans and restrictions on fuels will work only if the use of cleaner fuels is incentivized.

Therefore, “With the right kind of push and pull measures, if you introduce gaseous fuels in NCR, it can bring tremendous benefits,” and new vehicular norms become effective, monitoring older vehicles should remain on the radar for action. Public transport options that are not based on fossil fuels should be increased. Finally, for a problem that plagues an entire region, these measures also need to move out of Delhi and make up for the lost time.

23. The energy sector must be required to report its water consumption

Context:

The Composite Water Management Index (CWMI) by the NITI Aayog, which was released this June, shows that 600 million people face high to extreme water stress in India.

CWMI report:

- The report, which was published in association with the Ministry of Water Resources, Ministry of Drinking Water and Sanitation and the Ministry of Rural Development, places India at a dismal 120 among 122 countries in the water quality index.
- It predicts that a persistent water crisis will lead to an eventual 6% loss in the country’s Gross Domestic Product by 2030.
- In the projections that the Central Water Commission (CWC) released in 2015, the sector-wise requirement of water (that is, for drinking and domestic use, industry and energy) will rise steeply between 2030 and 2050.
- The CWMI report covers these broad themes — ground water and surface-water restoration; major and medium irrigation; watershed development; participatory irrigation management; on-farm water use; rural and urban water supply; and policy and governance.
- The projected water demand of the energy sector makes it an important point for the NITI Aayog to consider while bringing out future iterations of the CWMI.

Important facts:

- As per the Central Electricity Authority (CEA), March 2018, thermal electricity accounts for more than 86% of India's total power generation.
- Analysis shows that 77% of India's total electricity comes from thermal power plants that are dependent on freshwater sources.
- Of all the freshwater-cooled thermal plants, 38.9% of generation capacity is installed in areas with high or extremely high water-stress.
- By 2030, more than 70% of India's existing thermal power utilities are likely to experience an increased level of water competition from agricultural, urban, and other industrial demands.

The CWMI raises three main issues:

- Limited coverage
- Unreliable data
- Limited coordination and sharing.

Conclusion:

The NITI Aayog alludes to this while describing the CWMI: "This Index is expected to establish a public, national platform providing information on key water indicators across states. This platform will help in monitoring performance, improving transparency, and encouraging competition, thereby boosting the country's water achievements by fostering the spirit of 'competitive and cooperative federalism' among the states. Further, the data can also be used by researchers, entrepreneurs, and policymakers to enable broader ecosystem innovation for water in India."

The CWMI concludes by noting that water-scarce States such as Gujarat, Madhya Pradesh, Andhra Pradesh, Karnataka, Maharashtra and Telangana are leaders in the Index. It notes that this is "likely driven by necessity in the face of looming water shortages". Factoring in the water-energy nexus linkages, especially the metrics around power plant water withdrawal and consumption will only help make the Index better and the States better prepared to manage their water and power resources.

24. A forest filled with butterflies**Context:**

A recent survey held in the Parambikulam Tiger Reserve initiated jointly by the Department of Forest and Wildlife, Parambikulam Tiger Conservation Foundation, and the Wayanad-based Ferns Naturalists Society, spotted 221 varieties of butterflies, 11 of which were endemic to the area

Parambikulam Tiger Reserve:

- Parambikulam Tiger Reserve (Kerala), one of India's protected forest areas, turns a garden with dream flowers floating all over.
- Wafer thin canvases bearing a splash of colours flutter all around,

filling the reserve with a splendour that matches the aura of a forest full of butterflies. With such a rich spread, the reserve could also hit spotlight as a haven of butterflies.

Key facts:

- The major species spotted during the four-day initiative include Small Palm Bob, Silver streak Blue, Orange-tail Awl, and Red-disc Bush brown. Among them, Orange-tail Awl gets active only during early morning hours and late in the evening.
- One of the biggest surprises of the survey is the spotting of Red-disc Bushbrown, a high-altitude species endemic to Western Ghats. It is found in an area of Nelliampathy region at an altitude of 1,320 m. It would be difficult to spot them in any part further north of Western Ghats
- The survey team had also recorded migration patterns of the rare species — Dark Blue Tiger and Common Crow.
- Buddha Peacock or Buddha Mayoore, which was recently declared as State butterfly of Kerala, was found in abundance in some areas of the forest. The survey had also recorded over 100 butterfly host plants in the reserve.
- A pioneer in community-based ecotourism, Parambikulam tries to ensure foolproof conservation with the active involvement of 234 members of six tribal settlements inside its limits. The reserve has many firsts to its credit, made possible through the participation of tribal people
- Being a protected forest area, the reserve has nearly five endemic flora varieties and has had 29 direct sightings of tigers.
- Ever since the Joint Forest Participatory Management was introduced, there have been no incidents of poaching in the reserve.

25. India's First Elephant Hospital Opens In Mathura

Context:

India's first specialized hospital for elephants has been formally opened in Mathura.

- The unique medical centre offers wireless digital X-ray, laser treatment, dental X-ray, thermal imaging, ultrasonography, hydrotherapy and quarantine facilities.
- Located close to the elephant conservation and care centre, the hospital is designed to treat injured, sick or geriatric elephants and is equipped with a medical hoist for lifting elephants, as also an elephant restraining device with a dedicated indoor treatment enclosure for long duration medical procedures.

Science and Technology

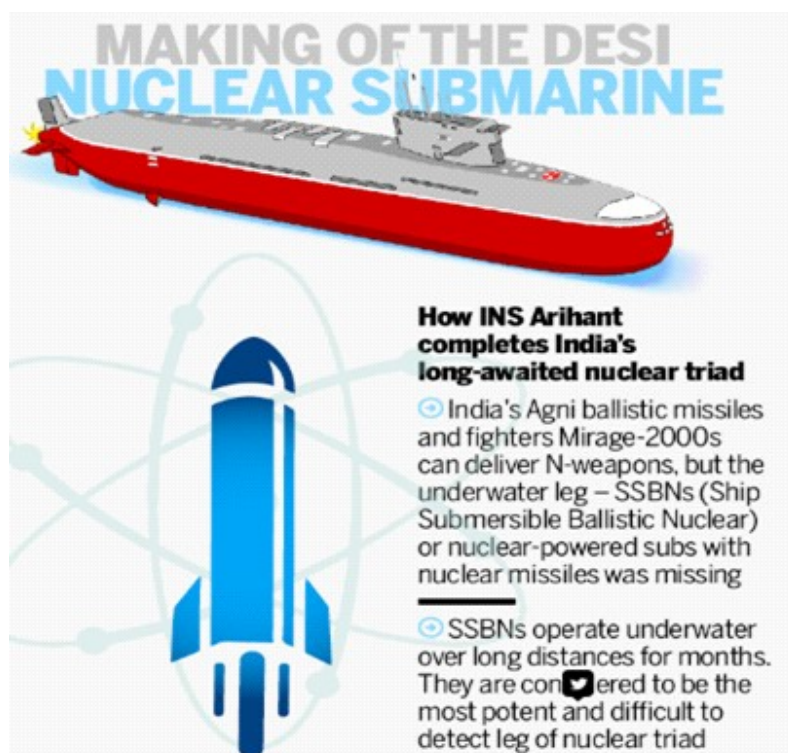
26. Nuclear sub Arihant completes first deterrence patrol mission

Context:

Prime Minister Narendra Modi tweeted that India's first nuclear armed submarine INS Arihant had successfully completed its first deterrence patrol, heralding India's entry into an exclusive club of powers with land, air and sea-based nuclear weapons delivery platforms.

About INS Arihant:

- India's hunt for a nuclear submarine began in the 1970s but it was only in the 1990s that it launched the Advanced Technology Vessel programme, under which the Arihant came into being, to build submarines capable of launching nuclear weapons.
- The name Arihant means "annihilator of enemies". INS Arihant has undergone a host of surface and "dived" sorties during its trials to prove its sea-worthiness.
- INS Arihant is the first of three such SSBNs constructed under the



secretive ATV (advanced technology vessel) programme launched decades ago. The construction of the second one, INS Aridhaman, is also almost complete now, with its delivery slated for 2018.

- The US, with 70+ nuclear submarines, leads the race with Russia at the second spot with approximately 30 nuclear submarines. At the third spot are the European powers, France and the UK, with 10 to 12 nuclear submarines each.

- Though the missiles on INS Arihant, with a range of 750km and 3,500km, pale in

comparison to missiles on Chinese, the US and Russian submarines, which have ranges of well over 5,000 km, yet the nuclear-triad has been a critical addition to India's arsenal.

Strategic importance to India:

- A ballistic missile submarine is a strategic asset as it can fire city-destroying missiles from anywhere in the ocean and remain undetected for a long time.

- It can sneak closer to the coast of an enemy nation and fire ballistic missiles deep into their territory, which otherwise cannot be reached by land-based short-range ballistic missiles.
- The INS Arihant completes India's nuclear triad by adding maritime strike capability to land- and air-based delivery platforms. All the big five nuclear nations — the US, Russia, France, China and the UK — are already full-fledged nuclear triad powers. China reportedly began combat patrols of an armed nuclear-powered submarine in 2015.

Challenges still remain for India:

- The Arihant patrol is a modest but critical first step in demonstrating the operational credibility of the submarine. However, this single achievement does not axiomatically lead to the conclusion that India's 'triad' is now complete.
- The classical triad in nuclear deterrence is an amalgam of a complex and rigorous distillate of three different strands—the land-based missile with a nuclear warhead, a similar airborne capability, and finally the sea-based under-water deterrent.
- Currently only the US and Russia among the nuclear 5 have the resources and the pedigree to claim such a capability. Even France and China have trimmed their deterrence sails.
- Very COMMENTARY India is located in challenging weapons of mass destruction (WMD) region, what is euphemistically referred to as "a rough neighbourhood" and the fact that both its nuclear capable neighbours (China and Pakistan) are in a deep and covert WMD cooperation framework compounds the challenge for Delhi.
- Add to this the fact that Pakistan has also used its nuclear capability to shield its terrorism investment and the strategic picture becomes even muddier. Pakistan last year tested its submarine-launched Babur missile, and in the process completed its nuclear triad, since it already possesses land-based ballistic missiles as well as tactical nuclear bombs that it can drop from its fighter aircraft.
- China has commissioned four Type 094 SSBNs with a Type 094A estimated to be under construction, according to reports. Pakistan only has attack submarines but there are plans to arm them with nuclear missiles, according to varitriad reports.

Conclusion:

The completion of the first patrol by the Arihant is cause for satisfaction but it would be misleading to extrapolate in an expansive manner from this first operational punctuation.

27. Trans fatty acids (TFAs)

Context:

Kerala is planning to launch an initiative to enforce dietary guidelines, involving the reduction of trans fatty acids (TFAs), salt and sugar in commercially available foods in the State.

Significance:

- The initiative, with technical support from the World Bank, WHO and the Food Safety and Standards Authority of India (FSSAI), is being launched as unhealthy diet is pushing up metabolic syndrome and premature deaths due to non-communicable diseases (NCDs) among Keralites.
- Latest estimates put the prevalence of metabolic syndrome (MS) in Kerala between 24-33%, indicating that one in three or four persons — predominantly women — have this condition.
- Metabolic syndrome (MS) is a cluster of metabolic abnormalities — high blood pressure, high blood sugar, abdominal obesity, abnormal cholesterol or triglyceride levels — that occur together, raising risk of heart disease, stroke and diabetes.

Trans fats:

- Trans fatty acids (TFAs) or Trans fats are the most harmful type of fats which can have much more adverse effects on our body than any other dietary constituent. These fats are largely produced artificially but a small amount also occurs naturally. Thus in our diet, these may be present as Artificial TFAs and/ or Natural TFAs.

WHAT'S TASTY ISN'T HEALTHY

What is trans fat and where do you find it?

Trans fat can occur naturally at very low levels in some meat and dairy products. Artificial trans fat is made when oil goes through hydrogenation, which involves adding hydrogen to liquid oil to make it more solid. In India, trans fat is consumed a lot in the form of vanaspati, a cheaper source of fat that improves taste as well

TRANS FAT IN INDIAN FOOD

Indian restaurants use vanaspati for cooking bhaturas, parathas, puris and tikkis among others. Repeated use of the same oil for frying adds to the problem



Research shows trans fat consumption increases bad cholesterol (LDL) in blood and decreases the amount of good cholesterol (HDL)—raising the risk of coronary heart disease and heart attacks

- Artificial TFAs are formed when hydrogen is made to react with the oil to produce fats resembling pure ghee/butter.
- In our diet the major sources of artificial TFAs are the partially hydrogenated vegetable oils (PHVO)/vanaspati/ margarine while the natural TFAs are present in meats and dairy products, though in small amounts.

Harmful effects:

- TFAs pose a higher risk of heart disease than saturated fats. While saturated fats raise total cholesterol levels, TFAs not only raise total cholesterol levels but also reduce the good cholesterol (HDL), which helps to protect us against heart disease. Trans fats consumption increases the risk of developing heart disease and stroke.
- It is also associated with a higher risk of developing obesity, type 2 diabetes, heart disease, metabolic syndrome, insulin resistance, infertility, certain types of cancers and can also lead to compromised fetal development causing harm to the yet to be born baby.

Why they are increasingly being used?

- TFA containing oils can be preserved longer, they give the food the desired shape and texture and can easily substitute 'Pure ghee'. These are comparatively far lower in cost and thus add to profit/saving.

Permissible limit:

- WHO recommends that trans fat intake be limited to less than 1% of total energy intake and has called for the total elimination of TFAs in global food supply by 2023. FSSAI has proposed to limit TFA limit in foods to 2% and eliminate trans fats from foods by 2022.

28. World's standard definition of kilogram now redefined**Context:**

Scientists have changed the way the kilogram is defined. The decision was made at the General Conference on Weights and Measures. The new definitions will come into force on 20 May 2019.

- Currently, it is defined by the weight of a platinum-based ingot called "Le Grand K" which is locked away in a safe in Paris.
- Le Grand K has been at the forefront of the international system of measuring weights since 1889. Several close replicas were made and distributed around the globe. But the master kilogram and its copies were seen to change – ever so slightly – as they deteriorated.
- In a world where accurate measurement is now critical in many areas, such as in drug development, nanotechnology and precision engineering – those responsible for maintaining the international system had no option but to move beyond Le Grand K to a more robust definition.

How wrong is Le Grand K?

- The fluctuation is about 50 parts in a billion, less than the weight of a single eyelash. But although it is tiny, the change can have important consequences.

How does the new system work?

- Electromagnets generate a force. Scrap-yards use them on cranes to lift and move large metal objects, such as old cars. The pull of the electromagnet, the force it exerts, is directly related to the amount of electrical current going through its coils. There is, therefore, a direct relationship between electricity and weight.
- So, in principle, scientists can define a kilogram, or any other weight, in terms of the amount of electricity needed to counteract the weight (gravitational force acting on a mass).

Planck's constant:

- There is a quantity that relates weight to electrical current, called Planck's constant – named after the German physicist Max Planck and denoted by the symbol h .
- But h is an incredibly small number and to measure it, the research scientist Dr Bryan Kibble built a super-accurate set of scales. The Kibble balance, as it has become known, has an electromagnet that pulls down on one side of the scales and a weight – say, a kilogram – on the other. The electrical current going through the electromagnet is increased until the two sides are perfectly balanced.
- By measuring the current running through the electromagnet to incredible precision, the researchers are able to calculate h to an accuracy of 0.000001%. This breakthrough has paved the way for Le Grand K to be deposed by “die kleine h ”.

Note: General Conference on Weights and Measures (CGPM) is the highest international body of the world for accurate and precise measurements and comprises of 60 countries including India and 42 Associate Members.

Miscellaneous

29. Rani Lakshmibai of Jhansi

Context:

Rani Laxmibai, also called the Rani of Jhansi was a pivotal figure in the Indian Revolt of 1857. She is also regarded as one of greatest freedom fighters of India. **November 19 is the birth anniversary of Rani Lakshmibai.**

Background:

- Born on November 19, 1828 in Varanasi to a Marathi family as Manikarnika
- Her parents were Moropant Tambe and Bhagirathi Bai. Her father was working at the Peshwa's court in Bithoor.
- After her mother died when she was four, her father brought her up. The Peshwa also took a keen interest in her upbringing.
- She was educated and taught horse riding, fencing and shooting to a target.
- Her childhood friends were Nana Sahib and Tatya Tope.
- At the age of 14, she was married to the Maharaja of Jhansi, Gangadhar Rao in 1842.
- After her marriage, she was called Laxmibai.
- Her son Damodar Rao was born in 1851. But he died after four months.
- Gangadhar Rao died in 1853. Before he died, he had adopted his cousin's son Anand Rao, who was renamed Damodar Rao.

Role in the Revolt of 1857 and Contributions to Indian Freedom Struggle:

- Lord Dalhousie sought to annex Jhansi when the Maharaja died applying the Doctrine of lapse since the king did not have any natural heir.
- As per this, the Rani was granted an annual pension and asked to leave the fort of Jhansi.
- The Revolt of 1857 had broken out in Meerut and the Rani was ruling over Jhansi as regent for her minor son.
- British forces under the command of Sir Hugh Rose arrived at Jhansi fort with the intention of capturing it in 1858.
- He demanded that the city surrender to him or else it would be destroyed.
- Rani Laxmibai refused and proclaimed, "We fight for independence. In the words of Lord Krishna, we will if we are victorious, enjoy the fruits of victory, if defeated and killed on the field of battle, we shall surely earn eternal glory and salvation."

- For two weeks the battle went on where the Rani led her army of men and women valiantly against the British.
- Despite courageous fighting, Jhansi lost the battle.
- The Rani, tying her infant son on her back, escaped to Kalpi on horseback.
- Along with Tatya Tope and other rebel soldiers, the Rani captured the fort of Gwalior.
- Afterwards, she proceeded to Morar, Gwalior to fight the British.
- Rani Laxmibai died while fighting in Gwalior on 18th June 1858, aged 29. She was dressed as a soldier when she died.

30. Silver Jubilee Commemoration Ceremony of SIMBEX- 2018

Context:

India and Singapore will hold 25th joint naval exercise SIMBEX, acronym for Singapore-India Maritime Bilateral Exercise from November 10 to 21 in India off Andaman Sea and Bay of Bengal. SIMBEX 2018 will mark silver jubilee of exercise and will be largest edition since 1994 in terms of scale and complexity.

SIMBEX- 2018:

- It will witness diverse range of exercises at sea such as live weapon drills including multiple missile rings, heavy weight torpedo (HWT) and medium range gun and anti-submarine rocket rings; advanced antisubmarine warfare (ASW) exercises, submarine rescue demonstrations; integrated surface and anti-air warfare (AAW); unmanned aerial vehicle (UAV) operations and cross deck helicopter flying among others.
- The initial first harbour phase of the exercise will be held at Port Blair followed by Sea Phase in Andaman Sea. Second harbour phase will be held at Visakhapatnam. Final sea phase will be held in Bay of Bengal. The number of missiles and torpedo rings in this exercise will be largest ever undertaken by Indian Navy with any foreign Navy till date. It will also witness highest numbers and variety of platforms elded by both sides.
- Indian Navy for this exercise will be deploying Ranvir class destroyer — INS Ranvijay, two Project 17 multirole stealth frigates — INS Satpura and INS Sahyadri, Project 28 ASW corvette — INS Kadmatt, Project 25A missile corvettes, INS Kirch, OPVs INS Sumedha and INS Sukanya, Fleet Support Ship, INS Shakti, Sindhughosh Class submarine, INS Sindhukirti, P8I Long Range Maritime Patrol and ASW aircraft from INAS 312, Dornier 228 Maritime Patrol aircraft from INAS 311, Mk 132 Hawk AJTs from INAS 551 and integral helicopters such as the UH3H, Seaking 42 B, Seaking 42C and Chetak utility helicopters.

- Singapore Navy will be deploying represented by two Formidable Class stealth frigates — RSS Formidable and RSS Steadfast, two Missile Corvettes, RSS Vigour and RSS Valiant, one Littoral Mission Vessel — RSS Unity, Archer class Submarine, RSS Swordsman, ‘Swift Rescue’ Deep Sea Rescue Vehicle (DSRV), Fokker F50 maritime reconnaissance aircraft, embarked S70B helicopters and Scan Eagle unmanned aerial systems.

Corner stone for Navy-Navy relations is SIMBEX which started as a basic anti-submarine exercise in 1994 as ‘Lion King’ has grown from strength to strength. The 25th edition of SIMBEX is the largest ever participation by the Singapore Navy in any bilateral exercise. To mark the historic occasion and as a symbol of growing trust and comfort levels between the two navies, a special Logo was also released. The occasion was also utilised to simultaneously release Special Postal Cover and Singaporean Postage Stamp on SIMBEX.

31. Exercise INDRA:

Some Key Facts:

- Opening ceremony for the Tenth Indo-Russian Joint Exercise, INDRA 18 scheduled from 18 November to 28 November 2018 was held on 19 November 2018 at Babina Military Station.
- Contingents of the participating nations came together for the opening ceremony which was held in presence of a number of officers and officials of the participating nations.
- There was a fly past of Army Aviation helicopters which carried the national flags of both the participating nations during the parade.
- The members of both the participating nations also interacted and familiarized with each other after the opening ceremony.
- The aim of the exercise is to practice joint planning and conduct to enhance interoperability of the two armies in the peace keeping and enforcement environment under the aegis of United Nations.
- The eleven day exercise focuses upon training on enhancing team building and tactical level operations in a counter insurgency environment in semi urban terrain.

32. World Toilet Day

Context:

In 2013, the United Nations General Assembly officially designated November 19 as World Toilet Day. World Toilet Day is coordinated by UN-Water in collaboration with governments and partners. Previously, World Toilet Day was established by the World Toilet Organization in 2001.



About World Toilet Day:

- World Toilet Day is a day to raise awareness and inspire action to tackle the global sanitation crisis – a topic often neglected and shrouded in taboos.
- SDG 6 aims to ensure that everyone has a safe toilet and that no-one practises open defecation by 2030. Failure to achieve this goal risks the entire 2030 Agenda for

Sustainable Development.

- 2018 Theme: When Nature Calls.

33. Kambala

Context:

The coastal districts of Dakshina Kannada and Udupi are all set for the kambala. The races would be held under the auspices of the District Kambala Committee.

- Karnataka government had promulgated Prevention of Cruelty to Animals (Karnataka Amendment) Ordinance, 2017 on July 20 last year. The President gave his assent to the Prevention of Cruelty to Animals (Karnataka Amendment) Bill making Kambala a legal rural sport in Karnataka. The Bill seeks to exempt kambala and bullock-cart racing from the ambit of the Prevention of Cruelty to Animals (PCA) Act, 1960.

About Kambala:

- Kambla in its traditional form is non-competitive with buffalo pairs made to race one after another in paddy fields, which is considered a thanksgiving to the Gods for protecting the animals from diseases.
- Over the years, it has however become an organised sport with animal rights activists claiming that the buffaloes run in the race due to fear of being beaten, which the organizers dismiss, saying no violence is involved and that several modifications had been made to ensure that it is an animal friendly event.



Abhyasa Program Structure

	Multiple Choice Questions (PRELIMS)	Descriptive Questions (MAINS)	Total Marks
Daily Test	10 (10*1 = 10 marks)	1 (1*10= 10 Marks)	20
Weekly Test	20 (20*1 = 20 marks)	2 (2*10= 20 Marks)	40
Fortnightly Test	30 (30*1 = 30 marks)	3 (3*10= 30 Marks)	60
Monthly Test	50 (50*1 = 50 marks)	5 (5*10= 50 Marks)	100
3 Months Test	100 (100*1 = 100 marks)	10 (10*10= 100 Marks)	200
Total Questions	4250+	500+	



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62



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83



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100



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105



Mishra
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144



149



187



295



296



360



412



417



474



480



548



614



673



713



726



758



761



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768



769



828



832



872



886

