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A Shankar IAS Academy Initiative

CURRENT AFFAIRS MAGAZINE

OCTOBER 2020

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OCTOBER 2020

G.S PAPER II

1. POLITY

1.1 Babri Masjid Verdict

Why in news?

The Supreme Court said that none of the 32 surviving accused of the Babri Masjid demolition case was found guilty.

What is the story behind?

- The mosque was brought down in 1992 to build a Ram temple.
- In 2019, the Supreme Court handed over the empty site to those who wanted the mosque brought down.
- However, it recognised the demolition as an egregious violation of the rule of law.
- This gave rise to hope that the ends of justice would be served by the punishment of those who mobilised the vandals.
- But now, the SC said that none of the accused was found guilty.

What did the trial court find?

- The trial court has given judicial legitimisation to the 'Ram Janmabhoomi movement' by acquitting all those indicted for conspiracy to bring down the structure.
- The court found that the demolition was **not planned** in advance.
- This finding flies in the face of the entry of several volunteers into Ayodhya that day armed with implements to bring down the structure.
- The movement was headed by L.K. Advani, Murli Manohar Joshi and Uma Bharti among others.
- The proponents of the movement had positioned themselves in vantage points to witness the occasion and celebrated with pride.

What were the evidences?

- In this case, there were sufficient evidence about the political mobilisation and the purported intent to assemble on that day.
- The court had with it evidence that there was studied inaction from the State, whose Chief Minister (CM) was one of the accused.
- The court had with it evidence that the unambiguous and open threats to the structure voiced by many of the movement's protagonists.
- The CM then, had given a false assurance to the SC and the National Integration Council that nothing but a symbolic 'kar seva' would take place.
- But, the crowd went into frenzy, goaded on by provocative speeches by the dignitaries, and vandals went up the dome.
- The possibility of tampered audio and video evidence would not undo the cumulative effect of the logistical and financial preparation, besides the communal mobilisation.

What did the Liberhan Commission say?

- The Manmohan Singh Liberhan Commission had laid bare the entire conspiracy in its damning report.
- But, a probe under the Commission of Inquiry Act has no binding value.
- The evidence adduced at the trial alone matters.



What did the CBI do?

- The CBI failed to prove the element of conspiracy, the details of the advance mobilisation, the meeting of minds that is required to prove a plot and its broad contours.
- From the beginning, the police investigation was marked by bungling.
- When the main events were covered by two FIRs, the U.P. government failed to notify both of them while designating courts for trial.
- The Allahabad High Court quashed the flawed notification.
- The State government's failure to rectify the irregularity resulted in separate proceedings in Lucknow and Rae Bareilly.
- The CBI filed a supplementary charge sheet after omitting the conspiracy charge.
- The Supreme Court later said that this derailed the joint trial and resulted in separate proceedings in two places.

What did the SC do?

- In 2017, the SC revived the conspiracy charge.
- It directed the trial court to resume day-to-day trial.
- It sternly reminded the agency that it was because of its failure and that of the State government that a crime that shook the secular fabric of the Constitution had not seen justice for 25 years.

What is unacceptable?

- It is unacceptable to see a court saying that the destruction was a "spontaneous act".
- All those who went through that phase in India's political history know that the demolition was only the culmination of a revanchist movement.
- The period was marked by communal mobilisation, holding of processions to gather 'bricks' meant for constructing a temple, etc.
- The cause of communal amity cannot afford successive judicial setbacks to both secular values and the rule of law.

1.2 Hathras Rape Case

Why in news?

The Hathras gang rape marks a new phase in the history of rape-as-caste-atrocity in the 21st century.

What is the realisation?

- The new republic realised that nothing has changed by granting passive legal rights to people who are actively treated as unequal.
- This is especially true when the responsibility for the enforcement of these new rights rests upon those who believe that the old inequalities are part of their legitimate caste-inheritance.
- An answer to this dilemma emerges through the notion of the caste atrocity, and the SC and the ST (Prevention of Atrocities) Act, 1989.

What does the Act say?

- The Act highlights that an extraordinary law is needed to criminalise practices that were considered ordinary and legitimate not so long ago.
- The term "atrocities", like its predecessor "untouchability", is not defined in the law.
- The law only refers to a list of practices ranging from **extremes** such as being forced to eat excreta, to varied forms of **routinised humiliation** and **discrimination**.
- This includes economic boycott, social exclusion, sexual violence and political disenfranchisement.

Where should one begin?

- The difficult process of redefining some **traditional practices as modern crimes** is where one must begin.
- This would help understand the place of rape within the larger spectrum of the caste atrocity.
- In rural society, the sexual availability of lower caste women to upper caste men is included in the intangible forms of caste capital that go with tangible forms such as land or wealth.
- Tensions arise when intangible caste entitlements begin to meet resistance rather than resignation.
- Upper caste adopts an oblique dog-whistle kind of language that must deny the relevance of caste and highlight the agency of the lower caste woman, albeit in biased ways.
- In response, lower caste rage against accumulated humiliations is compelled to insist on the perennial presence of caste and its pathology above all other co-morbidities.
- These reactions are neither equal nor symmetrical.

What are the patterns of denial observed?

- The classic instance of caste denial was the **Khairlanji case** of 2006.
- This establishes the undeniable centrality of caste in the ongoing enmity between Surekha, a Mahar woman, and her dominant Kunbi opponents.
- Surekha's assertiveness and the upward mobility of her family were unbearable for the Kunbis.
- They had sexually assaulted and murdered Surekha and her children.
- But, the Nagpur High Court judgment insisted that it was a revenge killing that had nothing to do with caste.

What was the 'Nirbhaya' impact?

- The next phase in the evolution of caste denial arrives with Delhi's 'Nirbhaya' gang rape in December 2012.
- Between 2012 and 2013, Haryana witnessed a relentless succession of rapes, gang rapes, sexual assaults and murders of Dalit women and girls.
- Public and media responses to the Haryana rapes were muted in the face of all the attention to the Delhi gang rape, but they were not silenced.
- Haryana did see local mobilisations by Dalit activist groups and support from some Delhi-based Dalit and women's organisations.
- Several cases were successfully filed despite opposition from the all-powerful Jat community, to which most of the accused belonged.

What is a common tactic?

- A common tactic of the accused was to try and turn every rape case into one of consensual sex, and every murder into suicide.
- This was accompanied by the denial of caste regardless of the identity of victim or perpetrator.
- When out of court settlements or compromises failed, caste details were invariably removed from the records.
- So, the Prevention of Atrocities Act was not allowed to be applied.
- The recent Hathra case seems to be breaking with earlier patterns.

What was the State's response?

- The Uttar Pradesh police forcibly cremated the body of the victim and did not allow the family to conduct the last rites.
- This act triggered a wave of revulsion, and conversely, a surge of support for the dead victim and her family.
- The State Chief Minister claimed that protests against the incident are acts of sedition.
- He said that these protests are part of a foreign-funded conspiracy to increase caste riots.
- Cases are lodged against every political party that organised a protest, but public meetings in support of the accused are allowed.



1.3 Shaheen Bagh Protest

Why in news?

The Supreme Court found the indefinite occupation of a public road by the Shaheen Bagh protestors unacceptable.

What was the judgment?

- The Court said that the administration ought to take action to remove “encroachments and obstructions” placed during such protests.
- The Court’s assertion was made even while appreciating the existence of the right to peaceful protest against a legislation.
- The Court’s view arises from a straightforward **balancing of two contrasting rights**,
 - a) The right to protest and
 - b) The right to free movement.

What is the question?

- A moot question is whether the manner and content of a protest should always conform to forms deemed acceptable by the law.
- Protests are not always rooted in legality, but derive legitimacy from the rightness of the underlying cause and the extent of public support.
- In many cases, they are against laws and regulations perceived as unjust.
- A flash strike, a spontaneous road block or a call for a complete shutdown - each of these is not, in a strict sense, legal.
- But, at the same time, it is an inevitable part of the culture of protest in a democracy.

What did the court do in this case?

- In this case, the Court notes that the administration neither negotiated with the protesters in Shaheen Bagh nor tried to clear the scene.
- Any finding that a peaceful protest had continued too long, or in a place deemed inconvenient to others, should not encourage the administration to seek early curbs on the freedom of assembly.
- After the pandemic led to the end of the protests, there was little left for adjudication.
- The Court’s remarks might come across as an offering to administrators looking to de-legitimise protests.
- Following the earlier judgment that any ‘bandh’ is illegal, courts routinely stayed sector-wide strikes.

What is another aspect?

- Another aspect of the present ruling is the assertion that protests should be confined to “**designated places**”.
- Such judicial certitude may end up undermining the larger democratic need for public expression of dissent in a manner and place that would be most effective.
- The notified demonstrations are subject to regulations regarding **time and space**.
- But, it may not be possible to extend the same to spontaneous, organic and leaderless protests driven by a cause.

How shouldn’t this ruling be perceived?

- The ruling should not form the basis for suppression of such protests by the force of the state.
- The principles that are salutary from an administrative point of view are,
 - a) The need for balance between the right to protest and the right to free movement, and
 - b) The rule that protests should take place at designated spots.
- But these principles cannot become unquestionable axioms to render all protests that cause inconvenience to others as the target of the strong arm of the state.



1.4 State Govt & Judiciary Tussle

Why in news?

There is a sudden escalation of an ongoing tussle between the judiciary and the ruling party in Andhra Pradesh (A.P.).

Why is there a tussle?

- The CM of A.P., Y.S. Jagan Mohan Reddy, wrote a letter to the Chief Justice of India, S.A. Bobde.
- In that letter, he complained about the allegedly hostile attitude of the A.P. High Court (HC) against him and his government.
- By making public the details of the letter that contains allegations against a serving Supreme Court judge, the conflict is out in the open.

What did the HC do?

- The HC has directed the CBI to investigate into the registry's complaints against allegedly defamatory social media posts against the judiciary as well as individual judges.
- It also wants the CBI to examine whether these attacks were part of a larger conspiracy.
- The CM alleges that the HC is controlled by loyalists of his predecessor in office, and has passed a slew of orders against his regime.
- The HC argues that the State police are reluctant to take action against those carrying on an online campaign against the court.
- It says many of those posting on social media against the HC judges are from the YSR Congress.

What is the basis of the conflict?

- The conflict is based on mutual accusations that
 1. The HC is hostile to the State government, and
 2. The State government is abetting a political campaign against the judges.
- It is disturbing enough that some judicial orders are seen in a political light, or lend themselves to such an interpretation.
- It becomes ominous if these charges give rise to open threats and abuse.
- The government has sought to ease the situation by offering no objection to the CBI inquiry.

What is the dilemma?

- The government is presumably waiting for the outcome of the CM's missive to the CJI, who in turn faces a dilemma.
- There is a dilemma because the CJI cannot be seen as either ignoring a written complaint from an elected leader or giving undue credence to charges from a disgruntled litigant.
- The problem is that allegations of possible judicial bias are combined with those of misconduct, a serious charge.

What could be done?

- The right thing would be for the CJI to order an inquiry into the letter in accordance with the apex court's internal procedure.
- Regardless of what happens, it may end the recriminations.
- India can ill-afford a public perception that judges have strong political loyalties.
- For, that will undermine faith in an independent judiciary.

1.5 Jammu and Kashmir Land Laws

Why in news?

The changes in land laws in Jammu and Kashmir were notified by the Centre.

What are the new laws about?

- It has allowed the purchase of land by those who are not permanent residents of the Union Territory (UT).
- Earlier, only permanent residents could purchase land in the erstwhile State, which was reorganised as two UTs, J&K and Ladakh, in 2019.

Why were the laws changed?

- One of the arguments against the now nullified special status of J&K was that the restrictions on land transfers hampered investments.
- J&K industrial policy had limited land holding of investors to designated enclaves.
- The changes in land laws were logical steps to follow the end of the special status.
- Some restrictions remain on the transfer of agricultural land for non-agricultural purposes, but this too can be cleared by the district collector.

Was there opposition?

- The government has said that the changes will encourage investment and advance peace and progress in J&K.
- The argument that these changes would help the people of the region might have been stronger if these were done in consultation with them.
- But in all three regions - Jammu, Kashmir and Ladakh - there is strong opposition to opening the land market to non-residents.
- Political parties in J&K too have opposed the changes.
- Free movement of people, and an integrated national market can advance development.
- But India's governance structure accommodates fears and concerns of local populations in this context in a measured manner.
- There are several States which have provisions to regulate ownership and transfer of land under Article 371 of the Constitution.

Will there be similar laws for Ladakh UT?

- The Centre is expected to announce new land laws for the UT of Ladakh before October 30, 2020.
- It has promised to safeguard interests of the people regarding all issues related to language, demography, ethnicity, land and jobs.

What is the impact of the Centre's approach?

- The Centre's approach towards J&K has been marked by a lack of trust.
- This has accentuated the alienation of large sections of the population.
- Fears of deliberate demographic engineering have dominated politics in the Valley for long.
- After the reorganisation of the State and the loss of its special status in 2019, the people of Jammu and Ladakh turned nervous on this question.
- Desirable as it may be, there is no point forcing a particular path of development upon people.
- The situation is precarious also because of the heavy hand of the state on political and civil society activities in J&K.

What could be done?

- The unilateralism that has come to define New Delhi's dealings with J&K is achieving little.
- The measures aimed to promote investment shouldn't be pushed when the end result is political volatility.
- The Centre's policy towards J&K must be buttressed by a robust political process that,
 1. Enables people's participation and
 2. Ensures stability with growth and development.

2. GOVERNANCE

2.1 SVAMITVA

Why in news?

The Survey of Villages and Mapping with Improvised Technology in Village Areas (SVAMITVA) will survey all rural properties.

What are the problems?

- Individual farmers are not able to take land on **lease**, or confidently lease out land.
- Availability of **institutional credit** is constrained by the absence of proper land records.
- The digitisation of land meant for agricultural purposes has been completed to the extent of almost 90%.
- But, demarcating residential properties remains an issue.

What is the problem with tax collection?

- The digitisation of agricultural land records has contributed to the smooth implementation of the PM Kisan Samman Nidhi Yojana.
- However, the provision of common amenities is impacted by the lack of demarcation of property owned in the villages.
- Panchayats are **unable to collect** their due share of property tax from residential parcels.
- The Economic Survey 2017-18 said that the house tax collections of panchayats is 20% “relative to potential” (all India), with the southern States doing better in this respect.
- With clear titles and transparent land valuations, these collections could improve.

What is needed?

- A comprehensive digital mapping of rural land categories will help raise rural productivity and incomes in various ways.
- [Rural land categories - Agricultural, residential and commons]

What is SVAMITVA?

- The SVAMITVA seeks to address these problems.
- The plan is to survey all rural properties using drones and prepare GIS-based maps for each village.
- The process begins with the signing of a MoU between the Survey of India (SoI) and the State government concerned.

What is the process?

- The SoI will use technology for **topographical mapping**, including satellite imageries and drone platforms.
- During this financial year, the scheme will be implemented as a pilot in about one lakh villages across eight States.
- The States are Maharashtra, Karnataka, Haryana, Uttar Pradesh, Uttarakhand, Madhya Pradesh, Punjab and Rajasthan.
- SVAMITVA would cover all 6.60 lakh villages in the country by 2023-24.
- Property cards or “**sampatti patrak**” will be made available on digital platforms or as hard copies to the village household owners.

What is the significance?

- Digitisation of personal identity and agriculture land, and now residential property in rural areas through SVAMITVA, will facilitate **transparent** transactions in land parcels.
- Non-farm related activities will benefit from clear title and the removal of land supply constraints.

- According to NITI Aayog's 2016 report on land leasing, 36% of the tenant farmers are landless and 56% are marginal land owners.
- Clear title records, accompanied by legalisation of land leasing, will improve their access to **credit, insurance and support services**.
- With digital records, banks can lend freely without much documentation.
- Formal lease markets and digitisation of personal records can lead to **improved implementation** of schemes like PM-KISAN.
- These can be directed towards the cultivators, instead of absentee landlords.
- The main challenge for SVAMITVA is to ensure Centre-State coordination and smooth working of dispute settlement systems.

3. INDIA & ITS NEIGHBORHOOD

3.1 FATF and Pakistan

Why in news?

The Financial Action Task Force has decided to retain Pakistan on its greylist.

What is FATF?

- Headquartered in Paris, the Financial Action Task Force (FATF) was set up in 1989 by the G7 countries.
- **Objective** - FATF acts as an international watchdog on issues of money laundering and financing of terrorism.
- It is empowered to curtail financing of UN-designated terrorist groups.
- It is to limit the concerned countries from sourcing financial flows internationally and thereby constraining them economically.
- **Members** - FATF has 39 members, which comprise 37 member jurisdictions and 2 regional organisations.
- India became a full member in 2010.

What does the FATF's decision mean?

- The decision of the FATF has disappointed the Imran Khan government.
- His cabinet had projected confidence that the country would be taken off the greylist.
- For this, Pakistan government had monitored jurisdictions on terror financing and money laundering activities.
- It had cleared on 21 of the 27 mandated action points.

What will be the implications of this decision?

- Pakistan will face international strictures on its markets and on its ability to procure loans until the next FATF plenary in February 2021.
- By this time, Pakistan is expected to complete the six pending issues.
- A bigger problem for Pakistan was that Turkey was the only other country in the FATF to push for Pakistan to be let off.
- It suggested that the last six points be cleared by an "on-site" visit by an FATF team.
- The proposal was dropped when even other traditional backers of Pakistan such as China, Saudi Arabia and Malaysia did not support it.

What options does Pakistan have?

- It has little option but to complete its tasks in the next four months.
- The tasks that it needs to complete include:

1. More action against UNSC-banned terrorists and terror groups,
2. Action against charitable organisations (Non-Profits) linked to these banned entities,
3. Tracing fugitive terrorists and pursuing convictions against them,
4. Revising the list of banned entities under the Anti-Terrorism Act to reflect all those banned by the UNSC, and
5. Cracking down on other channels of terror financing through narcotics and smuggling.

What is there for India in this?

- For those in India watching the outcome of the FATF decision, there are some broader dividends to consider from this process.
- To begin with, Pakistan's deadline for action ended in September 2019.
- But, the FATF has retained Pakistan on the greylist for the third time this year and was not automatically downgraded it to the blacklist.
- This has ensured that the pressure has continued to make Pakistan accountable on terror.
- The Khan government has been forced to make a real legislative push to bring Pakistani anti-terror laws in line with international standards.
- At least for now, it will ensure sufficient pressure on groups such as the LeT that target India, to refrain from publicly raising funds.

What is crucial?

- Pakistan's support to the U.S.-led Afghan process and talks with the Taliban are crucial to the peace process.
- FATF process has made Pakistan more amenable to help Afghanistan.
- It remains to be seen if the actions it takes will permanently change Pakistan's course in supporting cross-border terror groups.

What does India want?

- India's goal is for Pakistan to fully dismantle the infrastructure of terror in the understanding that it is in Pakistan's own interests to do so.
- It is hoped that the prolonged FATF process will enable this realisation in Islamabad.

4. BILATERAL ISSUES

4.1 Indo-US 2+2 Meeting

Why in news?

India and the US are preparing for the third 2+2 ministerial meeting.

What is the agenda?

- The meeting will be between External Affairs Minister and Defence Minister of India, and US Secretary of State and Defense Secretary.
- The meeting will happen in New Delhi.
- One of the items on the agenda will be the Basic Exchange and Cooperation Agreement (BECA).
- BECA is a pact that would lay the foundation for deeper military cooperation.
- In the last two meetings, agreements known as LEMOA and COMCASA were signed.

What is BECA?

- The BECA largely pertains to geospatial intelligence, and sharing information on maps and satellite images for defence.
- Signing BECA will allow India to use the US's advanced geospatial intelligence.

- This will enhance the accuracy of automated systems and weapons like missiles and armed drones.
- It will give access to topographical and aeronautical data and products that will aid navigation and targeting.
- This could be a key for Air Force-to-Air Force cooperation.

What is LEMOA?

- The Logistics Exchange Memorandum of Agreement (LEMOA) was signed between India and the US in August 2016.
- It allows the military of each country to replenish from the other's bases: access supplies, spare parts and services from the other's land facilities, air bases, and ports.
- This can then be reimbursed.
- This is extremely useful for Navy-to-Navy cooperation, since the US and India are cooperating closely in the Indo-Pacific.
- If signing LEMOA needed trust, its application enhances the trust.

What is COMCASA?

- The Communications Compatibility and Security Agreement (COMCASA) was signed in September 2018, after the first 2+2 dialogue.
- It allows the US to provide India with its encrypted communications equipment and systems.
- Because of this, Indian and US military commanders, aircraft and ships can communicate through secure networks in peace and war.
- It paved the way for transfer of communication security equipment from the US to India to facilitate "interoperability" between their forces.

What do these three pacts put together mean?

- LEMOA means one partner trusts the other enough to expose its valuable assets.
- COMCASA means one is confident that it can rely on encrypted systems to connect the two militaries.
- BECA means it can share highly classified information in real time without fear of being compromised.
- All this signals the level of trust that has developed between the two countries and their militaries, faced with an aggressive China.

What does this mean in the context of the ongoing border standoff?

- Amidst the longest India-China border in three decades, India and the US have intensified under-the-radar intelligence and military cooperation at an unprecedented level.
- This cooperation has facilitated information-sharing between security, military and intelligence branches of the two countries.
- It includes sharing of high-end satellite images, telephone intercepts, and data sharing of Chinese troops and weapons deployment along the 3,488 km Line of Actual Control (LAC).
- The Indian defence establishment also has enhanced capability with some American equipment.
- The armed forces have used at least five American platforms at the LAC.
- Now, with these key defence pacts in place, cooperation can happen in a more structured and efficient way, rather than episodic.

Is there a catch in all this?

- The US wants India to move away from Russian equipment and platforms.
- It is because the US feels that this may expose its technology and information to Moscow.
- India is wary of Pakistan's ties with Pentagon, and US's dependence on Rawalpindi for access to Afghanistan as well as its exit strategy.
- But, because of Chinese belligerence being the clear and present danger, New Delhi's strategic embrace of Washington is the obvious outcome.

5. INTERNATIONAL ISSUES

5.1 US Antitrust Suit

Why in news?

The US Department of Justice has filed an antitrust lawsuit against Google.

What does filing this suit mean?

- This marks a significant step towards curbing the growing monopolistic power of the Internet behemoth.
- The lawsuit focuses only on specific deals done by Google with phone makers and telecom operators to capture significant market share for its search engine business.
- But, the outcome of this case could open investigations into other practices related to its Android app store and other software platforms.

How monopolistic is Google?

- With a 90% market share in the search business, Google is one of the largest companies the world has ever seen.
- The nature of its online products and services allows Google to wield power over five billion people with Internet access around the world.
- It influences consumer shopping behaviour and also determines the political destiny of countries around the world.
- Google arguably exercises more influence over how we live than any government today.
- This dominance enables Google to do a lot of things that are not just anti-competitive, but also anti-consumer.

What are the anti-consumer actions?

- Google announced that it would make app developers on the Google Play Store platform use its in-app payment system instead of other systems.
- This meant that the developers would have to use Google's billing system, which takes a 30% fee for every transaction.
- This decision has been withheld after protests from developers.
- But, it reveals Google's inclination to misuse its market dominance.

What is the issue specific to India?

- Google tracks users' shopping habits, video-watching preferences, the content of e-mails, places travelled among other things.
- This could be a major problem in countries like India, where personal data protection and privacy laws are virtually non-existent.

How policing could be done?

- Twitter, Facebook and Google exert immense influence on the social, economic and political landscape of a country.
- Facebook recently set up an oversight board in a bid to showcase that it can self-regulate.
- However, a big drawback of this board is that it is not designed to take quick decisions.
- These platforms cannot be trusted to do its own policing.
- Neither can this task be left to governments, as it could be misused by ruling regime to change the course of elections or target political rivals.

What is needed?

- It is time to set up an **independent regulatory oversight** of Internet platforms.
- Proceedings initiated against Google in the US should pave the way for similar scrutiny in India, too.

5.2 H-1B Visa

Why in news?

The US administration has changed its policy stance on H-1B visa.

What are the new changes?

- The US administration said it was announcing an **interim final rule**, which will strengthen the non-immigrant work visa programme.
- The new rules will be effective **60 days** from their publication in the Federal Register, which is the official journal of the US government.

What is an interim final rule?

- Executive policies announced by agencies such as the Department of Homeland Security (DHS) or the US Citizenship and Immigration Services (USCIS) require them to consult stakeholders.
- They should give them a notice period of 60 days and seek comments before any sweeping changes are brought in.
- This method allows agencies such as DHS to act with urgency and within a specified time after a new rule or law is made.
- In the latest announcement on the proposed policy changes, the DHS said that the USCIS would forgo the usual 60-day comment.
- It also said that notice period to immediately ensure that employing H-1B workers will not worsen the economic crisis caused by COVID-19.
- The impact of the pandemic on the US economy and its domestic workers was an obvious fact which justified the agency issuing this rule.

What are the new proposed changes?

- **Detrimental** - As per the DHS, the H-1B work visa regime had over the years gone far beyond the mandate, for which it was launched, often to the detriment of US workers.
- Therefore, in order to bring back the integrity to the regime, the DHS has announced some changes.
- These changes would ensure that H-1B petitions are approved only for qualified beneficiaries and petitioners.
- The new rule will narrow down the definition of what constitutes a “specialty occupation”.
- This means that companies and agencies which hire workers on H-1B visas will have a tough time proving to the immigration agencies that such employees are not available from the domestic pool of workers.
- **Filling Quota** - Another proposed change relates to companies allegedly making fictitious work offers to fictitious employees just to fulfil their quota of H-1B visa applications approved.
- The US administration had alleged that both Indian and the US-based companies have often given fictitious H-1B work visa offers to foreign employees.
- They do so to evade some part of taxes, while also undercutting the jobs for eligible US workers.
- **Enforcement** - The final proposed rule change talks about better enforcement of the new H-1B norms which will be announced later.
- This will be done through worksite inspections and monitoring compliance, before, during and after the H-1B work visa is approved.

How many permits are issued?

- Every year, the US administration issues 85,000 H-1B work permits in all. Of these,
 - a) 65,000 are for people with specialty occupations.
 - b) 20,000 are reserved for those foreign workers who have earned a masters or higher university degree in the US.
- Every year, Indians and Indian companies corner a lion's share of the number of H-1B work permits issued each year.



How will the changes impact Indian IT companies?

- As of April 1, 2020, the USCIS had received about 2.5 lakh H-1B work visa applications.
- Indians had applied for as many as 1.84 lakh of these visas.
- Since the definition of “specialty occupation” is proposed to narrow down, the 65,000 visas issued every year may be brought down.
- Indian IT giants such as TCS, Infosys and others have in the past insisted that they have reduced their dependence on H-1B visas to a large extent.
- But, a reduction in the overall quota would still mean that,
 - a) The number of workers they would have to shell out more money to hire local talent or
 - b) Pay more to the existing H-1B work visa holders.

How will the changes impact global IT companies?

- The proposed change could also impact global IT companies which hire H-1B visa workers in a great number.
- Most of these H-1B work permit holders were Indians.
- H-1B visas, most often used by Indian and Chinese companies, are generally approved for a period of three years for a person.
- But many visa holders change employers to extend their US stay.
- The visa norms have often been criticised for allowing cheap labour in the US at the expense of its local workforce.

What happens to the old rules and relaxations?

- The DHS has come out with a broad plan on what it intends to do to repair the H-1B work visa regime.
- But, the final contours and exact changes are not known yet.
- The changes are seen as a poll promise being fulfilled by Donald Trump.
- Once the DHS comes out with the final norms, it will have to be seen whether the new rules apply only to the fresh work visas that are issued or also to the existing visa holders.
- Until then, the relaxations announced by the Trump administration in August 2020 would continue to apply.

5.3 Libya Ceasefire Agreement

Why in news?

Rival parties in Libya announced a historic ceasefire.

What happened?

- This was followed by the 5+5 Libyan Joint Military Commission (JMC) talks in Geneva.
- This will give way to the possibility that the long-drawn conflict might be coming to an end.
- This is the first, crucial, brave step towards a comprehensive settlement of the long Libyan crisis.

What is going on in Libya?

- Libya has been embroiled in a tussle for power between rival militias ever since Muammar Gaddafi was ousted from power by NATO-backed forces in October 2011.
- Gaddafi's death marked the end of 42-year rule by the former Army officer which was in power since 1969.
- In the wake of Gaddafi's ouster, dozens of militias led by multiple warlords scrambled to occupy the power vacuum.
- As a result, Libya turned into a war zone with different militant leaders claiming control of the North African nation.
- Some of the issues of dispute among the warring factions include control of the oil infrastructure, governance, national finances and the military.

Are other countries involved?

- The UN-backed internationally recognised government called the Government of National Accord (GNA) is led by Fayez al-Sarraj.
- The GNA took power in 2015 under the UN-brokered Libyan Political Agreement.
- This Tripoli-based government is supported by allies Qatar and Turkey.
- Turkey has sent troops to Libya, which includes Syrian rebel fighters who are aligned with Turkey.
- Turkey maintains that it has sent these troops to help the UN-backed government in the west.
- The GNA's authority is challenged by the factions controlling the east.
- The eastern part is controlled by rebel forces under the Libyan National Army (LNA) which is supported by Russian military contractors.
- Between 2014 and 2019, the LNA has conducted military operations against the Islamic State in the east.
- The spread of the Islamic State has further complicated the situation and is also one reason the US is one of the foreign states that has intervened.

What has been the impact of the civil war in Libya?

- As per the Council on Foreign Relations' Global Conflict Tracker, the civil war in Libya has created over 50,000 refugees and asylum seekers, while more than 268,000 people have been displaced.
- As per the Congressional Research Service report, since April 2019, over 2,600 Libyans including hundreds of civilians have been killed.

What is the new ceasefire agreement about?

- As per this new agreement facilitated by the UN, all foreign mercenaries and armed forces will have to withdraw within the next 90 days.
- The parties also agreed that any violations in the ceasefire will be dealt by a joint military force, which will be under a unified command.
- But, the ceasefire does not apply to UN-designated terrorist groups.
- The agreement has established a Joint Police Operations room.
- This operations room will implement and propose special arrangements to secure the areas that are cleared of military units and armed groups.
- Further, the 5+5 have also agreed to open the land and air routes that connect the regions and cities of Libya.

What will be the impact on oil reserves?

- Significantly, Libya has Africa's largest oil and gas reserves.
- With regards to oil production, the different parties have agreed that the commanders of the east and west petroleum facilities will work directly with a representative appointed by the National Oil Corporation.
- This representative will recommend a plan for restructuring the Petroleum Facilities Guards to ensure that the flow of oil continues.
- This is a significant development since control of the oil infrastructure is one of the elements of competition between the GNA and LNA.

6. INTERNATIONAL ORGANISATIONS

6.1 Quad Meeting

Why in news?

The second meeting of the Quadrilateral Strategic Dialogue of Foreign Ministers was held in Tokyo.

What is the Quad?

- The Quadrilateral Security Dialogue or the 'Quad' is an informal setup of Australia-India-Japan-United States.
- It aims to strengthen the defence and security cooperation amongst the four countries.
- The idea was originally conceived in 2007 by the former Japan's Prime Minister, Shinzō Abe.
- It was proposed to check China's growing influence and assertiveness in the Indo-Pacific region.

What is the departure?

- The meeting was planned when the Foreign Ministers (FMs) had met at the UN General Assembly.
- In a departure from the earlier secrecy, the FMs made public a large part of their deliberations.
- The deliberations include the decision to make the FM meeting an annual event, to cooperate on combating the pandemic, and on building infrastructure, connectivity and a supply chain initiative in the region.

Who were the attendees?

- As the host, Japan's Prime Minister Yoshihide Suga dispelled any notion that he might not be as proactive as his predecessor, Shinzō Abe.
- Australia's FM Marise Payne, India's External Affairs Minister S. Jaishankar and the U.S. Secretary of State Mike Pompeo attended the meeting.

What did the US say?

- In the meeting, Pompeo said that his mission was to direct the Quad towards building a coalition to counter Beijing's aggression in the region.
- This pointed out to the LAC standoff, as well as Chinese aggression in the South and East China Seas.
- His proposal did not only seem to be just a coalition of democracies committed to a free and open Indo-Pacific.
- But also seems like the US is keen on turning the Quad into a full-fledged military alliance of countries facing tensions with China.

What should be done?

- **Strategic autonomy** - The government should not downplay the import of such openly stated intentions.
- While Japan and Australia are bound by alliance treaties to the U.S., New Delhi has thus far charted its course on strategic autonomy.
- Mr. Pompeo's words point to an interest in bringing India into bilateral tensions in the Indo-Pacific.
- He also invited the Quad to take a role in India-China tensions as well.
- The Modi government has rejected such suggestions, and any shift would be unwise now.
- **Impression** - India has much to gain strategically and in terms of capacity building from the Quadrilateral dialogue.
- But little should be gained from the impression that it is being led by the US on an important initiative for the region in which India is an important stake-holder.

6.2 Nobel Peace Prize

Why in news?

The Nobel Peace Prize 2020 was awarded to the United Nation's World Food Programme (WFP).

What is the Nobel Peace Prize?

- The Nobel Prizes would be dedicated to the person who shall have done the most or the best work
 1. For fraternity between nations,
 2. For the abolition or reduction of standing armies and
 3. For the holding and promotion of peace congresses.
- The Nobel Peace Prizes have been awarded since 1901.
- It was not awarded on 19 occasions including 1914-1916, 1918, 1939-1943 among some other years.
- Overall, the prize has been awarded to 135 laureates, including 107 individuals and 28 organisations.

What is the UN WFP?

- The WFP was established in 1961 at the behest of the US president Dwight Eisenhower.
- It is the world's largest humanitarian organisation committed towards its global goal of ending hunger by the year 2030.
- In 1960, Eisenhower proposed to the UN General Assembly that a scheme should be devised for providing food aid through the UN system.
- In 2015, eradication of world hunger became one of the UN's Sustainable Development Goals (SDGs).
- The WFP is the UN's primary instrument in achieving that goal.
- WFP runs entirely on public donations and its donors include governments, corporations and individuals.

Why did it win the prize?

- WFP was awarded the prize for its efforts to combat hunger and for its contribution to bettering conditions for peace in conflict-affected areas.
- It was given the award for acting as a driving force in efforts to prevent the use of hunger as a weapon of war and conflict.

How does WFP help people?

- It provides food assistance in two ways, either by way of providing food or by meeting people's food-needs by providing cash-based transfers.
- The cash-based transfers were launched for the first time in 2005 in response to the tsunami in Sri Lanka.
- In 2019, WFP provided assistance to close to 100 million people spread across 88 countries by supplying them with food, cash and vouchers.
- In 1962, the WFP undertook its first emergency operation after an earthquake in Iran killed over 12,000 people.
- In 1963, it launched its first development programme in Sudan.
- In 1989, WFP staged the largest humanitarian airdrop in history when it launched "Operation Lifeline Sudan" to provide assistance to people affected by the civil war.
- More recently, it has provided food aid to the victims of the earthquake in Nepal in 2015.

How does WFP measure hunger?

- It estimates hunger by the **prevalence of undernourishment**.
- The UN defines undernourished people as those individuals whose food intake falls below the minimum level of dietary energy requirements.
- These dietary energy requirements are set by sex and age groups in consultation between the FAO, UN and WHO.
- According to current estimates, about 8.9% of the world's population or about 690 million people are hungry.
- As per the WFP, if the current trends continue, by 2030 there will be 840 million hungry people.



- Further, about 135 million suffer from acute hunger mainly as a result of man-made conflicts, climate change and economic downturns.
- WFP estimates that the pandemic could possibly double that figure.

Does WFP work in India?

- Yes, WFP has been working in India since 1963.
- It has transitioned from food distribution to providing technical assistance as India became self-sufficient in cereal production.
- One-fourth of the world's undernourished population is in India.
- About 21% of the population live on less than \$1.90 a day.
- Now, WFP is working to improve the government's targeted public distribution system to ensure that food reaches those that need it the most.
- It is also working with the government to improve the nutritional value of the Midday Meal programme.
- It is using its own software called the Vulnerability and Analysis Mapping to identify the most food insecure groups in the country.

G.S PAPER III

7. ECONOMY

7.1 GST Council Meet

Why in news?

The GST Council's recent meeting was able to make slight progress.

In what aspects progress was seen?

- The progress is made in two respects, which includes Simplifying the return filing process and Taking a tentative step forward in resolving the impasse over compensation cess.

What are the options?

- **Option 1** - The Centre raised the compensation payable to the States under 'option one' from ₹ 97,000 crore to ₹ 1,10,000 crore.
- Under this option, the States can borrow through a special window of the Reserve Bank of India.
- The entire principal and interest on the borrowing would be borne out of the cess.
- **Option 2** - This option involves the States borrowing the entire shortfall of ₹ 2,35,000 crore from the market.
- The interest will be borne by the States.
- **Opting** - While 21 States have opted for the first option, the remaining (largely Opposition-ruled) have opposed the terms.
- The latter States are demanding the 14% annual increase in GST revenues to States that was written into law.

What did the Centre say?

- The Centre has promised that all the dues of the States will be settled through the extension of the compensation cess beyond June 2022.
- It has released ₹ 20,000 crore of compensation cess collected this year.
- The opposing States should not insist on an escalation to the dispute redress mechanism.
- This would delay and complicate the process for all States at a time when their need for funds is immediate.



What is the move regarding return filing system?

- The intent to move towards auto-populated returns and invoice matching could check tax evasion and improve revenue collection.
- From January 2021, taxpayers would have to provide details required in the GSTR 1 return alone, regarding outward supplies.
- Other data pertaining to input tax credit will be captured from the suppliers and the net tax payable will be shown in the GSTR-3B return.
- These measures show that the GST return filing system is moving back to its original design of ease of compliance and improved collection.
- This move should be viewed along with requirement for businesses with turnover exceeding ₹ 500 crore to file e-invoices from October, 2020.

What is another good move?

- Almost 93% of the 1.3 crore GST registered taxpayers are smaller businesses having less than ₹ 5 crore of annual turnover.
- Providing leeway to these smaller businesses to file returns on a quarterly basis from next year is a good move.
- This move will provide relief to the majority of the businesses, cutting down their compliance costs to a third.
- However, there could be glitches for a few quarters.
- With small taxpayers filing quarterly returns, input tax credit could get blocked for larger taxpayers (who file on a monthly basis).
- Yet, the step may lead to larger companies persuading their suppliers to be more compliant in filing returns.
- These recent changes might further the shift of entities from the unorganised to organised sector, so far stalled by loose implementation.

7.2 Loan Cash Back Scheme

Why in news?

The Centre waives the compound interest on loans up to Rs 2 crore.

What is the government's proposal?

- The Finance Ministry issued certain guidelines to the banks.
- It said that the difference between the compound interest and simple interest for a period of six months will be provided to all borrowers with loans up to Rs 2 crore.

What does this mean?

- This means that the borrowers need to pay only simple interest.
- The government will pay back the difference between compound interest charged during those six months and simple interest.
- The ex gratia payment will be admissible irrespective of whether the borrower had availed the moratorium on repayment or not.
- It is for those loan accounts which are standard and not non-performing assets (NPAs) as on February 29, 2020.
- For loan accounts which were closed during this period, the ex gratia payment will be made from March 1, 2020 till the date of closure of such account.

Who is eligible for the scheme?

- The compound interest waiver is for most of the loans: housing, MSME, education, credit card dues, automobile, personal loans to professionals.
- Any borrower whose aggregate of all facilities with lending institutions is more than Rs 2 crore will not be eligible for the waiver.

- The waiver will be provided by all private and state-owned banks, cooperative banks, regional rural banks, housing finance companies and non-banking financial institutions.
- The rate of interest used to calculate the ex gratia amount will be based on the contracted rate specified for most loans.
- Exact waiver benefit will depend on the stage of the loan and outstanding principal amount.

What is the relief being offered to borrowers?

- This waiver may come as a relief to borrowers, mainly whose loans are in initial years of repayment as their interest component is a major chunk.
- This would help in reducing the burden on borrowers as they are required to pay the contracted rate of interest on loans.
- However, customers will still have to bear the liability of simple interest accumulated during the six of the moratorium period.

How's the calculation done?

- The government has specified that for reimbursement, the compounding of interest should be reckoned on a **monthly basis**.
- The rate of interest to be applied for calculating the difference will be the contracted rate as specified in the loan agreement.
- For credit card dues, the rate of interest will be the weighted average of lending rate charged by the card issuer for transactions financed on the EMI basis during the period from March 1, 2020 to August 31, 2020.

Will the bank be able to handle it?

- Bankers say that it's not an easy task and involves more paperwork for banks and housing finance firms.
- Banks should process the claims of borrowers and credit the amount.
- They will have to lodge the claim for reimbursement with the designated cell at State Bank of India (SBI) by December 15, 2020.
- SBI, nodal agency for the scheme, will evaluate the claims and furnish the details to the government.
- Lending institutions will get the funds through SBI.

7.3 World Economic Outlook

Why in news?

The International Monetary Fund (IMF) has released its latest World Economic Outlook.

What are the projections?

- The report titled 'A long and difficult ascent' sums up the economic challenges ahead.
- The IMF's economists have sought to make forecasts for world output through 2020, 2021 and into the medium term.
- The global economy is projected to shrink 4.4% this year, reflecting a less severe contraction than the 5.2% drop estimated in June.
- The output is seen rebounding at a marginally slower 5.2% pace in 2021.
- The IMF has based its revision on better-than-anticipated second-quarter GDP out-turns, mostly in advanced economies.
- It is also based on the signs of a stronger recovery in the July-September quarter.

What are the concerns?

- The IMF pointed out that even as the world economy ascends out of the depths it plunged into (due to the pandemic-led lockdown), there remains the danger of resurgence in infections.
- This danger is prompting European countries to reimpose at least partial closures.

- There are certain factors which magnify the uncertainty.
- The factors include the risks associated with predicting the pandemic's progression, the unevenness of public health responses, and the extent to which domestic activity can be disrupted.

What will be the impact of the pandemic?

- The IMF's Chief Economist pointed out that the pandemic is set to leave scars well into the medium term as the,
 1. Labour markets take time to heal,
 2. Investment is held back by uncertainty and balance sheet problems, and
 3. Lost schooling impairs human capital.
- The global growth will gradually slow to about 3.5% in the medium term.
- The cumulative loss in output relative to the pre-pandemic projected path estimated to more than double to \$28 trillion over 2020–25.
- So, the efforts to improve average living standards are certain to be severely set back.

What is needed?

- The IMF observed that the pandemic is set to widen inequality between economies and within nations.
- So, the IMF has urged greater **international cooperation**.
- It is imperative for all countries to work closely to ensure that new treatments and vaccines are made available to all.
- This is because wider and faster **availability of medical solutions** could boost global income by almost \$9 trillion by end-2025.

What could be done for now?

- With no visibility yet on vaccine availability, the IMF has also stressed the need for policymakers to persist with,
 1. Direct income support for the most vulnerable and
 2. Regulatory forbearance for stressed but viable firms.
- In a world as interconnected as it is today, the cost of economic insularity would only be more protracted pain for all.

7.4 Gender Budgeting

What is the issue?

- Gender Budgeting is needed to incorporate gender commitments into fiscal commitments.
- There are multiple challenges for doing gender budgeting in India, which needs to be addressed soon.

What is gender budgeting?

- It is an approach that uses fiscal policy to promote gender equality by trying to translate gender commitments into fiscal commitments.
- This is done through different processes, resources and institutional mechanisms.
- In a multi-level governance structure, the political economy of gender budgeting encompasses both the fiscal and legal frameworks.
- The interface between intergovernmental fiscal transfers and the institutions of multi-level governance also matters.

What is the legal framework in India?

- In India, gender budgeting is not mandatory by law at any level of the federation.
- The legal frameworks for gender budgeting can differ in unitary or federal states with multi-level governance.

- The frameworks for gender budgeting in India are confined only to fiscal fiat, inclusive of taxation and public expenditure policies.
- To a limited extent, it is regarding the intergovernmental fiscal transfers.
- There is heterogeneity of stakeholders, from various stages of budget formulation to implementation at multiple levels of governance.

What is the importance?

- One important aspect of gender budgeting is that it can **eliminate the statistical invisibility** of the 'unpaid' care economy.
- The invisibility of unpaid care is a significant issue.
- This was recognised as an issue by the United Nations Statistical Division (UNSD) through Systems of National Accounts (SNA) 1993.
- Properly measuring the care economy requires investment in improving measurement through, for instance, 'time-use surveys'.
- Time-use surveys are conducted in India only in six states, though it is likely to be extended to all states.

When was gender budgeting introduced in India?

- Gender budgeting was pioneered in India in the research of NIPFP in 2000-2001 with UN Women and the Ministry of Women And Child Development.
- Starting in 2005-06, a "Statement of Gender Budgeting" was introduced in the budget documents by the Union government.
- Today, the process of gender budgeting within the Union Finance Ministry starts with the 'budget circular'.
- This circular states that each ministry and department is required to undertake gender-based analysis of demand for grants within the analytical matrices.
- These matrices have been prepared by NIPFP for gender budgeting.
- Now, urgent policy reform is required to revive the gender budgeting secretariat.

What is the deviation?

- Underestimation or overestimation of the budget is important in driving home the accountability of the government.
- Higher Budget Estimates do not ensure higher spending.
- There is significant deviation between Budget Estimates and Revised Estimates and Actuals in India.
- The errors are high for different expenditure components of gender budgeting.
- Linking gender budgeting to outcomes involves 'public expenditure benefit incidence' analysis across income quintiles.
- It also involves the integration of gender budgets in outcome budgets.
- In India, the mechanism of intergovernmental fiscal transfers plays a major role in providing states sufficient financial resources to carry out their expenditure assignments.

What is the formula?

- A 2016 Levy Economics Institute paper devised a formula for tax devolution into which gender sensitivity could be incorporated for India.
- It has suggested incorporating the child sex ratio (0-6 years) as a gender criterion in the fiscal transfers.
- The results revealed that 'engendering' intergovernmental fiscal transfers improve progressivity.

What does the Finance Commission's report reveal?

- The 15th Finance Commission of India has submitted its **interim report** in November 2019.
- The report has integrated the criteria '**Total Fertility Rate**' (reciprocal) with 12.5% as a proxy for demographic performance of states.

- It also states that better performance in reduction of TFR serves as an indicator for better outcomes in health as well as education.
- Hence, this criterion also rewards States with better outcomes in those important sectors of human capital.
- The 15th Financial Commission's **final report** is due in October 2020.
- One has to wait and see whether they design a conditional grant for strengthening gender budgeting at the state level.
- Designing a conditional transfer (specific purpose grant) to strengthen gender budgeting can be directly linked to gender equality outcomes.

7.5 Interest Waiver

Why in news?

The Supreme Court (SC) has directed the government to implement the waiver of “interest on interest” for borrowers with an exposure of up to Rs 2 crore.

What does the SC decision mean?

- The SC wants the government to waive it by November 2, 2020.
- The hearings will continue and a final verdict is some time away.
- The SC seems to be comfortable with the idea of the government picking up the tab for the loss banks would incur by not charging the compound interest on exposures that were allowed a moratorium.
- The decision would come as a huge relief for both banks and the Reserve Bank of India (RBI).

Who would be eligible for waiver?

- The SC is not going to recommend a waiver of compound interest for bigger exposures—of more than Rs 2 crore.
- In other words, the government will reimburse banks for compound interest due only from smaller borrowers.

Is it a good practice?

- Waiving interest on loans can never be a good practice since it creates a moral hazard and vitiates the borrowing environment.
- Given the unprecedented pain caused by the pandemic, the SC's view is understandable.

What is important?

- It is important that the SC has allowed the government to pay the bill, sparing the banks.
- Also, the waiver is restricted to just the smaller borrowers.

What did the government say?

- In its affidavit to the court, the government had pointed out that waiving the interest on all loans and advances, across all categories of borrowers, for a period of six months would cost Rs 6 lakh crore.
- Clearly, banks are not financially strong enough to bear this burden.
- It would wipe out a substantial part of their net worth and make many of them unviable.
- As the government observed, lending institutions need to survive the current crisis, and promises made to depositors need to be honoured.
- If customers are to be paid interest on their deposits, borrowers need to pay interest on the loans.

What could be done?

- **Sub-limits** - Not all categories of borrowers are equal.
- It would only be fair if the government specifies different sub-limits for each segment of borrowers because taxpayers should not be subsidising those who can afford to pay the interest.
- **Declaring NPAs** - The RBI has been concerned, with the SC directive regarding non-performing assets (NPAs).

- The SC had directed the banks not to classify any loans as NPAs if they had not been declared as such on August 31.
- Hopefully, banks will soon be permitted to classify loans as per the rules because it is important that they provide for them immediately.
- **Setting aside capital** - Given how a big chunk of loans is expected to go bad, it is important banks set aside enough capital for these losses.

7.6 AT-1 Bonds

Why in news?

The Securities Exchange Board of India (SEBI) has restricted the small investors their access to AT-1 bonds.

What are AT-1 bonds?

- AT-1 bonds, short for Additional Tier-1 bonds, are innovative debt instruments.
- AT-1 includes perpetual non-cumulative preference shares and perpetual bonds.
- It is a type of unsecured, perpetual bonds that banks issue to shore up their core capital base to meet the Basel-III norms.

What are the new requirements?

- The SEBI has said that offers of such instruments should take the electronic book provider route, with participation restricted to QIBs.
- [QIBs - Qualified Institutional Buyers]
- The minimum ticket size for initial offers and secondary market trading in these bonds has been raised to ₹ 1 crore.
- Explicit disclosures will now be required on the perpetual character of these bonds.
- The Point-of-Non-Viability (PONV) clause that allows the RBI to direct a troubled bank to completely write-off the principal value.

Why these requirements are welcomed?

- These new requirements are a welcome attempt by the SEBI to ward off YES Bank-like situations.
- In YES Bank, the write-off of AT-1 bonds as a part of the bank's restructuring plan came as a shock to the hundreds of retail investors.
- This case brought into focus the widespread mis-selling of AT-1 bonds to retirees and low-risk investors by banks and intermediaries.

What are the loose ends?

- While SEBI's new rules will keep retail investors off these instruments, there are loose ends that need tying up.
- **Blocked out** - Now, a key category of investors called high net worth individuals are blocked out.
- So, the banks should compete with fewer buyers for their future AT-1 offerings at a time when sentiment towards these bonds has been soured by the YES Bank write-off.
- The RBI opened AT-1 bonds to retail investors a couple of years ago.
- It was done to broad-base demand and give public sector bank (PSB) bond offers a leg-up.
- **Impact on liquidity** - The increase in the minimum trading lot can impact secondary market liquidity.
- This will render these bonds less appealing to institutions.
- **Shooting up capital needs** - A shallow market for AT-1 bonds can hurt when Tier 1 capital requirements for PSBs may shoot up on the back of Covid-related provisioning.
- Fitch estimates banks' capital requirement at \$15-58 billion in the coming year.

What should the regulators do?

- In this context, the SEBI and the RBI can evaluate if AT-1 bond participation can be opened up to **informed non-QIB investors**.
- [Non-QIB investors - Corporate treasuries and family offices with appropriate caveats.]
- The regulators also need to work out an **exit window**.
- This can be done through buybacks, for retail investors stuck in older AT-1 bonds with a current outstanding value of over ₹ 84,000 crore.
- The SEBI needs to initiate specific **penal actions** against intermediaries guilty of mis-selling.
- The RBI should **tighten its lax oversight of banks** acting as intermediaries for third-party products.
- SEBI's actions should serve as a wake-up call for the RBI to pay more serious attention to investor protection.

7.7 Monetary Policy Review

Why in news?

The Reserve Bank of India (RBI) has reviewed its monetary policy lately.

What does the review indicate?

- This review indicates that the RBI will prioritise the revival of economic growth over inflation through the end of the current financial year.
- The RBI has reconstituted the Monetary Policy Committee (MPC), with three new external members.
- The MPC unanimously voted to keep policy interest rates unchanged.
- This was said even as it categorically stated that the RBI would continue with the accommodative stance to revive growth on a durable basis and mitigate the impact of Covid-19 on the economy.

What did the RBI find?

- The MPC tilted away from its inflation targeting mandate by downplaying the risks on the price pressures front.
- This is because the RBI has found that **supply shocks** were responsible for keeping inflation above the tolerance band for months.
- These shocks should dissipate as the economy unlocks, supply chains are restored, and activity normalises.
- As part of the shift in priority, it projected that it would stick with the accommodative stance during the current and the next financial year.
- This forward looking guidance prompted one of the new members to dissent and vote against the wording.
- The MPC's majority view of ensuring a 'dovish' position on interest rates for at least six months has left it little near-term leeway to tame price pressures.

What did the RBI Governor emphasise on?

- The RBI Governor emphasised that the current 'inflation hump' was a brief phenomenon that needs to be looked through when taking measures to help the economy return to its feet.
- The RBI has taken a series of liquidity enhancing and credit flow supportive steps.
- With these steps, the RBI reiterated its commitment to maintain stability in the financial markets.
- This comes at a time when the resources-strapped Central and State governments are expected to resort to substantially higher levels of borrowing to meet their spending needs.
- There can be no argument that the economy needs all the support it can get to recover from its 23.9% estimated contraction of the first quarter.

What is the forecast?

- The RBI sees a gradual recovery.
- It has forecasted a marginal growth of 0.5% in the fourth quarter that would narrow the full-year contraction to 9.5%.

- It is the inflation assumptions, however, that cause disquiet.
- From a projection of 6.8% for Q2, CPI inflation is posited to sharply ease: 5.4% in Q3 and 4.5% in Q4.
- There are risks like persistence of supply bottlenecks, cost-push pressures from higher taxes on transport fuels and the possibility of food-price inflation.
- In overlooking these risks that becoming entrenched pose to the outlook on prices, the RBI has clearly sought to talk up confidence.

7.8 Forensic Audits

Why in news?

The Securities Exchange Board of India (SEBI) has made minor tweaks to different laws.

What has been changed?

- These tweaks could go a long way in strengthening the safeguards for public investors in listed shares and bonds.
- The most important of these is the requirement for all listed entities to make compulsory disclosures to the stock exchanges.
- It initiated any forensic audits into their books along with the reasons for commissioning them.
- On completion, the final audit reports along with management comments need to be filed with the exchanges too.

What does this move mean?

- This is a welcome move because the initiation of a forensic investigation and an explanation on whether it was initiated by the regulator or the company's own Board, is price-sensitive information.
- It has a bearing on one's decision to invest in a stock.
- Making full public disclosures of forensic audit reports as soon as they are submitted is essential too.
- This would do away with insider trading and stock price manipulation based on half-baked leaks from such reports.

What happened in the past?

- In the past, listed companies such as ICICI Bank and Infosys have seen sharp stock price volatility.
- This happened after whistle-blowers accused their top managers of governance infractions.
- Their Boards, after initiating internal forensic audits, claimed that the auditors had unearthed no irregularities citing selective extracts.
- DHFL, after a sting operation by a media outlet, commissioned a forensic study by an auditor who promptly gave it a clean chit.
- A subsequent audit commissioned by the regulator unearthed evidence of widespread diversion of loan funds.

What is the significance of public disclosure?

- Disclosing forensic audit reports to the public would remove all scope for selective interpretations.
- It allows analysts and investors in a company to make up their mind for themselves.
- Disclosing will prove instructive to investors and policymakers on the modus operandi used by fraudsters to divert public money.

What could be done?

- For better protection to bond and mutual fund investors, SEBI must extend the requirement on making forensic audit reports public to,
 1. Entities with listed shares,
 2. Entities with listed debentures and
 3. Entities dealing with public money in a fiduciary capacity — be it asset managers or rating agencies.

- The regulators such as SEBI and RBI should set an example by publishing the findings of these reports.

7.9 Code on Wages

What is the issue?

- In the monsoon session of Parliament, three new labour codes were bulldozed into passing and now await the President's assent.
- Labour Minister told that four new labour codes, including the Code on Wages, will become operational before the year ends.

What is the Code on Wages, 2019?

- The Code on Wages, 2019 seeks to consolidate and simplify four pieces of legislation into a single code. The legislations are,
 - a) Payment of Wages Act, 1936,
 - b) Minimum Wages Act, 1948,
 - c) Payment of Bonus Act, 1965 and
 - d) Equal Remuneration Act, 1976.
- Its object and reasons stated that the 2nd National Commission on Labour, 2002 suggested consolidating all labour laws into four codes.

Why rules will be framed?

- While the previous four pieces of legislation had a total of 119 sections, the new Code has 69 sections.
- Considering that the repealed legislations each had a definition section, inspectors, penalties, etc, any consolidation will impact their length.
- All requirements for enforcing the Act have been relegated to the Rules.
- Section 67 had authorised the framing of rules relating to as many as 38 provisions of the Act.
- As a result, the delegated rules will be bigger than the Code.
- This is no way to condense prior pieces of legislation.

What problems will arise?

- Combining the four repealed pieces of legislation into a single code will create new set of problems.
- Barring a few new concepts, the new Code retains almost all provisions.
- **Worker** - The Code will have the same definition of the term "worker".
- But, a person employed in a supervisory capacity drawing up to ₹ 15,000 will also be considered a worker.
- **Wage fixing** - In the Minimum Wages Act, to fix minimum wage in an employment which has more than 1,000 workers to be first included in the Schedule, and then, minimum wages will be fixed as per law.
- The Code has dispensed with the necessity of having a minimum number of workers and the inclusion of such employment into the schedule.
- **Floor wage** - The central government will fix a "floor wage".
- Once it is fixed, State governments cannot fix any minimum wage less than the "floor wage".
- It is unwarranted since many States always fix minimum wages higher than the existing rates.
- The concept should be for a binding minimum wage and not have dual wage rates — a binding floor wage and a non-binding minimum wage.

What is the conflict?

- There was a conflict between the minimum wages fixed by the State governments for agriculture workers.
- There were cases as to whether the Minimum Wages Act would have an over-riding effect over the provisions of the MGNREGA, 2005.



- [MGNREGA - Mahatma Gandhi National Rural Employment Guarantee Act]
- That has been set to rest by excluding MGNREGA from the purview of the Code on Wages.

Who is an inspector-cum-facilitator?

- The Code has created an omnibus inspector-cum-facilitator who will act as per the inspection scheme framed by the government.
- He will advise employers and workers to comply with the provisions of the code.
- As per Section 51, he may carry out inspections as may be assigned by the government.

What are the provisions regarding claim mechanism?

- Section 45 stipulates that the claims will be heard by an authority who is not below the rank of a “Gazetted Officer”.
- A government official without legal and administrative background can hear such claims.
- However, any dispute regarding bonus will continue to go before the Industrial Tribunal.
- One can appeal to an appellate authority who must be one rank higher than the competent authority (Section 49).
- Neither the Code nor the Rules prescribe the qualifications and experience required for appointment of competent authority.

What are the provisions on penalty?

- The penal provisions found hitherto in any pieces of labour legislation never had an impact on employers.
- In Asiatic case, 1982, the Supreme Court observed that if violations of labour laws are going to be punished only by meagre fines, the labour laws would be reduced to nullity.
- But, Section 52 has been introduced where an officer (not below the rank of an undersecretary to the government) will impose a penalty in the place of a judicial magistrate.
- A similar provision of the Bonded Labour System (Abolition) Act, 1976 was struck down by the Division Bench of the Madras High Court (2014).
- The Bench had observed that the Executive Magistrate has no role to play in conducting judicial trial and recording judicial decisions.

What are the exemptions made?

- The Code exempts employers from penal provisions if they prove that they had used due diligence in enforcing the execution of the code.
- They should also prove that it was the other person who had committed the offence without his knowledge, consent or connivance.

Will there be an impact?

- There is nothing particular in this Code that will expand the coverage of workers in all industries in the unorganised sector.
- While there were 10,000 slabs of minimum wages that existed, they would now be reduced to 200 slabs.
- The 200-slab categorisation may not have much of an impact.
- The Code on Wages has not succeeded in a consolidation of laws.

7.10 Global Hunger Index

Why in news?

The Global Hunger Index (GHI) 2020 has placed India at rank 94 among 107 countries.

What is the GHI?

- The GHI has been brought out every year by Welthungerhilfe (lately in partnerships with Concern Worldwide) since 2000.

- A low score gets a country a higher ranking which implies a better performance.
- The reason for mapping hunger is to ensure that the world achieves “Zero Hunger by 2030” - a Sustainable Development Goals of the UN.
- This is why GHI is not calculated for certain high-income countries.

What are the four indicators of GHI?

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

How is the score calculated?

- Each country's data are standardised on a 100-point scale.
- A final score is calculated after giving 33.33% weight each to components 1 and 4, and giving 16.66% weight each to components 2 and 3.
- As GHI tracks the performance of different countries on four key parameters, it provides a far more comprehensive measure of hunger.

What is India's position?

- The GHI 2020 places India at **rank 94** among 107 countries.
- The unedifying assessment of the national situation as “**serious**”.
- The country's **score of 27.2** is the worst among BRICS countries.
- It is inferior to Pakistan, Sri Lanka, Bangladesh and Nepal.

What does this position mean?

- India's poor progress on nutritional indices must dismiss the pride surrounding strong economic growth for years.
- It turns the national focus on persisting hunger, wasting and stunting among children.

What is the evidence?

- The evidence from the National Family Health Survey-4 (NFHS-4) of 2015-16 is not very different.
- The national policy has no appetite for a radical transformation in the delivery of adequate nutrition especially to women and children.
- It has paid inadequate attention to achieving diet diversity through the PDS.
- On the other hand, the country is widely seen as falsely equating energy calories with a diverse diet.
- The existing deprivation has been aggravated by the pandemic, with food inflation putting pressure on depleted or meagre incomes and savings.

What did the NFHS-4 find?

- It found that under-five stunting stood at 38%, and wasting at 21%.
- These data represent some progress, at a drop of about 10 percentage points in both categories compared to a decade earlier.



- But steady economic prosperity should have yielded a far bigger social dividend.
- The latest GHI measure reminds us that much work is needed to bring the true benefits of the National Food Security Act to the unreached.
- Efforts should be made to not merely mitigate hunger through cereals, but as nourishment through a diverse diet.

What needs to be done?

- Strengthening the PDS, with a focus on women's health, would lead to healthier pregnancies.
- Stronger supplemental nutrition under the ICDS scheme would give children a better chance at all-round development.
- International Food Policy Research Institute's recent findings say that three out of four rural Indians cannot afford a balanced, nutritious diet.
- This underscores the importance of immediate sustained intervention.
- The right to food would be meaningless if it leaves a large section of Indians hungry, stunted and wasted.

8. INFRASTRUCTURE

8.1 Railway Privatisation

Why in news?

The mega plan for privatisation of passenger trains was unveiled by the Railway Board a couple of months ago.

What is the plan?

- It involves privatisation of a total of 151 trains in 12 clusters, with a minimum of 16 coaches in each train running at 160 kmph.
- Eventually it will cover 109 routes, compared to the 9,000-plus passenger trains that had been time-tabled to run every day prior to the Covid-19 lock down.
- This may not be much, but it is a good beginning.

How will the bidding take place?

- Over 120 RFQ from 15 parties is an indicator of the project's popularity. The bidders are to be short-listed by November 2020 for the final round.
- The contracts are to be placed by April 2021, and the first lot of private train sets to arrive by April 2023.
- The operator may be allowed to import three trains in each of the 12 clusters while the rest are to be manufactured in India.
- The bidding is to be on a revenue-sharing basis; the one that pays the Railways the most, wins.
- However, a short history lesson, from British Rail, would be in order.

What is the history?

- During the Margaret-Thatcher era, the British Rail went for massive privatisation that proved an unmitigated disaster.
- Treating maintenance of infrastructure, rolling stock maintenance, and passenger and freight train operations, etc, as **separate activities** were all privatised as distinct business units.
- The scores of private entities were created for every possible activity of the British Rail.
- However, a few years after, all hell broke loose when a serious mishap took place at the Potter's Bar station involving human casualties.

What did the enquiry reveal?

- A statutory enquiry revealed that the new company, called 'Network Rail', that now owned rail infrastructure had been cutting corners.



- This resulted in the mishap.
- There were stringent conditions for liability and compensation in case things went wrong.
- So, the first people to reach an accident site were lawyers who had to find what went wrong to establish the liability, and due compensation.

What did the report reveal?

- A public-interest report was released by the Centre for Research in Socio Cultural Change (CRESC), a think tank based in Manchester, the UK.
- The report pointed out that the actions like the public subsidies paid out to shareholders as dividends and Network Rail's unsustainable debt had negative consequences for physical infrastructure.
- The report pointed out that due to negative consequences, the railways will have to be bailed out by the public.
- At last, it had to be 'bailed out', and then taken over by the government.
- This will not be the case with the Indian Railways, as only a few private train operators (PTOs) are to be inducted, and rest of the system is not being privatised.

What needs to be done?

- The PTO is to introduce coaches or trains with technology superior to that of Indian Railways.
- So, upgrading the track to support running of trains at 160 kpmh from existing 120 kpmh will need to be carried out by IR on top priority.

What would be the role of the proposed regulator?

- The proposed private trains will be sharing track space with other passenger and freight trains, which could lead to disputes.
- For the private train to be **punctual**, it may have to be accorded priority at the cost of other trains, to avoid any penalty for being late.
- Anticipating a plethora of such problems that may arise in the PPP initiative, a 'regulator' is proposed to be created.
- With commissioning of the West and East Dedicated Freight Corridors, the private sector may invest in **freight wagons** as well and run them.
- This will be keeping the proposed regulator quite busy.

What could be learnt?

- The private investment should not end up with many rolling stock being purchased, and with no matching maintenance facility being created.
- The operator may simply walk away while banks or investors who would have financed the whole project left holding the baby!
- This was the case with the British Rail privatisation.
- Hopefully, the Indian Railways will learn from the pitfalls of the British Rail privatisation, and be able to carefully avoid them.

9. AGRICULTURE

9.1 Fertiliser Subsidy

Why in news?

The Centre is planning to restrict the number of fertiliser bags that individual farmers can buy during any cropping season.



What is fertiliser subsidy?

- Farmers buy fertilisers at Maximum Retail Price (MRP) below their normal supply-and-demand-based market rates or what it costs to produce or import them.
- The difference, which varies according to plant-wise production cost and import price, is footed by the Centre as subsidy.
- MRPs of non-urea fertilisers are decontrolled or fixed by the companies.
- However, the Centre pays a flat per-tonne subsidy on these nutrients to ensure they are priced at “reasonable levels”.
- Thus, decontrolled fertilisers retail way above urea, while they also attract lower subsidy.

How is the subsidy paid and who gets it?

- The subsidy goes to fertiliser companies, although its ultimate beneficiary is the farmer who pays MRPs less than the market rates.
- Companies, until now, were paid after their bagged material had been dispatched and received at a district’s railhead point or approved godown.
- From March 2018, direct benefit transfer (DBT) system was introduced.
- In this, subsidy payment to the companies would happen only after actual sales to farmers by retailers.
- Each retailer now has a point-of-sale (PoS) machine linked to the **e-Urvarak DBT portal** of the Department of Fertilisers.

What is the purpose of this portal?

- Anybody buying subsidised fertilisers should furnish his/her Aadhaar unique identity or Kisan Credit Card number.
- The quantities of the individual fertilisers purchased, the buyer’s name and biometric authentication have to be captured on the PoS device.
- Only upon the sale getting registered on the e-Urvarak platform can a company claim subsidy.
- These are processed on a **weekly basis** and payments are remitted electronically to its bank account.

What was the new payment system’s purpose?

- The main motive is to **curb diversion**.
- This is natural with any under-priced product.
- Being super-subsidised, urea is prone to diversion for non-agricultural use apart from being smuggled to Nepal and Bangladesh.
- The scope for leakage was more in the earlier system, right from the point of dispatch till the retailer end.
- With DBT, pilferage happens only at the retailer level, as there is no subsidy payment till sales are made through POS machines.

What is the next step being proposed?

- At present, the Centre is following a **no denial policy**.
- Anybody, non-farmers included, can purchase any quantity of fertilisers through the PoS machines.
- That obviously allows for bulk buying by unintended beneficiaries, who are not genuine or deserving farmers.
- There is a limit of 100 bags that an individual can purchase at one time.
- But, it does not stop anyone from buying any number of times.
- One plan under discussion is to cap the total number of subsidised bags that any person can buy during an entire kharif or rabi cropping season.
- This, it is expected, would end retail-level diversion and purchases by large buyers masquerading as farmers.

What is the fertiliser requirement of a typical farmer?

- It depends on the crop.
- A farmer growing irrigated wheat or paddy may use about three 45-kg bags of urea, one 50-kg bag of DAP and 25 kg of MOP per acre.
- A total of 100 bags would easily cover the seasonal requirement of a 20-acre farmer.
- This could possibly be a reasonable cap to impose.
- Those wanting more can well afford to pay the unsubsidised rates for the extra bags.

How much subsidy does a farmer really get per acre?

- **Fertilisers** - For three bags urea, one bag DAP and half-a-bag MOP per acre, the farmer would spend a total of Rs 2,437 at existing MRPs.
- The corresponding subsidy value will add up to Rs 2,418.3 per acre.
- But then, farmers are also taxed on other inputs.
- **Other inputs** - Take diesel, where the incidence of excise and value added tax is Rs 42.19 on a litre retailing at Rs 70.46 in Delhi.
- On 30 litres of average per-acre consumption for paddy or wheat, that will be nearly Rs 1,266.
- So, for every Re 1 spent on fertiliser subsidy, more than half is recovered as diesel tax.
- **GST** - In addition, farmers pay goods and service tax (GST) on inputs, ranging from 12% to 18%.
- Fertiliser itself is taxed at 5%.
- Since there is no GST on farm produce, they cannot claim any input tax credit on their sales, unlike other businessmen.

9.2 Problems in Sugar Industry

What is the issue?

- The sugar industry is supposed to commence its crushing activities for the 2020-21 season this month.
- But the industry appears to be hamstrung by problems - some familiar and some new.

What are the problems?

- After every season of surplus, the industry has run up **large arrears** with farmers for the supply of cane.
- This year, because of the lockdown, **millers' cash flows** have been hit.
- The hit is due to the sharp fall in the institutional off take of sugar from food and beverage makers and hotels — usually a stable revenue source.

What did the governments do?

- The industry's persistent **working capital crunch** has also been aggravated by the Centre.
- The Centre delayed its promised payouts towards transport subsidy on sugar exports, relying on which the industry has shipped out over 60 lakh tonnes of sugar this year.
- The Centre has been tardy in reimbursing mills for the carrying costs on the 40-lakh tonne buffer-stock created at its behest.
- State governments have been delaying payments on co-generated power.
- The Centre and State governments have persisted with **populist policy measures** that interfere in the active functioning of the market.
- This has aggravated the industry's structural problems.

What are the populist measures taken?

- Instead of desisting from hikes in the Fair and Remunerative Price (FRP) for cane, which would discourage farmers from planting excessive cane, the Centre has kept up FRP hikes.
- The Centre has begun announcing a 'minimum selling price' for sugar.

- States like Uttar Pradesh have worsened the over-capacity situation with unrealistic State Advised Prices and capital subsidy schemes.

What are the other problems?

- Industry's own efforts at de-risking the business through forward integration moves have come a cropper, too.
- These forward integration moves include the processing of molasses into ethanol and bagasse into power.
- Annual conflicts between the sugar industry and oil marketing companies on the quantum and pricing of ethanol have ensured that the ethanol blending programme is a non-starter.
- With revenues from co-generated power dependent on the finances of State discoms, this diversification gambit hasn't worked either.

10. ENVIRONMENT

10.1 Blue Flag Certification

Why in news?

Eight beaches in India have been awarded the 'Blue Flag' certification by an eminent international jury.

Who are the jury members?

- It comprises members of the
 1. United Nations Environment Programme (UNEP),
 2. United Nations World Tourism Organization (UNWTO),
 3. Foundation for Environmental Education (FEE) and
 4. International Union for Conservation of Nature (IUCN).

What are the beaches selected?

- The beaches selected for the certification are: Kappad, Shivrajpur, Ghoghla, Kasarkod, Padubidri, Rushikonda, Golden and Radhanagar.
- It is an outstanding feat considering that no 'Blue Flag' nation has ever been awarded for 8 beaches in a single attempt.
- This is also a global recognition of India's conservation and sustainable development efforts.
- In January 2020, the Centre issued a Gazette Notification declaring a list of activities and facilities that would be permissible in the Coastal Regulation Zone (CRZ) areas of certain beaches.
- These beaches are those that are identified for obtaining the 'Blue Flag' certification.

What is the 'Blue Flag' certification?

- The 'Blue Flag' certification can be obtained by a beach, marina, or sustainable boating tourism operator, and serves as an eco-label.
- It is awarded by the Denmark-based non-profit Foundation for Environmental Education (FEE).
- It sets stringent environmental, educational, safety-related and access-related criteria that applicants must meet and maintain.
- It is awarded annually to beaches and marinas in FEE member countries.

What is the Blue Flag programme?

- The Blue Flag programme was started in France in 1985 and in areas out of Europe in 2001.
- The programme promotes **sustainable development** in freshwater and marine areas through four main criteria.
- The **four criteria** include water quality, environmental management, environmental education and safety.
- Forty-seven countries currently participate in the program.



- 4,573 beaches, marinas, and boats have this certification.
- In its July 2019 notification, the Environment Ministry identified the 12 beaches in India for Blue Flag certification.

What activities are permitted in the CRZ?

- The activities and facilities like portable toilet blocks, grey water treatment plant, solar power plant, etc., would be permitted in the CRZ of the beaches, including islands.
- This would be subject to maintaining a minimum distance of 10 meters from the High Tide Line (HTL).
- These activities and facilities would be exempt from prior clearance under the provisions of CRZ Notification, Island Protection Zone Notification and Island Coastal Regulation Zone Notifications.

10.2 GRAP

Why in news?

Starting October 15, some stricter measures to fight air pollution will come into force in Delhi and its neighbouring National Capital Region (NCR) towns.

What are the stricter measures?

- These measures are part of the Graded Response Action Plan (GRAP).
- **Diesel generator** sets can no longer be used in Delhi and the NCR towns of Noida, Ghaziabad, Greater Noida, Faridabad, and Gurgaon.
- The only exception is DG sets used for emergency and essential services.
- Pollution control authorities will begin **night patrolling** to check for dust and industrial emissions, as well as the burning of waste.
- **Mechanised sweeping** and frequent **sprinkling of water on roads** (to make the dust settle) have been directed.
- These steps will be incremental.
- When levels of pollution rise, more measures will come into force, depending on the air quality.

What is GRAP?

- The plan was formulated after several meetings that the Environment Pollution (Prevention and Control) Authority (EPCA) held with state government representatives and experts.
- The result was a plan that institutionalised measures to be taken when air quality deteriorates.
- The plan was approved by the Supreme Court in 2016.
- GRAP was notified in 2017 by the Centre and draws its authority from this notification.
- The action plan has been in effect for three years in Delhi and NCR.
- Experts have credited the actions under the GRAP for the improvement in Delhi's air over the past few years.

How will the GRAP be used?

- GRAP works only as an **emergency measure**.
- As such, the plan does not include action by various state governments to be taken throughout the year to tackle industrial, vehicular and combustion emissions.
- When the air quality moves from '**Poor**' to '**Very Poor**', the measures listed under both sections have to be followed.
- If air quality reaches the '**Severe+**' stage, the response includes extreme measures such as shutting down schools and implementing the odd-even road-space rationing scheme.

What are the achievements?

- GRAP has been successful in doing two things, they are
 1. Creating a step-by-step plan for the entire Delhi-NCR region, and

2. Getting on board several agencies.

- These agencies include all pollution control boards, industrial area authorities, municipal corporations, regional officials of the India Meteorological Department, and others.
- The plan requires action and coordination among 13 different agencies in Delhi, Uttar Pradesh, Haryana and Rajasthan (NCR areas).
- At the head of the table is the EPCA, mandated by the Supreme Court.
- Before the imposition of any measures, EPCA holds a meeting with representatives from all NCR states.
- A call would be taken on which actions have to be made applicable in which town.

Has GRAP helped?

- The biggest success of GRAP has been in fixing accountability and deadlines.
- For each action to be taken under a particular air quality category, executing agencies are clearly marked.
- Also, coordination among as many as 13 agencies from four states is simplified because of the clear demarcation of responsibilities.
- Three major policy decisions that can be credited to EPCA and GRAP are
 1. Closure of the thermal power plant at Badarpur,
 2. Bringing BS-VI fuel to Delhi before the deadline set initially, and
 3. Ban on Pet coke as a fuel in Delhi-NCR.

What measures have been taken in other states?

- One criticism of the EPCA as well as GRAP has been the focus on Delhi.
- While other states have managed to delay several measures, citing **lack of resources**, Delhi has always been the first to have stringent measures enforced.
- In 2014, a study by the World Health Organisation found that Delhi was the most polluted city in the world.
- This made panic spread in the Centre and the state government.
- The release of a study on sources of air pollution the following year also gave experts, NGOs, and scientists, an idea on why Delhi was so polluted.
- All of these things, state government officials say, have made Delhi the obvious pilot project.
- For GRAP as well as EPCA, the next challenge is to extend the measures to other states effectively.

10.3 UN Biodiversity Summit

Why in news?

The first-ever UN Summit on Biodiversity was convened in New York.

What happened in the Summit?

- The theme of the Summit is “Urgent action on biodiversity for sustainable development.”
- The member-nations of the Convention on Biological Diversity (CBD) took note of the link between biodiversity loss and the spread of animal pathogens.
- They called for an end to destructive industrial and commercial practices.
- There is consensus that conservation targets set a decade ago in Aichi, Japan, to be achieved by 2020, have spectacularly failed.

What are the targets that weren't achieved?

- Evidence is presented by the latest UN Global Biodiversity Outlook 5 report: none of the 20 targets has been fully met.
- Many countries have ignored the connection between biodiversity and well-being.

- They have depleted ecological capital in pursuit of financial prosperity.
- Among the Aichi targets that fell by the wayside are those on,
 1. Reform or phasing out of subsidies that erode biodiversity,
 2. Steps for resource use within safe ecological limits,
 3. Preventing industrial fisheries from destroying threatened species and vulnerable ecosystems, and
 4. An end to pollution, including growing plastic waste.
- A bright spot is the partial progress made on **protecting surface and subsurface water**, inland, coastal and marine areas.

What does WWF index reveal?

- The losses appear even starker from WWF's Living Planet Index.
- The index points to precipitous declines in vertebrate populations, a key indicator, by 68% over 1970 levels.
- There is a fast-erosion of the ecosystem health.
- The 196 CBD member-countries must chart a greener course, aligning it with the Paris Agreement.

What was India's message?

- At the summit, India's message was one of pride in an ancient conservation tradition, as one of the few mega diverse countries.
- India's message recognised the value of nature as much as the destructive impact of unregulated resources exploitation.

What is the concern?

- National laws of the 1970s and 1980s have shielded islands of biodiversity, particularly in about 5% of India's land designated as protected areas.
- But they are now seen as irritants to speedy extraction of natural resources.
- In this hurry, due process is sought to be dispensed with, as envisaged by the new EIA norms proposed by the NDA government.
- There is little concern for indigenous communities that have fostered biodiversity.
- No effort to make these communities strong partners in improving the health of forests and buffer zones.

What could be done?

- Now that CBD members are set to draw up fresh conservation targets to be finalised next year, India too has an opportunity.
- India could plan a trajectory of green growth after Covid-19.
- This plan should be around clean energy, ecological agriculture, a freeze on expansion of mining and dam-building, resource recovery from waste, and regeneration of arid lands.
- It should join the coalition of the enlightened.

11. SCIENCE & TECHNOLOGY

11.1 Defence Offset Dilution

Why in news?

The government has diluted the offset policy in defence procurement.

Why was it diluted?

- Reportedly, it was diluted in response to the Comptroller and Auditor General (CAG) of India's report.

- Many contend that the move is a setback for augmenting domestic capabilities or for realising the goal of Atmanirbhar Bharat.

Why defence trading is done?

- Most countries restrict trade in defence equipment and advanced technologies in order to safeguard national interest.
- Yet, for commercial gains and for global technological recognition, governments and firms do like to expand the trade.
- Negotiated bilateral sales between countries are a way out of the dilemma.

What are the factors?

- **Soft credit** often sweetens the deals with restrictions imposed on use, modification and resale of such equipment and technologies.
- In such trade negotiations, the price of the product is one of the many other factors.
- **Geopolitics** and the **technical knowhow** involved in the equipment weigh-in considerably as the contracts are for the long term, with technological fixities.
- The **product and technology** compel buyers to stick to them for:
 1. The advantages of bulk purchase, and
 2. Dependence on the supplier for spares and upgrades.
- In other words, there is considerable “path dependency” in such choices, rendering the decisions difficult to reverse.
- Developing country buyers often lack an industrial base and research and development (R&D) facilities (which take a long time to mature).

How will offset clause help?

- The price and the terms of the contract reflect the government’s relative bargaining strength, and political and economic considerations.
- Large buyers such as India seek to exercise their “buying power” to secure not just the lowest price.
- They also try to acquire the technology to upgrade domestic production and build R&D capabilities.
- The offset clause is the instrument for securing these goals.

What was the initial offset clause?

- Initiated in **2005**, the offset clause has a requirement of sourcing 30% of the value of the contract domestically.
- Indigenisation of production in a strict time frame, and training Indian professionals in high-tech skills, required for promoting domestic R&D.
- However, the policy has been tweaked many times since.

What are the changes made?

- As of November 2019, the Defence Ministry had signed 52 offset contracts worth \$12 billion via Indian offset partners, or domestic firms.
- The duration of these contracts extends up to 2022.
- According to the CAG report, between 2007 and 2018, the government signed 46 offset contracts worth ₹ 66,427 crore of investments.
- But, the realised investments were merely 8%, or worth ₹ 5,457 crore.
- Reportedly, technology transfer agreements in the offsets were not implemented, failing to accomplish the stated policy objective.
- Recently, the government has diluted this policy further.



- Henceforth, the offset clause will **not be applicable to bilateral deals** and deals with a **singleseller** (monopoly), to begin with.

Why is it a setback for defence?

- Most defence deals are bilateral, or a single supplier deal (due to the monopoly over the technology).
- The dilution means practically giving up the offset clause.
- This may mean an end to India's prospects for boosting defence production and technological self-reliance.
- But, the government defended the decision by claiming a cost advantage.
- Price is but one of many factors in such deals, as explained above.
- The higher (upfront) cost of the agreement due to the offset clause would pay for itself by,
 1. Reducing costs in the long term by indigenisation of production,
 2. The potential technology spill-overs for domestic industry.
- Hence, giving up the offset clause is undoubtedly a severe setback.

What should be learnt from the aerospace industry episode?

- Despite the heft of Hindustan Aeronautics Limited, India is a lightweight in global civilian aircraft manufacturing.
- This is due to the fact that the public sector giant mostly devotes itself to defence production.
- With the introduction of the offset policy in 2005, things changed dramatically.
- For contracts valued at ₹ 300 crore or more, 30% of it will result in offsets, implemented through Indian offset partners.
- As aerospace imports rose rapidly, so did the exports via the offsets by 544% in 2007, compared to the previous year.
- By 2014, exports increased to \$6.7 billion from \$62.5 million in 2005.
- The offset clause enabled India to join the league of the world's top 10 aerospace exporters.
- The success was short-lived, however. The policy dilution undid success.
- Exports plummeted after the offset clause was relaxed.

What could be done?

- Because of the CAG's critical remarks in its latest report, the government has virtually scrapped the defence offset policy.
- Thus, India has voluntarily given up a powerful instrument of bargaining to acquire scarce advanced technology.
- But, there are successful examples to draw lessons from, as the aerospace industry episode demonstrates.
- India needs to re-conceive or re-imagine the offset clause in defence contracts with stricter enforcement of the deals.
- This should be based in national interest, and in order to aim for 'Atma Nirbhar Bharat Abhiyaan', or a self-reliant India.

11.2 K Missile Family

Why in news?

A successful trial of the Shaurya missile was conducted by India.

What is Shaurya missile?

- The nuclear capable Shaurya missile is a land-based parallel of the submarine launched K-15 missile.
- These ballistic weapons belong to the K missile family.
- They are named after late Dr APJ Abdul Kalam, the centre figure in India's missile and space programmes.



- They are launched from Arihant class of nuclear submarines.

What does this test reveal?

- Shaurya was examined for several advanced parameters compared to its earlier tests, according to sources.
- Shaurya is a canister-based system, which means that it is stored and operated from specially designed compartments.
- In the canister, the inside environment is controlled, thus it will
 - 1) Make its transport and storage easier,
 - 2) Improve the shelf life of weapons.
- These recent tests of these systems can be looked at as a strong message to China and Pakistan in light of the present situation in the region.

What are the K Family of missiles?

- The K family of missiles are primarily Submarine Launched Ballistic Missiles (SLBMs).
- They have been indigenously developed by the Defence Research and Development Organisation (DRDO).
- The development of these naval platform launched missiles began in the late 1990s as a step towards completing India's nuclear triad.
- [Nuclear Triad - The capability of launching nuclear weapons from land, sea and air based assets.]
- Because these missiles are to be launched from submarines, they are lighter, smaller and stealthier than their land-based counterparts.
- Their land-based counterparts are the Agni series of missiles which are medium and intercontinental range nuclear capable ballistic missiles.

What are the variants?

- Land and air variants of the K family have been developed by the DRDO.
- Shaurya is a land variant of short range SLBM K-15 Sagarika, which has a range of at least 750 kilometers.
- India has also developed and successfully tested multiple times the K-4 missiles from the family which has a range of 3500 km.
- It is reported that more members of K-family with ranges of 5000 and 6000 km are also under development.

What is the strategic importance of SLBMs?

- The capability of being able to launch nuclear weapons submarine platforms has strategic importance in achieving the nuclear triad.
- The sea-based underwater nuclear capable assets increases the second strike capability of a country and thus boosts its nuclear deterrence.
- These submarines can survive a first strike by the adversary.
- Also, it can launch a strike in retaliation thus achieving Credible Nuclear Deterrence.
- The 2016 commissioned nuclear powered Arihant submarine and its class members are capable of launching missiles with nuclear warheads.
- The development of these capabilities is important in light of India's relations with China and Pakistan.

What were the other recent tests?

- In January 2020, DRDO conducted two successful tests of the K-4 missile from submerged platforms off the coast of Andhra Pradesh.
- These tests were a key step towards ultimately deploying K-4 on INS Arihant, which already has K-15 onboard.
- There has not been any official communication from DRDO about the recent tests which is possibly because of,
 - 1) Classified nature of K family missile projects and



- 2) Their close link to the Advanced Technology Vehicle (ATV) project of which Arihant class vessels are part of.

11.3 Anti-Tank Guided Missiles

Why in news?

The indigenously developed laser-guided version of the Anti-Tank Guided Missile (ATGM) was successfully test fired by the DRDO.

What are the ATGMs?

- ATGMs are missile systems that can strike and neutralise armoured vehicles such as tanks.
- They can pierce the armours of tanks and the material that can withstand such ammo.

When did ATGMs first come into use?

- The development of such kind of ammunition has been an ongoing race since World War I.
- But it wasn't until the World War II that armies across the world began to use the ATGMs.
- Indian Army mainly uses various imported ATGMs.
- But, the Defence Research and Development Organisation (DRDO) has been working on ATGMs that can be launched from different platforms as part of the Integrated Guided Missile Development Programme.

What were the previously tested ATGMs?

- In 2018, ATGM **Nag** was successfully tested in desert conditions.
- In 2019, the indigenously developed low weight, fire and forget **Man Portable ATGM (MPATGM)** was successfully tested.
- All these systems are in their various stages of development.
- They are mainly used by infantry units of the Army.
- In 2019, the government said that it has procured **Anti-Tank Spike Missiles** from Israel to meet the requirements of the Indian Army.

How are laser-guided ATGMs different?

- The laser-guided ATGM was successfully tested twice recently for a target placed at different ranges.
- They mainly differ in one aspect from other ATGMs developed till date.
- This ATGM (which is yet to receive an operational name) is designed to be fired from tanks.
- With its range limited to 1.5 to 5 kms, it locks and tracks the targets with the help of laser designation to precisely strike the target.
- The missile uses a 'tandem' High Explosive Anti Tank (HEAT) warhead.
- The term tandem refers to the missiles using more than one detonation in order to effectively penetrate the protective armours.
- This missile has the capacity of piercing armoured vehicles which use specially designed armour plates to counter the impact of projectiles.

Where was this ATGM developed?

- This Laser Guided ATGM has been developed by two facilities of the DRDO's Armament and Combat Engineering Cluster in association with Instruments Research & Development Establishment.
- [Two facilities of the Armament and Combat Engineering Cluster are
 1. Armament Research and Development Establishment (ARDE) and
 2. High Energy Materials Research Laboratory (HEMRL)]
 - This missile is currently undergoing tests to be integrated with India's Main Battle Tank (MBT), Arjun.



- DRDO scientists said more tests for hitting targets at different ranges and for testing other flight parameters are planned in coming days.
- After these series of validation tests, the system will be ready for the user trial by the Army.
- These tests were conducted from MBT Arjun at the field ranges of the Armoured Corps Centre and School (ACC&S) of the Indian Army.

What is its importance in armoured warfare?

- The role of armoured vehicles has remained decisive even in modern day warfare because of their ability to **go past conventional defenses**.
- Tank battles are generally fought in a close range of under five kms.
- The objective is to hit the enemy tank before they can take a clear shot.
- Development of missile systems that can defeat tanks built using modern armour **act as a deterrent** against enemy tanks from advancing.
- DRDO scientists say the operability of the missile from a tank is a key feature in armoured warfare.
- The missile has the capability of engaging with the target even if it is not in the line of sight, thus further enhancing its capability.

11.4 Eliminating Lymphatic Filariasis

What is the issue?

- For a malnourished body, a parasitic infection can deplete the body's nutrients, severely slimming the chances of recovery and rehabilitation.
- A truly integrated control programmes needs nutritional supplements after treating neglected tropical diseases.

What is lymphatic filariasis?

- The neglected tropical disease like lymphatic filariasis (LF) or Elephant Foot is caused due to a mosquito bite injecting microfilariae into blood.
- It causes disfigurement and disability.
- According to the World Health Organisation, LF is stated to be the second leading cause of long-term disability.
- But in this case of neglected tropical disease, **healthy nutritional behaviours** can lead to the elimination of the disease.

What is the challenge?

- A public health challenge for the country is that the LF puts over 650 million Indians living in tropical or subtropical regions at risk.
- The LF is endemic to 256 districts across India.
- About 90% of the LF burden in the country comes from eight states.
- 8 states - Uttar Pradesh, Bihar, Jharkhand, West Bengal, Chhattisgarh, Maharashtra, Odisha, and Madhya Pradesh.
- These states are home to a significant number of the 117 aspirational districts identified by the NITI Aayog.
- Aspirational districts register rampant malnutrition.
- They form major focus areas for POSHAN Abhiyan or the National Nutrition Mission.

What makes it even worse?

- Diseases caused due to infectious organisms tend to occur amongst the **poorest** of the poor and the chronically **undernourished**.
- These people are already at risk of diarrheal diseases, respiratory tract infections, malaria, and HIV.

- Undernutrition increases the risk of infection, the severity of the disease, and the risk of child mortality.

How can the transmission of LF checked?

- It can be checked by improvements in the districts' nutritional status, in addition to disability alleviation and mass drug administration (MDA).
- MDA is an annual dosage of anti-filarial drugs given to eligible people in affected areas.
- This triple-drug therapy is being scaled up by the Centre.
- So, it will help achieve India's goal of LF elimination by 2021.

What do studies reveal?

- Studies have shown that malnutrition is closely related to filariasis.
- It has also found that their **compounded effect** can put the affected person at **higher risk**.
- The **nutritional indicators** should be used as the monitoring mechanism for the elimination of LF.
- This will help in effective implementation of the provisions under the national nutrition program.
- The POSHAN Maah in September is a key reminder for all stakeholders to make the fight for filaria elimination into a people's movement.

What is needed?

- **Broad approach** - Mass drug administration can help reduce the parasite load in an affected body, and diminish sources of reinfection.
- But, a collaborative effort in nourishing locals will go a long way in securing health and well-being.
- This approach should include nutritional rehabilitation, behaviour change initiatives, and public health measures to prevent reinfection.
- **Community-based initiatives** - Along with uptake of schemes like take-home ration at the district level, community-based initiatives can help a lot to the mass movement.
- These initiatives may include promoting kitchen gardens and sourcing locally-available foods to diversify food consumption.
- **Rehabilitation** - The infection is usually acquired in childhood and can clinically manifest in one's youth.
- So, rehabilitation of affected persons is required for extensive recovery of deficits in the health, nutrition, and education status of children.
- It will also help in alleviating the symptoms of disease in all age groups.
- **Essentials** - Finally, clean water, environmental health, and sanitation are essential to keep people and their excreta apart.
- This will prevent vectors and flies from breeding, which would pave the way for the elimination of LF.

11.5 Pandemic Modelling

Why in news?

A committee of experts' forecast on the course of the pandemic in India has brought good tidings.

Who are the committee members?

- The seven-member committee consisted of well-regarded mathematicians and infectious disease experts.
- They were appointed by the Department of Science and Technology.
- The committee made the forecast using **mathematical modelling**.

What was the forecast?

- By their estimate, India passed its Covid-19 peak in September, 2020.
- The decline in the overall caseload is being observed for nearly a month now is to continue.
- Active cases, about 7.5 lakh now, are expected to drop below 50,000 by December.



- By February, 2021, the pandemic is likely to extinguish itself with only 'minimal' (not zero) infections.

What are the assumptions?

- It is reasonable to assume that the committee has been scrupulous.
- But, the warning is that this is still a forecast based on mathematical modelling. There are some strong assumptions.
- The decline will continue only if there are no major mutations during winter, antibodies are durable, and current restrictions are maintained.
- There would be no significant gains from a strict lockdown beyond the district level.
- The current containment measures would suffice, except if there are local outbreaks that threaten to overwhelm health-care facilities there.
- Their calculation showed a peak by July latest, with anything from 6 to 15 times the existing infections had there been no or delayed lockdown.

What is the purpose?

- The purpose of the pandemic modelling is to generate a probabilistic overview of the future.
- Mathematical modelling has become a creative exercise, with several models and forecasts being made available on pre-print servers and pending peer-review.

What was the model used?

- The datasets on which the latest model relied on are publicly available and the modelling employs a category of models called **SEIR**.
- SEIR, within a population, estimates those Susceptible, Exposed, Infected and Recovered.
- It is extremely dependent on the quality of data that is used as an input and relies as much on simplifying assumptions that sacrifice complexity for comprehension.
- But there is nothing to suggest, from what is known about the exercise, that it is more likely to be true than similar estimates from scores of models the world over that subscribe to a certain degree of rigour.

What do the experts say?

- Experts associated with the pandemic have reiterated many times that mathematical modelling ought not to be taken literally.
- The latest assessment too should then be used not to critique or justify past decisions but dwell more on the future.
- To be useful, mathematical models must induce policy or behavioural change to avoid their own worst-case scenarios.
- This latest assessment must be seen - no more, no less - as a tool to this end.

11.6 Solidarity Trial

Why in news?

The World Health Organization (WHO) made available interim results from the Solidarity Therapeutics Trial.

What is the Solidarity Trial?

- Initiated by WHO and its partners, the Solidarity Trial is the world's largest multinational human trials on Covid-19 therapeutics.
- The trial covers four repurposed drugs or drug combinations.
- This includes remdesivir, hydroxychloroquine, lopinavir/ritonavir and interferon (in combination with rosinavir and lopinavir).

What is the aim?

- The study spans over more than 30 countries involving 11,300 participants in the trial.
- It included 26 trials in parts of India with a high burden of cases.

- The study looks into the effects of these treatments on various indicators, including their ability to prevent deaths and shorten hospital stays.
- The aim was to help determine whether any of these drugs could at least moderately affect in-hospital mortality, and whether any effects differed between moderate and severe disease.

What have the trials found?

- None of the drugs was able to prove benefits across the parameters studied, especially in reducing mortality among hospitalised patients.
- The interim results said these drugs had little or no effect on hospitalised Covid-19 patients as indicated by overall mortality, initiation of ventilation and duration of hospital stay.
- Drugs like hydroxychloroquine and lopinavir had already been dropped over the course of the last six months for not showing much promise.

What are the other findings?

- The mortality findings contain most of the randomized evidence on Remdesivir and Interferon.
- The findings are consistent with meta-analyses of mortality in all major trials.
- Interferon was also dropped from the trial.
- The findings struck a nerve with American biopharmaceutical firm Gilead Sciences, which developed and patented remdesivir.

To what extent have these drugs been used in India?

- India stopped use of combinations like lopinavir/ritonavir early into the pandemic.
- But, remdesivir, hydroxychloroquine and interferon combinations are still used as part of the Covid-19 treatment regimen.
- Remdesivir, especially, has been heavily sought after.
- The size of India's remdesivir market was pegged at around Rs 121.29 crore in the 12 months ended September.
- These calculations were based on data available for only four of the several remdesivir brands. This means the market may be even larger.

How much of a blow are these findings to those prescribing these drugs?

- The **governments** will take a call on whether the evidence is convincing enough to remove these therapies from their clinical management protocols.
- **Doctors** who feel the drugs should be part of treatment may also take a call on how they will be used on a case-by-case basis.

What about remdesivir?

- The data on remdesivir is disappointing, and it will be under pressure to perform.
- Remdesivir's indiscriminate use will stop, but it still might have a place in individualised care.

What now for Covid-19 therapeutics, pending a vaccine?

- The findings don't impact the use of other drugs and assisted therapies that have been proven to improve clinical outcomes.
- Newer therapies like antibody cocktails may also be in focus as part of the Solidarity Trial going forward.
- The WHO will continue with the Solidarity Trial and look at immuno modulators.

11.7 Medicine Nobel

Why in news?

The 2020 Nobel Prize in Physiology or Medicine is given to three scientists who peeled the layers off the Hepatitis C virus (HCV).

Why they were awarded?

- The Nobel Committee has decided to give the 2020 Medicine Nobel to Harvey J. Alter, Michael Houghton and Charles M. Rice.
- These scientists peeled the layers off the virus that confounded generations of physicians - the HCV.
- The Nobel Committee chose researchers who went after a pathogen, and succeeded in unwrapping the whole puzzle.
- It cannot be a coincidence that this comes at a time when researchers are fighting fatigue in a daily battle against the SARS-CoV-2 virus.

What was their work?

- The accolades went to the three for identifying the viral origin of HCV.
- The Nobel statement said that the scientists' work characterised this form of hepatitis to be a distinct clinical entity.
- They said that it was caused by an RNA virus of the Flavivirus family, now known as HCV.

To whom was the 1976 Medicine Nobel given?

- The 1976 Medicine Nobel was awarded for the discovery of the Hepatitis B virus (HBV), and the development of the first-generation HBV vaccine.
- However, the isolation of the HBV only partially eliminated the risk of contracting this severe liver disease transmitted through blood.
- The circle was only complete with the discovery of HCV.

What did the Global Hepatitis report say?

- According to the WHO Global Hepatitis report, HBV and HCV are major causes for mortality and morbidity.
- Around 1.34 million deaths was reported in 2015, a 63% increase from 1990, mainly due to HCV.
- The number of deaths is also comparable to that caused by TB and higher than that caused by AIDS.

What is the importance of the discovery?

- The discoveries of HBV and HCV, and the development of effective screening routines, have virtually eliminated the risk of transmission via blood products.
- With the development of effective drugs against HCV, it is possible that the threat of this viral infection would be eliminated soon.
- The Nobel Committee called it among the most impactful scientific accomplishments of the 20th century.

What is next?

- The triumph of humanity, over the pathogens that weaken and kill people is certainly a singular achievement that is worth celebrating.
- Showcasing this achievement will send a deeply inspiring message at a time when SARS-CoV-2 virus is holding the world to ransom.



PRELIM BITS

12. HISTORY AND ART & CULTURE

Girnar

- Girinar is one of the most ancient Hindu and Jain pilgrimage shrine in India.
- Girnar, also known as Girinagar ('city-on-the-hill') or Revatak Parvata, is a group of mountains in the Junagadh District of Gujarat, India.
- Mount Girnar has Gorakhnath peak, Guru Dattatreya peak and a Jain temple.
- It is the place where 22nd Tirthankar Lord Neminath attained Nirvana.
- Temples located in the hill are sacred to the Digambara and the Svetambara branches of Jainism.
- Recently a 2.3 Km long rope way has been inaugurated in India, it is being touted as the longest temple ropeway in Asia.

Junagadh rock inscription

- The Junagadh rock inscription of Rudradaman, also known as the Girnar Rock inscription of Rudradaman, is a Sanskrit prose inscribed on a rock by the Western Satraps ruler Rudradaman I.
- It is located near Girnar hill near Junagadh, Gujarat, India.
- The inscription is dated to shortly after 150 CE.
- The Junagadh rock contains inscriptions of Ashoka (one of fourteen of the Major Rock Edicts of Ashoka), Rudradaman I and Skandagupta.

Bundi Temples and Stepwells

- Bundi is a district in the Hadoti region of Rajasthan.
- It was the erstwhile capital of Hada Rajput province known as Hadoti located in south-eastern Rajasthan.
- It is also known as City of stepwalls, blue city and also as Chotti Kashi.
- It was known as Chotti Kashi owing to presence of over hundred temples within and around the hada capital.
- Temples constructed in early phase of Bundi's growth were in classical Nagara style, while in later phases new temple typologies emerged from amalgamation of architectural form of traditional haveli with the classical Nagara style.
- Jain temples formed third type of temple type constructed in an introvert form.
- A fourth temple type emerged in the form of raised or elevated temple.
- Absence of monumentality in their scale is a distinctive feature of temples in Bundi.

The Cat Geoglyph

- Recently, a giant cat geoglyph was discovered on a hill at the famous Nazca Lines site in Peru.
- It dates from 500 BC – 200 AD (Paracas age). The cat geoglyph is believed to be older than the ones previously found at Nazca.
- The Paracas culture was an Andean society existing between approximately 800 BCE and 100 BCE, with an extensive knowledge of irrigation and water management.
- It was in present day Peru in the Paracas Desert region.
- Representations of felines of this type are frequent in the iconography of ceramics and textiles of the Paracas society.



Nazca Lines

- Nazca Lines are a group of geoglyphs known for the depictions of larger-than-life animals, plants and imaginary beings.
- Geoglyphs are the large designs made on the ground by creators using elements of the landscape such as stones, gravel, dirt or lumber.
- These are believed to be the greatest known archaeological enigma, owing to their size, continuity, nature and quality.
- The site is around 450 km away from capital Lima.
- Drawn more than 2 millennia ago on the surface of southern Peru's arid Pampa Colorada, the geoglyphs feature different subjects, but mainly plants and animals.
- The figures include pelicans (the largest ones sized around 935 feet long), Andean Condors (443 feet), monkeys (360 feet), etc.
- Variety of geometric shapes such as triangles, trapezoids and spirals, and some have been associated with astronomical functions.
- The Lines were first discovered in 1927, and were declared a World Heritage Site by UNESCO in 1994.



13. GEOGRAPHY

Sea Surface Temperature

- Sea surface temperature (SST) is the water temperature close to the ocean's surface.
- The exact meaning of surface varies according to the measurement method used, but it is between 1 millimetre (0.04 in) and 20 metres (70 ft) below the sea surface.
- Air masses in the Earth's atmosphere are highly modified by sea surface temperatures within a short distance of the shore.
- SST changes diurnally, like the air above it, but to a lesser degree, there is less SST variation on breezy days than on calm days.
- A new study on variability in the Mascarene High (MH) during global warming hiatus (GWH) revealed that the Southern Indian Ocean has experienced significantly increased sea surface temperature (SST) during this period (1998-2016).
- **The Mascarene High (MH)** is a semi-permanent subtropical high-pressure zone in the South Indian Ocean.
- Apart from its large influence on African and Australian weather patterns, it also helps in driving the inter-hemispheric circulation between the Indian Ocean in the south and subcontinental landmass in the north.
- **A global warming hiatus** is referred to a global warming pause, or a global warming slowdown, which is a period of relatively little change in globally averaged surface temperatures.
- The hiatus, however, can result in an increase in the SST.
- This warming in SST, resulted in a decrease in the pressure gradient between the MH and the Indian landmass.
- This in turn suppressed the intensity of low-level cross-equatorial winds over the western Indian Ocean affecting the onset of the monsoon over the Indian subcontinent and rainfall over East Asia.
- The southwest monsoon caused by this high-pressure area is the strongest component of the Indian subcontinent monsoon that contributes about more than 80 per cent of the annual rainfall in entire East Asia.
- The weakening of the MH in the southern Indian Ocean during GWH may affect the strength of the upwelling along the coast of Somalia and Oman and thus, influence the Arabian Sea ecosystem.



Indus Suture Zone

- A suture zone is a linear belt of intense deformation, where distinct terranes, or tectonic units with different plate tectonic, metamorphic, and paleo geographic histories, join together.
- The ISZ represents a belt of tectonic compression caused by the under thrusting of the Indian shield/ plate against the Tibetan mass.
- It marks the boundary between the Indian and Eurasian plates.
- The suture zone stretches from the North-Western Himalayan syntaxes bordering the Nanga Parbat to the East as far as the Namche Barwa Mountain.
- The fault line runs all along the Indus River, from China through India and Pakistan.
- According to a recent survey has found that a tectonic fault line that runs through Ladakh, along the Indus River, is moving northward.
- The Karakoram Range and the Ladakh plateau lie to the north of ISZ and originally formed a part of the European plate.
- The zone has been neo-tectonically active for the past 78,000-58,000 years.
- While the frontal and central parts of the Himalayas, the Shivaliks, Himachal Pradesh, Uttarakhand, Jammu and Kashmir and Sikkim are still known to be active and moving.

Thrusts of Himalaya

- Himalaya were known to be made up of north dipping thrusts like
 1. Main Central Thrust (MCT),
 2. Main Boundary Thrust (MBT),
 3. Main Frontal Thrust (MFT).
- As per the established models, all of these thrusts except MFT are locked, and overall deformation in Himalaya is being accommodated only along with the MFT.

Lost River of Thar Desert

- Researchers have found the evidence of a "lost" river that ran through the central Thar Desert, near Bikaner.
- The findings represent the oldest directly dated phase of river activity at Nal Quarry in the central Thar Desert.
- The study indicates that Stone Age populations lived in a distinctly different Thar Desert landscape than we encounter today.
- This evidence indicates a river flowed with phases of activity dating to approximately up to 172 thousand years ago, nearby to Bikaner, Rajasthan, which is over 200 kilometres away from the nearest modern river.
- These findings predate evidence for activity in modern river courses across the Thar Desert as well as dried up course of the Ghaggar-Hakra River.
- The results indicated that the strongest river activity at Village of Nal occurred at a time when the monsoon was much weaker than today in the region.
- River activity continued at the site between 95 to 78 thousand years ago.

Thar Desert

- It is also known as the Great Indian Desert.
- It is a large arid region in the north-western part of the Indian subcontinent and forms a natural boundary between India and Pakistan.
- It extends between the Aravalli Hills in the north-east, the Great Rann of Kutch along the coast and the alluvial plains of the Indus River in the west and north-west.
- About 85% of the Thar Desert is located within India, with the remaining 15% in Pakistan.
- More than 60% of the desert lies in the Indian state of Rajasthan, and it extends into the states of Gujarat, Punjab and Haryana.
- Within Pakistan's Punjab province, the Thar continues as the Cholistan Desert.

Nechiphu Tunnel

- Recently Foundation stone for Nechiphu Tunnel in Arunachal Pradesh has been laid.
- The tunnel is in the Balipara-Charduar-Tawang (BCT) road in West Kameng district of Arunachal Pradesh.
- The 450m-long tunnel will bypass the existing road, will be D-shaped and comprise two lanes of 3.5m width each.
- Another 1.8 km-long tunnel is also being constructed on the BCT road and both will reduce distance to the area bordering China by 10km.

- This project is of strategic importance and provide connectivity to remote areas.

Sitwe Port

- Sittwe Port is situated at the mouth of the Kaladan River.
- The project will link Kolkata to Sittwe in Myanmar and then from Myanmar's Kaladan river to India's north-east.
- It is being financed by India as a part of the Kaladan Multi-Modal Transit Transport Project, a collaboration between India and Myanmar.
- The project is aimed at developing transport infrastructure in southwestern Myanmar and north-eastern India.
- Recently India announced a grant of two million US Dollars for the construction of the border Haat Bridge at Byanyu/Sarsichauk in Chin State.
- India and Myanmar have agreed to work towards the operationalization of the Sittwe port in the Rakhine state in the first quarter of 2021.



Nagorno-Karabakh Region

- Recently Armenia and Azerbaijan held their first high-level talks after nearly two weeks of fierce clashes over the disputed Nagorno-Karabakh region.
- Armenia and Azerbaijan are part of Transcaucasia or South Caucasia.
- Caucasia is a geographical region in the vicinity of the southern Caucasus Mountains on the border of Eastern Europe and Western Asia consisting of Georgia, Armenia, and Azerbaijan.
- Nagorno-Karabakh region has 95% of the population as ethnically Armenian and is controlled by them but it is internationally recognised as part of Azerbaijan.
- Armenia is Christian majority, while Azerbaijan is Muslim majority country.



Buldhana Pattern

- 'Buldhana Pattern' of water conservation' has won national recognition, NITI Aayog is in the process of formulating National Policy on water conversation based on it.
- It is based on the synchronization of national highway construction and water conservation.
- It was achieved for the first time in Buldana district of drought-prone Vidarbha region, (Maharashtra) by using soil from the water bodies, nallas and rivers.
- This leads to the increase in capacity of water storage across the water-bodies and it came to be known as 'Buldana Pattern'.
- Creation of State Water Grid and adopting water Conservations works under this pattern will increase the agriculture production.
- With this activity 225 lakh cubic metre of soil was used in National Highway construction and the resultant widening / deepening resulted in increase of 22,500 Thousand Cubic Metre (TMC) of water storage capacity with no cost to state government.

Pearl River

- The Pearl River estuary includes Hong Kong, Macau as well as the mainland Chinese cities of Shenzhen, Guangzhou and Dongguan.



- About 22 million people live in the area.
- The estuary is one of the busiest shipping lanes in the world.

Atal Tunnel

- World's longest highway tunnel at Rohtang was recently inaugurated.
- It is a 9.02 km-long-tunnel, at an altitude of above 3,000 metres.
- It connects Manali to Lahaul-Spiti valley.
- It is built by the Border Roads Organisation (BRO).
- It provides all-weather connectivity to the landlocked valley of Lahaul-Spiti, which remains cut-off for 6 months due to bad weather connection.
- It is also strategically important as it provide better connectivity to the armed forces in reaching Ladakh.

14. POLITY

Mirror Order in Judgement

- The judgment was based on a petition regarding the custody of a child whose father is based in Kenya and the mother is in India.
- Recently Supreme Court has applied the principle of “mirror order” in a child custody case where one of the estranged parents is living abroad in Kenya.
- A ‘mirror order’ is ancillary or auxiliary in character.
- It supports the original order passed by the court which has exercised primary jurisdiction over the custody of a child.
- When a competent court in India passes a series of the conditions for the transfer of custody of a child to a parent living abroad, an identical or mirror order is passed by an equally competent court to ensure that the conditions of custody are met.
- This mechanism ensures that contradictory judicial orders are not passed and is considered a remedy against transnational parental abduction of children in inter-country marriages.
- The object of a mirror order is to safeguard the interest of the minor child in transit from one jurisdiction to another, and to ensure that both parents are equally bound in each State.
- The mirror order is passed to ensure that the courts of the country where the child is being shifted are aware of the arrangements which were made in the country where he had ordinarily been residing.
- Such an order would also safeguard the interest of the parent who is losing custody, so that the rights of visitation and temporary custody are not impaired.

National Commission for Protection of Child Rights (NCPCR)

- It is a statutory body set up in March 2007 under the Commissions for Protection of Child Rights (CPCR) Act, 2005.
- It is under the administrative control of the Ministry of Women & Child Development.
- Its mandate is to ensure that all laws, policies, programmes, and administrative mechanisms are in consonance with the child rights perspective as enshrined in the Constitution of India and also the UN Convention on the Rights of the Child.
- It inquires into complaints relating to a child's right to free and compulsory education under the Right to Education Act, 2009.
- It monitors the implementation of Protection of Children from Sexual Offences (POCSO) Act, 2012.

Juvenile Justice (Care and Protection of Children) Bill, 2018

- It comprehensively addresses children in conflict with law and children in need of care and protection.



- It mandates setting up Juvenile Justice Boards and Child Welfare Committees in every district. Both must have at least one-woman member each.
- It states that the adoption of a child is final on the issuance of an adoption order by the court. Currently, there are 629 adoption cases pending in various courts.
- The Act included several new offences committed against children (like, illegal adoptions, use of child by militant groups, offences against disabled children, etc) which are not adequately covered under any other law.
- All Child Care Institutions, whether run by State Government or by voluntary or non-governmental organizations are to be mandatorily registered under the Act within 6 months from the date of commencement of the Act.
- The Bill provides that instead of the court, the district magistrate will issue adoption orders to address the high pendency of adoption cases.
- The Bill also seeks to transfer all pending matters related to adoption before any court to the district magistrate having jurisdiction over the area.

NRI Quota in Technical Education

- Supreme Court has ruled that Private colleges and institutions that offer professional and technical courses have a complete discretion to do away with their Non-Resident Indian (NRI) quota of seats.
- The judgment quoted from the Constitution Bench verdict in the Inamdar case, which said the term 'NRI' in relation to admissions was itself a "misnomer".
- "Neither the students who get admissions under this category nor their parents are NRIs.
- In effect and reality, under this category, less meritorious students, but who can afford to bring more money, get admission.
- The money brought by such students enables the educational institutions to strengthen its level of education and also to enlarge its educational activities".
- The verdict also referred to the seven-judge Bench decision in P.A. Inamdar, which held that 15% NRI quota was "not compulsory" but "only potential".
- That was why the court had suggested limiting the quota to 15%.
- As per the recent judgement Candidates under the quota cannot assert their right to be admitted, says court in a judgment
- The colleges could completely eliminate the NRI quota for 2020-21 academy year.

Judgment on Right to Protest

- Recently, the Supreme Court (SC) has upheld the right to peaceful protest against the law but also cleared that public ways and public spaces cannot be occupied and that too indefinitely.
- The Supreme Court has said that occupying public places for protests is not acceptable and such a space cannot be occupied indefinitely.
- Highlights of the judgment are as follows
 1. The judgment upheld the right to peaceful protest against a law but made it unequivocally clear that public ways and public spaces cannot be occupied, and that too indefinitely.
 2. In a democracy, the rights of free speech and peaceful protest were indeed "treasured", they were to be encouraged and respected.
 3. But these rights were also subject to reasonable restrictions imposed in the interest of sovereignty, integrity and public order, Police regulations also weighed in.
 4. Fundamental rights do not live in isolation, the right of the protester has to be balanced with the right of the commuter and they have to co-exist in mutual respect.
 5. It highlighted that the State or UT administrations have the entire responsibility to prevent encroachments in public spaces and should not wait for courts to pass suitable orders.



6. The verdict also dwelt on the merits and demerits of technology impacting social movements.

- The Constitution guarantees the right to protest and express dissent, but with an obligation towards certain duties.
- Article 19 confers upon citizens the right to freedom of speech and expression under Article 19(1)(a) and right to assemble peacefully without arms under Article 19(1)(b).
- These rights, in cohesion, enable every citizen to assemble peacefully and protest against action or inaction of the State..
- However, these rights are also subject to reasonable restrictions mentioned under Article 19(2), imposed in the interest of sovereignty, integrity and public order with the help of police regulations.

Jurisdiction of River Management Boards

- Whenever the riparian states are not able to reach amicable agreements on their own in sharing of an interstate river waters, section 4 of IRWD Act provides dispute resolution process in the form of Tribunal.
- As per the Act, the tribunal shall not only adjudicate but also investigate the matters referred to it by the central government and forward a report setting out the facts with its decisions.
- It implies that the tribunal responsibility is not limited to adjudication of issues raised by the concerned states and also investigation of other aspects which are in public domain such as
 1. Water pollution,
 2. Salt export requirement,
 3. Water quality deterioration,
 4. Flood control,
 5. Sustainability of river basin productivity & its ecology,
 6. Environmental flow requirements,
 7. Climate change effects,
- When the tribunal final verdict issued based on the deliberations on the draft verdict is accepted by the central government and notified in the official gazette, the verdict becomes law and binding on the states and union government for implementation.
- When pronounced in the ambit of IRWD Act and the Indian constitution, the tribunal's verdict after its publication in the official gazette is equivalent to Supreme Court verdict as per section 6 of IRWD Act.
- He was speaking after convening an apex council meeting involving the Centre, Andhra Pradesh and Telangana, the second since 2016.
 - The meeting is primarily to resolve the conflict between the two States over executing irrigation projects and sharing water from the Krishna and Godavari rivers.
 - Recently Union Water Resources Ministry announced that it will determine the jurisdictions of the Krishna and Godavari river management boards (KRMB and GRMB)
 - The headquarters of the KRMB would be located in Andhra Pradesh

Amendment Related to Land in Jammu and Kashmir

- Recently Union government has notified 'Union Territory of Jammu and Kashmir Reorganisation (Adaptation of Central Laws) Third Order, 2020.
- It states that any Indian citizen can now buy land in Jammu and Kashmir (J&K) without being a domicile.
- The introduction of the UT of J&K Reorganisation (Adaptation of Central Laws) Third Order, 2020 has resulted in the repeal of at least 11 land laws in J&K, including the J&K Big Landed Estates Abolition Act that had resulted in famous 'Land to tiller' rights.
- The features of the latest order are as follows
 1. No domicile or permanent resident certificate is required to purchase non-agricultural land in the UT.



2. People as well as investors outside J&K can now purchase land in the UT, ending the exclusive rights of locals over the land granted under Article 370 (now abrogated).
3. The Centre also notified the Real Estate (Regulation and Development) Act, 2016, which paves the way for the acquisition of land in J&K by all Indian citizens.
4. The amendment has abolished the Big Land Estate Abolition Act, 1950 – this provided for redistribution of land which paved the way for rural prosperity and ended landlordism in J&K.
5. Empowers the Centre to declare any area in J&K as ‘strategic’ and intended for the direct operational and training requirement of the armed forces.
6. However, this can be only done by an army officer of or above the rank of a corps commander.
7. Spouses of a J&K domicile shall also be deemed as a domicile, earlier, spouses of domiciles were not considered domiciles.
8. Children of central government officials posted for over ten years in J&K will also continue to be considered domiciles.

Enhancement of Election Expenditure

- Under Rule 90 of the Conduct of Election Rules, 1961, a candidate contesting Lok Sabha polls can spend up to Rs 70 lakh and up to Rs 28 lakh in an assembly election depending on the state in which he is contesting polls.
- Under Section 77 of the Representation of the People Act, 1951, every candidate shall keep a separate and correct account of all expenditure incurred between the date on which he has been nominated and the date of declaration of the result.
- All candidates are required to submit their expenditure statement to the ECI within 30 days of the completion of the elections.
- An incorrect account or expenditure beyond the cap can lead to disqualification of the candidate by the ECI for up to three years, under Section 10A of the Representation of the People Act, 1951.
- It can be noted that there is no cap on a political party’s expenditure, which is often exploited by candidates of the party.
- However, all registered political parties have to submit a statement of their election expenditure to the ECI within 90 days of the completion of the elections.
- Recently the poll spending limit for candidates contesting Lok Sabha and Assembly elections has been enhanced by 10 percent.
- Centre has approved this based on the recommendation of the Election Commission that contestants be allowed to spend more on campaigning keeping in mind difficulties they may face due to COVID-19 curbs.
- By the maximum expenditure a candidate can incur for campaigning in Lok Sabha polls is now Rs. 77 lakh.
- The last time the expenditure ceiling was enhanced was ahead of the Lok Sabha polls in 2014.
- For Assembly election, it has been hiked from Rs. 28 lakh to Rs. 30.80 Lakh.

Chapter Proceedings

- Chapter proceedings are preventive actions taken by the police if they fear that a particular person is likely to create trouble and disrupt the peace in society.
- Chapter proceedings is not a legal term.
- According to officers, since all the sections related to preventing of crime fall under a single chapter, it was colloquially called “chapter proceedings” and has since been used to refer to actions of this nature.
- These proceedings are unlike punitive action taken in case of an FIR with an intention to punish.
- Here, the police can issue notices under sections of the Code of Criminal Procedure to ensure that the person is aware that creating nuisance could result in action against him.
- This includes paying a fine, in the absence of which, he could be put behind bars.
- Procedures involved are as follows



1. Generally a notice is issued to a person under section 111 of the CrPC.
 2. Whereby he is asked to present himself before the Executive Magistrate an ACP-rank officer in a Commissionerate of a deputy collector in rural areas who has issued the notice.
- Recently Chapter proceedings against Republic TV Editor-in-Chief Arnab Goswami has begun by Mumbai city police.

Gupkar Declaration

- Gupkar Declaration, is a pact to fight for the restoration of J&K's special status.
- The Declaration was signed by six political parties, including Congress and regional parties of the state, on August 4, 2019, just a day before the abrogation of J&K's special status.
- It called for a joint fight to "safeguard J&K's special status, Article 370 and 35A".

Withdrawal of General Consent to CBI

- Recently, the Maharashtra government withdrew its general consent to the Central Bureau of Investigation (CBI) to probe cases in the State.
- The move comes a day after the CBI registered an FIR in the TRP scam after taking over the probe based on an FIR filed in Uttar Pradesh.
- General Consent - is normally given to help the CBI seamlessly conduct its investigation into cases of corruption against central government employees in the concerned state.
- Maharashtra is the fourth State after Andhra Pradesh, West Bengal and Rajasthan to take such an action.
- Outcomes of the move
 1. Withdrawal of General Consent means the CBI will not be able to register any fresh case involving a central government official or a private person stationed in Maharashtra without getting case-specific consent.
 2. Withdrawal of consent will only bar the CBI from registering a case within the jurisdiction of concerned states.
 3. The CBI could still file cases in Delhi and continue to probe people inside Maharashtra.
 4. In simple terms withdrawal of consent means that CBI officers will lose all powers of a police officer as soon as they enter the state unless the state government has allowed them.
 5. It will have no impact on investigation of cases already registered with CBI as old cases were registered when general consent existed.

15. GOVERNMENT INITIATIVES

Decade of Healthy Ageing

- Union Ministry for Health & Family Welfare has launched Decade of Healthy Ageing (2020-2030).
- It is aimed at mainstreaming issues related to elderly and to deliberate upon ways to ensure better and effective delivery of services, making full use of convergence mechanisms.
- The broad aims of the initiatives will include evolving convergence within various national health programs and also promoting inter-sectoral coordination with other line Departments/Ministries.
- Community based organizations, NGOs and multinational agencies will also be involved for developing an implementation framework for multi-sectoral engagement on healthy aging.

Longitudinal Aging Study of India

- Union Ministry of Health & Family Welfare has launched the Longitudinal Ageing Study in India (LASI) in 2016.

- It will assess the needs of its elderly people and frame policies accordingly.
- The survey will take into account study on 60,000 elderly people over 25 years plan and will be the largest survey of its kind.
- LASI project will be jointly funded by the Union Health Ministry, United Nation's Population Fund-India and United States National Institute on Ageing.
- The survey would be undertaken by the Mumbai based International Institute for Population Sciences (IIPS), in collaboration with Harvard School of Public Health (HSPH) and University of Southern California (USC).
- It will provide Union Health Ministry sufficient data on older population in the country that in turn would be used to develop a scientifically validated data needed for their health, economic and social analysis of the older population.
- It will investigate various health structures, and impact of social determinants on health of the elderly.
- It will provide scientific data for framing evidence-based policy for elderly citizens and help in expanding the scope of health and social security policy and programmes for older population.

DBT-BIRAC Clean Tech Demo Park

- Union Science & Technology Ministry has inaugurated the "DBT-BIRAC Clean Tech Demo Park" at New Delhi.
- The DBT-BIRAC Clean Tech Demo Park will be used to demonstrate innovative Waste-to-Value technologies.
- It is supported by Department of Biotechnology (DBT) and Biotechnology Industry Research Assistance Council (BIRAC).
- This park will be managed by the Clean Energy International Incubation Centre (CEIIC), a public-private-partnership incubator set up jointly by DBT, BIRAC and Tata Power.
- DBT has undertaken several initiatives under Swachh Bharat Mission for the development, demonstration and promotion of innovative clean waste-to-value technologies such as
 1. Biomethanation,
 2. Constructed wetlands,
 3. Algal treatment
 4. Water membrane filtration.

Geo-Tagging component of PMKSY

- Geo-tagging is the process of adding geographical identification data to various media such as websites, SMS messages, QR Codes.
- This data usually consists of latitude and longitude coordinates.
- It can also include altitude, bearing, distance, accuracy data, and place names, and perhaps a time stamp.
- A GIS is a framework for gathering, managing, and analyzing geography related data.
- Recently, Ministry of Jal Shakti launched a mobile application for geo-tagging of the components of projects under Pradhan Mantri Krishi Sinchayee Yojana (PMKSY).
- The mobile application has been developed with the help of Bhaskaracharya National Institute of Space Applications & Geoinformatics (BISAG-N).
- It aims to track the pace of work and actual status of the projects.
- The mobile application can be used to capture the image of the project component along with other details such as location, type of canal/ structure, completion status, etc.
- The captured information can be submitted by the user for geo-tagging on the geographic information system (GIS) portal developed for this purpose.

BISAG-N

- BISAG-N is an autonomous scientific society registered under the Societies Registration Act, 1860.
- It comes under the Ministry of Electronics and Information Technology.



- The mobile application can be operated in both online & offline mode depending on the network availability in the region.

Ghar Tak Fiber

- 'Ghar Tak Fibre' scheme in Bihar, aims to connect all 45,945 villages of Bihar with high-speed optical fibre internet by 31st March 2021.
- Under the scheme, Bihar has to provide at least five fibre-to-the-home (FTTH) connections per village and at least one WiFi hotspot per village.
- The Scheme will be implemented by the Ministry of Electronics and Information Technology.
- The Scheme will lead the following
 1. Digital services including e-Education,
 2. E-Agriculture,
 3. Tele-Medicine,
 4. Tele-law and other social security schemes in Bihar ensuring easy access to all state natives.
- It is also likely to boost the local employment generation with the implementation of Bharat Net initiative which will be done by recruiting local workers.

Bharat Net Project

- It a special purpose vehicle envisaged in 2011.
- It was an ambitious plan to connect all the 2,50,000 gram panchayats through a high-speed optical network.
- Initially it was launched as National Optical Fibre Network (NOFN), it was renamed as BharatNet Project in 2015.
- Under the Project, a village or a gram panchayat (GP) is considered 'lit up' when it consistently has internet connection and users at the end to verify the same.

Heeng Cultivation Project

- Recently CSIR-Institute of Himalayan Bio resource Technology (IHBT), has initiated a mission to grow Heeng (asafoetida) in the Indian Himalayas.
- Heeng is not cultivated in India, India imports about 1,200 tonnes of raw heeng worth Rs. 600 crore from Iran, Afghanistan and Uzbekistan.
- In 2017, IHBT approached the National Bureau of Plant Genetic Resources (NBPGR) with an experimental project idea to cultivate heeng in the Indian Himalayas.
- In June 2020, the IHBT inked a Memorandum of Understanding with the agriculture ministry of Himachal Pradesh to jointly cultivate the heeng.
- The agriculture ministry has identified four locations in the Lahul-Spiti valley and has distributed heeng seeds to seven farmers in the region.
- However, the challenge for the scientists is that heeng seeds remain under a prolonged dormant phase and the rate of seed germination is just 1%.

KAPILA

- Union Education Ministry has virtually launched the 'KAPILA' Kalam Program for Intellectual Property Literacy and Awareness campaign.
- It is released on the 89th birth anniversary of former President Dr. APJ Abdul Kalam.
- Under this campaign, students pursuing education in higher educational institutions will get information about the correct system of application process for patenting their invention and they will be aware of their rights.
- During the event it has also been decided to celebrate the week of October 15th to 23rd as 'Intellectual Property Literacy Week'.

Institution Innovation Council (IIC 2.0)

- The Institution Innovation Council was established by the Ministry of Education in 2018.
- So far, IICs have been established in about 1700 higher educational institutions.
- IIC will be established in 5000 higher educational institutions under IIC 3.0.



- The Institution Innovation Council (IIC 2.0) annual report was also presented on the occasion and the launch of IIC 3.0 was announced.

VTMS/ VTMS

- Union Ministry for Shipping has e-launched the development of Indigenous Software solution for Vessel traffic services (VTS) and Vessels Traffic Monitoring Systems (VTMS).
- VTS and VTMS is a software which determines vessel positions, position of other traffic or meteorological hazard warnings and extensive management of traffic within a port or waterway.
- Vessel Traffic Services (VTS) contribute to the following
 1. Safety of life at sea,
 2. Safety and efficiency of navigation,
 3. Protection of the marine environment, Adjacent shore areas, Work sites and offshore installations from possible adverse effects of maritime traffic.
- The VTMS traffic image is compiled and collected by means of advanced sensors such as radar, AIS, direction finding, CCTV and VHF or other co-operative systems and services.
- A modern VTMS integrates all of the information into a single operator working environment for ease of use and in order to allow for effective traffic organization and communication.
- VTMS is mandatory under IMO Convention SOLAS (Safety of Life at Sea).
- Implementation of National Maritime Domain Awareness programme shall become feasible with Indian VTS software at low cost.
- Ministry of Shipping has sanctioned an amount of Rs. 10 Crore to IIT, Chennai for development of indigenous VTS software.

Meri Saheli

- The “Meri Saheli” initiative was started as a pilot project in South Eastern Railway in September 2020.
- Recently it was extended to all zones after getting encouraging response from lady passengers.
- It is initiative for focused action on security of women across all zones with an objective to provide safety and security to lady passengers travelling by trains for their entire journey from starting station to destination station.
- The Strategy entails interaction with lady passengers especially those travelling alone by a team of young lady RPF personnel at the originating station.
- These lady passengers are briefed about all precautions to be taken during the journey and told to dial 182 in case they face or see any problem in the coach.
- The platform duty RPF personnel at the stopping stations En-route keep unobtrusive watch over the concerned coaches and berths and if need arises, interact with the lady passengers.

SERB-POWER

- Recently, the Union Minister for Science and Technology has launched SERB-POWER (Promoting Opportunities for Women in Exploratory Research) Scheme.
- It has two components of fellowship and research grants.
- The scheme is designed exclusively for women scientists to mitigate gender disparity in science and engineering research in various science and technology (S&T) programmes in Indian academic institutions and research and development (R&D) laboratories.
- It will serve as a benchmark of recognition in the national scenario and will empower women scientists and cultivate a women-friendly culture and ensure more women in leadership positions in decision-making bodies.
- Eligibility Criteria:
 1. Women researchers in 35-55 years of age.

2. Up-to 25 Fellowships per year and not more than 75 at any point in time.
- Duration: Three years, without the possibility of extension. Once in a career.
- Grants will be regulated through terms of reference conforming to SERB-Core Research Grant (CRG) guidelines.

16. GOVERNMENT SCHEMES

Kala Sanskriti Vikas Yojana

- Kala Sanskriti Vikas Yojana (KSVY) is an umbrella scheme under Ministry of Culture for the promotion of art and culture in the country.
- KSVY has the following sub-schemes through which financial assistance is provided to cultural organizations:
 1. Scheme of Financial Assistance for Promotion of Art and Culture.
 2. Scheme of Financial Assistance for Creation of Cultural Infrastructure.
 3. Scheme for Safeguarding the Intangible Cultural Heritage.
- Recently Culture Ministry has issued guidelines for holding cultural events under various scheme components of Central Sector Scheme 'Kala Sanskriti Vikas Yojana' (KSVY).
- The guidelines will enable artists to avail benefits under these schemes in virtual mode also and will ensure continued financial assistance to tide over the present crisis.

Deen Dayal Antyodaya Rashtriya Aajeevika Mission

- Deen Dayal Antyodaya Yojana - National Livelihoods Mission (NRLM) was launched by the Ministry of Rural Development (MoRD) in 2011.
- The Mission aims at creating efficient and effective institutional platforms of the rural poor enabling them to increase household income through sustainable livelihood enhancements and improved access to financial services.
- In the program was renamed Deendayal Antayodaya Yojana (DAY-NRLM).
- Union government has approved changes in the criteria to extend benefits under the Deen Dayal Antyodaya Rashtriya Aajeevika Mission.
- Under new changes it aims to over 10.58 lakh women in Jammu & Kashmir and Ladakh.

Kumhar Sashaktikaran Yojana

- Kumhar Sashaktikaran Yojana (KSY) was launched in 2018, to strengthen and improve the living of potters in the country by making them self-reliant (Atma Nirbhar).
- It provides potters with modern equipment and training to reconnect them with the society and revive their art.
- KVIC has created proper marketing channels including tie-up with the Indian Railway for selling the products of potters.
- Proper training and distribution of advanced equipment under the scheme has eliminated drudgery from the process of pottery making and also resulted in increasing the production by 3-4 times.
- Recently, electric pottery wheels to 100 potter families in Maharashtra were distributed under the KSY of Khadi and Village Industries Commission (KVIC).

Kisan Suryodaya Yojana

- Kisan Suryodaya is scheme of Gujarat state government.
- It is aimed at providing day-time electricity to farmers in Gujarat for irrigation and farming purposes.



- Under the scheme Rs. 3,500 crore will be spent over the next three years for providing solar power to farmers for irrigation during daytime (5 AM to 9 PM).
- 10 districts including Dahod, Gir-Somnath and Tapi have been selected under the Scheme for 2020-21.
- The remaining districts will be covered in a phase-wise manner by 2022-23.
- About 3,500 circuit kilometers (CKM) of new transmission lines will be laid for this project.
- The scheme would help in the expansion of micro irrigation in the state.
- Micro irrigation is defined as the frequent application of small quantities of water directly above and below the soil surface; usually as discrete drops, continuous drops or tiny streams through emitters placed along a water delivery line.

17. GOVERNMENT ORGANISATIONS

Artificial Intelligence Research Centre

- Recently an artificial intelligence research centre in Hyderabad has been setup by Intel.
- The institution has been setup in a tie up with International Institute of Information Technology (IIIT-H), Public Health Foundation of India (PHFI) and the State government.
- The research centre, named INAI, will act as a catalyst to accelerate India's leadership in AI by driving innovation and entrepreneurship.
- In the smart mobility domain, INAI will advance research in the area of road safety.
- The centre will apply AI solutions to population-scale problems in the Indian context, with focus on challenges in the healthcare and smart mobility segments.

Frontier Technologies Cloud Innovation Centre

- Recently NITI Aayog has announced the establishment of a Frontier Technologies Cloud Innovation Centre (CIC) with Amazon Web Services, AWS.
- This aims to address societal challenges through digital innovation, which is first of its kind in India.
- This CIC is part of the AWS CIC Global Programme which provides an opportunity for government agencies, non-profits and educational institutions, for
 1. Come together on pressing challenges,
 2. Apply design thinking,
 3. Test new ideas,
 4. Access the technology expertise of AWS.
- The NITI Aayog Frontier Technologies CIC will be a great enabler to budding innovators and start-ups and help in leveraging emerging technologies such as AI, IOT and robotics, block chain.

18. INTERNATIONAL ORGANISATIONS

Safety of Life at Sea

- The International Convention for the Safety of Life at Sea (SOLAS) is an international maritime treaty which sets minimum safety standards in the construction, equipment and operation of merchant ships.
- SOLAS is administered by International Maritime Organization
- The convention requires signatory flag states to ensure that ships flagged by them comply with at least these standards.

- The first version of SOLAS Treaty was passed in 1914 in response to the sinking of the RMS Titanic, which prescribed numbers of lifeboats and other emergency equipment along with safety procedures, including continuous radio watches.
- The 1914 treaty never entered into force due to the outbreak of the First World War.
- Further versions were adopted in 1929 and 1948.
- SOLAS in its successive forms is generally regarded as the most important of all international treaties concerning the safety of merchant ships.

APG Enhanced Follow-up List

- APG is a regional affiliate of the Paris-based Financial Action Task Force (FATF).
- The FATF had placed Pakistan in the grey list in June 2018.
- The grey list of APG refers to countries that are “monitored jurisdictions”, while the blacklist refers to countries facing a “call to action” or severe banking strictures, sanctions and difficulties in accessing loans.
- In February this year, the FATF had threatened Pakistan with a potential blacklist in a sternly worded note that said, “All deadlines in the action plan have expired.”
- China, Pakistan’s all-weather ally, has prevented it from being blacklisted by the FATF for the past two years, with support from Turkey and Malaysia.
- Recently Asia-Pacific Group (APG) on Money Laundering said, Pakistan will remain in the enhanced follow-up list.
- This decision makes after taking note of Pakistan’s “meagre progress” in combating money laundering and terror financing.
- It will have to continue to report back to the APG on progress to strengthen its implementation of comprehensive Anti-money Laundering and Terrorist Financing measures.

UNHRC

- Recently Pakistan has been re-elected to the United Nations Human Rights Council (HRC) with an overwhelming majority securing 169 votes in the 193-member UN General Assembly.
- UNHRC is a United Nations body whose mission is to promote and protect human rights around the world.
- The UNHRC has 47 members elected for staggered three-year terms on a regional group basis.
- The headquarters of UNHRC is in Geneva, Switzerland.
- The UNHRC investigates allegations of breaches of human rights in United Nations member states, and addresses important thematic human rights issues.
- UNHRC shall consist of 47 Member States, which shall be elected directly and individually by secret ballot by the majority of the members of the General Assembly.
- The members of the Council shall serve for a period of three years and shall not be eligible for immediate re-election after two consecutive terms.

ASEAN PhD Fellowship Programme

- The ASEAN PhD (APFP) Fellowship Programme was announced on in 2018 by Indian administration.
- Under the APFP, one thousand fellowships will be provided exclusively to the ASEAN citizens.
- APFP is the largest capacity development programme undertaken by the Government of India for foreign beneficiaries.
- Under the program students of the ASEAN member states have got the opportunity to study in the IITs, which are among the best global institutions.
- APFP will open many doors to synergies in the field of technology and research for the academicians, researchers and the scientists from India and ASEAN.

United Nations Alliance of Civilizations

- The United Nations Alliance of Civilizations (UNAOC) was established in 2005.
- It was the political initiative of Mr. Kofi Annan, former UN Secretary-General and co-sponsored by the Governments of Spain and Turkey.
- The United Nations Alliance of Civilizations High Representative and Secretariat are based and operating from New York.
- It is an initiative that seeks to galvanize international action against extremism through the forging of international, intercultural and interreligious dialogue and cooperation.
- Recently UNAOC has condemned the beheading of a teacher in the north-western suburbs of Paris in France.

SCO Start-up Forum

- Shanghai Cooperation Organisation will launch its first ever Startup Forum on 27th October 2020 ahead of the SCO trade ministers meeting.
- The forum will lay the foundation for multilateral cooperation and engagement among the Shanghai Cooperation Organisation (SCO) Member States to develop and hone their start up ecosystems, collectively.
- The Forum shall identify areas of cooperation by launching multiple entrepreneurial activities like
 1. Start-up showcases through a dedicated virtual platform,
 2. Mobilizing capital for start-ups,
 3. Sharing of best practices,
 4. Procuring social innovations etc.

ILO Governing Body

- Recently India has assumed the Chairmanship of the Governing Body of International Labour Organization (ILO).
- Labour & Employment Secretary Apurva Chandra has been elected as the Chairperson of the Governing Body of the ILO for the period October 2020-June 2021.
- The Chairperson of the Governing Body of ILO is a position of international repute.
- The Governing Body (GB) is the apex executive body of the ILO.
- GB meets thrice a year, in March, June and November, Functions of GB are as follows
- It takes decisions on ILO policy,
- Decides the agenda of the International Labour Conference,
- Dadopts the draft programme and budget of the organisation for submission to the conference,
- Elects the Director-General.
- The broad policies of the ILO are set by the International Labour Conference, which meets once a year in June, in Geneva, Switzerland.

Every Woman Every Child (EWEC) Movement

- It was launched by the United Nations during the United Nations Millennium Development Goals Summit in September 2010.
- Every Woman Every Child is an unprecedented global movement that mobilizes and intensifies international and national action by governments, the private sector, and civil society to address the major health challenges facing women, children, and adolescents around the world.

19. BILATERAL ISSUES

Intellectual Property Cooperation

- Ministry of Commerce and Industry has signed a Memorandum of Understanding (MoU) for Intellectual Property (IP) Cooperation with Denmark.
- The MoU aims at increasing IP co-operation between the two countries by way of, exchange of information and best practices on processes for disposal of applications for patents, trademarks, industrial designs, and Geographical Indications, and cooperation in the field of protection of Traditional Knowledge.
- It will be a landmark step forward in India's journey towards becoming a major player in global innovation and further the objectives of the National Intellectual Property Rights Policy, 2016.

20. INTERNATIONAL ISSUES AND EVENTS

PMNCH Accountability Breakfast

- The Partnership for Maternal, Newborn and Child Health (PMNCH) is a global health partnership founded in 2005.
- It is hosted at the World Health Organization in Geneva, Switzerland which joins the maternal, newborn and child health (MNCH) communities into an alliance.
- The Accountability Breakfast aims to convert talk into action for the health and rights of women, children and adolescents.
- Recently Union Ministry for Health and Family Welfare participated in the PMNCH 'Accountability Breakfast' (an annual event) to discuss the issues of maternal and child health.
- The event was co-hosted by the White Ribbon Alliance (WRA) and Every Woman Every Child (EWEC).

21. ECONOMY

Appointment of RBI deputy Governor

- The Reserve Bank's affairs are governed by a Central Board of Directors (CBD).
- Members of the board are appointed by the Government of India in accordance with Section 8 of the Reserve Bank of India Act.
- The CBD as the administrative apex body of the RBI contains two sets of directors; the official directors and non-official directors.
- The official directors comprised of the Governor and not more than four Deputy Governors who are appointed/nominated by the Central Government under the RBI Act. RBI Governors is thus appointed by the Government
- **Structure** - The central bank has four Deputy Governors of which two are appointed from outside – one a commercial banker and the other, an economist.
- The remaining two are promoted from within the RBI.
- **Selection** - The Financial Sector Regulatory Appointment Search Committee (FSRASC) is responsible for selecting the candidate.
- The RBI Act doesn't mention any specific qualification for the governor.
- **Term/ Tenure** - The Governor and Deputy Governors hold office for periods not exceeding five years.
- The term of the governor may be fixed by the government at the time of his appointment.
- Governor/Deputy Governors is eligible for reappointment or extension.

- **Appointments** - Previously Deputy Governors were appointed by a panel headed by RBI Governor.
- But now they are appointed based on recommendations of the Financial Sector Regulatory Appointment Search Committee (FSRASC) headed by Cabinet Secretary that also includes RBI Governor.
- Recently Appointments Committee of the Cabinet (ACC) has approved the appointment of RBI's senior-most Executive Director M. Rajeshwar Rao as RBI Deputy Governor.

2020 Nobel Prize for Economics

- The Royal Swedish Academy of Sciences awarded Sveriges Riksbank Prize in Economic Sciences, 2020.
- It has been awarded to Paul Milgrom and Robert Wilson (both from the USA) for their work on commercial auctions.
- Milgrom and Wilson improved the auction theory and invented new auction formats.
- The new auction formats are for auctioning off many interrelated objects simultaneously, on behalf of a seller motivated by broad societal benefit rather than maximal revenue.
- Their work will benefit sellers, buyers and taxpayers around the world.
- It will help in auctioning goods and services, such as radio frequencies, which are difficult to sell in traditional ways.
- Wilson developed the theory for auctions of objects with a common value a value which is uncertain beforehand but, in the end, is the same for everyone.
- Examples include the future value of radio frequencies or the volume of minerals in a particular area.
- **Winner's Curse** - Wilson's work showed why rational bidders tend to bid under their own estimate of the worth due to worries over the "winner's curse".
- The winner's curse is a tendency for the winning bid in an auction to exceed the intrinsic value or true worth of an item.
- Milgrom came up with a more general theory of auctions, by analysing bidding strategies in different auction forms.

Auction Theory

- Auction theory studies how auctions are designed, what rules govern them, how bidders behave and what outcomes are achieved.
- The oldest form of auction is the auction of a bankrupt person's property to pay off his creditors.
- This simple design of such an auction is the highest open bidder getting the property (or the commodity in question).
- Over time, the format of auctions has widened to include other commodities such as spectrum for radio or telecom use, carbon dioxide emission credits, electricity or the right to collect the local garbage etc.
- Different auction models are needed for depending upon the commodities, purpose of the auction and the entities conducting the auction.
- For e.g. Maximizing the profit may be the motive of a private auction while making a service affordable can be the purpose of auctioning a service by the government.
- Wrong auction design can lead to a second-hand market where companies trade among themselves with little revenue accruing to the government or little benefit to the public.
- Three key variables need to be understood while designing an auction are as follows
 1. Rules of Auction i.e. closed/sealed bids, single bids versus multiple bids.
 2. Commodity or service being put up for auction i.e. how does each bidder value an item.
 3. Uncertainty regarding which bidder has what information about the object, or even the value another bidder associates with the object.



Open Market Sale Scheme (OMSS)

- It refers to selling of food grains by Government / Government agencies at predetermined prices in the open market from time to time.
- It enhance the supply of grains especially during the lean season and thereby to moderate the general open market prices especially in the deficit regions.
- For transparency in operations, the Corporation has switched over to e- auction for sale under Open Market Sale Scheme (Domestic).
- The FCI conducts a weekly auction to conduct this scheme in the open market using the platform of commodity exchange NCDEX (National Commodity and Derivatives Exchange Limited).
- The State Governments/ Union Territory Administrations are also allowed to participate in the e-auction, if they require wheat and rice outside Targeted Public Distribution System (TPDS)
- The present form of OMSS comprises 3 schemes as under
 - (i) Sale of wheat to bulk consumers/private traders through e-auction.
 - (ii) Sale of wheat to bulk consumers/private traders through e-auction by dedicated movement.
 - (iii) Sale of Raw Rice Grade 'A' to bulk consumers/private traders through e-auction.
- Recently Government has decided that start date of procurement of pulses and oilseeds under the Price Support Scheme (PSS) may be decided by the respective States.
- The procurement shall continue for 90 days from the date of commencement of procurement.

Market Intervention Scheme

- Market Intervention Scheme (MIS) is an ad-hoc scheme under which are included horticultural commodities and other agricultural commodities which are perishable in nature.
- Market Intervention Scheme works in a similar fashion to Minimum Support Price based procurement mechanism for food grains.
- MIS covers commodities which are not covered under the minimum price support scheme.
- It aims to intervene the market to protect the growers of their commodities from making distress sale in the event of a bumper crop during the peak arrival period when the prices tend to fall below economic levels and cost of production.
- Government implements M.I.S. for a particular commodity on the request of a State Government concerned.
- Losses suffered are shared on 50:50 basis between Central Government and the State.

Options on GST Compensation

- Recently, the Centre has decided to borrow an estimated revenue shortfall of Rs. 1.1 lakh crore as loans to States to meet the Goods and Services Tax (GST) shortfall.
- In which Expenditure Department under the Finance Ministry allowed 20 States to raise ₹ 68,825 crore from the market.
- The two options are as follows
 1. **Borrowing** - Letting the States to borrow ₹ 1.1 lakh crore of the ₹ 2.35 lakh crore estimated shortfall in GST cess collections in 2020-21 without having to worry about principal and interest repayments.

The amount can be repaid after five years (of GST implementation) ending 2022 from cess collection.
 2. **Raising money** - States to raise ₹ 2.35 lakh crore while bearing the interest costs (However it found no takers)
- A special window is being created to facilitate GST-related borrowings.
- While the present nods for additional borrowing pertain to the additional borrowing flexibility of 0.5% of the Gross State Domestic Product (GSDP) that had been offered to States who opted for the first option for GST compensation.



- Under the terms of Option-1, States are also entitled to get unconditional permission to borrow the final instalment of 0.50% of GSDP out of the 2% additional borrowings permitted by the Government of India, under Atmanirbhar Abhiyaan.
- The GST Compensation Act, 2017 guaranteed states that they would be compensated for any loss of revenue in the first five years of GST implementation, until 2022, using a cess levied on sin and luxury goods.

Framework for Regulatory Sandbox

- The International Financial Services Centres Authority (IFSCA) has introduced a Framework for Regulatory Sandbox to tap into innovative FinTech solutions.
- The Regulatory Sandbox shall operate within the IFSC located at GIFT City.
- Under this Sandbox framework, entities operating in the capital market, banking, and insurance and financial services space shall be granted facilities to experiment with innovative FinTech solutions.
- Under the Sandbox experiments can be carried out in a live environment with a limited set of real customers for a limited time frame.
- These features shall be fortified with necessary safeguards for investor protection and risk mitigation.
- As an additional steps towards creating an innovation-centric ecosystem in the IFSC, IFSCA has proposed the creation of an "Innovation Sandbox"
- The Innovation Sandbox will be managed and facilitated by the Market Infrastructure Institutions (MIIs) operating within the IFSC.

IFSCA

- Union government has established International Financial Services Centres Authority to regulate all financial services in International Financial Services Centres (IFSCs).
- IFSCA has an objective to develop a world class FinTech hub at the IFSC located at GIFT City in Gandhinagar (Gujarat, India).
- The IFSCA will consist of nine members, appointed by the central government.
 1. This Include Chairperson, a member each from the RBI, SEBI, the Insurance Regulatory and Development Authority of India (IRDAI), and the Pension Fund Regulatory and Development Authority (PFRDA)
 2. Two members from the Ministry of Finance.
 3. Two other members will be appointed on the recommendation of a Selection Committee.
- All members of the IFSC Authority will have a term of three years, subject to reappointment
- IFSCA's 'FinTech' initiatives includes financial

Consumer Price Index-Industrial Workers (CPI-IW)

- The CPI-IW is mainly used for determining dearness allowance (DA) paid to central/state government employees and workers in the industrial sectors besides measuring inflation in retail prices, fixation and revision of minimum wages in scheduled employments.
- CPI-IW is compiled and maintained by the Labour Bureau, an attached office of the Ministry of Labour & Employment.
- Recently, the Ministry of Labour and Employment released the new series of Consumer Price Index for Industrial Worker (CPI-IW) with base year 2016.
- The new series of CPI-IW with base 2016 has replaced the existing series with base 2001.
- Earlier, the series were also revised from 1944 to 1949; 1949 to 1960; 1960 to 1982 and 1982 to 2001.
- The revision in base year will reflect changing consumption pattern of the working-class population over the years.
- Key changes



1. Following the change in base year, the index will give 39% weight to food and beverage consumption of workers now as against 46.2% earlier.
2. In contrast, spending on housing will get almost 17% weight as against 15.2% earlier.
3. Among consumption categories, a segment comprising spending on heads like education, health and transport by workers has been given a sizable jump in weight from 23% earlier to 30% now.

Compound Interest Waiver Scheme

- Recently, the Government of India has announced the scheme for the waiver of compound interest.
- This is based on compound interest that was payable by the borrower who had opted for loan moratorium between 1st March 2020, and 31st August 2020.
- Under this, the government will grant eligible borrowers ex-gratia payment of the difference between the compound interest and simple interest for the six-month moratorium period.
- Eligibility:
- The scheme shall be applicable for loans availed by
 1. Micro, Small and Medium Enterprises (MSMEs),
 2. Retail customers for education, housing, consumer durables, automobiles, provided a borrower has an aggregate outstanding loan of Rs. 2 crore or less, from all such loans.
- Credit card dues have also been included in the scheme's ambit.
- The loan interest waiver payment shall be admissible, irrespective of whether the borrower had availed the moratorium partly, fully, or not at all.
- However, this would only be permitted for loan accounts that had not been reported as Non-Performing Assets (NPAs) as on 29th February 2020.

22. ENVIRONMENT

Stockholm Convention on Persistent Organic Pollutants

- Union Cabinet has recently approved the ratification of seven chemicals listed under Stockholm Convention on Persistent Organic Pollutants (POPs).
- The Stockholm Convention is a global treaty to protect human health and the environment from POPs.
- The convention calls to ban nine of the dirty dozen chemicals (key POPs), limit the use of DDT to malaria control, and curtail inadvertent production of dioxins and furans.
- The convention listed twelve distinct chemicals in three categories:
 1. **Eight pesticides** - Aldrin, Chlordane, DDT, Dieldrin, Endrin, Heptachlor, Mirex and Toxaphene.
 2. **Two industrial chemicals** - Poly chlorinated biphenyls and Hexachlorobenzene.
 3. **Two unintended by-products of many industrial processes** - Poly chlorinated dibenzo-p-dioxins and dibenzofurans. (Commonly referred to as dioxins and furans).
- The regulation inter alia prohibits the manufacture, trade, use, import and export of seven chemicals, namely:
 1. Chlordecone,
 2. Hexabromobiphenyl,
 3. Hexabromodiphenyl ether and Hepta Bromodiphenyl Ether (Commercial octa-BDE),
 4. Tetrabromodiphenyl ether and Pentabromodiphenyl ether (Commercial penta-BDE),
 5. Pentachlorobenzene,
 6. Hexabromocyclododecane, and
 7. Hexachlorobutadiene.

- The Cabinet further delegated its powers to ratify chemicals under the Stockholm Convention to Union Ministries of External Affairs (MEA) and Environment, Forest and Climate Change (MEFCC) in respect of POPs for streamlining the procedure.
- The ratification process would enable India to access the Global Environment Facility (GEF) financial resources.

Green Strategic Partnership

- India and the Kingdom of Denmark have launched the Green Strategic Partnership for delivering sustainable solutions to India.
- The Partnership will focus on expanding economic ties, green growth, and cooperation on global challenges such as climate change.
- Green growth is a term to describe a path of economic growth that uses natural resources in a sustainable manner.
- Highlights of the deal are as follows
 1. Danish companies with niche technologies and expertise have offered to help India in meeting its air pollution control targets, including in the key area of tackling the problem of burning crop stubble.
 2. Other key points under the partnership include dealing with the Covid-19 pandemic and cooperation in water efficiency and water loss.
 3. The creation of India-Denmark energy parks in areas with large numbers of Danish firms and an India-Denmark skill institute to train Indian manpower has been proposed.
 4. The Green Strategic Partnership will build on an existing Joint Commission for Cooperation and existing joint working groups.

Project Lion

- Project Lion was on 15th August, 2020, on the lines of Project Tiger and Project Elephant.
- The programme has been launched for the conservation of the Asiatic Lion, whose last remaining wild population is in Gujarat's Asiatic Lion Landscape (ALL).
- The Wildlife Institute of India, along with the Gujarat Forest Department, had created a Project Lion proposal.
- Under the proposal six new sites has identified for possible lion relocation in the future include:
 1. Madhav National Park, Madhya Pradesh
 2. Sitamata Wildlife Sanctuary, Rajasthan
 3. Mukundra Hills Tiger Reserve, Rajasthan
 4. Gandhi Sagar Wildlife Sanctuary, Madhya Pradesh
 5. Kumbhalgarh Wildlife Sanctuary, Rajasthan
 6. Jessore-Balaram Ambaji WLS and adjoining landscape, Gujarat
- The proposal seeks to create free ranging lion populations within Gujarat and in India to counter lack of genetic diversity within Asiatic lions.

Kuno-Palpur Wildlife Sanctuary

- Kuno National Park is a protected area in Madhya Pradesh that received the status of national park in 2018.
- The protected area was established in 1981 as a wildlife sanctuary.
- It is in the Khathiar-Gir dry deciduous forests ecoregion.
- Union government has chosen this place for translocating Asiatic Lions and re-introduction of African Cheetas.

Zombie Fires

- Zombie Fire is a fire from a previous growing season that can smoulder under the ground which is made up of carbon-rich peat.
- When the weather warms, the fire can reignite, these are also known as holdover fires.
- According to a new study, the fire regimes in the Arctic are changing rapidly, with 'zombie fires' becoming more frequent in addition to fires occurring in the once-frozen tundra.

- The fires in the Arctic spreading to areas which were formerly fire-resistant is a more worrying feature.
- The tundra is drying up and vegetation there like moss, grass, dwarf shrubs, etc. are starting to catch fire.
- In 2019 and 2020, burning occurred well above the Arctic Circle, a region not normally known to support large wildfires.
- Wildfires on permafrost in Siberia south of the Arctic are not uncommon.
- The reason for this anomaly is that temperatures in winter and spring were warmer than usual during 2019-20.
- Temperature in Siberia in 2020 had gone through the roof, with the region recording a severe heatwave.
- Nearly all of this year's fires inside the Arctic Circle occurred on continuous permafrost, with over half of these burning on ancient carbon-rich peat soils.

Arctic Fires

- The Arctic region has a cold body of water and permafrost, it naturally acts as a carbon sink.
- On average it absorbs 58 megatons of CO₂ a year in its cold water.
- Soils in areas of permafrost contain twice as much carbon as there is currently in the atmosphere.
- As the climate and permafrost soils have warmed, microbes have started to break down this organic carbon, which has been frozen and fixed in the permafrost.
- That has led to a rise in land emissions of CO₂ and methane.
- Also there will be less absorption of carbon by water with rising temperature.
- It will be a feedback loop, as peatlands release more carbon, global warming increases, which thaws more peat and causes more wildfires.
- Arctic fires will affect the global climate over the long term depending on what they burnt.
- That's because peatlands, unlike boreal forest, do not regrow quickly after a fire, so the carbon released is permanently lost to the atmosphere.

Yellow Dust

- Recently North Korean authorities have urged citizens to remain indoors to avoid contact with a mysterious cloud of 'yellow dust' blowing in from China.
- Yellow dust is actually sand from deserts in China and Mongolia that high speed surface winds carry into both North and South Korea during specific periods every year.
- The sand particles tend to mix with other toxic substances such as industrial pollutants, as a result of which the 'yellow dust' is known to cause a number of respiratory ailments.
- Usually, when the dust reaches unhealthy levels in the atmosphere, authorities urge people to remain indoors and limit physical activity, particularly heavy exercise and sport.
- Sometimes, when the concentration of yellow dust in the atmosphere crosses around 800 micrograms/cubic meter, schools are shut and outdoor events cancelled in the affected areas.

Two New Ramsar Sites

- Recently, Kabartal Wetland (Bihar) and Asan Conservation Reserve (Uttarakhand) have been designated as Ramsar sites.
- Earlier in 2020, India designated 10 more wetlands as a Ramsar site, taking the total number from 27 to 37.
- With 2 more inclusions, the total number of Ramsar sites in India is 39, the highest in South Asia.

Kabartal Wetland

- It is known as Kanwar Jheel, it covers 2,620 hectares of the Indo-Gangetic plains in the Begusarai district of Bihar.

- It acts as a vital flood buffer for the region besides providing livelihood opportunities to local communities.
- It is also a valuable site for fish biodiversity with over 50 species documented.
- It is an important stopover along the Central Asian Flyway, with 58 migratory waterbirds using it to rest and refuel.
- Five critically endangered species inhabit the site, including three vultures – the red-headed vulture (*Sarcogyps calvus*), white-rumped vulture (*Gyps bengalensis*) and Indian vulture (*Gyps indicus*) – and two waterbirds, the sociable lapwing (*Vanellus gregarius*) and Baer's pochard (*Aythya baeri*).

Asan Conservation Reserve

- ACR is a 444-hectare stretch of the Asan River running down to its confluence with the Yamuna River in Dehradun district of Uttarakhand.
- It is Uttarakhand's first Ramsar Site.
- The damming of the River by the Asan Barrage in 1967 resulted in siltation above the dam wall, which helped to create some of the Site's bird-friendly habitats.
- These habitats support 330 species of birds including the critically endangered red-headed vulture (*Sarcogyps calvus*), white-rumped vulture (*Gyps bengalensis*) and Baer's pochard (*Aythya baeri*).
- Other non-avian species present include 49 fish species, one of these being the endangered *Putitora mahseer* (*Tor putitora*).

Delhi's Air Quality Index

- Air quality in the national capital turned 'poor' for the first time this season October 7, 2020, according to Central Pollution Control Board (CPCB).
- The Air Quality Index (AQI) in Delhi was 215 October 7, according to CPCB, It is expected to deteriorate further.
- The reasons for deteriorating air quality are as follows
 1. Dip in temperature,
 2. Calm surface winds,
 3. Steady increase in farm fires in Punjab and Haryana.

Characteristics of AQI

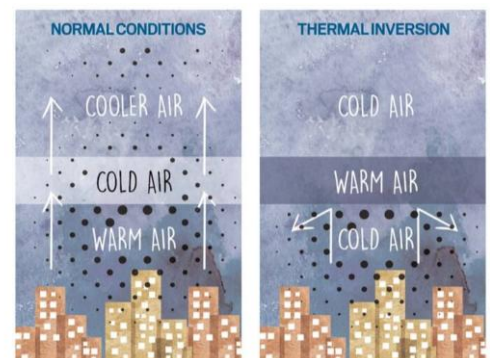
- Classification of an AQI between 0-500 are as follows
 1. 0-50 is considered 'good'
 2. 51-100 'satisfactory'
 3. 101-200 'moderate'.
 4. 201-300 'poor'.
 5. 301-400 'very poor'.
 6. 401-500 'severe'.
- An AQI above 500 falls in 'severe-plus or emergency' category.

Factors influencing Delhi's Air Pollution

- Air pollution in Delhi and the whole of the Indo Gangetic plains is a complex phenomenon that is dependent on a variety of factors.
- The first and foremost is the input of pollutants, followed by weather and local conditions.
- The other factors of air pollution in NCR are as follows

1) Thermal Inversion

- 2) **Wind speed** - High wind speeds are highly effective at dispersing pollutants but winters bring dip in wind speeds as compared to summers.
- 3) **Stubble burning** 12-26% of all particulate matter in Delhi is of bio-mass burning.



Dip in temperature

When the temperature dips, it lowers the inversion height, which is the layer beyond which pollutants cannot disperse into the upper layer of the atmosphere. The concentration of pollutants in the air increases when this happens

Blue flag beaches

- The Blue Flag Programme for beaches and marinas is run by the international, non-governmental, non-profit organisation FEE (the Foundation for Environmental Education).

- FEE (the Foundation for Environmental Education) was established in France in 1985.
- Blue Flag beaches are considered the cleanest beaches of the world.
- In order to qualify for the Blue Flag, a series of stringent environmental, educational, safety, and accessibility criteria must be met and maintained.
- Union environment minister announced 8 beaches of India have been awarded the “BLUE FLAG”.
- The eight beaches are:
 1. Shivrajpur in Gujarat,
 2. Ghoghla in Daman & Diu,
 3. Kasarkod and Padubidri beach in Karnataka,
 4. Kappad in Kerala,
 5. Rushikonda in Andhra Pradesh,
 6. Golden beach of Odisha and
 7. Radhanagar beach in Andaman and Nicobar.
- India is also the first country in “Asia-Pacific” region which has achieved this feat in just about 2 years’ time.
- Japan, South Korea and UAE are the only other Asian nations who have been conferred with a couple of Blue Flag beaches, however, in a time frame of about 5 to 6 years.
- India is now in the league of 50 “BLUE FLAG” countries.

BEAMS

- On the lines of Blue Flag certification, Recently India has also launched its own eco-label BEAMS.
- BEAMS (Beach Environment & Aesthetics Management Services) is launched under ICZM (Integrated Coastal Zone Management) project.
- This is launched by the Society of Integrated Coastal Management (SICOM) and the Union Ministry of Environment, Forest and Climate Change (MoEFCC).
- The objectives of BEAMS program are as follows:
 1. Abate pollution in coastal waters,
 2. Promote sustainable development of beach facilities,
 3. Protect & conserve coastal ecosystems & natural resources,
 4. Strive and maintain high standards of cleanliness,
 5. Hygiene & safety for beachgoers in accordance with coastal environment & regulations.

Partnership for Action on Green Economy (PAGE)

- The Partnership for Action on Green Economy (PAGE) was launched in 2013 as a response to the call at Rio+20.
- It aims to support those countries wishing to embark on greener and more inclusive growth trajectories.
- PAGE seeks to put sustainability at the heart of economic policies and practices to advance the 2030 Agenda for Sustainable Development.
- PAGE brings together five UN agencies
 1. UN Environment,
 2. International Labour Organization,
 3. UN Development Programme,
 4. UN Industrial Development Organization,
 5. UN Institute for Training and Research



- PAGE represents a mechanism to coordinate UN action on green economy.
- It also aims to assist countries in achieving and monitoring the emerging Sustainable Development Goals, especially SDG 8: “Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all.”

Human Emissions of Nitrous Oxide

- According to recent findings Human emissions of nitrous oxide (N₂O) increased by 30 per cent between 1980 and 2016.
- Its global concentration levels increased from 270 parts per billion (ppb) in 1750 to 331 ppb in 2018, a jump of 20 per cent.
- The growth has been the quickest in the past five decades because of human emissions.
- It has also found that a major proportion of the N₂O emissions in the last four decades came from the agricultural sector, mainly because of the use nitrogen-based fertilisers.
- Most N₂O emissions have come from emerging countries like India, China and Brazil.
- The increase in its emissions means that the climatic burden on the atmosphere is increasing from non-carbon sources as well, while the major focus of global climate change negotiations is currently centred on carbon its emissions and mitigation.

Nitrous Oxide (N₂O)

- Nitrous oxide is a dangerous gas for the sustainable existence of humans on Earth.
- It has the third-highest concentration (CO₂ and Methane are other two gases) in our atmosphere among greenhouse gases responsible for global warming.
- N₂O can live in the atmosphere for up to 125 years.
- N₂O is also the only remaining threat to the ozone layer, for it accumulates in the atmosphere over a long period of time, just like CO₂.

Displacement of Population from Tiger Habitats

- According to recent report total 18,493 families in 215 villages across Protected Areas (PA) in India have been displaced in the 48 years since the inception of Project Tiger.
- PAs comprise wildlife sanctuaries, national parks and conservation reserves.
- Project Tiger is the Union government’s flagship scheme for tiger conservation.
- The displacements, according to the RTI response, happened from the core areas (also known as critical tiger habitats) created under the Wildlife Protection Act (WLPA), 1972.
- This loss in population led to the creation of the First Tiger Task Force in 1972.
- The task force talked about the creation of “involute spaces”, which are areas of wilderness undisturbed by humans (mostly forest dwellers).
- Although the WLPA created the legal framework for settling rights in PAs, there was no legislative or policy framework to govern resettlement from core areas of national parks.
- The mechanism, however, was set in place only in the 2006 amendment of the WLPA on the basis of the Second Tiger Task Force report of 2005.
- The amendment, for the first time, brought the idea of “voluntary relocation” within the purview of law.

Critical Tiger Habitats

- The tiger reserves are constituted on a core/buffer strategy.
- The core areas have the legal status of a national park or a sanctuary, whereas the buffer or peripheral areas are a mix of forest and non-forest land, managed as a multiple use area.
- Buffer area is the area peripheral to the critical tiger habitat or core area providing supplementary habitat for dispersing tigers, besides offering scope for co-existence of human activity.
- The limits of the buffer/ peripheral areas are determined on the basis of scientific and objective criteria in consultation with the Gram Sabha and an Expert Committee constituted for the purpose.



- CTH's are identified under the wildlife protection Act (WLPA), 1972.
- It is notified by state government in consultation with expert committee.

Judgement on Elephant Corridors

- Elephant corridors allow elephants to continue their nomadic mode of survival, despite shrinking forest cover, by facilitating travel between distinct forest habitats.
- These corridors play a crucial role in sustaining wildlife by reducing the impact of habitat isolation.
- The Supreme Court recently upheld the Tamil Nadu government's authority to notify an 'elephant corridor' and protect the migratory path of the animals through the Nilgiri biosphere reserve.
- Nilgiri biosphere reserve is the largest protected forest area in India, spanning across Tamil Nadu, Karnataka and Kerala.
- SC's judgement said its State's duty to protect a "keystone species" like elephants, which are immensely important to the environment.
- The corridor is situated in the ecologically fragile Sigur plateau, which connects the Western and the Eastern Ghats and sustains elephant populations and their genetic diversity.
- It has the Nilgiri hills on its south-western side and the Moyar river valley on its north-eastern side.
- The elephants cross the plateau in search of food and water depending on the monsoon.

High Court's stand on Elephant Corridor

- In 2011, the High Court had held that the government was authorised by the Centre's 'Project Elephant' to earmark the corridor since there was no impediment in the Wildlife Protection Act.
- It had held that the State government's action to identify the corridor was in complete obligation to its duties under Article 51-A(g) of the Constitution.
- It said it was the duty of every citizen to protect and improve the natural environment, including wildlife.

Ban on Import of Air Conditioner with Refrigerants

- Recently Union government has banned imports of air conditioners with refrigerants.
- This decision is taken in view to promote domestic manufacturing and cut imports of non-essential items.
- Air conditioners, have been singled out by PM as an example of a segment where self-reliance was required.
- In July, the government imposed restrictions on the imports of various colour TV sets as well.
- Non-essential electronic goods have been under the purview of the Ministry of Commerce and Industry since the government decided to push for self-reliance in various sectors this year.
- Products and financial services across the spectrum of banking, insurance, securities and fund management.

SPECIES IN NEWS

Chinese Pink Dolphins

- Indo-Pacific humpback dolphin is a species of humpback dolphin inhabiting coastal waters of the eastern Indian and western Pacific Oceans.
- This species is often referred to as the Chinese white/pink dolphin in China (including Macao), Hong Kong, Taiwan and Singapore as a common name.
- IUCN Status of the animal is vulnerable.
- According to recent observations Chinese pink dolphins are making a comeback in the Pearl river estuary, one of the most heavily industrialised areas on Earth
- Pink dolphins have seen a decline in their numbers in the past 15 years by 70-80 per cent.
- The herb is used to help with painful or excessive bleeding during menstruation and premature labour.

Bio-Fortified varieties

- Union government has introduced bio-fortified varieties of eight crops on World Food Day.
- 17 varieties of these crops has been recently developed by utilizing the local landraces and farmer's varieties.
- These varieties will transform the normal Indian thali into nutri-thali.
- Few important crop varieties of the recent introduction are as follows
 1. High zinc rice of Assam
 2. Rice collected from Garo hills
 3. Finger millets from Dang district, Gujarat

Snow Leopard

- The Snow Leopard is also known as Ghost of the mountains.
- It acts as an indicator of the health of the mountain ecosystem in which they live, due to their position as the top predator in the food web.
- The Snow Leopard lives at high altitudes in the steep mountains of Central and Southern Asia, and in an extremely cold climate.
- They inhabit the higher Himalayan and trans-Himalayan landscape in the states/union territories of Jammu and Kashmir, Himachal Pradesh, Uttarakhand, Sikkim, and Arunachal Pradesh.
- India is a unique country to have a good presence of 5 big cats, including Snow Leopard.
- The other 4 are, Lion, Tiger, Common Leopard, and Clouded Leopard.
- Snow Leopard capital of the world is Hemis National Park, Ladakh.
- The animal is protected under the following conventions
 1. IUCN Red List- Vulnerable
 2. Convention on International Trade in Endangered Species (CITES)- Appendix I
 3. Convention on Migratory Species (CMS)- Appendix I
 4. Appendix I includes species threatened with extinction.
 5. Indian Wildlife (Protection) Act 1972- Schedule I

International Snow Leopard Day

- The day aims to raise awareness on conservation and protection of snow leopards.
- International Snow Leopard Day came into being on 23rd October, 2013, with the adoption of the Bishkek Declaration by 12 countries on the conservation of snow leopards.
- The 12 countries included, India, Nepal, Bhutan, China, Mongolia, Russia, Pakistan, Afghanistan, Kyrgyzstan, Kazakhstan, Tajikistan, and Uzbekistan.
- The Global Snow Leopard and Ecosystem Protection Programme (GSLEP) was also launched on the same day to address high-mountain development issues using conservation of the snow leopard as a flagship.

Pipeworts (Eriocaulon)

- Two new species of pipeworts was discovered in the Western Ghats of Maharashtra and Karnataka.
- Scientists from the Agharkar Research Institute in Pune have discovered it.
- Pipeworts (Eriocaulon) is a plant group which completes its life cycle within a small period during monsoon.
- It exhibits great diversity in the Western Ghats.
- The species from Maharashtra has been named Eriocaulon parvicephalum (due to its minute inflorescence size).
- The other reported from Kumta, Karnataka is called Eriocaulon karaavalense (named after Karaavali, Coastal Karnataka region).



23. SCIENCE AND TECHNOLOGY

SPACE

Super Habitable Planets

- Recently researchers have found out that there are at least 24 super habitable planets which may support life better than the Earth.
- For this finding, researchers have rummaged for the planets which are older, slightly warmer and wetter than the Earth.
- Moreover, all these planets are 100 light-years away from the Earth located outside the Solar System.
- Favorable factors in planets for hosting life
- **Age and Star the planet Orbits** - The scope of life on any planet significantly depends upon the star it orbits.
- **Types of Stars** - Scientists further classified these stars into G-stars which have lifespan less than that of 10 billion years and K-stars that are comparatively cooler, dwarf stars with lifespan of 20 to 70 billion years.
- **Mass of the Planet** – It is one of the promising factors to determine evidence regarding life-formation.
- The research concluded that the planet which is 10 percent larger than the Earth will be having greater area of habitable land with larger mass and would be able to easily retain its interior heating through radioactive decay.
- **Surface temperature of planets** – This play a crucial role in indicating any life-supporting evidences as it would decide the formation of water, moisture and clouds.

Telescopes used for finding earth like planets

- **James Web Telescope** – It is sometimes called JWST or Web, it is an orbiting infrared observatory that will complement and extend the discoveries of the Hubble Space Telescope, with longer wavelength coverage and greatly improved sensitivity.
- The longer wavelengths enable Webb to look much closer to the beginning of time and to hunt for the unobserved formation of the first galaxies, as well as to look inside dust clouds where stars and planetary systems are forming today.
- It will be the largest, most powerful and complex space telescope ever built and launched into space.
- **Large Ultraviolet Optical Infrared Surveyor, commonly known as LUVOIR** – It is a multi-wavelength space telescope concept being developed by NASA under the leadership of a Science and Technology Definition Team.
- It has the key science goal of characterizing a wide range of exoplanets, including those that might be habitable.
- LUVOIR can observe ultraviolet, visible, and near-infrared wavelengths of light.
- **PLANetary Transits and Oscillations of stars (PLATO)** is a space telescope under development by the European Space Agency for launch in 2026.
- The mission goals are
 1. To search for planetary transits across up to one million stars,
 2. To discover and characterize rocky extrasolar planets around yellow dwarf stars (like our sun), subgiant stars, and red dwarf stars.
- The emphasis of the mission is on earth-like planets in the habitable zone around sun-like stars where water can exist in liquid state.



Earth Observation Satellite EOS-01

- Earth observation satellites are the satellites equipped with remote sensing technology.
- Earth observation is the gathering of information about Earth's physical, chemical and biological systems.
- Many earth observation satellites have been employed on sun-synchronous orbit.
- EOS-01 is an earth observation satellite and is intended for applications in agriculture, forestry and disaster management support.
- India has scheduled the launch of earth observation satellite EOS-01 from Satish Dhawan Space Centre.
- ISRO's Polar Satellite Launch Vehicle (PSLV-C49) will launch the satellites, it will be PSLV's 51st Mission.
- Other earth observation satellites launched by ISRO are - RESOURCESAT- 2, 2A, CARTOSAT-1, 2, 2A, 2B, RISAT-1 and 2, OCEANSAT-2, Megha-Tropiques, SARAL and SCATSAT-1, INSAT-3DR, 3D.

DEFENCE

INS Sindhuvir

- India will be delivering a Kilo Class submarine INS Sindhuvir to Myanmar Navy as part of defence cooperation.
- Kilo class refers to diesel-electric attack submarines that were designed and built in the erstwhile Soviet Union.
- This will be the first submarine of Myanmar Navy.
- Myanmar is one of India's strategic neighbours and shares a 1,640-kilometer-long border with a number of north-eastern states including militancy-hit Nagaland and Manipur.

Integrated Theatre Command

- An integrated theatre command envisages a unified command of the three Services, under a single commander, for geographical theatres (areas) that are of strategic and security concern.
- The commander of such a force will be able to bear all resources at his disposal from the Army, the Indian Air Force, and the Navy with seamless efficacy.
- The integrated theatre commander will not be answerable to individual Services.
- Integration and jointness of the three forces will avoid duplication of resources.
- The resources available under each service will be available to other services too.
- The services will get to know one another better, strengthening cohesion in the defence establishment.
- The Shekatkar committee has recommended the creation of 3 integrated theatre commands at
 1. Northern for the China border,
 2. Western for the Pakistan border,
 3. Southern for the maritime role.
- As part of defence reforms after the appointment of the Chief of Defence Staff (CDS), the government is working on the formation of integrated theatre commands.

INS Kavaratti

- "INS Kavaratti" an indigenously built Anti-Submarine Warfare (ASW) stealth corvettes under Project 28 (Kamorta class) is scheduled to be commissioned into the Indian Navy.
- Kavaratti is indigenously designed by the Indian Navy's in-house organisation, Directorate of Naval Design(DND), and built by Garden Reach Shipbuilders & Engineers (GRSE), Kolkata
- Kavaratti has a state-of-the-art weapons and sensor suite capable of detecting and prosecuting submarines.



- In addition to its anti-submarine warfare capability, the ship also has a credible self defence capability and good endurance for long-range deployments.

Rudram-1 Missile

- DRDO has successfully flight tested indigenously developed Anti-Radiation Missile - Rudram-1.
- It is an air-to-surface missile, which is the first indigenous anti-radiation missile of the country.
- Once the missile locks on the target, it is capable of striking accurately even if the radiation source switches off in between.
- Rudram has been developed for the Indian Air Force - IAF's requirement to enhance its Suppression of Enemy Air Defence (SEAD) capability.

Anti-Radiation Missiles

- ARM's are designed to detect, track and neutralize the adversary's radar, communication assets and other radio frequency sources, which are generally part of their air defence systems.
- These can locate and target any radiation emitting source.
- These can play a key role in neutralizing any jamming platforms of the enemy or take out radar stations thereby clearing a path for own fighters to carry out an offensive and also prevent own systems from being jammed.
- They uses 'Passive homing head' for Guidance, It is a system that can detect, classify and engage targets (radio frequency sources in this case) over a wide band of frequencies as programmed.

Secure Application for Internet

- Indian Army has launched a messaging app called Secure Application for Internet (SAI).
- It will provide secure voice, text and video calling services to its soldiers.
- The application supports end-to-end secure voice, text and video calling services for Android platform over internet.
- SAI will be utilised pan Army to facilitate secure messaging within the service.
- SAI scores over on security features with local in-house servers and coding which can be tweaked as per requirements.
- The model (of SAI) is similar to commercially available messaging applications like WhatsApp, Telegram, SAMVAD and GIMS and utilises end-to-end encryption messaging protocol.

HEALTH

Soil-Transmitted Helminthiasis (STH)

- Soil-Transmitted Helminthiasis (STH), also known as parasitic intestinal worm infection.
- It is known to have detrimental effects on children's physical growth and well-being and can cause anaemia and under-nutrition.
- As per WHO Report on STH published in 2012, in India there were an estimated 64% children in the age group (1-14 years) at risk of STH.
- The National Centre for Disease Control (NCDC) completed the baseline STH mapping across the country by the end of 2016.
- The data showed varied prevalence ranging from 12.5 % in Madhya Pradesh to 85% in Tamil Nadu.
- Regular deworming as advised by the World Health Organization eliminates worm infestation among children and adolescents living in areas with high STH burden.

- According to recent reports 14 States have shown reduction in the Soil-Transmitted Helminthiases (STH) and 9 states have shown substantial reduction in STH follow up prevalence survey.

Tubarial Salivary Glands

- Researchers at the Netherlands Cancer Institute have identified a set of salivary glands deep in the upper part of the throat.
- The gland is named as “Tubarial Salivary Glands”.
- The new organ was discovered while scientists were studying prostate cancer cells using PSMA PET-CT technology.
- The discovery may be important for cancer treatment.
- The newly discovered glands are about 1.5 inches (3.9 centimeters) in length on average and are located over a piece of cartilage called the torus tubarius.
- The glands probably lubricate and moisten the upper throat behind the nose and mouth.
- So far, this nasopharynx region behind the nose was not thought to host anything but microscopic, diffuse, salivary glands.
- Until now, there were three known large salivary glands in humans:
 1. Under the tongue,
 2. Under the jaw and back of the jaw,
 3. Behind the cheek.



Saviour Sibling Experiment

- Thalassaemia is a disorder where the haemoglobin count is low in blood and such persons require frequent blood transfusions.
- Thalassaemia major is the most severe form of beta thalassaemia.
- It develops when beta globin genes are missing.
- The symptoms of thalassaemia major generally appear before a child's second birthday.
- The severe anaemia related to this condition can be life-threatening.
- The only way to save a patient with Thalassaemia major is through a bone marrow transplant, from a human leukocyte antigen HLA-identical donor.
- India recently carried out a ‘saviour sibling’ experiment, in which baby’s bone marrow was used to save another child.
- A one-year-old sibling has saved her brother’s life by donating her bone marrow.

Trans Fat Free India

- Trans fats, or trans-fatty acids, are a form of unsaturated fat.
- They come in both natural and artificial forms.
- Natural, or ruminant, Trans fats occur in the meat and dairy from ruminant animals, such as cattle, sheep, and goats.
- They form naturally when bacteria in these animals’ stomachs digest grass.
- However, artificial Trans fats otherwise known as industrial Trans fats or partially hydrogenated fats are hazardous to your health.
- These fats occur when vegetable oils are chemically altered to stay solid at room temperature, which gives them a much longer shelf life.



- Artificial Trans fats may increase your risk of heart disease.
- In 2018 the World Health Organization launched a plan to eliminate trans-fat from the global food supply.
- Recently union government proposed to make India Trans Fat free by 2022, a year ahead of target set by World Health Organization.

OTHERS

Super Conductor in Room Temperature

- Recently, researchers have created a material that is superconducting at room temperature.
- A mixture of carbon, hydrogen and sulphur was put in a microscopic niche carved for this experiment.
- However, it only works at a pressure of 267 Gigapascals (GPa), which is equivalent to about three-quarters of pressure at the centre of Earth (360 GPa).
- As the experimental temperature was lowered, resistance to a current passed through the material dropped to a vanishingly small value below the critical temperature (T_c).
- The transition of the sample to become superconductive occurred the best at transition temperature of around 15°C at 267 GPa.

Diamagnetism

- It is a very weak form of magnetism that is induced by a change in the orbital motion of electrons due to an applied magnetic field.
- This magnetism is non-permanent and persists only in the presence of an external field.
- The magnitude of the induced magnetic moment is very small, and its direction is opposite to that of the applied field.

Meissner Effect

- When a material makes the transition from the normal to the superconducting state, it actively excludes magnetic fields from its interior and this is called the Meissner effect.
- This constraint to zero magnetic fields inside a superconductor is distinct from the perfect diamagnetism which would arise from its zero electrical resistance.

24. INDEX AND REPORT

Human Cost of Disasters Report

- United Nations has released the Human Cost of Disasters 2000-2019 Report.
- Highlights of the report
 1. Climate change is largely to blame for a near doubling of natural disasters in the past 20 years.
 2. 7,348 major disaster events had occurred between 2000 and 2019, claiming 1.23 lives, affecting 4.2 billion people and costing the global economy some \$2.97 trillion.
 3. The figure far outstrips the 4,212 major natural disasters recorded between 1980 and 1999.
 4. The sharp increase was largely attributable to a rise in climate-related disasters, including extreme weather events like floods, drought and storms.
 5. The report relied on statistics from the Emergency Events Database, which records all disasters that kill 10 or more people, affect 100 or more people or result in a state of emergency declaration.
 6. While a warming climate appeared to be driving the number and severity of such disasters, there had also been an increase in geophysical events like earthquakes and tsunamis that are not related to climate but are particularly deadly.



7. The deadliest single disaster in the past 20 years was the 2004 Indian Ocean tsunami, with 226,400 deaths, followed by the Haiti earthquake in 2010, which claimed some 222,000 lives.

India's Energy Needs Report

- According to recent findings on energy needs Less than 3% of India's energy needs met by hydro, solar, wind and nuclear sources
- More than 54%* of India's energy needs were met by coal production in FY19.
- Over 97%* of energy needs were served by fossil fuels: coal, crude oil, oil products and natural gas.
- Energy consumption includes electricity and transport.
- The calculations are done after converting all the energy sources into a solitary unit: a Tonne of Oil Equivalent.
- One tonne of oil equivalent is equal to the energy released by burning one tonne of crude oil (=11.63 megawatt-hours).

Sex Ratio at birth

- Recent Sample Registration System (SRS) reports show that sex ratio at birth in India, measured as the number of females per 1,000 males, declined marginally from 906 in 2011 to 899 in 2018.
- Biologically normal sex ratio at birth is 1,050 males to 1,000 females or 950 females to 1,000 males.
- There is considerable son preference in all states, except possibly in Kerala and Chhattisgarh.
- The UNFPA State of World Population 2020 estimated the sex ratio at birth in India as 910, lower than all the countries in the world except China.
- Other findings of are
 1. Total Fertility Rate (TFR) – In India the number of children a mother would have at the current pattern of fertility during her lifetime, as 2.2 in the year 2018.
 2. According to various findings Fertility is likely to continue to decline and it is estimated that replacement TFR of 2.1 would soon be, if not already, reached for India as a whole.
- But the most troubling statistics in the SRS report are for sex ratio at birth.

Global Wealth Report 2020

- Recently, Credit Suisse has released the Global Wealth Report 2020.
- The Credit Suisse Global Wealth Report provides the most comprehensive and up-to-date coverage of information on household wealth worldwide.
- Highlights of the report are
 1. In 2019, total global wealth rose by USD 36.3 trillion and wealth per adult reached USD 77,309, which is 8.5% more when compared to 2018.
 2. As a consequence, the world has been better placed to absorb any losses from Covid-19 during 2020.
 3. However, total household wealth dropped by USD 17.5 trillion between January and March 2020, a 4.4% decrease compared to the value at the end of 2019.
 4. Household wealth in India is dominated by property and other real assets, although financial assets have grown over time, now forming 22% of gross assets. (Stocks, bonds, bank deposits are some examples of financial assets)
 5. The average wealth of Indian adults rose marginally to USD 17,420 at end-June 2020, as against USD 17,300 as of December 2019, showing some growth despite the Covid pandemic and lockdowns.
 6. Wealth inequality remains quite high in India.
 7. There is considerable poverty reflected in the fact that 73% of the adult population had wealth below USD 10,000 at the end of 2019.
 8. Between January and April 2020, unemployment rates approximately tripled in India to 24%.



State of Global Air 2020 (SoGA 2020)

- Recently, a global study, State of Global Air 2020 (SoGA 2020) has been released by the Health Effects Institute (HEI).
- It highlights that air pollution is the largest risk factor for death among all health risks and it is the first-ever comprehensive analysis of air pollution's global impact on new-borns.
- HEI is an independent, non-profit research institute funded jointly by the USA's Environmental Protection Agency and others.
- Highlights of the report are as follows
 1. India, Bangladesh, Pakistan and Nepal are among the top ten countries with the highest PM_{2.5} (particulate matter) exposures in 2019 and all of these countries experienced increases in outdoor PM_{2.5} levels between 2010 and 2019.
 2. India is also among the top ten countries with highest ozone (O₃) exposure in 2019.
 3. Also, among the 20 most populous countries, India recorded the highest increase (17%) in O₃ concentrations in the past ten years.
 4. Long-term exposure to outdoor and household (indoor) air pollution contributed to over 1.67 million annual deaths from stroke, heart attack, diabetes, lung cancer, chronic lung diseases, and neonatal diseases, in India in 2019.
 5. Although the link between air pollution and Covid-19 is not completely established, there is clear evidence linking air pollution and increased heart and lung disease.
 6. Average pollution levels in India are declining over the past three years but these have been marginal, particularly in the Indo-Gangetic plains which see extremely high PM pollution especially during winter.
 7. After a decline in pollution due to the nationwide lockdowns after March, pollution levels are again rising and air quality is dipping to the 'very poor' category in several cities.

Survey on Migration

- Labour Bureau under Union Labour and Employment Ministry is working on survey on migration.
- It will provide authentic estimates of the number of migrant workers in the country, along with an assessment of the issues being faced by them.
- The other surveys being carried out by the Labour Bureau are on
 - **Domestic workers** - The survey on domestic workers, who form about 3% of the workers in the country, would be a first of its kind and would help the government identify the problems faced by domestic workers in order to formulate policies for their benefit.
 - **Professional bodies** - The survey on professional bodies would help in assessing the employment and unemployment in various fields.

Poverty and Shared Prosperity 2020

- Poverty and Shared Prosperity Report is biennial report of the World Bank.
- It provides the latest and most accurate estimates on trends in global poverty and shared prosperity.
- According to the report "new poor" will be the following
 - a) Be more urban poor.
 - b) Be more engaged in informal services and manufacturing and less in agriculture.
 - c) Live in congested urban settings and work in the sectors most affected by lockdowns and mobility restrictions.
- Highlight estimates of the report are as follows
 1. The COVID-19 pandemic is estimated to push an additional 88 million to 115 million people into extreme poverty this year, with the total rising to as many as 150 million by 2021, depending on the severity of the economic contraction.

2. It mentions that Covid-19 can add around 27-40 million new poor in Sub-Saharan Africa and around 49-57 million in South Asia region.
3. The pandemic and global recession may cause over 1.4% of the world's population to fall into extreme poverty.
4. Extreme poverty is defined as living on less than \$1.90 a day.
5. The World Bank measures poverty lines of \$3.20 and \$5.50, and also a multidimensional spectrum that includes access to education and basic infrastructure.
6. Global extreme poverty rate is projected to rise by around 1.3% to 9.2% in 2020.
7. If the pandemic would not have been there, the poverty rate was expected to drop to 7.9% in 2020.

Data Governance Quality Index

- Data Governance Quality Index (DGQI) survey was conducted by Development Monitoring and Evaluation Office (DMEO), Niti Aayog.
- It aims to assess different Ministries/Departments' performance on the implementation of Central Sector Schemes (CS) and Centrally Sponsored Schemes (CSS).
- It also drives healthy competition among them and promote cooperative peer learning from best practices.
- Six major themes of DGQI are Data Generation, Data Quality, Use of Technology, Data Analysis, Use and Dissemination, Data Security and HR Capacity and Case Studies.
- Ministries/Departments were classified in six categories - Administrative, Strategic, Infrastructure, Social, Economic, Scientific.
- Recently Department of Fertilizers (Ministry of Chemicals and Fertilizers) has been ranked 3rd out of the 65 Ministries/Departments with a score 4.11 on a scale of 5 on Data Governance Quality Index (DGQI).
- It has been ranked 2nd amongst the 16 Economic Ministries/Departments.

Highlights of World Economic Outlook

- According to recent World Economic Outlook 2020, India's gross domestic product (GDP) will witness a contraction of over 10%.
- This is more than the double of 4.5% contraction projected in the April edition.
- Highlights of the report are as follows
 1. Global growth would contract by 4.4% in 2020 and bounce back to 5.2% in 2021.
 2. Indian economy, severely hit by the pandemic, is projected to contract by 10.3% in 2020.
 3. The spread of the Covid-19 and containment measures have severely disrupted supply and demand conditions in India.
 4. However, India is likely to bounce back with an 8.8% growth rate in 2021, thus regaining the position of the fastest-growing emerging economy, surpassing China's projected growth rate of 8.2%.

Confronting Carbon Inequality

- Confronting Carbon Inequality is a report released by Oxfam International and the Stockholm Environmental Institute (SEI).
- It highlights that a rich person contributes more to the climate crisis than a poor person.
- According to the report an Indian emitted only 1.97 tonnes of CO₂ (tCO₂) annually, while Americans and Canadians both emitted well over 16 tCO₂.
- The per capita CO₂ emissions of the richest 10% of Indians were about 4.4 tons in 2018, in comparison to the per capita emissions of the richest 10% Americans were 52.4 tons, almost 12 times that of the richest Indians.
- Highlights of the report are as follows

1. **Cumulative Emissions** - The richest 1% of humanity accounted for 15% of cumulative emissions, while the poorest 50% accounted for only 7%.
2. **Depletion of Global Carbon Budget** - The richest 10% depleted the global carbon budget by 31% and the poorest 50% used only 4% of the carbon budget.
A carbon budget is a cumulative amount of carbon dioxide (CO₂) emissions permitted over a period of time to keep within a certain temperature threshold.
3. **Emissions Growth** - While the richest 10% accounted for 46% of emissions growth, the poorest 50% accounted for only 6%.
About half of the emissions of the richest 10% are associated with North America and the European Union (EU).

Annual Status of Education Report

- Recently, the Annual State of Education Report (ASER) survey has been.
- It is a nationwide survey of rural education and learning outcomes in terms of reading and arithmetic skills that has been conducted by the NGO Pratham for the last 15 years.
- It uses Census 2011 as the sampling frame and continues to be an important national source of information about children's foundational skills across the country.
- It provides a glimpse into the levels of learning loss that students in rural India are suffering, with varying levels of access to technology, school and family resources resulting in a digital divide in education.
- Highlights of the report are
 1. ASER 2020 is the first ever phone-based ASER survey and it was conducted in September 2020, the sixth month of national school closures.
 2. Enrolments - 5.5% of rural children are not currently enrolled for the 2020 school year, up from 4% in 2018.
 3. This difference is the sharpest among the youngest children (6 to 10) where 5.3% of rural children had not yet enrolled in school in 2020, in comparison to just 1.8% in 2018.
 4. The proportion of boys enrolled in government schools has risen from 62.8% in 2018 to 66.4% in 2020, while for girls, that number has gone up from 70% to 73% in the corresponding period.
 5. Patterns show a slight shift toward government schools, with private schools seeing a drop in enrolment in all age groups.
 6. Among enrolled children, 61.8% live in families that own at least one smartphone which was merely 36.5% in 2018.
 7. About 11% of families bought a new phone after the lockdown, of which 80% were smartphones.
 8. WhatsApp is by far the most popular mode of transmitting learning materials to students, with 75% of students receiving input via this app.

Periodic Labour Force Survey

- Recently, the National Statistical Office (NSO) released the quarterly Periodic Labour Force Survey (PLFS) for October-December 2019.
- This dataset differs from the Annual Report of Periodic Labour Force Survey, which covers both rural and urban areas.
- However, unemployment data for urban areas is released quarterly.
- Highlights of the report are
 1. Unemployment Rate is eased in urban areas to 7.9% in October-December 2019 compared to 9.9% in October-December 2018.
 2. Female unemployment rate decreased to 9.8% in October-December 2019 compared to 12.3% in October-December 2018.

3. Male unemployment rate moderated to 7.3% in October-December 2019 from 9.2% in October-December 2018.
4. However, state-wise data showed that urban unemployment rate was higher than the national average in Uttar Pradesh, Uttarakhand, Telangana, Kerala, Madhya Pradesh, Jammu & Kashmir, Delhi and Andhra Pradesh.
5. Labour Force Participation Rate rose to 37.2% in October-December 2019 from 36.3% in October-December 2018.

Public Affairs Index

- The Public Affairs Centre has developed Public Affairs Index (PAI) as a unique statistical tool to evaluate the performance of governance in the States.
- It is largely based on secondary data and has been extracted from Union Government Ministries and Departments.
- According to the PAC, the governance performance is analysed in the context of sustainable development defined by three pillars of equity, growth and sustainability.
- It is a data driven platform to rank the 30 States of India from the lens of governance.
- Recently, the Public Affairs Centre (PAC) has released the Public Affairs Index (PAI)-202
- Key Highlights of Public Affairs Index-2020 are as follows
 1. Kerala was adjudged the best-governed state in the country while Uttar Pradesh ended at the bottom in the large states category.
 2. The four southern states, namely, Kerala (1.388), Tamil Nadu (0.912), Andhra Pradesh (0.531), and Karnataka (0.468) stood in the first four ranks in the large state category in terms of governance.
 3. Uttar Pradesh, Odisha and Bihar were at the bottom of the ranking, scoring negative points in the category i.e. -1.461, -1.201 and -1.158 points respectively.
 4. In the small state category, Goa ranked first with 1.745 points, followed by Meghalaya (0.797) and Himachal Pradesh (0.725).
 5. The worst performers who scored negative points are Manipur (-0.363), Delhi (-0.289) and Uttarakhand (-0.277).
 6. Chandigarh emerged the best governed union territory in the category of UTs with 1.05 PAI points, followed by Puducherry (0.52) and Lakshadweep (0.003).
 7. Dadar and Nagar Haveli (-0.69), Andaman, Jammu and Kashmir (-0.50) and Nicobar (-0.30) were the least performers.