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for

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2020

(14th December - 19th December)

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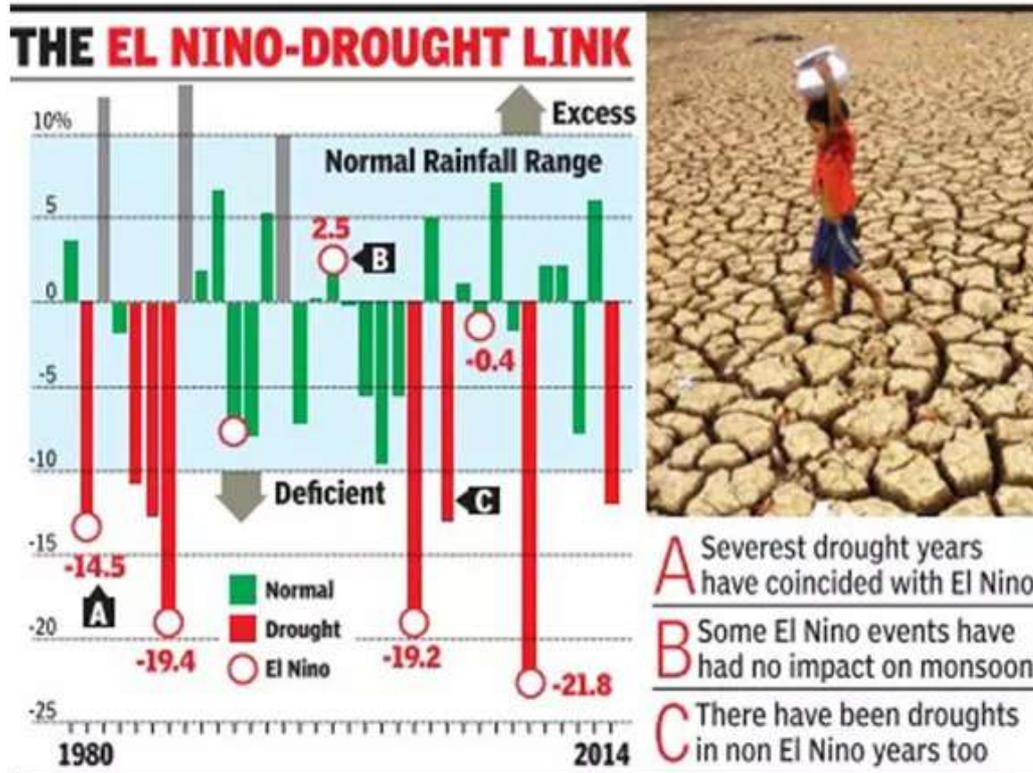


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1. Geography

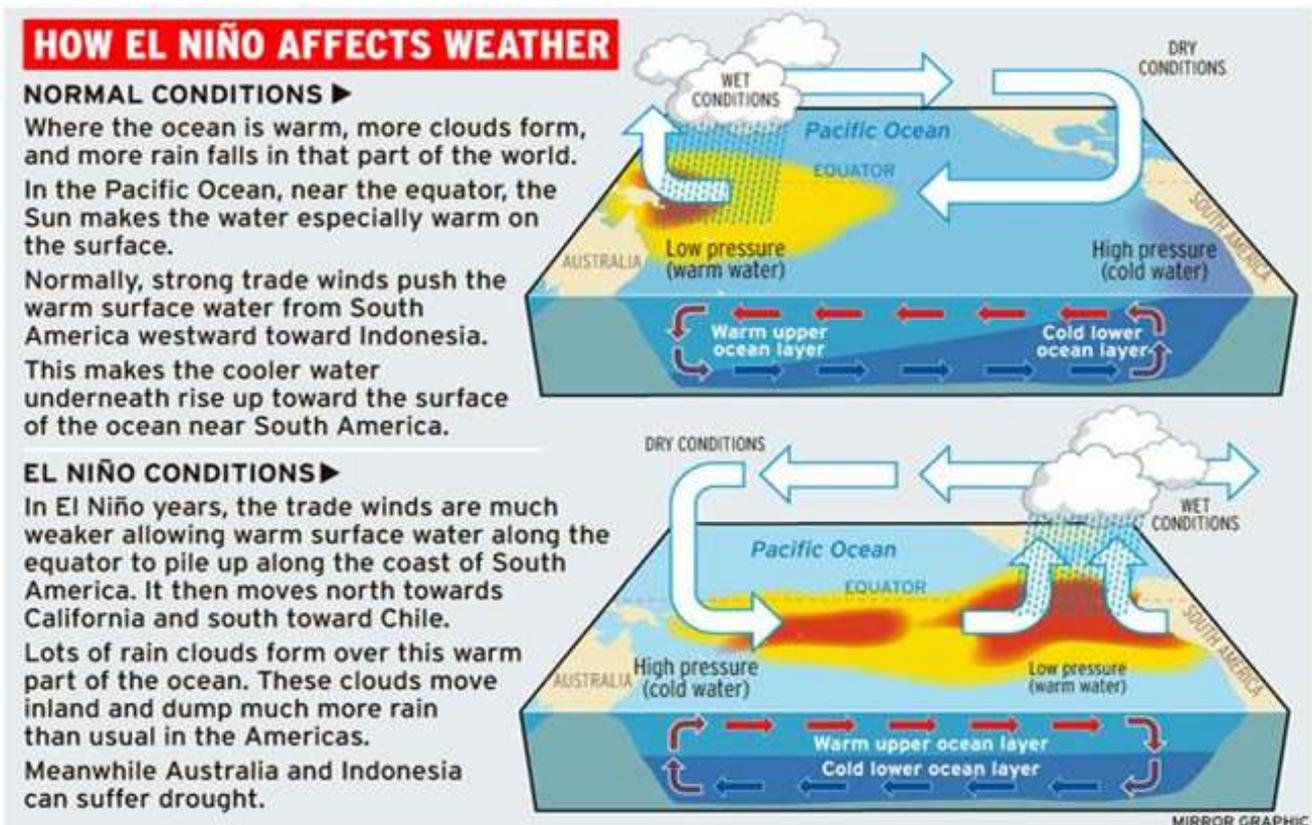
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1.1.El Nino alone not reason for droughts: IISc study



- Context: A new study carried out by researchers of the Indian Institute of Science's (IISc) Centre for Atmospheric and Oceanic Sciences (CAOS) has found that El Niño alone is not to be blamed for droughts in the Indian subcontinent.
- The study has found that nearly half of the droughts that occurred during the Indian summer monsoon season in the past century may have been driven by atmospheric disturbances from the North Atlantic region.
- 10 out of 23 droughts that India witnessed in the past century have occurred during years when El Niño was absent.
- These droughts may all have a different type of evolution than El Niño droughts, as well as a common cause, which is this mid latitude influence.
- The droughts that happen during an El Niño year follow a standard pattern. The rainfall deficit, departure from a long-term average sets in early around mid-June and becomes progressively worse.
- By mid-August, the deficit spreads across the country and there is no going back from a drought.
- The droughts during the non-El Niño years, when analyzed together, also seemed to follow a common pattern.
- First, there was a moderate slump in June. Then, during mid-July to mid-August the peak of the season, the monsoon, showed signs of recovery and the rainfall increased.

- Around the third week of August, there was a sudden steep decline in rainfall, which resulted in drought conditions
- It was observed that some droughts during monsoon season in India are due to unique North Atlantic disturbances.
- The monsoon season in India runs generally from June to September each year.
- Previous research has shown that El Niño events almost always lead to dry monsoon seasons, but not all dry seasons are due to El Niño events.
- In this new effort, the researchers sought to learn more about other events that might impact monsoon season rains. Their work involved obtaining and analyzing weather data for South Asia over the past 100 years.
- These disturbances, they also found, resulted in the development of currents that disturbed the factors that normally lead to the heavy rains typically associated with monsoon season in South Asia.
- They were not able to explain the nature of such disturbances, however, except to note that they involved winds from the upper atmosphere mixing with cyclonic circulation over the cold water of the North Atlantic.



1.2.Northern Lights

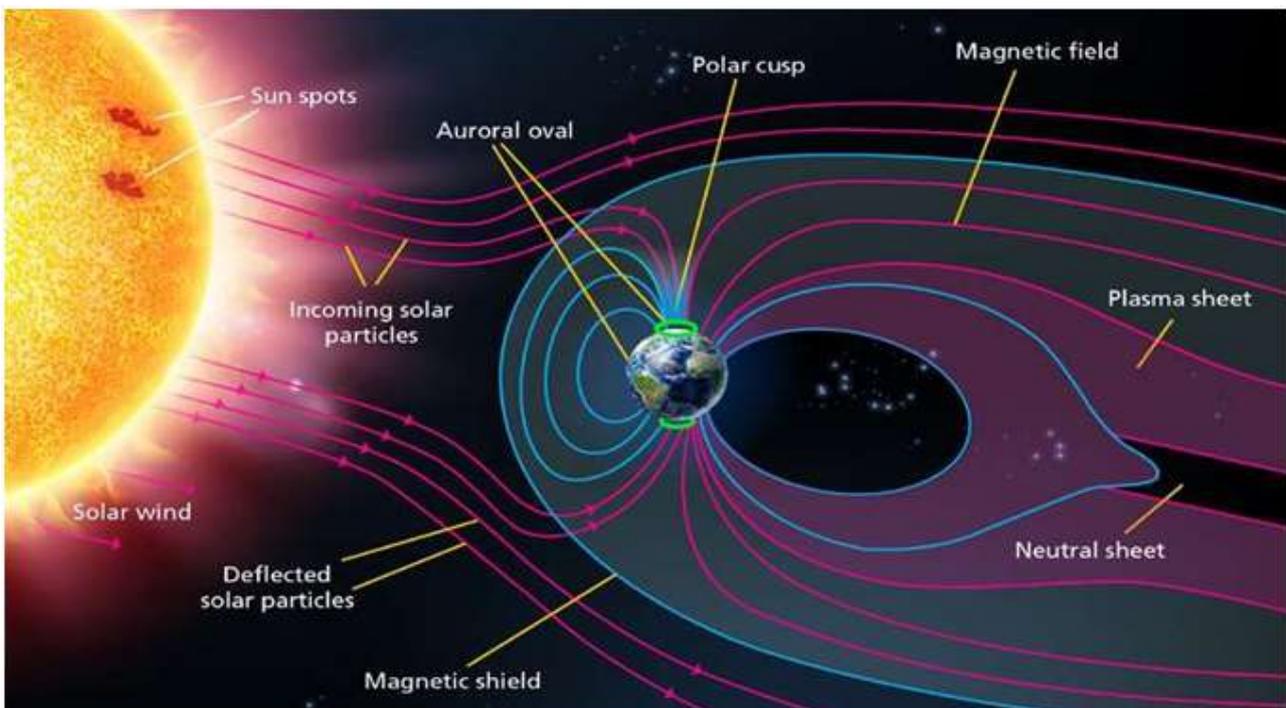
- Northern Lights, also known as Aurora Borealis, are usually witnessed far up in the polar regions or the high latitude regions of Europe, like in Norway.
- But they were also visible in northern parts of Illinois and Pennsylvania in the US.
- This happened due to a solar flare, which emerged from a Sunspot.

- The flare is accompanied by a Coronal Mass Ejection (CME) – a large bubble of radiation and particles emitted by the Sun that explodes into space at high speed.
- The Space Weather Prediction Center at the US National Oceanic and Atmospheric Administration (NOAA) said the electromagnetic storm could be growing to major status causing the Northern Lights to be visible in more number of areas than usual.



What causes an aurora?

- Auroras occur when charged particles ejected from the Sun's surface – called the solar wind – enter the Earth's atmosphere.
- While flowing toward Earth, the fast-moving solar wind carries with it the Sun's magnetic field, which disrupts the magnetosphere – the region of space around Earth in which the magnetic field of our planet is dominant.
- When the Sun's magnetic field approaches Earth, the protective magnetic field radiating from our planet's poles deflects the former, thus shielding life on Earth.



- However, as this happens, the protective fields couple together to form funnels, through which charged solar wind particles are able to stream down to the poles.
- At the north and south poles, the charged particles interact with different gases in the atmosphere, causing a display of light in the sky.
- This display, known as an aurora, is seen from the Earth's high latitude regions (called the auroral oval), and is active all year round.

- In the northern part of our globe, the polar lights are called aurora borealis or Northern Lights, and are seen from the US (Alaska), Canada, Iceland, Greenland, Norway, Sweden and Finland.
- In the south, they are called aurora australis or southern lights, and are visible from high latitudes in Antarctica, Chile, Argentina, New Zealand and Australia.
- Generally, the auroral oval is confined to the polar regions.

What are the examples of high solar activity?

- Solar activities include solar flares, solar energetic particles, high-speed solar wind and Coronal Mass Ejections (CME).
- These influence the space weather which originates from the Sun.
- The NOAA's Space Weather Prediction Center has forecasted a Level G3 or "strong" storm, making it possible for auroral displays to be visible in relatively lower latitudes, such as in the US cities of Chicago, Detroit, Boston and Seattle.
- This geomagnetic storm is ranked third on the five-point scale used to measure geomagnetic storms.
- As per the NOAA, a G3 storm can require voltage corrections to be made in power systems, and false alarms can be triggered on some protection devices.
- Large storms usually occur at the peak of the 11-year solar cycle, or during the three years after the peak.

Can solar flares or storms be dangerous?

- Solar flares can typically affect space-dependent operations like Global Positioning Systems (GPS), radio and satellite communications, besides hampering flight operations, power grids and space exploration programmes.

1.3. Mount Everest

- Context: The Foreign Ministers of Nepal and China jointly certified the elevation of Mount Everest at 8,848.86 metres above sea level – 86 cm higher than what was recognised since 1954.
- The common declaration meant that the two countries have shed their long-standing difference in opinion about the mountain's height – 29,017 feet (8,844 m) claimed by China and 29,028 ft (8,848 m) by Nepal. In feet, the new elevation is about 29,031 ft, or about 3 ft higher than Nepal's previous claim.
- No other mountain has perhaps been the subject of as much debate. Over the years, there have been debates on issues like whether it should be "rock height", or whether the snow cladding it, too, should be accounted for.

How and when was the earlier measurement of 8,848 m done?

- This was determined by the Survey of India in 1954, using instruments like theodolites and chains, with GPS still decades away.
- The elevation of 8,848 m came to be accepted in all references worldwide – except by China.
- Mount Everest rises from the border between Nepal and China.

- There was also a third estimate, even higher. In 1999, a US team put the elevation at 29,035 feet (nearly 8,850 m).
- This survey was sponsored by the National Geographic Society, US.
- The Society uses this measurement, while the rest of the world, except China, had accepted 8,848 m so far.

When was the new measurement done?

- Nepal's earthquake of April 2015, triggered a debate among scientists on whether it had affected the height of the mountain.
- The government subsequently declared that it would measure the mountain on its own, instead of continuing to follow the Survey of India findings of 1954.
- New Zealand, which shares a bond with Nepal over the mountain, provided technical assistance.
- In May 2019, the New Zealand government provided Nepal's Survey Department (NapiBibhag) with a Global Navigation Satellite, and trained technicians. Christopher Pearson, a scientist from University of Otago, travelled to Nepal on a special assignment.

How did China come to be part of it?

- China's measurements were done separately.
- The team of 120 (field workers and data analysts) was processing the data and computing results, which took four months, when the pandemic disrupted its work.
- The two sides subsequently signed a memorandum of understanding to jointly make public their results. The Chinese side conducted its measurements early this year.

1.4.India's New Maritime Command

- Context: The Vice Chief of Naval Staff (VCNS) is expected to hand over the study related to the formation of the Maritime Theatre Command (MTC) to the CDS shortly.

Background

- Indian Armed Forces released the Joint Doctrine in 2017 elaborating various Military objectives like preventing war through strategic and conventional deterrence across the full spectrum of military conflict, to defend the nation and its interests and sovereignty.
- Presently, the Army and the Air Force each have seven existing commands.
- The Indian navy is deployed under three area commands, each headed by a flag officer.
- Various inter-service commands and institutions such as the Strategic Forces Command, the Andaman and Nicobar Command and the Integrated Defense Staff (IDS) are already operational.
- The joint-services Strategic Forces Command has the operational responsibility to handle India's Nuclear arsenal.
- The agenda for the new Chief of Defense Staff (CDS) role is aimed at re-organisation India's existing single-service commands into only five joint commands with a focus on enhanced operational efficiency.

- The model proposed in the study is expected to be implemented in 2022, with no liabilities towards the creation of additional posts or ranks i.e. an Organisation structure to be culled out from the existing Command Structures of each of the services.
- Since the Indian Navy is the smaller than the other two services (Indian Army & Indian Air Force), it shall be first seeing the implementation of MTC, though now with larger assets under its belt.
- Earlier this year the CDS had announced his plans of merging the Western and Eastern Command and it was then called 'Peninsular Command', however, since then the name has been changed to the Maritime Theatre Command.
- The other two tri-services theatre commands, are also planned to be created in the next two years.
- The Commander-in-Chief (CINC) of MTC is to report to the Joint Chiefs of Staff Committee headed by the CDS.
- Now, the role of Navy Chief when the operational role has been re-aligned shall mainly be focused on 'Raise, Train and Sustain' the Naval assets.
- The Command Headquarter of MTC is planned to be at Karwar.
- This incidentally too was the earlier aim of Navy so as to decongest Mumbai harbour in the Western Naval Command (WNC) and evolve Karwar as the main WNC base.
- It is expected that staffing of the HQ personnel shall gradually be enhanced to meet the tri-services components to handle work in an efficient manner to achieve an operational Command and Control.

Will the implementation process of MTC be easy?

- No. The implementation of MTC surely shall not be a smooth sailing due to various reasons inherent in every military organisation world over.
- It is not a mere exercise of re-naming and re-designation of Roles and Responsibilities but the creation of a functional matrix targeted at achieving the highest military proficiency.
- The traditional Command structure had evolved from the warfare tactics of the past and was a time tested approach.
- Therefore, the re-structure process of Indian Armed forces has to be implemented very carefully since we have ongoing border hostility with China and Pakistan.
- Various vagaries of inter-services rivalries and lack of resources should be well addressed, at all times respecting the expertise of each of the service arms.
- But additionally, the technological framework for seamless flow of combat information exchange amongst the three service components under MTC shall be the essential factor to achieve the desired operational efficiency.
- Indian Navy is well placed to undertake these responsibilities due to being already technologically advance and possessing its own three-dimensional arms viz, aircraft, warships and submarines.

More about Theaterisation?

- There will be specific units of personnel from the three services – the Indian Army, Navy and Air Force. All will be under a common theatre commander. And, they will all fight as a cohesive unit, just like in the US and China.



- This Theaterisation aims at compiling all the resources of land forces, naval units and aviation assets under a single theatre commander for efficient availability of resources to meet the military objectives in today's hi-tech warfare.
- The restructuring shall have Northern, Eastern and Western theatre commands to directly address the hostile China and Pakistan.
- The Indian Army possess highly motivated manpower which holds a rich combat experience and operational expertise to operate in diverse terrains as per the varied geography at the border's to be protected.

1.5.Over 75% Districts are Hotspots Of Extreme Weather Events

- Context: Over 75 per cent districts in India are hotspots of extreme climate events such as cyclones, floods, droughts, heat and cold waves, according to a study released by the Council on Energy, Environment and Water (CEEW).
 - ✓ This is the first time that extreme weather event hotspots in the country have been mapped.
 - ✓ The frequency, intensity, and unpredictability of these extreme events have risen in recent decades – while India witnessed 250 extreme climate events in 35 years between 1970 and 2005, it recorded 310 such weather events in only 15 years since then, the study has pointed out.
 - ✓ The CEEW study found that in the last 50 years, the frequency of flood events increased almost eight times.
 - ✓ Events associated with floods such as landslides, heavy rainfall, hailstorms, thunderstorms, and cloudbursts increased by over 20 times.
 - ✓ The frequency of floods surged significantly in the last two decades, it was found.
- Between 1970 and 2004, three extreme flood events occurred per year on an average, but after 2005, the yearly average rose to 11.
- The annual average for districts affected until 2005 was 19, but after 2005, on average 55 districts were affected by floods each year.
- In 2019, India witnessed 16 extreme flood events, which affected 151 districts. The study found that over 9.7 crore people are currently exposed to extreme floods in India
- Six of India's eight most flood-prone districts in the last decade—Barpeta, Darrang, Dhemaji, Goalpara, Golaghat, Sivasagar—are in Assam.
- The current trend of catastrophic climate events results from a mere 0.6 degrees Celsius temperature rise in the last 100 years. India is already the fifth most vulnerable country globally in terms of extreme climate events, and it is all set to become the world's flood capital.
- The CEEW analysis indicates that while the number of rainy days during monsoon have decreased, single-day extreme rainfall events are increasing, leading to flooding.
- Until 2005, the number of districts affected by drought was six, but after 2005 this figure rose to 79.

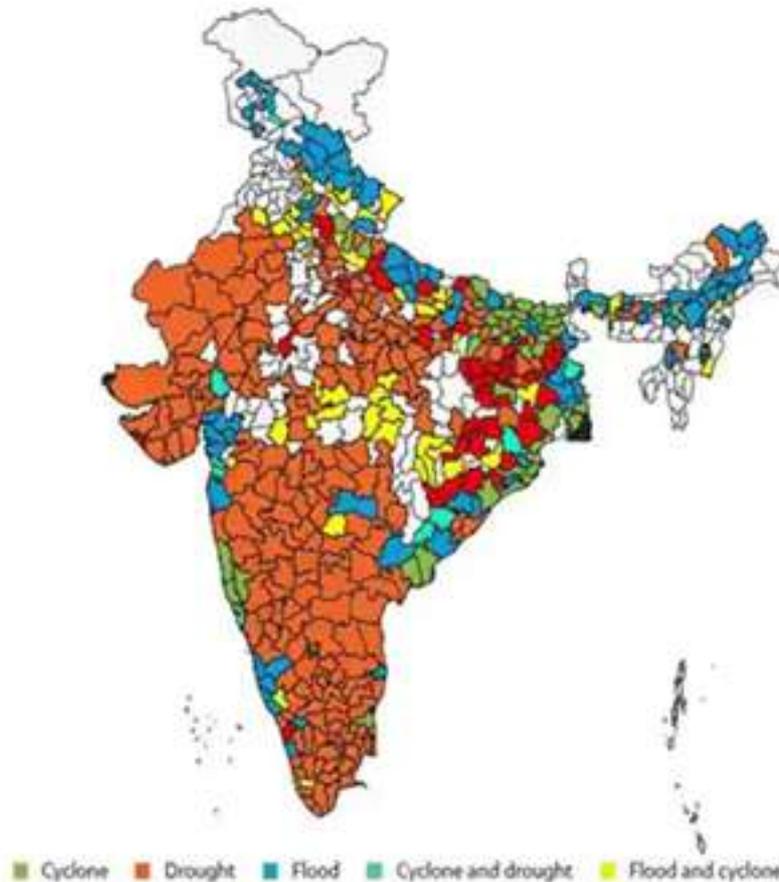


Figure ES1
More than 75 per cent of Indian districts are extreme climate event hotspots

Source: Author's analysis

Microclimatic zones shifting

- Microclimatic zones, or areas where the weather is different from surrounding areas, are shifting across various districts.
- A shift in microclimate zones may lead to severe disruptions across sectors – every 2 degrees C rise in annual mean temperature will reduce agricultural productivity by 15-20%.
- Some reasons identified behind this shift in microclimatic zones is change in land-use patterns, disappearing wetlands and natural ecosystems by encroachment, and urban heat islands that traps heat.
- The study also found a shift in the pattern of extreme climate events, such as flood-prone areas becoming drought-prone and vice-versa, in over 40 per cent of Indian districts.

2. History

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2.1. Cattle, buffalo meat residue found in Indus Valley vessels

- A new study has found the presence of animal products, including cattle and buffalo meat, in ceramic vessels dating back about 4,600 years at seven Indus Valley Civilization sites in present-day Haryana and Uttar Pradesh.
- The study was conducted as a part of the Two Rains project of the University of Cambridge and Banaras Hindu University, analyzed the lipid residue in pottery found at the ancient sites.
- About 50-60% of domestic animal bones found at Indus Valley sites come from cattle/buffalo.
- The high proportions of cattle bones may suggest a cultural preference for beef consumption across Indus populations, supplemented by the consumption of mutton/lamb.
- The study of lipid residues in Indus pottery shows a dominance of animal products in vessels, such as the meat of non-ruminant animals like pigs, ruminant animals like cattle or buffalo and sheep or goat, as well as dairy products.
- The analysis of lipid residues involved extraction and identification of the fats and oils that were absorbed in the vessels.
- The study was the first to look into the absorbed lipid residues in pottery from multiple sites, including Rakhigarhi, Farmana and Masudpur.
- While cattle bones have been found in large numbers at Indus Valley sites, the study found little evidence of dairy products.
- However, there could be regional differences as a recent study of vessels in Gujarat had found evidence of dairy products.

2.2. Tharu Tribals

- Context: The Uttar Pradesh government has recently embarked upon a scheme to take the unique culture of its ethnic Tharu tribe across the world. The intention is to put Tharu villages on the tourism map, and to create jobs and bring economic independence to the tribal population.

What is this scheme about?

- The state government is working to connect Tharu villages in the districts of Balrampur, Bahraich, Lakhimpur and Pilibhit bordering Nepal, with the home-stay scheme of the U.P. Forest Department.
- The idea is to offer tourists an experience of living in the natural Tharu habitat, in traditional huts made of grass collected mainly from the forests.
- The Uttar Pradesh Forest Corporation will train the Tharu people to communicate effectively with visitors and encourage villagers to acquaint them with aspects of safety and cleanliness, and with the rules of the forest.
- Tharu homeowners will be able to charge tourists directly for the accommodation and home-cooked meals.

- The UP government expects both domestic and international tourists to avail of the opportunity to obtain a taste of the special Tharu culture by staying with them, observing their lifestyle, food habits, and attire.
- The Tharus live in both India and Nepal. In the Indian terai, they live mostly in Uttarakhand, Uttar Pradesh, and Bihar.

Who exactly are the Tharu people?

- The community belongs to the Terai lowlands, amid the Shivaliks or lower Himalayas.
- Most of them are forest dwellers, and some practice agriculture.
- The word tharu is believed to be derived from sthavir, meaning followers of Theravada Buddhism.
- Members of the tribe survive on wheat, corn and vegetables grown close to their homes.
- In the Indian terai, they live mostly in Uttarakhand, Uttar Pradesh, and Bihar.
- According to the 2011 census, the Scheduled Tribe population in Uttar Pradesh was more than 11 lakh; this number is estimated to have crossed 20 lakh now.

What is unusual about the Tharu language, food, and culture?

- They speak various dialects of Tharu, a language of the Indo-Aryan subgroup, and variants of Hindi, Urdu, and Awadhi
- In central Nepal, they speak a variant of Bhojpuri, while in eastern Nepal, they speak a variant of Maithili.
- Tharus worship Lord Shiva as Mahadev, and call their supreme being “Narayan”, who they believe is the provider of sunshine, rain, and harvests.
- Tharu women have stronger property rights than is allowed to women in mainstream North Indian Hindu custom.
- Most Tharutribals consume alcoholic beverages, and some eat beef.
- Standard items on the Tharu plate are bagiya or dhikri – which is a steamed dish of rice flour that is eaten with chutney or curry – and ghonghi, an edible snail that is cooked in a curry made of coriander, chili, garlic, and onion.

2.3.Hampi stone chariot now gets protective ring

- Context: The Vijaya Vittala Temple in the UNESCO World Heritage site of Hampi, has been cordoned off by a protective ring by the Archaeological Survey of India (ASI).
- ASI put up the barrier aimed at preventing people from touching or climbing the monument, causing damage in any way.
- The stone chariot is one of the most visited monuments in Hampi and needs extra protection.
- Every tourist visiting the site photographs the sensitive monument and touches it.
- Some even climb it to take their photos with the monument. The protected monument is facing the risk of being damaged by such objectionable behavior of some of the tourists.

- Tourists can, henceforth, see and photograph the monument from a distance.
- The Chariot is actually a shrine dedicated to Garuda, which you see inside the complex of Vijaya Vittala temple. There used to be a massive sculpture of Garuda seated atop the chariot but now, it is a ruin.
- The Stone Chariot of Hampi is recognized among the three famous chariots in India; One in Konark and another one in Mahabalipuram.

Hampi stone chariot



- The iconic chariot was built by the Great King of Vijayanagara, Shri Krishna Deva Raya during the 16th century.
- It is said in the history that the king got fascinated with the Konark Sun temple chariot while fighting a battle in Odissa and wanted one of that kind in his empire.
- There is an interesting talk among the locales that the world would come to a halt when the chariot moves from its space.
- Also, villagers believe that the idol inside the chariot was stolen by Britishers and it is still there, somewhere in Britain.
- The architecture is inspired by the Dravidian art and it is a pure colossal structure mirroring the skills of the early craftsmen and architects.
- One amazing fact about Stone chariot is its construction. It looks like one single piece of a solid structure. However, it was built by slabs of granite whose linkages are smartly hidden with artistic designs.
- The base of the chariot depicts the mythical battle scenes in its finest details.
- The chariot has elephants seated but you can clearly observe the hind legs and tails of the horses behind the elephants. A smaller ladder is observed in between the two elephants as a way to enter the inner sanctum of the shrine.
- Stone Chariot of Hampi is designated as one of India's most known archaeological destinations. Also, the Government of India printed the chariot in 50 Rupee Note.
- The chariot is located in the complex of Vijaya Vittala temple where one can see the stone musical pillars.

2.4.Gwalior, Orchha in UNESCO world heritage cities list: MP Govt

- Context: The historical fort cities of Gwalior and Orchha in Madhya Pradesh have been included in the list of UNESCO's world heritage cities under its urban landscape city programme, according to the state government.
- After getting included in the heritage city list, the face of Gwalior and Orchha will totally change and UNESCO along with the state tourism department will make a master plan for the beautification of the two places.
- A UNESCO team will visit the state next year and after having a look at the heritage properties will prepare a master plan for their development and conservation.
- Under the plan, UNESCO will suggest best measures and resources for the development of these places under the Historic Urban Landscape recommendations.
- Gwalior was established in 9th century and ruled by Gurjar-Pratihara, Tomar, and Scindias.
- Gwalior is known for its palaces and temples, including the intricately carved Sas Bahu Ka Mandir.
- The Gwalior Fort occupies a sandstone plateau overlooking the city and is accessed via a winding road lined with sacred Jain statues.
- Within the fort's high walls is the 15th-century Gujari Mahal Palace, now an archaeological museum.

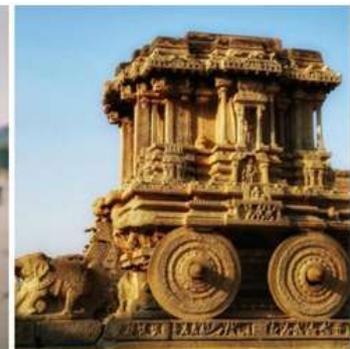


3. Polity

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3.1.Sahyogini Matru Samitis (SMS)

- Context: SahyoginiMatru Samitis (SMS) will have authority to monitor implementation of ICDS, fix accountability of service provider institutions at local level.
 - ✓ The Department of Women and Child Development, Madhya Pradesh is set to create a decentralised structure under the National Food Security Act (NFSA), 2013, to give a legal backing to community-centric SahyoginiMatru Samiti (SMS) / maternal associate committees.
 - ✓ There is an urgency of Integrated Child Development Services (ICDS) to ensure that elected local body representatives monitor and improvise programmes related to nutrition and maternal entitlement.
 - ✓ The supplementary nutrition programme under the ongoing ICDS provides entitlement to women and children under the NFSA, 2013.
 - ✓ However, most states have not taken any note of this critical provision so far.
 - ✓ They have been reticent in showing willingness to create legal structures as enshrined under the Act.
- It is in this backdrop that the Madhya Pradesh government has made a positive move: The December 2, 2020 order endowed the SMS with authority to monitor the implementation of ICDS and fix accountability of service provider institutions at the local level.
- It also allowed for discharging all functions of the vigilant committee in compliance of the mandate rendered by the NFSA.
- The NFSA, 2013, also asked for reforms in food and nutrition programmes, especially in the context of public accountability, transparency and vigilance systems.
- The Act requires the concerned departments (linked with NFSA) to make efforts for creating systems for community monitoring and social audit of schemes.
- Following this legal mandate, the state order sets out that SahyoginiMatru Samiti is authorised to function as vigilance committee and to conduct social audit of nutrition and maternity entitlement programmes.
- The samiti will be formed at every anganwadicentre, whereas the NFSA talked about formation of vigilance committee at every public distribution system (PDS) shop.
- The proposed structure of the SMS is designed in a manner that it addresses the three essential principles: Leading involvement of local governance institution, multi-social-sectoral convergence and overcoming geographical barriers.



- The samiti will be headed by an elected representative of the local body, preferably by a woman representative. It will have nine additional members.

The classification

- It includes any woman (above the age of 49 years), who is willing to serve voluntarily; a school teacher; a women member of another committee formed by any other department; chairperson of women self-help group; mothers of a child up to six years of age; mother of adolescent girls, woman from reproductive age group and member of family with pregnant woman with complication or severely malnourished child.
- The nine members (of total 15) will represent the key entitlement holders.
- The Madhya Pradesh guideline authorises SMS to monitor supply, distribution, quality of supplementary nutrition and create dialogue with the entitlement holders.

3.2. Maharashtra Police to use software to crack down on child porn

- Context: The cyber wing of the Maharashtra Police recently acquired a software from Interpol that would help them track down child pornography uploaded online
 - ✓ The Interpol has a software that uses various mechanisms like detecting nudity in images, recognising age of the person through facial structures, among other filters.
 - ✓ It also has in-built algorithms to look for keywords around child pornography that would for example help law enforcement agencies track forums that indulge in these crimes.
 - ✓ Based on these filters, the software 'Crawler' scans the net looking for such images, videos and text.
 - ✓ If they find any such media, it is added to the database after which officers identify cases that could fall under child pornography.

Which states are being provided this software in India?

- While initially the database was with Interpol, they have now also provided the software to Maharashtra.
- Earlier this year, 12 officers of Maharashtra cyber were trained by the Interpol officers in the use of this software after which they were provided access to it.
- Kerala too was to undergo training by Interpol last year after several such media was found to be uploaded from there.

What is the TRACE team set up by Maharashtra Cyber to counter child pornography?

- The 12 officers who went for training to the South Asian wing of Interpol form the core of Tactical Response Against Cyber Child Exploitation (TRACE) Unit.
- Those 12 officers trained a batch of 270 policemen across the state in the use of the software to track cases of child pornography.
- The TRACE unit was primarily set up to act against child pornography in Maharashtra that is part of a larger campaign against Child Sexual Abuse Material (CSAM) across the country since 2019.

Why has there been a boost in action against CSAM in India since 2019?

- India's fight against Child Sexual Abuse Material (CSAM) received a boost in 2019 when National Centre for Missing and Exploited Children (NCMEC), a US-based nonprofit that works to prevent child exploitation, started sharing tip-offs about child pornography in India with Indian agencies.
- These tip offs were received by the National Crime Records Bureau (NCRB) which then passed it on to the states where the child pornography related incident had taken place.
- A total of 25,000 cases of child pornography being uploaded were reported in the five months between September 2019 and January 2020 across the country.
- While Delhi topped the list when it comes to people suspected to be involved in uploading child-porn, Maharashtra, Gujarat, Uttar Pradesh and West Bengal are the other top states as per the data.

What is 'Operation Blackface' carried out in Maharashtra?

- 'Operation Blackface' is part of the larger action taken against CSAM across the country.
- Acting on the tip off provided by NCRB, Maharashtra Cyber cops started forwarding complaints to the districts where FIR's were registered against accused persons.
- In the current year alone, there have been above 100 FIR's registered in cases linked to CSAM and nearly 50 persons placed under arrest.



3.3.Karnataka Assembly passes anti-cow slaughter Bill

- Context: Karnataka passed the Karnataka Prevention of Slaughter and Preservation of Cattle Bill (2020) .The Bill envisages a ban on all forms of cattle slaughter and stringent punishment for offenders.
 - ✓ The Bill is not completely new by itself. It is a revised version of a law passed in 2010.
 - ✓ It was shelved in 2013 after the Bill failed to get the Governor's assent.

- ✓ The Govt then reverted to Karnataka Prevention of Cow Slaughter and Preservation of Animals Act, 1964, that allowed cow slaughter with certain restrictions.
- ✓ The 1964 law allowed the slaughter of bullock, buffalo-male or female if it was certified by a competent authority to be above the age of 12 years, incapacitated for breeding or deemed sick.

How is 'beef' and 'cattle' defined in the latest Karnataka Bill?

- While 'beef' is defined as the flesh of cattle in any form, the word 'cattle' is defined as "cow, calf of a cow and bull, bullock, and he or she buffalo below the age of thirteen years".
- The Bill also terms shelters established for the protection and preservation of cattle registered with the Department of Animal Husbandry and Fisheries as 'gau-shalas'.

Who has the power to conduct searches?

- Police officers ranked sub-inspector and above or a competent authority will have the power to search premises and seize cattle and materials used or intended to use to commit the offence.
- Such seizures, if any, will then be reported before the Sub-Divisional Magistrate.

What are the penalties?

- Terming cow slaughter as a cognizable offence, violators can attract three to seven years of imprisonment.
- While a penalty between Rs 50,000 and Rs 5 lakh can be levied for the first offence, second and subsequent offences can attract penalties ranging between Rs 1 lakh and Rs 10 lakh.

3.4. Shakti Act, 2020

- The Maharashtra government presented a draft bill making changes to existing laws on violence against women and children. The Bill, proposed to be enacted as Shakti Act, 2020.

What is the reason given by Maharashtra to bring in a new law?

- The main reason given by the government for bringing in the new law is an increase in the number of cases of violence, specifically sexual violence against women and children.
- In order to effectively control the heinous sexual offences against women and children, it is necessary to complete the investigation and the trial of these cases within a time frame, which may deter the perpetrators from committing such offences. Stringent punishment, including heavy fines and death penalty, needs to be prescribed.

Which laws are proposed to be amended?

- The draft Bill proposes to make changes to the Indian Penal Code, the Code of Criminal Procedure and the Protection of Children from Sexual Offences Act. The changes are proposed in existing sections of rape, sexual harassment, acid attack and child sexual abuse.
 - ✓ The Bill proposes death penalty in cases of rape, gangrape, rape by persons in authority, aggravated sexual assault of minors and in cases of acid attack when grievous injury is caused.
 - ✓ The Bill also proposes to add a heavy fine amount of up to Rs 10 lakh on those found guilty.



- ✓ The existing law had provisions for a fine but did not specify the amount in most sections. In cases of acid attacks, where grievous injury is caused to a victim, a fine of up to Rs 10 lakh is proposed to be paid to the victim for treatment including plastic surgery and reconstruction.
- ✓ The Bill also proposes amendments to the Criminal Procedure Code, directing for an investigation in these cases to be completed within 15 days after an FIR is filed, extendable only by seven days.
- The Bill also states that a trial has to be completed within 30 days after the charge sheet is filed against an accused. An appeal filed before a higher court is proposed to be disposed of within 45 days.
- The Bill proposes setting up exclusive courts for this purpose. While such provisions for speedy disposal of cases and setting of special courts are also present in the POCSO Act, the disproportionate ratio between cases filed and the existing infrastructure including in forensics, judiciary leads to higher pendency.

Are there any specific provisions related to social media?

- The draft Bill proposes an additional law to deal with abuse of women on social media. Section 354E is added to include intentional acts creating “a sense of danger, intimidation, fear to a woman” apart from insulting her modesty by any act, deed or words including offensive communication will be an offence with a maximum punishment of two years and a Rs 1 lakh fine.
- This also includes uploading morphed videos of women or threatening them with uploading of photos, videos which could defame, cause disrepute to them or violate their privacy.
- The Bill also makes it mandatory for Internet, telephone providers and social media platforms to share electronic records, data for probes in cases of sexual violence against women and children within seven days or a punishment of simple imprisonment for one month and fine up to Rs 5 lakh can be imposed.

Provisions for “false” information and “implied consent”

- The Bill also makes provision for making a “false complaint” or provides false information in respect of offence committed stating that anyone who does that “solely with the intention to humiliate, extort or threaten or defame or harass” a person shall face imprisonment for a term up to one year or fine or both.

Other provisions

- The Bill also proposes setting up of a “Women and Children Offenders Registry” linked to the National Registry of Sexual Offenders and will be made available to law enforcement agencies with details of persons convicted of specified offences of sexual violence against women and children. A separate police team will also be set up in each district to probe such cases.
- The Bill also states that the government will set up institutions like the One Stop Centre for providing victims rehabilitation, legal aid, counselling, medical support. Many of these are already proposed under various schemes like Manodhairya in the state.

3.5. France's draft law against 'Islamism'

- Context: French cabinet presented a draft law called a law "to reinforce Republican principles. The Bill comes in the wake of a series of terror attacks in recent years.

What does the proposed law aim to do?

- It envisages a range of measures, including school education reforms to ensure Muslim children do not drop out, stricter controls on mosques and preachers, and rules against hate campaigns online.
- Once the law comes into force, French mosques could see increased surveillance of their activities, such as financing.
- The government would be able to exercise supervision over the training of imams, and have greater powers to shut down places of worship receiving public subsidies if they go against "republican principles" such as gender equality.
- Moderate community leaders targeted by an extremist "putsch" could receive protection.
- Under French secularism laws, or laïcité, there is already a ban on state employees displaying religious symbols that are "conspicuous", such as the crucifix or hijab.
- This ban would now be extended beyond government bodies to any sub-contracted public service.
- There would also be a clampdown on home-schooling for children over age three, with parents from to be dissuaded from enrolling them in underground Islamic structures.
- Doctors who issue "virginity certificates" would be fined or jailed.
- Officials would be banned from granting residency permits to polygamous applicants.
- Couples would be interviewed separately by city hall officials prior to their wedding to find out if they have been forced into marriage.
- Stricter punishments would be introduced for online hate speech.

What has been the reaction?

- The sharpest criticism of the Bill has come from abroad.
- Turkey has called the proposed law an "open provocation".
- Critics have expressed alarm that the Bill could lead to the conflation of the Islamic religion with Islamism, a political movement, and lead to the alienation of French Muslims.

4. Economy

Click [here](#) to watch the following questions on YouTube

4.1. Bangladesh signs first Preferential Trade Agreement (PTA) since its independence

- Bangladesh signed its first Preferential Trade Agreement (PTA) with Bhutan allowing duty free access to a range of goods between the two countries.
- This is the first PTA Bangladesh has signed with any country in the world.
- The agreement was signed on the occasion marking the 50 years of diplomatic ties between the two countries.
- In 1971, Bhutan was the first country in the world, followed by India as the second, to recognise Bangladesh as an independent country.



- Under the PTA 100 Bangladeshi products will get duty free access to Bhutan.
- At the same time, 34 items from Bhutan will get duty free access into Bangladesh.
- Further items can be added in the list later on the basis of discussion between the two countries.
- Goods like Jute and Jute products, baby clothes and accessories, men's trousers, jackets and blazers are among the 100 items from Bangladesh which will get duty free access to Bhutan.
- On the other hand fruit juice, natural honey, wheat flour jams, jellies and lime stone, quartzite etc from Bhutan will have duty free access to Bangladesh.
- The trade volume between the two countries is approximately 50 million dollars with 7.56 million of export and 42.09 million import into Bangladesh.
- Bangladesh is expected to sign 11 more PTAs and Free Trade Agreements (FTAs) with countries like Indonesia and Nepal by June next year.

Preferential Trade Agreement (PTA)

- PTA or discriminatory trade agreement or regional trade liberalization
- PTA is a trading bloc which gives preferential access to certain products from the participating countries.
- This is done by reducing tariffs, but not by abolishing them completely.
- A PTA can be established through a trade pact.
- It is the first stage of economic integration.
- The line between a PTA and a Free trade area (FTA) may be blurred, as almost any PTA has a main goal of becoming a FTA in accordance with the *General Agreement on Tariffs and Trade*.

4.2. Invest India wins UN Investment Promotion Award

- The UNCTAD has declared 'Invest India' as winner of the 2020 United Nations Investment Promotion Award
- "Invest India" is the National Investment Promotion and Facilitation Agency of India and act as the first point of reference for investors in India.

- It is a non-profit venture set up in 2009 under the Department for Promotion of Industry and Internal Trade, Ministry of Commerce and Industry.
- The award recognises and celebrates the outstanding achievements of the World's best-practice investment promotion agencies.
- The evaluation was based on UNCTAD's assessment of work undertaken by 180 national Investment Promotion Agencies across the world.
- UNCTAD reported best practices from investment promotion agencies in the IPA Observer publications in April 2020 and July 2020.
- IPAs response to the pandemic became the basis for the evaluation of the 2020 United Nations Investment Promotion Award.



4.3. Make in India is hitting supply of life-saving medicines

- Context: The Ministry of Railways has written to the Department for Promotion of Industry & Internal Trade, Ministry of Commerce and Industry, seeking exemption for procuring certain medical items manufactured outside India, particularly medicines used in the treatment of COVID-19, cancer, etc.
- As per the Department for Promotion of Industry and Internal Trade's (DPIIT) norms
 - ✓ Class-I is a local supplier or service provider whose goods, services or works offered for procurement have local content equal to or more than 50%
 - ✓ Class-II is a supplier or service provider whose goods, services or works offered for procurement have local content of more than 20% but less than 50%.
 - ✓ Only these two categories of suppliers shall be eligible to bid in the procurement of all goods, services or works and with estimated value of purchases of less than ₹200 crore.

Issue

- Northern Railway expressed difficulty in procuring drugs and surgical items in the light of the latest 'Make in India' policy.
- Indian Railways, one of the largest employers in the country with over 12 lakh employees, has its own network of healthcare infrastructure, including super specialty hospitals in all Zonal Headquarters.
- Certain drugs used in cancer treatment were manufactured outside India but available in the Indian market through agents or dealers.
- Besides a surgical implant, the suppliers of anti-viral medicines used for the treatment of COVID-19, and even the vaccine for the coronavirus, may not fall under the Class-I or Class-II categories, which is required for purchases under the new 'Make in India' guidelines.
- The uninterrupted supply chain of these medicines and medical items are essential in the human life saving category and providing satisfactory health care to all railway employees and their family

members.

- In the existing 'Make in India' policy, there is no window available to procure such items from the suppliers who may not meet the Local Content Criteria required for Class-I and Class-II Local Supplier category.
- It is therefore proposed to seek exemption to procure such medicines and medical items from Indian Market from 'non-local suppliers.
- DPIIT forwarded the issue to the Department of Pharmaceuticals and Ministry of Health and Family Welfare, being the nodal agency for Pharmaceuticals, Medical Devices and Equipment.
- The DPIIT had also informed that procurement of imported items through Indian agents/ traders amounted to indirect violation of the general finance rules and hence, it was not recommended and advised.

4.4. Government asks private television channels to follow ASCI guidelines on online gaming and fantasy sports

- Context: The Ministry of Information and Broadcasting has issued an advisory asking all private television broadcasters to follow guidelines issued by the Advertising Standards Council of India (ASCI) for advertisements relating to online gaming, fantasy sports etc.
 - ✓ The Ministry has advised that the advertisements should not promote any activity prohibited by statute or law.
 - ✓ The advertisements on Online Gaming, Fantasy Sports, should be in conformity with the Advertising Code laid down under Cable Television Networks (Regulation) Act, 1995 and the Consumer Protection Act, 2019.
 - ✓ The advisory has been issued jointly by I&B Ministry, Ministry of Consumer Affairs, ASCI, News Broadcasters Association, Indian Broadcasting Foundation, All India Gaming Federation, Federation of Indian Fantasy Sports, and the Online Rummy Federation.
 - ✓ ASCI guidelines require that every such gaming advertisement must carry the following disclaimer: 'This game involves an element of financial risk and may be addictive. Please play responsibly and at your own risk'.
 - ✓ Such a disclaimer should occupy at least 20% of the advertisement space.
 - ✓ The gaming advertisements cannot depict users under the age of 18 years as engaged in playing a game of "online gaming for real money winnings" or suggest that such users can play these games.
 - ✓ The advertisements should neither suggest that online gaming presents an income generating opportunity as an alternative to employment nor depict a person playing such games is more successful than others.
 - ✓ The Advertising Standards Council of India, established in 1985, is a Mumbai based self-regulatory voluntary organisation of the advertising industry in India.
 - ✓ It seeks to ensure that advertisements conform to its Code for Self-Regulation.
 - ✓ Under the Cable Television Networks (Regulation) Act, 1995 it is mandatory for television networks to follow the advertising code laid down by ASCI.

4.5. Smuggling in India Report 2019-20



- Finance Minister inaugurated the 63rd Founding Day Celebrations of the Directorate of Revenue Intelligence (DRI).
- On the occasion The Smuggling in India Report 2019-20 was released.
- It analyses organised smuggling trends on Gold and Foreign Currency, Narcotic Drugs, Security, Environment and Commercial Frauds.

4.6. Sovereign fund flow: India replaces China as most sought-after destination

- Context: India has quietly replaced China as the most sought-after destination for global sovereign wealth funds investment in the private sector.
- It is a sign of the country's growing attraction for investors.
- The data was released by New York-based Global SWF, which tracks over 400 sovereign wealth funds.
- In the year 2020 to date, these funds deployed capital worth a record \$14.8 billion in India, which is nearly three times more than what they have put in China (\$4.5 billion).

About Sovereign Wealth Funds

- A sovereign wealth fund (SWF), sovereign investment fund, or social wealth fund is a state-owned investment fund.

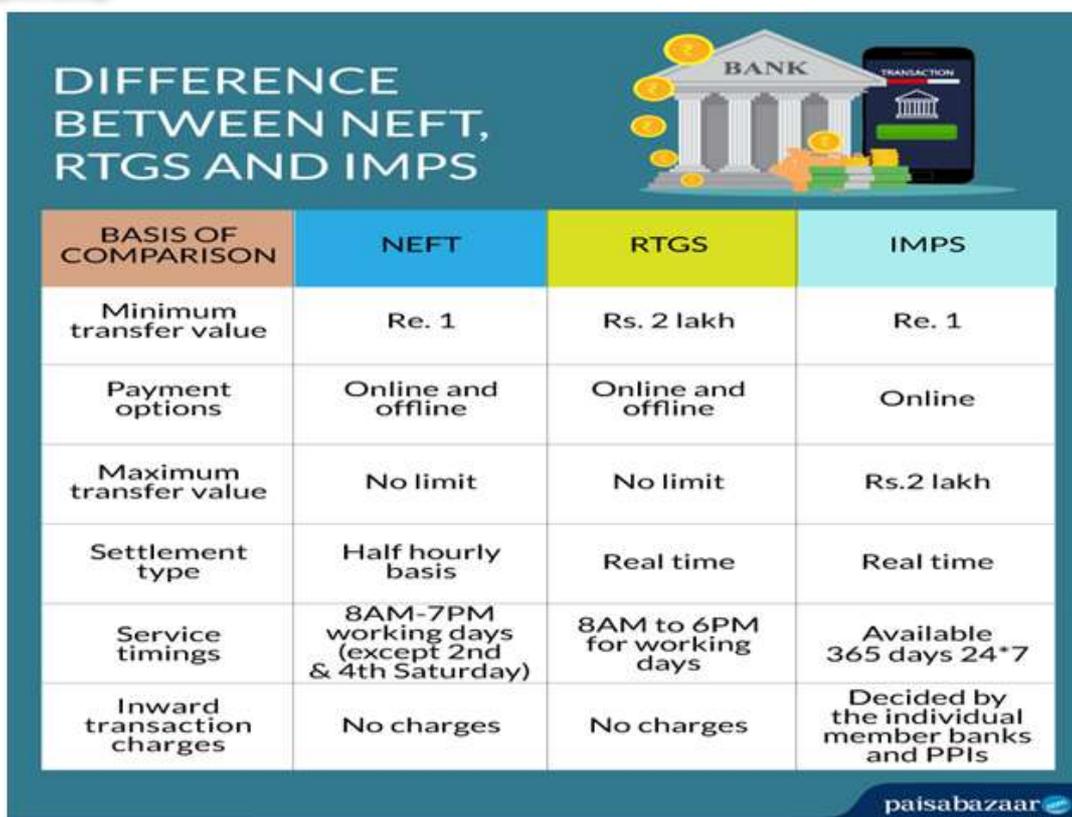
- It is comprised of money generated by the government, often derived from a country's surplus reserves. SWFs provide a benefit for a country's economy and its citizens.
- The funding for a SWF can come from a variety of sources like surplus reserves from state-owned natural resource revenues, trade surpluses, bank reserves that may accumulate from budgeting excesses, foreign currency operations, money from privatizations, and governmental transfer payments.
- In general, sovereign wealth funds usually have a targeted purpose.
- Some countries have sovereign wealth funds that can be similar to venture capital for the private sector.
- Similar to any type of investment fund, SWFs have their own objectives, terms, risk tolerances, liability matches, and liquidity concerns.
- Some funds may prefer returns over liquidity and vice versa.
- Depending on the assets and objectives, sovereign wealth funds' risk management can range from very conservative to a high tolerance for risk.

Types of SWFs

- Traditional classifications of sovereign wealth funds include:
 - ✓ Stabilization funds
 - ✓ Savings or future generation funds
 - ✓ Public benefit pension reserve funds
 - ✓ Reserve investment funds
 - ✓ Strategic Development Sovereign Wealth Funds (SDSWF)
 - ✓ Funds targeting specific industries (possibly emerging or distressed)
 - ✓ Foreign currency reserve assets. (Some classifications may not consider these funds as SWFs.) Foreign currency reserve funds are powerful funds that may be used for specific governmental purposes and/or for helping to manage the trading power of a currency globally.

Investment Terms

- The amount of money in a SWF is usually substantial.
- The acceptable investments included in each SWF vary from fund to fund and country to country.
- Countries can create or dissolve SWFs to match the needs of their population.
- Funds with liquidity concerns may limit investments to only very liquid public debt instruments.
- In some cases, sovereign wealth funds will invest directly in domestic industries.
- Liquidity, debt, and allocation balances can be some of the key factors in investment terms.
- There can be a concern that SWFs have a political influence.
- Some of the most significant sovereign wealth funds are not entirely transparent about their investments and corporate governance practices.



BASIS OF COMPARISON	NEFT	RTGS	IMPS
Minimum transfer value	Re. 1	Rs. 2 lakh	Re. 1
Payment options	Online and offline	Online and offline	Online
Maximum transfer value	No limit	No limit	Rs.2 lakh
Settlement type	Half hourly basis	Real time	Real time
Service timings	8AM-7PM working days (except 2nd & 4th Saturday)	8AM to 6PM for working days	Available 365 days 24*7
Inward transaction charges	No charges	No charges	Decided by the individual member banks and PPIs

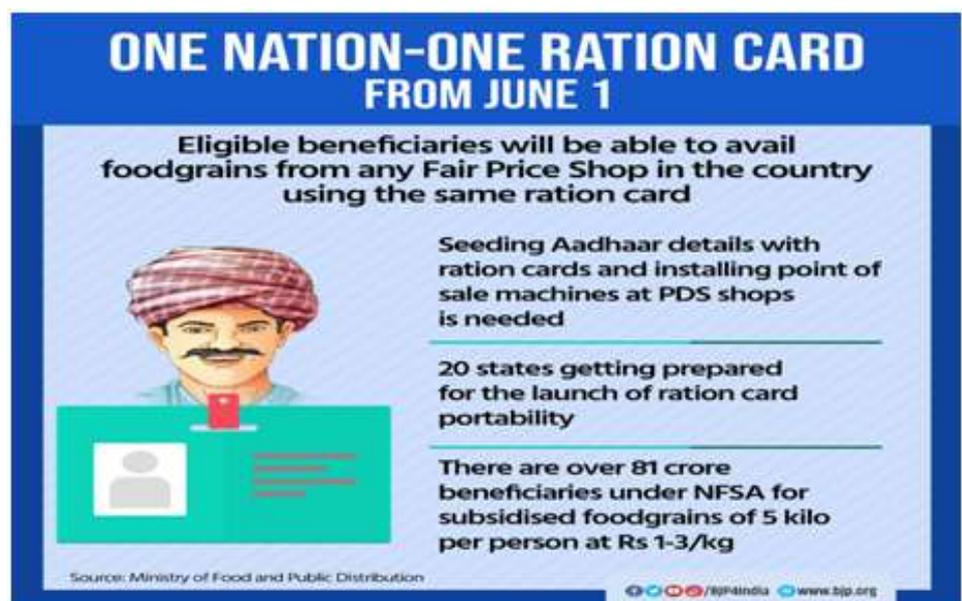
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4.7. RTGS to be available 24x7 from December 14: RBI

- Context: The Reserve Bank of India (RBI) announced that the money transfer facility, Real Time Gross Settlement System (RTGS), will be available round the clock on all days of the year from December 14, 2020. With this, India will become one of the few countries in the world to operate its RTGS system round the clock throughout the year.
 - ✓ Real Time Gross Settlement, RTGS systems are specialist funds transfer systems where the transfer of money or securities takes place from one bank to any other bank on a "real-time" and on a "gross" basis.
 - ✓ Settlement in "real time" means a payment transaction is not subjected to any waiting period, with transactions being settled as soon as they are processed.
 - ✓ "Gross settlement" means the transaction is settled on a one-to-one basis, without bundling or netting with any other transaction. "Settlement" means that once processed, payments are final and irrevocable.
 - ✓ Earlier the transfer facility was available between 7 AM and 6 PM on all working days except for the second and fourth Saturday of the month and on Sundays.
 - ✓ RTGS facilitates inter-bank transfer of funds from the account of the remitter in one bank to the account of the beneficiary maintained with any other bank branch.
 - ✓ The minimum amount to be remitted through RTGS is Rs 2 lakh with no upper or maximum ceiling.
 - ✓ Round the clock availability of RTGS will provide extended flexibility to businesses for effecting payments and will enable introduction of additional settlement cycles in ancillary payment systems.

4.8. Nine states successfully completes 'one nation one ration card' reform

- Due to COVID 19 pandemic Government of India has issued a grant of additional borrowing permission of 2% of the Gross State Domestic Product (GSDP), to the states for the year 2020-21.
- This has enabled the States to mobilise additional financial resources to fight the pandemic and maintain the standards of service delivery to the public.
- However, to ensure long-term debt sustainability and prevent any adverse impact on future, a part of the additional borrowing was linked to the States carrying out reforms in the sectors critical for service delivery to the citizens.
- One of the sectors identified for reforms is the Public Distribution System.
- Out of the additional borrowing limit of 2% of GSDP, 0.25% is linked to implementation of "One Nation One Ration Card system".
- This was aimed to ensure that the beneficiaries under the National Food Security Act (NFSA) and other welfare schemes, especially the migrant workers and their families, get ration from any Fair Price Shop (FPS) across the country.
- Other aims of the intended reform were to better target beneficiaries, elimination of bogus/ duplicate/ ineligible ration cards and thus enhance welfare and reduce leakage.
- For this, conditions stipulated Aadhar Seeding of all Ration Cards, biometric authentication of beneficiaries and automation of all the Fair Price Shops (FPS) in the State.
- So far nine States have successfully completed reforms in PDS and implemented One Nation One Ration System.
- These States are: Andhra Pradesh, Goa, Haryana, Karnataka, Kerala, Telangana, Tripura and Uttar Pradesh.
- On completion of reforms, additional borrowing permission of Rs.23,523 crore has been issued to them.
- Department of Food and Public Distribution in the Ministry of Consumer Affairs, Food and Public Distribution is the Nodal Department to certify that a State has met the conditions stipulated for this reform.
- To become eligible for additional borrowing, the States have to complete the reforms by 31st December, 2020.



- It is expected that many more States will complete this reform before the stipulated date.
- In addition to the One Nation One Ration Card, other reforms specified as a precondition to avail additional borrowing are: ease of doing business reform, urban local body/ utility reforms and power sector reforms.

Easy access

Under the 'One nation, one ration card' system, beneficiaries can buy subsidised foodgrains from a ration shop in any part of the country

The scheme will be rolled out across the country on: July 1, 2020



A migrant will be allowed to buy a maximum of 50% of the family quota. This is to ensure that the individual, after shifting to another place, does not buy the entire family quota in one go

Ration card-Aadhaar linkage must to access the portability scheme

States providing portability of PDS entitlements:

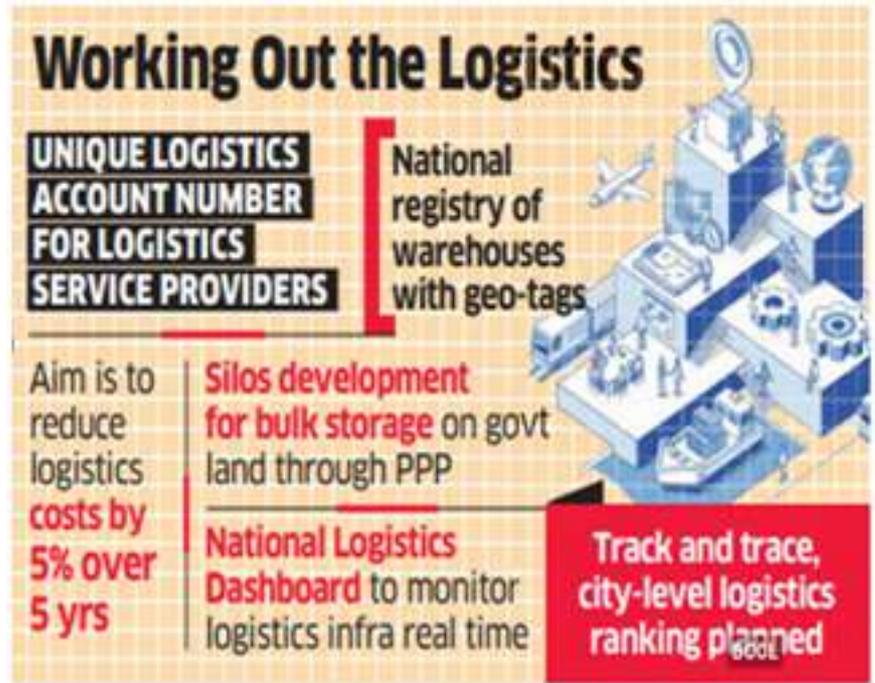
- Andhra Pradesh, Gujarat, Haryana, Jharkhand, Karnataka, Kerala, Maharashtra, Rajasthan, Telangana and Tripura
- A person will only be eligible for the subsidies supported by the Centre, which include rice sold at ₹3/kg and wheat at ₹2/kg
- Even if a beneficiary moves to a State where grains are given for free, he/she will not be able to access those benefits

4.9. Centre mulls new policy that can reduce India's logistics costs by 5% over next 5 years

- Context: India plans to draw up a comprehensive digital inventory of logistics assets and manpower that could be used in emergency situations like the ongoing pandemic.
- These assets could be upgraded to military standards in terms of design, construction and equipment capacity, the commerce and industry ministry has proposed in a draft cabinet note on the National Logistics Policy, 2020.
- The policy also entails handing out a unique logistics account number to logistics service providers, track and trace, and a national registry of warehouses with geo tags providing information like available space and development of silos for bulk storage on government land through public-private partnership.
- Besides, standardised key physical components and services like packaging, handling equipment, shelving and racking, trucks, documentation, and a National Logistics Dashboard for real time monitoring of various logistics infrastructure have also been proposed.
- The policy aims at reducing India's logistics costs by 5% over the next five years and break into top 25 countries in major global logistics-related performance indices, create a single point of reference for all logistics and trade facilitation, facilitate faster clearances, double employment in the logistics sector and reduce losses due to agri-wastage.
- India ranked 44 on the World Bank's Logistics Performance Index in 2018.
- While there are no financial implications of the policy at present and funding for physical logistics infrastructure will be met under the National Infrastructure Pipeline Projects by the respective ministries, the government is likely to explore the possibility of support from multilateral sources.
- Further, co-funding options for construction and upgradation of intermodal transport, transshipment warehousing and handling facilities will be explored.



- The draft policy also seeks to remove distortions in input tax credit that limits seamless logistics across states.
- It also envisages a National Logistics Act for unified documentation for logistics services and transparency in freight charges, along with national and state master plans to identify optimal multimodal transport mix to decongest roads by promoting railways, inland waterways and coastal shipping.



Working Out the Logistics

UNIQUE LOGISTICS ACCOUNT NUMBER FOR LOGISTICS SERVICE PROVIDERS

National registry of warehouses with geo-tags

Aim is to reduce logistics costs by **5% over 5 yrs**

Silos development for bulk storage on govt land through PPP

National Logistics Dashboard to monitor logistics infra real time

Track and trace, city-level logistics ranking planned

5. Environment

Click [here](#) to watch the following questions on YouTube

5.1. Eco-ducts

- Context: Ramnagar Forest Division in Nainital district, Uttarakhand, recently built its first eco-bridge for reptiles and smaller mammals.
 - ✓ Eco-ducts or eco-bridges aim to enhance wildlife connectivity that can be disrupted because of highways or logging.
 - ✓ These include canopy bridges (usually for monkeys, squirrels and other arboreal species); concrete underpasses or overpass tunnels or viaducts (usually for larger animals); and amphibian tunnels or culverts.
 - ✓ Usually these bridges are overlaid with planting from the area to give it a contiguous look with the landscape.
 - ✓ The National Tiger Conservation Authority, New Delhi, had identified three major sites that were cutting across animal corridors, including National Highway 37 through the Kaziranga-KarbiAnglong landscape in Assam, and State Highway 33 through the Nagarhole Tiger Reserve in Karnataka.
 - ✓ One of the largest underpasses – 1.4 km – for animal conservation in India is being built along the Madhya Pradesh-Maharashtra border.
 - ✓ Other proposals include the Chennai-Bangalore National Highway, in the Hosur-Krishnagiri segment, near reserve forests for elephant crossings, and in the Tadoba-Andhari Tiger Reserve in Chandrapur, Maharashtra.

Importance of Eco Bridges in Biodiversity Management

- To prevent genetic isolation of fragmented flora and fauna populations, the bridge would encourage the interaction of wildlife by facilitating movement between the once separated forests and effectively expand habitat, mating and foraging ranges of flora and fauna.
- With wildlife crossing the expressway from one nature reserve to another, the chances of pollination and dispersion of rare native plants could greatly increase.
- Eco-bridges would also bring about greater interaction between individuals leading to a healthy exchange of genetic materials, thereby reducing the occurrence of inbreeding and increasing the long-term survival of our native species.
- Providing crossing infrastructure at key points along transportation corridors is known to improve safety, reconnect habitats and restore wildlife movement.

5.2. Eluru mystery disease

- Context: A preliminary report of All India Institute of Medical Sciences (AIIMS), Delhi, has found traces of heavy metals lead and nickel in at least 10 blood samples collected from patients from different places in Eluru town in West Godavari District in Andhra Pradesh.

- ✓ The AIIMS team conducted the blood tests after at least 550 people fell sick in Eluru town due to an undiagnosed illness.
- ✓ The results indicate lead and nickel content in drinking water or/and milk as the possible reason behind people falling ill.
- ✓ E-Coli in water was found to be normal while culture test of cerebral spinal fluid turned negative for known viruses and bacteria.

What is anthrax?

Anthrax is an acute infectious disease caused by the spore-forming bacterium *Bacillus anthracis*. Anthrax most commonly occurs in wild and domestic lower vertebrates (cattle, sheep, goats, camels, antelopes, and other herbivores), but it can also occur in humans when they are exposed to infected animals or tissue from infected animals.

Nickel	Mining, production, electroplating	Pulmonary oedema, lung cancer, nasal cavity cancer
Silica	Mining and quarrying, stone cutting, construction, sand blasting	Silicosis, fibrosis, silicotuberculosis
Talc	Rubber industry, cosmetics	Talcosis, fibrosis
Tantalum carbide	Manufacture and sharpening of cutting tools	Hard metal disease, hyperplasia of bronchial epithelium, fibrosis
Tin	Mining, tin production	Stenosis
Tungsten carbide	Manufacture and sharpening of cutting tools	Hard metal disease, hyperplasia of bronchial epithelium, fibrosis
Vanadium	Steel manufacture	Irritation, bronchitis

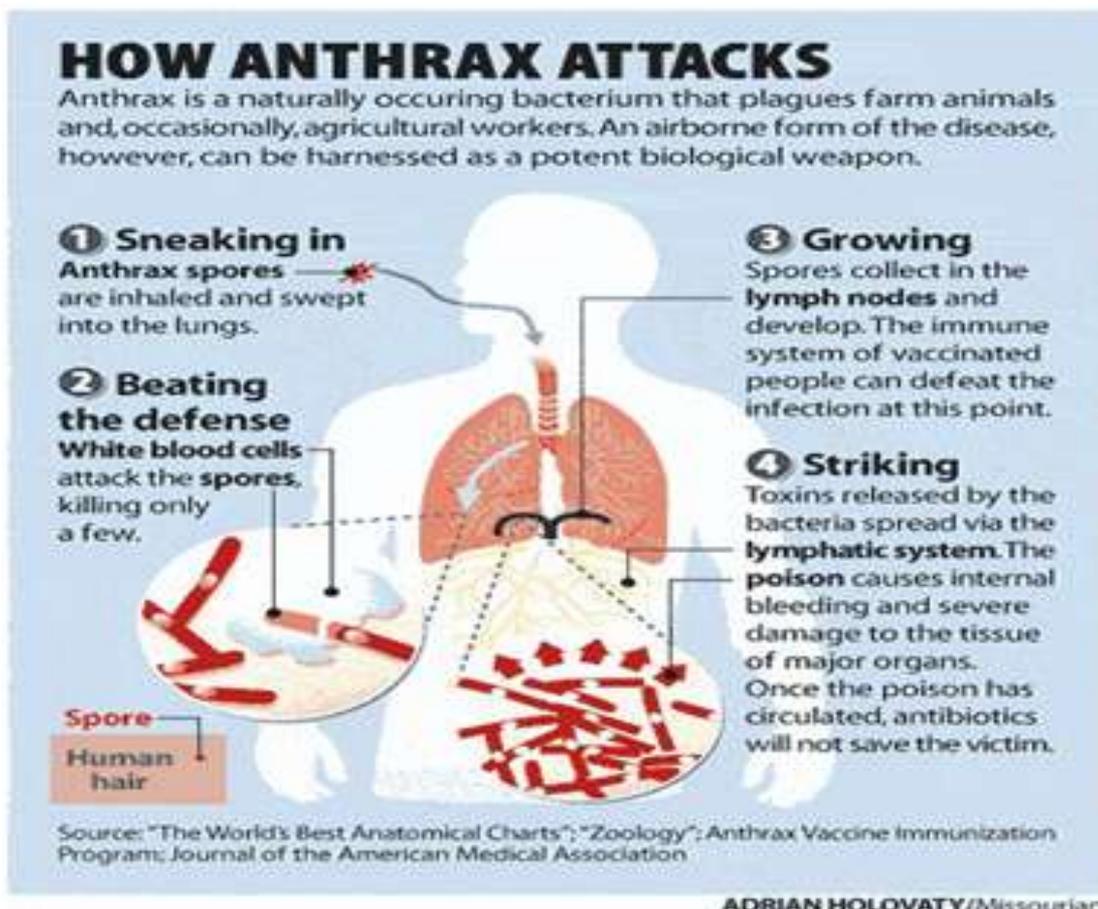
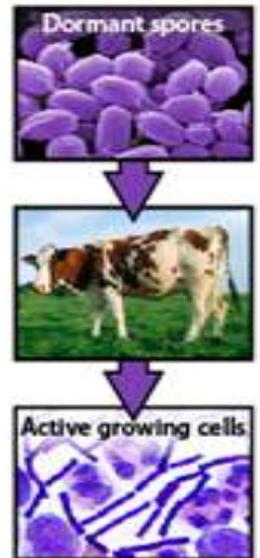


5.3.Carcass of wild elephant in Assam tests positive for Anthrax

- Context: The carcass of a wild elephant found inside Joypur reserve forest in Assam’s Dibrugarh district last week has tested positive for Anthrax: Wildlife Trust of India (WTI).
- ✓ The highly infectious disease which is caused by the bacteria called ‘Bacillus anthracis’ had earlier been detected in cattle in the state, this is likely to be the first confirmed case of Anthrax in wild elephants in Assam.

- ✓ Forest officials had found the carcass of a sub-adult female aged nearly 10 years in the Soraipung range of the forest on December 3.
- ✓ Two days later, carcass of another female elephant aged around 18-20 years was found few hundred metres away from the spot where the first carcass was found.
- ✓ Both elephants are believed to be from the same herd.
- ✓ Usually, carcasses of wild elephants are buried, but since forest officials suspected the deaths to be due to Anthrax, the two elephants were cremated using safety measures.

- 1** The bacteria known as *Bacillus anthracis* produce **spores** that are **dormant** (not active) and can live in the environment, like soil, for a long time, even decades.
- 2** When spores **get into the body** of an animal or person (a place rich with water, sugars, and other nutrients), they can be "activated" and turn into **active growing cells**.
- 3** When they become active, the bacteria can multiply, spread out in the body, produce toxins (poisons) and cause severe illness and death.



5.4.Emission Gap Report 2020

- Context: The United Nations Environment Programme (UNEP) released its annual Emissions Gap Report 2020.
 - ✓ The report states that the year 2020 would be one of the warmest years on record.



✓ The annual report from UNEP measures the gap between anticipated emissions and levels consistent with the Paris Agreement goals of limiting global warming this century to well below 2°C and pursuing 1.5°C.

✓ Below are the findings from the Emission Gap Report 2020 on key aspects:

- Record high GHG emissions: “Global GHG emissions continued to grow for the third consecutive year in 2019, reaching a record high of 52.4 Gigatonne carbon equivalent (GtCO₂e) (range: ±5.2) without land-use change (LUC) emissions and 59.1 GtCO₂e (range: ±5.9) when including LUC.”
- Record carbon emission: “Fossil carbon dioxide (CO₂) emissions (from fossil fuels and carbonates) dominate total GHG emissions including LUC (65 per cent) and consequently the growth in GHG emissions. Preliminary data suggest that fossil CO₂ emissions reached a record 38.0 GtCO₂ (range: ±1.9) in 2019.”
- Forest fires increasing GHG emissions: “Since 2010, GHG emissions without LUC have grown at 1.3 per cent per year on average, with preliminary data suggesting a 1.1 per cent increase in 2019. When including the more uncertain and variable LUC emissions, global GHG emissions have grown 1.4 per cent per year since 2010 on average, with a more rapid increase of 2.6 per cent in 2019 due to a large increase in vegetation forest fires. LUC emissions account for around 11 per cent of the global total, with the bulk of the emissions occurring in relatively few countries.”
- G20 countries account for bulk of emissions: Over the last decade, the top four emitters (China, the United States of America, EU27+UK and India) have contributed to 55 per cent of the total GHG emissions without LUC. The top seven emitters (including the Russian Federation, Japan and international transport) have contributed to 65 per cent, with G20 members accounting for 78 per cent. The ranking of countries changes dramatically when considering per capita emissions.
- Is the GHG emission rate slowing? “There is some indication that the growth in global GHG emissions is slowing. However, GHG emissions are declining in Organisation of Economic Cooperation and Development (OECD) economies and increasing in non-OECD economies. Many OECD economies have had a peak in GHG emissions, with efficiency improvements and growth in low-carbon energy sources more than offsetting the growth in economic activity. Despite improving energy efficiency and increasing low-carbon sources, emissions continue to rise in countries with strong growth in energy use to meet development needs.”
- On consumption-based emissions: “There is a general tendency that rich countries have higher consumption-based emissions (emissions allocated to the country where goods are purchased and consumed, rather than where they are produced) than territorial-based emissions, as they typically have cleaner production, relatively more services and more imports of primary and secondary products. In the 2000s, the gap between consumption and production was growing in rich countries but stabilised following the 2007–2008 global financial crisis. Even though rich countries have had higher consumption-based emissions than territorial-based emissions over the last decade, both emission types have declined at similar rates.”
- Did the COVID-19 pandemic impact the emission level? “CO₂ emissions could decrease by about 7 per cent in 2020 (range: 2–12 per cent) compared with 2019 emission levels due to COVID-19, with a smaller drop expected in GHG emissions as non-CO₂ is likely to be less affected. However, atmospheric concentrations of GHGs continue to rise.”

- Which sector reported the lowest dip in emission due to pandemic? “The reduction in GHG emissions in 2020 due to COVID-19 is likely to be significantly larger than the 1.2 per cent reduction during the global financial crisis in the late 2000s. Studies indicate that the biggest changes have occurred in transport, as COVID-19 restrictions were targeted to limit mobility, though reductions have also occurred in other sectors.”
- What about other GHGs (excluding carbon dioxide) level? “Although CO₂ emissions will decrease in 2020, the resulting atmospheric concentrations of major GHGs (CO₂, methane (CH₄) and nitrous oxide (N₂O)) continued to increase in both 2019 and 2020. Sustained reductions in emissions to reach net zero CO₂ are required to stabilise global warming, while achieving net-zero GHG emissions will result in a peak then decline in global warming.”
- Are countries on track to attain net zero level? “At the time of completing this report, 126 countries covering 51 per cent of global GHG emissions have net-zero goals that are formally adopted, announced or under consideration. If the United States of America adopts a net-zero GHG target by 2050, as suggested in the Biden-Harris climate plan, the share would increase to 63 per cent.”

5.5. Aerosols in Indo-Gangetic Plain have led to increased incidents of high rainfall in the Himalayan foothills

- Context: Scientists have found that aerosols like black carbon and dust, which makes the Indo-Gangetic Plain one of the most polluted regions of the world, have led to increased incidents of high rainfall events in the foothills of the Himalayan Region.
- The Indo-Gangetic Plain is located South and upwind of the Himalayan foothills.
- The region is associated with high aerosol loading, much of which is black carbon and dust, and thus provides an opportunity for studying how aerosol affects extreme rainfall events, particularly when air mass is forced from a low elevation to a higher elevation as it moves over rising terrain technically called orographic forcing.
- A team of researchers from National Institute of Technology Rourkela, Leipzig Institute for Meteorology (LIM), University of Leipzig, Germany, Indian Institute of Technology Madras, Indian Institute of Technology Kanpur supported by the Department of Science & Technology, under DST Climate Change program have highlighted the crucial role of the aerosol direct radiative effect on high precipitation events over the Himalayan region.
- They showed that particulate emissions can alter the physical and dynamical properties of cloud systems and, in turn, amplify rainfall events over orographic regions downwind of highly polluted urban areas.
- The study used 17 years (2001–2017) of rainfall rate, aerosol measurements called aerosol optical depth (AOD), meteorological reanalysis fields such as pressure, temperature, and moisture content at different altitudes are used to compute the thermodynamic variable “moist static energy” and outgoing long-wave radiation from Indian region to investigate high precipitation events on the foothills of the Himalayas.

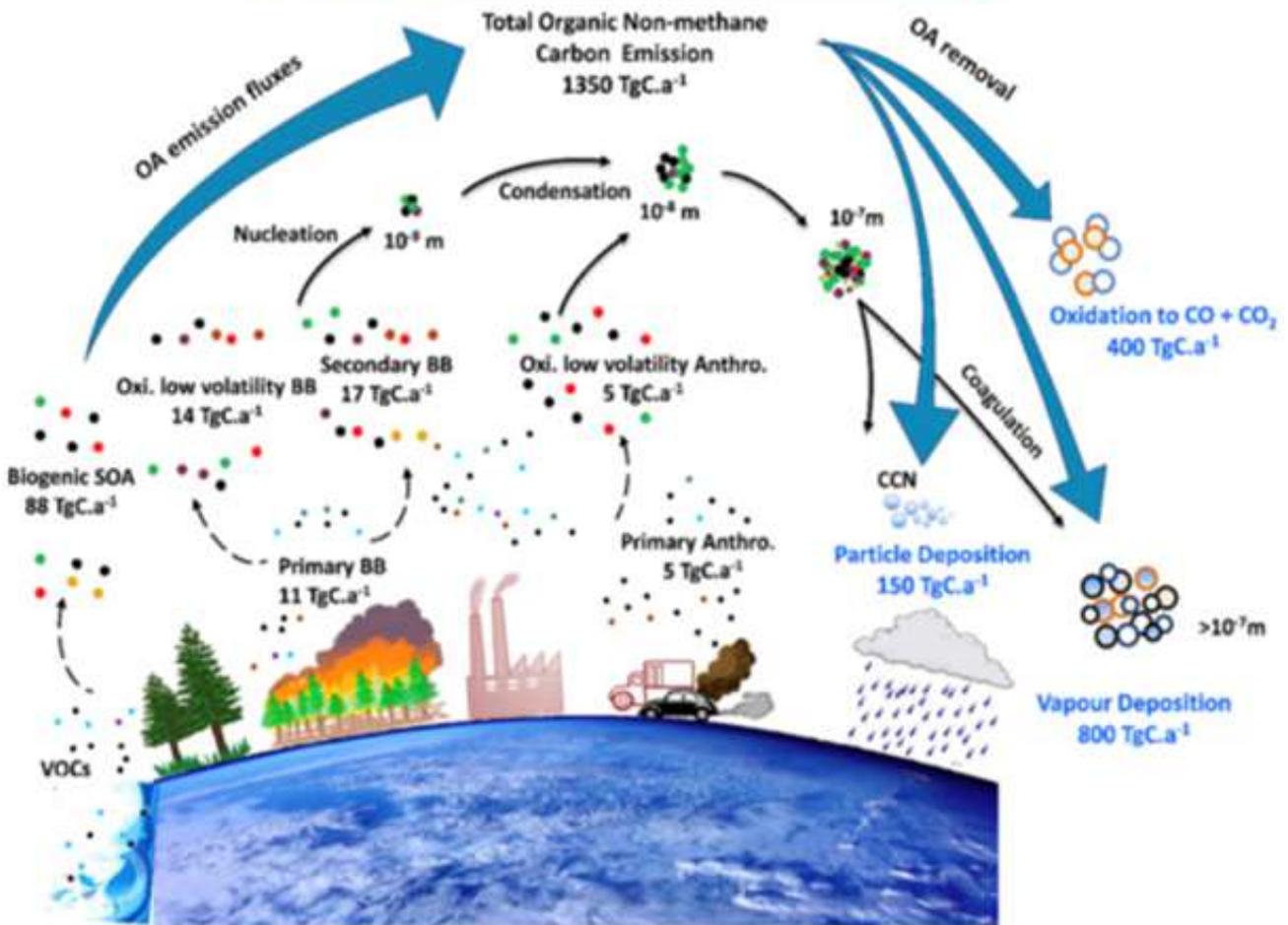
What is an Aerosol?

Small Particle (between a few nm and a few μm)

Composed of various chemical species (Sulfates, Nitrates, Sea Salt, Carbons, and more!)



PM10 (10 μm)

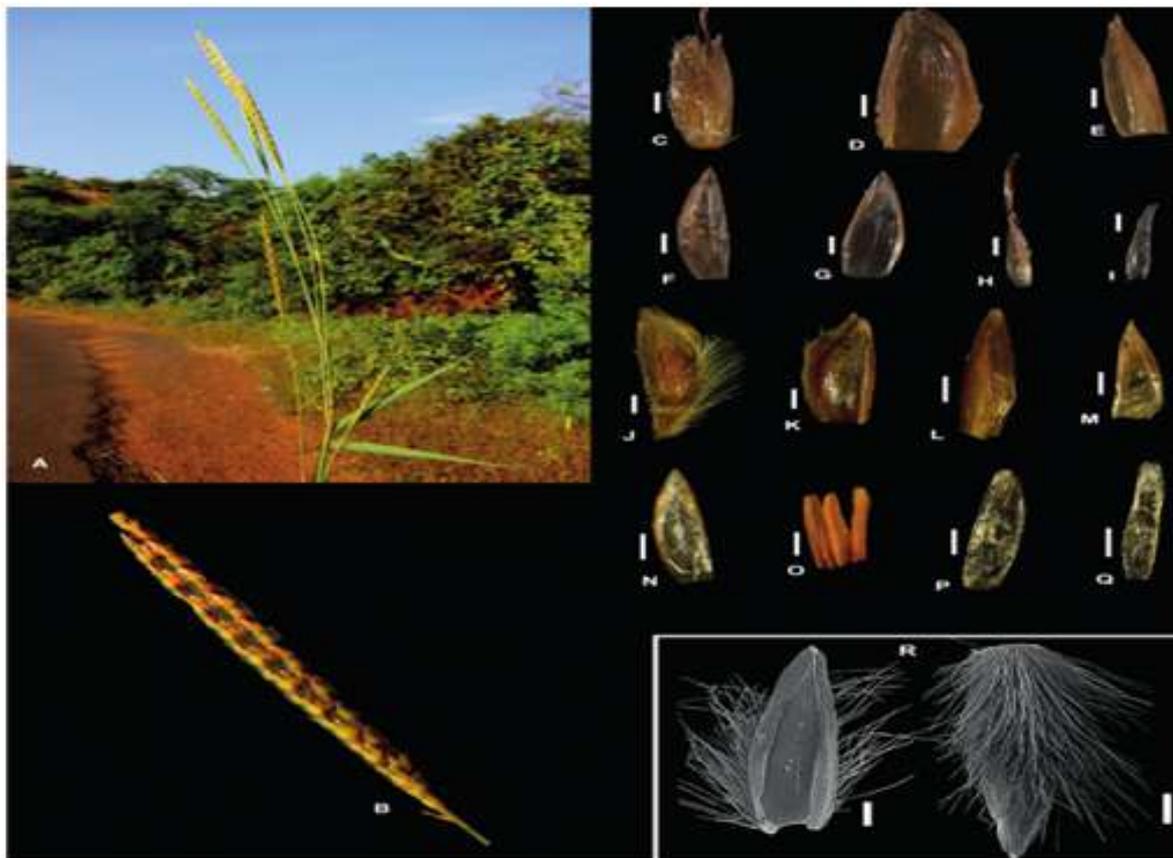


- The team found clear associations between high precipitation events, high aerosol loading, and high moist static energy (MSE) values (Moist static energy of an air mass includes the potential energy due to its height above the ground and the latent heat due to its moisture content).
- The findings also highlight the crucial role of the radiative effect of aerosol on high precipitation events over the Himalayan region.
- The results of the study indicate that aerosols can play a vital role in exciting high precipitation (HP) events over the Himalayas during the monsoon season. Thus, aerosols, including chemistry, are essential to consider when forecasting HP events over the Himalayan region in regional modelling studies.

5.6. Muraingrass

- A new species of Indian Muraingrasses known for their ecological and economic importance, such as fodder, have been spotted by scientists in Goa in the Western Ghats.
- The species has adapted to survive harsh conditions, low nutrient availability, and blossoms every monsoon.
- Globally 85 species are known from *Ischaemum*, of which 61 species are exclusively found in India.
- The Western Ghats have 40 species with the highest concentration of the genus.
- Agharkar Research Institute (ARI), Pune, an autonomous institute of the Department of Science & Technology, has been exploring the biodiversity of the Western Ghats for last few decades.

- They discovered a novel species named *Ischaemumjanarthanamii* from plateaus of Western Ghats of Goa.
- The species was named *Ischaemumjanarthanamii* in honour of Prof. M. K. Janarthanam, Professor of Botany, Goa University, for his contribution to the Indian grass taxonomy and documentation of the floristic diversity of Goa state.
- The first collection of this new species was made in the 2017 monsoon.
- The population was kept under observation for the next two years to confirm the consistency of its characters.
- Morphological and molecular data of the species were used to confirm the novelty of the species.
- *Ischaemumjanarthanamii* grows on low altitude lateritic plateaus in the outskirts of Bhagwan Mahavir National Park, Goa.
- The vegetation is exposed to extreme climatic conditions like desiccation in drier months and soils with low nutrient availability.
- However, withstanding these, the species has adapted to survive harsh conditions and blossom every monsoon.



5.7. Why are villagers in Maharashtra's Dahanu objecting to the Vadhavan port project

- Context: Villagers in Vadhavan in Maharashtra's Dahanu taluka, about 131 km from Mumbai, came out in protest against a biodiversity survey commissioned by the Jawaharlal Nehru Port Trust (JNPT) for the construction of the Vadhavan Port that received in-principle approval from the Union Cabinet in February.

Why are the villagers in Vadhavan opposed to the construction of the port?

- Locals are protesting against a biodiversity survey undertaken by officials of JNPT and scientists from the National Institute of Oceanography for the construction of a port at Vadhavan.
- They believe construction of port will be detrimental to the environment and their livelihoods.
- Dahanu is one of the eight talukas in Maharashtra's newest district of Palghar, which was created in 2014.
- But over two decades prior to that, the Union Ministry of Environment and Forests (MoEF) had, under the provisions of The Environment (Protection) Act, 1986, declared Dahanu an "ecologically fragile area" and imposed restrictions on setting up of industries that have a detrimental effect on the environment.
- Stressing on the ecological sensitivity of the area, the locals have said that the construction of the port will not only hurt the flora and fauna of Dahanu, but will also disrupt allied activities like fishing and farming.
- Dahanu is only one of three places in India where liveconches can be found, and which gives the seafront of Vadhavan the name of "Shankhodar".
- The rocks, moss, and corals in the sea, he said, are favourable not just for fishing but also for fish seeding.
- The protesters also said that the survey team of five, including two scientists, could not have carried out the survey without informing the Gram Panchayat of Vadhavan that passed a resolution against the proposed port in 2014.
- The protesters and environmentalists say that the survey should have been carried out with permission from the Dahanu Taluka Environment Protection Authority, or DTEPA, formed in 1996 following orders of the Supreme Court.
- The MoEF had last year urged the court to dissolve the authority, and the matter remains pending.

What does the Vadhavan port project entail?

- The port project is part of the Centre's Sagarmala initiative that aims to make Indian ports major contributors to the country's GDP.
- The JNPT and the Maharashtra Maritime Board are development partners for the project.
- The Vadhavanport, will be India's 13th major port, has been planned by the JNPT as an 'All Weather, All Cargo' satellite port to enhance capabilities in handling deep draft ships and larger vessels.

- With an increase in container shipping, the port, which will be close to the JNPT in Uran, Navi Mumbai, is also expected to handle the spillover in container vessel traffic at the Jawaharlal Nehru Port, which is India's top container port.

How did the port get approval in an ecologically fragile area?

- In February, the Union Cabinet gave in-principle approval for the construction of the port.
- In June, after the DTEPA raised an objection to the project, the MoEF informed the authority that the port is allowed in the taluka.
- The Shipping Ministry had, while seeking the Union Cabinet's in-principle approval in February, stated that there was no restriction on constructing a port in Vadhavan – arguing that a port has no manufacturing or processing activity, and is therefore, not an industry; rather it is an infrastructure project.
- In a statement the JNPT said that as part of the order issued by the MoEF on June 8, 2020, it had recognised that “services rendered by a Port are not classified as ‘RED’ category and declared that Port under no circumstances is an industry.
- Ports provide services to the Exim trade thereby they do not contribute to the pollution in and around the region of Vadhavan.

6. Science & Technology

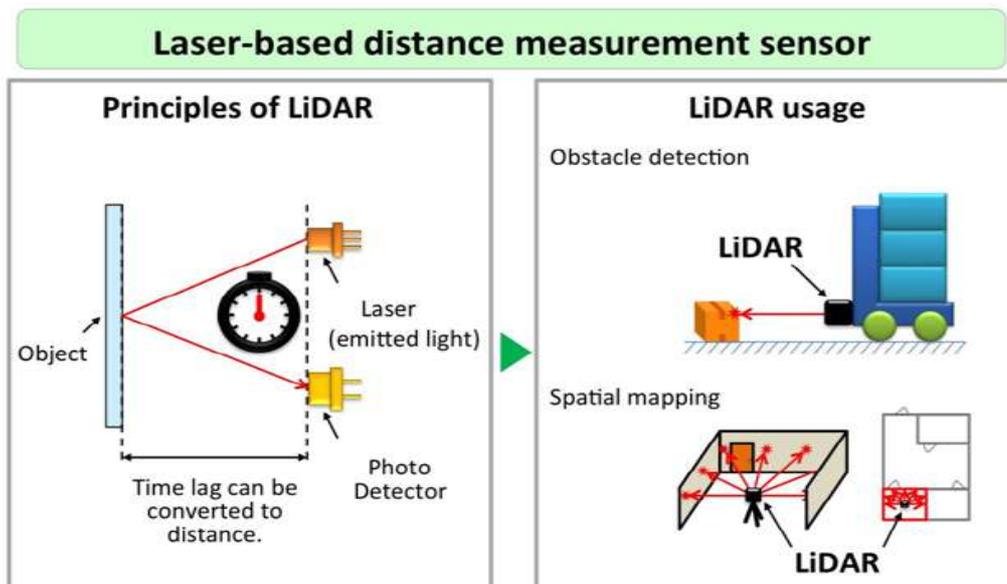
Click [here](#) to watch the following questions on YouTube

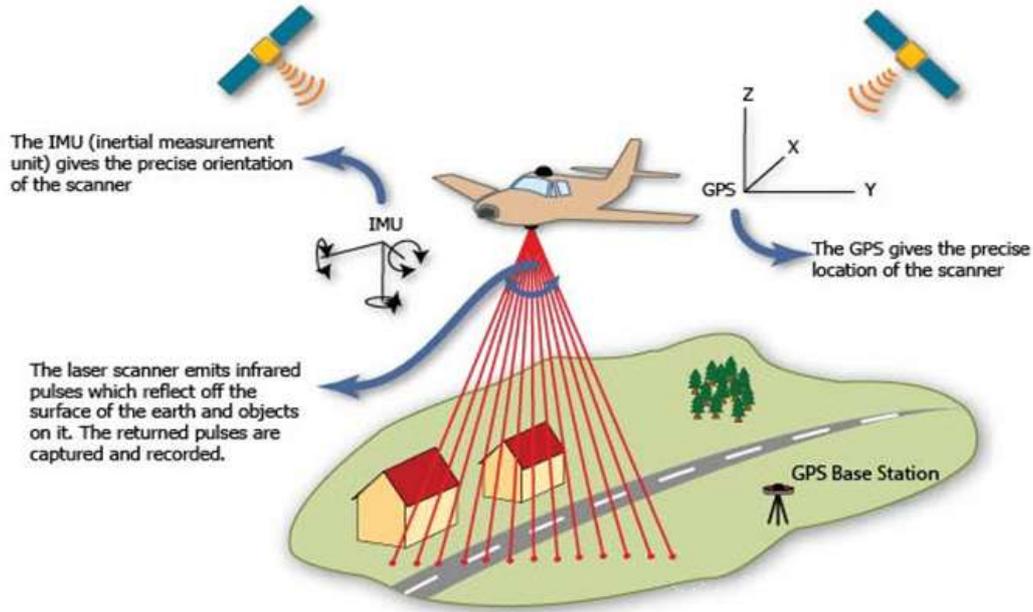
6.1. LiDAR Technique

- Delhi-Varanasi bullet train project: NHRCL to conduct ground survey using LiDAR technique
- Indian Railways has entrusted National High Speed Rail Corporation Limited (NHRCL) with the work for preparing Detailed Project Report (DPR) for the Delhi-Varanasi High Speed Rail (HSR) corridor.
- This corridor is among the eight high-speed networks that the Railways is planning across the country, one of which -- the Mumbai-Ahmedabad high-speed rail (HSR) -- is under construction.

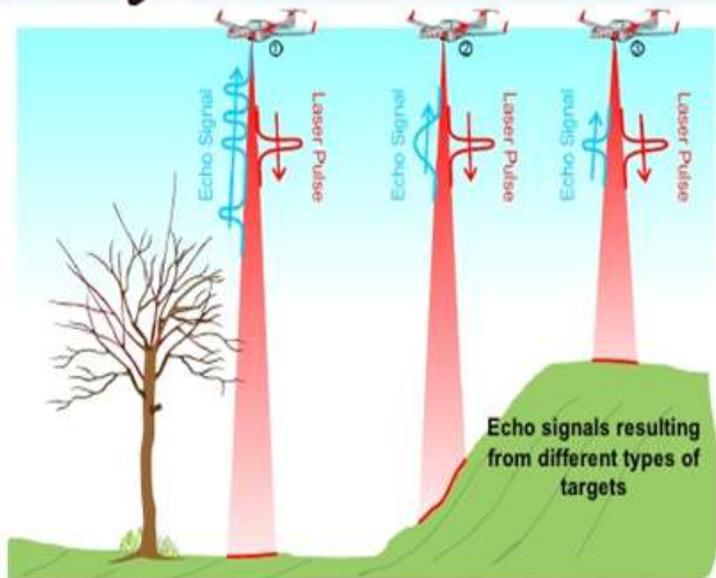
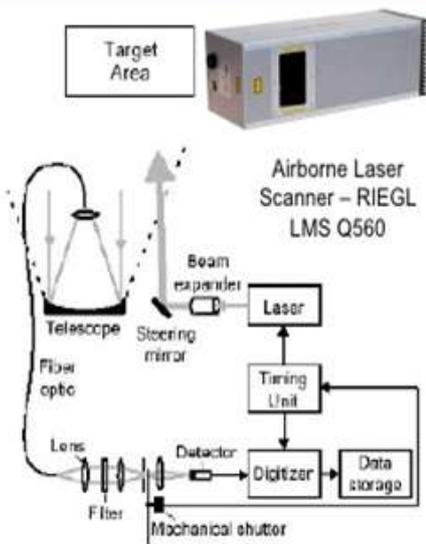
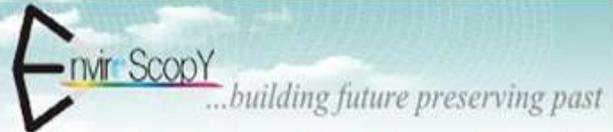
LiDAR technique

- National High Speed Rail Corporation Limited will be adopting Light Detection and Ranging Survey (LiDAR) technique using Laser enabled equipment mounted on a helicopter for conducting ground survey for the preparation of Detailed Project Report for the proposed Delhi-Varanasi HSR corridor.
- The alignment or ground survey is a critical activity for any linear infrastructure project as the survey provides details of areas around the alignment.
- This technique uses a combination of Laser data, GPS data, flight parameters and actual photographs to give accurate survey data.
- Based on the findings of the survey, designing of the vertical & horizontal alignment, structures, location of the stations and depots, Land requirement for the corridor, identification of project affected plots/structures, right of way etc are decided.
- The aerial LiDAR survey technique, for the first time for any railway project in India, was adopted for the Mumbai- Ahmedabad High Speed Rail Corridor primarily because of its high accuracy.





3. The principle of airborne LIDAR technique



LIDAR sensors, used for topographic applications operate in the near infrared band.

Unlike photogrammetry, LIDAR data collection is not affected by sun angle and does not require collection to be performed in late fall or early spring for leaf-off conditions

Typical Sensor Characteristics

Parameter	Typical value(s)
Vertical accuracy (cm)	15
Horizontal accuracy (m)	0.2 - 1
Flying height (m)	200 - 8,000
Scan angle (deg)	1 - 75
Scan rate (Hz)	0 - 40
Beam divergence (mrad)	0.3 - 2
Pulse rate (KHz)	05 - 33
Footprint diameter (m) from 1,000 m	0.25 - 2
Spot density (m)	0.25 - 12

1st International Symposium of Technical Geography-Cluj Napoca 30-31th of May 2008

6.2. Vitamin C Fortified Rice

- **Context:** The Odisha government has decided to distribute vitamin C fortified rice in Malkangiri district to reduce malnutrition and anaemia. Seven out of 10 women in the district are anaemic and every second child is stunted or underweight.
- The state government has signed an agreement with a New Delhi-based company which will fortify rice with vitamin C.
- The state civil supplies department had placed an order for these machines for owners of 23 old and three new rice mills in the district.
- The department will supply paddy to rice millers, who would fortify it with vitamin C, which will then be distributed to consumers through the PDS from February 2021.
- As per the food supplies & consumer welfare department, Odisha, there are 507,025 total beneficiaries under the national food security act, in Malkangiri district.
- All of them would be supplied vit C fortified rice.
- According to the World Health Organization (WHO), food fortification is defined as the practice of deliberately increasing the content of essential micronutrients so as to improve the nutritional quality of the food supply and to provide a public health benefit with minimal risk to health.
- In October 2016, Indian government's Food Safety and Standards Authority Of India (FSSAI) operationalized the Food Safety and Standards (Fortification of Foods) Regulations, 2016 for fortifying staples namely wheat flour and rice (with iron, Vitamin B12 and folic acid), milk and edible oil (with Vitamins A and D) and double fortified salt (with iodine and iron) to reduce the high burden of micronutrient malnutrition in India.
- Several food experts, and activists have strongly opposed the decision.
- They believe this decision will only benefit companies engaged in artificial vitamin-C enrichment
- The rice when cooked, boiled, and drained, will lose more than 75 per cent of the artificially added vitamin C as it is a water-soluble vitamin.
- Anaemia, which results from a lack of red blood cells or dysfunctional red blood cells in the body, leads to reduced oxygen flow to the body's organs.
- Iron supplements can be used for iron deficiency.

Food for thought

Fortification of eatables is aimed at fighting malnutrition

What it means

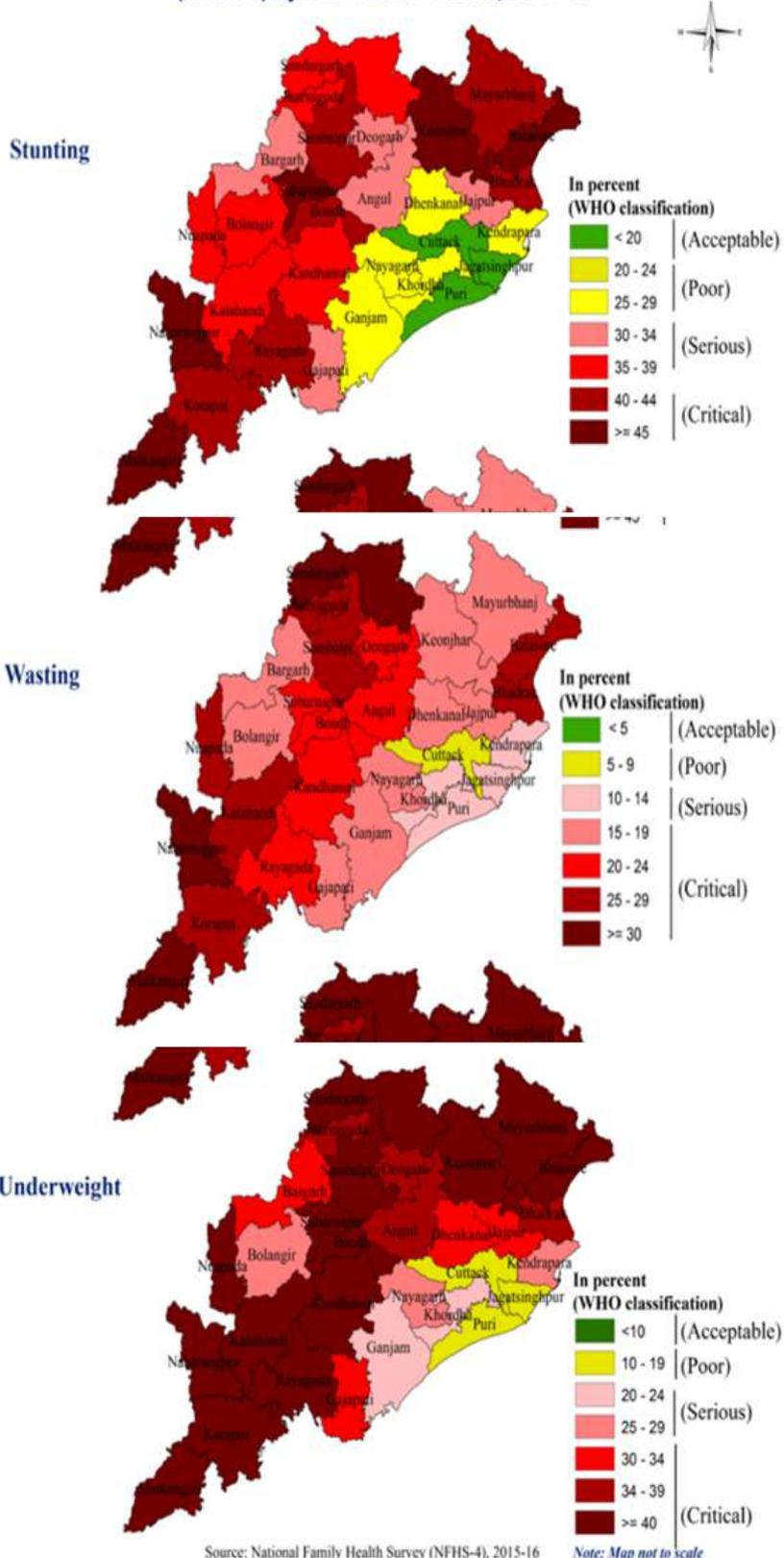
Fortification is the addition of key vitamins and minerals, such as iron, iodine, zinc, Vitamins A & D, to staple foods such as rice, milk and salt to improve their nutritional content



- The nutrients may or may not have been originally present in the food before processing
- It is a simple, proven, cost-effective and complementary strategy in use across the globe
- The draft Food Safety and Standards Regulations, 2016, prescribe the standards for fortification of salt, oil, milk, and rice

- And as per a study, vitamin C also plays an important role in iron metabolism, application for red blood cell formation, and absorption of iron in the body.
- According to the National Family Health Survey (NFHS), 2015-2016, seven in ten women in the age group of 15-49 years in Malkangiri district are anaemic.
- Meanwhile, 47.2 per cent of men in the same age bracket, and 72.2 per cent of children (6-59 months) are anaemic, respectively.
- As per the same NFHS report, only 16.8 per cent of children (6-23 months) in the district receive an adequate diet. More than 45 per cent of under-five children are stunted (height-for-age), and 51.8 per cent are underweight (weight-for-age).
- Odisha has the third-highest percentage of tribal population in the country (9.5 million), as documented in the Population Census 2011.
- Recently, the state government announced to introduce fish and fish-based products to anganwadi children and pregnant and lactating women in Mayurbhanj, a predominantly tribal district, where 43.5 per cent of children under-5 years are stunted (low height-for-age) and 45.6 per cent of pregnant women are anaemic.
- This move was welcomed by activists and nutritionists.
- However, the initiative of vitamin C fortified rice is facing criticism.
- Experts believe in place of artificially adding vitamin C to rice, the state government should provide natural food sources, such as amla and lemon.

Map 5.1: Percentage of Stunted, Wasted and Underweight Children (under 5) by Districts in Odisha, 2015-16





- On World Food Day, the central government announced supplying fortified rice in schools covered under the mid-day meal programme.
- These fortified rice will carry three micronutrients – B12, iron and folic acid.

6.3. Draft guidelines of Technical Specifications of Floating Structures

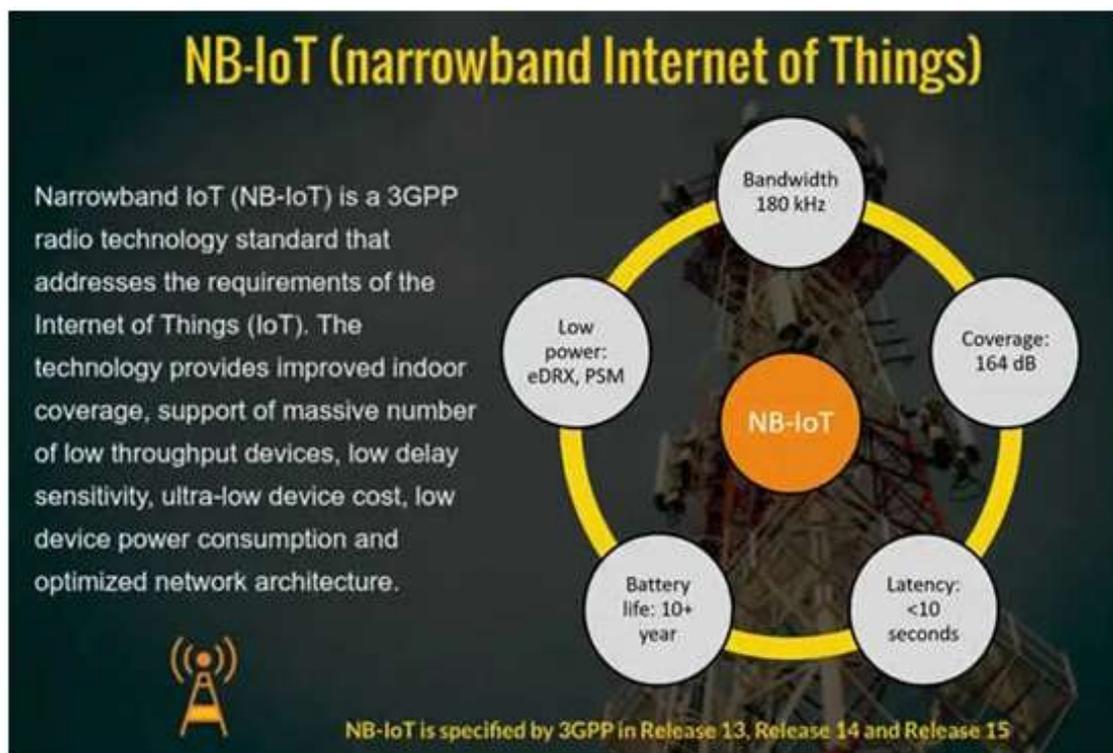
- Ministry of Ports, Shipping and Waterways has compiled the draft guidelines for technical specifications of floating structures, with a vision to set up and deploy world-class floating infrastructure all along the coastline and issued the same for public consultation.
- Floating structure because of its inherent advantages, is attractive solution and being encouraged by the Ministry of Ports, Shipping and Waterways.

The benefits of floating jetties over the conventional quay and fixed concrete structures are as follows

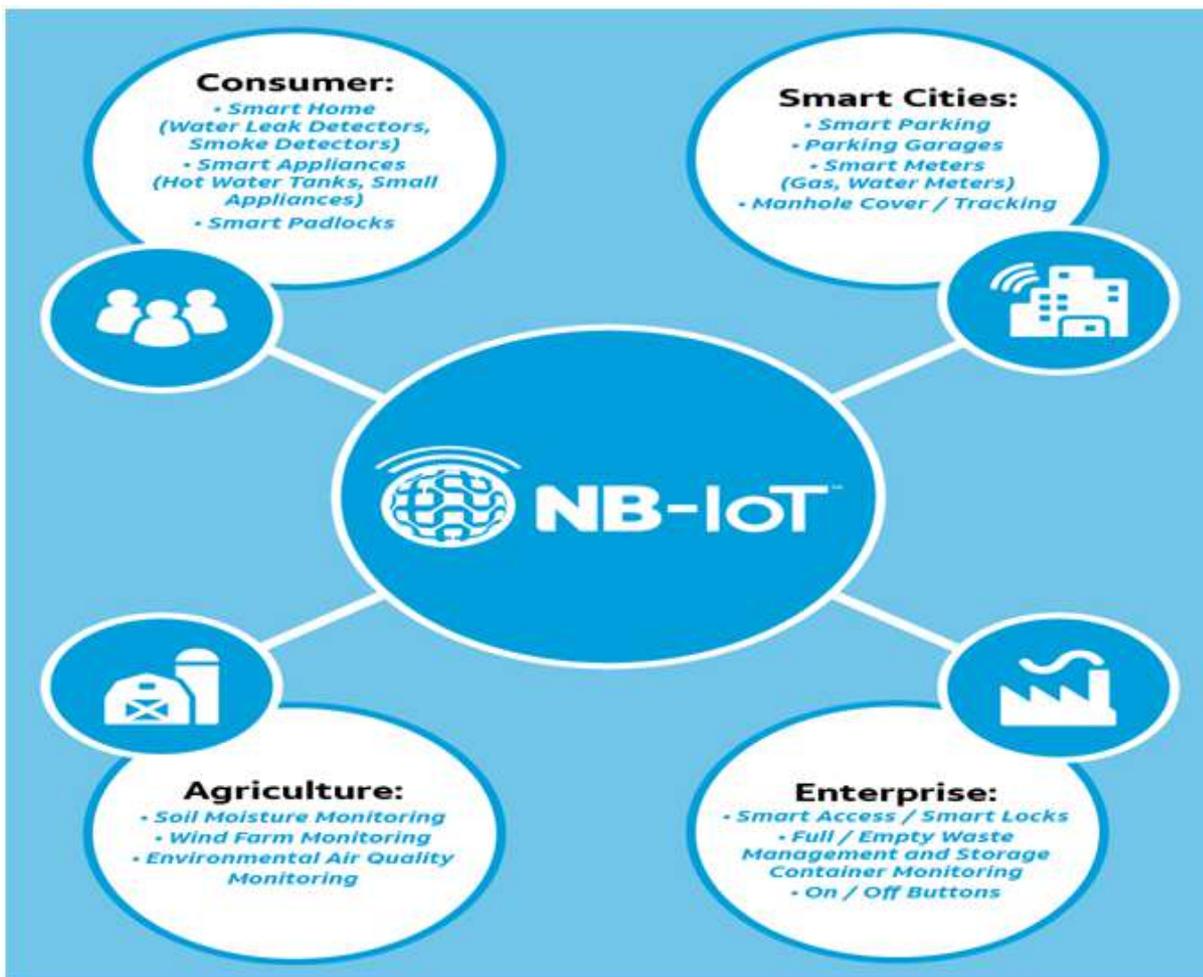
- It is a cost-effective solution and much cheaper than conventional structures price.
- Setting up of floating structures is much faster as compared to conventional jetties. Usually, floating structures can be built in 6-8 months as compared to 24 months for conventional structures.
- Its environmental impact is minimal.
- Expansions are easily feasible due to modular construction techniques.
- It is easily transportable in case of reconfiguring of the port.
- It provides constant freeboard between jetties and boats.
- Deployment of floating jetties, especially in locations having a large tidal range, where conventional quay poses problems during low tide periods, is very convenient.
- Floating Jetties, at such locations, provide constant freeboard, eases embarkation of ship's stores and straightforward unloading of the fishermen's catch.
 - ✓ It consequently leads to increased productivity as well as safety of the fishermen in the long run.
 - ✓ Ministry of Ports, Shipping and Waterways has successfully implemented a few pilot projects in the recent past by following the international guiding principles.
 - ✓ These include setting up of passenger floating jetties in Goa, water-aerodromes at Sabarmati River & at Sardar Sarovar Dam (for the seaplane services) which are yielding the best results.
 - ✓ More than 80 similar projects of the Ministry are under planning stage all along the coastline for overall development and upliftment of the coastal community.
 - ✓ Ministry has entrusted IIT Chennai to work out the technical specifications of sustainable floating structures like floating jetties, water-aerodromes, floating marinas, fish landing facilities etc. so that precise and stringent technical specifications are established.

6.4.BSNL launches 'world's first' satellite-based narrowband-IoT network

- Context: BSNL, in partnership with Skylotech India, announced a breakthrough in satellite-based NB-IoT (Narrow Band-Internet of Things), in pursuance vision of a truly Digital India starting with fishermen, farmers, construction, mining and logistics enterprises.
 - ✓ With this solution, India will now have access to a connectivity for millions of yet unconnected machines, sensors and industrial IoT devices.
 - ✓ This new 'Made in India' Solution, which is indigenously developed by Skylo, will connect with BSNLs satellite- ground infrastructure and provide PAN-India coverage, including Indian seas.
 - ✓ The coverage will be so vast that it will not leave any dark patch within the boundary of India, from Kashmir & Ladakh to Kanyakumari, and from Gujarat to the North East, including the Indian seas.
- The solution is in line with BSNLs vision to leverage technology to provide affordable and innovative telecom services and products across customers segments
- Skylo would also help provide critical data for the logistics sector to enable effective distribution of COVID-19vaccine in 2021 and will be a big contributor in service to the nation.
- This breakthrough announcement is very timely because it comes during the ongoing Indian Mobile Congress 2020.
- This new technology supports the Department of Telecom and NITI Aayogs plan of bringing indigenous IoT connectivity to India's core sectors.



- Examples of where this technology has already been tested successfully include, Indian Railways, fishing vessels, and enabling connected vehicles across India.
- A small, smart, incredibly rugged box, the Skylo 'User Terminal' interfaces with sensors and transmits data to the Skylo Network and into people's hands.
- The accompanying Data Platform provides an immersive, visual, experience for industry-specific applications on mobile or desktop.
- It gives users the ability to take immediate and appropriate action, no matter where they are.
- This new digital machine connectivity layer will serve as a complement to smartphone-centric mobile & Wi-Fi networks, and covers India's full geography to bring online new applications for the first time.
- The device developed by Skylo will be provided only through the state-run firm at a price of around Rs 10,000 a unit.



6.5.CMS-01 Satellite

- The Indian Space Research Organisation (ISRO) successfully launched its 42nd communication satellite CMS-01.
- It lifted from the Second Launch Pad (SLP) of Satish Dhawan Space Centre at Sriharikota.
- Initially scheduled to launch on 8 December and again to 14 December, it was pushed back due to bad weather and the possibility of hurricanes.

- The CMS-01 satellite will be the first in a new series of communication satellites that India will be launching after the GSAT and INSAT series.
- Earlier ISRO had launched the PSLV C49 that had delivered 10 satellites.
- This included EOS-01 which is an earth observation satellite that will provide agriculture, forestry and disaster management support.
- CMS-01 is the 42nd communication satellite from India and weighs around 1,410 kgs.
- It will be replacing the ageing GSAT-12 satellite that was launched 15 July 2011 and was supposed to serve for seven years.

ISRO'S PSLV-C50 LIFTS OFF WITH CMS-01 SATELLITE

PSLV-C50 successfully placed country's CMS-01 satellite into geosynchronous transfer orbit

- CMS-01 is India's 42nd communication satellite
- Will replace GSAT-12 satellite, launched in 2011
- Will provide telecom services in the Extended-C Band of the frequency spectrum
- Extended-C Band coverage will include Indian mainland, Andaman-Nicobar and Lakshadweep Islands
- Mission life: 7 years

PSLV-C50

- 52nd flight of PSLV
- 22nd flight of PSLV 'XL' variant

77th launch vehicle mission from Sriharikota spaceport

Source: ISRO

- However, it ended up serving a mission life of nine years.
- The CMS-01 will provide telecom services in the Extended-C Band of the frequency spectrum.
- The Extended-C Band coverage will include Indian mainland, Andaman-Nicobar and Lakshadweep Islands.
- Twenty minutes into the flight, it will be set in the Geostationary Orbit (GEO) at 83° inclination.
- The expected mission life of this spacecraft is supposed to be seven years or more.
- PSLV-C50 rocket launch will be followed by the launch of the new Small Satellite Launch Vehicle (SSLV) carrying the Earth Observation Satellite (EOS-02) and the Geosynchronous Satellite Launch Vehicle-F10 (GSLV) carrying the EOS-3.
- The other Indian satellites that are ready for launch are GISAT and Microsat-2A.

The PSLV-C50 rocket

- The Polar Satellite Launch Vehicle (PSLV) is ISRO's workhorse rocket.
- This will be the 22nd flight of the PSLV rocket in the 'XL' configuration, and the 52nd PSLV flight.
- ISRO added that this will be the 77th launch vehicle mission from SDSC, SHAR.
- The PSLV is 44-metre-high and has four stages with six strap-on booster motors on to the first stage that gives it's a higher thrust during the initial flight moments.
- ISRO has developed and used different PSLV variants, including ones with either two or four strap-on motors, or the Core Alone variant without any strap-on motors.



- As the PSLV is not a reusable rocket, the first stage won't be reclaimed and it will crash into the Indian Ocean.

6.6. Recognition Scheme for Hygiene Rating Audit Agencies

- The Quality Council of India (QCI) has come out with a scheme for approval of hygiene rating audit agencies
- The aim is to help consumers take informed decisions regarding food outlets where they prefer to eat by encouraging businesses to improve hygiene and safety standards.
- The recognised agency will verify compliance with food hygiene and safety procedures laid down by the Food Safety and Standards Authority of India (FSSAI).
- The food establishments are rated based on hygiene and safety conditions observed at the time of audit.
- It said the rating will be in the form of smileys (1 up to 5) and the certificate should be displayed prominently in the consumer facing area.
- Hygiene rating and its recognition scheme will help in improving confidence of Indian consumers and food service operators in basic hygiene and quality of food.

Quality Council of India

- The Quality Council of India (QCI) set up in 1997 is an autonomous body attached to the Department of Industrial Policy & Promotion, Ministry of Commerce and Industry.
- The Chairman of QCI is appointed by the Prime Minister on recommendation of the industry to the government.
- Its mandate is to establish and operate the National Accreditation Structure (NAS) for conformity assessment bodies and providing accreditation in the field of health, education and quality promotion.
- National Accreditation Board for Certification Bodies (NABCB) and National Accreditation Board for Testing and Calibration Laboratories (NABL) are the two accreditation boards of the QCI.
- These two bodies work closely to support the Government and regulators to ensure that the data provided by accredited conformity assessment bodies is robust, reliable, and trustworthy in terms of decision making, compliance testing and standards setting.
- Indian industry is represented in QCI by three premier industry associations namely ASSOCHAM; CII; and FICCI.