CURRENT AFFAIRS WEEKLY

WEEK: 1
MAY 2021

MAINS

PRELIMS

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— Disclaimer —

The current affairs articles are segregated from prelims and mains perspective, such separation is maintained in terms of structure of articles. Mains articles have more focus on analysis and prelims articles have more focus on facts.

However, this doesn't mean that Mains articles don't cover facts and PT articles can't have analysis. You are suggested to read all of them for all stages of examination.

CURRENT AFFAIRS ANALYST

WEEK- 1 (MAY, 2021)

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SECTION: A

(MAINS)

CURRENT AFFAIRS

HIMALAYAN FAULT LINES AND SEISMIC GAPS

CONTEXT

A series of earthquakes has hit Assam and major parts of the Northeast, causing extensive damage to the infrastructure.

⊙ BACKGROUND

- The Indian Plate has produced three north-dipping fault systems stacked on each other.
- These faults in the Himalayas, namely Main Boundary Thrust (MBT), Main Central Thrust (MCT) and the Himalayan Frontal Thrust (HFT), run along the Himalayan Ranges.
- The precursice analysis of the earthquake in Assam shows that the events are located closer to Himalayan Frontal Thrust near **Kopili Fault**.
- This area isextreme seismically active which falls in the highest Seismic Hazard zone V associated with collisional tectonics where Indian plate sub-ducts beneath the Eurasian Plate.

⊙ ANALYSIS

What is a fault?

- A fault is a fragmentation or zone of fractures between two blocks of rock. Faults allow the blocks to move relative to each other in different directions.
- This movement of blocks of rock can be rapid, in the form of an earthquake or may occur slowly, which is called as creep.
- Range of a fault can be few millimeters to thousands of kilometers. Most faults produce repeated displacements over geologic time.
- During the earthquake disaster, the rock on one side of the fault suddenly falls over with respect to the other.
- The fault surface can be vertical, horizontal or some arbitrary angle in between.

How is a fault created?

- A new fault is formed when the stress on the rock is great enough to cause a fracture, and one wall in the fracture moves relative to the other, which is caused by compressional/tensional force by the rising magma from the mantle.

Main Himalayan Thrust

- The **Main Himalayan Thrust** follows a North West-South East strike and is a décollement beneath the Himalaya Range, and gently dip towards the north, beneath the Himalayan region.
- MHT is the largest active continental mega-thrust fault in the world.
- Deformation of the crust is also accommodated along splay structures including the
  - Himalayan Frontal Thrust (HFT)
  - Main Boundary Thrust (MBT)
  - Main Central Thrust (MCT)

Himalayan Thrust

- **Himalayan Frontal Thrust**
  - The **Himalayan Frontal Thrust (HFT)**, also known as the **Main Frontal Thrust (MFT)** is a geological fault in the Himalayas that defines the boundary between the Indian and Eurasian Plates.

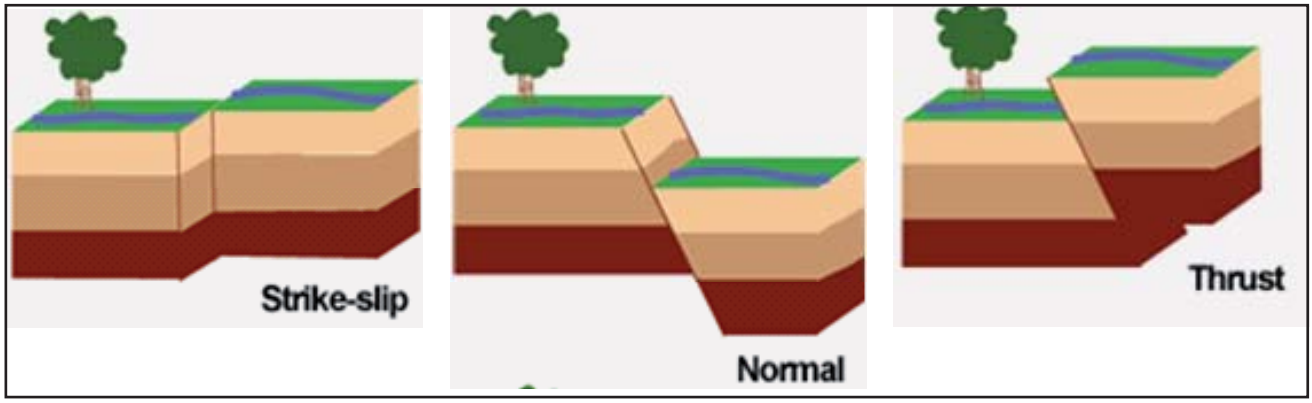

Figure 1: Fault

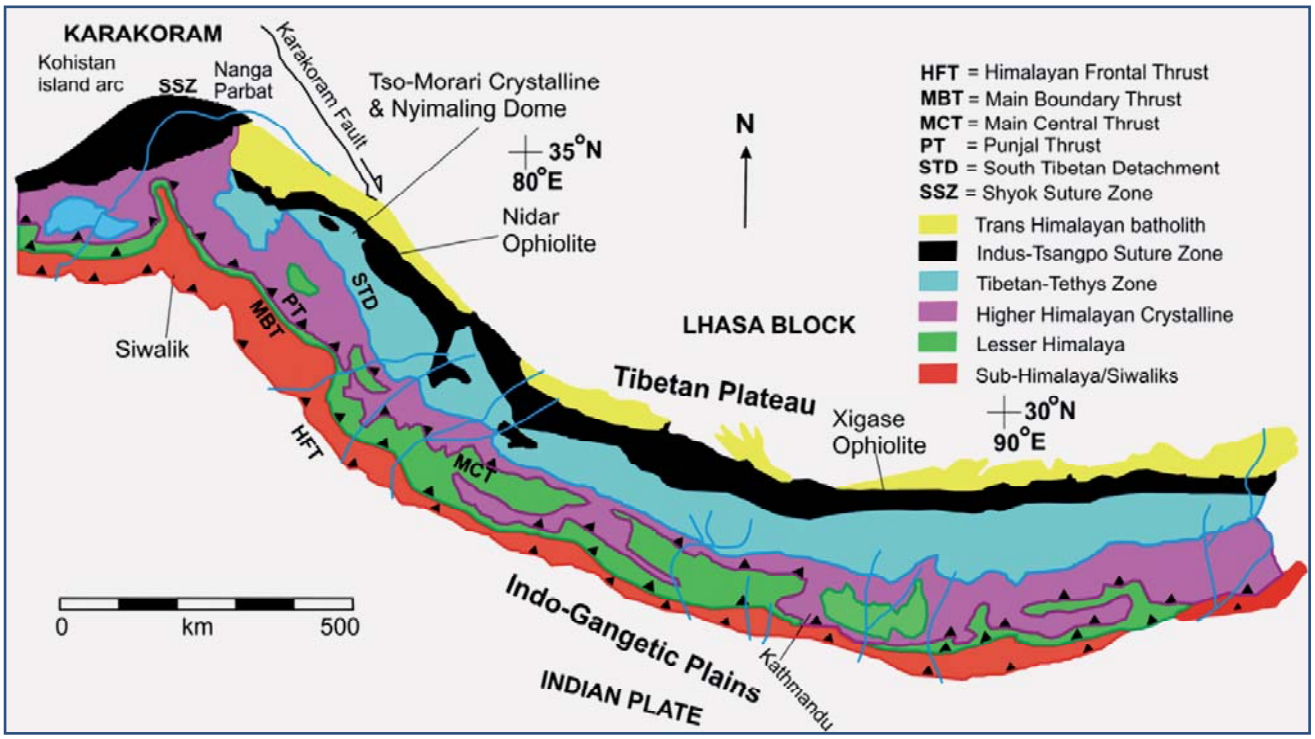

Figure 2: Himalayan Thrust

- The fault can be seen via satellite imagery because it is well expressed on the surface. The youngest and southernmost thrust structure in the Himalaya deformation front is Himalayan Frontal Thrust.
- As the root décollement, it is a splay branch of the Main Himalayan Thrust (MHT).

- **Main Boundary Thrust**
  - Occurred during the Cainozoin period, the Main Boundary Thrust (MBT) is one of the major Himalayan thrusts, and it is presently incorporated within the Himalayan thrust wedge (Lesser and Outer Himalayas) displaced above the Indian lithosphere
  - It shows the faulted contact between the Siwalik and the older Murree /Dharamshala beds in the Himalayas of Jammu-Himachal Pradesh.
  - MBT has been described `unambiguously' as the southern limit of the Main Himalayan structural unitsin the Darjeeling Himalayas.
  - The MBT is considered to be the thrust that transports older, Gondwana rocks from the north over the younger, Lower Siwalik rocks to the south.

- **Main Central Thrust**
  - The **Main Central Thrust** is a major faultwhich is formed where the Indian Plate has pushed under the Eurasian Plate along the Himalaya. The fault is exposed on the surface in a NW-SE direction as it slopes down to the north. It is a 2200km longthrust fault that continues along Himalaya mountain belt.

What is seismic gap?

- A seismic gap a section of an active fault which has the potential to produce significant earthquake(s).
- The rocks at the gap have not slipped from their position, compared with other segments along the same structure in a long time.
- A hypothesis suggests that over along period of time, the displacement on any segment must be equal to the displacement experienced by all the other parts of the fault.
- Any large or longstanding gap in displacement is considered to be the fault segment most likely to suffer future earthquakes.

Three main seismic gaps in Himalayas

- **Assam Gap:** between the 1950 Assam and 1934 Bihar–Nepal earthquake ruptures, this has potential to cause at least three great earthquakes.
- **Central Gap:** between the 1905 Kangra and 1934 Bihar–Nepal earth-quakes, this has potential to cause three great earthquakes.
- **Kashmir Gap:** lies west of the1905Kangra earthquake rupture, this has potential to cause at least two great earthquakes.

⊙ CONCLUSION

Due to high population density, urbanization, deforestation and unprecedented growth of poor construction in the Himalayan foothills and Indo-Gangetic plains, scientists are of the view that even the occurrence of a single major earthquake will be disastrous for the region. Occurrence of a great magnitude earthquake any-where along the Himalayan arc can claim lives of up to 1 million people. Hence it is desirable to stress on the need of earthquake preparedness and enforcement of good construction practices. Seismological and GPS networks in the Himalaya should be installed other than the continuing efforts to understand the earthquake occurrence processes through, it is important that early earthquake warning systems be installed which may mitigate the risk in high population density regions in the Indo-Gangetic plains, ad-joining the Himalayan arc.

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RUSSIA'S WITHDRAWAL FROM ISS AND LAUNCH OF ROSS

CONTEXT

Russia will launch its own space station in space by 2028 and has named it ROSS (Russian Orbital Service Station) which is seen as a new thread in technology lead space diplomacy countering International Space Station

⊙ BACKGROUND

- In a recent development Russia has announced that it would withdraw from the International Space Station by 2025, and build its own space station that will be functional in the orbit by 2028.
- When the decisions between Russia and USA are already strained and deteriorating on many fronts, these two powers are accusing each other of militarisation of space and it's use for non-peaceful means.

⊙ ANALYSIS

What is a space station?

- The space station or orbital space station is a satellite cum laboratory cum spacecraft, which is capable to support humans on board the spacecraft for an extended time varying upto months. It does not have any major landing or propulsion system.
- A space station should have docking ports which allows other spacecrafts to dock and transfer crew and other supplies
- There can be many reasons to maintain a space station, they are mainly launched for civilian usage-majorly technology and science but dual purpose to aid military capabilities can't be overlooked.

Major Space Stations

- **Salyut 1:** first space station launched by Soviet Union in 1971
- **Skylab:** first United States space station launched by NASA in 1973
- **Mir:** Launched by USSR and was functional in low earth orbit between 1986-2001
- **International Space Station:** multinational collaborative project stationed in low earth orbit launched in 1998
- **Tiangong Space Station:** it is a China's program to create a **modular space station**. This program is sole venture of China without the help of any other nation. The program began in 1992 as **Project 921-2**. China is working on large multiphase construction program as of now

How International Space Station has benefited Earth?

- **Commercializing low-Earth orbit**
  - For the first time in history of mankind, the market is expressing its intent towards what research can be conducted aboard under microgravity lab without any government help rather, the private companies are investing and raising capital to provide laboratory facilities for small payloads and CubeSats, which is bound to make research faster, efficient and affordable
- **Growing high-quality protein crystals**
  - Microgravity allows for optimal growth of the unique and complicated crystal structures of proteins leading to the development of medical treatments. Hematopoietic prostaglandin D synthase (H-PGDS), which **may hold the key to developing useful drugs** for treating muscular dystrophy, is an example of a protein that was successfully crystallized in space.
- **Bringing space station ultrasound to the ends of the Earth**
  - Doctors are taking up techniques originally developed for space station astronauts and adapting them for use in Earth's farthest corners by developing protocols for performing complex procedures rapidly with remote expert guidance and training
- **Improving eye surgery with space hardware**
  - The **Eye Tracking Device experiment** gave researchers insight into how humans' frames of reference, balance and the overall control of eye movement are affected by weightlessness. Now the engineers have realized that this gadget also has utility on Earth among general public
- **Understanding the mechanisms of osteoporosis**
  - Scientists conducted a study of mice in orbit to understand mechanisms of osteoporosis. Due

to this research the Prolia® was developed on earth to treat people with osteoporosis, a direct benefit of pharmaceutical companies using the spaceflight opportunity available via space lab to improve health on Earth.

- **Providing students opportunities to conduct their own science in space**
  - ISS conducts various projects like YouTube Space Lab competition, the Student Spaceflight Experiments Program, and **SPHERES Zero Robotics**- these types of inquiry-based projects allow students to be involved in human space exploration with the goal of stimulating their studies of science, technology, engineering and mathematics
- **Monitoring water quality from space**
  - Hyperspectral Imager for the Coastal Ocean (**HICO**) was an imaging sensor that helped detect water quality parameters such as water clarity, phytoplankton concentrations, light absorption and the distribution of cyanobacteria.
- **Monitoring natural disasters from space**
  - International Space Station has captured photographs of Earth from space which has provided tremendous aid during disaster management and developing disaster management techniques beforehand

Intended benefits from Russian Orbital Service Station (ROSS)

- From ROSS, the astronauts can gaze whole of the territory of Russia, unlike the ISS from which they can see only 20% of the territory.
- It can be fitted with earth observation transponders and will keep an eye on Northern Sea Route.
- ROSS will be a specialized industrial space station. It will have production compartments that will allow it to perform a number of new tasks that are not available on the ISS.
- ROSS will include a so-called slipway module, on which it will be possible to park various types of automatic spacecraft and satellites, repair them, refuel them, adjust the payload, and then send them back to autonomous flight
- Roscosmos envisage to create a fleet of tugs attached to ROSS that will be able to launch these satellites from the station into the right orbit

⊙ CONCLUSION

- Russia has been a crucial player in making the ISS a success, with other space agencies relying on advanced Russian modular space station construction technology to build the space station in the initial years, US was also dependent on Soyuz passenger vehicles, till last year, to transport astronauts to ISS after US shut down its Space Shuttle Program, but now NASA will use SpaceX system.
- The Russia and China have also entered into an agreement for lunar exploration which is seen as counter to NASA's Artemis program. These recent developments in the field of space technology and space diplomacy are new to their era and India must launch its own space station in coming days.

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CLAMPDOWN OF INFORMATION TANTAMOUNT TO CONTEMPT OF COURT

CONTEXT

The Supreme Court has warned the law enforcement agencies that there can be no clampdown on citizens right to communicate their grievances on social media platforms regarding COVID-19, otherwise it will be treated as contempt of court.

⊙ BACKGROUND

- There have been acute shortages of COVID-19 resources like- oxygen cylinders, hospital beds, Remdesivir etc. as India is grappled under second wave of COVID-19
- A large number of citizens are seeking help on social media in their personal capacity because apparently the state has failed to deliver those welfare goods
- States think it will create a wrong perception in masses and can create a panic situation

⊙ ANALYSIS

What is contempt of court?

- Contempt of Court is disobedience to the court whether wilfully or accidentally, by acting in defiance to the authority, justice and dignity.
- The power to punish for Contempt can be duly exercised by the court to up hold the dignity of the court of law and protect its proper functioning whenever an any person or body adversely affects the administration of justice by its act or tends to impede the course of justice, or shake public confidence in a judicial institution.

Genesis of contempt of court

- The law concerning contempt of court in India has its roots in the British Raj.
- An undelivered judgment of J Wilmot in 1765 lead to the genesis of this act, where the judge said the power of court was necessary to maintain the dignity and majesty of judges and vindicate their authority
- Henceforth, the Contempt of Court Act, 1971 was enacted to bring transparency and more clarity in the concept of contempt of court and the power to punish for the contempt of subordinate courts.
- This Act was replaced by Contempt of Court Act, 1952 which was again replaced by Contempt of Court Act, 197on the recommendations of H.N. Sanyal committee.

What are criminal and civil contempt?

- The expression 'contempt of court' in the Contempt of Courts Act, 1971 is divided into two categories:
- **Civil Contempt** means whenever a person wilfully disobeys to any judgment, decree, direction, order, writ or other process of a court, or wilful breach of an undertaking given to a court, which is mentioned under Section 2(b) of the Contempt of Court Act, 1971
- Another type of contempt called **Criminal contempt** means the publication (whether by words, spoken or written, or by signs, or by visible representation, or otherwise) of any matter or the doing of any other act whatsoever which
  - scandalises or tends to scandalise, or lowers or tends to lower the authority of, any court
  - prejudices, or interferes or tends to interfere with, the due course of any judicial proceeding
  - interferes or tends to interfere with, or obstructs or tends to obstruct, the administration of justice in any other manner is any behaviour or wrongdoing that conflicts with or challenges the authority, integrity, and superiority of the court.

Why does the Contempt of Court Act should be retained?

- As per the Law Commission report 274, there were a high number of civil (96,993) and criminal (583) contempt cases pending in various High Courts and the Supreme Court. The Commission observed that such high number of cases vindicates the claim of relevancy of the contempt of court in present scenario
- Even if the concerned act is repealed but the offence of Scandalising the Court continues to be punishable in UK under other laws
- Supreme Court and High Courts derive their contempt powers from the Constitution. The procedure in relation to investigation and punishment for contempt are only mentioned in the Contempt of Court Act, 1971. Therefore, repeal of relevant sections of the offence from the

Act will not impact the constitutional powers of the constitutional courts to punish anyone for its contempt.

- if the definition of contempt is narrowed, subordinate courts will suffer as there will be no remedy to address cases of their contempt, as they cannot punish for their contempt as per the constitution
- The Act had passed judicial scrutiny at various levels and hence it is justified to retain the law in the stature books

Why the provisions regarding contempt of court are unwarranted?

- The Contempt Law in England has now been abolished after the last contempt proceedings occurred in 1930.
- If the courts are to preserve their duty using this archaic law, the dignity of court will not be established and respected if it impedes fundamental rights of the citizens.
- A law for criminal contempt is completely standing apartfrom our democratic system which recognises freedom of speech and expression as a fundamental right.
- It violates the principle of natural justice, where a party to the case can not be its adjudicator
- In the Namboodiripad's case, the court observed that the Freedom to Speech and expression should always prevail except where contempt is manifest, mischievous or substantial.
- If citizens are free to voice their opinion, then certain structural inefficiency like the opaque system of appointment of Judges in the Higher Judiciary adds to the argument against retaining this provision of contempt of court.

⊙ CONCLUSION

The offence of criminal contempt in India needs to be revisited after the famous Prashant Bhushan case, where judiciary took suo moto cognizance. The fact that social media comments, tweets, posts etc by citizens are being considered as contempt of court pose the risk of chilling effect on freedom of speech to avoid any criminal proceedings. In light of such proceedings, scandalising the court must be re-evaluated in terms of its rationale. The fact that the philosophy behind contempt of court considers public criticism to have a greater impact on judicial integrity than the judge's conduct and quality of judgements they will pronounce is questionable.

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STAMPEDE IN ISRAEL MAKES A CROWD-DISASTER

CONTEXT

A huge gathering on Mount Meron to celebrate a religious holiday, has turned into a disaster due to stampede.

⦿ BACKGROUND

- Recently tens of thousands of Jews had thronged to the **Mount Meron** tomb of 2nd-century sage Rabbi Shimon Bar Yochai for annual **Lag Baomer** commemorations that include all-night prayer, mystical songs and dance.
- Media had reported that it started after some attendees slipped on steps, which caused dozens more to fall, leading to a **man-made disaster** of stampede
- This incident reflects that poor **crowd management** was deployed by the authorities responsible which could not avert this man-made disaster.

⦿ ANALYSIS

What is crowd management?

- The tenets of crowd management lie on fundamental ground of managing the demand -supply gap through
  - **Controlling the crowd inflow**
  - **Regulating the crowd at the venue**
  - **Controlling the outflow**
- The demand can be understood by-
  - historical numbers, crowd arrival patterns, growing popularity, type of visitors
  - Identify mass arrival time windows creating peaks (season, days of the week, time in the day, festivals, holidays etc.),
  - Advance ticket booking/registration
  - Public transport timetables
- The supply can be understood by
- The capacity of the venue: seating capacity;

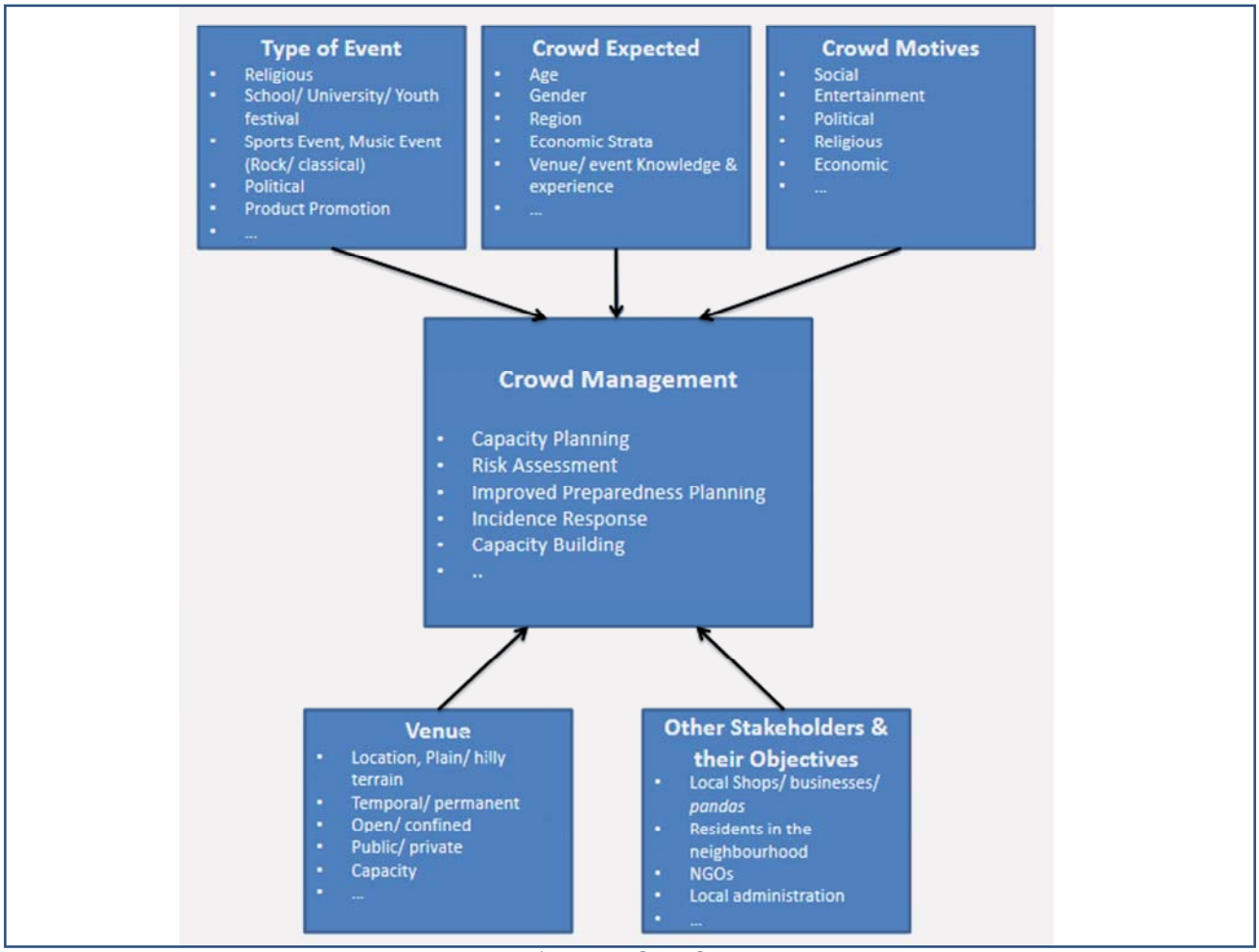


Figure 1: Flow Chart

worships, offerings or prayers possible per hour etc

- Calculate the capacity of queue complex/holding areas

Human Stampedes in India

- **Sabrimala Tragedy of 1999**
  - 52 pilgrims were killed and several injured in a tragedy at Pampa hill top.
  - Cause:
    - The tragedy happened because of uncontrolled crowding of pilgrims at the Hill Top in Pamba and the rushing down by pilgrims, immediately after seeing the Makarjyothi, towards parking places and bus stand. Some people stumbled upon and others fell over them near Kerala State Electricity Board's building
- **Shri Kalubai Yatra Mandhardev at Wai, Satara, Maharashtra, 2005**
  - A stampede took place at the temple premises killing 293 and injuring 250-300people visiting. Fires and gas cylinder explosions that followed, added to the panic. All the deaths were caused because of **suffocation**. There were no deaths because of fire.
  - Causes:
    - Wrong Crowd estimates (More pilgrims expected because of Tuesday)
    - Temple compound not big enough to hold large number of pilgrims
    - Narrow, steep, wet (slippery), winding path with (illegal) vendors (some having gas cylinders) on both sides
    - Illegal electric connections

1954 Prayag Kumbh Mela stampede
1994 Gowari stampede
1996 Haridwar and Ujjain stampedes
1999 Sabarimala stampede
2005 December Chennai stampede
2005 November Chennai stampede
2008 Jodhpur stampede
2011 Sabarimala stampede
2013 Prayag Kumbh Mela stampede
2013 Madhya Pradesh stampede
2014 Mumbai stampede
2014 Patna stampede
2017 Mumbai stampede

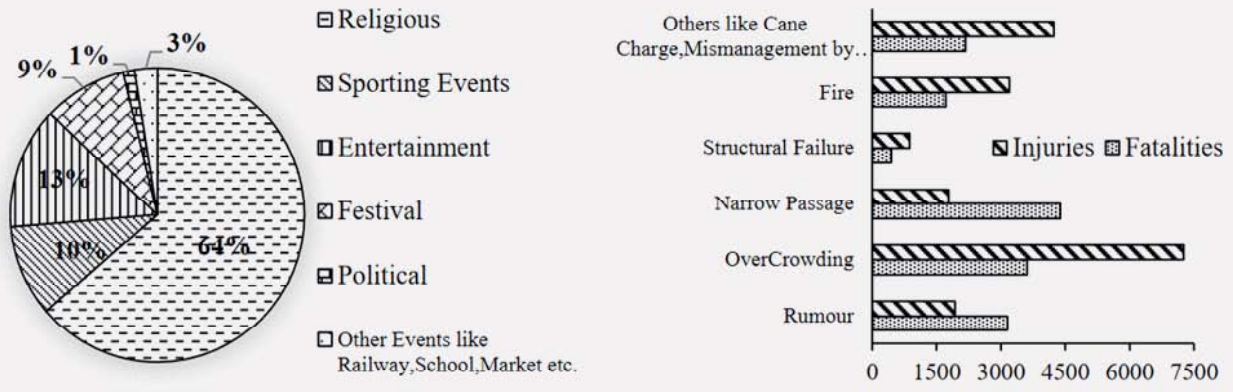
What are the causes/triggers for crowd-disaster?

Structural

- Structure collapse of
  - Barricades/ bamboo railings/wire fence/ Metal barrier
  - Makeshift bridge.
  - Temporary structure.
  - Railings of the bridgecaused by panic triggered by rumours

Fire/Electricity

- Fire in a makeshift facility or a shop
- Cooking in a makeshift facility
- Wooden structure/ quick burning acrylic catching fire



(a) Distribution of fatalities with respect to type of event (b) Influence of triggering factors on injuries and fatalities.

Figure 2

Crowd Control

- More than anticipated crowd at store/mall/political rallies/ examinations/ religious gatherings/ public celebrations
- Underestimation of audience, staffing, services
- People allowed in excess of holding capacity due to overselling of tickets for an event

Crowd Behaviour

- A wild rush to force the way towards entrance/ exits
- Crowds attempting to enter a venue after the start/ closing time
- A collision between large inward flows and outward flows

Security

- Under deployment of security personnel to regulate to control crowd.
- Lack of adequate scientific planning in making police arrangement to deal with crowd with proper sectoral deployment under an officer with adequate manpower and each sector reporting to the senior police personnel in charge of the police arrangement.
- Lack of proper wireless deployment with clutter free call arrangement between sector in-charge and officer in-charge of the police arrangement

Lack of Coordination between Stakeholders

- Coordination gap between agencies (e.g. Commissioner /Superintendent of Police and District Magistrate; PWD, Fire Service, Forest officials, Revenue officials, Medical officers and shrine management etc.)
- Poor infrastructure (Plans on paper but no implementation due to lack of funds, resources, or will)

Flowchart describing crowd-disaster process *(See Figure 3)*

How the crowd can be effectively managed?

- Multiple routes should be encouraged (normal, express, emergency) with varying "route gradient". This will also help in movement of typically vulnerable groups (children, people with special needs etc.)
- Long Term Perspectives is required for crowd management at religious places hence focus should be on infrastructure development which

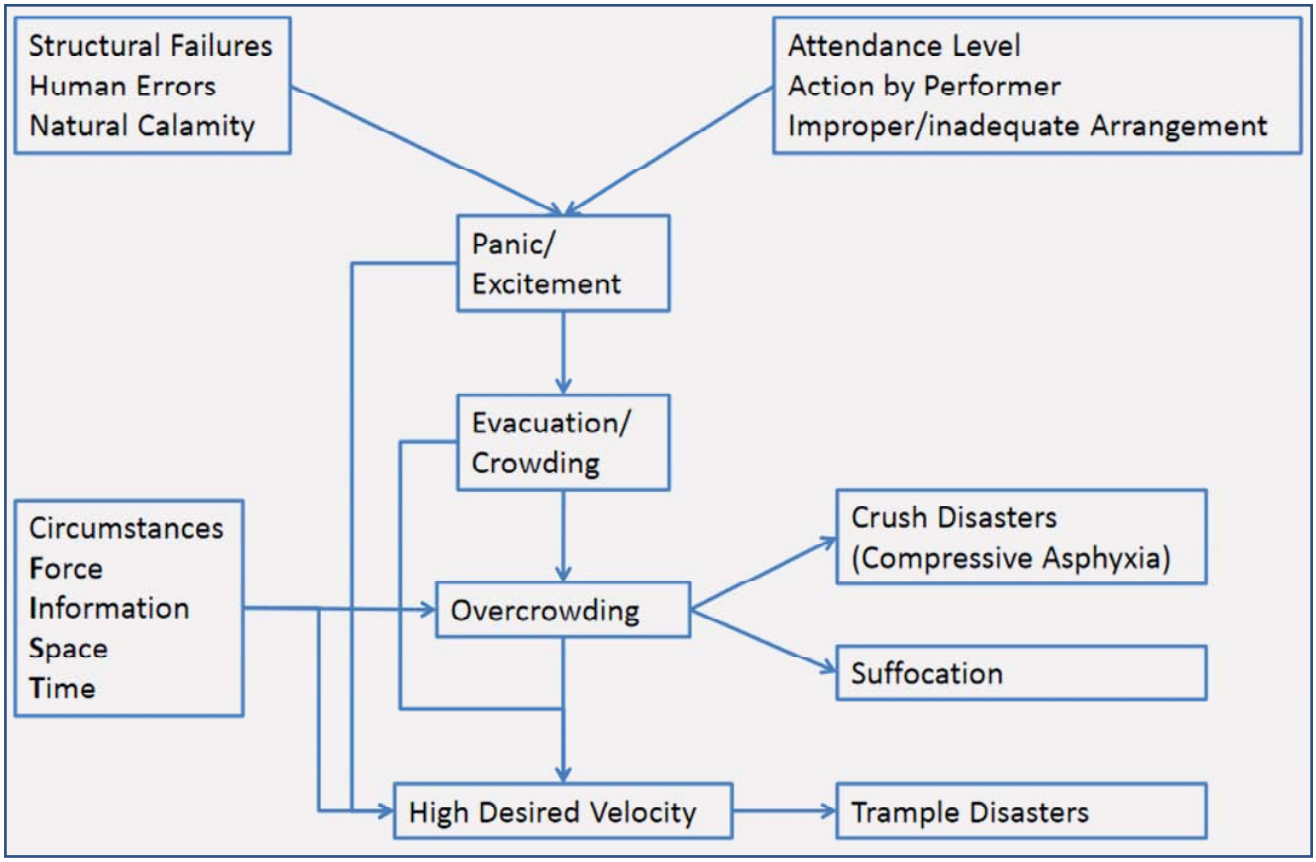


Figure 3: Flowchart describing crowd-disaster process

should depend on popularity, periodicity of event, weather, terrain, local population etc.

- Each staging point should have sufficient facilities for rest, food, water, hygiene. An effective way of counting/monitoring visitors passing through a staging point should be installed to regulate the flow
- Research has shown that understanding of crowd behaviour has led to community-based approach to crowd control instead of force-based control.
- An attempt has to be made and the intelligence has to be gathered about the motives of various visitors (social, entertainment, political, religious, economic etc.) and unwanted visitors (theft, disruption, terror etc.)
- A Unified Control Systembrings the agencies with different functional authorities, roles, and responsibilities to work together effectively without affecting individual accountability. Under a Unified Control System, a single, coordinated**Incident Action Plan** will direct all activities.

Role of ICT in crowd-disaster management

- **Registration database**
  - database system should be deployed to capture demographic details (gender, age, and place etc.) of the visitors. This data would be useful in capturing underlying patterns
- **Online registration**
  - This registration process could be used to influence the arrival pattern
- **Deployment of RFID tags**
  - As visitors move through the system, the scanners deployed at various locations could be used to keep track of their movements along with timings. This can also help track the exact number of visitors at various locations
- **Geographical Information Systems**
  - (GIS), wherever possible, should be deployed in location planning, layout, alignment of roads, structural assessment of parking lots, helipads, laying utility lines (water, electricity, gas) etc.

⊙ CONCLUSION

- Event volunteers and paramedics must commence rapid first aid treatment.
- Route patients to area hospitals in a coordinated manner, so that relatives can easily find them.
- A **control room** and helpdesk to handle all the inquiries.
- Police personnel and relief workers should ensure proper storage and tagging of the mobiles, purses, footwear and other **belongings** of the victims.
- **Psycho-social support** and mental health services for the survivors, and the persons who lost their loved ones.

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THE ETHICS OF PATENTING CORONAVIRUS VACCINE

CONTEXT

Despite the solidarity shown by WIPO and WHO on prioritizing health before patent, researchers and governments face many difficult ethical decisions as they fund and develop treatments and vaccines for COVID-19.

⊙ BACKGROUND

- The world is under the grip of global pandemic which has disrupted economy, caused widespread human causalities and collateral damage like migrant crisis of 2020
- Now as the vaccine has arrived by various drug manufacturers their production capacity does not meet the current demand of vaccine
- Hence there is strong argument to allow those patented vaccines to be manufactured by other pharma companies and water down the privilege of patent.

⊙ ANALYSIS

What is patent?

- A patent is a type of intellectual property right and a key driver of value for biotech companies.
- Biotech companies use medical patents to protect their intellectual property rights to items such as drugs.
- A patented drug is protected against generic competition for a specified number of years, which lets the company that developed it earn high profits that help compensate for the high research and development costs to bring the drug to market, but can also make the drug unaffordable for low-income patients.

Why vaccines should be patented?

- The organizations creating treatments and vaccines for COVID-19 will have invested substantial amounts of time and money into their inventions.
- Protecting this investment, in order to encourage innovation, is exactly why patents exist.
- In addition, IP rights such as patents can also facilitate control over vaccine production and distribution, for instance by way of licensing.
- This control can help to ensure vaccine quality and safety
- Where the same vaccines are used in the developed countries and the developing ones, a market containing both rich and poor parts exists, and the developing countries can perhaps take advantage of the R&D costs being largely carried by the developed countries

Mechanisms that have been used to facilitate access to patented vaccines

- Tiered pricing – The different classes of buyers are charged different prices for the same product.
- In the context of vaccines, low-income countries are charged a reduced price compared to the open market rate through bulk procurement systems
- Bulk purchasing – this is also a mechanism for facilitating access to vaccines due to the importance of vaccine production scale issues and the need to predict demand.
- Procurement processes of the sort that were so successful in reducing the price of the Hepatitis B vaccine may face difficulty as global vaccine patent monopolies tend to increase the likelihood of encountering single suppliers.
- Voluntary licensing – voluntary licensing may take a number of different forms starting from a 'bare' patent licence, through permitting the licensee to carry out a certain stage of the vaccine production process, to a full technology transfer to put the licensee in the same position as the patent owner.
- Business model considerations will apply and as noted above, it cannot be expected that voluntary licensing will necessarily result in the same reductions in price that would appear in a truly competitive situation.
- Compulsory licensing –a 'compulsory' licence can be granted where for example the patent holder has abused their monopoly or where it is otherwise in the public interest.
- Whether or not the necessary know-how is possessed by a potential compulsory licensee will impact the effectiveness of compulsory licensing

Why we should consider a patent-waiver for production of COVID vaccine?

- Many drugs are discovered by the joint efforts of many companies to combat COVID-19 using new and repurposed technologies.

- To speed innovation, many pharmaceutical companies are partnering with each other, the public sector, and other third parties.
- These collaborations begin to break down the barriers these highly competitive companies build for intellectual property protection under normal circumstances.
- Contrary to a popular perception, the real philosophy to grant a patent is about gaining 'control' over the product first; rather than just making profits by creating monopoly.
- Many people risk their life in clinical trials of any drug and if that section of society is deprived of its availability, then it will further discourage volunteers showing up for trials hampering future development of vaccines
- Many drug manufacturers based in developing countries argue that the compliance cost related to patents increases transaction costs and adds to their development timelines of the company
- Patents on vaccines and on essential technologies for vaccine development are not the only factors influencing vaccines Research and Development. Other factors are regulatory structure, investment, human capital, logistics etc.

⊙ CONCLUSION

Desperate times call for desperate measures, and COVID pandemic is one of such. Health and safety has to come before patent rights in all emergency situations including the COVID-19 pandemic, Hence the world should work in solidarity towards free access or affordable licensing for certain coronavirus-related innovations.

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INDIA, JAPAN AND AUSTRALIA LAUNCHES SUPPLY CHAIN RESILIENCE INITIATIVE (SCRI)

⊙ CONTEXT: **In a move to counter China's dominance of supply chain in the Indo-Pacific region, trade ministers of India, Japan and Australia formally launched the Supply Chain Resilience Initiative (SCRI).**

What is SCRI?

- The Supply Chain Resilience Initiative is a trilateral push to create a free and transparent trade and investment environment.
- The initiative was launched after high-level consultations since September last year, among the three countries.
- **Focus area:** Initially, SCRI will focus on sharing best practices on supply chain resilience and holding investment promotion events and buyer-seller matching events to provide opportunities for stakeholders to explore the possibility of diversification of their supply chains.
- **Aim:** The SCRI aims to create a virtuous cycle of enhancing supply chain resilience with a view to eventually attaining strong, sustainable, balanced and inclusive growth in the region.

The Indo-Pacific region

- In terms of geo-spatiality, the Indo-Pacific is broadly to be understood as an interconnected space between the Indian Ocean and the Pacific Ocean.
- Its expanse is debated to be ranging from the eastern shores of Africa to the western coast of the United States, albeit with variations in definitions depending on each actor and their own geographic positioning in the vast expanse

NCT OF DELHI (AMENDMENT) ACT COMES INTO EFFECT

⊙ CONTEXT: **The Government of National Capital Territory of Delhi (Amendment) Act, 2021, came into force.**

What is in the Act?

- The Act amends the **GNCT of Delhi Act, 1991.**
- According to the legislation, the "government" in Delhi means the "Lieutenant Governor."
- The city government will now mandatorily have to take the opinion of the L-G before taking any executive action.
- It also provides that the opinion of the LG "shall be obtained" on all such matters as may be specified by the LG, before taking any executive action.

Inquiry by the Assembly into administrative decisions:

- The Bill also prohibits the Legislative Assembly from making any rule to enable itself or its Committees to:

- consider the matters of day-to-day administration of the NCT of Delhi
- conduct any inquiry in relation to administrative decisions

- Further, any provision in force having the above said effect will be void.

LG's opinion for executive actions:

- The Act specifies that all executive action by the government, whether taken on the advice of the Ministers or otherwise, must be taken in the name of the LG.
- The Bill adds that on certain matters, as specified by the LG, his opinion must be obtained before taking any executive action on the decisions of the Minister/ Council of Ministers.

'LARGE AREA CERTIFICATION' (LAC) SCHEME

CONTEXT: **The Government of India has certified 14,491 ha of Traditional Organic Areas under Car Nicobar and Nancowry group of islands in UT of A&N Islands. This area becomes the first large contiguous territory to be conferred with organic certification under the 'Large Area Certification' (LAC) scheme.**

What is Large Area Certification (LAC) Scheme?

- The organic certification has been given under the Large Area Certification (LAC) Scheme of the PGS-India (Participatory Guarantee System) certification programme.
- Under LAC, each village in the area is considered as one cluster/group.
- All farmers with their farmland and livestock need to adhere to the standard requirements and on being verified get certified enmass without the need to go under conversion period.
- Certification is renewed on annual basis through verification by a process of peer appraisals as per the process of PGS-India.

About the certified Islands

- Car Nicobar and Nancowry group of Islands have been traditionally organic for ages.
- The administration has also banned the sale, purchase and usage of any chemical inputs of GMO seeds in these islands.

How was it done?

- The administration of UT in collaboration with local communities prepared the island-wise and farmer wise database of land holding, practices being adopted, input usage history etc.
- An expert committee has verified their organic status and recommended for declaration of the area as certified organic under the PGS-India certification programme.
- Based on these reports, the Government of India certified 14,491 ha area under Car Nicobar and Nancowry group of islands in UT of A&N Islands.

Which other areas can be certified organic?

- Besides these islands, agriculture areas in States like Himachal, Uttarakhand, North Eastern states and tribal belts of Jharkhand and Chhattisgarh, desert districts of Rajasthan which are essentially free from the use of chemical inputs can be transformed to certified organic.
- Department of Agriculture, Cooperation and Farmers Welfare (DAC&FW) in consultation with states is working to identify such areas, transform them to certified organic

and facilitate the marketing of area-specific niche products through branding and labelling.

Schemes promoting organic/natural farming

- Paramparagat Krishi Vikas Yojana
- Organic Mission in North East

GENETIC STUDY OFFERS GOOD NEWS FOR ENDANGERED SUMATRAN RHINOCEROS

⊙ CONTEXT: **A genome study involving the last remaining populations of the Sumatran rhinoceros — a solitary rainforest dweller — is providing what scientists called good news about the prospects of saving this critically endangered species from extinction.**

Key-highlights of the study

- The study found that the two existing wild populations of this rhino on the islands of Borneo and Sumatra boast unexpectedly good genetic health and surprisingly low levels of inbreeding.
- Only about 80 of the rhinos remain after a separate population on the Malaysian Peninsula went extinct in recent years.
- The Sumatran rhinoceros — the closest living relative to the woolly rhinoceros that was among the notable species of the last Ice Age — is known for its two small horns and a thin coat of reddish-brown hair.
- With such small population sizes, much higher inbreeding can be expected in extant populations of Sumatran rhinoceros.

Sumatran rhinoceros

- The Sumatran rhinoceros is the smallest of the world's five rhinoceros species, at around 1,540 to 1,760 pounds (700 to 800 kg).
- **Scientific name:** Dicerorhinus sumatrensis
  - **Family:** Rhinocerotidae
  - **Kingdom:** Animalia
  - **Order**: Perissodactyla
  - **Phylum:** Chordata
  - **Class:** Mammalia
- The elusive rainforest inhabitant, the most vocal rhino species, remains solitary except for mating and rearing offspring.
- It once had a wide range in Southeast Asia, from the foothills of the Himalayas down to Borneo and Sumatra.

JOE BIDEN'S INVITES 40 WORLD LEADERS TO LEADERS SUMMIT ON CLIMATE

⊙ CONTEXT: **At the now-concluded Leaders' Climate Summit hosted by United States' President Joe Biden, the US unveiled its new Nationally Determined Contribution (NDC) to the 2015 Paris Agreement.**

What is the US' target?

- To reduce greenhouse gas (GHG) emissions 50-52 per cent below 2005 levels by 2030.
- To reach the goal of net zero emissions no later than 2050.
- When compared to a baseline year of 1990 instead of 2005, a 50-52 per cent reduction below 2005 levels translates to a 41-43 per cent reduction from 1990 levels.

Previous target

- The updated target translates to a commitment that is 12 per cent higher, since the previous NDC worked out to a ~38 per cent reduction by 2030.
- This is contrary to claims that it is a doubling of the US' previous NDC of 26-28 per cent reduction by 2025.

Other countries' targets

New commitments were made by various countries ahead of and during the summit.

- **Japan:** Japan committed to reduce emissions by 46 per cent from 2013 levels by 2030, compared to their earlier goal of 26 per cent and to aspire to a 50 per cent reduction.
- **Canada:** Canada pledged to cut emissions by 40-45 per cent from 2005 levels by 2030, compared to its previous goal of 30 per cent.
- **European Union (EU) and United Kingdom (UK):** The EU and the UK announced legally binding targets to reduce emissions by 55 per cent and 78 per cent from 1990 levels, by 2030 and 2035, respectively. Individually, both are higher than the 40 per cent target set by the EU previously and the 68 per cent reduction target by 2030 set by the UK in December 2020.
- **India:** India did not announce an updated NDC, on the grounds that its current NDC is already considered 2 degrees Celsius (˚C) compatible by the CAT, but announced a new India-US Climate and Clean Energy Agenda 2030 Partnership to mobilise investments in clean technologies for industry, transportation, power and buildings.

SAUDI ARABIA LAUNCHES SAUDI GREEN INITIATIVE

⊙ CONTEXT: **In order to combat climate change, Saudi Arabia has launched the 'Saudi Green Initiative' and 'Middle East Green Initiative'.**

⊙ ABOUT THE INITIATIVES

Saudi Green Initiatives

- The Saudi Green Initiative aims to raise the vegetation cover, reduce carbon emissions, combat pollution and land degradation, and preserve marine life.

- As part of the initiative, 10 billion trees will be planted in the Kingdom.
- It aims to reduce carbon emissions by more than 4% of global contributions, through a renewable energy programme that will generate 50% of Saudi's energy from renewables by 2030.
- With the understanding that the need of the hour is to do more than enough, Saudi Arabia is working towards raising the percentage of its protected areas to more than 30% of its total land area, representing roughly 6,00,000 sq km, exceeding the global target of 17%.

Middle East Green Initiative

- As part of the Middle East Green initiative, Saudi Arabia will work with the Gulf Cooperation Council countries and regional partners to plant an additional 40 billion trees in the West Asian region.
- It represents 5% of the global target of planting one trillion trees and reducing 2.5% of global carbon levels.
- Saudi Arabia has been sharing its expertise and know-how with its neighbouring countries to reduce carbon emissions resulting from hydrocarbon production in the region by 60% and globally by 10%.

Saudi Arabia's carbon mission

- Saudi Arabia currently operates the largest carbon capture and utilisation plant in the world, turning half a million tonnes of CO2 annually into products such as fertilizers and methanol.
- It also operates one of the region's most advanced CO2-enhanced oil recovery plants that captures and stores 8,00,000 tonnes of CO2 annually.

TWO DAMSELFLY SPECIES DISCOVERED IN WESTERN GHATS

⊙ CONTEXT:

In a latest development, researchers have collaborated to discover two damselfly species from Satara district in Maharashtra, which forms part of northern Western Ghats.

⊙ ABOUT THE DISCOVERY

- The new endemic damsels were *Euphaea thosegharensis* and *Euphaea pseudodispar*.
- **Genus:** They belong to the genus *Euphaea*.
- Euphaea thosegharensis is similar to Euphaea cardinalis, while Euphaea pseudodispar is similar to Euphaea dispar but can be easily separated by its colouration and morphology.
- They are restricted to the high elevation streams and riparian patches of Satara district around Thoseghar and Kaas lake in Maharashtra.
- The discoveries have been published in the recent issue of Journal of Threatened Taxa.

Euphaea

- Prior to the findings, only three endemic species of *Euphaea* were known from Western Ghats. These include:
  - ***Euphaea fraseri***, a very common species in the forested foothills of Western Ghats. It is found from Kanyakumari to Maharashtra.
  - ***Euphaea dispar***, which is restricted to the north of the Palakkad Gap from South Kanara and Coorg to Nilgiris.
  - ***Euphaea cardinalis***, a montane species found south of the Palakkad Gap in Anamalais, Palnis and Agasthyamalai Hills.

ISRO JOINS HANDS WITH ARIES TO MAXIMISE UTILISATION OF DATA FROM INDIA'S MISSION ADITYA-L1

⊙ CONTEXT: **One year before the proposed launch of India's maiden solar mission — the Aditya L1 — Indian researchers plan to create a skilled community of solar scientists ready to use the scientific data which will emerge from the mission.**

Aditya-L1 Support Cell (AL1SC)

- As a first step, the **Aditya-L1 Support Cell (AL1SC)** has been established at the Aryabhatta Research Institute of Observational Sciences (ARIES), which will primarily produce this required trained manpower.
- An MoU in this regard was inked between ARIES and Indian Space Research Organisation (ISRO) earlier this year.
- The Support Cell will be a one-stop online platform for students, faculty and researchers from colleges, universities and institutions in India to get free access to a sample of processed scientific data pertaining to the Sun.
- All the data will be hosted at the Indian Space Science Data Centre (ISSDC) of ISRO with ARIES Cell acting as a manpower training centre.

Aditya L1mission

- It is India's first solar mission.
- **Launch vehicle:** Polar Satellite Launch Vehicle (PSLV) in XL
- Led by ISRO, the mission aims to set up a space-based observatory to track the Sun and it is expected to be launched sometime in mid-2022.
- The seven payloads (instruments) will study solar corona, solar emissions, solar winds and flares, Coronal Mass Ejections (CMEs), as well as capture images of the Sun.

NEW HIGH-YIELDING AND PEST-RESISTANT VARIETY OF SOYBEAN: MACS 1407

⊙ CONTEXT: **Indian Scientists have developed a high-yielding and pest-resistant variety of soybean called MACS 1407.**

⊙ ABOUT THE NEW VARIETY

- Scientists developed MACS 1407 by using the conventional cross breeding technique.
- The new variety gives 39 quintals per hectare making it a high yielding variety.
- It is also resistant to major insect-pests like girdle beetle, leaf miner, leaf roller, stem fly, aphids, white fly and defoliators.
- Its thick stem, higher pod insertion (7 cm) from ground, and resistance to pod shattering make it suitable even for mechanical harvesting.
- MACS 1407 require an average 43 days for 50 % flowering and take 104 days to mature from the date of sowing. It has white coloured flowers, yellow seeds and black hilum.
- Its seeds have 19.81 % oil content, 41 % protein content and show good germinability.

Where it can be grown?

- This newly developed variety is suitable for cultivation in the states of Assam, West Bengal, Jharkhand, Chhattisgarh and North-Eastern states.
- Its seeds will be made available to farmers for sowing during the 2022 Kharif season.

Soybean production in India

- In 2019, India produced around 90 million tons of soybean.
- India is striving to be among the world's major producers of soybean.
- It is widely cultivated as oil seeds as well as a cheap source of protein for animal feed and many packaged meals.
- High-yielding, disease resistant varieties of the legume can help achieve this target.

THE SILENT PANDEMIC OF ANTIMICROBIAL RESISTANCE

⊙ CONTEXT:

As serious as the current health and economic crisis is, COVID-19 may just be the harbinger of future crises. Antimicrobial resistance (AMR) is one of the greatest challenges of the 21st century.

What is antimicrobial resistance?

- Simply put, it is the phenomenon by which bacteria and fungi evolve and become resistant to presently available medical treatment.
- Antimicrobial Resistance (AMR) occurs when bacteria, viruses, fungi and parasites change over time and no longer respond to medicines making infections harder to treat and increasing the risk of disease spread, severe illness and death.

Complex challenges for AMR

- misuse of antimicrobials in medicine
- inappropriate use in agriculture
- contamination around pharmaceutical manufacturing sites where untreated waste releases large amounts of active antimicrobials into the environment

Important steps taken by GOI

- **National Action Plan on AMR (NAP-AMR)**: Government of India (GoI) adopted the **National Action Plan on AMR (NAP-AMR)** in 2017.
  - **Nodal Ministry:** Ministry of Health and Family Welfare (MoHFW)
  - **Key surveillance body**: National Centre for Disease Control (NCDC)
- **Standards for antibiotic residues:** In January 2020, when the Ministry of Environment, Forest and Climate Change (MoEFCC) published draft standards for antibiotic residues in pharmaceutical industry effluents under the proposed Environmental (Protection) Amendment Rules 2019.

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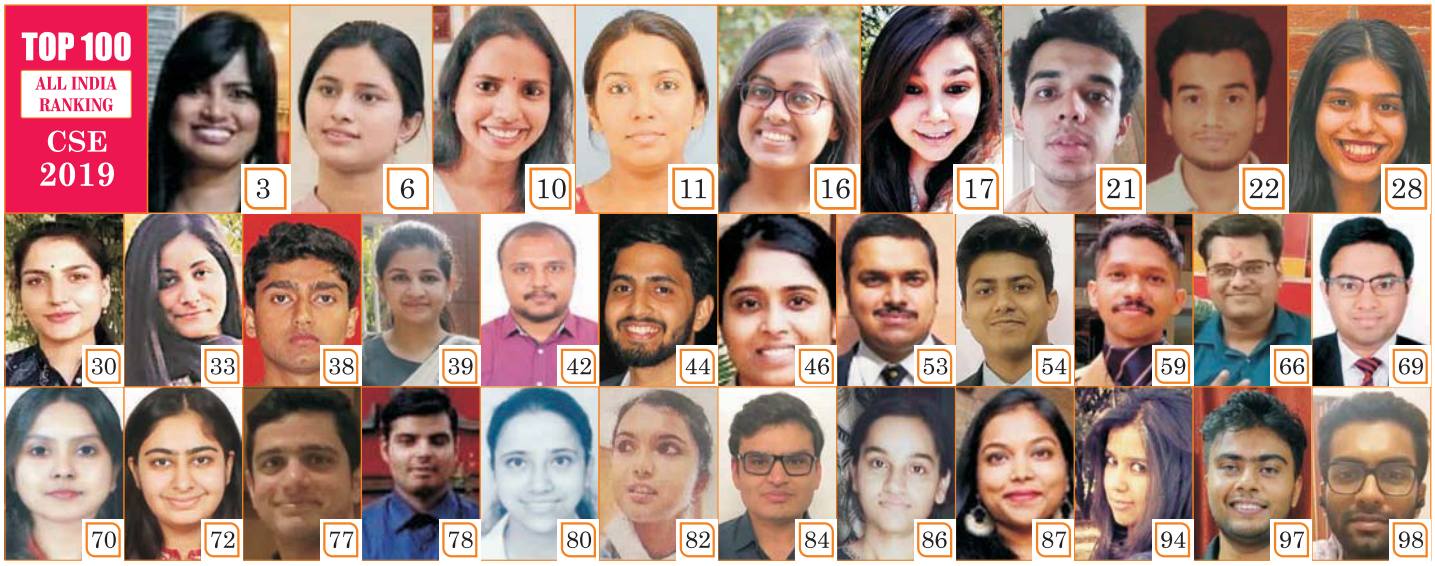

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