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for

1st Week of

August 2020

(3rd August - 8th August)

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Table of Contents

1. Geography 1

1.1.Hurricane Hanna - Texas 1
1.2.Mobile App"MAUSAM" 2
1.3.High Levels of Ammonia - Yamuna Water 3
1.4.Green – Ag Project 3
1.5.Port Louis 4
1.6.Aerial Seeding 5
1.7.Smog Towers 5
1.8.National Transit Pass System (NTPS) 5
1.9.Barakah Nuclear Energy Plant 5
1.10.Agatti Island 6
1.11.Nag River 7
1.12.China's - Near Ecuador Waters 8

2. Environment 9

2.1.Dhole Conservation 9
2.2.NGT Orders Interim Stay On Felling Of Coconut Trees In Agatti Island 10
2.3.Study on Sea Level Rise 10
2.4.Pokkali Rice Seedlings 12

3. Science & Technology 14

3.1.Severe Fever with Thrombocytopenia Syndrome (SFTS) 14
3.2.Electronic Vaccine Intelligence Network (eVIN) 14
3.3.Time Capsules 15
3.4.Oxford Vaccine for COVID-19 15

1. Geography

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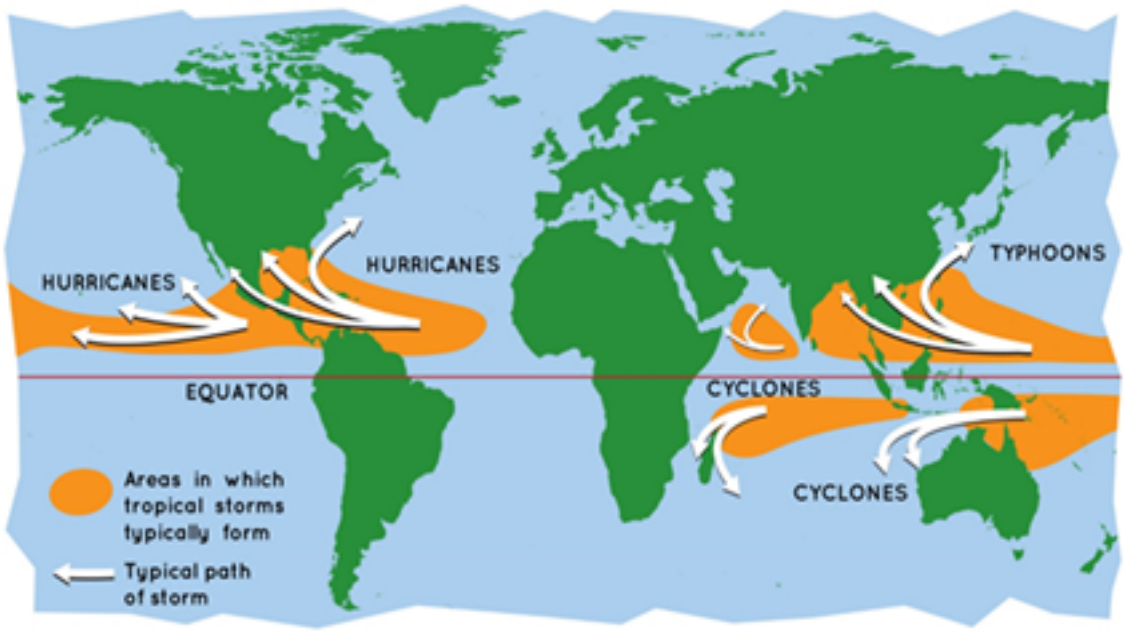
1.1.Hurricane Hanna - Texas

Additional Concepts you should know



Storms of this type are called hurricanes in the North Atlantic and eastern Pacific

- Typhoons in South East Asia and China.
- Tropical cyclones in the southwest Pacific and Indian Ocean region.

Naming around the world

- Worldwide there are six regional specialised meteorological centres (RSMCs) and five regional Tropical Cyclone Warning Centres (TCWCs) mandated for issuing advisories and naming of tropical cyclones.

Indian Ocean

- The India Meteorological Department is one of the six Regional Specialised Meteorological Centres (RSMCs) to provide tropical cyclone and storm surge advisories to 13 member countries under WMO/ESCAP PTC Panel (World Meteorological Organization / The United Nations Economic and Social Commission for Asia and the Pacific – Panel on Tropical Cyclones PTC).

Member Countries

- India,
- Bangladesh,
- Iran,
- Maldives,

- Myanmar,
- Oman,
- Pakistan,
- Qatar,
- Saudi Arabia,
- Sri Lanka
- Thailand
- United Arab Emirates
- Yemen

Please Remember

- The naming of the tropical cyclones over the north Indian Ocean commenced from September 2004.
- This list contained names proposed by then eight member countries of WMO/ESCAP PTC, viz., Bangladesh, India, Maldives, Myanmar, Oman, Pakistan, Sri Lanka and Thailand.
- The requirement for a fresh list of tropical cyclones including representation from five new member countries: Iran, Qatar, Saudi Arabia, United Arab Emirates and Yemen (total 13 member countries) were tabled during the 45th session of WMO/ESCAP, held in September 2018. The session was hosted by Oman.

1.2.Mobile App"MAUSAM"

- Ministry of Earth Sciences launches Mobile App "Mausam" for India Meteorological Department on its Foundation Day Celebrations.
- The app will be an important tool for dissemination of weather information and warnings in an attractive and user friendly manner which will meet the requirements of public.
- The MAUSAM mobile App has the following 5 services:

Current Weather

- Now cast
- City Forecast
- Warnings – colour codes
- Radar products

Please do not confuse with "Project Mausam "

- Project Mausam is a cultural and economic project by the Indian Ministry of Culture and Archaeological Survey of India (ASI) with the Indira Gandhi National Centre for the Arts which aims to connect countries on the Indian Ocean.
- Project Mausam aims to rebuild maritime and economic connections with the 39 countries bordering the Indian Ocean.

- The project also aims to bring together historical and archaeological researchers to record the diversity of economic, cultural, and religious interactions between countries in.
- There are two visions for Project Mausam: the first is to understand national cultures between countries and the second is to rebuild communications between countries.

1.3.High Levels of Ammonia - Yamuna Water

- Recently, high levels (around 3 parts per million) of ammonia in the Yamuna river has been detected in Delhi which led to the disruption of water supply in Delhi.
- The acceptable maximum limit of ammonia in drinking water, as per the Bureau of Indian Standards, is 0.5 ppm.
- What has been mentioned in the newspapers?

What is ammonia and what are its effects?

- Ammonia is a colourless gas and is used as an industrial chemical in the production of fertilisers, plastics, synthetic fibres, dyes and other products.
- Ammonia occurs naturally in the environment from the breakdown of organic waste matter, and may also find its way to ground and surface water sources through industrial effluents or through contamination by sewage.
- If the concentration of ammonia in water is above 1 ppm it is toxic to fishes.
- In humans, long term ingestion of water having ammonia levels of 1 ppm or above may cause damage to internal organs.

What is the long-term solution to the problem?

- Stringent implementation of guidelines against dumping harmful waste into the river, and making sure untreated sewage does not enter the water are two things pollution control bodies are expected to do.

Important Terms

- But, a more organic method agreed upon by environmentalists and experts is to maintain a sustainable minimum flow, called the ecological flow.
- This is the minimum amount of water that should flow throughout the river at all times to sustain underwater and estuarine ecosystems and human livelihoods, and for self regulation.

1.4.Green – Ag Project

- The Union government on July 28, 2020, launched the Green-Ag Project in Mizoram, to reduce emissions from agriculture and ensure sustainable agricultural practices.
- Mizoram is one of the five states where the project will be implemented. Other states include Rajasthan, Madhya Pradesh, Odisha and Uttarakhand.
- The project is designed to achieve multiple global environmental benefits in at least 1.8 million hectares (ha) of land in five landscapes, with mixed land use systems. It aims to bring at least 104,070 ha of farms under sustainable land and water management.

- The project will also ensure 49 million Carbon dioxide equivalent (CO2eq) sequestered or reduced through sustainable land use and agricultural practices.
- The Green-Ag Project is funded by the Global Environment Facility, while the Department of Agriculture, Cooperation, and Farmers' Welfare (DAC&FW) is the national executing agency. Other key players involved in its implementation are Food and Agriculture Organization (FAO) and the Union Ministry of Environment, Forest and Climate Change (MoEF&CC).
- The pilot project is supposed to end on March 31, 2026, in all states, including Mizoram, where the project covers 145,670 ha of land in two districts — Lunglei and Mamit. It aims to cover 35 villages and includes two protected areas — the Dampa Tiger Reserve and the Thorangtlang Wildlife Sanctuary.

1.5.Port Louis

- New Supreme Court built in Port Louis with Indian grant assistance.

1.6.Aerial Seeding

- Recently, the Haryana government has employed aerial seeding techniques to improve green cover in the Aravalli area of the state.
- The method involves spraying seed balls or seed pellets from the air using seeding drones.
- Furthermore, one of the advantages this kind of plantation has is that it requires no attention after seed balls are dispersed on the ground.
- One does not even need to plough and place the seeds in the soil as they are already surrounded by a mixture that will give them nutrients and will ensure that they are not eaten away by birds.
- The only thing that needs to be taken care of with aerial seeding is that the species of seeds selected will have to be native to that area (as these have higher survival rates) and the correct timing for seeding.
- The process of the seed's germination and growth is such that it requires no attention after it is dispersed and thus seed pellets are known as the "fire and forget" way of plantation.

1.7.Smog Towers

- A smog tower is a structure designed to work as a large-scale air purifier, fitted with multiple layers of filters which trap fine dust particles suspended in the air as it passes through them.
- The first such tower was erected in 2015, in Rotterdam, Netherlands, created by Dutch artist Daan Roosegaarde.
- An estimate made of their impact on air quality shows a tower would reduce 50% of the particulate matter load — fine dust particles suspended in the air — in an area of 1 kilometre in the direction of the wind, as well as 200 metres each along the sides of the tower and against the direction of the wind.
- China has the world's largest smog tower and has reduced PM 2.5 by 19% in an area of around 6 sq km in the tower's vicinity.

1.8.National Transit Pass System (NTPS)

- The NTPS is an online system for issuing transit permits for timber, bamboo and other forest produce.
- This system helps in monitoring and keeping records of transit permits for inter-state and intra-state transportation of timber and bamboo from private lands/government/private depot and other minor forest produce.
- E-pass will be issued for transit through the desktop-based web portal as well as a mobile application.
- It will be functional in Madhya Pradesh and Telangana for now on a pilot basis.

1.9.Barakah Nuclear Energy Plant

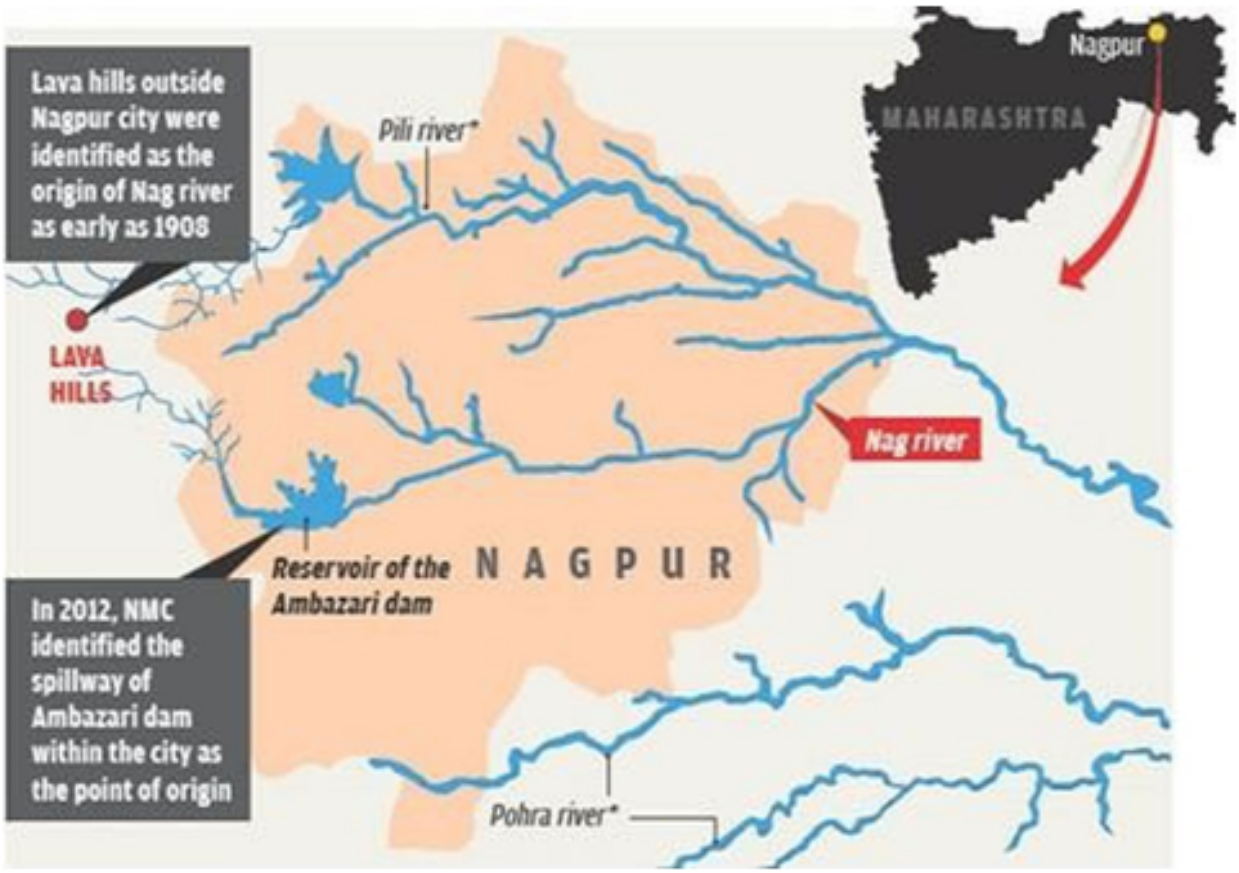
- United Arab Emirates' first nuclear reactor at the Barakah Nuclear Energy Plant has achieved first criticality and successfully started up.

1.10. Agatti Island

- Recently, the southern bench of the National Green Tribunal (NGT) has granted an interim stay on felling of coconut trees on Agatti Island in Lakshadweep.

1.11.Nag River

- Recently, the Bombay High Court said that the Nag River has become extremely polluted due to industrialisation and urbanisation.
- The Nagpur city derives its name from the Nag River which passes through the city.
- The Nag River originates from the Ambazari Lake in west Nagpur.



1.12.China's - Near Ecuador Waters

- Ecuador was on alert earlier this week as a flotilla of 260 mostly Chinese fishing vessels– what some called a "floating city"– was sighted near the Galapagos archipelago, a UNESCO World Heritage Site, whose aquatic species such as manta rays and sharks have been endangered by commercial fishing.
- The Galapagos Islands, spread over almost 60,000 sq km, are a part of Ecuador, and are located in the Pacific Ocean around 1,000 km away from the South American continent.
- Every year, Ecuador faces the challenge of protecting its natural habitat from Chinese vessels.
- Chinese ships frequent Ecuador's waters this time of the year when the cold Humboldt Current brings in nutrients that lead to a high congregation of marine species.

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2. Environment

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2.1.Dhole Conservation

- Study named a strategic road map for conserving the endangered dhole Cuon alpinus in India', was published recently in Mammal Review.
- Through the study, the scientists explored the conservation tenets of retention, recovery and restoration of dholes in India, said to be a global stronghold for the species, in the context of large carnivores facing high extinction risk.
- Dholes play an important role as apex predators in forest ecosystems.
- Besides the tiger, the dhole is the only large carnivore in India that is under the International Union for Conservation of Nature's 'endangered' category.
- Tigers and leopards are more resilient than dholes.
- Leopards survive and thrive in a wide range of habitats.
- Tigers do need forest cover but they are also able to disperse long distances through mixed landscapes with forests and human-use areas.
- Dholes are perhaps a lot more sensitive to forest cover and therefore require more nuanced approaches for population recovery.
- They are seen in particularly in the Western and Eastern Ghats of the southern states and Central Indian Highlands, Arunachal Pradesh, Assam, Meghalaya, and West Bengal.

- In the Himalayan region, they are found in Sikkim and Ladakh.
- With less than 2,500 individuals surviving in the wild globally, the dhole is already extinct in about 10 Asian countries.
- They are killed for their fur and manufacturing the traditional medicines.
- Karnataka, Maharashtra and Madhya Pradesh rank high in the conservation of the endangered dhole in India, according to a new study.
- Scientists from the Wildlife Conservation Society-India, the University of Florida, the Wildlife Conservation Trust, and the National Centre for Biological Sciences found that these three States were adequately equipped to maintain their high ranks in consolidating forest habitats and recover dhole populations by increasing prey density and reducing the pressure on forests.
- On the other hand, the study said, Arunachal Pradesh, Chhattisgarh, Odisha, Telangana and Goa will need to increase financial investments in the forest and wildlife sectors, and reduce the ease of granting forest clearances for infrastructure projects.

2.2.NGT Orders Interim Stay On Felling Of Coconut Trees In Agatti Island

- The southern bench of the National Green Tribunal has granted an interim stay on felling of coconut trees in Agatti Island in Lakshadweep for the purpose of forming a beach road.
- It is alleged that the administration was indiscriminately cutting down coconut trees for forming a beach road, which was against the Integrated Island Management Plan of Lakshadweep formulated on the basis of the report of the expert committee appointed by the Supreme Court and headed by former Judge of Supreme Court of India Justice R.V. Raveendran.
- Due to the large scale cutting of the coconut trees for the project, the local residents lost their income.
- It would also affect the environment as trees, standing along the coastline, acted as a green belt to protect the land during cyclones and other natural calamities

2.3.Study on Sea Level Rise

- In a study published in the journal Scientific Reports, researchers predict that by 2100, the global population potentially exposed to episodic coastal flooding will increase from 128-171 million to 176-287 million.
- The value of global assets exposed to these episodes is projected to be between $6,000-$9,000 billion, and 12-20 per cent of the global GDP.
- The researchers note that sea-level rise (SLR) is a “well accepted” consequence of climate change.
- Their study has found that globally, of the 68 per cent area that is prone to coastal flooding, over 32 per cent can be attributed to regional SLR.
- This, they say, will significantly increase coastal flooding by 2100.
- The results indicate by the year 2100, for most of the world, flooding incidents that are typically associated with a 1 in a 100-year event could occur as frequently as 1 in 10 years, primarily as a result

of sea level rise.

- As per this assessment, 0.5-0.7 per cent of the world's land area is at a risk of episodic coastal flooding by 2100, impacting 2.5-4.1 per cent of the population, assuming there are no coastal defenses or adaptation measures in place.
- Last year in September, Indonesia's President Joko Widodo announced that the country's capital would be relocated from Jakarta to the province of East Kalimantan on the lesser populated island of Borneo.
- The relocation was meant to reduce the burden on Jakarta, which has been facing problems such as poor quality air and traffic gridlocks, and is particularly prone to flooding.
- It is also the largest Indonesian city with a population of 1 crore.
- It is located on the North West coast of the most populous island in the world, Java.
- The combination of climate change and heavy congestion continues to bury Jakarta, the "world's fastest-sinking city", by about 25 cm into the ground every year.

- Indonesia's government launched a coastal development project called a Giant Sea Wall or "Giant Garuda" (Garuda is the name of a bird from Hindu mythology and is Indonesia's national symbol) in 2014 meant to protect the city from floods.
- In the Bulletin of the American Meteorological Society, researchers proposed an extraordinary measure to protect 25 million people, and important economic regions of 15 Northern European countries from rising seas as a result of climate change.
- They suggested a mammoth Northern European Enclosure Dam (NEED), enclosing all of the North Sea.
- The idea involved construction of two dams of a combined length of 637 km to protect Northern Europe against unstoppable SLR.
- A Special Report on the Ocean and Cryosphere in a Changing Climate, published last year by the IPCC, noted that "well-designed coastal protection" could both "reduce expected damages" and "be cost efficient for urban and densely populated areas"

2.4.Pokkali Rice Seedlings

- The pokkali variety of rice is known for its saltwater resistance and flourishes in the rice paddies of coastal Alappuzha, Ernakulam and Thrissur districts in Kerala.
- It is cultivated in the water-logged coastal regions.
- It has unique saline tolerant property.
- Its resistance to salinity is remarkable
- The uniqueness of the rice has brought it the Geographical Indication (GI) tag and is the subject of continuing research.

- Pokkali is famed for its peculiar taste, extra-large grains size and its high protein content.
- Farmers in South 24 Parganas district in West Bengal are betting on the pokkali variety of rice from Kerala to tide over a crisis-like situation created by severe seawater incursion into paddy fields in vast areas of the Sundarbans after the cyclone Amphan hit West Bengal on May 20.
- Vyttila-11 varieties of pokkali seedlings were brought from Kerala.

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3. Science & Technology

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3.1.Severe Fever with Thrombocytopenia Syndrome (SFTS)

- It belongs to the Bunya virus family is transmitted to humans through tick bites
- It was first identified in China in 2009
- Reports say that the virus has killed at least 30 per cent of those infected
- Virologists believe an Asian tick called Haemaphysalis longicornis is the primary vector, or carrier, of the virus
- Farmers, hunters and pet owners are particularly vulnerable to the disease as they regularly come in contact with animals that may carry the Haemaphysalis longicornis tick
- Patients suffering from the disease usually experience a whole range of symptoms, including fever, fatigue, chill, headache, lymphadenopathy, anorexia, nausea etc.
- The virus eventually travelled to other East Asian nations, including Japan and South Korea. Since the virus was first discovered, the total number of cases has risen significantly

Treatment

- While a vaccine to treat the disease is yet to be successfully developed, the antiviral drug Ribavirin is known to be effective in treating the illness

3.2.Electronic Vaccine Intelligence Network (eVIN)

- It is an innovative technological solution aimed at strengthening immunization supply chain systems across the country
- This is being implemented under National Health Mission (NHM) by Ministry of Health and Family Welfare
- eVIN aims to provide real-time information on vaccine stocks and flows, and storage temperatures across all cold chain points in the country
- This robust system has been used with the requisite customization during the COVID pandemic for ensuring continuation of the essential immunization services and protecting our children and pregnant mothers against vaccine preventable diseases
- eVIN combines state-of-the-art technology, a strong IT infrastructure and trained human resource to enable real time monitoring of stock and storage temperature of the vaccines kept in multiple locations across the country
- eVIN has reached 32 States and Union Territories (UTs) and will soon be rolled-out in the remaining States and UTs of Andaman & Nicobar Islands, Chandigarh, Ladakh and Sikkim

3.3.Time Capsules

News

- Ahead of the laying of the foundation stone for the Ram temple in Ayodhya, claims and denials have emerged about plans by the Ram Janmabhoomi Teerth Kshetra Trust to put in a time capsule, or 'kaal patra'

Time Capsules

- It is a container of any size or shape, which accommodates documents, photos and artefacts typical of the current era and is buried underground, for future generations to unearth
- The time capsule requires special engineering so that the contents don't decay, even if pulled out after a century
- Material such as aluminium and stainless steel are used for the encasing, and documents are often reproduced on acid-free paper.

Time Capsules in India

- Outside the Red Fort and placed underground in 1972 by Prime Minister Indira Gandhi, was dug out by the subsequent government
- At a school in Mumbai, IIT-Kanpur, Lovely Professional University in Jalandhar, and Mahatma Mandir in Gandhinagar

3.4.Oxford Vaccine for COVID-19

- Drugs Controller General of India (DCGI) who heads the Central Drugs Standard Control Organisation (CDSCO) has approved the application of Serum Institute of India (SII) to conduct late-stage human trials in India
  - ✓ SII, the world's largest maker of vaccines, has a tie-up with AstraZeneca, the Swedish-British pharma giant, to manufacture the Covid-19 vaccine for low- and middle-income countries. The vaccine is already being tested in the UK, South Africa and Brazil, where participants are being administered two doses nearly a month apart.
- The Oxford candidate is considered to be one of the global frontrunners for the Covid-19 vaccine, along with candidates being developed by Moderna with the US National Institute of Allergy and Infectious Diseases, and Pfizer with BioNTech
- The Institute can now start larger phase II/III trials of the candidate in India, ahead of Bharat Biotech's Covaxin and Zydus Cadila's ZyCov-D, other candidates that are still in phase I/II trials 2