

1. Lassa Fever

Why in News?

- Three Persons Diagnosed with Lassa fever in the UK died. The cases have recently been linked to travel to west African countries.

Highlights:

- The Lassa fever-causing virus is found in West Africa and was first discovered in 1969 in Lassa, Nigeria.
- The fever is spread by rats and is primarily found in countries in West Africa including Sierra Leone, Liberia, Guinea, and Nigeria where it is endemic.
- Matomys rats has the potential to spread the deadly Lassa virus.
- The death rate associated with this disease is low, at around 1%. But the death rate is higher for certain individuals, such as pregnant women in their third trimester.
- According to the European Centre for Disease Prevention and Control, about 80% of the cases are asymptomatic and therefore remain undiagnosed.
- A person can become infected if they come in contact with household items of food that is contaminated with the urine or feces of an infected rat (zoonotic disease).
- It can also be spread, though rarely, if a person comes in contact with a sick person's infected bodily fluids or through mucous membranes such as the eyes, nose or the mouth.
- Person-to-person transmission is more common in healthcare settings.
- Mild symptoms include slight fever, fatigue, weakness and headache.
- Serious symptoms include bleeding, difficulty breathing, vomiting, facial swelling, pain in the chest, back, and abdomen and shock.
- Death can occur from two weeks of the onset of symptoms, usually as a result of multi-organ failure.
- The antiviral drug ribavirin seems to be an effective treatment for Lassa fever if given early on in the course of Clinical Illness.

2. Earth observation satellite EOS-04

Why in News?

- Recently, Indian Space Research Organisation's earth observation satellite EOS-04 and two small satellites (INSPIRESat-1 and INS-2TD) were successfully placed into the intended orbit by the PSLV-C52 rocket.

Highlights:

- This launch was the 54th flight of the Polar Satellite Launch Vehicle (PSLV) rocket, and the 23rd of its most powerful XL-version that has six strap-on boosters.
- EOS-04 weighing 1,710 kg and with a mission life of ten years designed to provide high quality images under all weather conditions for applications such as Agriculture, Forestry and Plantations, Soil Moisture and Hydrology and Flood mapping.
- It will complement the data from Resourcesat, Cartosat and RISAT-2B series of satellites that are already in orbit.
- The first of these newly named satellites, EOS-01, launched in November 2020, is in orbit right now. EOS-02, a micro-satellite to be flown on a new launch vehicle called SSLV (Small Satellite Launch Vehicle) is yet to be launched, while launch of EOS-03 had ended in a failure in August, 2021.
- It will be placed In a sun synchronous polar orbit of 529 km, is a radar-imaging satellite which would have made it a part of the RISAT series earlier.
- In fact, it would replace the RISAT-1 which was launched in 2012 but has been non-functional for the last few years.
- RISATs use synthetic aperture radars to produce high-resolution images of the land.
- One big advantage that radar imaging has over optical instruments is that it is unaffected by weather, cloud or fog, or the lack of sunlight.
- It can produce high-quality images in all conditions and at all times, making it suitable for Surveillance.

3. Comprehensive Economic Cooperation Agreement (CECA)

Why in News?

- Recently, India and Australia have announced that they are set to conclude an Interim Trade Agreement in March 2022 and a Comprehensive Economic Cooperation Agreement (CECA) 12-18 months thereafter.
- The agreement will cover “most areas of interest for both countries” including goods, services, rules of origin, sanitary and phytosanitary measures and customs procedures.
- Earlier, India, Japan and Australia have formally launched the Supply Chain Resilience Initiative (SCRI).

What is an Interim Trade Agreement?

- An interim or early Harvest Trade Agreement is used to liberalise tariffs on the trade of certain goods between two countries or trading blocs before a comprehensive FTA (Free Trade Agreement) is concluded.
- Government's emphasis on interim agreements may be tactical so that a deal may be achieved with minimum commitments and would allow for contentious issues to be resolved later.
- The problem, though, is that these early harvest schemes potentially target the low-hanging fruits, leaving the tougher goods and services for later.
- This strategy can lead to significant delays in wrapping up the more broad-based FTAs, which could potentially lead to impediments.
- India had concluded an early harvest agreement with Thailand in 2004 but has not been able to conclude a comprehensive FTA with the country.
- India also has a trade agreement with Sri Lanka dealing with goods but was not able to conclude an agreement on services and investments.
- Early harvest agreements that do not graduate into full-scale FTAs are exposed to legal challenges from other countries that are members of the World Trade Organisation (WTO).
- It is often beneficial to negotiate the entire deal together, as an early harvest deal may reduce the incentive for one side to work towards a full FTA.
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4. Multi-slit Solar Explorer (MUSE) and HelioSwarm

Why in News?

- NASA has selected two science missions – the Multi-slit Solar Explorer (MUSE) and HelioSwarm – to help improve our understanding of the dynamics of the Sun, the Sun-Earth connection, and the Constantly Changing Space Environment.

Highlights:

- These missions will provide deeper insights into our universe and offer critical information to help protect astronauts, satellites, and communications signals such as GPS
- The MUSE mission will help scientists understand the forces driving the heating of the Sun's corona and the eruptions in that outermost region that are at the foundation of space weather.
- The mission will offer deeper insight into the physics of the solar atmosphere by using a powerful instrument known as a multi-slit spectrometer to observe the Sun's extreme ultraviolet radiation and obtain the highest resolution images ever captured of the solar transition region and the corona.
- The HelioSwarm mission is a constellation or "swarm" of nine spacecraft that will capture the first multiscale in-space measurements of fluctuations in the magnetic field and motions of the solar wind known as solar wind turbulence.
- The Sun's outermost atmospheric layer, the heliosphere, encompasses an enormous region of the solar system.
- Solar winds spread through the heliosphere, and their interactions with planetary magnetospheres and disruptions such as coronal mass ejections affect their turbulence.