





**Most Trusted Learning Platform**



## NAMASTE Scheme

- **Significance of the NAMASTE scheme**
- **NAMASTE is significant as it will be-**
- **Providing access to alternative livelihoods support**
- **Enable them to access self-employment and skilled wage employment opportunities**
- **Bring about a behaviour change amongst citizens towards sanitation workers**



## NAMASTE Scheme

The category of cities that will be eligible are given below:

- (i) All Cities and Towns with a population of over one lakh with notified Municipalities, including Cantonment Boards (Civilian areas),
- (ii) All Capital Cities/Towns of States/ Union Territories (UTs), not covered in (i),
- (iii) Ten Cities from hill states, islands and tourist destinations (not more than one from each State).

## Vostro Accounts

- Banks from 18 countries have been permitted by the Reserve Bank of India (RBI) to open Special Vostro Rupee Accounts (SVRAs) for settling payments in Indian rupees.
- Vostro Accounts
- It is a type of bank account that is maintained by a bank on behalf of a foreign bank and are used to facilitate international trade transactions and to settle the obligations arising from these transactions.
- The foreign bank is the account holder and the local bank is the account's custodian. These are subject to various regulations and guidelines issued by the country's central banks.
- These play critical role in facilitating international trade and commerce.

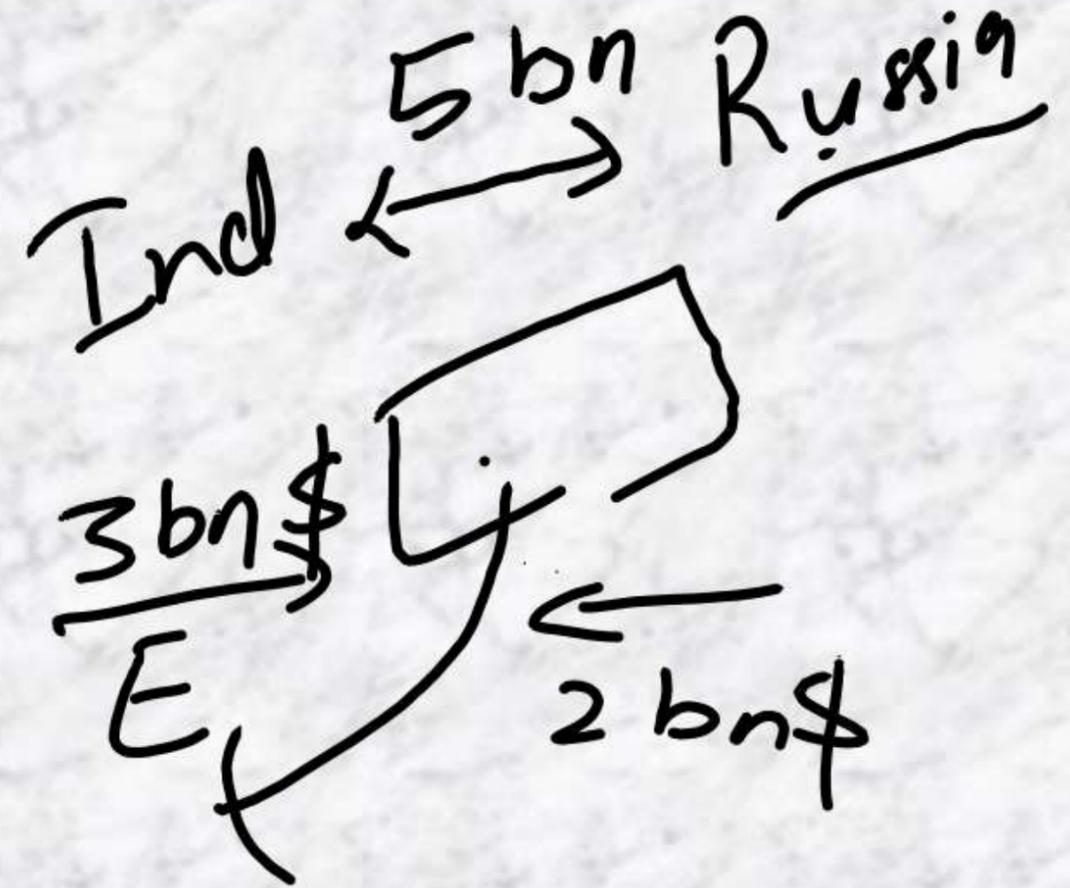
→ Ministry of  
Social  
Justice

→ Ministry of  
Home and  
Urban Affairs



## Vostro Accounts

- **Special Vostro Rupee Accounts (SVRAs)**
  - **Indian Governments approve the creation of special Vostro rupee accounts with 18 nations – Botswana, Fiji, Germany, Guyana, Israel, Kenya, Malaysia, Mauritius, Myanmar, New Zealand, Oman, Russia, Seychelles, Singapore, Sri Lanka, Tanzania, Uganda, and the United Kingdom.**
  - **Approximately sixty such approvals have been given by the Reserve Bank of India (RBI).**
  - **These can be set only after permission from the RBI and by approaching the Authorised Dealer (AD). These can help with the settlement of exports/imports in Indian rupees (INR).**
- 



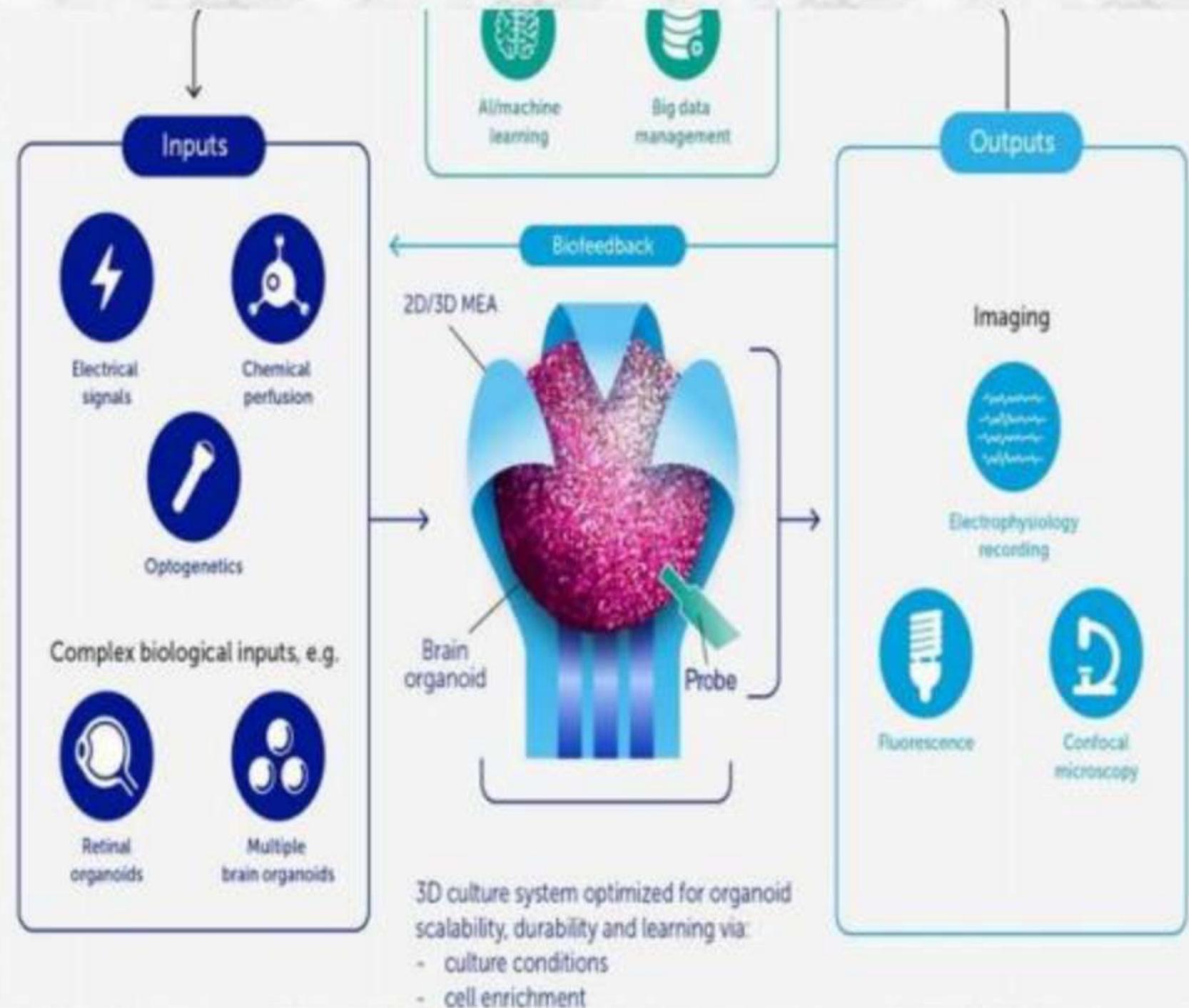
## Organoid Intelligence – Bio Computers

- An innovative new field of study called "Organoid Intelligence", which aims to develop 'Bio computer was released by Researchers at Johns Hopkins University (JHU).
- In these 'Bio computers', brain cultures developed in the lab are connected to actual sensors and input/output devices.
- Experts anticipate that this technology will enable them to access the brain's processing capacity and comprehend the molecular underpinnings of human cognition, learning, and other neurological illnesses.



# Organoid Intelligence – Bio Computers

- **About Biological computers**
- **Biological computers are made from living cells. Instead of electrical wiring and signalling, biological computers use chemical inputs and other biologically derived molecules such as proteins and DNA.**



## Sickle Cell Anaemia

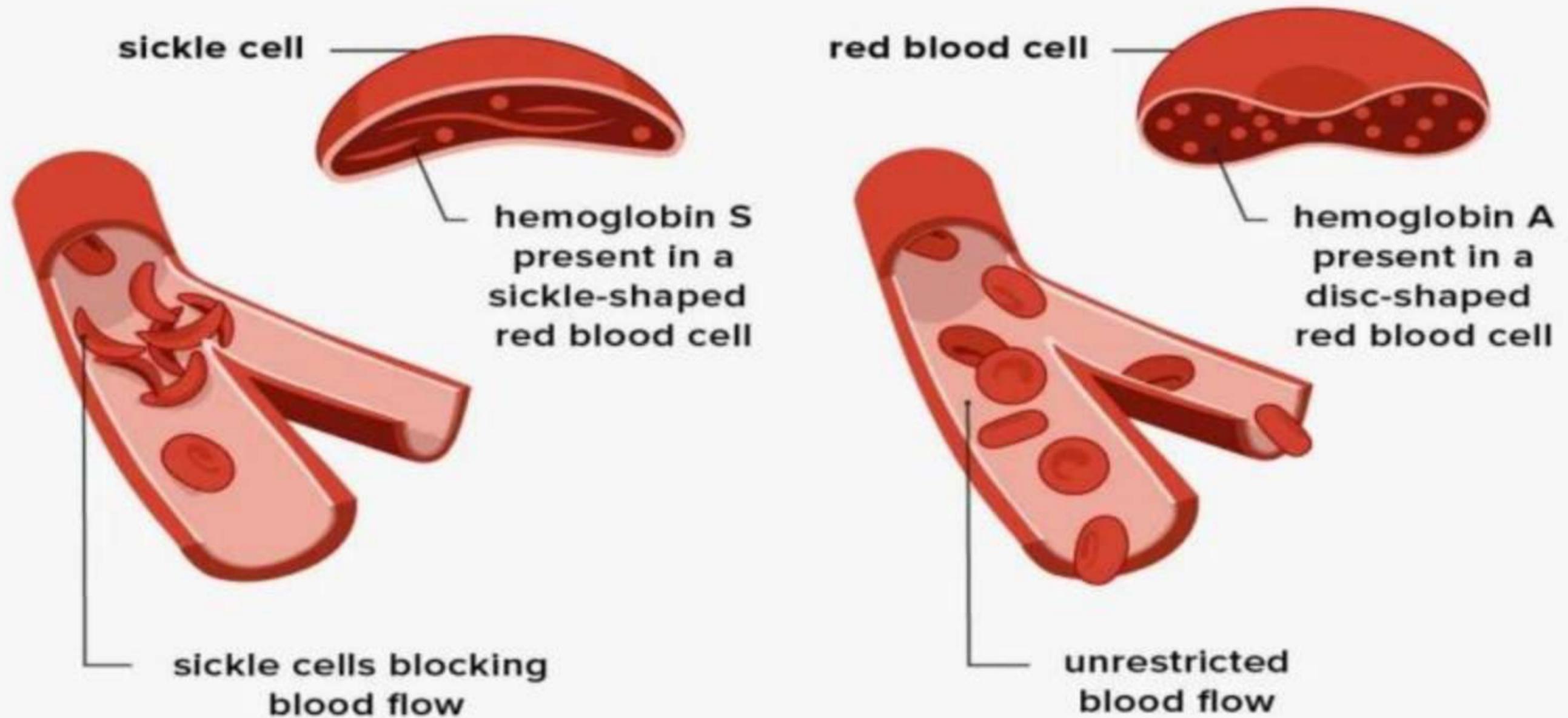
→ Genetic disorder

- The government will work in "mission mode" to eliminate the condition by 2047.
- India is the second-worst affected country in terms of predicted births with SCA — i.e. chances of being born with the condition.
- It changes the shape of red blood cells, making them stiff and sticky, and shaped like sickles or crescent moons.
- These sickle cells can block blood flow, which can lead to serious complications.

Anaemia



## Sickle Cell vs. Red Blood Cell



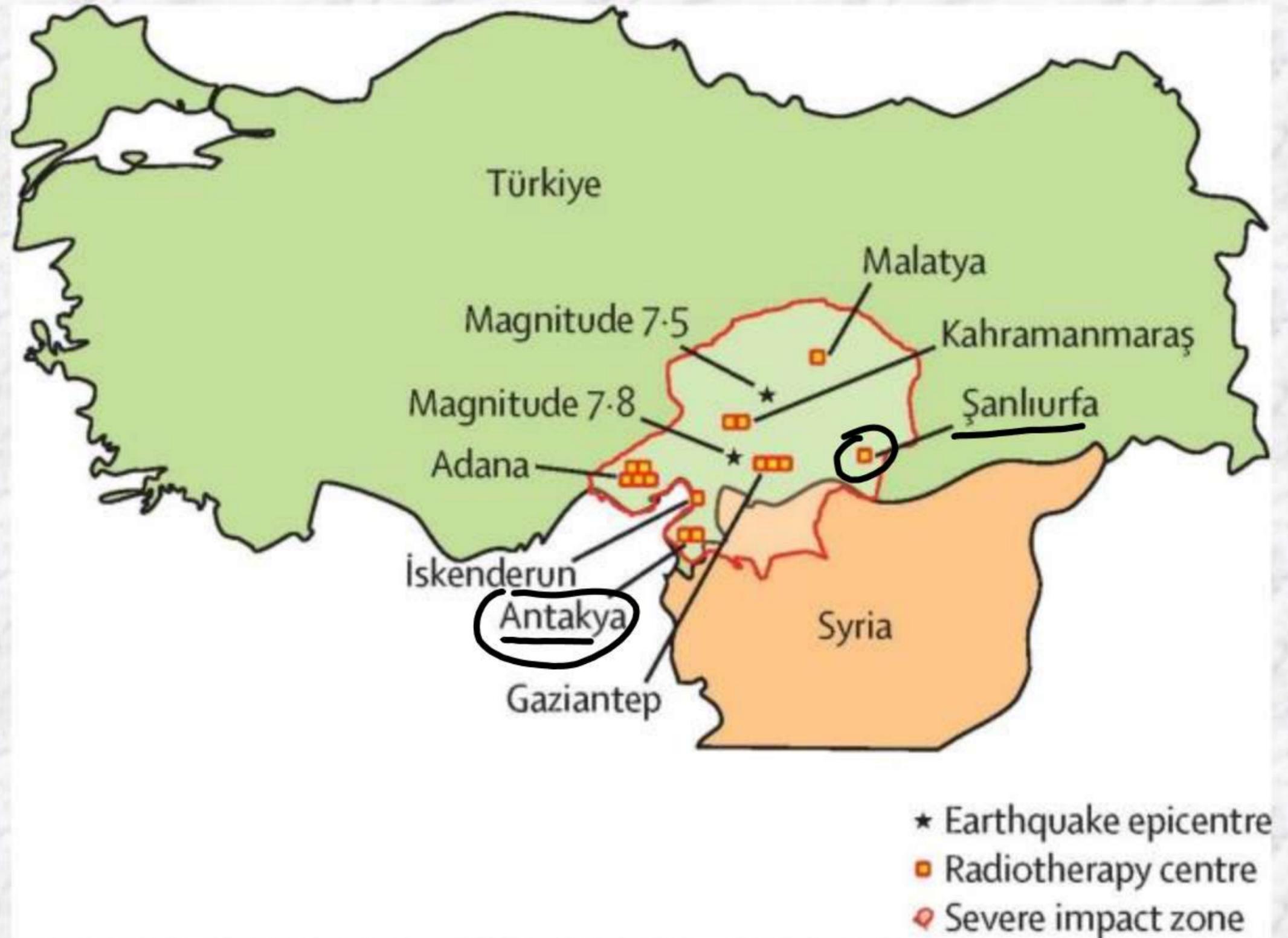
## Lithium Triangle

- The Lithium Triangle is a region of the Andes that is rich in lithium reserves.
- It is located around the borders of Argentina, Bolivia, and Chile.
- The lithium is concentrated in salt pans along the Atacama Desert and neighboring arid areas
- The Lithium Triangle is thought to hold around 56% of the world's lithium supply.
- The salt flats of the Lithium Triangle contain roughly half the world's known lithium



## Places in News:

- **Three ancient cities suffered widespread destruction in Monday's massive earthquake in Turkey and Syria: Antakya, Sanliurfa and Aleppo.**
- **The 7.8-magnitude quake has killed more than 19,000 people in Turkey and Syria and flattened entire blocks over residents in their sleep.**



# UPSC



## Vedic Heritage Portal

- The portal aims to map the Vedic heritage of the country and is a repository of Vedic knowledge and traditions from across the country.
- It is an effort to preserve and promote the 'Vedas', which are an intangible heritage of humanity as per the United Nations Educational, Scientific and Cultural Organization (UNESCO).
- It gives detailed information about oral traditions, textual tradition in form of published books/manuscripts, or implements (yajna-related objects).
- Research articles and lectures on scientific subjects explaining the relevance of 'Vedic knowledge' in the perspective of modern science are also documented.
- The IGNCA comes under of Ministry of Culture.

# Green Tug Transition Programme (GTTP)

- India aims at becoming 'Global Hub for Green Ship' building by 2030 with launch of Green Tug Transition Programme(GTTP)
- It is launched by the Ministry of Ports, Shipping & Waterways
- The programme will start with 'Green Hybrid Tugs', which will be powered by Green Hybrid Propulsion systems, and subsequently adopting non-fossil fuel solutions like (Methanol, Ammonia, Hydrogen).

# Green Tug Transition Programme (GTTP)

- **NCoEGPS will act as a technological arm of Ministry of Ports, Shipping, and Waterways for providing the needed support on Policy, Research and Cooperation on Green Shipping**
- **National Centre of Excellence in Green Port & Shipping (NCoEGPS) - a collaboration between the Ministry of Ports, Shipping & Waterways, and the Energy and Resources Institute (TERI).**



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# Terran 01

- The Terran 1 is a 3D-printed rocket developed by Relativity Space.
- It was launched on March 22, 2023, from Cape Canaveral, Florida.
- The rocket is 100 feet tall and 7.5 feet wide, and 85% of its mass is 3D printed.
- The Terran 1's first and only launch failed to reach orbit due to a second stage failure.
- The rocket crashed into the ocean after three minutes of flight.
- Relativity Space is retiring the Terran 1 in favor of developing the larger, reusable Terran R vehicle.



# 3D Printing

- **3D printing, also known as additive manufacturing, is a process that creates a physical object from a digital design.**
- **The process involves laying down thin layers of material, such as liquid or powdered plastic, metal, or cement, and then fusing the layers together**



# Vayulink System

- The Indian Air Force has come out with an innovative solution helping pilots to deal with bad weather and providing them jammer-proof uninterrupted communication with the base station.
- 'Vayulink', the data link communication uses the Indian Regional Navigation Satellite System (IRNSS) that is also known as NAVIC, to send radio communication to the base station when the signals are low.
- Vayulink is an ad-hoc data link communication system, which when installed in an aircraft, gives position of other aircrafts close by, encrypted traffic data over secured channel
- When the planes are flying close to any friendly forces on grounds during a combat situation, the aircraft display gives the position of such forces on the ground, including tanks and troops beneath



# Vayulink System

- The Vayulink system also prevents aircraft collision, provides better combat teaming and helps plan real-time basis where multiple teams can get together and go towards the target coming from different areas
- The system can also give the pilots data on the weather.
- When you are flying above the hills where there is no radio communication, the system can give you radio communication also.
- Vayulink has been developed by the IAF only and it is a very secure system.



Poland

Russia

Belarus

Hungary

Romania

Slovakia

Moldova

Ukraine ⇒ 7 letters

(a) Belarus

(b) Poland

(c) Hungary

(d) Turkey

# Megha -Tropiques

- **Megha in Sanskrit is 'cloud' and Tropiques in French is 'tropics'. It has been envisaged it is a low earth orbit (LEO) mission.**
- **Megha-Tropiques Mission is an ISRO-CNES (Indo-French) collaborative program intended for studying the water cycle and energy exchanges in the tropics using a satellite platform.**
- **It provides scientific data on the contribution of the water cycle to the tropical atmosphere, with information on condensed water in clouds, water vapour in the atmosphere, precipitation, and evaporation.**



# Space debris



Kessler's  
Syndrome

# Megha -Tropiques

- It is a unique satellite for climate research with its circular orbit inclined 20 degrees to the equator; which helps scientists seeking the refine prediction models.
- It has day, night and all-weather viewing capabilities; it passes over India almost a dozen times every day, giving scientists an almost real-time assessment of the evolution of clouds.



# Megha -Tropiques

- The Megha-Tropiques mission goals are as follows:
- To provide, simultaneous measurements of several elements of the atmospheric water cycle (water vapour, clouds, condensed water in clouds, precipitation and evaporation),
- To measure the corresponding radiative budget at the top of the atmosphere,
- To ensure high temporal sampling to characterize the life cycle of the convective systems and to obtain significant statistics



# Matua Community

- Prime Minister virtually addressed the Matua community during the opening of 'Matua Dharma Maha Mela 2022
- Originally from East Pakistan, the Matuas migrated to India during Partition and after the creation of Bangladesh. However, a sizable number are yet to get Indian citizenship.
- In November 2018, the late matriarch of Matua Mahasangha, Binapani Devi Thakur who was referred to as 'Boro Maa' (elder mother) was awarded Banga Bibhushan, the highest civilian award of West Bengal.
- The sect opposed caste oppression which attracted adherents from other marginalised communities like Malis and Telis.



# Matua Community

- **Matua Mela**
- **The Matua Maha Mela is an important event which showcases the vibrant culture of the Matua community.**
- **The foundation of Matua Maha Mela was laid by Shree Harichand Thakur ji and further nurtured by Guruchand Thakur ji and Boro Ma**



## **Mount Merapi & Marapi:**

- **Indonesia's Mount Merapi, one of the world's most active volcanoes, erupted late on March**
- **Merapi has been at the second-highest level alert since 2020 following increased volcanic activity and authorities established a restricted zone of seven kilometres from the summit.**
- **The volcano's last major eruption in 2010 killed more than 300 people and forced the evacuation of some 280,000 residents.**
- **There are two active volcanoes: Mount Marapi (Sumatra) & Mount Merapi (Java)**

# Mount Merapi & Marapi:



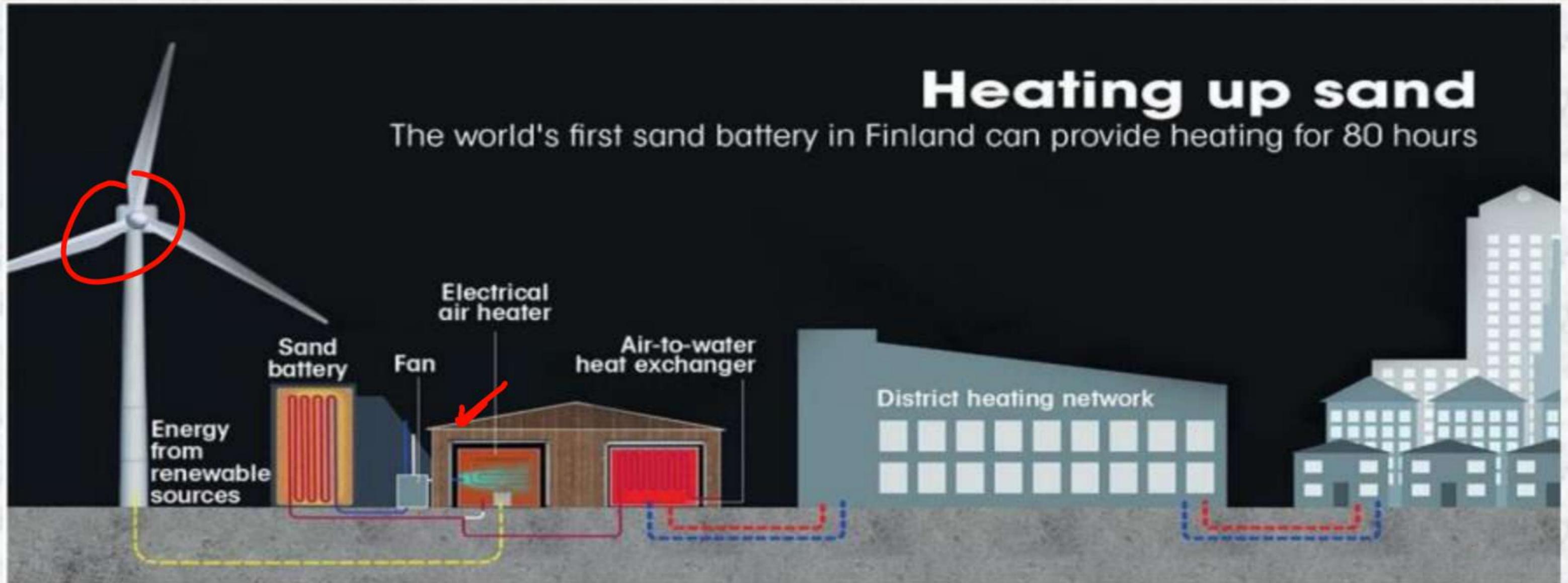
# Sand Battery

- Finland has installed the world's first sand battery that can store heat from renewable energy sources for months.
- The battery is made of sand collected from construction sites, can solve the problem of round-the-year energy supply
- The installed battery can store 8 megawatt-hours (MWh) of energy and release heat at 0.1 MW – enough to provide heating and hot water for about 100 homes and a public swimming pool for 80 hours on a full charge.



## Heating up sand

The world's first sand battery in Finland can provide heating for 80 hours



### HOW THE BATTERY GETS CHARGED

Using renewable sources, air is heated to  $600^{\circ}\text{C}$  in the electrical air heater. The hot air is blown inside the sand battery through a pipe. The battery is considered charged when the sand at the core of the battery reaches  $600^{\circ}\text{C}$ .

### HOW THE BATTERY GETS DISCHARGED

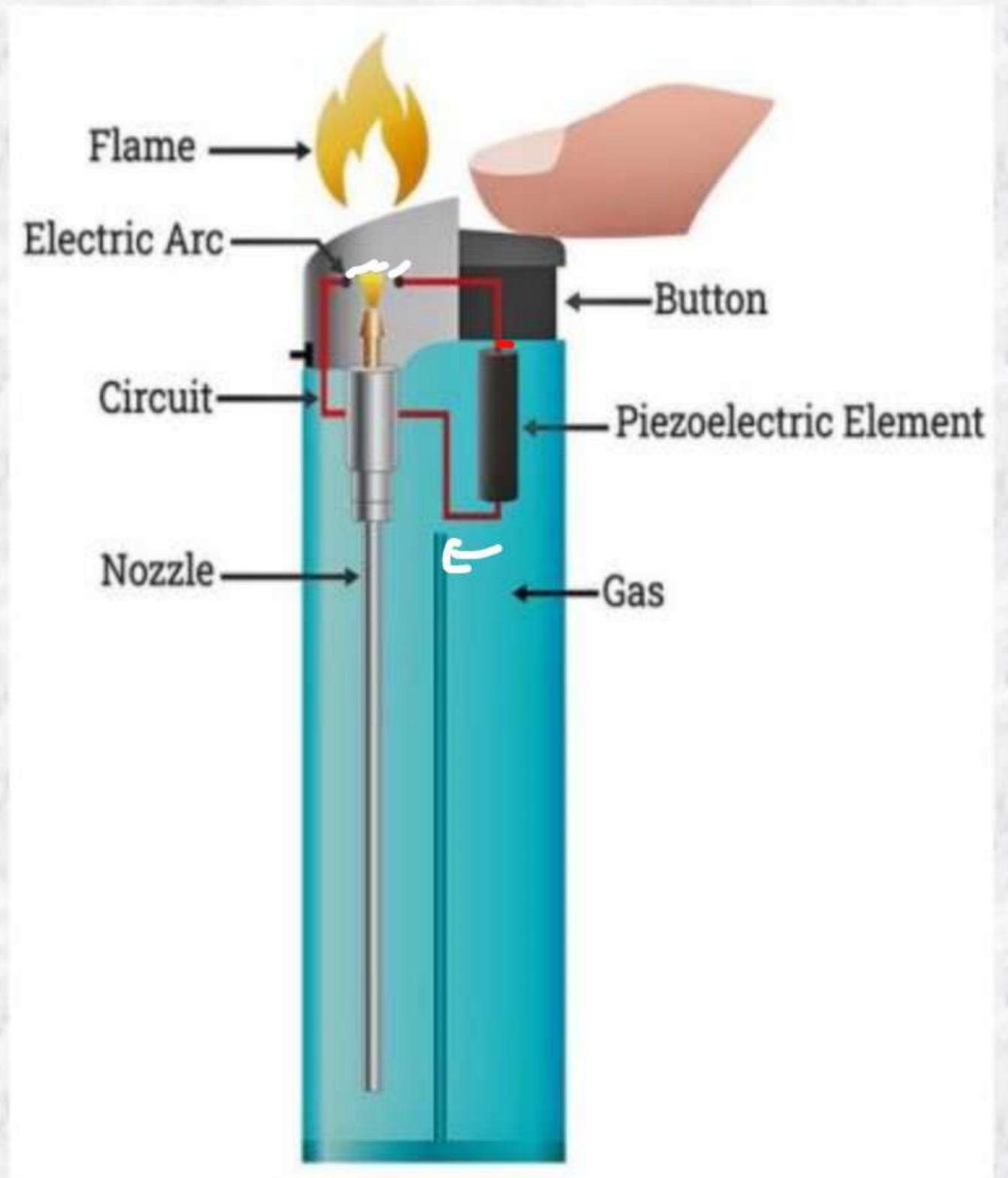
Using fans, air is pushed into the pipe inside the battery casing. Once the air reaches,  $200\text{-}500^{\circ}\text{C}$ , it is sent to the air-to-water heat exchanger, where it is used to boil water. The boiling water is sent to the district heating network which is used to keep buildings and public water systems warm and provide hot water for various industrial processes.

## Piezoelectric Effect:

- For the first time, scientists have reported evidence of the piezoelectric effect in liquids.
- The effect has been known for 143 years and in this time has been observed only in solids.
- In the piezoelectric effect, a body develops an electric current when it is squeezed.
- Quartz ✓ is the most famous piezoelectric crystal: it is used in this capacity in analog wristwatches and clocks.
- Such crystals are also used in cigarette lighters, electric guitars, TV remote controls, audio transducers, and other instruments where converting mechanical stress to a current is useful.

# Piezoelectric Effect:

- How this electricity comes into picture?
- Quartz is silicon dioxide ( $\text{SiO}_2$ ).
- The quartz crystal consists of silicon and oxygen atoms at the four vertices of a three-sided pyramid; each oxygen atom is shared by two pyramids.
- These pyramids repeat themselves to form the crystal.
- The effective charge of each pyramid is located slightly away from the centre.
- When a mechanical stress is applied – i.e. when the crystal is squeezed – the position of the charge is pushed further from the centre, giving rise to a small voltage. This is the source of the effect.



⇒ Laws / Rules

⇒ Schemes

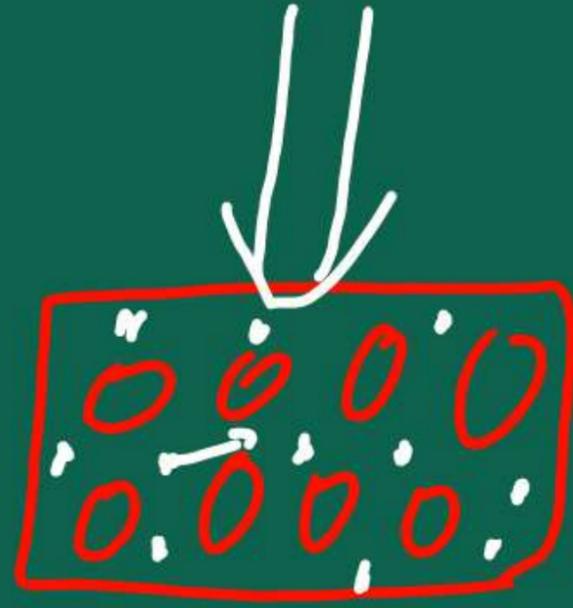
⇒ Species

⇒ Terms

⇒ Places in news

⇒ Report

⇒



Char move = current



# KHAN GLOBAL STUDIES

Most Trusted Learning Platform

**THANKS FOR WATCHING**

