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# Liquid Nano Urea

**What exactly is liquid nano urea, and how does it work?**

- **It is essentially urea in the form of a nanoparticle. Urea is a chemical nitrogen fertiliser, white in colour, which artificially provides nitrogen, a major nutrient required by plants.**
- **The product has been developed at IFFCO's Nano Biotechnology Research Centre (NBRC) at Kalol.**
- **Liquid nano urea is sprayed directly on the leaves and gets absorbed by the plant. Fertilisers in nano form provide a targeted supply of nutrients to crops, as they are absorbed by the stomata, pores found on the epidermis of leaves.**

urea → 30%

liquid  
Nano = 80-90%  
urea

# Liquid Nano Urea

As of now, just 30-50 per cent of nitrogen from urea is utilised by plants in farms while the rest goes waste due to quick chemical transformation because of leaching, which contaminates soil and water bodies, and volatilisation that causes emissions of nitrous oxide in the atmosphere – leading to air pollution and global warming along with low nutritional efficiency for the crop.

However, while conventional urea is effective just for 30-50 per cent in delivering nitrogen to plants, the effectiveness of the nano urea liquid is over 80 per cent.

Urea 40kg  
-----  
    ↳ 300  
    ↓ ↓  
Liquid nano  
urea - (250)

# Liquid Nano Urea

- **On an average, a farmer in India applies two bags of urea in one acre per crop season, with the quantity varying slightly according to the crop. According to a release from IFFCO, field trials have shown that a 500 ml bottle of nano urea can replace one bag of conventional urea**
- **Cost effective: The new product will significantly bring down the cost of logistics and warehousing**

# Liquid Nano Urea

- **More yield:** Apart from substantially increasing farmers' income by cutting down on input and storage cost, nano urea liquid also aims to increase crop yield and productivity against conventional urea. It is proven to increase the crop yield by an average of 8 per cent along with improving the quality of farm produce by providing better nutrition to crops.
- **Reducing Import bill:** India is dependent on imports to meet its urea requirements. Liquid Nano Urea has been indigenously developed in India.
- **Reduction in Pollution:** Air, water and Land Pollution will decrease with wise use of Liquid Nano urea.

## Possible implications

- Increase in yield
- Reduction in emission
- lesser subsidy burden

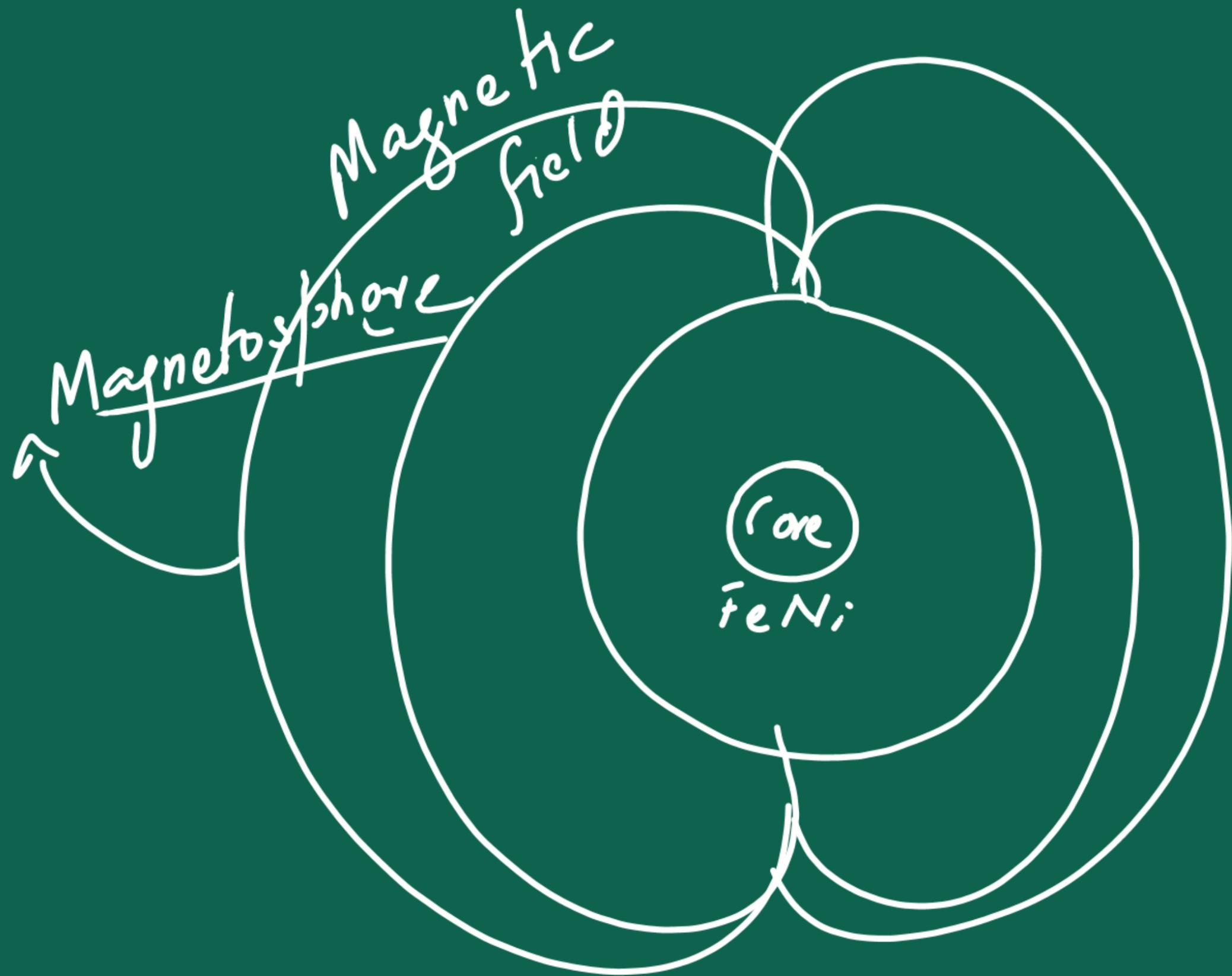
# Geomagnetic Storm

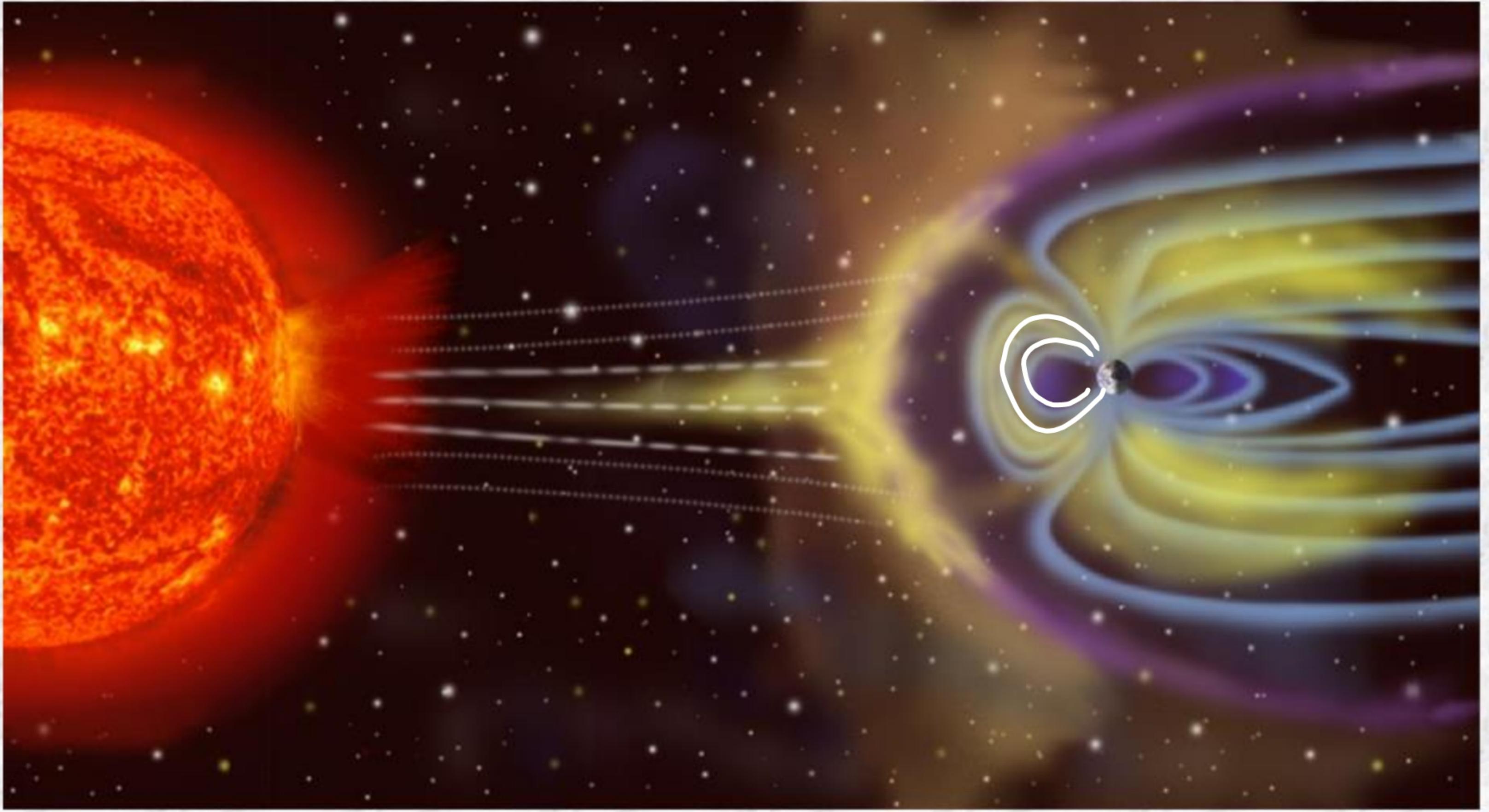


Magnetosphere

- What is this?
- ✓ A geomagnetic storm is a disturbance in the earth's magnetosphere, which is the area around the planet controlled by its magnetic field.
- ✓ A solar geomagnetic storm basically means that the Sun is about to discharge significant amounts of Coronal Mass Ejection with high-intensity energy toward the Earth, and some of the other planets on the internal solar system.
- ✓ Earth's internal magnetism creates a region around the planet known as the magnetosphere.
- ✓ It shields our home planet from harmful solar and cosmic particle radiation, as well as erosion of the atmosphere by the solar wind

↓  
Sphere of  
magnetic  
influence  
of Earth





# Geomagnetic Storm

When it happens?

When there is a very efficient exchange of energy from the solar wind into the space environment surrounding Earth

Why?

It is due to variations in the solar wind that produces major changes in the currents, plasmas, and fields in Earth's magnetosphere.

Impact:

Change in atmosphere → Heating of ionosphere and the thermosphere.

Impact on Satellites: Extra drag on satellites in low earth orbit- de-orbiting of satellites

Impact on radio, communication, GPS etc

Impact on power grid & Pipeline - It can create geomagnetic induced currents (GICs) in the power grid and pipelines.

Formation of Auroras

# Trishakti Prahar

- The Indian military Tuesday concluded exercise Trishakti Prahar — a joint training exercise — which began in North Bengal on January 21.
- As per defence sources, the aim of the exercise was to practice battle preparedness of the security forces, using latest weapons and equipment in a networked, integrated environment, involving the Army, the Indian Air Force and CAPFs.
- As a part of the exercise, swift mobilisation and deployment practices were carried out in various locations across north Bengal.

→ Silliguri  
(corridor)

# Trishakti Prahar

- Efforts of all agencies, including the civil administration, civil defence organisations, police and CAPFs, were coordinated to ensure efficient movement and quick mobilisation
- It was conducted close to the strategic 'Siliguri' corridor, also called Chicken's neck.

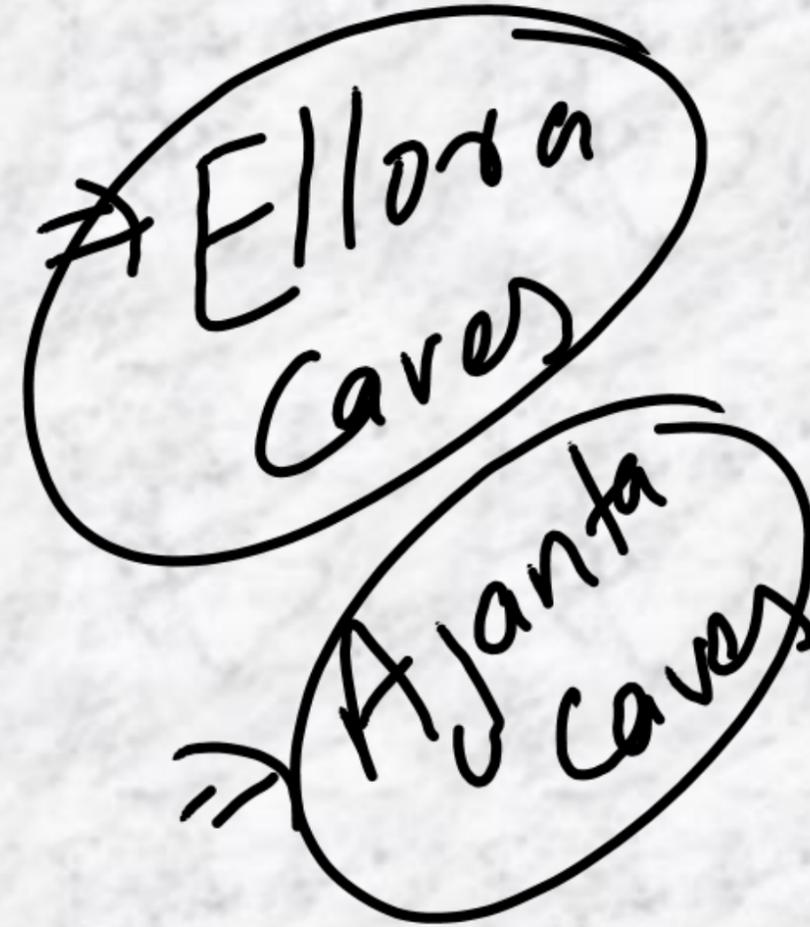
# GRISHNESHWAR TEMPLE

- Context: Former U.S. Secretary of State Hillary Clinton on Wednesday visited the historic Ellora Caves in Maharashtra's Aurangabad district and visited the Grishneshwar temple, which is the 12th Jyotirlinga in the country, sited close to Ellora.
- This ancient temple showcases the pre-historic South Indian architectural style and structure.
- The word Ghrneshwara means "lord of compassion".
- The temple houses carvings and sculptures of many Hindu gods and goddesses.

→ Maratha  
Style of Architecture

# GRISHNESHWAR TEMPLE

- It is an important pilgrimage site in the Shaiva tradition of Hinduism, which considers it as the twelfth Jyotirlinga (linga of light).
- It is built of red rocks and is composed of a five-tier shikara.
- The temple, with exquisitely sculpted walls, was built under the patronage of Queen Ahilyabai Holkar, one of the rulers of the erstwhile state of Indore.





# Sursingar ✓

- It is a stringed musical instrument that is similar to the sarod, but which is older and produces deeper notes.
- The instrument is made of wood and has a gourd attached to a hollow wooden handle with a metal fingerboard.
- The strings of the instrument, usually four in number and made of brass or bronze, are plucked with a metal pick.

→ wooden

# Sursingar

- The Sursingar can be played either holding it vertically in front of the musician and supported by his left shoulder like the Veena, or holding it parallel to the ground like the Sarod, or like the Sitar, which is held at an angle of 50-60 degrees to the ground.
- The Sursingar (along with the Rudra Veena and the Surbahar) usually accompanies Dhrupad, the genre of Hindustani vocal music which has a low, deep, and thoughtful pitch.

# Corporate Climate Responsibility Monitor 2023

- The Corporate Climate Responsibility Monitor (CCRM) 2023 is a report that analyzes the climate plans and pledges of 24 global corporations.
- The report is published by the New Climate Institute and Carbon Market Watch.
- The CCRM 2023 assesses the transparency and integrity of the companies' climate pledges.
- The CCRM 2023 press release states that Maersk is the only company whose climate strategy integrity is rated as reasonable

↓  
Companies

# Corporate Climate Responsibility Monitor 2023

- Greenwashing ✓
- Greenwashing is a deceptive marketing practice where companies or governments exaggerate their actions and impact on climate change.
- It's also called green sheen
- What is Net Zero?
- Net zero refers to the balance between the amount of greenhouse gas (GHG) that's produced and the amount that's removed from the atmosphere. It can be achieved through a combination of emission reduction and emission removal.

100 tonne CO<sub>2</sub>  
emit  
100 tonne CO<sub>2</sub>  
absorb

# River Cities Alliance ✓

- The River Cities Alliance (RCA) is a collaboration between the Ministry of Jal Shakti and the Ministry of Housing and Urban Affairs.
- The RCA's goal is to connect river cities and focus on sustainable river development
- The RCA is a platform for Indian river cities to exchange information and discuss ideas for sustainable urban river management.
- The RCA's three main themes are technical support, capacity building, and networking ✓
- The RCA has 142 Indian river cities and Aarhus, Denmark as members.
- The Alliance is open to all river cities of India. Any river city can join the Alliance at any time

NMCS  
NIUA

# River Cities Alliance

- The RCA also launched the India-led Global River Cities Alliance (GRCA) at the United Nations Climate Change Conference COP28 in Dubai in December 2023.
- The Global River Cities Alliance (GRCA), led by the National Mission for Clean Ganga (NMCG) under the Ministry of Jal Shakti, Government of India, was launched at COP28.
- GRCA is a unique alliance covering 275+ global river-cities in 11 countries, international funding agencies and knowledge management partners and is first of its kind in the world.

River Cities Alliance

# River Cities Alliance

- About NMCG
- The National Mission for Clean Ganga (NMCG) is a registered society
- The Ministry of Environment, Forests and Climate Change (MoEFCC) established the NMCG on August 12, 2011 under the Societies Registration Act of 1860
- It works under the ambit of Ministry of Jal Shakti
- It works to prevent, control, and reduce environmental pollution in the Ganges River.
- The NMCG also works to ensure that the river has a continuous and ~~adequate~~ water flow

## Millet international initiative for research and awareness

- India has introduced a draft to launch a global initiative to encourage the consumption and production of millet
- The acronym MIIRA stands for 'Millet International Initiative for Research and Awareness'.
- According to Agriculture Ministry sources, the MIIRA will be aimed at coordinating millet research programmes at the international level.
- It is in line with the UN declaring 2023 as the International Year of Millets, the proposal for which was moved by India and supported by 72 countries.

MIIRA

# Millet international initiative for research and awareness

- According to the sources, MIIRA will aim to connect millet research organisations across the world while also supporting research on these crops.
- For MIIRA to take off, India will contribute the “seed money”, while each G20 member will later have to contribute to its budget in the form of a membership fee.
- Millets require warm temperatures ranging from 20-30 degrees Celsius for seed germination and are highly adaptable to a variety of soil conditions.
- Alluvial, sandy and loamy soils are ideal soils for millet cultivation.
- India is the largest producer of millets in the world.

## Khanan Prahari app

- The government has launched a mobile app namely 'Khanan Prahari' and a web app Coal Mine Surveillance and Management System (CMSMS) for reporting unauthorized coal mining activities
- It has been launched by the Ministry of Coal towards curbing illegal coal mining activities.
- It allows citizens to report incidents of illegal coal mining through geo-tagged photographs and textual information
- It has been developed in association with the Bhaskaracharya Institute of Space Application & Geoinformatics, Gandhinagar, and CMPDI, Ranchi.

→ Identity of the person reporting crime will remain anonymous.

# Global Quality Infrastructure Index

- India's national accreditation system under the Quality Council of India (QCI) has been ranked 5th in the world in the recent Global Quality Infrastructure Index (GQII) 2023.
- The GQII ranks the 185 economies in the world on the basis of the quality infrastructure (QI).
- India's overall QI system ranking continues to be in the Top 10 at the 10th position, with the standardization system (under BIS) at 9th and the metrology system (under NPL-CSIR) at 21st position in the world.
- The GQII rankings are published and presented post-facto for each year based on the data collected till the end of that year.
- It is an initiative on metrology, standardisation, accreditation and related services, supported by Physikalisch-Technische Bundesanstalt (PTB) and the Federal Ministry for Economic Cooperation and Development (BMZ), Germany.

# Global Quality Infrastructure Index

## GQII 2023: Global Ranking and Subrankings by QI area (185 Economies)

| Economy Name       | Economy Code | GQII Rank 2023 | Rank Metrology 2023 | Rank Standardization 2023 | Rank Accreditation 2023 |
|--------------------|--------------|----------------|---------------------|---------------------------|-------------------------|
| Germany            | DEU          | 1              | 2                   | 2                         | 2                       |
| China              | CHN          | 2              | 3                   | 1                         | 6                       |
| United States      | USA          | 3              | 1                   | 7                         | 1                       |
| United Kingdom     | GBR          | 4              | 5                   | 3                         | 9                       |
| Japan              | JPN          | 5              | 4                   | 5                         | 16                      |
| Italy              | ITA          | 6              | 15                  | 4                         | 3                       |
| Spain              | ESP          | 7              | 13                  | 9                         | 8                       |
| Korea, Republic of | KOR          | 8              | 6                   | 6                         | 36                      |
| France             | FRA          | 9              | 7                   | 26                        | 11                      |
| India              | IND          | 10             | 20                  | 8                         | 5                       |

# Global Quality Infrastructure Index

- Quality Council of India:
- Quality Council of India (QCI) was established as a National body for Accreditation
- QCI was set up through a PPP model as an independent autonomous organization with the support of Government of India and the Indian Industry represented by the three premier industry associations, (i) Associated Chambers of Commerce and Industry of India (ASSOCHAM), (ii) Confederation of Indian Industry (CII) and (iii) Federation of Indian Chambers of Commerce and Industry (FICCI).
- QCI is a non-profit organization registered under the Societies Registration Act XXI of 1860.

## **Global Quality Infrastructure Index**

- The Department of Industrial Policy and Promotion, Ministry of Commerce and Industry was designated as the nodal point for all matters connected with quality and QCI**
- The main objectives of QCI are (a) to establish and operate national accreditation structure (b) to monitor and administer the National Quality Campaign**

# PM Kusum Extended

- Ministry of New and Renewable Energy (MNRE) has launched the Pradhan Mantri Kisan Urja Suraksha evam Utthan Mahabhiyan (PM-KUSUM) Scheme for farmers.
- PM-KUSUM Scheme has been extended till 31.03.2026
- It has three parts:
- Having farmers or farmer groups install solar power plants worth 10,000 MW;
- Installing 20 lakh solar-powered agriculture pumps that aren't connected to the grid (off-grid) and,
- Converting 15 lakh agriculture pumps, already connected to the grid, into solar.

# PM Kusum Extended

- As of December 31, 2022, only 88.46 MW of solar capacity had been added; 181,058 solar pumps had been installed and 1,174 grid-connected pumps converted. ✕
- Nodal Ministry: Ministry of New and Renewable Energy

## Components under PM KUSUM

### Component A:

2MW

Setting up of Decentralised Ground-mounted Solar Power Plants of capacity up to 2 MW.

Farmers / group of farmers / cooperatives / panchayats / Farmer Producer Organisations (FPO) can setup the plant, however, in case they are not able to arrange equity required for setting up the solar power plant, they can opt for developing the same through developer(s).

The renewable power generated will be purchased by DISCOMs at a feed-in-tariff (FiT).

Procurement Based Incentive @ Rs. 0.40 per unit with upper limit of Rs. 6.6 Lakh/MW for five years will be provided to DISCOMs.

## Components under PM KUSUM

### Component B:

Installation of Stand-alone solar water pumps for replacement of existing diesel agricultural pumps.

Reduction in Irrigation Cost and reduction in pollution levels.

Easy loans available for financing farmer's contribution.

Subsidy support available from Central and the state government.

## Components under PM KUSUM

### Component C:

Solarisation of agricultural electricity pumps through Individual Solar Pumps as well as Feeder level Solarisation.

Feeder level solarisation can be implemented in either RESCO or CAPEX Mode.

Incentivization for Water Conservation available.

Subsidy Support available from Central and State Government.

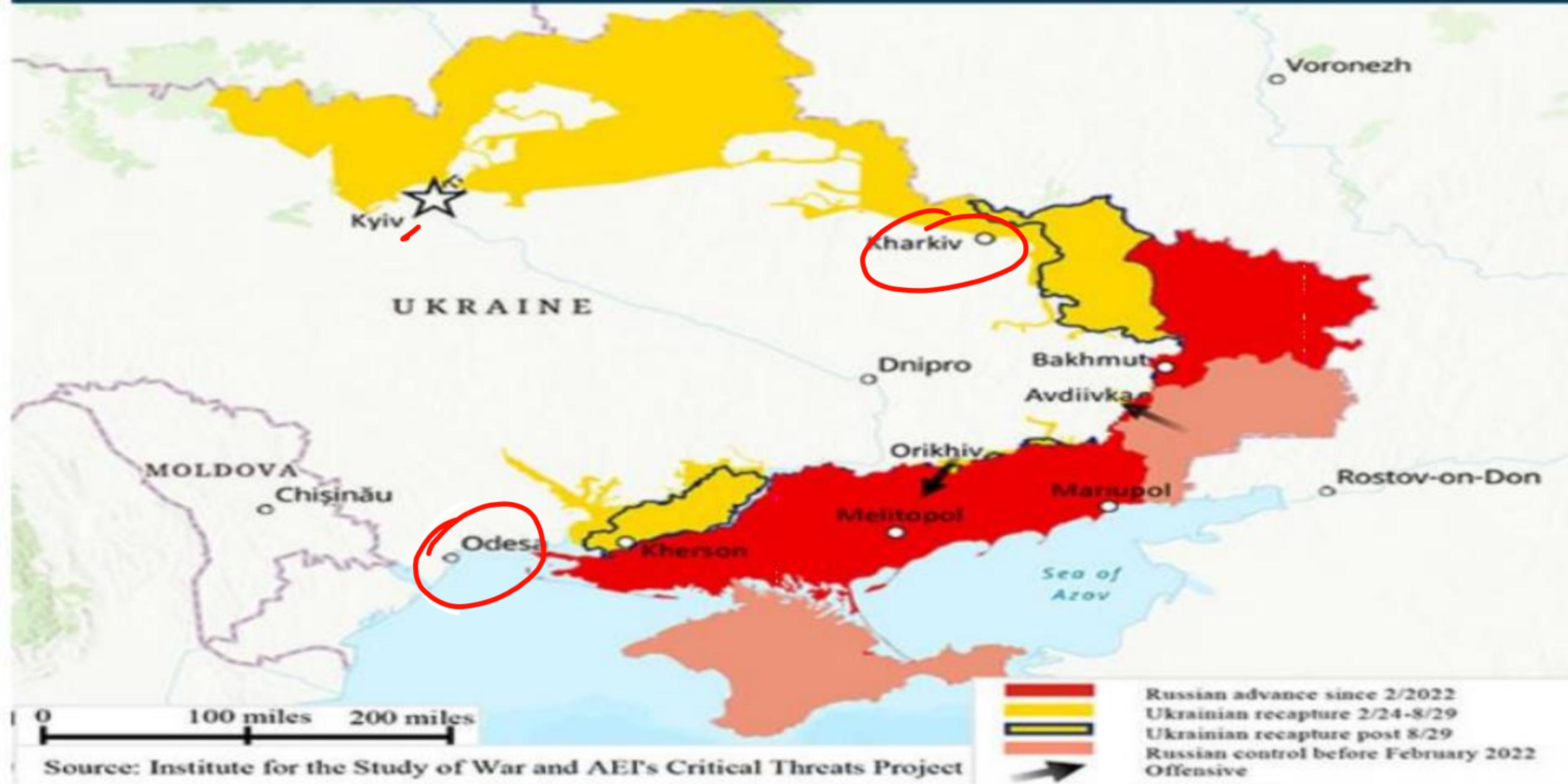
# Odesa - Ukraine

- The World Heritage Committee decided to add the historic centre of Odesa to its list of World Heritage sites.
- It is an international city in Ukraine
- It is a major seaport and transportation hub located on the north-western shore of the Black Sea.
- Odesa's location on the shores of the Black Sea allowed it to become one of the most important ports in the Russian empire.
- It incorporates two other large ports, Yuzhne to the east and Chornomorske to the south.



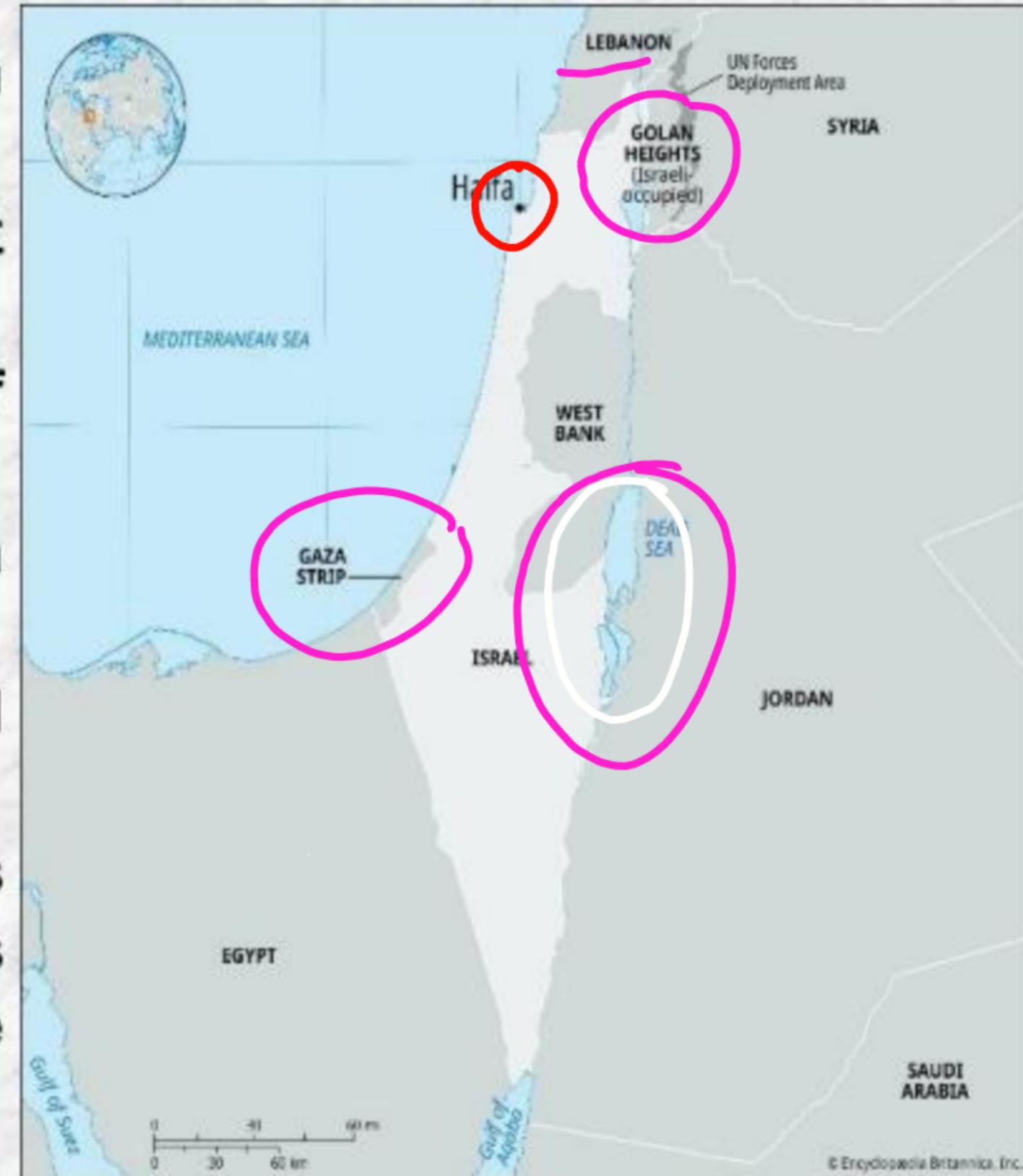


# Control today: Jan. 2, 2024



# Port of Haifa: Israel

- The Port of Haifa is located towards the north of Israel, about 90 km from Tel Aviv.
- It is close to the city of Haifa, the third largest city in Israel.
- It is also one of the major industrial areas of Israel.
- The Adani Group acquired the port of Haifa for USD 1.2 billion.
- It is also located near the busy Suez Canal shipping route.
- It handles nearly half of the country's container cargo and is also the nation's principal port for passenger traffic and cruise ships.



Lebanon

Syria

Jordan

Egypt

# Yaya Tso Lake

- Yaya Tso, a beautiful lake at an altitude of 4,820 metres known as the “paradise for birds” due to its location, has been proposed as Ladakh’s first Biodiversity Heritage Site
- It is a nesting habitat for a large number of birds and animals, such as the bar-headed goose, black-necked crane and brahminy duck.
- It is also one of the highest breeding sites of the black-necked crane in India.



# Biodiversity Heritage Site

- It is a unique conservation approach recognised under Section 37 of the Biological Diversity Act, 2002.
- Biodiversity Heritage Sites have rich biodiversity with wild as well as domesticated species; high endemism; rare and threatened species, keystone species, species of evolutionary significance, wild ancestors of domesticated/ cultivated species; fossil beds; cultural, ethical or aesthetic values for maintaining cultural diversity, with or without long human association with them.

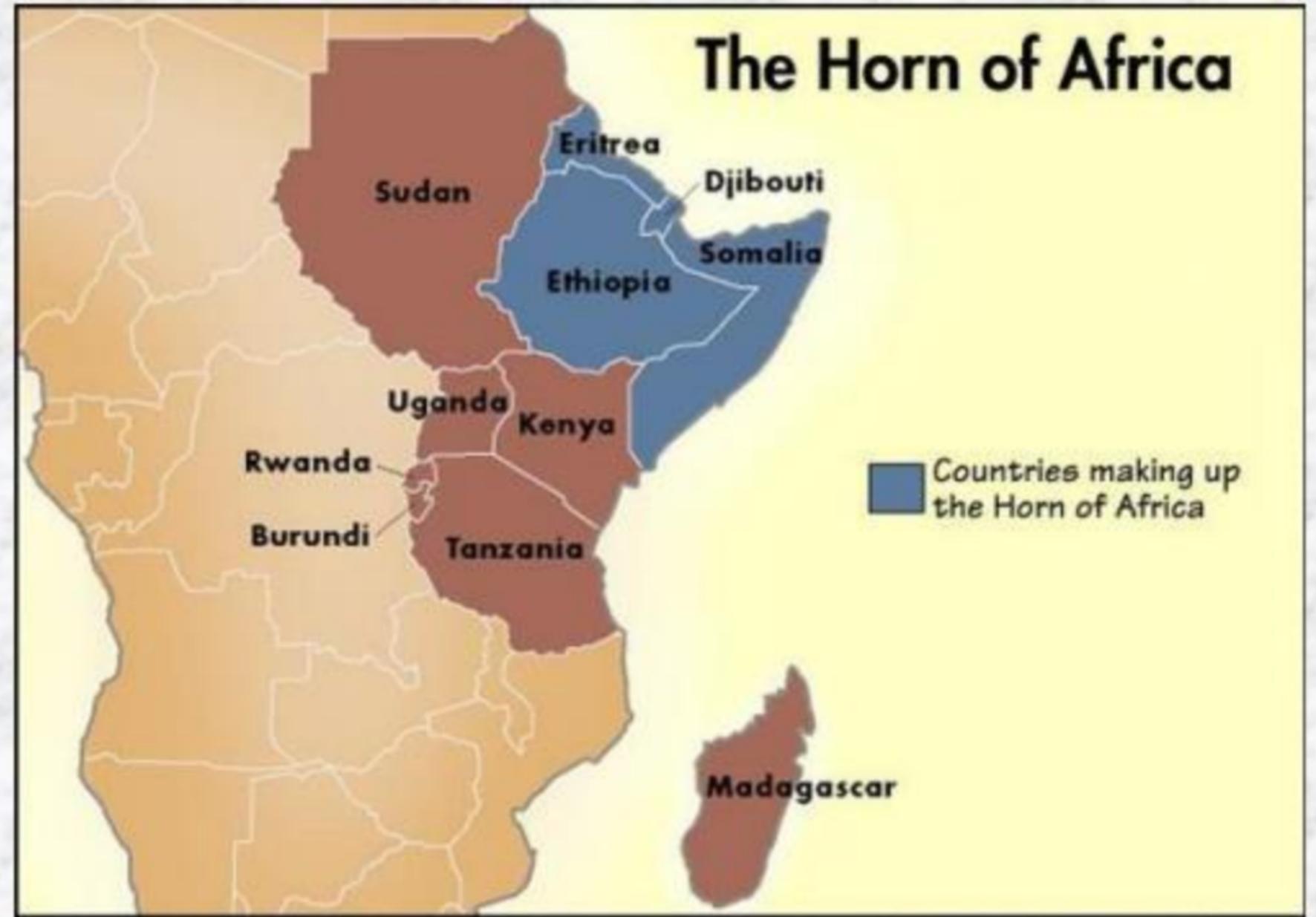
→ State government

# Biodiversity Heritage Site

- As per Section 37 (1) of the Biological Diversity Act, 2002 the State Government may, from time to time in consultation with the local bodies, notify in the Official Gazette, of areas of biodiversity importance as Biodiversity Heritage Sites.
- So far forty-four (44) Biodiversity Heritage Sites have been notified by sixteen (16) states.

# Horn of Africa: SEED in the Horn of Africa

- Horn of Africa: **SEED** = Somalia, Ethiopia, Eritrea, Djibouti
- Broader Definition = SEED + Kenya, Sudan, South Sudan





# KHAN GLOBAL STUDIES

Most Trusted Learning Platform

**THANKS FOR WATCHING**

