

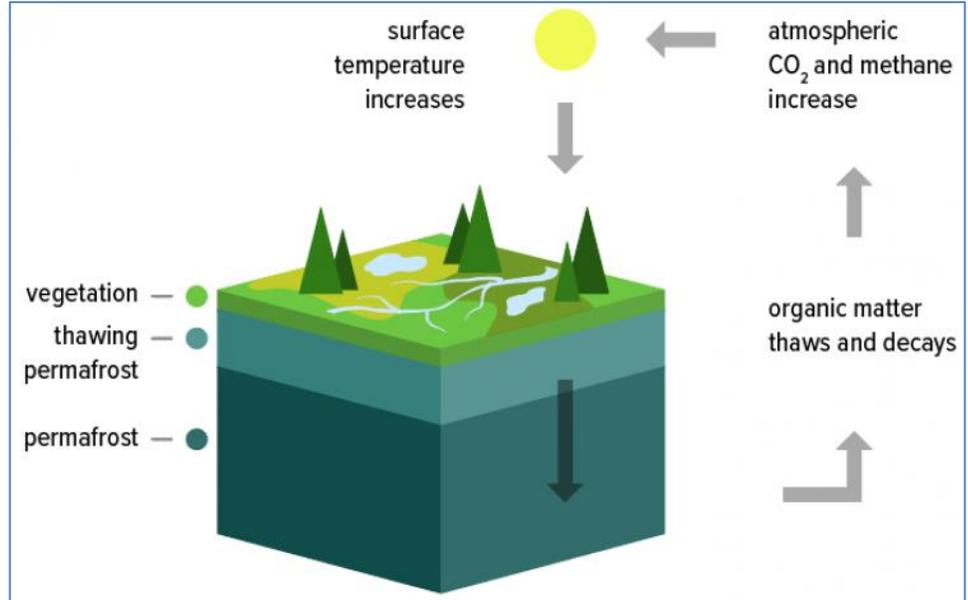
## 1. Permafrost Peatlands

### Topic: Environment and Ecology

**In News: A new research published in the journal Nature Climate Change** warn that permafrost peatlands in Europe and Western Siberia are much closer to a climatic tipping point than previous believed.

#### More on the Topic:

- According to projections, even with the most aggressive efforts to reduce global



carbon emissions and thus limit global warming, **Northern European climates will no longer be cold and dry enough to sustain peat permafrost by 2040.**

- **Strong emissions-cutting measures, on the other hand, could help preserve suitable climates for permafrost peatlands in northern parts of Western Siberia**, a landscape that contains 13.9 billion tonnes of peat carbon.
- **Significance of The frozen peatlands in these areas:** This area can store up to **39 billion tonnes of carbon**, which is equivalent to twice the amount of carbon stored in all of Europe's forests.
- The large amounts of carbon stored in peatland permafrost soils are particularly threatened by the rapid climate change of the twenty-first century.
- When permafrost thaws, **organic matter begins to decompose, releasing greenhouse gases like carbon dioxide and methane.**
- **This change will raise global temperatures** and potentially hastening global climate change.

#### About Permafrost:

- Permafrost is **any ground that remains completely frozen which equals to 32°F (0°C) or colder for at least two years straight.**
- These permanently frozen grounds are most common in regions with high mountains and in Earth's higher latitudes near the North and South Poles.
- As Earth's climate warms, **the permafrost is thawing. That means the ice inside the permafrost melts, leaving behind water and soil.** Thawing permafrost can have dramatic impacts on our planet and the things living on it.

#### Global Peatlands Initiative:

- It is an attempt **to conserve peatlands as the world's largest terrestrial organic carbon resource** by leading experts and organisations and to avoid them from being released into the atmosphere.
- It is headed by the **United Nations Environment**.

Source: Indian Express

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## 2. India's first hydrogen-powered fuel cell electric car project

### Topic: Science and Technology

**In News:** Union Ministry for Road Transport and Highways had inaugurated a first of its kind pilot project for Hydrogen-based advanced **Fuel Cell Electric Vehicle (FCEV)**.

#### More on the Topic:

- Toyota Kirloskar Motor Pvt. Ltd. along with International Center for Automotive Technology (ICAT) initiated this Pilot project to study and evaluate the world's most advanced FCEV Toyota Mirai which runs on hydrogen, on Indian roads and climatic conditions.
- This aims at spreading awareness about Hydrogen, FCEV technology, and disseminating its benefits to support hydrogen-based society for India.



#### More About the Project:

- The Toyota Mirai is powered by a **hydrogen fuel cell battery pack and capable of providing a range up to 650 km in a single charge**, with a refueling time of five minutes. 'Mirai' in Japanese means 'future'.
- FCEV, which is powered by hydrogen is among **the best zero-emission solutions and is completely environment-friendly with no tailpipe emissions other than water**.
- **Green hydrogen can be generated from renewable energy and abundantly available biomass**.
- Introduction and adoption of technology to tap into the green hydrogen's potential will play a key role in securing a clean and affordable energy future for India.
- If the project become successful it will be a huge shift from fossil fuel and towards the conservation of our environment.

#### About Fuel Cell:

- A fuel cell is a device that produces **electric energy, through a chemical reaction**.
- Fuel cells use a positively charged ion (Hydrogen) and an oxidizing agent (oxygen).
- There are many types of fuel cells, but they all consist of a cathode, an anode, and an electrolyte that allows positively charged (hydrogen) ions to move between the two sides of the fuel cell.
- They differ from batteries as they (fuel cells) require a continuous supply of fuel.

- Both batteries and fuel cells produce direct current (D.C).
- **Hydrogen fuel cells** provide an inherently clean source of energy, with no adverse environmental impact during operation as the byproducts are simply heat and water. Unlike biofuel or hydropower, hydrogen doesn't require large areas of land to produce.

Source: Business Today

### 3. Remote Sensing Crop model

#### Topic: Agriculture

**In News:** India's largest agri-trading marketplace Agribazaar along with Microsoft under GOI project Agristack has recently announced that it will be offering a 'remote sensing crop model' to farmers.

#### More on the Topic:

- The model will help farmers in **implementing precision farming methods** naturally.
- The service will be provided to three lakh farmers who have been registered with the platform, though the service is expected to benefit over 10 lakh farmers in the coming months.

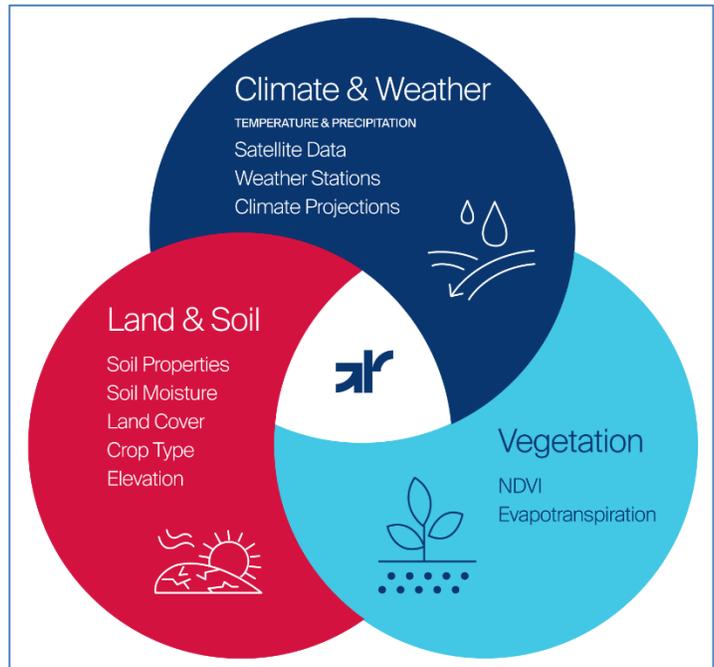
#### About remote sensing?

- Remote sensing refers to the process where **scientific data and observations are collected about an object without needing to be at the same location physically.**
- This exercise is often carried out through a variety of instruments, including measuring an object's reflected and emitted radiation through a satellite or plane.

#### About Remote Sensing in Agriculture:

- Remote sensing in agriculture refers to **the process of collecting information about soil and the land.**
- Through **ground observation posts, satellites and aircraft observations,** scientists and agricultural experts are able to measure characteristics like nutrient deficiencies, water deficiency or surplus, weed infestations, insect damage, hail damage, wind damage, herbicide damage, plant populations and presence of diseases.
- The collection of this data allows for **the easy implementation of precision farming.**

#### About Precision Farming:



- Precision farming refers to a farming management concept where **inputs are carefully chosen to increase average yields.**
- Inputs include material like fertilisers but also the amount of water given to crops, choice of crops, cropping practices, and more.
- Through careful planning, precision farming leads to a higher average yield per unit of land when compared to traditional farming while also using available resources and inputs judiciously.
- Essentially, it tells farmers the **'what, when, where and how' for farming their crops.**

#### About Agristack:

- The AgriStack is a collection of technologies and digital databases proposed by the Central Government focusing on India's farmers and the agricultural sector.
- The central government has claimed that these new databases are being built to primarily **tackle issues such as poor access to credit and wastage in the agricultural supply chain.**
- Under AgriStack', the government aims to provide **'required data sets' of farmers' personal information to Microsoft to develop a farmer interface for 'smart and well-organized agriculture'.**

Source: Indian Express

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## 4. National e-Vidhan Application (NeVA) programme

### Topic: Polity and Governance

**In News:** The north eastern state of Nagaland created history by becoming the first State Assembly in the entire country to implement the National e-Vidhan Application (NeVA) programme to become completely paperless.



#### More on the Topic:

- In the ongoing Budget session of the state the Nagaland Assembly Secretariat has attached a tablet or e-book on each table in the 60 members' assembly.
- "National eVidhan Application (NeVA)", a **Mission Mode Project for Digital Legislatures to make the functioning of all Legislative Houses in the country paperless** has been developed on the theme of 'One Nation – One Application'.
- **NeVA is a Unicode compliant software having provision for easy access to various documents** like List of Questions, List of Business, Reports etc. bilingually viz. English and any regional language.

- NeVA is transforming all State Legislatures into 'DIGITAL HOUSES' so as to enable them to **transact entire Government Business on digital platform** including information exchange with the State Government Departments in digital mode.
- It stands for bringing far reaching transformation in the governance across the country by **making the people well informed & enlighten citizens** and thereby strengthening the roots of the democracy in the country.
- NeVA is not only bringing **greater synergy, coordination, transparency and accountability** between the Legislature and the executive in a State, but also across the States.
- Since, the process involving the functioning of all Legislatures are similar except some minor variations, enabling provisions have been incorporated in NeVA for onboarding it by **the two Houses of Parliament also**.

Source: Livemint

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## 5. Credit Guarantee Fund Trust for Micro and Small Enterprises (CGTMSE)

**Topic: Government Schemes**

**In News:** The Public

Accounts Committee of the Parliament has come down hard on the lack of professionalism in the

Credit Guarantee Fund Trust for Micro and Small Enterprises (CGTMSE).



**More on the Topic:**

- Despite its nation-wide operations, the trust has only one office with 45 officers or staff and also that the Ministry of MSMEs has been drawing officers from Small Industries Development Bank of India (SIDBI) on deputation to head the trust.
- It has recommended that CGTMSE should engage dedicated personnel and **do away with the policy of ad-hocism** in drawing personnel on deputation or fixed term basis to the organisation.

**About Credit Guarantee Fund Trust for Micro and Small Enterprises (CGTMSE):**

- It was launched in 2000 by the Government of India (GoI) **to make available collateral-free credit to the micro and small enterprise sector**.
- Both the existing and the new enterprises are eligible to be covered under the scheme.
- Credit Guarantee Fund Trust for Micro and Small Enterprises (CGTMSE) is a jointly set up by **Union Ministry of Micro, Small & Medium Enterprises (MSME) and Small Industries Development Bank of India (SIDBI)** to catalyse flow of institutional credit to micro and small enterprises.

- The credit guarantee scheme (CGS) for small and micro enterprises was launched to **strengthen credit delivery system and to facilitate flow of credit to the MSE sector, create access to finance for unserved, under-served and underprivileged, making availability of finance from conventional lenders to new generation entrepreneurs.**
- Over the past 20 years, CGTMSE has been instrumental in providing guarantee cover to collateral and third party guarantee free credit facilities extended by eligible MLIs to MSEs.

Source: Livemint

## 6. 'Pradhan Mantri Poshan Shakti Nirman' scheme

### Topic: Government Schemes

**In News:** The Union Cabinet gave its nod to the 'Pradhan Mantri Poshan Shakti Nirman' scheme in order to address malnutrition among school-going children in the country.

#### More on the Topic:

- The existing Mid-Day Meal scheme, which provides hot meals to students, will be renamed as the National Scheme for PM Poshan Shakti Nirman.
- The scheme aims to cover **11.80 crore children in 11.20 lakh school.**
- All school-going students of classes I to VIII, studying in government and government-aided schools, are eligible to avail the benefits of the scheme.
- The scheme will encourage the participation of Farmers Producers Organizations (FPOs) and Women Self-Help Groups in the implementation of the scheme.
- The scheme will provide **"supplementary nutrition in aspirational and tribal districts and districts with high prevalence of anemia."**
- "Cooking competitions will be encouraged at all levels to promote ethnic cuisines and culture in line with **#Vocal4Local.**"

Source: Indian Express



**Ensuring holistic nutrition for children**

**PM POSHAN** in Schools to continue for five more years

- Mid Day Meal in schools renamed as National Scheme for PM POSHAN Shakti Nirman
- Total budget of ₹1.3 lakh crore for 5 year period
- To cover 11.80 crore children in 11.20 lakh schools
- Promote Nutrition Gardens in schools

## 7. World-first carbon border tariff

**Topic: Environment and Ecology**

**In News:** The European Union countries have backed the bloc's plan to impose a world-first carbon dioxide emissions tariff on imports of polluting goods.

### More on the Topic:

- The EU wants to introduce CO2 emissions costs on imports of steel, cement, fertilisers, aluminium and electricity, a move aimed at protecting European industry from being **undercut by cheaper goods made in countries with weaker environmental rules**.
- The main objective of this environmental measure is **to avoid carbon leakage**.
- It will also **encourage partner countries** of EU to establish carbon pricing policies to fight climate change.
- The border levy is part of a package of EU climate change policies designed **to cut the bloc's greenhouse gas emissions by 55 percent by 2030 from 1990 levels**.

Source: Indian Express

