NATIONAL ARCHIVES OF INDIA (NAI)

A book fair and an exclusive exhibition-cum-Sale of the National Archives of India (NAI's) publications opened recently.

About the National Archives of India (NAI):

- NAI is the **custodian of the records of enduring value** of the **Government of India.**
- **Established** on March 11, 1891, **at Calcutta (Kolkata)** as the Imperial Record Department, it is the **biggest archival repository in South Asia.**
- It was **transferred to New Delhi in 1911**.
- It functions as an **attached office of the Ministry of Culture**, Government of India.
- It has a vast corpus of records, viz., **public records, private papers, oriental records**, **cartographic records,** and **microfilms**, which constitute an invaluable source of information for scholars, administrators and users of archives.
- The **Director General of Archives**, heading the Department, has been **given the mandate for** the **implementation of the Public Records Act**, 1993, and the rules made there under, the **Public Records Rules, 1997, for the management**, administration, and preservation **of public records** in the Ministries, Departments, Public Sector undertakings, etc. of the Central Government.
- **Access to the records** in the NAI is **governed by** the provisions of the **Public Records Rules, 1997.**
- The NAI keeps and conserves **records of the government of India** and its organisations. It **does not receive classified documents**.

Abhilekh PATAL:

- The Abhilekh PATAL (**Portal for Access to Archives** and Learning) is an initiative of NAI to make its rich treasure of Indian archival records available **to all online**.

- It is a **full-featured web portal to access the NIA's reference media and** its **digitised collections** through the internet.
- It contains more than 2.7 million files held by the National Archives of India. The Digitized Collections contains over 71792 digitised records for online access.

PANCHAYAT DEVELOPMENT INDEX

Recently, the Union Minister of State for Panchayati Raj informed Lok Sabha about the Panchayat Development Index.

About the Panchayat Development Index:

- It is a **multi-domain and multi-sectoral index** that is intended to be used to **assess** the overall holistic development, **performance & progress of panchayats**.
- It takes into account **various socio-economic indicators** and parameters to gauge the well-being and development status of the local communities within the jurisdiction of a panchayat.
- It would play a significant role for performance evaluation and progress assessment in achieving the **localization of Sustainable Development Goals in rural area.**
- Under this the Local Indicators Framework on **nine themes of Localization of Sustainable Development Goals** was prepared.
- The **nine themes** taken into account are **poverty free and enhanced livelihood in village**, **healthy village**, child friendly village, water sufficient village, clean and green village, village with self-sufficient infrastructure, socially just and socially secured villages, village with good governance, and women friendly village.
- **Ranks:** This Index ranks panchayats on the basis of scores, and categorises them into **four grades.**
    - Those with scores under **40 per cent fall in grade D**, 40-60 per cent in grade **C,** 60-75 per cent in grade **B,** 75 to 90 per cent in category **A,** while those scoring **above 90 per cent** will be categorised as **A+.**

- **Significance:**
    - It shall provide valuable insights into the areas that require attention for improvement within the rural areas under the jurisdiction of the panchayats.
    - It helps in identifying disparities, achievement of development goals, and formulating targeted policies and interventions to enhance the overall well-being and quality of life of rural communities.

WHAT IS GLOBAL POSITIONING SYSTEM (GPS)?

From civilians to the military, from precision scientific studies to urban planning and disaster risk estimation, Global Positioning System has significantly changed our expectations of where we are and our sense of place.

About Global Positioning System (GPS):

- The U.S. Department of Defence started the GPS programme in 1973 and launched the first satellite in 1978.
- The modern GPS satellite constellation **consists of 24 satellites** moving around the earth in six orbits.
- Each satellite completes **two orbits in a single day**.
- The overall programme has **three main components**:
    - **Space segment**: It **consists of 24 satellites**. The six orbits they occupy **are all 20,200 km above the earth**, and each orbit has four satellites at all times. In this configuration, anyone on the earth will be able to 'see' at **least four satellites at a time.**
    - **Control segment:** It consists of **a global network of ground-based control stations** and antennae that track the 24 satellites, make sure their performance is as expected at all times, and transmit commands.
    - **User segment:** It pertains to the use of GPS in various sectors and applications. The major sectors include agriculture, construction, surveying, logistics,

telecommunications, power transmission, search and rescue, air travel, meteorology, seismology, and military operations.

How does GPS work?

- Each GPS satellite continuously broadcasts **a radio signal containing information** about its location in orbit, operational status, and the time at which the signal is emitted.
- The signals are transmitted at the **L1 (1,575.42 MHz) and the L2 (1,227.6 MHz)** frequencies at 50 bits/second.
- The signals are **encoded with code-division multiple access**.
- This allows multiple signals to be transmitted in the same channel and for a receiver to be able to disentangle them.
- There are **two encoding types**: the **coarse/acquisition mode**, which civilians can use to access coarse GPS data, and the **precise mode**, which is encrypted and is for military use.
- Being an electromagnetic signal, the radio waves travel at the speed of light.
- If the receiver has access to signals from four satellites, it will have the information required to calculate its location in four dimensions (three of space plus one of time relative to the satellite clock) – and can thus accurately triangulate its location on the ground.
- This informs the need for every point on the earth being able to 'see' four satellites at a time.

GRAM MANCHITRA APPLICATION

Recently, the Union Minister of State for Panchayati Raj informed the Lok Sabha about the Gram Manchitra application.

About the Gram Manchitra application:

- In order to encourage the **Spatial Planning** by **the Gram Panchayat**, **Ministry of Panchayati Raj** had launched the Geographic Information System (GIS) application "Gram Manchitra."

- This application facilitates and supports Gram Panchayats **to perform planning at Gram Panchayat** level using geo-spatial technology.
- It provides **a single/ unified Geo-Spatial platform** to better visualise the various developmental works to be taken up across the different sectors and provide a decision support system for the Gram **Panchayat Development Plan** (GPDP).
- Further, Ministry has **launched mActionSoft,** a **mobile based solution** to help in capturing photos with Geo-Tags (i.e. GPS Coordinates) for the works which have assets as an output.
- Geo-tagging of the assets is done in all three stages viz. (i) before the start of the work, (ii) during the work and (iii) on completion of work.
- This would provide a **repository of information on all works and assets** related to natural resource management, water harvesting, drought proofing, sanitation, agriculture, check dams and irrigation channels etc.
- Assets geo-**tagged using the m-ActionSoft application is available on Gram Manchitra**, enhancing the visualisation of various developmental works in the Gram Panchayats.
- The assets created under the finance commission funds are geotagged with the photographs of assets by the Panchayats.
- **Significance**
    - It will help Gram Panchayat officials **develop realistic and achievable development plans.**
    - These tools provide a decision support system in the preparation of development plans viz. **tools for identifying potential sites for development** projects, asset tracking, estimating the costs of projects, and assessing the impact of projects.

WHAT IS THE CYBER SURAKSHIT BHARAT INITIATIVE?

The National e-Governance Division (NeGD) recently organised the 40th Chief Information Security Officers (CISOs) Deep-Dive training programme under the Cyber Surakshit Bharat Initiative.

About the Cyber Surakshit Bharat Initiative:

- It is an **initiative of** the **Ministry of Electronics and Information Technology** (MeitY), Government of India.
- It was conceptualised with the mission **to spread awareness about cybercrime** and **build the capacities of Chief Information Security Officers** (CISOs) **and** frontline **IT officials across all government departments.**
- It is an initiative **to fortify the cyber security system in India** with regard to the Government's vision of a Digital India.
- It was launched **in cooperation with the National e-Governance Division (NeGD) and** various **industry partners** in India.
- It can be entitled as the **first public-private enterprise of its kind**.
- The **partners involved** in the origination of this scheme **include chief IT companies** like Intel, Microsoft, etc.

Operation:

  - It will be operated on **three principles: education, awareness, and enablement.**
  - It will **comprise a program of awareness on** the **importance of cybersecurity**.
  - The scheme will also **include a number of workshops** on the best enablement and practices of the officials with **cybersecurity health tool kits** for the management and mitigation of cyber threats.
  - It will also conduct a number of **training programs** all over the country from time to time, which will be **attended by CISOs and technical officials from the central government, state governments,** PSBs, UTs, PSUs, defence PSUs and **technical arms of the Army, Navy, and Air Force.**

- **Deep-Dive training programme:**
  - It specifically aims at **educating and enabling CISOs to understand cyber-attacks and get the necessary exposure to the latest technologies** for safeguarding e-infrastructure.

- The training focuses on providing a holistic **view of legal provisions**, **enabling** CISOs to **formulate policies for cybersecurity** and build concrete cyber crisis management plans.

LAKADONG TURMERIC

Recently, Meghalaya's Lakadong turmeric has been awarded the Geographical Indication (GI) tag.

About Lakadong turmeric:

- It is considered to be one of the **world's best varieties of turmeric**, with a **curcumin content** of around 6.8 to 7.5 per cent.
- It is darker in colour and is grown **organically without the use of fertilisers.**
- It is found in Lakadong **area of Jaintia Hills,** has **high curcumin content.**
- **Other GI products from Meghalaya: Garo Dakmanda** (traditional dress), **Larnai pottery and Garo Chubitchi** (alcoholic beverage) were also awarded the GI tag,

What is Curcumin?

- It is a **polyphenol** which has been shown to target multiple signalling molecules while also demonstrating activity at the cellular level.
- It has been **shown to benefit inflammatory conditions**, metabolic syndrome, pain, and to help in the management of inflammatory and degenerative eye conditions.
- In addition, it has been shown to benefit the kidneys.
- Most of these benefits are due to its **antioxidant and anti-inflammatory effects**.

Key facts about Geographical Indication (GI) tag

- It is a sign used on products that have a specific geographical origin and possess qualities or a reputation that are due to that origin.
- This is typically used for agricultural products, foodstuffs, wine and spirit drinks, handicrafts and industrial products.

- The Geographical Indications of Goods (Registration and Protection) Act, 1999 seeks to provide for the registration and better protection of geographical indications relating to goods in India.
- This GI tag is valid for **10 years** following which it can be renewed.

COP28 SUMMIT: TRIPLING NUCLEAR CAPACITY BY 2050

Why in News?

- At the COP28 climate meeting, more than 20 countries have pledged to triple the global nuclear installed capacity by 2050, in a bid to attain a net-zero emissions status.
- Just as in the case of the pledge tripling renewable energy, **India is not a part of the nuclear energy commitment** as well, in keeping with its position not to join alliances outside the COP process.

Declaration Supporting Tripling Nuclear Energy Capacity by 2050:

- Led by the US, **the document was signed by 22 countries** including France, the United Kingdom, Japan, Canada, South Korea and Ukraine.
- **These countries pledged to "work together"** to advance a "global aspirational goal" of tripling nuclear energy capacity from 2020 to 2050.
- **The declaration recognised:**
    - The key role of nuclear energy in achieving global net-zero greenhouse gas emissions;
    - The importance of nuclear science and technology in monitoring climate change and tackling its impacts, and emphasizing the work of the International Atomic Energy Agency (IAEA);
    - That nuclear energy is already the second-largest source of clean dispatchable baseload power, with benefits for energy security; etc.
- **China and Russia did not sign**, although they have the world's fastest growing and most ambitious nuclear power programmes.

- At the COP28 event, the IAEA director general also announced that **a first of its kind Nuclear Energy Summit would be held in Brussels** next year to discuss the role of nuclear energy in
    - Reducing the use of fossil fuels,
    - Enhancing energy security and
    - Boosting economic development.

Need for Increasing Nuclear Energy Capacity:

- **Nuclear energy is a clean but non-renewable source of energy.**
- According to the IAEA, **about 370 GW of operational nuclear power capacity** (as of now) is installed in 31 countries, providing about 10% of the world's total electricity.
    - **A tripling would see this go up to at least 1,000 GW** by the middle of the century.
- Nuclear energy can play **a key role in keeping global warming below 1.5 degrees Celsius** from pre-industrial times.
- **Nuclear power plants do not emit greenhouse gases** and are an essential part of almost every pathway that takes the world to a net-zero emissions state by 2050.
    - According to the International Energy Agency, nuclear power has **avoided nearly 70 billion tonnes of carbon dioxide** equivalent emissions (in the last 50 years).
- Studies confirm that the goal of global net-zero carbon emissions can only be reached by 2050 with **swift, sustained and significant investment in nuclear energy.**

India's Current Nuclear Energy Installed Capacity:

- **India currently has 6,780 MW of installed nuclear capacity**, and is constructing 8 new reactors, which will add almost an equal amount - 6,800 MW, thereby doubling its capacity in the near future.
- According to the former chairman of India's Atomic Energy Commission Anil Kakodkar, India must also be planning a rapid expansion of its nuclear energy sector in pursuit of its **net-zero goal by 2070.**