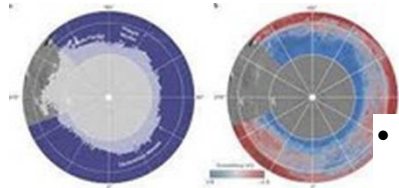


### SUBSURFACE WATER ICE MAPPING (SWIM) PROJECT

Recently, NASA's Subsurface Water Ice Mapping (SWIM) project released its fourth set of maps.



**About the Subsurface Water Ice Mapping (SWIM) project:**

- It aims to **locate the best places to access water ice buried under the Martian surface.**
- The recently released fourth set of maps is the most detailed and accurate since the project started in 2017.
- It is led by the Planetary Science Institute in Tucson, Arizona, and managed by NASA's Jet Propulsion Laboratory in Southern California.
- The **project uses data from several NASA missions**, such as the Mars Reconnaissance Orbiter (MRO), the 2001 Mars Odyssey, and the defunct Mars Global Surveyor.
- SWIM used two **higher-resolution cameras** on MRO.
- The Context Camera data was used to improve the maps of the Northern Hemisphere.
- For the first time, the **HiRISE (High-Resolution Imaging Science Experiment)** data was used to provide the most detailed view of the ice's edge as close to the equator as possible.
- The first phase of the SWIM project, completed in 2019, focused on the northern hemisphere. The second phase, completed in 2020, includes the southern hemisphere.

### **Highlights of the new map**

- The new map includes sightings of so-called "**polygon terrain,**" where the seasonal **expansion and contraction of subsurface ice causes** the ground to form polygonal cracks, indicating more ice hidden beneath the surface.

---

### UN GENERAL ASSEMBLY ADOPTS GAZA RESOLUTION

Why in news?

- The United Nations General Assembly has passed a resolution calling for an immediate humanitarian truce between Israel and Hamas and demanding aid access to Gaza.
- A total of 120 countries voted in favour of the resolution, 14 countries voted against including Israel and the United States, while **45 others, including India, abstained.**
- India's abstention in the vote exemplified the balancing act it has adopted on the ongoing conflict in the Gaza Strip.

## United Nations General Assembly (UNGA)

- It was established in 1945 under the Charter of the United Nations and is headquartered in New York City.
- It is one of the six principal organs of the UN and serves as the main policy-making organ of the Organization.
- It provides a unique forum for multilateral discussion of the full spectrum of international issues covered by the Charter of the United Nations.
- Each of the 193 Member States of the United Nations has an equal vote.

## News Summary: UN General Assembly adopts Gaza resolution

- The 193 members of the UN General Assembly (UNGA) met in a **resumed 10th Emergency Special Session.**
  - The 10<sup>th</sup>Emergency Special Session is related to Israeli-Palestine conflict. It was first held in April 1997.
  - The current session resumed the 10th Emergency Special Session.
- They voted on the draft resolution submitted by Jordan and co-sponsored by more than 40 nations.
- **Balanced position taken by India**
  - The balanced position taken by India was in line with the one that it has maintained in the other ongoing conflict in the world: the Russia-Ukraine war.
  - The diplomatic toolkit of hedging and balancing between the warring sides has been a consistent feature of New Delhi's approach.

## NASA-ISRO SYNTHETIC APERTURE RADAR (NISAR)

The 'NASA-ISRO Synthetic Aperture Radar' (NISAR) is poised to facilitate the exploration of how shifts in Earth's forest and wetland ecosystems impact the global carbon cycle and influence climate change.



### About NASA-ISRO Synthetic Aperture Radar (NISAR):

- NISAR is a Low Earth Orbit (LEO) observatory jointly developed by NASA and ISRO.
- It is an SUV-size satellite weighing 2,800 kilograms.
- It consists of both L-band and S-band synthetic aperture radar (SAR) instruments, which makes it a dual-frequency imaging radar satellite.
- NISAR will be the first satellite mission to use two different radar frequencies (L-band and S-band) to measure changes in our planet's surface.
- SAR is capable of penetrating clouds and can collect data day and night regardless of the weather conditions.
- NASA has provided the L-band radar, GPS, a high-capacity solid-state recorder to store data, and a payload data subsystem. ISRO has provided the S-band radar, the GSLV launch system, and spacecraft.
- It also consists of a large 39-foot stationary antenna reflector made of a gold-plated wire mesh which will be used to focus “the radar signals emitted and received by the upward-facing feed on the instrument structure.

### Mission Objectives:

- It will measure Earth’s changing ecosystems, dynamic surfaces, and ice masses, providing information about biomass, natural hazards, sea level rise, and groundwater.
- NISAR will observe Earth’s land and ice-covered surfaces globally with 12-day regularity on ascending and descending passes.

## 16 INDIAN ANTIQUITIES FROM US TO BE RETURNED BACK

### Why in the News?

- From a terracotta plaque depicting a standing figure with two attendants to a bronze sculpture depicting Lord Krishna, there are around 105 antiquities that were returned back to India from the United States two weeks ago.
- Process is on to bring back 16 more antiquities that were smuggled to the US.

### What is an Antiquity?

- The **Antiquities and Art Treasures Act (1972)**, defines “antiquity” as –
  - any coin, sculpture, painting, epigraph or other work of art or craftsmanship;
  - any article, object or thing detached from a building or cave;
  - any article, object or thing illustrative of science, art, crafts, literature, religion, customs, morals or politics in bygone ages;
  - any article, object or thing of historical interest.
- The **minimum time for any of the above mentioned items to be considered as antique is 100 years.**
  - For “manuscript, record or other document which is of scientific, historical, literary or aesthetic value”, this duration is “**not less than 75 years.**”

### International Conventions w.r.t. Antiquities:

- The **UNESCO 1970 Convention on the Means of Prohibiting and Preventing the Illicit Import, Export and Transfer of Ownership of Cultural Property** is an international treaty.
- The **convention urges States Parties to take measures to prohibit and prevent the illicit trafficking of cultural property.**
- It provides a common framework for the States Parties on the measures to be taken to prohibit and prevent the import, export and transfer of cultural property.
- To date, **the Convention has been ratified by 143 states (including India).**
- In 2000, the General Assembly of the UN and the UN Security Council in 2015 and 2016 also raised concerns on the issue.

## What is 'Provenance' and How is the Ownership of an Antiquity Checked?

- Provenance includes the list of all owners from the time the object left its maker's possession to the time it was acquired by the current owner.
- **The first thing in order to prove the ownership is the complaint (FIR) filed with the police.**
- Under the UNESCO 1970 Convention, a requesting party has to furnish the documentation and other evidence necessary to establish its claim for recovery and return.

## How to Check for Fake Antiquities?

- Under section 14(3) of the AATA, **"Every person who owns, controls or is in possession of any antiquity" shall register such antiquity before the registering officer "and obtain a certificate in token of such registration."**
- So far, the **National Mission on Monuments and Antiquities**, launched in March 2007, has **registered 3.52 lakh antiquities among the 16.70 lakh it has documented, to help in "effective check" of illegal activities.**
- This is a very small portion of the total number of antiquities in the country (estimated to be **around 58 lakh**).

---

## [THE CRIMINAL PROCEDURE \(IDENTIFICATION\) ACT \(CRPI\): CHALLENGES IN IMPLEMENTATION AND WAY AHEAD](#)

### Why in News?

- The CrPI Act 2022 enables police and central investigating agencies to collect, store and analyse physical and biological samples including retina and iris scans of arrested persons.
- Though the rules that would govern the Act were notified, the Act is yet to be implemented fully as the nodal agency - NCRB, is still preparing the guidelines and SOP to implement the legislation.

### Why was the Criminal Procedure (Identification) Act (CrPI) Brought In?

## A comparison between the two Identification Acts

The previous Identification of Prisoners Act, 1920 and the freshly notified Criminal Procedure (Identification) Act, 2022 have similarities as well as major differences. A quick look at how "measurements" of convicted & arrested persons will be collected from now on

Relevant provisions	Identification of Prisoners Act	Criminal Procedure Identification Act
<b>Persons whose measurements can be taken</b>	<ul style="list-style-type: none"> <li>should be convicted of an offence punishable with rigorous imprisonment of one year or upwards</li> <li>should be arrested for an offence punishable with rigorous imprisonment of one year or upwards</li> <li>if directed by the Magistrate for measurements to be taken for the purposes of investigation of proceedings under the CrPC, provided the person has been arrested in connection with such investigation previously</li> <li>ordered to give security for his good behaviour under CrPC</li> </ul>	<ul style="list-style-type: none"> <li>if convicted of an offence punishable under any law</li> <li>if arrested for an offence punishable under any law or if detained under preventive detention laws</li> <li>if directed by the Magistrate for measurements to be taken for the purposes of investigation of proceedings under the CrPC or any other law in force; there is no requirement for the person to have been arrested in connection with such proceedings previously</li> <li>ordered to give security for his good behaviour under CrPC</li> </ul>
<b>Measurements that can be taken</b>	finger impressions, foot impressions, measurements and photographs	finger-impressions, palm-print impressions, foot-print impressions, photographs; iris and retina scan; physical, biological samples and their analysis; behavioural attributes including signatures, handwriting or any other examination referred to in section 53 or section 53A of the CrPC, 1973
<b>Destruction of measurements</b>	in case of acquittal, discharge or release, if not previously convicted of any offence punishable with rigorous imprisonment of one year or upwards	in case of acquittal, discharge or release, if not previously convicted of any offence punishable with rigorous imprisonment for any term. For convicts, records are to be destroyed from 75 years of collection

- The CrPI Act repealed the British-era Identification of Prisoners Act 1920 whose scope was limited to -

- Collecting and recording finger impressions, footprint impressions and photographs of certain category of convicted persons and
- Impressions of non-convicted persons on the orders of a Magistrate.

- The new Act made provisions for the use of modern techniques to capture and record

appropriate body measurements.

## What is the role of the National Crime Records Bureau (NCRB)?

- The central body - NCRB, which operates under the Union Ministry of Home Affairs (MHA), has been entrusted with the task to store, process, share, disseminate and destroy records of measurements.
- Impressions taken at any police station will be stored in a common database maintained by the NCRB.
- The database could be accessed by authorised police and prison officials across the country.
- The NCRB will prescribe -
  - The specifications of the equipment or devices to be used for taking measurements in digital and physical format,
  - The method of handling and storing measurements by the State police in a format compatible with the NCRB database and
  - Also, the information technology system to be used for taking the measurements.
- Police and prison officials have been authorised to take measurements and the Act expanded the scope to also allow -
  - Any person skilled in taking the measurements or

- A registered medical practitioner or
- Any person authorised to take such measurements.
- The records are to be stored for 75 years.

## What are the Challenges in the Implementation of the CrPI Act?

- **Collection of DNA samples:** Though the Act and rules do not distinctly mention collection of DNA samples and face-matching procedures, the NCRB has said that these measures will be rolled out in around 1,300 locations across the country.
  - **Also, the type of DNA samples that could be collected by the police have not been defined yet.**
- **Shortage of devices:**
  - Police across States have been trained to record finger impressions through the National Automated Fingerprint Identification System (NAFIS).
    - NAFIS, also under the NCRB, is a separate project that was launched in 2022.
    - It assigns a unique 10-digit National Fingerprint Number (NFN) to all suspects arrested by the police.
    - NAFIS integrates the data on a common platform, enabling the police to run a countrywide search to match fingerprint impressions lifted from a crime scene.
  - However, several police officials said the iris scanners and devices that would enable capturing of DNA and facial-recognition systems are **yet to be provided**.
- **Violates fundamental rights, including the right to privacy:** With plans to include DNA samples and facial-recognition technology, questions arose about the protection of such data.
- **Lack of awareness:** Though the rules state that measurement of persons detained or arrested under prohibitory and preventive sections of law are not to be recorded, not many officers are aware of it.
- **Onus of destruction and disposal of records on an individual falsely implicated:** For such a disposal/destruction, the request will have to be made to the nodal officer.
  - This would impact people from sections of society who do not have access to the law and would therefore be unable to apply for deletion.

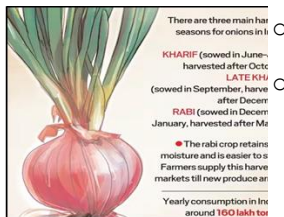
## GOVT SETS MINIMUM EXPORT PRICE FOR ONIONS

### Why in news?

- Recently, the government issued a notification and set the minimum export price (MEP) for onions at \$800 per metric tonne.
- This comes after the 40 per cent export duty imposed on onions in August 2023.
- This has been done to ensure sufficient availability of onion for domestic consumers and keep the prices for the produce at affordable levels.

### Production of Onion in India

- **Background**
  - India is the **second-largest onion-growing country** in the world. The Indian onions are famous for their pungency and are available round the year.



The choice of season depends on the region's climate and the onion variety being cultivated. Onions are more commonly associated with the Rabi season.

- **Varieties**
  - India cultivates various onion varieties, with the most common ones being red onions and white onions.
  - There are certain varieties of yellow onion which are suitable for export in European countries.
- **Cultivation Practices**
  - Onions are primarily grown through seeds, although bulb-to-bulb planting is also practiced.
  - The crop requires well-drained soil and is often cultivated in sandy or loamy soils.
  - Adequate irrigation is essential, and farmers may use drip irrigation systems to conserve water.
- **Onion producing states**
  - The Major Onion producing states are Maharashtra, Karnataka, Madhya Pradesh, Gujarat, Bihar, Andhra Pradesh, Rajasthan, Haryana and Telangana.
  - **Maharashtra ranks first** in Onion production.



## CARDAMOM CULTIVATION

The timely setting in of the North-East monsoon in high-ranges has brought smiles to the faces of cardamom growers in India.



### About Cardamom Cultivation:

- It is popularly known as **Queen of Spices** and belongs to the Zingiberaceae family.
  - It is native to the **evergreen, rainy forests of Western Ghats** in South India.
  - It is cultivated mainly in the Southern states, viz., **Kerala, Karnataka, and Tamil Nadu.**
  - **Soil and climate**
    - **Soil:** It is grown in forest **loamy soils**, which are **usually acidic in nature** with a pH range of 5.0–6.5.
    - This crop can be grown **at an elevation from 600 to 1500 m.**
    - **Temperature:** 10 to 35 degree C
    - **Rainfall:** 1500 to 4000 mm
    - The growth of cardamom is enhanced when planted in humus rich soils with low to medium **available phosphorous** and medium to **high available potassium.**
  - It is used as a flavouring agent and drug in traditional medicine.
-