

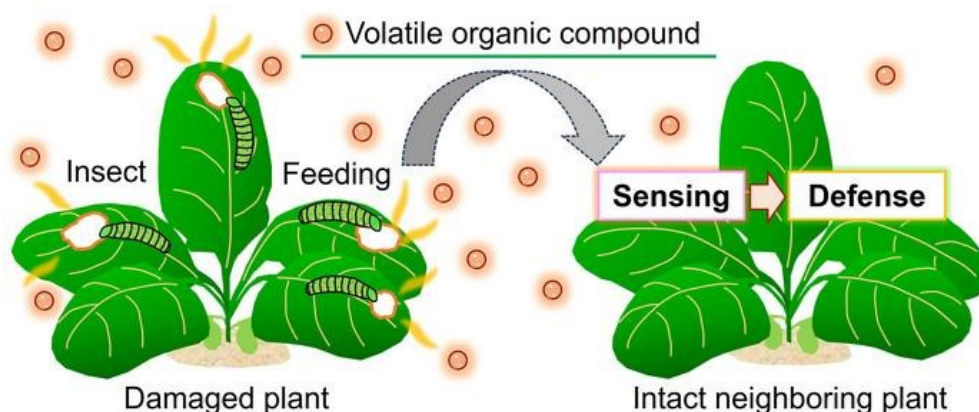


## Prelim Bits 24-11-2023 | UPSC Daily Current Affairs

### Green Leaf Volatiles (GLVs)

*For the first time, scientists were able to visualise plants sensing compounds released by other plants in danger.*

- **GLV** - A group of compounds that a plant releases into the air when it is injured which may be a warning to other plants that danger is near.
- They consist of six carbon (C6) compounds including alcohols, aldehydes and esters which are released from almost every plant.
- **2 major defence mechanisms**
  - When a plant is damaged, GLVs are released as by-products. Plants can make themselves less palatable or even indigestible to the insect attackers.
  - When an insect takes a bite of a plant leaf, calcium ions flood the leaves in the cells.
  - **Future prospects** - To fight agricultural pests without using pesticides and going organic.



**Other internal defence responses of plants** - Jasmonic acid activates plants' defences and effectively repels insect pests.

### Reference

[The Hindu| Visualising the mechanism of GLV](#)

## 25 years of the International Space Station (ISS)

*International Space Station (ISS), a place of peaceful collaboration for science, has completed more than 140,000 Earth orbits in its journey of 25 years.*

- ISS is a multi-nation construction project that is the largest single structure humans ever put into space.
- **Origin** - Mainly a creation of USA and later Russia was invited to participate.
- **Operated by** - 5 agencies
  - Canadian Space Agency (CSA)
  - The European Space Agency (ESA)
  - The Japan Aerospace Exploration Agency (JAXA)
  - The National Aeronautics and Space Administration (NASA)
  - The State Space Corporation "Roscosmos"
- **Size** - Measures 109 meters (357 feet) end-to-end.
- **Location** - At Low Earth Orbit (430 kilometers)

*Among the 1<sup>st</sup> "live-in" astronauts were Bill Shepherd of NASA and Roscosmos cosmonauts Yuri Gidzenko and Sergei Krikalev.*

- **Components** - It consists of
  - **Zarya Control Module** - Russia based component that was launched in 1998 for supplying fuel storage, battery power, and serving as a docking zone for other vehicles
  - **Unity Node 1 module** - US based component
- It passes over our heads **16 times every 24 hours** (orbiting Earth every 90 minutes at a speed of **8 kilometers per second**).
- **Achievements** - Its discoveries have benefitted drug development, new water purification systems, methods to mitigate muscle and bone atrophy and lead to innovations in food production.
- **Future of ISS** - NASA, CSA, and the ESA have committed to operate till 2030, while Russia has said that it will withdraw after 2024 to focus on building its own space station around 2028.

*NASA plans to spend up to \$1 billion to build the **US Deorbit Vehicle (USDV)** to deorbit ISS.*

**Related links** - [Tiangong Space Station](#)

## References

1. [Indian Express| ISS completes 25 years](#)
2. [Indian Express| Future of ISS](#)

## Global DPI Repository (GDPIR) and Social Impact Fund

India has launched 2 new initiatives - Global DPI Repository and Social Impact Fund, to advance Digital Public Infrastructure in Global South.

**Digital Public Infrastructure (DPI)** is a set of shared digital systems to deliver and provide equitable access to public and / or private services to drive development, inclusion, innovation and respect human rights and fundamental freedoms.

- **Global DPI Repository (GDPIR)** - A virtual repository of DPI, voluntarily shared by G20 members and beyond.
- **Developed by** - Ministry of Electronics and Information Technology (MeitY)
- **Aim** - To bridge the knowledge gap in the choices and methodologies required for the design, construction, deployment, and governance of DPIs.
- To showcase the information in a standardized format by incorporating elements such as maturity scales, source codes and governance frameworks.

Currently, the GDPIR features **54 DPIs from 16 countries**.

## Social Impact Fund (SIF)

- It is envisioned as a government led, multistakeholder initiative to fast-track DPI implementation in the global south.
- **Aim** - To offer a platform for all stakeholders to contribute to this fund and help accelerate the achievement of the Sustainable Development Goals (SDGs) in Low- and Middle-Income Countries (LMICs) through DPIs.
- To provide upstream technical and non-technical assistance to countries in developing DPI systems.

The **SIF India** has pledged an initial commitment of 25 million USD.

## Reference

[PIB| Global DPI Repository and Social Impact Fund](#)

## Udayarpalayam Palace

Udayarpalayam Palace was once an impregnable seat of power in Tamil Nadu but now is a refuge for pigeons and bats.

- It is a 5 acre palace that resembles the Thirumalai Nayakkar Mahal of Madurai.

- **Location** - Udayarpalayam in Ariyalur district, **Tamil Nadu**.
- **Built in** - **18<sup>th</sup> century** by the then Zamindars.
- **Architecture** - **South Indian secular architecture**.
- The foundation is made of *granite boulders and pillars*.
- The palace includes
  - **Lakshmi Vilasam** (A court hall)
  - **Krishna Vilasam** (Hall for dance and music concerts)
  - **Marriage hall**
- **Stucco images** - The skeleton of every image (dancers and others) was made of wood, covered with cloth over which plastering was done and final touches were given with lime and sand paste.

## **Rulers of Udayarpalayam**

- Udayarpalayam rulers lived as *poligars*.

***Palaiyakkarars, or Poligar**, in Andhra and Tamil Nadu refers to the holder of a small kingdom (palayam) as a feudatory to a greater sovereign.*

- **Genealogy** - The names of the rulers start with the *title **Kachi***, indicating that they had migrated from Kancheepuram.
- **1<sup>st</sup> ruler** - Kachi Yuvarangappa Kalakka Tola Udayar.
- **Currency** - **Udayarpalayam puthupanam** [new money].
- **Political scenario** - They submitted to the Mughals when they took Gingee and paid **Peshkash** (tribute).
- During Anglo-French struggle, *they supported British*.

## **Reference**

[The Hindu| Udayarpalayam Palace](#)

## **Investor Risk Reduction Access (IRRA)**

*Recently launched Investor Risk Reduction Access (IRRA) platform acts as a 'safety net' for investors registered with SEBI.*

- **Need** - There is rise in instances of glitches in trading members' systems making the investors with open positions at risk.
- **Launched by** - SEBI (Securities and Exchange Board of India)
- **Developed by** - It has been jointly developed by all the stock exchanges of India
  - BSE (Bombay Stock Exchange)
  - NSE (National Stock Exchange)
  - NCDEX (National Commodity and Derivatives Exchange Limited)
  - MCX (Multi Commodity Exchange of India Ltd)
  - MSE (Metropolitan Stock Exchange of India)

- **Objectives**

- To **reduce risks faced by investors during technical glitches** at both the primary and disaster recovery site.
- To provide an opportunity **to square off/close their open positions and cancel pending orders.**

- **Working**

- It can be invoked by trading members or suo moto by stock exchanges.
- It downloads trades information from all the trading venues.
- It sends SMS/email to investors with IRRA access link over an Internet-based Based Trading (IBT) web URL and an app.
- Investors can access through a secure login system using their Unique Client Code (UCC) or investor's PAN number.

- **Reverse migration** - Based on the trading member's request and confirmation from all exchanges, the IRRA will be shut down and enable to resume business from the original trading system.

- Only 1 reverse migration will be allowed during a trading day.

- **Limitations** - It is not meant for taking fresh positions or orders, and is not available for algo trading, Institutional clients.

***Squaring off*** is a trading style that, day trade investors use to make profit from the market volatility.

## Reference

[Indian Express| Working of IRRA](#)

### Other Important News

#### **Guru Teg Bahadur**

- [Guru Tegh Bahadur](#) Martyrdom Day is observed every year on 24 November. He is the **9<sup>th</sup> of ten gurus**.
- He was born in Amristar, Punjab in 1621. He is also called Hind ki Chadar, or Shield of India.
- He composed 115 songs that are included in the Sri Guru Granth Sahib, the central book of Sikhism.

#### **Saint Meera Bai**

- Saint Meera Bai is one of the famous Hindu mystic poetess of 16<sup>th</sup> century and a great devotee of lord Krishna.
- Meera Bai was born into a royal family in Kudki, now Pali district of **Rajasthan** in 1498 CE. Her childhood name was Yashodha.
- Bhaktmal, a poetry collection that describes the **biography of Meera Bai**, is written by **Guru Nabha Dass ji** in 1585 CE in Braja language.

### **INS Sumedha**

- The Indian Navy completes 2<sup>nd</sup> *anti-piracy patrol* in the Gulf of Guinea in Atlantic Ocean with the Offshore Patrol Vessel (OPV) INS Sumedha recently.
- INS Sumedha is the 3<sup>rd</sup> of the indigenously developed Naval OPV of Saryu class.
- It was built by Goa Shipyard Limited and commissioned on 2014.
- It took part in the recently conducted ***Operation Kaveri*** for evacuation of Indian diaspora from war hit Sudan recently.

### **Galathea Bay/International Container Transshipment Port (ICTP)**

- Union Minister for Ports, Shipping and Waterways (MoPSW) visits Galathea Bay and reviews progress of proposed International Container Transshipment Port (ICTP) recently.

### **Galathea Bay**

- Galathea Bay is located on Great Nicobar Island in the Andaman and Nicobar Islands.
- Galathea Bay is also the name of a National Park that was established in 1992. It is part of the Great Nicobar Biosphere Reserve.

### **Article 311(2) (C)**

- The Jammu & Kashmir government has terminated 4 government employees for being a threat to the security of the state under article 311 (2) (c) recently.
- **Article 311(2)** - It states that a civil servant cannot be dismissed, demoted, or reduced in rank unless they have been given a reasonable opportunity to show cause against the proposed action.
- **Article 311(2)(c)** - It allows the government to terminate employees without ordering an inquiry into their conduct or giving them an opportunity to explain their position if the President/Governor, is satisfied that in the interest of the security of the State, it is not expedient to hold such inquiry.

### **Paranjothi**

- Paranjothi, popularly known as Sirruthondar was an army general of the great Pallava king Narasimavarman I (630-668 CE).
- He also led the Pallava army during the invasion of Vatapi in 642 CE.
- Periyapuram, a biography of 63 Saivaite saints, gives a detailed account of Sirruthondar as he was one of the Saivaite saints.

### Location of Ecuador

- Daniel Noboa sworn in as Ecuador's President recently.
- Ecuador is a country in **South America** that's named after the equator, which splits the country in two. **Capital** - Quito.
- It's bordered by Colombia in north, Peru in east and south and in west by Pacific Ocean.
- It is home to Amazon rainforest, Andean paramos, Cloud forests, Galápagos Islands.



### Chila in Peru

- A recent study says that Peru has lost more than half of its glacier surface in the last 6 decades, and 175 glaciers became extinct due to climate change between 2016 and 2020.
- The Chila mountain range lies in ***the Arequipa Region in the Andes of Peru.***
- This mountain range is home to key first waters that give rise to the Amazon River, the longest and mightiest in the world, descend from the glacier.
- It has lost 99% of its glacial surface since 1962.

### Koala

- Koala (*Phascolarctos cinereus*) is a tree-dwelling herbivorous marsupial of Australia.
- Koalas are folivore specialists, feeding mainly on Eucalyptus leaves, and occasional leaves of other plant species.
- **Conservation status** - IUCN - Endangered.
- ***Chlamydia*** is a bacterial infection affecting many koalas in South East Queensland. Australia is planting kola corridors to save them.
- **Marsupials** are a group of mammals that are also known as pouched mammals.



### **Nidirana Noadihing (Musical Frog)**

- Scientists have discovered a new species of 'music frog', Nidirana noadihing in **Arunachal Pradesh** recently.
- The speciality of this new species of frog is that *both the male and female are vocal*.
- **Habitat** - Swamps, ponds and paddy fields, and they often construct nests to lay their eggs.
- The new species was named after the **Noa-Dihing River**, which is near where the specimens were discovered and collected.
- **Noa-Dihing** is a tributary of Brahmaputra, originates in Arunachal Pradesh and flows through Assam and joins the Brahmaputra at Dihingmukh.
- The new species confirmed for the first time that the Nidirana genus has been found in India.
- Nidirana species are known in Japan, Taiwan, China, Vietnam, Laos and Thailand.



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