DAILY CURRENT AFFAIRS 16-10-2025

GS-2

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GS-3

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PM-KUSUM Scheme

Syllabus: GS-2; Government policies and Interventions

Context

- The Union government plans to showcase the **PM-KUSUM programme** to several **African countries and island nations** using the **International Solar Alliance (ISA)** platform.

About PM-KUSUM

- **Full form:** Pradhan Mantri Kisan Urja Suraksha evam Utthan Mahabhiyan.
- **Launch Year:** 2019.
- **Objectives:**
  - Provide **energy and water security** to farmers.
  - Enhance **farmer incomes**.
  - **De-dieselize** the farm sector.
  - Reduce **environmental pollution**.
- **Target:** Add **34,800 MW** of solar capacity by March 2026.
- **Nodal Ministry:** Ministry of **New and Renewable Energy (MNRE)**.

Eligible Beneficiaries

- Individual farmers
- Group of farmers
- **FPOs** (Farmer Producer Organizations)
- Panchayats
- Co-operatives
- **Water User Associations**

Components of PM-KUSUM

1. **Component A – Decentralized Grid-Connected RE Power Plants (10,000 MW)**
   - Set up **500 kW to 2 MW** renewable energy projects on **barren/fallow land**.
   - Beneficiaries: Individual farmers, groups, cooperatives, panchayats, FPOs.
   - Power purchased by **local DISCOMs** at a **pre-fixed tariff**.
   - Project to be installed within **5 km radius** of sub-stations.
2. **Component B – Standalone Solar Agriculture Pumps (20 lakh pumps)**
   - Individual farmers supported to install **solar pumps up to 7.5 HP**.
   - Replaces **diesel pumps** in **off-grid areas**.

3. **Component C – Solarisation of Grid-Connected Pumps (15 lakh pumps)**
    - Solarise existing **grid-connected pumps**.
    - Farmers use generated solar power for irrigation; **excess power** sold to DISCOMs at pre-fixed tariff.

Significance

- **Farmer Benefits:** Reduces electricity costs and diesel dependency; ensures reliable irrigation.
- **Environment:** Reduces **carbon emissions** by replacing diesel pumps with solar energy.
- **Energy Security:** Contributes to **renewable energy targets** and strengthens decentralized power generation.
- **Economic Impact:** Enhances **farmers' income** through sale of surplus electricity.
- **Global Diplomacy:** Promotes India's **green energy leadership** internationally via ISA platform.

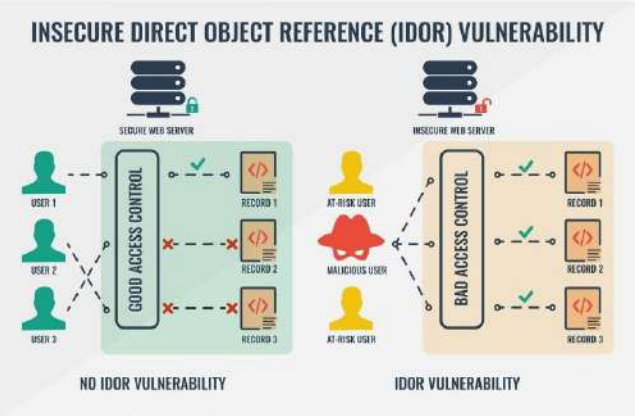
Insecure Direct Object Reference (IDOR)

Syllabus: GS-3; Science & Tech

Context

- A major security flaw in India's income tax e-filing portal was fixed, narrowly preventing a potential data leak. The flaw was an **IDOR (Insecure Direct Object Reference)** vulnerability.

What is IDOR?



- IDOR is a **web application security vulnerability** where internal object identifiers (like database keys or file paths) are exposed to users **without proper access control**.
- Attackers can manipulate these identifiers to **gain unauthorized access** to sensitive information or perform actions they shouldn't be able to.
- IDOR arises mainly due to **inadequate validation and authorization checks** on user input.

How It Happens:

- Websites authenticate users via **passwords or passkeys** and track sessions with **cookies**.
- While authentication confirms a user's identity, **access control ensures users can only access resources they are allowed to**.
- Without proper access control, **a logged-in user can access another user's data** (like purchase history, tax records, etc.).
- Exploiting this flaw is known as an **IDOR attack**.

Significance:

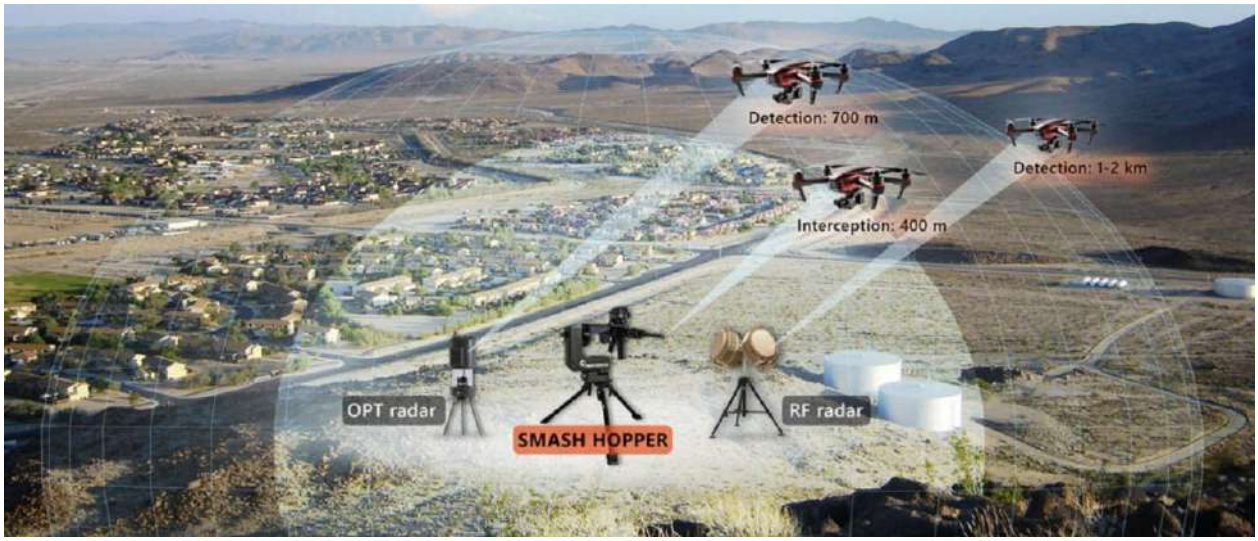
- IDOR vulnerabilities can lead to **sensitive data exposure**, **privacy violations**, and **financial risks**.
- The quick fix by the government highlights the importance of **cybersecurity in public digital platforms**.

SAKSHAM System

Syllabus: GS-3; Science and Technology

Context

- The **Indian Army** has initiated procurement of the **indigenously developed 'Saksham' Counter-Unmanned Aerial System (CUAS) Grid System** to strengthen battlefield airspace security.



About SAKSHAM

Full Form: *Situational Awareness for Kinetic Soft and Hard Kill Assets Management*

- **Type:** Counter-Unmanned Aerial System (CUAS) Grid System
- **Developer:** Bharat Electronics Limited (BEL)
- **Network:** Operates on the secure **Army Data Network (ADN)**
- **Coverage:** Monitors the **Tactical Battlefield Space (TBS)** including the **Air Littoral** (up to 3,000 metres / 10,000 ft above ground)

Key Features

1. **Real-time Detection & Tracking**
   - Detects, tracks, identifies, and neutralises hostile drones and UAS in real time.
2. **Integrated Recognised UAS Picture (RUASP)**
   - Provides commanders a real-time, integrated airspace picture by merging sensor data, CUAS systems, and AI analytics.
3. **AI-enabled Predictive Analysis**
   - Enables predictive threat analysis, automated decision support, and **3D battlefield visualization**.
4. **System Integration**
   - Integrates both friendly and hostile UAS data, C-UAS sensors, and soft/hard-kill systems on a **common GIS platform**.
5. **Enhanced Situational Awareness**
   - Receives inputs from the **Akashteer System**, mapping all airspace users—friendly, neutral, or hostile—within the combat zone.

Significance

- Strengthens **airspace security** for the Army in modern combat scenarios.
- Improves **decision-making** for commanders with real-time integrated airspace visualization.
- Demonstrates **indigenous technological capability** in counter-drone warfare.

Araneus nox

Syllabus: GS-3; Biodiversity

Context

- A survey by researchers in **Idukki Wildlife Sanctuary** reported the **first record of the spider species Araneus nox in India**.

About Araneus nox

- **Species type:** Orb-weaving spider
- **Family:** Araneidae
- **Common name:** Leathery Garden Orb-weaver
- **First documented:** 1877 by French arachnologist Eugène Simon in Basilan, Philippines
- **Web characteristics:** Spins near-perfect, vertically oriented circular webs on vegetation and tree branches

- **Habitat:** Gardens, forests, backyards
- **Distribution:** Southeast Asia (Cambodia, Laos, Myanmar, Thailand, Vietnam) and also in Philippines, Malaysia, Indonesia, Myanmar
- **Appearance:** Coloration varies from light brown to jet black, sometimes with clusters of light brown setae on the abdomen's sides; small to medium-sized with a distinctively textured, leathery abdomen

What are orb-weaving spiders?

- Belong to the family **Araneidae** (also known as Argiopidae or Epeiridae) in the order **Araneida**
- Known for **weaving round, symmetrical, orb-shaped webs** suspended in open-air spaces
- Widely distributed and considered a **large group of spiders**

Sathyamangalam Tiger Reserve (STR)

Syllabus: GS-3; Biodiversity

Context

- The **Madras High Court** has directed authorities to take appropriate action against **illegal resorts and tourist lodges** operating within the **prohibited zones** of the **Sathyamangalam Tiger Reserve (STR)**.
- This move aims to protect the reserve's delicate ecosystem and wildlife habitats from unregulated human activity.

About Sathyamangalam Tiger Reserve

- **Location:** Junction of Eastern and Western Ghats, Nilgiri Biosphere Reserve, Erode District, Tamil Nadu.
- **Area:** Over **1,400 sq.km**.
- **Connectivity:** Contiguous with **Mudumalai Tiger Reserve**, **Bandipur Tiger Reserve**, and **BR Tiger Reserve**, forming part of the **Nilgiris Biosphere Landscape**, which hosts **over 280 tigers**, the largest tiger population in the world.
- **Historical Significance:** Former hunting grounds of local rulers; strategic trade passage between Tamil Nadu and Karnataka along historic Mysore–Tamil Nadu routes.
- **Terrain:** Hilly and undulating; **altitude** ranges from 750 m to 1649 m.

Climate

- **Type:** Subtropical and dry.
- **Seasons:**
  - Summers: Hot and dry.
  - Monsoons: Wet and cooler; river flooding occurs.
- **Rivers:** Bhavani, Moyar, and Noyyal.

Flora and Fauna

- **Vegetation:** Southern tropical dry thorn forests, mixed deciduous forests, semi-evergreen forests, riparian forests.
- **Key Flora:** Teak, sandalwood, bamboo, Terminalia, Albizia, medicinal plants.
- **Key Fauna:**
  - **Mammals:** Tiger, Elephant, Panther, Sloth bear, Gaur, Black Buck, Spotted deer, Wild boar, Bonnet macaque.
  - **Primates:** Common langur, Nilgiri langur.
  - **Others:** Striped neck mongoose, Black-naped hare.

Tribal Communities

- Indigenous communities such as **Irula** and **Kurumba** reside in the reserve, coexisting with the ecosystem.