



FAO Report: 'Leveraging Space Technology for Agricultural Development and Food Security'

Published On: 10-02-2025

Context:

The **Food and Agriculture Organization (FAO)** recently released a report titled '**Leveraging Space Technology for Agricultural Development and Food Security**', in collaboration with the **United Nations Office for Outer Space Affairs**. The report discusses the challenges and opportunities in different segments of the **space sector** as they relate to agriculture.

Challenges and Opportunities in Space for Agriculture

The report is structured around three key segments of the space sector: **Upstream, Midstream, and Downstream**.

1. Upstream (Space Infrastructure Development)

- **Challenges:**
- **Reliance on external support** for satellite development.
- **Stagnation in remote-sensing innovation**, limiting the potential for new advancements in agricultural applications.
- **Opportunities:**
- **Capacity-building initiatives** like **Access to Space for All** and the **BIRDS project** aim to develop national capabilities in mission planning and satellite development, focusing on **agricultural applications**.

2. Midstream (Data Processing, Storage, and Management)

- **Challenges:**
- **Limited access to Earth observation and GNSS (Global Navigation Satellite System) data**.
- **Overlapping platforms for data access**, leading to **data inconsistencies** and inefficiencies.
- **Opportunities:**
- Initiatives like the **ESA's Copernicus Open Access Hub** and **NASA's Earth Data** platforms aim to reduce **data duplication** and improve **data-sharing efficiency**, benefiting agricultural research and applications.

3. Downstream (Practical Agricultural Uses)

- **Challenges:**
- **Agricultural monitoring gaps** such as missing **crop calendars, meteorological data, and cropland maps**, which hinder effective monitoring and decision-making.
- **Opportunities:**
- **Collaborations** for initiatives like **GEOGLAM (Global Agricultural Monitoring)** and **ESA's World Cereal program** aim to improve **data sharing** and **standardization**, ensuring better monitoring and management of agricultural resources.

Conclusion

The FAO's report highlights the vast potential of **space technology** in improving **agricultural development** and **food security**. By addressing the challenges in the space sector and capitalizing on emerging opportunities, space technology can significantly contribute to more efficient and sustainable agricultural practices worldwide.