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**AGRI STACK IN INDIA: TRANSFORMING  
AGRICULTURAL GOVERNANCE**

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## AGRI STACK IN INDIA: TRANSFORMING AGRICULTURAL GOVERNANCE

### Context

- Agri Stack represents a major step towards data-driven agriculture by integrating land records, farmer details and crop information into a unified digital ecosystem.

### What is Agri Stack?

- It is a **digital agriculture framework** developed under the **Digital Agriculture Mission** to create a unified and standardised database of farmers, land records and crops in India.
- It comprises three interconnected registries:
  - ◆ **Farm Registry:** It contains a database of **geo-referenced agricultural plots**. Every agricultural land parcel is digitally mapped to ensure accurate identification and verification.
  - ◆ **Farmer Registry:** Each land-owning farmer is assigned a **unique Farmer ID** linked to ownership details of agricultural plots, share in case of co-ownership, and dynamic land ownership updates through integration with the **Record of Rights (RoR)**.
  - ◆ **Crop Sown Registry:** This layer records details of crops cultivated on each plot through digital crop surveys, mobile-based data collection, geotagging, and satellite support.
- These surveys are conducted every crop season after sowing.

### Key Features of Agri Stack

- **Federated Architecture:** Agri Stack follows a **federated database model**, allowing States to maintain flexibility while ensuring interoperability across schemes and departments.
- **Privacy and Data Protection:** The system is designed with adherence to data protection principles, rule-based access, secure and consent-driven use of farmer data.
- **Technological Integration:** The platform integrates GIS mapping, mobile applications, satellite imagery, and digital land records.
  - ◆ It improves accuracy and reduces duplication and fraud.

### Progress Achieved

- According to government data, more than **9.40 crore Farmer IDs** have been generated.
- During **2025–26**, digital crop surveys were conducted for nearly **30 crore plots**, across more than **600 districts** in **24 States**.
- The use of mobile devices, geotagging and satellite support marks a shift from traditional manual surveys, which were often slow and error-prone.

### Benefits of Agri Stack

- **Improved Delivery of Welfare Schemes:** Agri Stack acts as a **single source of truth**, reducing repeated verification and lowering transaction costs for farmers.
  - ◆ It enables accurate beneficiary identification, Direct Benefit Transfer (DBT), reduced leakages and duplication.
- **Better Agricultural Extension Services:** Integration of land records, crop details, and soil health data can help provide personalised advisories related to sowing schedules, irrigation, fertiliser application, and pest management.
  - ◆ It can improve productivity and resource efficiency.
- **Data-Driven Policymaking:** Availability of real-time agricultural data helps governments monitor cropping patterns, anticipate supply-demand gaps, prevent price volatility, and improve disaster response and procurement planning.

- **Breaking Departmental Silos:** Earlier, multiple Ministries and States maintained separate farmer databases.
  - ♦ Agri Stack creates a common digital layer enabling interoperability across schemes and departments.

State-Level Use Cases	
State	Use Case
Uttar Pradesh	MSP-based procurement
Chhattisgarh	Farmer registration for paddy procurement
Madhya Pradesh	Price Deficiency Payment Scheme under PM-AASHA
Maharashtra	DBT benefits and disaster relief

- **Opportunities for Innovation:** As Agri Stack matures, it can create opportunities for agri-tech start-ups, precision agriculture tools, weather and market advisory platforms, credit and insurance innovations.
  - ♦ Applications combining crop data, weather forecasts and market prices can improve farmers' decision-making.

### Challenges and Concerns

- **Digital Divide:** Limited digital literacy and poor internet connectivity may affect adoption among small and marginal farmers.
- **Data Privacy:** Protection of sensitive farmer data and ensuring informed consent remain critical.
- **Land Record Issues:** Outdated and disputed land records in many States can hinder accurate database creation.
- **Federal Coordination:** Successful implementation requires continuous coordination between Centre and States.

### Conclusion

- Agri Stack is a significant reform in India's agricultural governance architecture. It seeks to improve welfare delivery, enhance transparency and promote evidence-based policymaking by creating a standardised, interoperable and technology-driven database.
- Its success, however, will depend on accurate land records, strong privacy safeguards, inclusion of vulnerable cultivators, and capacity building at the grassroots level
- Agri Stack can become a foundational digital public infrastructure for Indian agriculture, comparable in transformative potential to platforms like UPI in the financial sector if implemented effectively.

### Daily Mains Practice Question

[Q] Discuss its potential in transforming agricultural governance, welfare delivery and data-driven policymaking in India. Examine the challenges associated with its implementation.

Source: [BL](#)

