e-Urvarak

A Comprehensive Digital Governance Solution

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e-Urvarak/ Integrated Fertilizer Management System (iFMS) is a comprehensive and all-inclusive technology solution designed to streamline, monitor, and control the end-to-end flow of fertilizer disbursal and subsidy management system across the country.

The system captures sale of fertilizer at retail point using Point of Sale (PoS) devices and based on the actual sale, the subsidy is disbursed to the companies. This integrated system provides real-time visibility and coordination between multiple supply chain processes, including requirement gathering, supply plan, procurement, production, stock management, distribution, e-PoS-based Sales, buyer complaints, quality control and other value-added services.

e-Urvarak is a comprehensive system where all fertilizer supply chain activities converge and data is interconnected and managed through a single platform. By leveraging advanced technologies, the system enhances collaboration between Central and State Governments, Fertilizer manufacturers, stock points, dealers, and end-point buyers. This integration allows the Government to optimize distribution while reducing costs, improving efficiency, and authorizing each and every fertilizer sale via Aadhaar-based Biometric authentication.

The system is critical in ensuring timely procurement of raw materials, efficient production scheduling, maintenance of optimal stock levels, and quick and smooth sale, all while maintaining full monitoring and control of the Department of Fertilizers. Real-time data and insights enables the department to respond quickly to changes in demand, disruptions in the supply chain, or any other unforeseen events, ensuring continuous supply and minimizing downtime.

In addition to operational efficiency, the system offers robust subsidy disbursement-related capabilities, allowing the department to track, manage budgets, verify and process subsidy bills, which amounted to almost INR 2 Lakh Crores in 2023-24.

e-Urvarak represents an advancement in supply chain governance and subsidy claim processing in the country. Boasting a user base exceeding 3.5 lakh (Govt. and Private) and facilitating transactions for more than 12 crore fertilizer buyers nationwide, e-Urvarak has emerged as a cornerstone of efficiency and transparency in the critical sector. The system regulates the nationwide production, movement and e-PoS sale of over 640 LMT fertilizer in over 18 crore transactions while processing the subsidy claims on a weekly basis.

The Integrated Fertilizer Management System (iFMS) has revolutionized fertilizer subsidy governance in India by ensuring transparency, efficiency, and accountability. Through real-time tracking and Direct Benefit Transfer (DBT), it links subsidies to actual fertilizer sales, preventing misuse and ensuring timely authorised access for farmers. With data-driven decisions, iFMS enables better planning and timely distribution of fertilizers, empowering farmers as intended beneficiaries and promoting the Government's commitment to using technology to improve service delivery and transparency.

Jagat Prakash Nadda
Hon'ble Minister of Health & Family Welfare and Chemicals & Fertilizers

e-Urvarak enables control, facilitation and capture of transactional data starting from:

- Gathering of district-wise seasonal **fertilizer requirements** from State Agriculture Governments; finalization of the monthly supply plan by the Department of Fertilizers (DoF) where each company is assigned production and supply targets
- **Procurement of Raw Materials/Finished Goods** by Fertilizer Manufacturers via different modes as per the Supply Plan under regularization and monitoring by DoF.
- **Production** of fertilizers based on demand, capacity and targets by private, cooperative and PSU fertilizer manufacturers where the daily pro-

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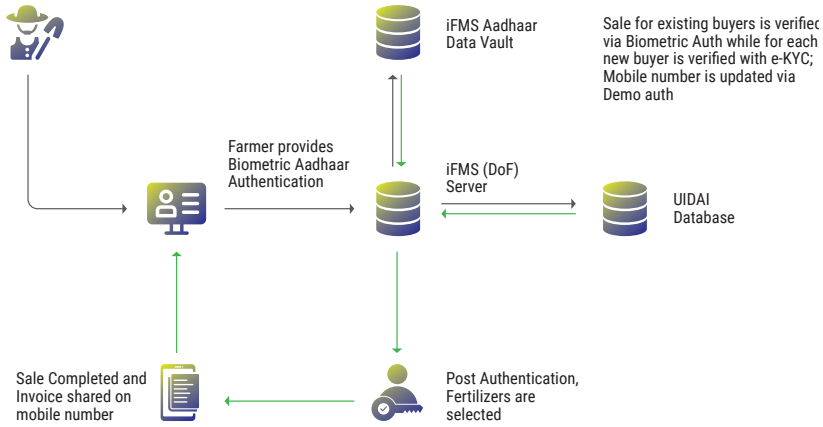
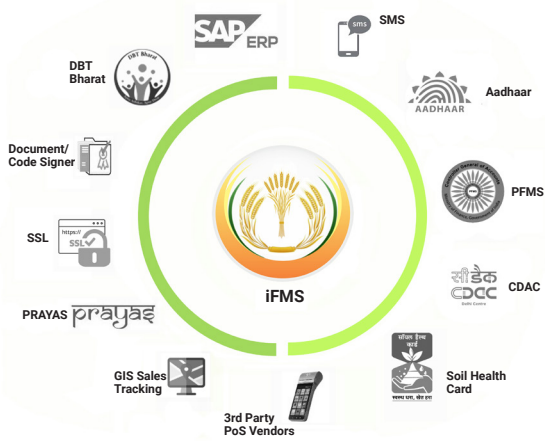


▲ Fig 9.1 **POS Sale Process**



▲ Fig 9.3 **e-Urvarak: Technology Ecosystem**

duction, opening balance and MRP is monitored

- **Imports** of critical fertilizers and raw materials by State Trading Enterprises as per directions of DoF
- Fertilizer **Movement** from plant and ports by rail or road to district warehouses in accordance with the monthly supply plan where DoF subsidizes freight cost of the movement
- **Distribution** from district warehouse to wholesalers, from wholesalers to retailers based on localized requirements
- Quantity and Quality-based **certification** of Fertilizer arriving in States at NABL/State Labs
- e-PoS Sales based on **Aadhaar authentication**/e-KYC from Retailers to Buyers to provide subsidy benefits directly to the buyers

Standout features for e-Governance

- **Demand and Supply Chain Management:** Aligning production schedules, and stock levels with anticipated demand across the country.
- **Authorized Transactional/ Sale Data Collection:** secured by Aadhaar Authentication, e-PoS at all retail points of data collection
- **Real-Time Data Dashboard/ MIS Reports:** Generates detailed reports and dashboards that monitor key supply chain performance indicators (KPIs), such as stock levels, sale analysis, subsidy expenditure, and custom KPIs as per Department requirements.
- **Comprehensive Subsidy Management:** Streamlines the subsidy disbursement process, making it faster and more accurate by integrating data from multiple stakeholders, including manufacturers, wholesalers, and retailers and linking sales to farmers directly with subsidy claims, it reduces delays in subsidy processing and payments to fertilizer companies.
- **API Based Integration with External Stakeholders/Govt Portals:** Real-time data sharing between e-Urvarak and external stakeholders, which enables quick and informed decision-making, accurate data collection, data sharing, cost efficiency, and scalability while ensuring compliance and visibility.

Technologies Used

IFMS Application Stack consists of Open Source software and tools at each level:

- Front End – HTML 5, CSS
- Mobile – Angular 10, Android 9.1, Cordova 11
- Backend – Spring MVC 5.1.0
- Data – PostgreSQL 9.3
- Infra – VMware ESXi 7.0.0

Innovations Applied

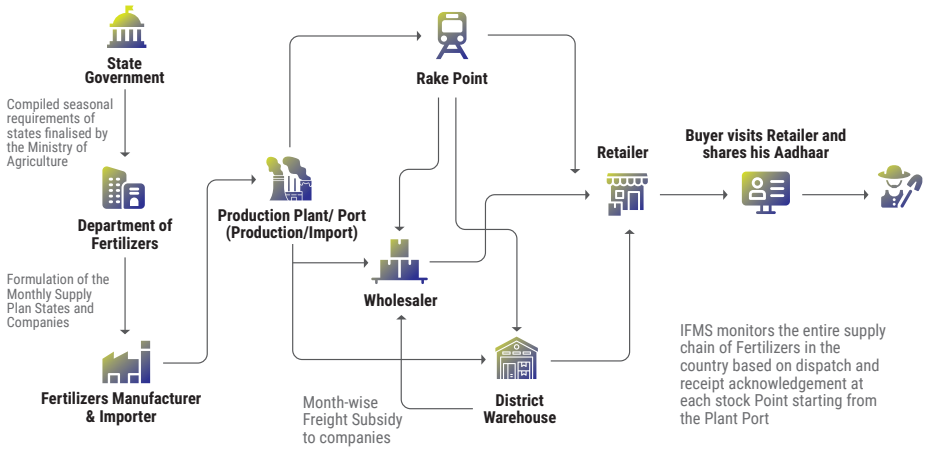
The flow has multiple feedback loops (dispatch and its acknowledgements) between various stakeholders, indicating ongoing communication and data exchange to ensure efficient stock management, tracking, and reporting. The system also ensures that subsidies are directly linked to authenticated purchases for preventing misuse.

The diagram reflects the integration of a digitized value chain where stock movements and transactions are continuously monitored, allowing for efficient fertilizer distribution across the country.

Way Forward

iFMS has been the catalyst for transformation within the fertilizer sector. iFMS has enabled the Department of Fertilizers to foster practices that excel in OOMF, SDG, and DGQi goals set by the government. The system's agile design is easily adaptable to changing requirements, allowing for rapid development and deployment of new functionalities enabling the introduction of Fermented Organic Matter, Drones, Community Radio, Digital PMKSKs to name a few and new modules like monitoring of Imports in the coming future. By leveraging advanced data analytics, iFMS provides actionable insights derived from the captured data, facilitating informed decision-making and continuous optimization of the supply chain and governance.

▼ Fig 9.2 **Digitalised Supply Chain**



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