



DIGITAL PATHWAY TO TARGETED FERTILISER SUPPORT

Authors:

RITIKA JUNEJA
TANMOY ADHIKARY
ASHOK GULATI

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Ritika Juneja

Tanmoy Adhikary

Ashok Gulati

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Abstract

India spends substantial public funds to keep fertilisers affordable for farmers. However, the current subsidy system does not fully account for differences in crop requirements, soil conditions and cultivated area. Although fertiliser sales are recorded through Aadhaar-authenticated Point of Sale (PoS) devices, authentication verifies the buyer's identity, not necessarily whether they cultivate the land or even whether they at least own lands for which the fertiliser is purchased or whether the quantity purchased matches the farm's actual requirements. Thus, under the existing no-denial system, it is very difficult if not impossible to ensure that subsidised fertilisers reach intended agricultural uses and can leave scope for diversion to non-agricultural uses. The problem is compounded by the exceptionally low, administratively fixed price of urea relative to its cost and other fertilisers, which encourages excessive use, distorts the nutrient mix and adds to the government's subsidy burden.

AgriStack, the Government of India's digital public infrastructure (DPI) for agriculture, provides an opportunity to address these gaps by linking farmer identity with land records and season-specific crop information. Its Farmer Registry and Digital Crop Survey (DCS) and in future soil health linked to each land id can help establish a more reliable basis for assessing fertiliser requirements and targeting support according to cultivated area soil health and cropping patterns. However, translating this potential into better fertiliser use requires moving beyond digital authentication and sales tracking towards a system that connects fertiliser distribution with actual cultivation needs. It also needs to be ensured that actual, tenants / sharecroppers do not get excluded.

This policy brief examines how AgriStack and other digital tools can enable more targeted, transparent and accountable fertiliser support. It explores how Bharat-VISTAAR can complement this infrastructure by providing farmers with localised, crop-specific advice on nutrient management, soil health and fertiliser application. State-level initiatives, particularly Madhya Pradesh's e-Vikas system, illustrate how farmer registration, land and crop data, and digital distribution can be integrated to improve fertiliser allocation and delivery. Together, these innovations could better align public expenditure with farmers' needs, promote balanced fertilisation and reduce diversion and inefficient use. However, reliably identifying actual cultivators, including tenant farmers and sharecroppers who may not be reflected in land records, remains a critical challenge. Bridging this gap is essential to enabling a transition towards Direct Cash Transfer (DCT) of fertiliser subsidies, a much-needed reform to make fertiliser support more targeted and accountable.

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Author's email: rjuneja@icrier.res.in, tadhikary@icrier.res.in, aqulati@icrier.res.in

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List of Abbreviations

AI	Artificial Intelligence
API	Application Programming Interface
Bharat-VISTAAR	Virtually Integrated System to Access Agricultural Resources
CCRC	Crop Cultivator Rights Card
CSC	Common Service Centre
DA&FW	Department of Agriculture and Farmers Welfare
DBT	Direct Benefit Transfer
DCS	Digital Crop Survey
DCT	Direct Cash Transfer
DoA&FW	Department of Agriculture, Cooperation and Farmers Welfare (the Department's name in 2021)
DPI	Digital Public Infrastructure
e-KYC	Electronic Know Your Customer
e-Vikas	Vitran evam Krishi Urvarak Aapurti Samadhan
FFS	Framework for Fertiliser Sale
FIR	First Information Report
FRA	Forest Rights Act, 2006
FRUITS	Farmer Registration and Unified beneficiary InformaTion System (Karnataka)
GFR	General Fertiliser Recommendation
ICAR	Indian Council of Agricultural Research
ID	Identity / Identifier
IDEA	India Digital Ecosystem of Agriculture
iFMS	Integrated Fertiliser Management System
IISS	Indian Institute of Soil Science
InDEA / IndEA	India Enterprise Architecture
INR	Indian Rupee
KCC	Kisan Credit Card
kg/ha	Kilogram per hectare

MahaDBT	Maharashtra Direct Benefit Transfer
MeitY	Ministry of Electronics and Information Technology
MFMB	Meri Fasal Mera Byora (Haryana)
MoA&FW	Ministry of Agriculture and Farmers Welfare
MoU	Memorandum of Understanding
MP	Madhya Pradesh
MRP	Maximum Retail Price
MSP	Minimum Support Price
OTP	One-Time Password
PACS	Primary Agricultural Credit Society
PIB	Press Information Bureau
PM-KISAN	Pradhan Mantri Kisan Samman Nidhi
PMKSK	Pradhan Mantri Kisan Samriddhi Kendra
PoS	Point of Sale
QR	Quick Response
RBI	Reserve Bank of India
RDF	Recommended Dose of Fertiliser
RoR	Record of Rights
SDO	Sub-Divisional Officer
TE	Triennium Ending
UFSI	Unified Farmer Service Interface
UT	Union Territory

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Ritika Juneja, Tanmoy Adhikary and Ashok Gulati

1. Introduction

India's fertiliser policy has played a critical role in ensuring the timely availability of fertilisers at affordable prices and supporting agricultural productivity. Yet the same largely uniform system of support operates across highly diverse farming conditions. Fertiliser requirements vary with crop, soil, irrigation, cultivated area, yield potential and farming practices, while the subsidy system has limited ability to differentiate support accordingly. The challenge, therefore, is not simply to reduce fertiliser use, but to ensure that fertiliser support reaches the right cultivator, for the right crop and in quantities better aligned with agronomic need.

In its present form, fertiliser subsidy is attached to the product at the point of sale, not to a verified farmer, landholding or crop requirement. Anyone able to produce an Aadhaar number can buy urea at ₹242 a bag — roughly 85–90 per cent below its underlying cost — whether or not they cultivate land at all. The Economic Survey 2015–16 estimated that 41 per cent of urea was diverted to industry or smuggled across borders using 2012–13 data. The Department of Fertilisers subsequently reported more than 370 inspections, 30 FIRs, 112 de-authorised units and around 70,000 bags of suspected diverted urea (PIB, 2023). Even the Parliamentary Standing Committee's Sixth Report (2024–25) acknowledges that Aadhaar-based buyer verification operates on a "no denial basis": it authenticates that a sale occurred without ever establishing who the beneficiary actually is (Department of Fertiliser, 2025).

This points to a deeper problem: a fertiliser transaction is not the same as a farmer entitlement. A point of sale (PoS) transaction can verify the buyer, but it cannot, by itself, establish whether the buyer is the actual cultivator or even at least he owns any land, what crop they are cultivating, what quantity is appropriate for that crop and area, or how soil conditions affect nutrient requirements. Answering these questions requires information that is currently fragmented across multiple government databases. Land records are supposed to identify ownership; PM-KISAN identifies registered beneficiaries; mandi records capture market transactions; crop-insurance databases record insured cultivation; and Kisan Credit Card (KCC) records capture access to agricultural credit. Each dataset captures a different part of the farming operation, but these systems are designed for different administrative purposes and are rarely integrated or routinely reconciled. As a result, there is no single, continuously updated view of who is cultivating what, where and with what input requirements.

This fragmentation becomes particularly important because land ownership and actual cultivation are not always the same. Tenant and sharecropper farmers may be absent from conventional land records even though they make decisions on crop choice, input use and fertiliser application. Similarly, knowing that a farmer owns or cultivates a parcel does not

reveal, by itself, the crop currently sown, its nutrient requirements, the soil condition of that parcel, or the fertiliser already purchased. Targeted fertiliser support therefore requires triangulating these different data points—farmer identity, cultivation rights, land, crop, soil, location and input transactions.

This is where Digital Public Infrastructure (DPI) for agriculture can provide the missing architecture. The Government of India has begun building this foundation through AgriStack, while initiatives such as Bharat-VISTAAR can complement it by providing timely, location-specific agricultural advisories. As of 6 August 2026, the platform had served more than 5.9 lakh farmers and addressed over 93 lakh queries. In the context of fertiliser reform, Bharat-VISTAAR is best viewed as an advisory and decision-support layer to strengthen agronomic decision-making, with the state fertiliser systems to translating this information into more targeted input delivery. States are also building on these foundations through their own digital systems and institutional innovations, creating different entry points into an emerging farmer–land–cultivator–crop–soil–input architecture. The objective is to progressively connect and reconcile existing information so that digital systems can move from simply authenticating a fertiliser transaction towards establishing a credible farmer- and field-level nutrient requirement.

Against this backdrop, this policy brief examines how AgriStack and State-level digital innovations can help India move towards a more targeted, transparent and data-driven fertiliser distribution system. It explores how digital infrastructure can improve the identification of actual cultivators, including tenants and sharecroppers; link farmers with land and crop information; incorporate soil and agronomic data; and connect these variables with fertiliser transactions. It also examines the challenges of data accuracy, interoperability, consent and governance, and the risk that digital systems could exclude farmers with limited digital access.

The larger question is whether this emerging digital architecture can take India beyond authenticating a fertiliser sale towards establishing a credible farmer-level nutrient entitlement. If these building blocks can be effectively connected, AgriStack and State-level innovations could not only improve targeted fertiliser delivery but also create the information architecture needed to consider, over time, a more effective and better-targeted Direct Cash Transfer (DCT) mechanism for fertiliser support.

2. AgriStack: Building the Entitlement Engine

AgriStack lineage runs from a February 2018 Ministry of Agriculture report on doubling farmers' income, which set out the potential of digitised agricultural records. This was followed by the constitution of a Task Force, co-chaired by the then Secretary of the Ministry of Agriculture, Sanjay Agarwal, and former MeitY Secretary J. Satyanarayana, with Additional Secretary Vivek Aggarwal as coordinator. The Task Force met eight times between 2019 and

2021 to develop a blueprint for digital agriculture, drawing substantially on the India Enterprise Architecture (InDEA/IndEA 2.0) framework developed by the Ministry of Electronics and Information Technology. (Consultation Paper on IDEA, 2021).

Recently, Bharat-VISTAAR adds an AI-enabled advisory and farmer-interaction layer to the emerging agricultural DPI architecture. Announced in the Union Budget 2026–27 with an allocation of ₹150 crore, Bharat-VISTAAR (Virtually Integrated System to Access Agricultural Resources) was launched in Phase I in February 2026 as a voice-first, multilingual platform integrating AgriStack data and ICAR agricultural knowledge with AI systems. It provides farmers with real-time and location-specific information on crop management, weather, market prices, pest and disease alerts, soil health and government schemes through a telephone helpline, chatbot, web portal and mobile application.

2.1 Design and Architecture

AgriStack follows a federated architecture in which the Central and State Governments jointly develop the digital ecosystem in accordance with MOUs signed between States and Ministry, while the core registries are created and maintained by States and Union Territories. The architecture comprises three foundational registries: the Farmers Registry, which links farmer identity with land records; Geo-referenced Village/Land Maps; and the Crop Sown Registry, which provides season- and plot-level information on crops, primarily through the Digital Crop Survey. The Farmer Registry is designed to cover four categories of farmers: landowners; tenants/ cultivators with the land they cultivate; forest dwellers with land cultivated under the Forest Rights Act (FRA) and landless farmers engaged in dairying or fisheries. Records can be drawn from the Record of Rights, the FRA database, State databases such as AP's land-tenancy database, and livestock and fisheries databases.

At the centre of this architecture is the Farmer ID. It is Aadhaar-linked but distinct from Aadhaar and is intended to dynamically connect a farmer with land, crops, demographic information and benefits received. The Unified Farmer Service Interface (UFSI) serves as the interoperability layer, providing standardised Application Programming Interfaces (APIs) through which authorised government and private applications can access relevant registry data. A Consent Manager provides the mechanism for consent-based data sharing across these applications.

The architecture is designed to create a unified, verified and reusable farmer profile that can support multiple services, including credit, insurance, subsidies and input delivery. Data governance is built around consent, encryption and role-based access, with the Government stating that AgriStack is being developed in accordance with the Digital Personal Data Protection Act, 2023 and associated data-protection rules. Like Aadhaar, AgriStack is designed to be agnostic to use cases: it establishes who the farmer is, what land is held, where it lies and what is grown, while each scheme decides how to use that information. Dedicated

regulations and a regulator for AgriStack are envisaged to control misuse of data. The Centre provides common applications, including the Farmer Registry, Digital Crop Survey, Consent Manager and AgriStack Sandbox, which states and other ecosystem participants can adopt and integrate into their own systems.

2.2 Operational Process

Farmer enrolment under AgriStack is undertaken through three parallel channels: self-registration; operator-assisted registration; and camp-based registration. Under self-registration, farmers access the web or mobile portal, authenticate their Aadhaar through OTP-based e-KYC, and provide bank and land details. Demographic information is auto-filled from Aadhaar, while land is claimed using Khasra/Gata/survey numbers retrieved directly from the State's land-record database, rather than through uploaded documents. Following e-Sign through the designated government gateway, the system generates the Farmer ID and Enrolment ID (AgriStack, 2026). Farmers who require assistance can register through Common Service Centres (CSCs), where Village-Level Entrepreneurs complete the process on their behalf, or through registration camps organised at the Gram Panchayat/Gram Sachivalaya level by agriculture and revenue officials.

Once enrolled, the system verifies the farmer by matching Aadhaar details with land records. Applications that meet the prescribed matching criteria can be approved automatically, while cases involving name mismatches, land disputes or discrepancies in Records of Rights (RoR) are routed for manual verification. Land-seeding then links the Farmer ID to the specific parcels claimed by the farmer. The Farmer Registry framework also provides for Farm IDs within the land-record system and allows exceptional cases, including situations where a person is not yet reflected in the RoR because of pending mutation following death or a dispute. There is a daily electronic synchronisation process between RoR and farmer registry to ensure that all mutations in RoR are updated in the registry. Lists of deceased farmers are periodically obtained from UIDAI to enable their removal from the registry.

The Farmer ID requirement has also begun to improve land records. Because a Farmer ID requires land to be recorded in the farmer's name with the correct extent, farmers now have a reason to settle inheritance issues and seek updates to their records, something they rarely did while in undisputed possession. Revenue departments in States such as Odisha, Bihar, Uttar Pradesh and Uttarakhand have taken up special drives; jointly owned holdings recorded in a single entry are being separated into individual shares (ansh nirdharan) in Uttar Pradesh, Bihar and Uttarakhand; and digitised village maps are being corrected because the crop survey requires geo-referenced maps.

The Digital Crop Survey (DCS) adds the crop dimension to this architecture. Conducted each season through a geo-referenced mobile application, the survey seeks to capture crop-sown information at the plot level on a saturation basis and feed it into the Crop Sown Registry. The

survey is planned to cover about 45 crore plots during Kharif 2026 and is carried out by about 6 lakh local youth and government surveyors, paid per plot. Surveyors must be physically within the geo-referenced plot to record the crop, irrigation status and approximate sowing date with a time-stamped photograph, and their entries are reviewed by supervisors on a web portal. With each plot surveyed in every cropping season, roughly 450 crore geo-tagged crop photographs have accumulated in last three years, a potential training dataset for AI-based crop analytics. This creates a seasonal link between the farmer, the land parcel and the crop actually recorded on that parcel. The Government has provided financial incentives for field-level data collection, including an allocation of INR 15,000 per registration camp and an honorarium of INR 10 per Farmer ID from PM-KISAN administrative funds for field functionaries (PIB, 2025).

Once the Farmer Registry and associated land and crop information are established, stakeholders across the agricultural ecosystem can access this data through UFSI, subject to farmer consent. State platforms such as Maharashtra's MahaDBT, Gujarat's iKhedut, Madhya Pradesh's e-Krishi Yantra and Odisha's Krushak Odisha use Farmer Registry data to auto-populate scheme applications.

2.3 Present Status

AgriStack has expanded rapidly since the rollout of the Farmer Registry. The number of Farmer IDs increased from 4.85 crore as of March, 2025 to 9.25 crore by April, 2026, and close to 11 crores by October 2026. This broadly meets the Mission's target of 11 crore Farmer IDs by 2026–27, and about 12 crore IDs are expected by March 2027 (Stakeholder consultation, 2026). However, coverage remains uneven across states. As of March 2026, the largest Farmer Registries were in Uttar Pradesh (1.9 crore), Maharashtra (1.3 crore), Madhya Pradesh (1.04 crore), Rajasthan (83.4 lakh), Karnataka (60.8 lakh) and Gujarat (60.2 lakh) (PIB, 2026). Thirty-five States and UTs have signed MoUs for AgriStack implementation; the Farmer Registry has been onboarded in 30 States, Geo-referenced Village Maps in 29 and the DCS in 22 states. The DCS has also scaled rapidly, expanding from pilots in 2023–24 to 436 districts in Kharif 2024 and 648 districts, over 31.3 crore plots in Rabi 2025–26 (PIB, 2026). Together, the Farmer Registry and DCS are progressively creating the farmer–land–crop data infrastructure envisaged under AgriStack. Registration numbers, however, overstate saturation. Measured against land rather than farmers, only about 60 per cent of land is linked to a Farmer ID, even where States report full farmer coverage, partly because enrolment is voluntary and some large or absentee owners have little incentive to register. In Telangana, Farmer IDs exceed the number of PM-KISAN beneficiaries by about 76 per cent, yet only about 80 per cent of land holdings as per State RoR is covered. Of the roughly 9 crore existing PM-KISAN beneficiaries, about 8 crores are in the Farmer Registry; the remainder may not hold land in their own name. At saturation, the Registry is expected to cover about 16–17 crore farmers. This saturation gap is the reason the Government is not yet planning for a direct cash transfer of fertiliser subsidy to farmers (Lok Sabha, 2026).

Some of the emerging use cases indicate that the infrastructure is moving beyond registration towards scheme delivery. Maharashtra used AgriStack-linked systems to transfer more than ₹14,000 crore to 89 lakh farmers for Kharif 2025 crop losses, while Chhattisgarh has integrated Farmer ID and DCS into MSP-based paddy procurement, covering more than 32 lakh farmers in a single season (PIB, 2026b). In the last two years Chhattisgarh is reported to have curbed inflows of paddy from neighbouring States, saving about ₹4,000 crore. In Karnataka, farmer benefits have been linked to the State's farmer registry for several years.

AgriStack is also being integrated with credit-delivery platforms. The government's JanSamarth portal, which brings credit-linked government schemes onto a common digital platform, already integrates AgriStack data to support eligibility checks and loan processing. Going forward, integration with RBI Innovation Hubs Unified Lending Interface will allow lenders to access verified farmers and land information. These developments illustrate how linking farmer identity, land records and crop information can support more efficient delivery of agricultural services and potentially provide a foundation for better-targeted fertiliser support.

2.4 Limitation: Identifying the Right Beneficiary

Everything AgriStack promises for fertiliser rests on one prior condition: the system must know who the farmer is. Integrating land, crop, soil and transaction data cannot deliver the right quantity to the right farmer if the person at the end of the chain is the wrong one. Aadhaar-based PoS authentication already confirms that a real, unique person bought the bag. The harder questions are whether that person is a farmer, whether they are cultivating a particular parcel this season, and whether the quantity matches the crop. AgriStack is built to answer these. The Farmer ID ties Aadhaar to a land record and removes duplicate and ghost claimants. Daily synchronisation with the RoR keeps it current, and the DCS adds geo-tagged evidence of what is actually sown. For owner-cultivators this largely works. For everyone else, it does not yet.

The ownership–cultivation gap. Farmer IDs are created by matching farmer details with digitised land records, but actual cultivation changes from season to season. A recorded owner may lease out the land, farm it through sharecropping, or leave it fallow. A tenant or sharecropper may make every decision on crop choice and fertiliser use without appearing in the RoR. If fertiliser support is linked mainly to land ownership, benefits will flow to the recorded owner rather than the person who applies the fertiliser. The Government has recognised this. The Farmers Registry provides for onboarding tenants and sharecroppers, and assisted registration through Farmer Producer Organisations (FPOs), *Krishi Sakhis*, CSCs and camps is meant to reach farmers facing digital-access barriers. But recognition of non-owner cultivators still depends largely on State rules, land records and verification mechanisms.

In practice, enrolment of non-owner cultivators has barely begun. Andhra Pradesh apart, few States formally recognise tenancy, and land reform laws have historically discouraged it. The Centre has therefore asked States to devise procedures for enrolling cultivators, administered by agriculture departments solely for delivering benefits and kept separate from revenue records. About seven to eight States, including Andhra Pradesh, Assam, Telangana, Uttar Pradesh and Chhattisgarh, have issued standard operating procedures, mostly requiring the landowner to approve the cultivator electronically for up to three seasons. Bihar has proposed approval by the panchayat instead, since outdated land records often make owner consent impractical, though this awaits State Cabinet approval. As a result, only a few thousand cultivators have been registered and tenant coverage remains below 1 per cent.

As a workaround, the Farmer Registry allows a landowner to authorise another person, using that person's Aadhaar number and name and without declaring them a tenant, to book fertiliser or sell produce at MSP on the owner's behalf. Madhya Pradesh uses this feature in e-Vikas. The route avoids owners' fear that a recorded tenancy could weaken their title, but it still depends on the owner's willingness. Maharashtra, Madhya Pradesh, Uttar Pradesh and Uttarakhand have enacted laws permitting tenancy, in addition to Andhra Pradesh and Telangana, but these too generally require the owner's consent, which owners remain reluctant to give.

Andhra Pradesh provides a useful institutional example. Its Crop Cultivator Rights Card (CCRC) formally recognises tenant cultivators through an agreement between the landowner and cultivator, countersigned by the Village Revenue Officer (Government of Andhra Pradesh, 2019). The CCRC gives the tenant rights over the crop for 11 months and enables access to crop credit and government support, including input subsidies, crop insurance and procurement, while the underlying land ownership remains with the landowner. This separation of ownership rights from cultivation rights offers an important lesson for fertiliser reform: a targeted system needs to identify not only who owns the land, but who is cultivating the crop and therefore using the subsidised input.

The inclusion challenge extends beyond formal tenancy. Women cultivators, oral tenants, sharecroppers and other cultivators whose farming activity is not reflected in formal land records can also fall between administrative databases. The issue is therefore not simply one of expanding the number of Farmer IDs, but of ensuring that the right person is attached to the right land, crop and season. For fertiliser targeting, this distinction is critical. A credible future entitlement may need to be built around cultivator + parcel + crop + cultivated area + season, rather than around land ownership alone.

The policy implication is clear: AgriStack should evolve from a land-linked farmer identity system into a cultivator-aware agricultural identity system. State-level mechanisms such as Andhra Pradesh's CCRC demonstrate how cultivation rights can be formally recognised without altering land titles.

3. Framework for Fertiliser Sale (FFS)

FFS was developed jointly by the Department of Fertilisers (DoF) and the Department of Agriculture and Farmers Welfare (DoA&FW), marks the next step in digitalising fertiliser distribution. It builds on the existing Integrated Fertiliser Management System (iFMS) and Aadhaar-based Point of Sale (PoS) infrastructure, which covers over 14 crore Aadhaar-linked buyers, 2.5 lakh retailers and around 7 crore tonnes of annual fertiliser sales transactions (PIB, 2026). FFS adds a farmer-, land- and crop-linked booking and verification layer to this established system, enabling fertiliser purchases to be assessed against recommended requirements rather than monitored only as retail transactions.

Under FFS, farmers can book fertiliser through a mobile application or with assistance at a CSC or Primary Agricultural Cooperative Society (PACS), using their Farmer ID or Aadhaar number, selecting a land parcel and declaring the intended crop. The system calculates the fertiliser requirement based on the General Fertiliser Recommendation (GFR) for the crop and area, subject to the limits configured by the State. Farmers can then select nearby retailers based on available stock and distance and receive a QR code or token for collection. The token is scanned at the retailer's PoS device, and the sale is completed through the existing Aadhaar-based biometric authentication process. The system also supports booking and purchase tracking, allowing actual sales to be compared with the farmer's assessed requirement. The underlying iFMS–PoS infrastructure remains in place, with FFS providing the additional booking and verification layer.

Importantly, FFS is configurable rather than a uniform national fertiliser-allocation rule. States/UTs can activate and tailor several controls: (i) Force GFR, which caps purchases at the farmer's GFR entitlement while allowing a lower quantity; (ii) bag-wise limits, including maximum bags per hectare or per farmer, with or without a link to GFR; (iii) product-wise restrictions, allowing different ceilings for urea, DAP and other fertilisers; (iv) rebooking controls, which specify the minimum interval between bookings and the maximum number of repeat bookings; and (v) approval of land added under Tier 2 and Tier 3, requiring designated-officer approval before fertiliser can be requested against that land. Force GFR is enabled in Andhra Pradesh, Karnataka, Meghalaya, Telangana, Uttar Pradesh and West Bengal. Product-wise restrictions have been configured in Andhra Pradesh, Chhattisgarh, Karnataka, Maharashtra, Meghalaya, Odisha, Rajasthan, Telangana and Uttar Pradesh. The Tier 2 and Tier 3 land-approval workflow is currently reported only in Telangana, while bag limits and rebooking rules can be configured according to State/UT requirements. Where specific product-wise restrictions have not been configured, a default ceiling of 50 bags per farmer per month on a single piece of land is followed. These state-specific settings matter because the permissible quantity and booking conditions can vary across jurisdictions; FFS does not necessarily impose the same purchase ceiling on every farmer or product.

FFS is designed to accommodate farmers who are not yet fully registered in AgriStack through a three-tier structure. Tier 1 covers farmers whose registration and land details can be retrieved from AgriStack; Tier 2 covers farmers whose land is in their name but who are not yet registered, subject to verification against State land records; and Tier 3 accommodates cultivators whose land is not recorded in their own name, including tenants and sharecroppers, through self-declared details. This tiered approach broadens access, although the extent to which a transaction can be linked to verified land and the actual cultivator varies by State. The additional approval workflow for Tier 2 and Tier 3 land, where enabled, provides a further verification layer.

Early results from Kharif 2026 indicate that in the pilot districts the number of buyers increased from 44.55 lakh to 46.97 lakh, while fertiliser sales declined from 18.30 lakh tonnes to 13.35 lakh tonnes. This implies a substantial decline in average purchases per buyer, with estimated savings of approximately ₹1,470 crore. Around 77 per cent of buyers reportedly had a digital Farmer ID, while about 15 per cent were tenant farmers (The Hindu Businessline, 2026). These figures should be treated as preliminary administrative estimates rather than independently evaluated impacts: the decline in sales and its implications for fertiliser use, crop productivity and farmer access require further assessment. More broadly, FFS creates the potential to analyse fertiliser use by crop, landholding and hectare, but its effectiveness will depend on reliable land and crop data, appropriate state-level configuration, inclusion of tenant cultivators and careful evaluation of outcomes.

4. How States are Digitising Fertiliser Distribution

States are moving towards a common objective: linking fertiliser sales to verified farmer identities, land parcels and crops, although their starting points and implementation approaches differ. Haryana was an early mover, integrating its Meri Fasal Mera Byora (MFMB) database with the national Integrated Fertilizer Management System (iFMS). This created a mechanism to match fertiliser purchases with farmer records, while also highlighting the importance of complete, accurate and regularly updated land and crop data. Madhya Pradesh developed its own AgriStack-linked e-Vikas platform, while other states are adopting the Centre's FFS. Rajasthan began implementing FFS in selected districts, with further expansion planned, although the process has been suspended perhaps due to local elections. Bihar extended Farmer ID-based fertiliser sales from two pilot districts to five additional districts in August 2026. These developments indicate a gradual shift towards linking fertiliser distribution with digital farmer and land records.

Telangana shows the direction of travel. It first built its own booking app, in which farmers declared their crop and area before booking urea, and tenants could register once the owner confirmed by OTP. In Kharif 2026, 33.39 lakh farmers registered on the state app, while 37.48 lakh QR codes were generated through FFS. From September 2026 the state replaced its app

with FFS. This suggests that states with their own systems are being drawn into a common national framework.

The policy lesson is that digitisation is a necessary but insufficient condition for effective fertiliser targeting. FFS and state-level platforms can improve traceability, advance booking and the monitoring of distribution, but their effectiveness depends on reliable land and crop records, workable arrangements for tenant farmers, accessible booking mechanisms and accurate, real-time stock information. The next step is to build on this digital foundation by progressively incorporating soil-test information and crop-specific nutrient requirements into fertiliser recommendations and allocation. This would help move the system beyond controlling who can purchase fertiliser and how much they can buy towards ensuring that fertiliser is supplied and used in line with agronomic need.

5. Case Study: Madhya Pradesh's e-Vikas

Madhya Pradesh's Vitran evam Krishi Urvarak Aapurti Samadhan (e-Vikas) system represents an attempt to move fertiliser distribution from a largely manual, queue-based process towards a digitally authenticated, land- and crop-linked allocation system. The reform was introduced against a persistent problem of peak-season shortages, uneven distribution, long queues and limited visibility over fertiliser stocks and farmer demand. The system seeks to improve transparency and efficiency in fertiliser distribution while enabling more targeted allocation based on verified farmer, land and crop information. e-Vikas also sits within a wider recalibration of Madhya Pradesh's agricultural budgetary support. The Centre and the State Government together spent an estimated INR 1.11 lakh crore a year on agrifood support in Madhya Pradesh in TE 2024, with roughly a fifth of that working against sustainability objectives and concentrated in fertiliser and power subsidies (Singh et al., 2025). The state's own diversification schemes, the MP Millet Mission, the Demand-based Agriculture Diversification Scheme and One District One Product Initiative, already work against that gap. e-Vikas's ability to record the crop actually booked against a fertiliser purchase gives those schemes a delivery mechanism: differentiated fertiliser entitlements by crop, rather than a single quantity ceiling applied regardless of what is sown.

5.1 e-Vikas Architecture

Under the earlier system, farmers had to visit retail outlets or PACS, submit documents, undergo manual verification and often wait in long queues during periods of peak demand. Fragmented farmer and land records also limited the ability of the administration to monitor distribution and match supplies with farmers' requirements. e-Vikas seeks to address these gaps by integrating farmer identity, land records, crop information, fertiliser recommendations, retailers and transaction authentication into a common digital workflow. The system was initially piloted in three districts, viz. Jabalpur, Shajapur and Vidisha, in Rabi 2025–26 and subsequently expanded state-wide from 1 April 2026. Under the system,

farmers authenticate themselves using their Aadhaar/Farmer ID (from AgriStack), after which they can add or claim land details and select the crop to be cultivated. Based on the selected crop and the applicable GFR, the system allows the farmer to select fertiliser products and quantities, choose a retailer or PMKSK, provide receiver details and generate a QR code. At the retail end, the booking is retrieved by scanning the QR code, followed by OTP verification where required, Aadhaar entry and biometric authentication, stock validation and fertiliser-company selection, before the sale is processed and payment confirmed. The architecture therefore creates a traceable digital chain linking farmer identity → landholding → crop → recommended fertiliser requirement → retailer and available stock → authenticated sale.

5.2 Early Evidence

The early administrative figures indicate substantial uptake - 40.90 lakh farmers have registered, 39.37 lakh e-tokens have been generated, 28.37 lakh e-tokens utilised and 13.73 lakh tonnes of fertiliser distributed, along with 77,273 additional fertiliser tokens and more than 1.15 lakh farmers served through exceptional-case mechanisms. (MoA&FW, 2026). These figures should primarily be interpreted as administrative outputs rather than independent evidence of impact, as they do not yet establish whether e-Vikas has reduced fertiliser diversion or changed crop-level fertiliser application at a significant level based on Recommended Doses of Fertilisers (RDFs). There are nevertheless indications of a possible behavioural shift. Also, the crop-wise RDFs currently used by the system, sourced from the Indian Institute of Soil Science (IISS), Bhopal, draw substantially on results from the All India Coordinated Research Projects, much of which reflects older experimental conditions. While these recommendations provide an important scientific benchmark, they may not fully capture changes in crop varieties, yield potential, cropping systems, soil fertility, irrigation and farm management practices. The next generation of the system should therefore move from static, crop-wise RDFs towards dynamically updated, location- and soil-specific recommendations based on contemporary agronomic evidence and periodic soil testing.

5.3 How e-Vikas is different from the Centre's FFS

The difference between Madhya Pradesh's e-Vikas and the Centre's FFS is largely a difference between a State-tailored system and a uniform national template. Both are built on the same logic of booking fertiliser against a verified farmer, land parcel and crop. But e-Vikas adapts that logic to local conditions, while FFS applies one design to every state regardless of its agro-climatic zones or the state of its land records. On the entitlement side, e-Vikas shows only the crops grown in each district, requires approval for crops with higher NPK doses, and lets a farmer book up to 25 per cent above the recommended quantity. FFS, in its current form, shows every crop to every farmer and permits 50 bags a month irrespective of eligibility. On inclusion, e-Vikas offers thirteen registration categories, including tenants (Sikmi), forest-rights and revenue patta holders, legal heirs and joint account holders. It also has a revenue-officer approval step for land claimed without a Farmer ID, which guards against booking

against another farmer's land. FFS has three broad categories and no land-approval step. On delivery, e-Vikas sets token limits by retailer capacity, steers farmers to the nearest retailer, removes non-saleable stock from booking, and allows same-day redemption and cancellation of mistaken tokens. FFS imposes a one-day wait and a three-day auto-cancellation. e-Vikas also has field verification of extra purchases and a trained field cadre of over one lakh staff, against a helpline and a single State coordinator under FFS. The comparison also shows that e-Vikas's advantages depend on prior groundwork. Madhya Pradesh reports fully digitised land records and Farmer ID coverage above target, whereas many States have neither. A uniform framework therefore cannot simply copy e-Vikas's features. The State's lead rests on the readiness of the underlying registries, which AgriStack is still building.

5.4 Operational Challenges

The first operational challenge relates to MRP reporting. The e-Vikas portal currently displays a single MRP for a fertiliser product, whereas the actual products available with retailers can differ in grade or fortification and consequently in price. This creates a mismatch between the price displayed digitally and the price applicable to the product physically available with the retailer.

The second challenge relates to farmer registration and token booking. Although awareness of the token requirement has increased, many farmers continue to depend on retailers or CSCs for registration and token generation. This shifts part of the transaction cost of the digital system onto frontline intermediaries and farmers. Retailers are required to undertake registration and token-related activities in addition to their regular fertiliser-sales responsibilities, while farmers who rely on assisted channels may incur additional service charges. The Government subsequently prescribed a ceiling of ₹15 for CSC-assisted token booking, although implementation of this ceiling has reportedly been uneven

From the retailer's perspective, e-Vikas has also not eliminated the underlying challenge of fertiliser availability during periods of peak demand. Instead, it has added another digital and administrative layer to the existing distribution system. Retailers must manage registration and token generation alongside fertiliser sales and contend with technical interruptions in both the existing iFMS and the e-Vikas platform.

Beyond these operational issues, discussions with states and different stakeholders also pointed to a potential unintended consequence of the e-Vikas model. If the system moves from simply recording transactions towards digitally determining the quantity a farmer can purchase based on RDFs, farmers may perceive these limits as externally imposed restrictions, particularly when their actual fertiliser requirement differs from the digitally determined quantity. This could generate dissatisfaction even where the underlying objective is to encourage more balanced fertiliser use. The policy challenge is therefore to ensure that digital recommendations or limits are perceived as credible, agronomically justified and responsive

to genuine variations in farm-level requirements, rather than as rigid administrative ceilings. The challenge became more visible as the peak fertiliser-demand period approached. The combination of implementation difficulties, delayed demand, inadequate physical availability and additional technical complexity contributed to farmer protests in several districts. In response, the Government temporarily suspended the exclusive online mechanism and moved towards a hybrid mode of distribution, allowing farmers to procure fertiliser through both the e-Vikas system and the earlier PACS-based mechanism. The move to a hybrid system is better understood as a course correction rather than an abandonment of digital reform. The Government has also constituted a review committee to examine the complaints and practical difficulties encountered during implementation and to identify measures for strengthening the system. The response reflects an important lesson for digital agricultural reforms: systems designed around administrative efficiency must also accommodate the realities of farmer access, local institutions and physical supply chains.

5.5 Lessons from e-Vikas

Fertiliser is both a politically sensitive and seasonally critical input. Changes in the way farmers access it therefore affect not only farmers, but also retailers, PACS, cooperative societies, local administrators and other intermediaries. The experience of e-Vikas shows that digital reform cannot be separated from the institutions through which fertiliser is actually distributed. Retailers, PACS, cooperative societies, CSC operators, local officials and farmers require adequate preparation, training and support before and during implementation. Digital processes must also avoid creating additional transaction costs or becoming a barrier to access during periods of peak demand. Most importantly, digital allocation cannot substitute for physical availability. Adequate stocks, reliable digital infrastructure and responsive last-mile support remain necessary conditions for the system to function. Some relatively simple operational changes could reduce these frictions. For example, where fertiliser products differ by grade or fortification and therefore carry different prices, displaying an MRP range or product-specific MRP rather than a single price could improve price transparency and reduce discrepancies between the digital platform and the physical retail point. Similarly, assisted registration and token booking need to be designed so that the cost of digitisation is not disproportionately shifted onto farmers or frontline intermediaries.

6. Conclusion and the Way Forward

• From Digital Transactions to Targeted Fertiliser Support

India already has many of the individual building blocks. Farmer identities are being created under AgriStack; land records are increasingly digitised; the Digital Crop Survey is generating information on crops sown; soil-test information exists through Soil Health Cards and other State systems; and fertiliser transactions are captured through PoS-based systems. States are also developing their own digital applications that connect some of these elements. The

problem is that these datasets have historically been developed for different administrative purposes and remain fragmented, uneven in quality and only partially interoperable. AgriStack provides an opportunity to bring these pieces together. Its significance, therefore, lies in creating a common digital backbone through which farmer, cultivator, land, crop, soil and input information can progressively be connected and reconciled.

The experience of Madhya Pradesh's e-Vikas illustrates both the potential and the limitations of this transition. By linking farmer identification, land, crop selection, fertiliser recommendations, retailer information, stock and transactions, it demonstrates how State-level systems can begin to operationalise a farmer–land–crop–input architecture. At the same time, its implementation experience shows that digital infrastructure cannot by itself resolve problems of physical supply, data quality, farmer access, institutional incentives or the credibility of digitally determined fertiliser requirements. These are precisely the issues that need to be addressed as AgriStack evolves into a broader platform for targeted agricultural support.

- **The Next Generation of Agricultural DPI**

The future opportunity for AgriStack is therefore to move from identity and record creation towards intelligence and entitlement. The next generation should increasingly enable: Who is actually cultivating the parcel? What crop is being grown in the current season? What is the nutrient status of the soil? What fertiliser requirement is agronomically appropriate? What support should the cultivator be entitled to? AgriStack can provide the common architecture for this progression, but it cannot determine the answers to these questions by itself. The quality of the eventual targeting will depend on the accuracy, timeliness and interoperability of the underlying datasets, as well as on the agronomic models used to translate those data into recommendations.

- **Closing the Ownership–Cultivation Gap**

A particularly important gap is between land ownership and actual cultivation. A farmer registry that is primarily anchored to land records can identify who owns a parcel, but this does not necessarily establish who is cultivating it in a particular season. Tenants, sharecroppers, oral lessees and other non-owner cultivators may therefore remain difficult to identify unless States have mechanisms for formally recognising and updating cultivation rights. For targeted fertiliser support, the relevant unit should progressively move from farmer or landowner alone towards cultivator + parcel + crop + cultivated area + season. AgriStack should therefore evolve into a cultivator-aware agricultural DPI, with States developing appropriate mechanisms for recording and verifying cultivation rights without requiring changes in land ownership. The experience of Andhra Pradesh's Crop Cultivator Rights Card provides one institutional reference for this approach. It demonstrates that cultivation rights can be formally recognised for purposes of accessing agricultural benefits

without transferring the underlying land title. Such State-level innovations can inform the design of a more inclusive national digital architecture.

- **From Crop-Wise Recommendations to Nutrient Intelligence**

A second priority is to strengthen the agronomic intelligence layer. Digital infrastructure can only improve fertiliser use if the recommendation embedded within the system is itself credible. Current State systems such as e-Vikas demonstrate the value of linking fertiliser transactions with crop-wise Recommended Doses of Fertiliser (RDFs). But static crop-wise recommendations represent only an intermediate step. Fertiliser requirements can vary with soil nutrient status, crop variety, cultivated area, previous crop, irrigation, yield objectives and local production conditions. AgriStack can provide the data architecture for this evolution by enabling relevant farmer, parcel, crop and soil information to be brought together. Bharat-VISTAAR and other digital advisory systems could complement this architecture by strengthening the decision-support layer. State fertiliser platforms can then potentially translate these recommendations into booking, allocation or support mechanisms. The policy objective should not be to use DPI simply to impose tighter quantitative restrictions on fertiliser purchases. Rather, it should be to make the basis for any entitlement or recommendation increasingly evidence-based, transparent and responsive to actual farm conditions.

- **Creating the Foundations for a Future Fertiliser DCT**

A DCT mechanism requires more than the ability to transfer money to a bank account. It requires a credible system for determining who should receive support, for what purpose, and how much. In the case of fertiliser, this is particularly complex because nutrient requirements differ across crops, soils, regions and farm sizes. AgriStack could potentially provide the information architecture for such a system, but several foundations would need to be established first. First, entitlement must be based on a credible assessment of requirement. A uniform national fertiliser entitlement is unlikely to reflect India's considerable agronomic diversity. Future support would need to draw increasingly on State- or district-specific recommendations and, where reliable data permit, parcel-level information. Second, the system must identify the actual cultivator. Fertiliser support should not be determined solely by land ownership where the owner and cultivator are different. Third, entitlements must be dynamic and season-specific. Crop choice, cultivated area and farming conditions can change from one season to another. The digital system should therefore be capable of updating the entitlement rather than treating it as a fixed annual allocation. Fourth, strong safeguards are required. Data quality, consent, privacy, interoperability, grievance redressal and mechanisms to correct erroneous land or crop records will be essential. A highly targeted system that excludes genuine cultivators because of incomplete or inaccurate digital records would defeat the purpose of the reform. Only after these foundations are sufficiently robust should India consider whether and how a farmer-

facing DCT could complement or eventually replace elements of the existing subsidy architecture.

Two near-term steps would help build these foundations. First, Farmer ID could progressively be made a requirement for MSP procurement, crop insurance and subsidised fertiliser, as it already is for new PM-KISAN enrolments and crop insurance. This would raise demand for registration and land-record correction, with benefits extending well beyond fertiliser. Second, rather than a single prescription, policymakers could be offered a sequenced menu of options: cultivator-aware registries and advisory-linked quantity norms in the short term, and nutrient-based pricing of urea and a gradual shift from price subsidy to direct support in the medium to long term.

The immediate priority should be to build and validate Agristack- the foundational digital infrastructure through practical use cases, rather than wait for the entire system to be perfected before pursuing reform. Targeted fertiliser distribution can itself help build the foundation by linking more Farmer IDs getting created and left out lands getting linked, crop-sown data and agronomic requirements, while identifying gaps in coverage and addressing the exclusion of tenant farmers and sharecroppers. State-level initiatives such as Madhya Pradesh's e-Vikas offer an opportunity to test and refine these. As these systems become more reliable, they can provide a stronger basis for determining whether fertiliser support can be targeted more precisely and, eventually, whether DCT can be designed around a credible, transparent and farmer-responsive entitlement. This phased approach allows the use case and the underlying infrastructure to evolve together, with implementation experience informing subsequent improvements.

References

- Department of Agriculture & Farmers Welfare. (2021, June 1).** Consultation paper on India Digital Ecosystem of Agriculture (IDEA). Ministry of Agriculture & Farmers Welfare.
- Department of Agriculture & Farmers Welfare. (2021–22).** Annual report 2021–22. Ministry of Agriculture & Farmers Welfare.
- Directorate of Farmers Welfare and Agricultural Development, Government of Madhya Pradesh. (2026).** e-Vikas. <https://evikas.mpkrishi.mp.gov.in/>
- Down To Earth. (2021, June 21).** Agristack: The new digital push in agriculture raises serious concerns. <https://www.downtoearth.org.in/agriculture/agristack-the-new-digital-push-in-agriculture-raises-serious-concerns-77613>
- Government of Andhra Pradesh. (2019).** The Andhra Pradesh Crop Cultivator Rights Act, 2019 (Act No. 30 of 2019). <https://faolex.fao.org/docs/pdf/IND216323.pdf>
- Government of Karnataka. (2026).** FRUITS. <https://fruits.karnataka.gov.in/>
- Government of Maharashtra. (2026).** MahaDBT farmer portal. <https://mahadbt.maharashtra.gov.in/Farmer/AgriLogin/AgriLogin>
- Government of Odisha. (2026).** Krushak Odisha user manual. https://krushak.odisha.gov.in/assets/files/KO%20-%20User%20Manual_final.pdf
- Government of Rajasthan. (2026).** Rajkisan portal. <https://rajkisan.rajasthan.gov.in/>
- Ministry of Agriculture & Farmers Welfare. (2026a).** AgriStack. <https://agristack.gov.in>
- Ministry of Agriculture & Farmers Welfare. (2026b, August 17).** e-Vikas: Fertilizer distribution system [Case study]. AgriStack. <https://agristack.gov.in/#/caseStudies>
- Ministry of Chemicals and Fertilizers. (2026, July 24).** Lok Sabha Starred Question No. 87.
- Ministry of Finance. (2016).** Economic Survey 2015–16, Volume 1. Government of India. <https://www.indiabudget.gov.in/budget2016-2017/es2015-16/echapvol1-09.pdf>
- Press Information Bureau, (2025, April, 01).** Digital identities to farmers. <https://www.pib.gov.in/PressReleasePage.aspx?PRID=2117390&lang=1®=3>
- Press Information Bureau. (2021, April 14).** Union Ministry of Agriculture signs MoU with Microsoft for a pilot project in 100 villages of 6 states. <https://www.pib.gov.in/PressReleasePage.aspx?PRID=1711877>

Press Information Bureau. (2023, May 9). Department of Fertilizers takes multi-pronged measures to stop diversion and black marketing of fertilizers in the country. Ministry of Chemicals and Fertilizers.

<https://www.pib.gov.in/PressReleasePage.aspx?PRID=1922824&lang=2®=48>

Press Information Bureau. (2026a, March 24). AgriStack's Farmers Registry crosses 9.20 crore Farmer IDs nationwide. Ministry of Agriculture & Farmers Welfare.

<https://www.pib.gov.in/PressReleasePage.aspx?PRID=2244626&lang=1®=3>

Press Information Bureau. (2026b, February 10). Outcome of digital agriculture initiatives. Ministry of Agriculture & Farmers Welfare.

<https://www.pib.gov.in/PressReleasePage.aspx?PRID=2225978&lang=1®=1>

Press Information Bureau. (2026c, March 30). Over 41 lakh applications amounting to ₹1,06,306 crore processed through Jan Samarth portal.

Press Information Bureau. (2026d, July 18). Department of Land Resources explores the convergence of digital public infrastructure for land and credit with RBI Innovation Hub.

Press Information Bureau. (2026e, August 30). Integrated Fertilizer Management System (iFMS) enters a new phase of data-driven fertilizer management.

<https://www.pib.gov.in/PressReleaseDetailm.aspx?PRID=2304690&lang=1®=3>

Singh, R., Thangaraj, P., Gulati, A., & Pant, R. (2025). Repurposing agrifood policies for biodiversity. New Delhi: Indian Council for Research on International Economic Relations (ICRIER)

Standing Committee on Chemicals and Fertilizers. (2025). Sixth report. Lok Sabha Secretariat.

The Hindu BusinessLine. (2026, October 5). Centre's pilot fertiliser sales via app in 22 district yields ₹1,500 cr savings. <https://www.thehindubusinessline.com/economy/agri-business/centres-pilot-fertiliser-sales-via-app-in-22-district-yields-1500-cr-savings/article71544582.ece>



Indian Council for Research on International Economic Relations (ICRIER)

Our Offices:

4th Floor, Core 6A, India Habitat Centre, Lodhi Road, New Delhi-110003
The Isher Building, Plot No. 16-17, Pushp Vihar, Institutional Area, Sector 6, New Delhi-110017
O: +91 11 43112400, **F:** +91 11 24620180 | **W:** www.icrier.org | **E:** info@icrier.res.in