

DBT in fertilizer: 4th round of concurrent evaluation—A national study

27 March 2019



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Methodology



Project background

- The objective of this project was to identify the issues and challenges pertaining to the implementation of DBT at the national level. The project would provide the government with evidence of successes and challenges, which can aid policy-level decision making and provide actionable solutions to improve implementation
- On a request from NITI Aayog, MSC conducted a nationally representative study on DBT in fertilizer. This was fourth round of study—the first one was in September, 2016 in two districts in Andhra Pradesh, where the pilot project was launched. [The second](#) was in January, 2017 in six districts, where the pilot project was expanded. [The third](#) was in July to September, 2017 in 14 pilot districts.

Evaluation	Study duration	Number of districts assessed
Round I	September, 2016	Two districts
Round II	January, 2017	Six districts including the two districts from Round I
Round III	July to September, 2017	14 districts including the six districts from Round II
Round IV	July to September, 2018	14 pilot districts (same as in Round III)
		National representative study

Himachal Pradesh

Retailer - 74
Farmer - 643

Punjab

Retailer - 69
Farmer - 646

Haryana

Retailer - 70
Farmer - 617

Uttar Pradesh

Retailer - 69
Farmer - 604

Rajasthan

Retailer - 69
Farmer - 645

Gujarat

Retailer - 68
Farmer - 629

Madhya Pradesh

Retailer - 69
Farmer - 605

Maharashtra

Retailer - 72
Farmer - 627

Tamil Nadu

Retailer - 70
Farmer - 628

Bihar

Retailer - 69
Farmer - 610

Assam

Retailer - 70
Farmer - 633

Manipur

Retailer - 29
Farmer - 613

Tripura

Retailer - 34
Farmer - 637

West Bengal

Retailer - 69
Farmer - 638

Jharkhand

Retailer - 70
Farmer - 604

Chhattisgarh

Retailer - 69
Farmer - 621

Telangana

Retailer - 69
Farmer - 616

Andhra Pradesh

Retailer - 73
Farmer - 665

Mixed-method research 18 states and 54 districts

Quantitative
survey

Qualitative
interviews

 **11,281**
Farmers

 **140**
Farmers

 **1,182**
Retailers

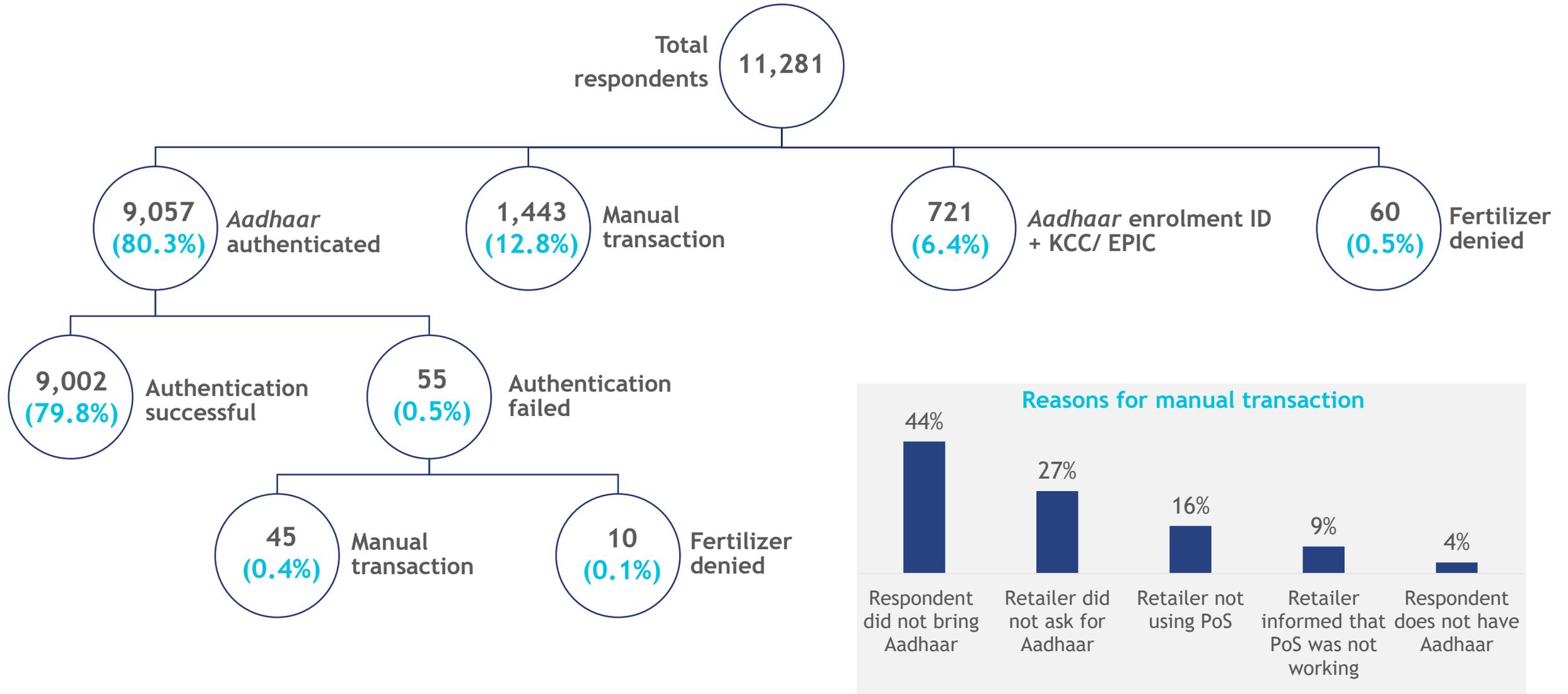
 **74**
Retailers

- Also held discussions with fertilizer Association of India (FAI) and fertilizer companies
- Conducted qualitative in-depth discussion with LFS companies, district agriculture officers, block agriculture officers, and district/ state coordinators

Transaction experience



Retailers adjust about 13% transactions as compared to 21% in the last round

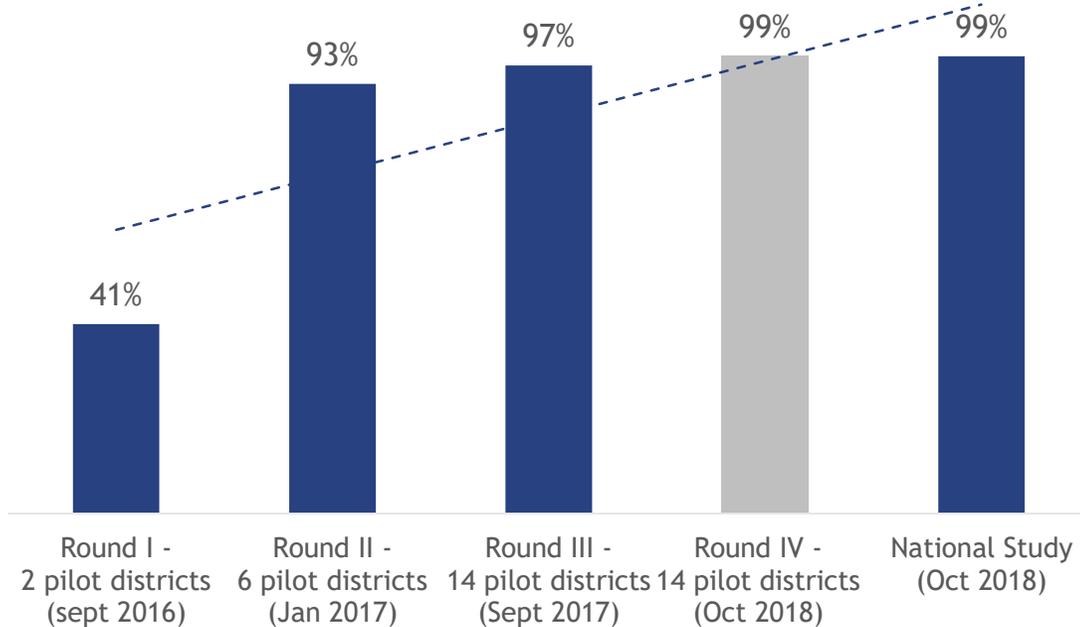


Aadhaar authentication rate has significantly improved over the four rounds of study

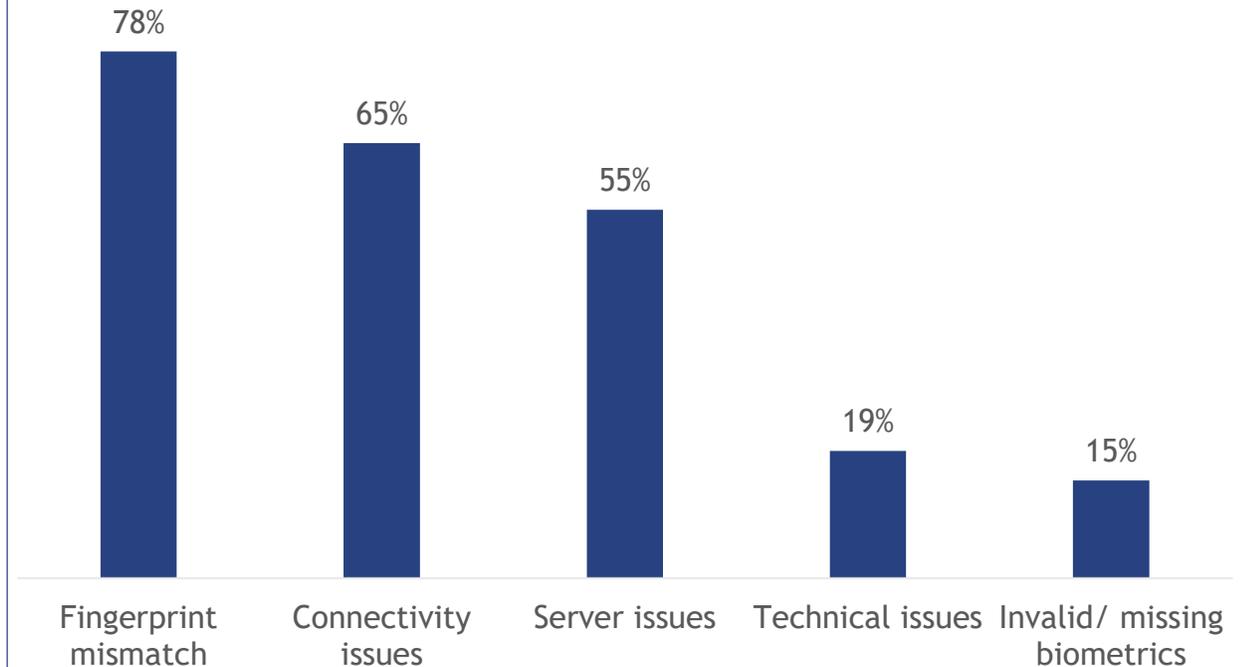
80.3% transactions were attempted through *Aadhaar* (99.4% were successful).

Retailers face issues related to biometric failure, connectivity, and server downtime

Authentication success rate in the first three attempts

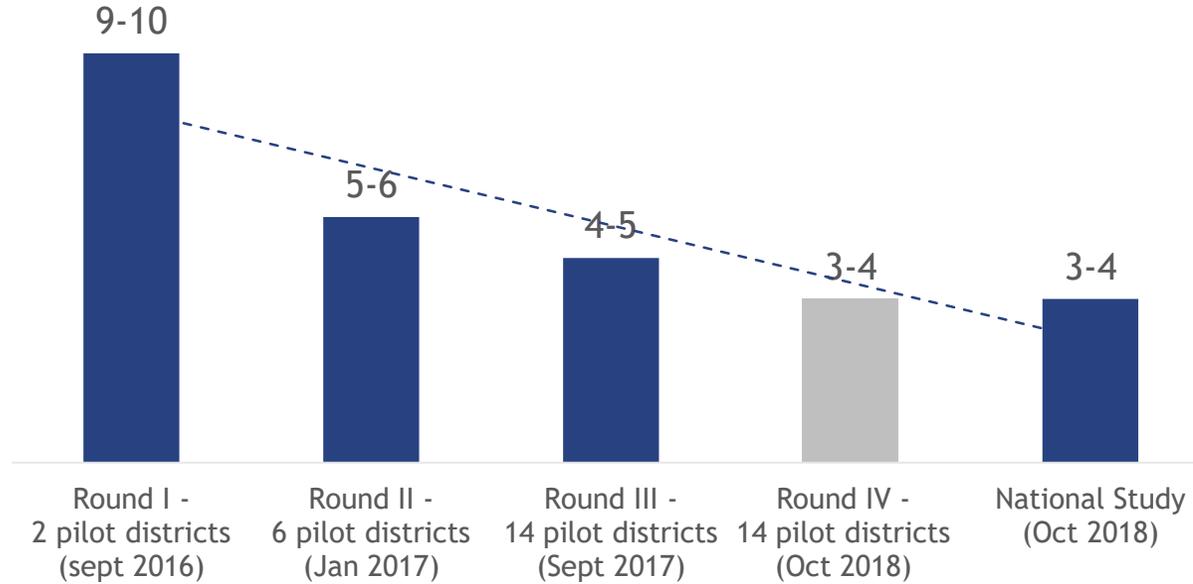


Reasons for authentication failure

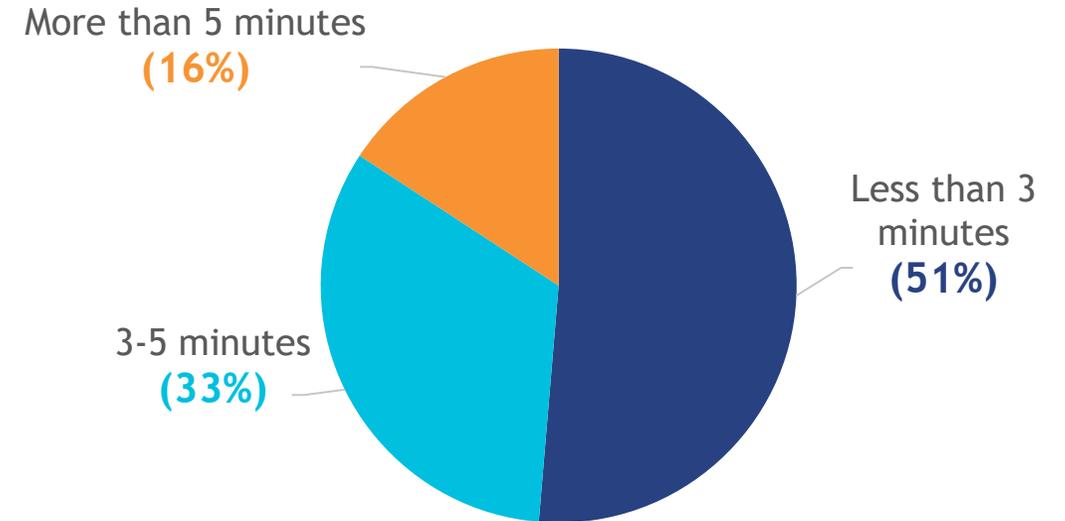


Transaction time has improved significantly

Average transaction time (minutes)



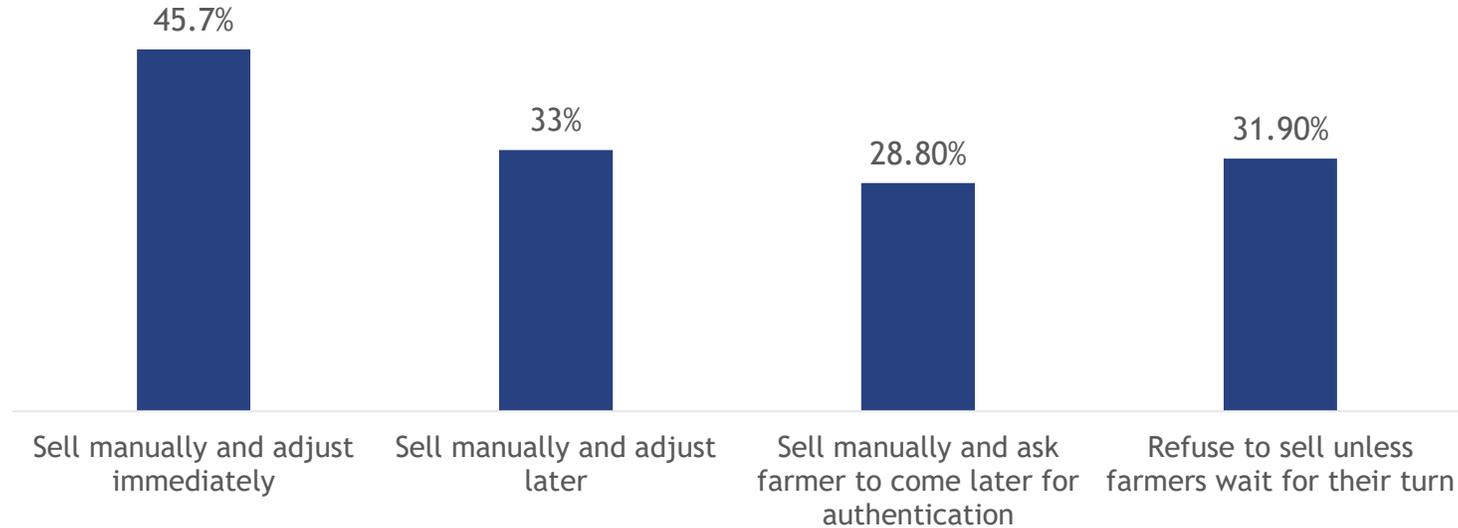
Percentage-wise break-up of transaction completion time for the national study



- The department has increased the server capacity over the pilot period to handle the increasing number of transactions. This has improved transaction time.
- In Assam, a transaction time amounting to 7-8 minutes is for only 0.3% of *Aadhaar*-initiated transactions.
- In Assam, 89% transactions are through *Aadhaar* EID + voter ID for which the average transaction time is 5 minutes.

60% retailers reported that they face issues while serving customers during the peak season

Managing sales during the peak season



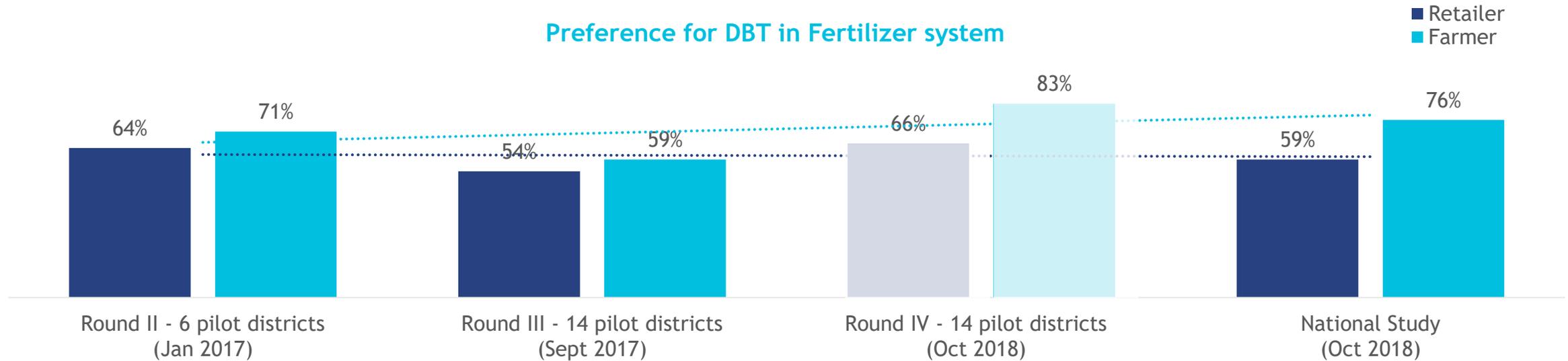
On an average, retailers use one PoS to manage sales. They do not want to use more than one PoS because of the cost of PoS and the additional manpower needed. Hence, retailers adjust transactions to manage the high customer footfall during peak sale seasons.

Perception and awareness



The preference for an *Aadhaar*-based system has been increasing among framers but it has been constant among retailers

Preference for DBT in Fertilizer system



Farmers prefer DBT in fertilizer because it

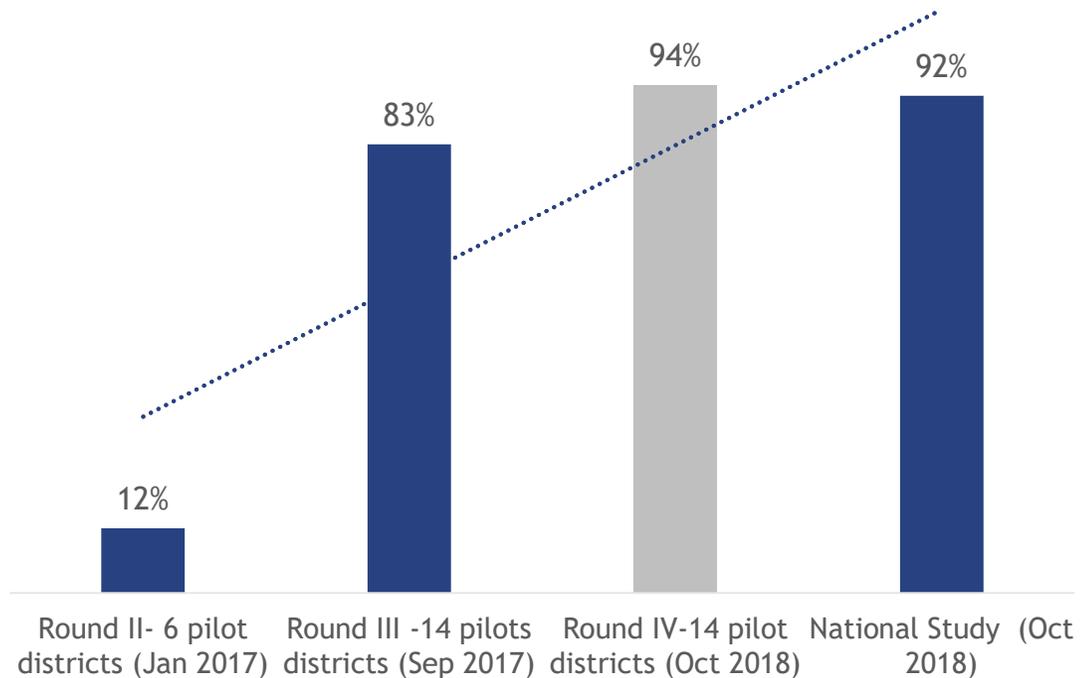
- Tracks the actual buyer
- Reduces black marketing and diversion
- Reduces overcharging by retailers
- Induces awareness of the quantity and price of fertilizer

Retailers prefer DBT in fertilizer because it

- Improves real-time record keeping
- Identifies customers
- Reduces diversion and black marketing
- Reduces paperwork
- Ensures adequate supply of fertilizer

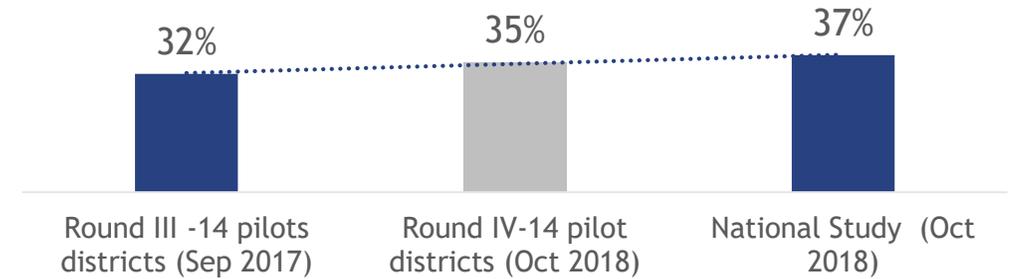
Awareness of the operational aspects of DBT in fertilizer has been on the rise. Yet awareness of subsidy remains low

Awareness of the need for Aadhaar to purchase fertilizer

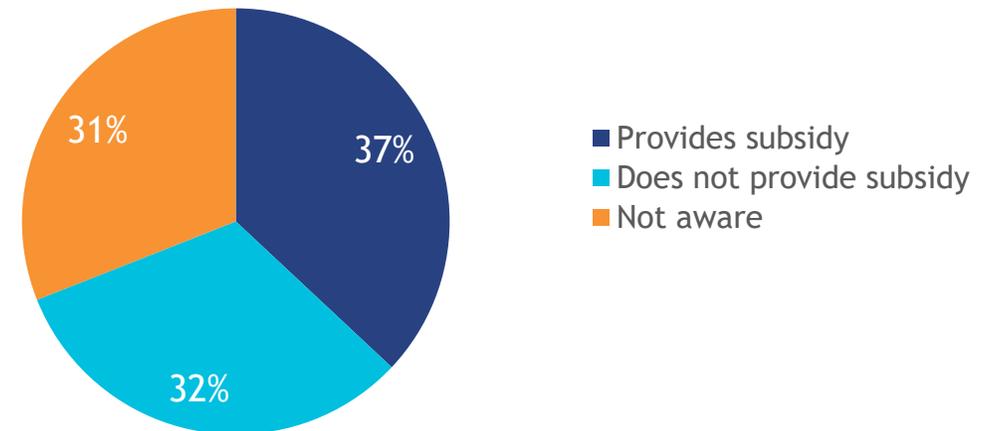


89% farmers were informed by retailers or cooperatives about need for Aadhaar to buy fertilizer. About 7% got to know from official channels, through in-person means or through mass communication either or from both sources.

Awareness of urea subsidy

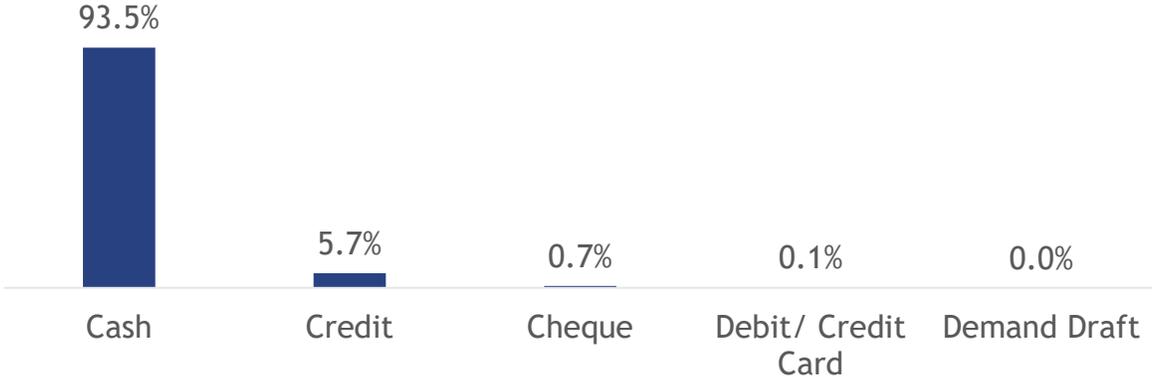


Awareness of urea subsidy provided by the government in the national study

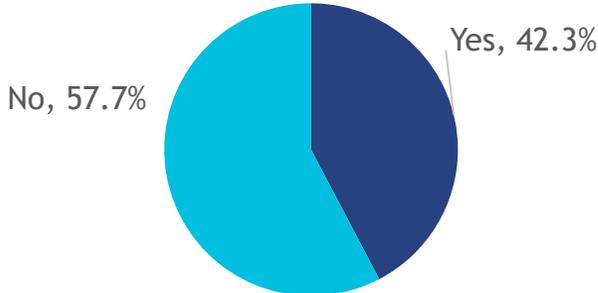


A majority of farmers buy fertilizer in cash but are willing to pay through cashless modes

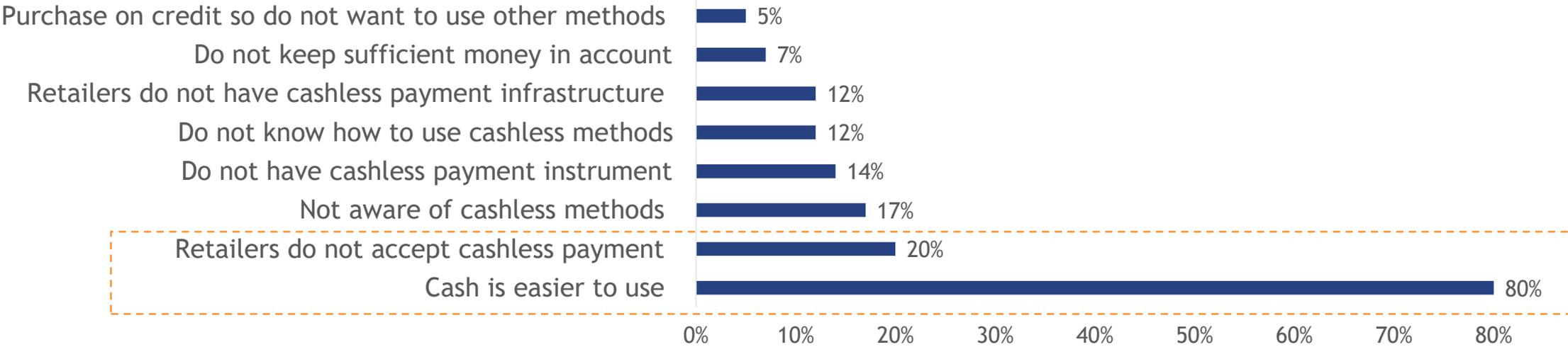
Current payment modes for fertilizer purchase



Preference to pay through cashless mode in the future



Reasons for not preferring cashless modes



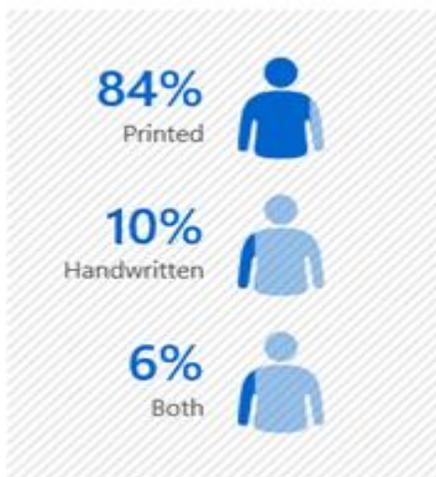
Impact of DBT and other key initiatives



DBT and other initiatives have had a positive impact on farmers

94% farmers get the transaction receipt against 85% in the last round

Types of receipt



99% farmers reported buying urea at MRP against 98% in the last round.

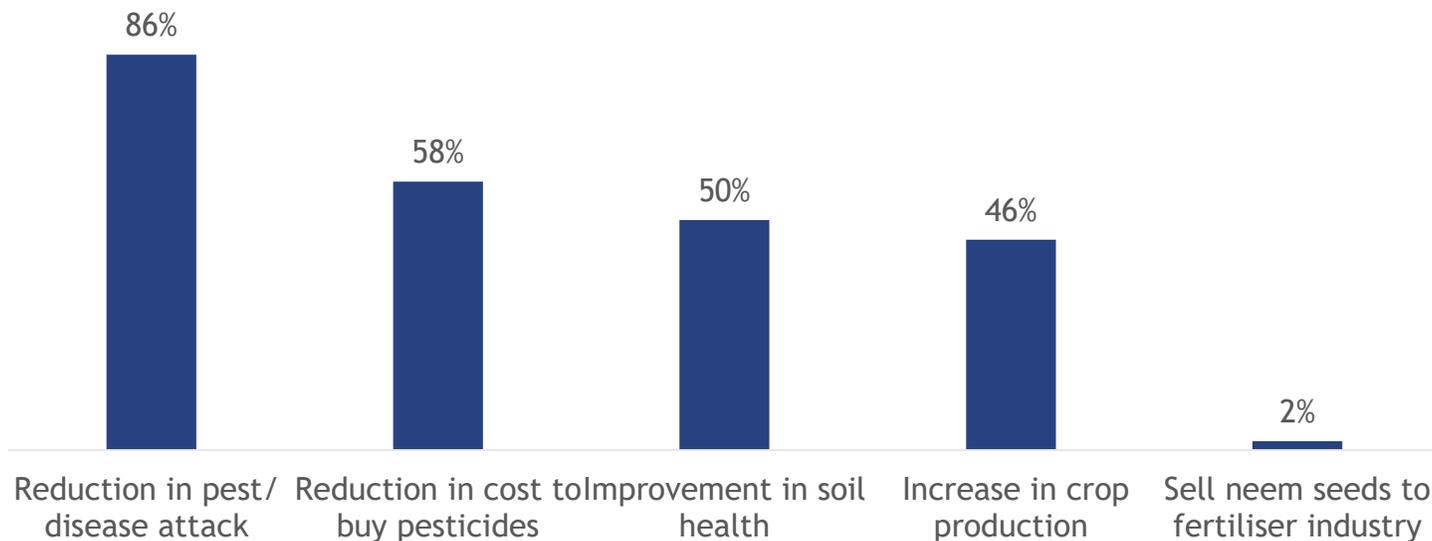
In Manipur, about 18% and in Assam 5% are overcharged.

Farmers perceive neem coating to be a positive initiative

76.5% Farmers are aware that urea comes with a coating of neem extract.

94.9% Farmers perceive that neem-coated urea is beneficial for crops.

Perceived benefits of neem-coated urea



Initiatives, such as reducing the size of the urea bag and increased retailer margin seems to have had a positive impact

Reducing the weight of urea bag by 5 kg may help in the optimization of urea use

We observed that:

- Most small farmers buy urea not by weight in kg but by number of bags.
- Large farmers, who have higher requirement of urea, purchase additional bags.

Retailers are realizing higher margins than before but a few issues still exist

However, the extent of margins realized varies from one retailer to another. The margin that is passed onto the retailers depend on the wholesalers. For instance:

- In Himachal Pradesh, IFFCO passes up to INR 16 to the cooperatives whereas HIMFED passes INR 6-8/
- Private wholesalers pass INR 6-10 to retailers. This depends on the availability of wholesalers in a particular market, demand and supply, and wholesaler and retailer business relationship.

Compliance

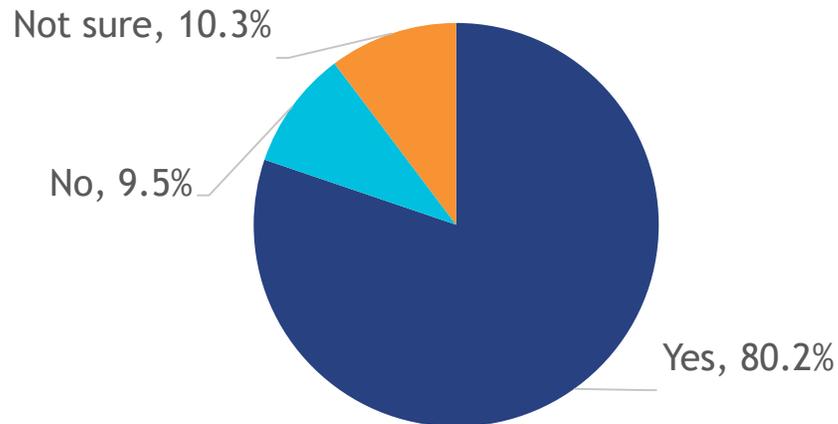


MSC 

Delays in receiving the dispatch ID and challenges in updating PoS software also lead to adjusted transactions

- 45.4% of farmers receive a dispatch ID and physical stock at same time and 15.2% receive the dispatch ID first. In both cases, retailers are able to update the stock in PoS and sell fertilizer.
- 39.5% receive physical stock first. In such cases, the retailers sell fertilizer manually without *Aadhaar* authentication.

PoS updated to latest version 2.4.6



Who updated the PoS?

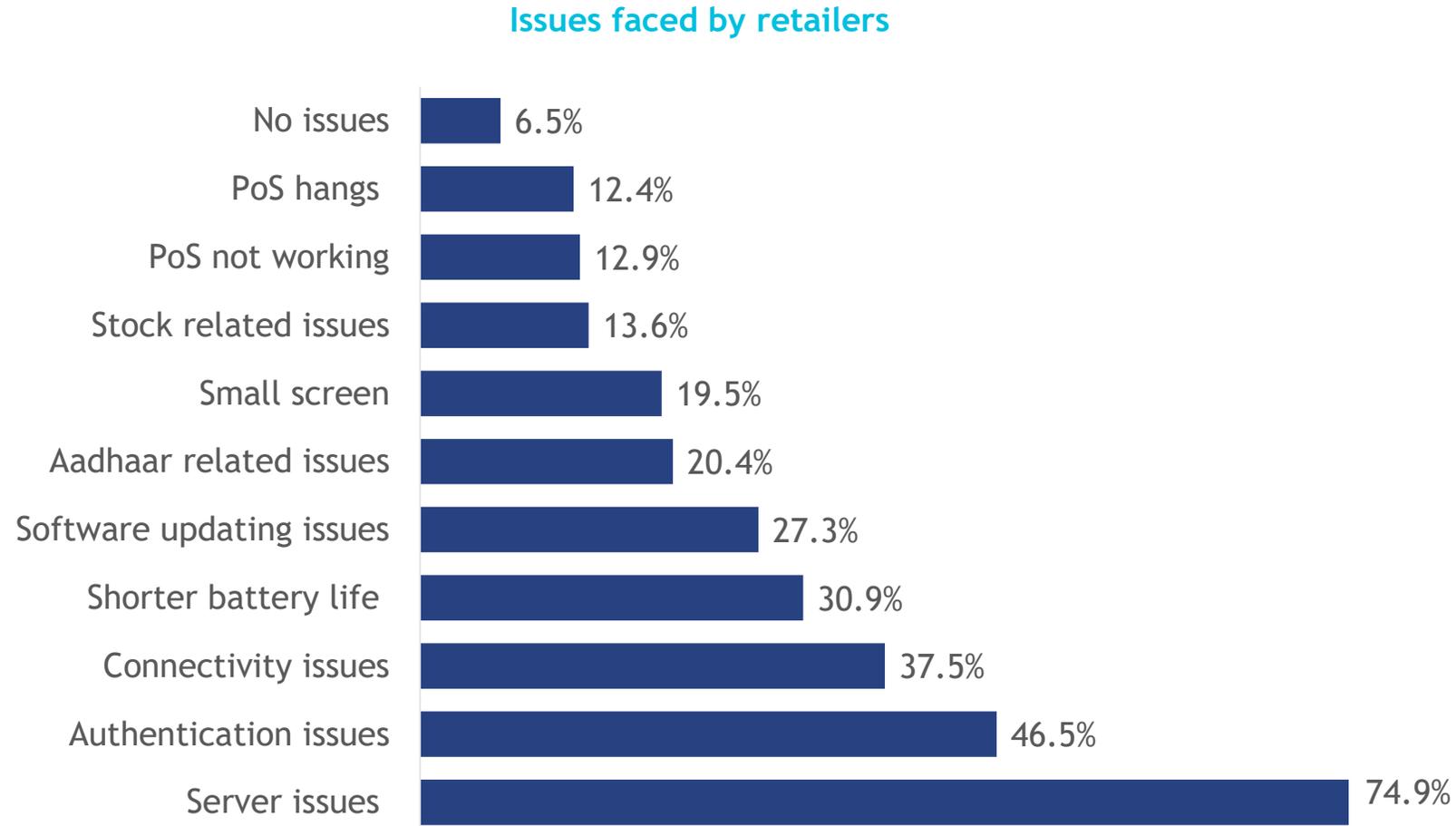


Frequent updates without prior communication: Retailers informed that the PoS updates are too frequent, which hampers their work. Moreover, they do not get prior information about the launch date of a new version.

Training and grievance resolution



90% of the retailers have taken part at least two training sessions. They feel that the training was helpful but they still face technology-related issues



Retailers who have Analogics devices face hardware-related issues, such as short battery life (1-2 hours), hanging of PoS, less space between the keys, works on 2G only, etc.

Despite a dedicated toll-free number, retailers prefer other modes of GRM

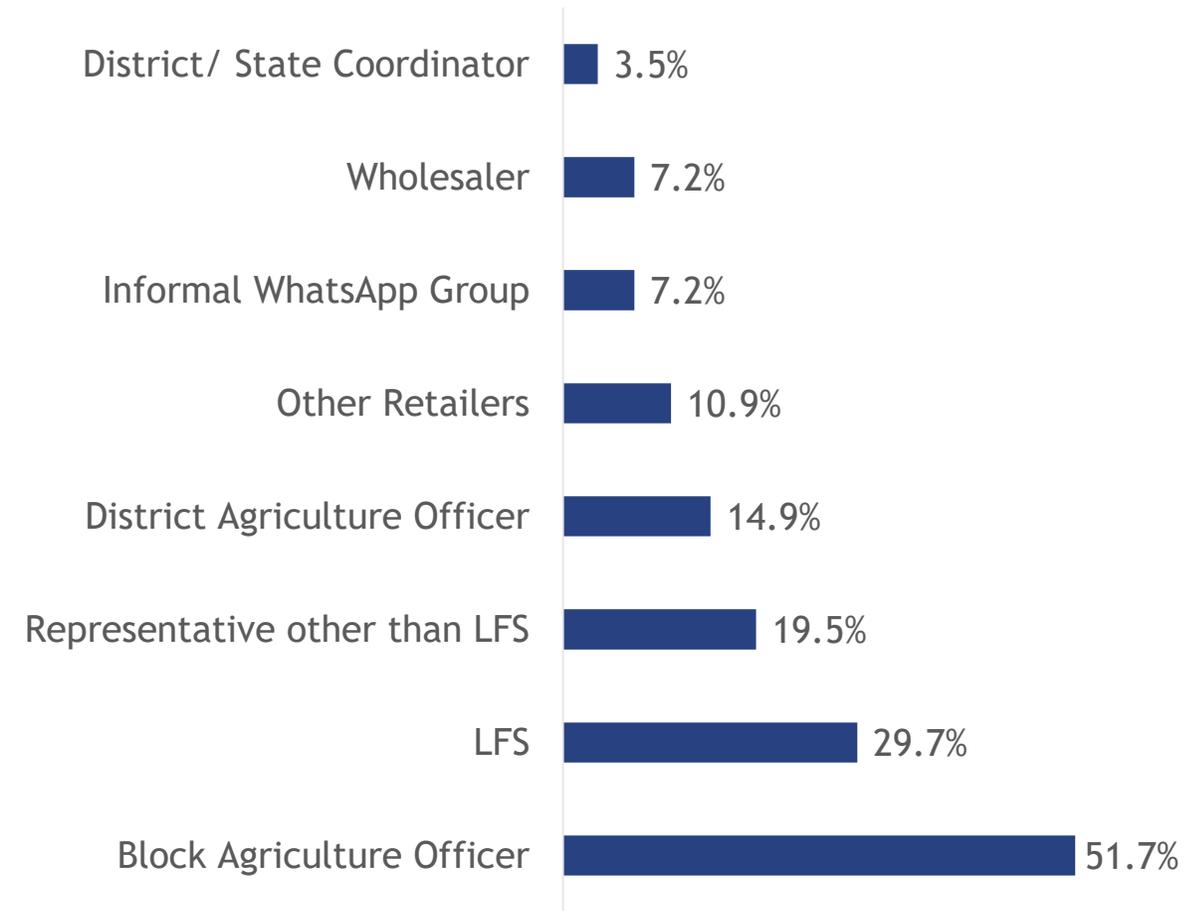
Toll-free

- **38.3%** retailers are aware of the toll-free helpline number 1800115501 for grievance resolution.
- **43%** of these retailers have registered their grievances through the toll-free number.
- **69.3%** of these retailers are satisfied with the grievance resolution support provided through the toll-free number.

Other modes of GRM

- **93%** retailers have used at least one or the other grievance resolution method.
- **79.1%** of these retailers are satisfied with the grievance resolution support provided through the other methods.

Other Modes of GRM





Recommendations and action taken by DoF

Technological recommendations (hardware and software)

Recommendation	Action taken by the DoF
<p>Develop a device-agnostic application Retailers face hardware issues and have concerns about replacement of PoS after its usable period ends.</p>	<p>Device-agnostic application (desktop and Android) has been developed and being tested.</p>
<p>Enable multilingual transaction receipt Farmers cannot read the content on the transaction receipt either because they are illiterate or the receipt is in English.</p>	<p>The department is making changes in the POS application to generate the transaction receipt in local languages.</p>
<p>Allow registration of new “admin” The system does not allow to change the admin more than once in the POS device.</p>	<p>Registration of new “admin” is allowed at cooperative and society retail points.</p>
<p>Enable automatic software updates For PoS application update, the state coordinator and fertilizer retailers do not receive prior information.</p>	<p>In the latest software update, 175,000 devices have been updated automatically.</p>
<p>Allow weight input in PoS up to three decimal points Due to the 45 kg bag of urea, the conversion of tonnes into kg runs into decimal points (even up to three decimal points).</p>	<p>The software has been updated to allow retailers to enter fertilizer sale up to three decimal points.</p>
<p>Allow reversal of stock Sometimes a wholesaler unintentionally sends stock to a retailer who may have the same name as the intended retailer. Often, the retailers may receive damaged stock.</p>	<p>The department has developed an option to reverse the stock.</p>

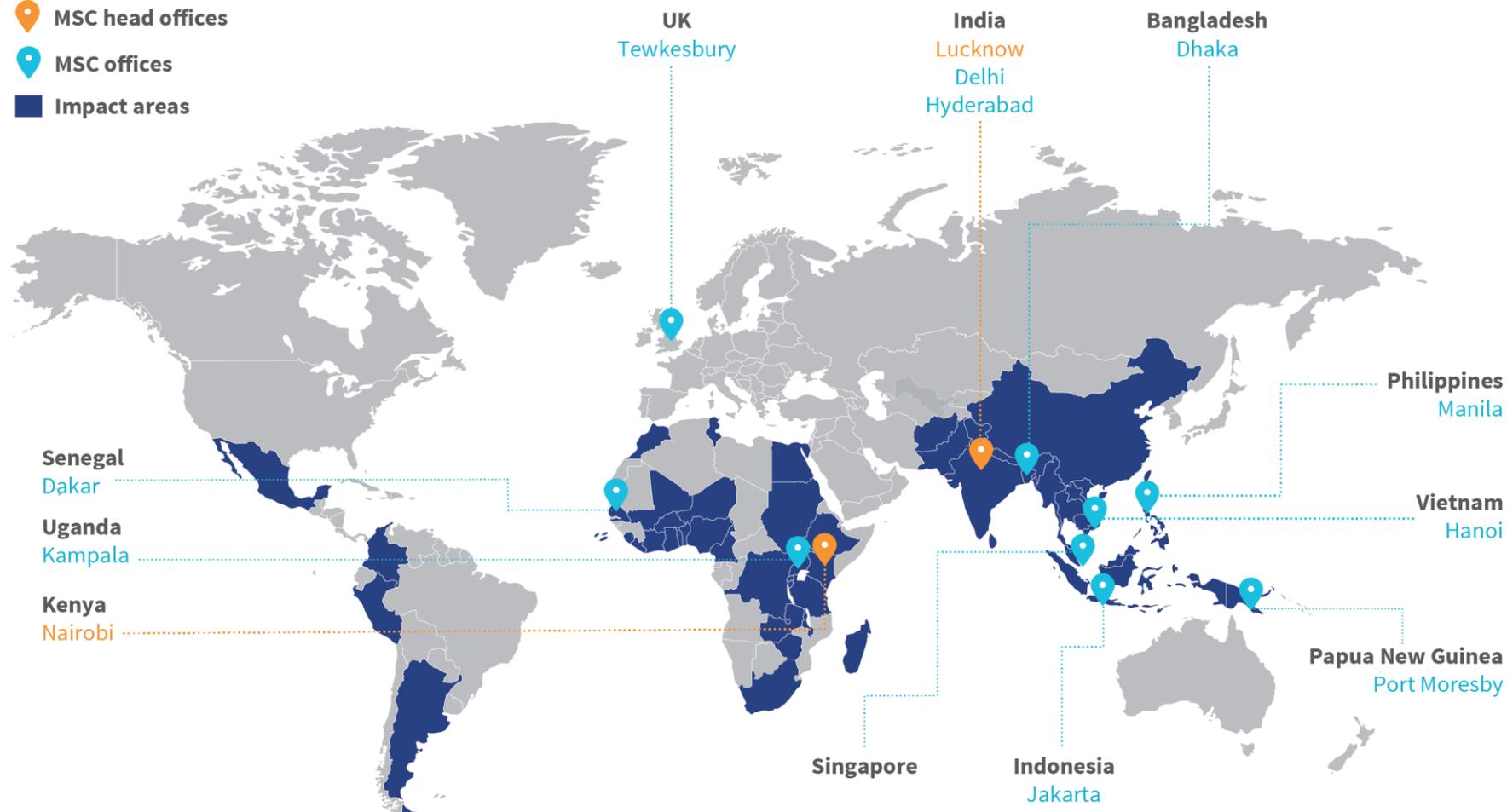
Operational recommendations

Recommendation	Action taken by the DoF
<p>Facilitate the replacement of faulty devices The devices from Analogics are of poor quality. Among other issues, they suffer from short battery life, the devices may shut down any time, and they support 2G SIMs.</p>	<p>In UP & West Bengal, nearly 1,000 devices have been ordered to overcome faulty devices.</p>
<p>Devise a one-stop solution for grievance resolution Most of the complaint resolution calls from retailers are forwarded to the state coordinators. One state coordinator cannot handle the complaints from the whole state.</p>	<ul style="list-style-type: none"> ✓ A 14-member call center has been set up and are able to answer queries in six languages (English, Hindi, Malayalam, Bengali, Kannada, and Tamil) ✓ A PoS Vendor support system has been established with toll-free numbers
<p>Increase the availability of PoS Machines in Assam In Dibrugarh, Assam, only 63 retailers of the 156 retailers had a PoS machine. BVFCL, the designated lead fertilizer supplier is financially unstable and cannot afford additional PoS devices.</p>	<p>Based on the market share in each district, the respective fertilizer companies were asked to purchase POS devices. The number of PoS devices doubled from 569 to 1,200</p>
<p>Update the RO module at rake points The RO module works in real-time but fertilizer companies do not update the dispatch ID in real-time, which delays stock updating and compels retailers to sell fertilizer manually.</p>	<p>The department has developed a device-agnostic application. The fertilizer companies can use devices of their choice at rake points to update the RO module in a timely manner.</p>

Other recommendations

Recommendation	Action taken by the DoF
<p>Check retailer-to-retailer sales Retailers increase profitability during the lean season by transferring stock to retailers where demand is high.</p>	<p>The department should check such sales.</p>
<p>Renew the requirement of B1 certificate The requirement can be met through the existing fertilizer monitoring system.</p>	<p>B1 Performa to be continued as it is still required for calculating the freight charges.</p>
<p>Enable market federations to pass sufficient margin to cooperatives Market federations, such as Himachal Pradesh do not pass sufficient margin to the retailers/ societies.</p>	<p>Freight and margin related matter can be resolved after discussion with states.</p>
<p>Fertilizer companies to provide gloves with fertilizer bags Farmers use bare hands to spread fertilizer in their field. This deteriorates their fingerprint impressions and also affects skin adversely.</p>	<p>TBD</p>

-  MSC head offices
-  MSC offices
-  Impact areas



[MSC corporate brochure](#) | Contact us at info@microsave.net

Asia head office

28/35, Ground Floor, Princeton Business Park,
16 Ashok Marg, Lucknow, Uttar Pradesh, India 226001
Tel: +91-522-228-8783 | Fax: +91-522-406-3773 | Email: manoj@microsave.net

Africa head office

Shelter Afrique House, Mamlaka Road,
P.O. Box 76436, Yaya 00508, Nairobi, Kenya
Tel: +25-420-272-4801 | Fax: +25-420-272-0133 | Email: anup@microsave.net

