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Andhra Pradesh's Public Distribution System: A Trailblazer

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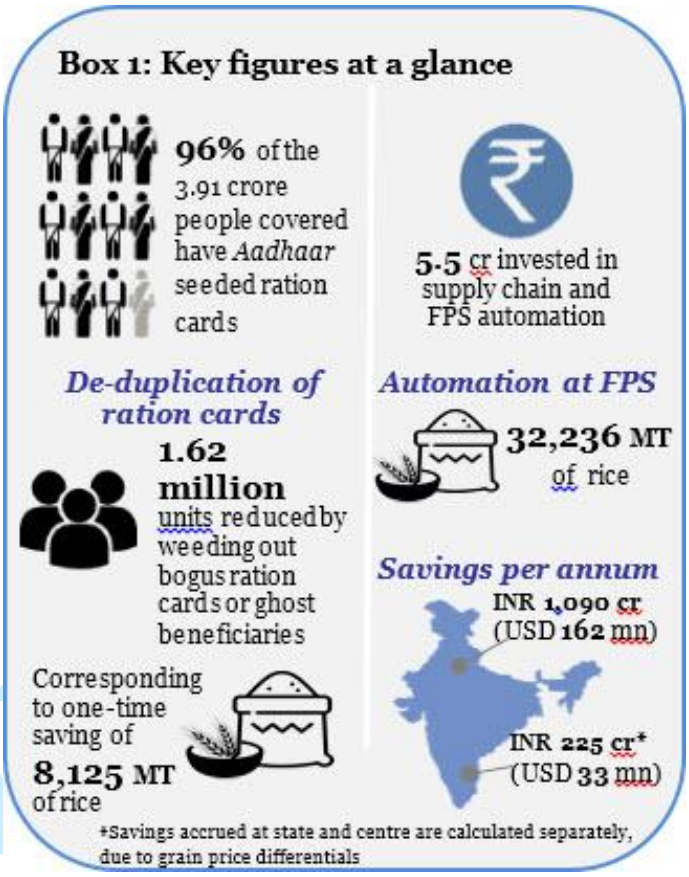
The automation of the Public Distribution System (PDS) is an ambitious attempt to combat the diversion of food grains intended for low-income households. Its success depends on two independent processes, namely: 1. *Digitisation/de-duplication of beneficiary records,* and 2. *End-to-end automation of the distribution process*. Among the states that have embarked on this process, Andhra Pradesh (AP) stands out as a pioneer, having achieved impressive cost savings (see Box 1). This Note discusses best practices that could be relevant to other state governments addressing similar challenges.



Seeding of Ration Cards with 'Aadhaar' to safeguard Government Interests

Bogus ration cards or ghost beneficiaries are significant contributors to leakages in the PDS system. As per the Hon'ble Minister for Consumer Affairs, Food and Public Distribution, Mr Ram Vilas Paswan's written reply in Lok Sabha, over 12 million bogus ration cards were scrapped in the last three years. To do this, the AP government has seeded a pre-digitised database of beneficiaries, with their *Aadhaar* numbers. In the case of mismatch between the *Aadhaar* and PDS databases, the Civil Supplies Department physically verified and validated the details of beneficiaries. *Aadhaar* seeding facilitates deduplication, ensuring that only the intended beneficiary can avail rations by authenticating biometrically.

Checks and Balances in the Supply Chain Curbs Diversion

The process of moving grain from warehouses to fair price shops presents opportunities for diversion. To control this, the state government has automated the supply chain and put in place a system of real-time tracking of trucks carrying food grains.

The entire process of moving food grains from Food Corporation of India (FCI) warehouses to Fair Price Shops (FPSs) is a two-stage exercise. Food grains first move from FCI to a Mandal[1] Level Stocking (MLS) point. Once the truck moves from an FCI warehouse to a FPS, a GPS device tracks it on the pre-determined, shortest possible route. Any deviations are met with departmental action against the driver. At the MLS point, another round of weighing verifies the quantity of grain unloaded, which should match with the quantity at the time of loading. The gunny bags are then loaded onto smaller trucks that provide doorstep delivery to the FPSs. State-appointed route officers validate the allocation unloaded at fair price shops.

FPS dealers also validate the quantity received when the stocks are unloaded at their outlet and acknowledge receipt of quantity of food grains. The system does not, however, address concerns related to the quality of grains in the PDS.

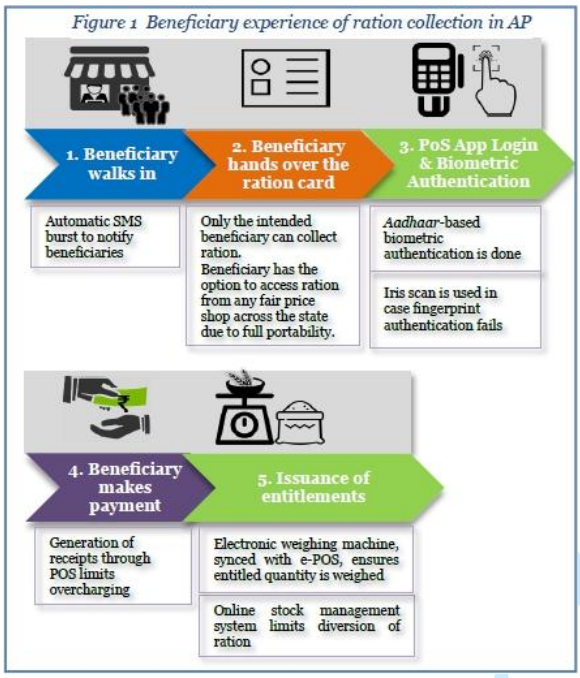
Biometric Authentication at FPS Shops Weeds out Diversions

The AP government has provided each FPS with an e-POS[2] machine. An FPS dealer can initiate transactions only after his/her biometric authentication. Similarly, ration-card holders also need to authenticate their biometric details in order to collect their entitlement of food grain, in linewith the central government's Biometrically Authenticated Physical Offtake (BAPO) principle. Where fingerprint authentication is unsuccessful due to worn out fingerprints, which is common among labourers, iris recognition is used. This is an important measure in a state with a large farming population and is an effective alternative. Validation of these details with the centralised *Aadhaar* database occurs on a real-time basis.

[1] Mandal is an administrative unit which is smaller than district
[2] e-POS is an 'Electronic Point of Sale' device, used in distribution of food grains

Another interesting feature in the AP model is the synchronisation of digital weighing scales with e-POS devices via Bluetooth. This eliminates the need for any manual input from the FPS dealer on the quantity of food grains disbursed and hence ensures correct weight of food grains. Automatically generated receipts and commensurate payment concludes the transaction. This serves as an official record for beneficiaries of the amount paid and quantity received.

Figure 1 Beneficiary experience of ration collection in AP



No 'Inconvenience'[3] to Beneficiaries to Maximise Disbursement of Entitlements

- A bilingual SMS message is sent to all beneficiaries to alert them about the arrival of stocks. This reduces information asymmetry.
- Unreliable data connectivity in rural areas is a well-acknowledged fact. After conducting a signal testing exercise across all FPS locations, the AP government has provided all dealers with two SIM cards that offer the best signal quality in the area. The e-POS devices can accommodate two SIM cards to minimise cases of delay or transaction failure due to network instability.
- Portability between FPSs across the state has been in place since October 2015. This allows migrant workers to access their entitlements at any FPS in the state.
- Old, infirm and differently-abled ration card holders are provided special services. The state has allowed nominees or representatives to help them with collection of entitlements. Where these people are alone in a household, the FPS dealer personally visits them with e-POS device and stocks to issue entitlements. These initiatives have resulted in "zero inconvenience" to eligible beneficiaries – as evidenced in the *MicroSave* field research which recorded no complaints from beneficiaries about the new system.

Conclusion

End-to-end automation of processes, along with digitisation of beneficiary data, has made PDS in AP robust and accountable. Real-time information generation provides a clear digital trail for each transaction. This system was quite expensive and the set-up cost of one FPS was approximately ☐ 55,000 (USD 808). This totals to ☐ 1,556 million (USD 23 mn) for 28,295 FPSs.[4] However, the resultant savings, which in *MicroSave*'s estimate are around ☐2,250 million (USD 34 mn) per annum, have made it a worthwhile investment.

The best practices adopted by AP make it a case worthy of emulation by other states. Prioritising both transparency and efficiency, these initiatives ensure that the poor households have access to their entitlements, are not inconvenienced, and save the government huge amounts by controlling the diversion of stocks and plugging leakages in the delivery channel.

[3]Inconvenience: entitled beneficiary not able to avail benefit due to factor out of his/her control
4http://scm.ap.gov.in/ePos/