

MicroSave India Focus Note #146

Land Record Digitisation - Exploring New Horizons in Digital Financial Services (DFS) for Farmers: Part-II

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December-2017

KEY FINDINGS

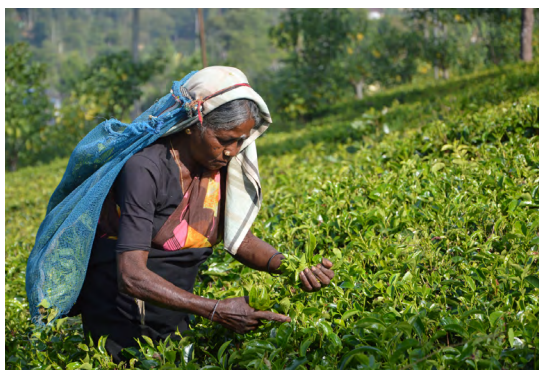
1. The digitisation of land records and their linkage with *Aadhaar* has opened a number of use-cases for further exploration. Government can leverage DILRMP to enhance efficiency of the subsidy process in areas viz: fertilizer and seed distribution; crop loans disbursement and insurance sale to farmers.
2. 100% digitisation of land records, distribution and digitisation of soil health cards, and *Aadhaar*-seeding of land records are prerequisites for capitalising such opportunities. Additionally, technical and infrastructural issues around internet connectivity, PoS devices, awareness of farmers, and banking channels need to be addressed to reduce transaction time at retail points/shops.
3. Successful operationalisation of such a system and effective use of all available data points will ensure substantial savings for the government. It will also bring about a revolution in the subsidy ecosystem for the farmers, especially the ones who do not have easy access to financial services and schemes announced from time to time.

In the previous India Focus Note -#145, we highlighted some of the latest reforms in the land registration process and best practices being followed in states across the country. This IFN discusses a few potential opportunities and related use-cases of digital land records. The Note emphasises how digital land records and its integration with DigiLocker can make the system more transparent and efficient. Moreover, it also delineates the prerequisites to enable such changes.

Emerging Use-Cases of Digital Financial Services (DFS) in Agriculture led by Land Record Digitisation

The digitisation of land records and their linkage with *Aadhaar* has enabled a number of use-cases, which are briefly explained below:

1.1 Fertiliser Subsidy



The Government of India (GOI) has a subsidy budget outlay of **INR 700 billion** (USD 11 billion) on fertilisers for the financial year 2017–18. The [Economic Survey of India 2015–16](#) estimated that leakages in fertiliser distribution are **as high as 65%**. The [Department of Fertilisers, Ministry of Chemicals and Fertilisers](#), has initiated multiple steps to curb leakages across the fertiliser distribution supply chain. A significant step in this direction includes setting up of the [Mobile Fertiliser Management System \(mFMS\)](#) to monitor

and [track the movement](#) of fertiliser from manufacturer to retailer.

Aadhaar-enabled Fertiliser Distribution System ([AeFDS pilot project](#)) was another notable initiative that the government undertook in the Krishna district of Andhra Pradesh. The project aimed to reduce leakages at the level of fertiliser retailers. It enabled distribution of fertiliser to farmers through biometric authentication using *Aadhaar* – the correct quantity to be distributed being determined by the area of their land and soil health. The Point of Sales (PoS) device at a retail shop validated a farmer's biometrics using *Aadhaar* and then verified the farmers' land details from the land record server ([web-land in Andhra Pradesh](#)). The device then displayed the soil health card details from the [soil health server](#).¹ Based on these three factors, the quantity of fertiliser was recommended by device to the farmer for a specific crop and the sale was concluded. Government expected this initiative to optimise the distribution of fertilisers and reduce excess usage, thereby preventing soil degradation.

MicroSave undertook a detailed assessment of the pilot. The assessment recommended delinking of the land records and soil health database from the system until *Aadhaar* is widely available and easily accessible along with the requisite support infrastructure like mobile/ internet connectivity. Also, the *Aadhaar* seeding of land records was underway at many locations. Subsequently, a large modified pilot project was undertaken

¹In an ideal world all three of these data points should be in each farmer's digital locker. However currently, considering the infrastructure availability, literacy levels / skill sets/ low capacities of farmers it would be over ambitious to expect them to access the digilocker on their own through any device. In the long run, it will be important to design and deploy intuitive interfaces to allow illiterate farmers to access and use the digilocker. With time, interface should be such that a farmer can give consent to a bank/ financial institute/ any other service point to access his/ her particular document present in digilocker. This is possible only when farmers are little equipped in using internet.

in 19 districts² by GOI and a [dip-stick assessment](#) was conducted by *MicroSave* in six of these districts, to provide recommendations prior to nationwide rollout. This round's recommendations included a strong mass communication campaign for farmers, an early checkout system, setting up of a grievance redressal mechanism, and the need for Wi-Fi enabled PoS devices.

The pilot initiatives aimed at linking digitised land records of farmers, soil health cards, and *Aadhaar* biometric authentication could prove instrumental in creating a roadmap in rationalising fertiliser subsidy. Provided there is an adequate strengthening of technological infrastructure, *Aadhaar* seeding with land and soil health card database, and *Aadhaar* acceptance, AeFDS may soon succeed in improving the fertiliser distribution process across the country.

1.2 Seed Subsidy



With the integration of land records and soil health cards with PoS devices and advancement in technology and infrastructure (internet connectivity; linkage of various databases like land, SHC, fertiliser and seed; and integration of data with the banks for loans and insurance), the farmers' data can be used to provide subsidised seeds to farmers based on the cropping season and their landholdings. This will help to curb leakages, ensure optimal distribution of seeds, address inefficiencies, and enhance transparency in the seed-delivery mechanism. Since this initiative is similar to AeFDS, it can simply ride on the existing AeFDS infrastructure. Additionally, it will result in reducing costs and implementation challenges and will have a higher probability of adoption by farmers owing to their prior experience with a similar system with fertiliser. A pilot project in this regard is currently already underway in [Anantapur district of Andhra Pradesh](#).

1.3 Credit to Farmers

The *Aadhaar*-seeded digital records of farmers include information of land size, cropping pattern, and seeds used. These digital records can facilitate better access to crop loans and other credit-financing. There is scope for banks and other financial institutions (FIs) to design and develop

an interface using *Aadhaar* to enable credit to farmers. The farmers can use *Aadhaar* authentication to provide consent to the banks/FIs to access their details for e-KYC and information on the land area, cropping patterns, fertiliser usage, seed usage, etc. The banks/FIs can use this information to ascertain the eligibility and credit limits for the farmers. The digital records of farmers will yield data points like the farmers' credit history, financial capability, and asset valuation. Using these data points as well as information like regional production trends in the previous years and the farmer's productivity during that period, banks and FIs can make much better-informed credit decisions. Such an arrangement would also help reduce the turn-around-time and paperwork in the loan sanction process, which is currently a problem for farmers owing to their low literacy levels. An initiative like this can be explored further on pilot-basis.

1.4 Crop Insurance

Along similar lines, insurance companies can provide crop insurance to farmers or bundle insurance products with crop loans using the farmers' information and other data points for underwriting and risk assessment. The availability of regional and area-specific data would allow insurance companies to improve risk assessment and the digital records would allow them to move to paperless sales (with e-KYC facility). This, in turn, would enhance premium calculation and loading, cost-reduction in risk-assessment, and better claim management, thereby reducing hassles in sales and administration for both farmers and insurance providers. Once integrated with the banking channels, such an initiative will encourage insurance companies to reach out to the untapped market and secure the farmers. This opportunity is significant, especially considering the vast scope for micro-insurance and insurance products in the country.³

Conclusion

Although the possibilities are endless, the first step towards realising these opportunities is to complete 100% digitisation of land records, distribution and digitisation of soil health cards, and *Aadhaar*-seeding of land records. Thereafter, other technical and infrastructural issues around internet connectivity, PoS devices, awareness of farmers, and banking channels need to be addressed to reduce transaction time at retail points/shops. In addition, all the databases should be able to interact fast so that the transaction time is efficient. Successful implementation of such a system and effective use of all available data points will not only ensure substantial savings for the government, but also bring about a revolution in the subsidy ecosystem for the farmers, especially the ones who do not have easy access to financial services and schemes announced by the government(s) from time to time.

²The nine districts are Una (Himachal Pradesh), Kishanganj and Begusarai (Bihar), Hoshangabad (Madhya Pradesh), Karnal and Kurukshetra (Haryana), Thrissur (Kerala), Gorakhpur (Uttar Pradesh), Nasik and Raigarh (Maharashtra), Tumkur (Karnataka), Rangareddy (Telangana), Krishna and West Godavari (Andhra Pradesh), Malda and South 24 Parganas (West Bengal), Narmada (Gujarat), Pali (Rajasthan), and Dhanbad (Jharkhand).

³<https://www.irdai.gov.in/ADMINCMS/cms/Uploadedfiles/Handbook%202014-15%20-%20contents.pdf>