Sattva Knowledge Institute SKI perspective

# MAKING THE OPEN CREDIT ENABLEMENT NETWORK WORK FOR INDIA'S SMALL AND MARGINAL FARMERS

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# Acknowledgements

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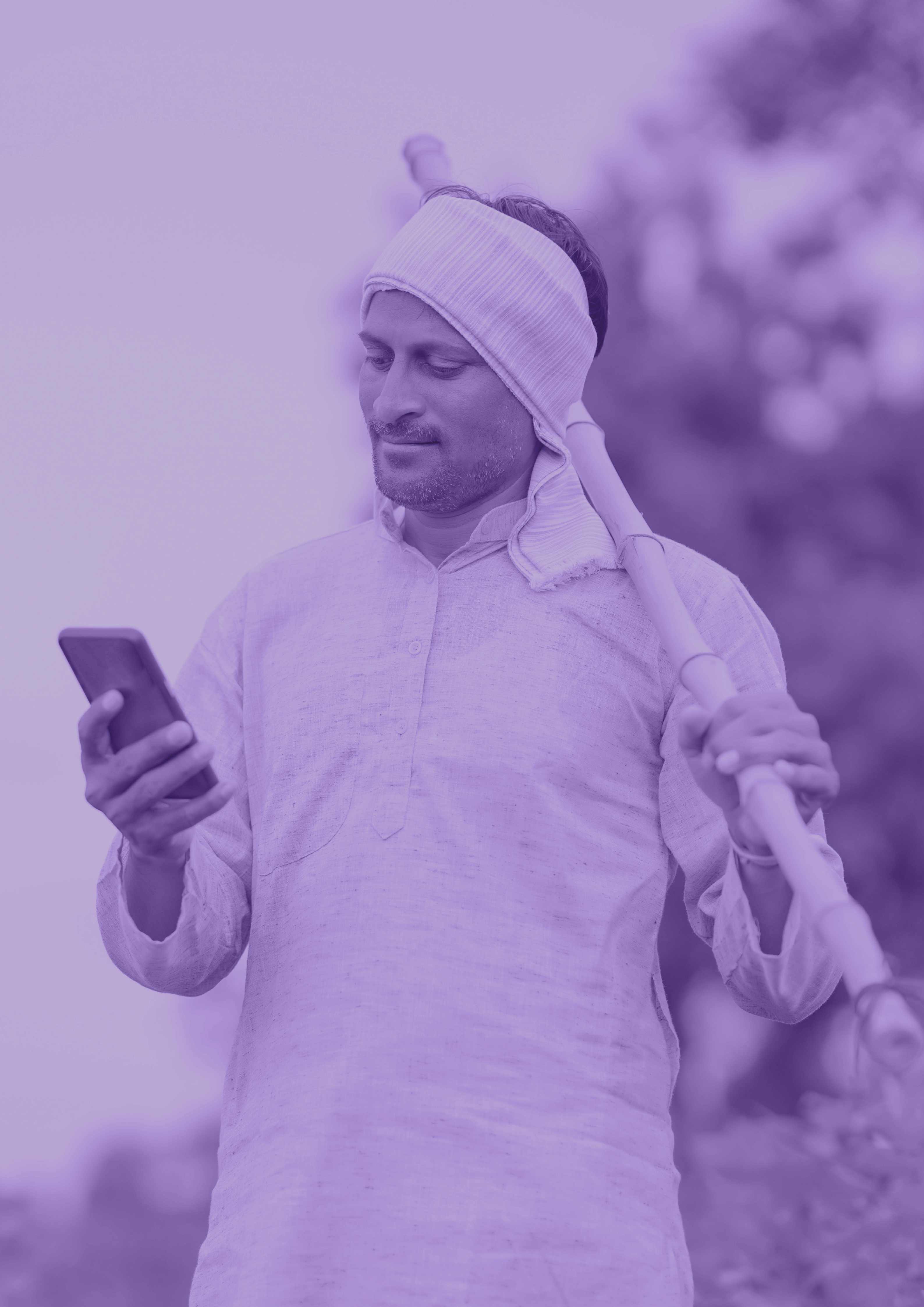

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# Executive Summary

Amongst the most crucial causes of India's agrarian crisis and subsequent economic slowdown is the structural inability of its small and marginal farmers to access small-sized, affordable and timely credit. The Open Credit Enablement Network (OCEN), which is an upcoming digital protocol, displays immense potential in challenging this situation, by shifting how credit is offered to financially excluded groups.

Instead of underwriting loans against a borrower's physical assets and collaterals, OCEN seeks to leverage the borrower's digital data trails to extend credit on the basis of real-time and continuous projections of their cash flows. This new 'cash flow-based' lending model promises to reduce overall costs across the lending value chain, making it economically viable for financial institutions to underwrite fast, small-sized and customised loans, and enabling the financial inclusion of small and marginal farmers.

However, an analysis of the socio-technical context of small and marginal farmers reveals that structural impediments such as the lack of robust digital financial trails, poor formal records, and distrust in financial institutions hinder the adoption of OCEN. Thus, for small and marginal farmers to access, adopt and reap its benefits, much groundwork is still to be laid. Going forward, philanthropy is well-situated to orchestrate ecosystem players and build safeguards into OCEN, strengthen digital literacy and infrastructure in rural India, and develop the innovation ecosystem for OCEN. This collaboration of stakeholders will ensure that OCEN's promise of enabling small and marginal farmers' access to low-cost, small-sized and timely credit is actualised.

# Introduction

India's agrarian crisis is deepening. Amongst the most crucial causes of the crisis and subsequent slowdown of the economy, is farmers' inability to access affordable institutional credit. The worst affected by the lack of access and availability of adequate, timely, and low-cost credit are the bulk of India's farmers – its small and marginal farmers.

Small and marginal farmers - who possess less than or equal to two hectares of agricultural land - constitute 86.2% of all farmers in India (RBI 2019a). Despite their constituting the majority of farmers, in 2019, over half of the USD 168 billion of agricultural credit offered by banks was disbursed to medium and large farmers (Naik 2020). Formal institutions hesitate to extend credit to small and marginal farmers as they perceive them to be high-cost and high-risk. This perception arises due to the high transaction costs associated with disbursing small ticket loans; low asset and collateral base of small farmers; and unavailability of data on farmers' activities. Such hesitance compels small and marginal farmers to meet their credit needs from non-institutional sources of credit, which often come at steep interest rates. Mounting debts, coupled with monocropping, lack of alternative sources of livelihood, a distorted and inefficient market, lack of suitable technology, and climate vagaries push many small and marginal farmers into distress, and worse still, to commit suicide.

While access to affordable institutional credit and financial services is not a silver bullet to the agrarian crisis, it needs to be emphasised, as it has the ability to tackle the other causes of the agrarian crisis. It can improve farmers' productivity, income and ability to absorb shocks resulting from uncertainties of nature. The financial inclusion of India's small and marginal farmers is then essential to triggering a virtuous cycle of agricultural growth.

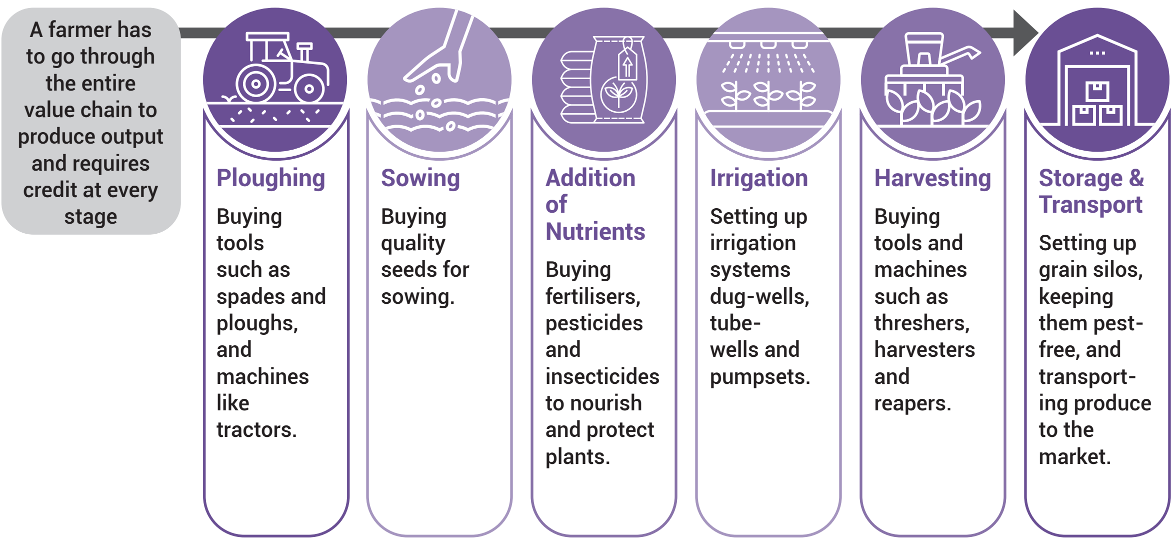
Financial inclusion of farmers is possible in two ways: by augmenting the flow of credit to agriculture, or by ensuring the equitable distribution of credit through innovative methods of delivery. With respect to the distribution of credit, the latest buzzword in the financial lending space is the Open Credit Enablement Network (OCEN). Introduced in July 2020, OCEN is an open protocol infrastructure that is being hailed for promising to usher in a "new paradigm of digital lending" (iSPIRIT 2020a). OCEN's framework represents a shift from the current model of extending credit – from an asset-based model to one based on real-time and continuous projections of the borrowers' cash flows. For economically marginalised consumers who possess few assets, OCEN's cash flow-based lending model will ease their access to quick, affordable and flexible credit. For lenders, the model optimises the risk assessment process by easing their access to reliable public and private financial information about the borrower. OCEN is thus being touted as the next big disruptor of the lending industry and upon its launch, promises to serve the "next one billion" customers who formal lenders hesitate to extend credit to, but who "need it the most" (iSPIRIT 2020a).

This perspective explores the feasibility of the OCEN protocol infrastructure and its promise of financial inclusion for India's small and marginal farmers. The OCEN infrastructure's first launch case – the Sahay application, which facilitates invoice financing for small and medium enterprises' unpaid bills – is currently largely limited to serving marginalised consumers in the manufacturing and services sectors, primarily in urban areas. However, a use case must be considered and developed for rural India's small and marginal farmers, as their financial inclusion is crucial for mitigating the agrarian crisis and its worst outcome – farmer suicides.

## Less than Half of all Small and Marginal Farmers have Access to Formal Credit

To identify the mechanisms by which OCEN can better deliver credit to small and marginal farmers, it is vital that we explore the prevalent needs and financial realities of these farmers.

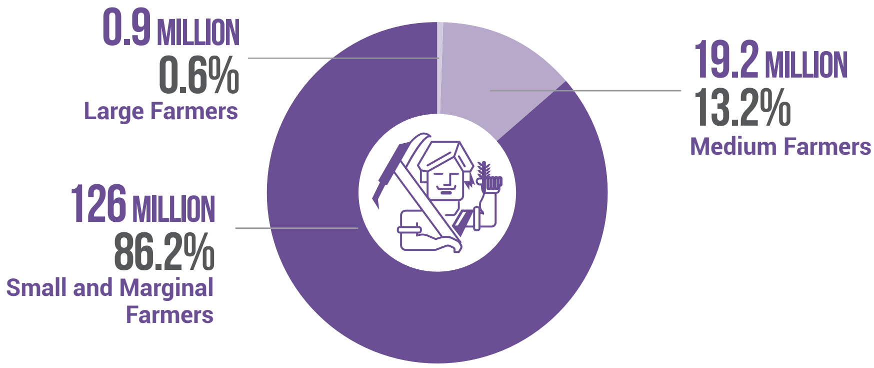
**Figure 1: Credit requirements of small and marginal farmers through the agricultural lifecycle**




To access institutional credit, borrowers must demonstrate their creditworthiness by owning assets and generating income. However, small and marginal farmers typically lack the necessary assets and income to meet these requirements, as indicated by the low ownership of high-value assets (*see Figure 2*) and reliance on off-farm and non-farm activities which are often informal. As a result, banks perceive them as risky and non-bankable customers, contributing to their financial exclusion.

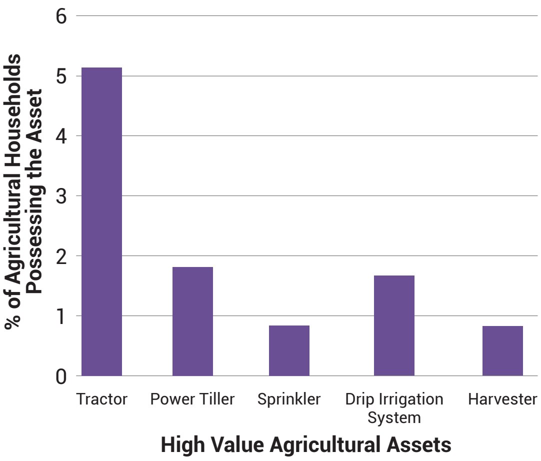
Even when small landholders are able to secure non-collateralised loans, they still encounter supply-side barriers that hinder their access to formal credit. The greatest obstacle they face is steep interest rates. Institutional lenders, including microfinance institutions and agri-techs, charge rates as high as 35-37% (D'souza 2020) due to the costs of disbursing,

Figure 2: Distribution of households according to the size of landholding




(Source: Agricultural Census 2015-16)

Figure 3: Ownership of High-Value Agricultural Assets (in per cent)




(Source: NAFIS 2016–17)

Figure 4: Agricultural Households Reporting any Investment in 2016 by Size Class of Land Possessed (in per cent)

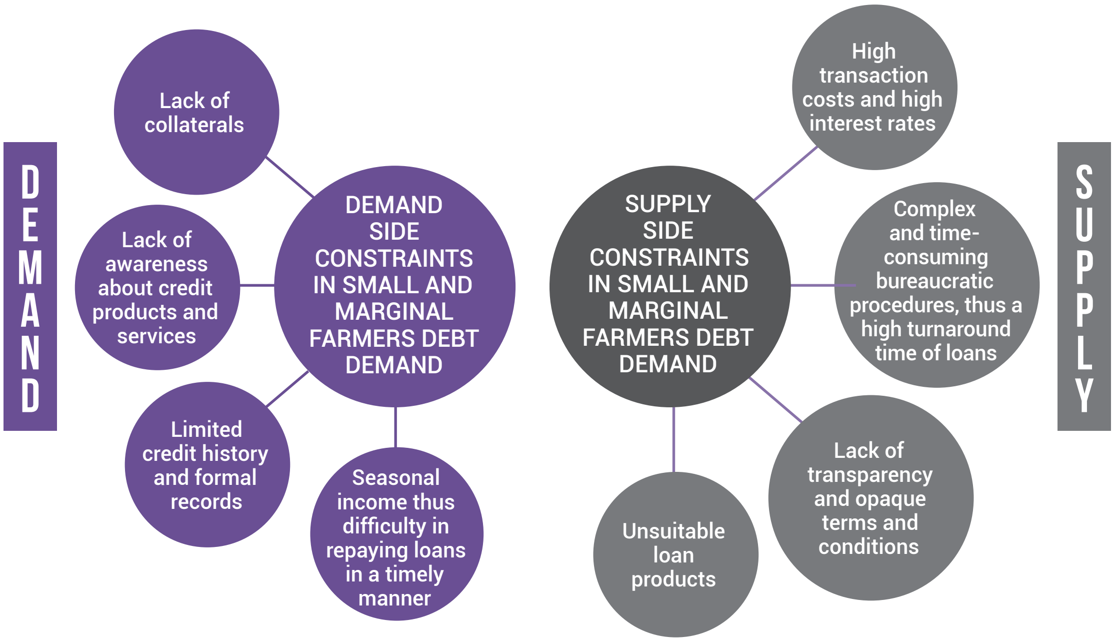

(Source: NAFIS 2016–17)

Figure 5: Average Monthly Income of Agricultural Household from Different Sources by Size Class of Land Possessed


(Source: NAFIS 2016–17)

processing, and collecting loan repayments. High transaction costs also make it difficult for them to extend small-sized loans to farmers for short periods, as needed by small agricultural households, without incurring losses. Consequently, financial institutions disburse fewer loans to poor farmers to maintain healthy balance sheets.

**Figure 6: Demand-side and supply-side constraints faced by small and marginal farmers**

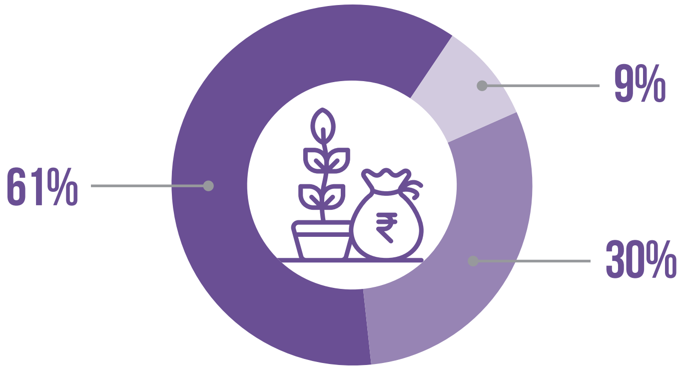



While all agricultural households prefer availing loans from formal institutional sources, small farmers' inability to access the same compels them to fall back on non-institutional sources of credit. As reflected in *Figure 7*, approximately 30% of all agricultural households avail credit from non-institutional sources, such as local moneylenders, landlords, friends and relatives (NAFIS 2016-17). Even though non-institutional sources offer credit at a high cost, small farmers continue to rely on them because of:

- societal pressure borne from the fact that such relations have existed for generations;
- unequal power relations between the moneylender and the borrower;
- because of the advantages offered by non-institutional sources. These include ease of access to credit; low turnaround time; flexibility of loan size and terms of repayment; and availability of credit for personal consumption, recurring costs and agricultural distress events (Sattva Research).

When accessing credit from both formal (barring commercial banks) and informal institutions, small and marginal farmers not only avail loans at a prohibitive cost but are also exposed to exploitation by these institutions. Credit from these sources comes with many strings attached. These institutions often oblige small and marginal farmers to purchase agricultural inputs and sell their produce through them, albeit at rates significantly lower

**Figure 7: Distribution of agricultural households by primary loan source**




Source: NAFIS 2016–17

than that of the market. Further, the one-sided dependency of the small farmer on these institutions, in addition to their tiny scale of operations, implies that they have limited bargaining capacity to refuse these terms. Thus, small farmers' "access to market is getting blocked by access to credit" (Sattva Research).

# The Promise of OCEN: Unlocking Sachet-sized Loans by Leveraging Information as Collateral

To overcome the structural shortcomings of traditional financial institutions and their strict lending criteria, OCEN intends to reimagine the entire lending value chain, providing an alternative way for small and marginal farmers to access credit.

OCEN is a decentralised, open-source protocol infrastructure that, along with the Account Aggregator network, enables a seamless and secure exchange of credit information between different actors. It allows for the creation of decentralised credit applications and services that can operate independently of centralised institutions, thereby providing consumers with greater accessibility to the credit market. OCEN's key feature is that instead of physical collateral, it leverages new and more granular sources of data – GST records, UPI transaction data, and telephone and other utility payments – to accurately assess a borrower's creditworthiness. This continuous and real-time projection of the borrowers' cash flows is why OCEN is being hailed as ushering in a new "cash flow-based lending" paradigm (Modi and Keswani 2022).

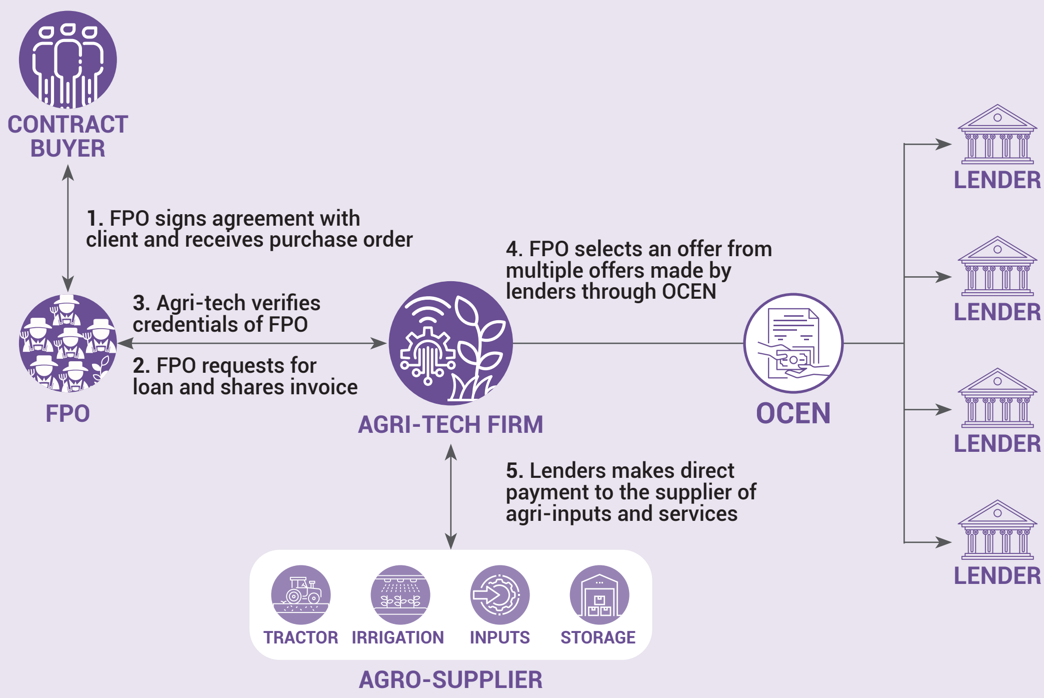
On the demand side, OCEN enhances borrowers' access to credit by utilising their digital financial history, thereby replacing traditional reliance on audited financials and physical collateral. On the supply side, this helps in easing lenders' access to reliable financial information about borrowers and thereby reduces transaction costs. It enables lenders to further reduce their transaction costs and reach a wider consumer base, by partnering with “loan service providers” – intermediaries who already engage with and possess access to small and marginal farmers.

Together, OCEN's automated, decentralised and open ledger of credit information reduces the cost of credit, overcomes the requirement for physical collateral, and optimises the risk assessment process; thereby making it economically viable for formal financial institutions to offer low-cost, timely, and sachet-sized loans to hitherto underbanked populations.

### Visualising the Process Flow: Use Case

To visualise how OCEN will facilitate small and marginal farmers' access to affordable and timely credit, we visualise a hypothetical use case below. In the use case, we assume a farmer producer organisation (FPO) as the borrower. This is so, as we elaborate later, because individual farmers do not yet produce sufficient digital trails necessary for accessing OCEN; although a collective of farmers, such as an FPO, can aggregate such data. Further, in the illustration below, an agri-tech firm acts as the loan service provider, the intermediary that regularly engages the FPO and possesses insight into the status of their activities.

**Small Landholders financing their Agri-credit needs through OCEN**



**The process flow of acquiring a loan on OCEN can be summarised in the following steps:**

- The FPO confirms a purchase order with a contract buyer.
- Upon confirmation of the order, the FPO reaches out to the agri-tech firm to request a loan against the invoice of the order.
- The agri-tech then requests the FPO to consent to share their GSTIN and bank account details with them via the Account Aggregator. This is to verify the borrowers' credentials and to assess their historic actions and ability to repay.
- Upon verification of the borrowers' credentials and creditworthiness, the agri-tech firm broadcasts their request for a loan to lenders and financial institutions.
- Lenders will now have less than ten seconds to revert to the FPO with offers. Given that once the delivery of the order is complete, there is an assured payer on the other side, the credit risk of extending a loan to the FPO is very low.
- Next, the FPO will select the offer that best suits its interest, authorise the loan agreement and simultaneously set up repayment methods on the agri-tech platform or app.
- Once the collection mandate is approved, the loan is dispersed by the lender, all in about four minutes.

OCEN is not the first attempt to narrow the gap in financial inclusion for farmers; India has attempted various measures in the past. The Kisan Credit Card (KCC) is one such effort that offers similar benefits as those promised by OCEN: short-term, low-interest, and collateral-free loans. However, OCEN's decentralised, automated and open-source infrastructure offers borrowers several potential advantages, when compared to the government-sponsored and centralised Kisan Credit Card (KCC) programme. These include greater transparency; access to multiple sources of credit; lower transaction costs; a more efficient and less time-consuming process; and finally, the potential to be more inclusive than the KCC.

While OCEN holds the potential to offer additional benefits over the KCC, it is not a direct replacement for the KCC. It will first have to be implemented and adopted by stakeholders and financial institutions thoughtfully and effectively in order to make a difference to small and marginal farmers.

## Structural Impediments Pose Major Barriers to the Adoption and Absorption of OCEN

There is much groundwork to be laid, and numerous impediments to be overcome in the agricultural ecosystem before OCEN's promise of serving disadvantaged farmers can be implemented. The impediments to OCEN today are as follows:

**Small and marginal farmers generate weak digital financial trails due to their poor access to digital infrastructure and devices, low levels of digital and financial literacy, and dismal penetration of digital banking.**

Despite India's rapid progress in digitisation, access to digital resources in rural areas is limited and unequal. According to a report by NITI Aayog, only 30% of rural households have internet access, compared to over 50% of urban households (NITI Ayog 2018). Additionally, the quality of digital infrastructure in rural areas is often poor, with slow internet speeds and limited connectivity. Even when small and marginal farmers have smartphones, low levels of digital and financial literacy lead to a lack of adoption of digital banking services, with only 15% using them (RBI 2021). Similarly, as few as 3-7% of rural India has adopted real-time payment services such as UPI (India Data Insights 2022). Traditional banking channels such as cash transactions and physical visits to banks remain the primary means of banking for the majority of farmers.

**Small and marginal farmers lack formal records and documentation required for registering and applying for credit on OCEN due to low levels of literacy, primacy afforded to word of mouth, and due to the informal nature of labour.**

To overcome the lack of digital data and financial trails among small farmers, alternative formal records can be utilised to demonstrate their productivity and financial stability. Such records include:

> *What amount do they crop, right? What was the land that they cropped? Where is that land? What were the inputs that they consumed? How much did they end up selling? What was the price that they sold at? Did they record that? How many people in the household are doing farming activities? What are the other activities that the household is doing?*
>
> *–(Sattva Research)*

Furthermore, small and marginal farmers often lack proper identification documents like PAN or Aadhaar cards, which are necessary for accessing OCEN since it is connected with other layers of the India Stack such as Aadhaar. Small farmers possess poor formal records and documentation due to factors like low literacy levels; fragmented land ownership; prevalence of sharecropping which "is not recorded anywhere…these are all like, kind of agreements that people do on the honour system" (Sattva Research); and informal sources of income that go unrecorded. Such conditions make it challenging to establish a clear credit history for small farmers.

**Small and marginal farmers in India continue relying on informal and non-institutional sources of credit and distrust formal institutions due to cultural beliefs, embeddedness in strong social networks and inherited practices.**

In order for OCEN to effectively serve small and marginal farmers, trust between lenders and borrowers is a critical component. However, past negative experiences, lack of transparency, limited familiarity with such institutions, and cultural norms and beliefs that discourage borrowing from formal institutions, all create significant barriers for these farmers to trust formal financial institutions.

Furthermore, small and marginal farmers are deeply embedded in social networks that have been in place for generations, which creates a strong sense of obligation for them to borrow from within their social circle, including friends, family, and moneylenders, to avoid social ostracisation (Sattva Research). This distrust in formal financial institutions and the ability to fall back on tightly knit informal networks often leads to intentional defaulting on loans by these farmers.

## Making OCEN Work for Small and Marginal Farmers: Orchestration Recommendations for Philanthropy

Making OCEN work for small and marginal farmers is a mammoth task that cannot be achieved by a singular stakeholder or organisation. Various stakeholders and organisations in the ecosystem need to come together to deliver on OCEN's promise. Based on our analysis of the existing landscape, we believe that philanthropy's patient and experimental capital is best suited for orchestrating the many players in the ecosystem.

1. **Building safeguards such as inclusion, trust, competition, security and privacy into OCEN:** Neglecting the needs and protections of various users and contexts while designing and implementing systems with broad societal consequences could be disastrous, particularly for marginalised communities. Incorporating ethics and safeguards into OCEN is critical for promoting equitable development and societal change. Philanthropy can coordinate with stakeholders to promote the responsible and accountable development and deployment of OCEN in the following ways:

   a. **Invigorate multi-stakeholder alliances to establish a shared vision, standards and frameworks for the inclusive, equitable and secure development and deployment of OCEN.**

      Philanthropists should identify and bring together stakeholders who have clear commitments to the responsible development and deployment of OCEN. Such a multi-stakeholder alliance should deliberate upon and establish standards, processes and structures of decision-making and participation that uphold the agency of users and holds various actors involved in OCEN's development and deployment accountable for the same.

For instance, in 2021, during the COVID-19 pandemic, a virtual event was organised by the Digital Public Goods Alliance, Norwegian Ministry of Foreign Affairs (NORAD), and The Rockefeller Foundation, where twenty global leaders gathered to establish a collective vision for enhancing inclusion and human rights in digital systems used for COVID-19 recovery. The stakeholders concurred on principles that emphasised the need for technology design to be revisable, governance to be deliberative with feedback loops, and accountability of funders and policymakers. To navigate uncertain situations, stakeholders established ethical committees consisting of multiple disciplines to ensure accountability (Shivkumar 2021).

**2. Catalysing and developing the innovation ecosystem:**

Since OCEN has not yet been launched, it is challenging to envision how it can enhance small and marginal farmers' access to credit. Therefore, philanthropy should study ongoing work related to small and marginal farmers and digital public infrastructure to identify emerging patterns, and determine how they can be integrated with OCEN for a positive impact on farmers' lives.

**a. Support and invest in knowledge creation and evidence generation in agricultural contexts, so as to develop demonstrable use cases of OCEN that are tailored to the needs of small and marginal farmers.**

To showcase the potential of OCEN in promoting financial inclusion, philanthropy should invest in creating various examples of how the protocol can benefit small and marginal farmers. This can be achieved by funding research that examines the unique characteristics of small and marginal farmers in different contexts. Additionally, philanthropy can identify common issues faced by small farmers that other ecosystem players are already working to solve, and align them with the features of digital public goods. Doing so will encourage imagination within the ecosystem about the most effective ways to utilise OCEN.

For example, in Kenya, timing credit offers and structuring repayment terms by accounting for seasonal patterns of the agricultural lifecycle has encouraged the uptake of micro-credit products and investment among small farmers. Innovations that bundle financial products have also driven greater adoption of micro-credit products among small and marginal farmers. By investing in tailored credit products, philanthropy can not only retain small and marginal farmers on OCEN but also set a precedent for the ecosystem regarding credit products best suited to them.

**b. Catalyse the innovation ecosystem by facilitating partnerships amongst stakeholders and funding product designs that have a positive outcome for farmers.**

Philanthropy must play a pivotal role in facilitating partnerships and collaborations between various players – between OCEN and financial institutions, business associations, and government agencies – to help build a sustainable digital financial ecosystem. This can include working with financial institutions to develop products and services that meet the needs of micro-enterprises, and collaborating with fintech companies to develop innovative digital solutions.

Furthermore, given that upon its launch, credit products will be developed on the OCEN infrastructure, philanthropy should fund and support technology developers and product designs that consult directly with small and marginal farmers at all stages, and are invested in designing systems that can adapt to their emerging needs, concerns and technological developments.

### 3. Strengthening the technical groundwork:

It is agreed that a widespread digital divide persists in India. In this regard, two factors need consideration: one, whether small and marginal farmers are able to access digital infrastructures and devices; and two, whether they are able to utilise these digital infrastructures and devices for their betterment. To address these areas, philanthropy can contribute in the following ways:

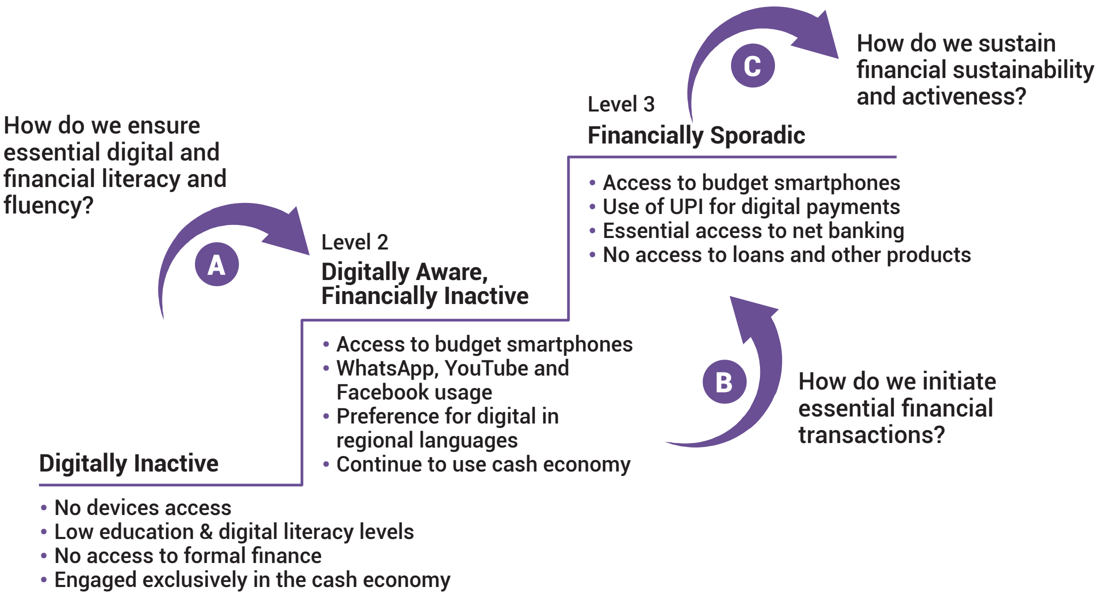
**a. Advocate for strengthening digital infrastructure in rural India and fund innovations that cater to rural India's low-resource digital environment.**

Philanthropy can encourage ecosystem players to support the development and expansion of physical digital infrastructure, enabling small and marginal farmers to access, adopt and benefit from OCEN. This can be achieved by advocating for policymakers to strengthen internet connectivity in rural areas and encouraging corporate social responsibility initiatives to provide smartphones and computers to farmers. Additionally, philanthropy can fund credit products that are designed to function effectively, despite intermittent connectivity in rural areas.

**b. Streamline funding into digital and financial literacy, particularly by investing in "phygital" (physical+digital) practices.**

To enhance the digital and financial literacy of small and marginal farmers, philanthropic funds should be directed towards creating programmes that facilitate experiential learning models. This involves offering hands-on experience with digital technology and financial execution. The use of digital media to teach financial products can be challenging for users to remember without practical application. However, the adoption rate improves significantly when knowledge is combined with practice and assistance from guides. Therefore, it is essential to invest in, and expand programmes that establish a foundation for the adoption of OCEN.

**Figure 8: Directed interventions for different segments of small and marginal farmers to ensure ease of financial inclusion in the digital lending process**




(Sattva 2022)

### 4. Strengthening FPOs to ensure that small and marginal farmers are equipped to adopt OCEN-enabled digital lending:

FPOs have great potential as a short-term solution to improve the adoption and use of OCEN among small and marginal farmers. They can enhance farmers' digital and financial literacy, formalise their credit history and documentation, build trust in formal institutions, and create strong digital data trails. In addition, FPOs can also serve as intermediaries, taking out loans on behalf of small farmers, which creates a two-step system that connects small farmers with FPOs. To achieve this, philanthropic efforts should be directed towards supporting FPOs in the following ways:

a. **Allocate resources towards strengthening the institutional capacity of FPOs, enabling them to provide both technical and non-technical training to their member farmers.**

Amongst the most urgent capabilities for which FPOs require handholding are leadership and governance (Sattva 2022b). Philanthropy can help address the challenges of attracting and retaining skilled leaders in rural areas, low wages, insufficient staff support, and limited visibility to stakeholders. A critical step is to invest in designing policies, management processes, and transparent systems for effective FPO governance. Adopting a lifecycle-based capacity-building framework, along with monitoring and evaluation tools, can ensure transparency and accountability in the process. Strengthening leadership and governance in FPOs can help small and marginal farmers develop financial resilience, formalise their records, gain digital and financial literacy, and trust formal credit institutions.

**b. Advocate for the creation of standard guidelines, frameworks, and tools for monitoring and evaluating the maturity and credit ratings of FPOs.**

Philanthropy has a critical role in advocating and persuading policymakers to establish policies and frameworks that enable effective monitoring and evaluation of FPO quality and performance. Standardised frameworks for assessing FPO maturity and financial capabilities will be essential for loan service providers and institutional lenders to determine creditworthiness when offering loans to FPOs and their members. These frameworks will also help new entrants in the ecosystem assess the performance of different FPOs. It is crucial to ensure that FPOs remain a touchpoint for loan service providers to acquire small and marginal farmers as customers, rather than becoming consumers themselves. Some FPOs have transactional relationships with their members, which can be ineffective in ensuring loan repayment. Therefore, social pressure from FPO leaders from within the community can be more successful in ensuring loan repayment.

# Conclusion

In evaluating the readiness of small and marginal farmers to adopt an infrastructure like OCEN, it is evident that much groundwork remains before they can reap its promised benefits. Philanthropy is well-placed to orchestrate ecosystem actors so as to realise the promise of OCEN for this group of users – equitable digital financial inclusion which can contribute to alleviating agrarian distress. With OCEN envisioned as the infrastructural base for India's future, the need for thoughtful consideration of its design and implementation is urgent.

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