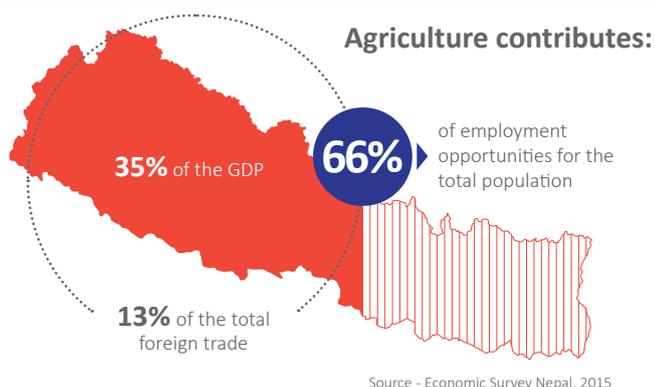


Agriculture Digital Linkage Study

'What drives the Nepalese economy?' - A question that prompts a thousand answers. With its unparalleled geographic landscape, **the agricultural sector in Nepal** presents an equal number of **challenges** and **opportunities** for farmers. **Agriculture is the primary sector of the Nepalese economy.**



Despite the figures, informal financial services still play a crucial role within the agricultural sector. A much-needed digital financial intervention has the potential to counter the financial challenges farmers face on a day-to-day basis. Mobile money is still considered a far-fetched idea for most rural people. Yet, there is growing interest from financial institutions to explore and implement digital financial services (DFS). With the determination from financial institutions and business innovations, there can be significant uptake of DFS usage, which would expand the outreach of financial inclusion.

To build this promising environment, the United Nations Capital Development Fund (UNCDF) programme Mobile Money for the Poor (MM4P), conducted qualitative research in the Central Region and Eastern Region of Nepal. This study delves into the country's agricultural sector that is driven by several types of commodities, including cereals, cash crops, fruits and vegetables, and allied sectors such as dairy and livestock.

For the Eastern Region, **2 commodity value chains** can benefit from effective adoption of DFS. However, this value chain model can be easily replicated all over Nepal with some level of customization.



A **value chain analysis** was conducted for the 2 commodities on the basis of various dimensions such as adoption drivers, incentives, dependencies, social and financial stressors in the value chain, etc., which were structured in 3 stages.



Dairy value chain

Dairy is one of the core income sources for medium and large farmers; they are engaged in milk production at the commercial level. Dairy is a bridge financing mechanism for small dairy farmers as it ensures continuity of income.



Small cooperatives

have **50–100** members and own milk chilling tanks with a capacity to hold **100–500** litres of milk.

Mid-size and large cooperatives

have **100–500+** members and collectively own chilling plants with a capacity to hold **1000–2500** litres of milk.

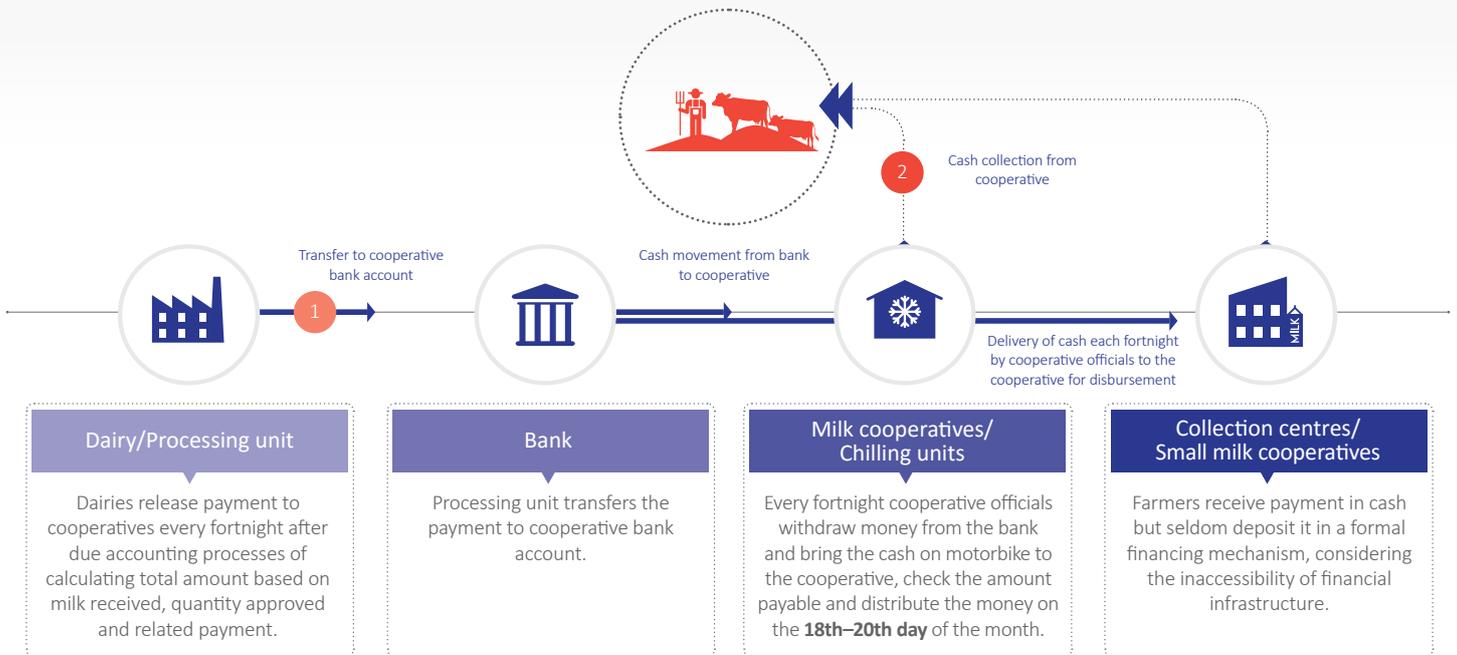
Large cooperatives act as

- ✓ Collection centres
- ✓ Quality control and check points
- ✓ Storage and transportation centres
- ✓ Source of payment, credit and saving services

Dairy: Supply chain



Dairy: Payment flows



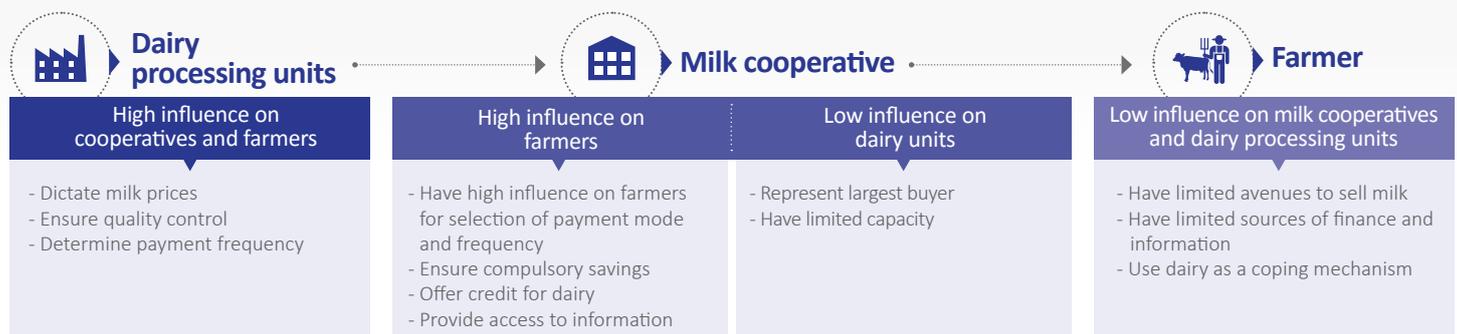
1 BANK TRANSACTION

- Small dairy: 50–200 members – NPR 100,000–NPR 300,000
- Large cooperatives – NPR 300,000+

2 CASH TRANSACTION

- Small farmer – NPR 2,000–NPR 4,000 per month
- Mid-size farmer – NPR 6,000–NPR 12,000 per month

Dairy: Influence and power equation

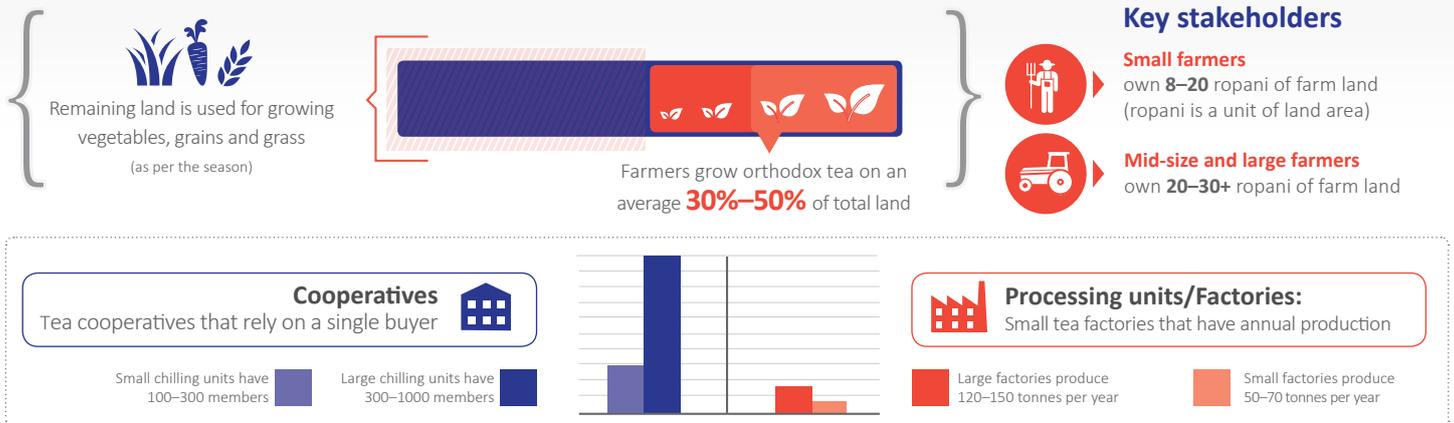


Digital finance intervention in dairy value chain

	Gaps/Challenges	Stress level	Coping mechanisms	Leveraging of DFS	Solutions
 <p>Dairy farmers</p>	Lack of formal financial products for cattle purchase	High	Reliance on informal mechanisms, such as friends/family or high interest bearing formal financial products	Data and financial transactions	Data-backed credit risk assessment to offer customized cattle loan, less paper work, easy access through wallet
	Awareness of insurance	Moderate	No coping mechanism in case of cattle's death	Financial transactions and information	Awareness-raising on insurance through digital feeds
	Financial distress	High	For smallholders, using dairy as a bridge finance mechanism	Data and financial transactions	Bridge finance product driven by transaction history of the customer
	Lack of formal financial services	Moderate	No place to safe keep the money	Financial transactions	Goal-based savings, normal savings features in wallet
 <p>Dairy cooperatives</p>	Manual record-keeping and reconciliation	Moderate	High number of staff to manage operations	Information	Driving payments through DFS (it will also enable digital data collection that can be further linked to in-house management information system for accounting)
	Safety and cost of cash movement	High	No coping mechanisms	Financial transactions	Transition from cash to digital money

Tea value chain

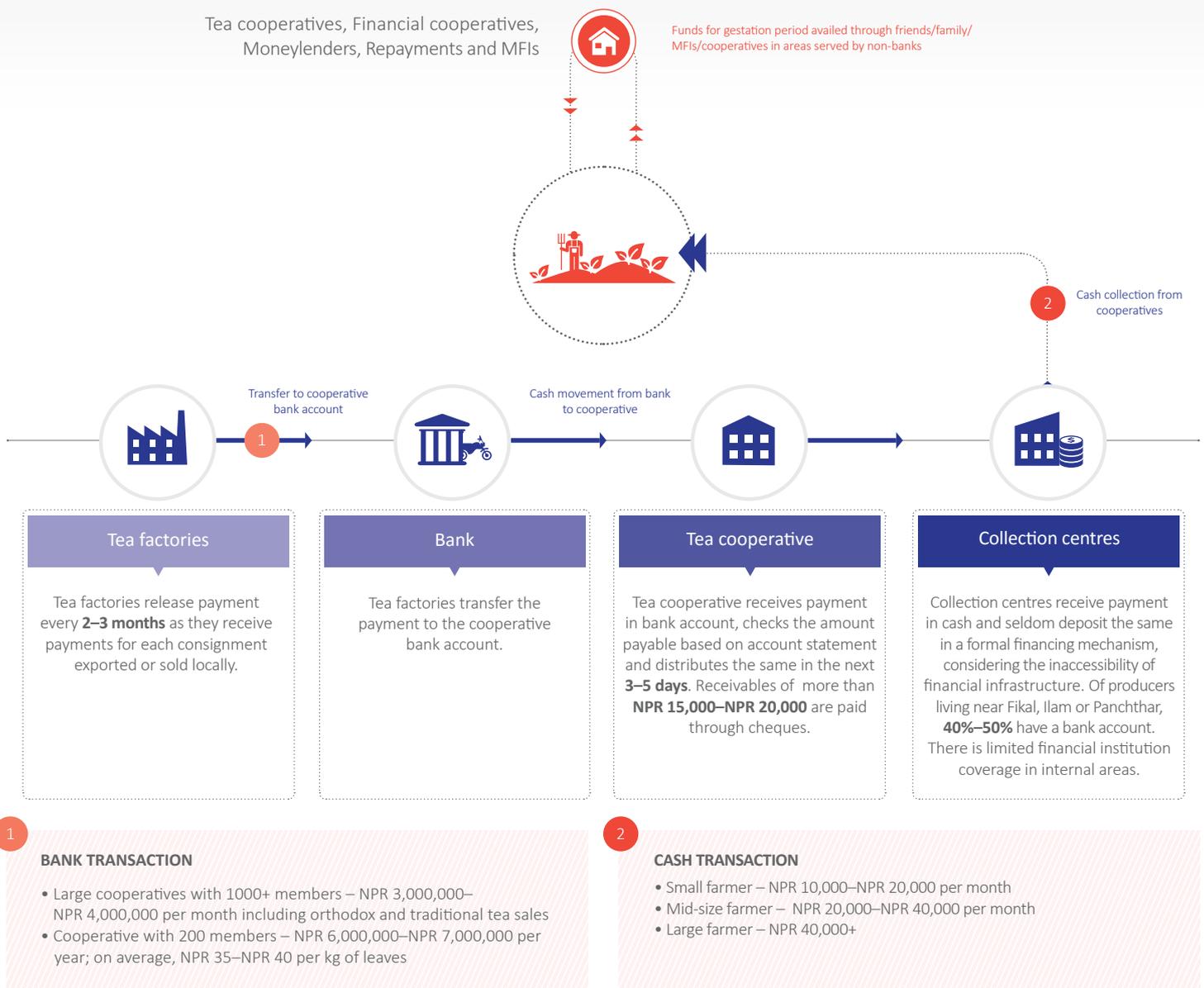
Tea is the main source of income as it contributes **50%–60%** of household income in the Eastern Region. Most farmers sell their produce to tea cooperatives that deal with either tea companies or agents from Indian tea markets in the case of traditional tea.



Orthodox tea: Supply chain



Orthodox tea: Payment flows

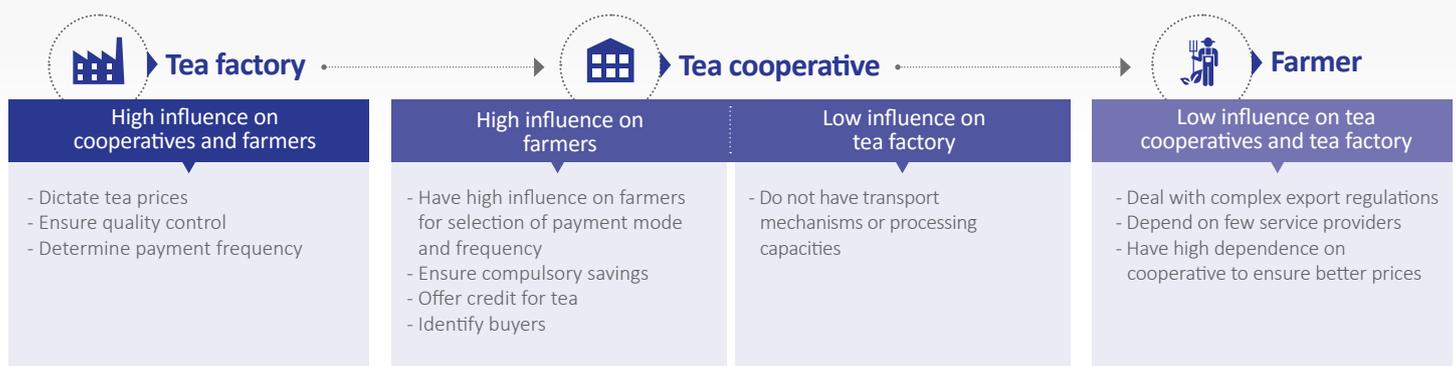


MFI - Source of finance for agricultural and household needs, 24% p.a. rate, up to NPR 100,000

Cooperative - Source of finance for agricultural and household needs, 14% p.a. rate, up to NPR 100,000 for secured and unsecured loans (4 times share amount)

Moneylender - Source of finance for agricultural and household needs, 36% p.a. rate

Tea: Influence and power equation

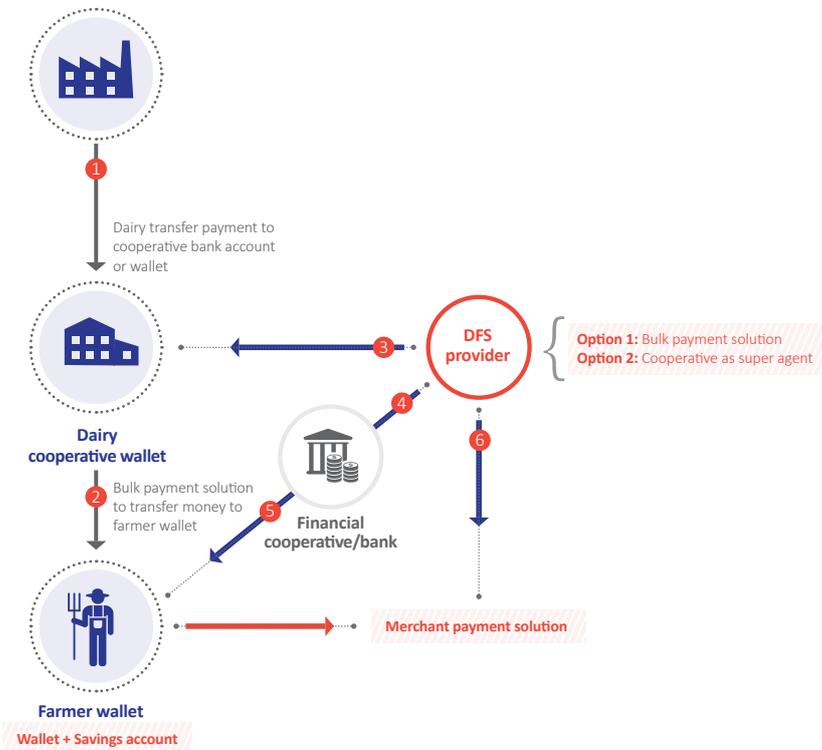


Digital finance intervention in tea value chain

	Gaps/Challenges	Stress level	Coping mechanisms	Leveraging of DFS	Solutions
 Tea farmers	Lack of formal financial products for household needs during payment lags	High	Reliance on informal mechanisms, such as friends/family or high interest bearing formal financial products	Data and financial transactions	Data-backed credit risk assessment to offer customized cattle loan, less paper work, easy access through wallet
	Lack of formal financial services for smallholders engaged in tea plantations	Moderate	Reliance on high interest bearing products for agricultural needs	Financial transactions and information	Bundled insurance product: premium bundled with credit, saving or bulk cash-in services
	Financial distress during payment lags	High	For smallholders, using dairy as a bridge finance mechanism to cover household expenses in case of delay in tea payments	Data and financial transactions	Bridge finance product driven by transaction history of the customer
 Tea cooperatives	Lack of formal financial services	Moderate	Adopting informal mechanisms such as household savings	Financial transactions	Goal-based savings, normal savings features in wallet
	Manual record-keeping and reconciliation	Moderate	High number of staff to manage operations	Information	Driving payments through DFS (it will also enable digital data collection that can be further linked to in-house management information system for accounting)
	Safety and cost of cash movement	High	No coping mechanisms	Financial transactions	Transition from cash to digital money

Conclusion: Leveraging DFS

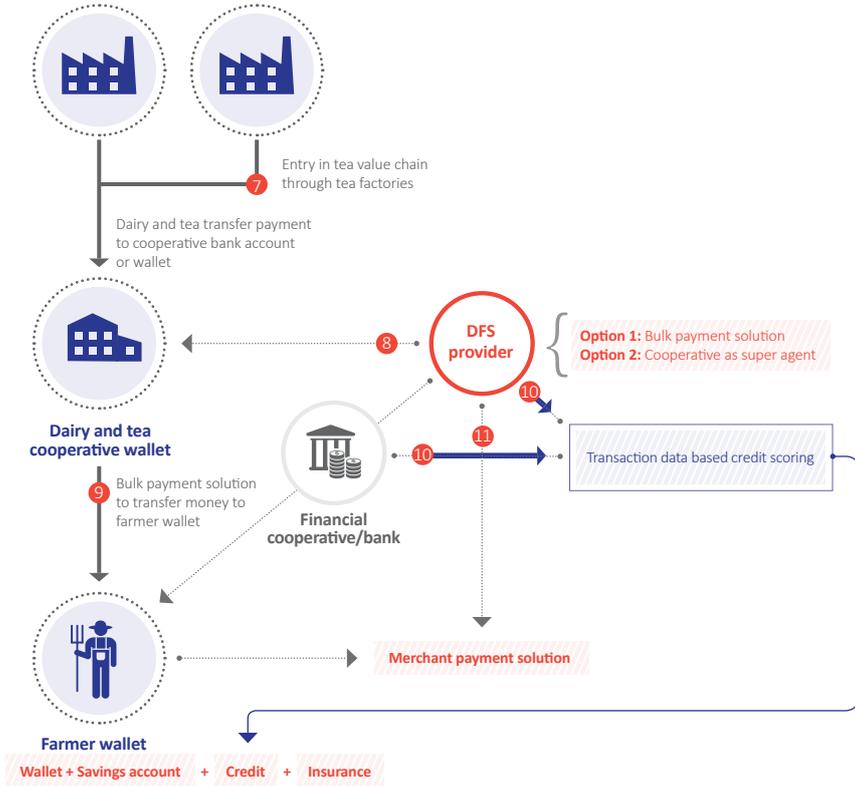
Phase I: Digitize limited products in value chain



Ecosystem relationships

- Dairy – Cooperatives:** Dairy will influence cooperatives to motivate farmers to opt for digital payments in wallet.
- Cooperative – Farmers:** Cooperative will make farmers aware of DFS and its advantage and motivate them to open a wallet account to receive payments.
- DFS provider – Cooperative:** DFS provider will enroll dairy cooperative as super agent and also offer a bulk payment solution to cooperative.
- DFS provider – Financial cooperative/bank:** DFS provider will partner with financial cooperative/bank to offer a savings product.
- DFS provider – Farmers:** DFS provider will provide wallet services for farmers to receive payments.
- DFS provider – Merchants:** DFS provider will offer a merchant payment solution for large merchants and an incentive for small merchants to accept digital payments.

Phase II: Customize products and integrate with tea value chain

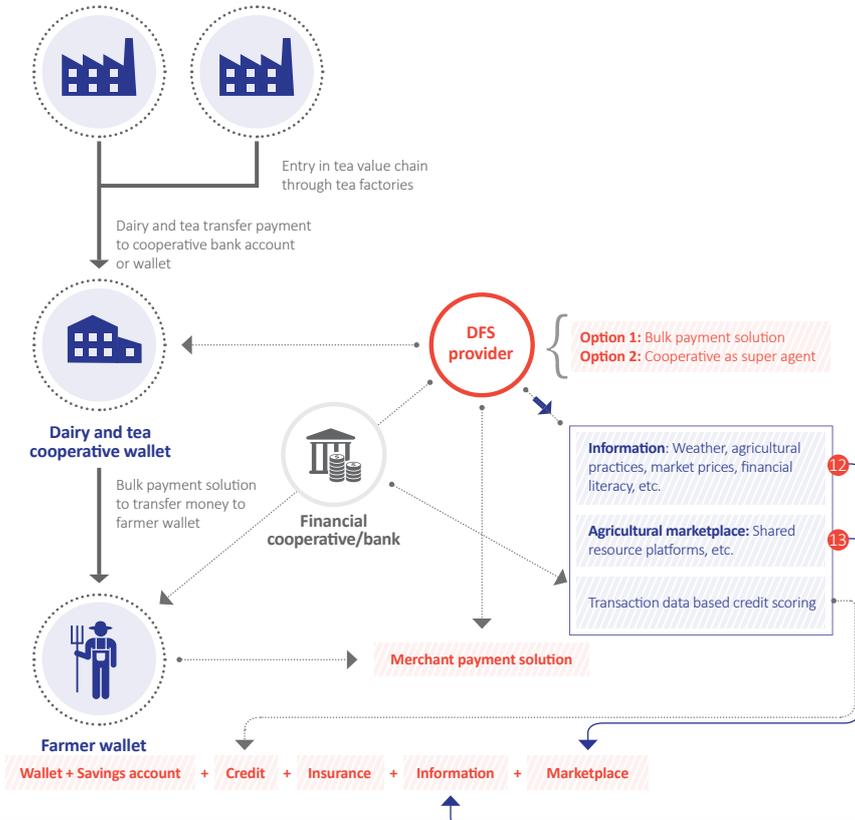


Mobile penetration	██████████	Advantage for quick adoption
Customized products	██████████	Customized savings, credit and insurance
Stakeholder complexity	██████████	Enabler for building ecosystem
DFS+ business model	██████████	Better returns enabling scale-up through partnership

Ecosystem relationships

- 7 **Tea company – Cooperatives:** Tea company will partner with cooperatives to promote digital payments.
- 8 **DFS provider – Cooperative:** DFS provider will enroll tea cooperative as super agent and also offer a bulk payment solution to cooperative.
- 9 **Cooperative – Farmers:** In case dairy farmer is also tea farmer, cooperative will direct tea payment to wallet. In case of exclusive tea farmer, cooperative will motivate farmer to open a wallet and accept digital payments.
- 10 **DFS provider – Financial cooperative/bank – Credit scoring tool developer:** DFS provider will partner with financial cooperative/bank to use transactional history to develop a credit scoring tool and offer a small credit product for immediate needs such as bridge finance and insurance to safeguard livelihood.
- 11 **DFS provider – Merchants:** DFS provider will enroll more merchants, especially related to the agricultural ecosystem.

Phase III: Integrate access to information and digital marketplace



Ecosystem relationships

- 12 **DFS provider – Information services:** DFS provider will partner with information services to provide value added services to farmers.
- 13 **DFS provider – Virtual marketplace:** DFS provider will partner with virtual marketplace providers that will offer access to resources including finance, inputs, equipment, etc.

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