CGIAR

Rethinking Food Markets and Value Chains for Inclusion and Sustainability

Bundling input and cash loans through digital financial service providers in Nigeria

Kate Ambler, Bedru Balana, Jeffrey Bloem, Eduardo Maruyama, and Opeyemi Olanrewaju

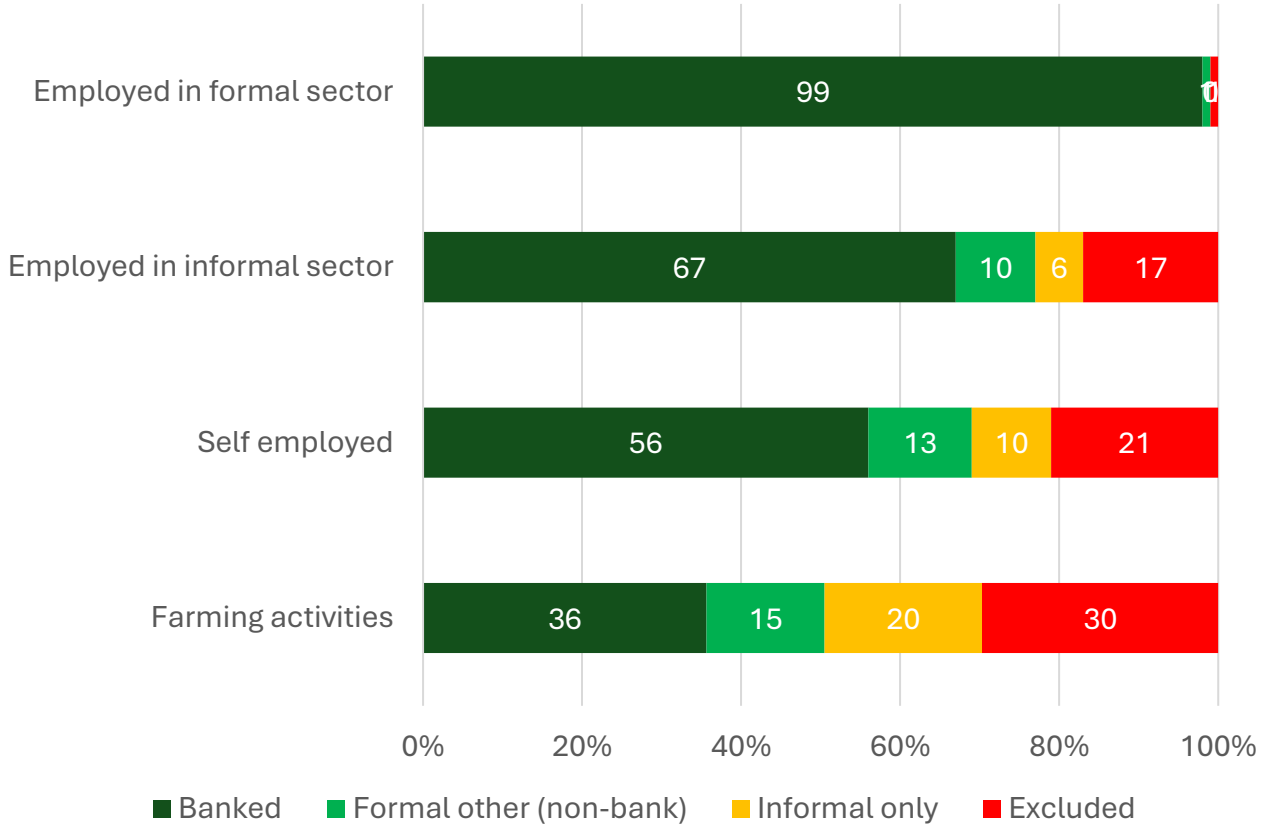
Science, Innovation and Policy Symposium

December 10-11, 2024

Background

- Farmers' lower use of formal financial products and services explained by:
  - Limited banking access in rural areas
  - Seasonal cash flows
  - Lack of traditional collateral for loans
- Preference for informal services reinforced by:
  - Trust within communities
  - Simplicity of processes
  - Participation in community-based groups

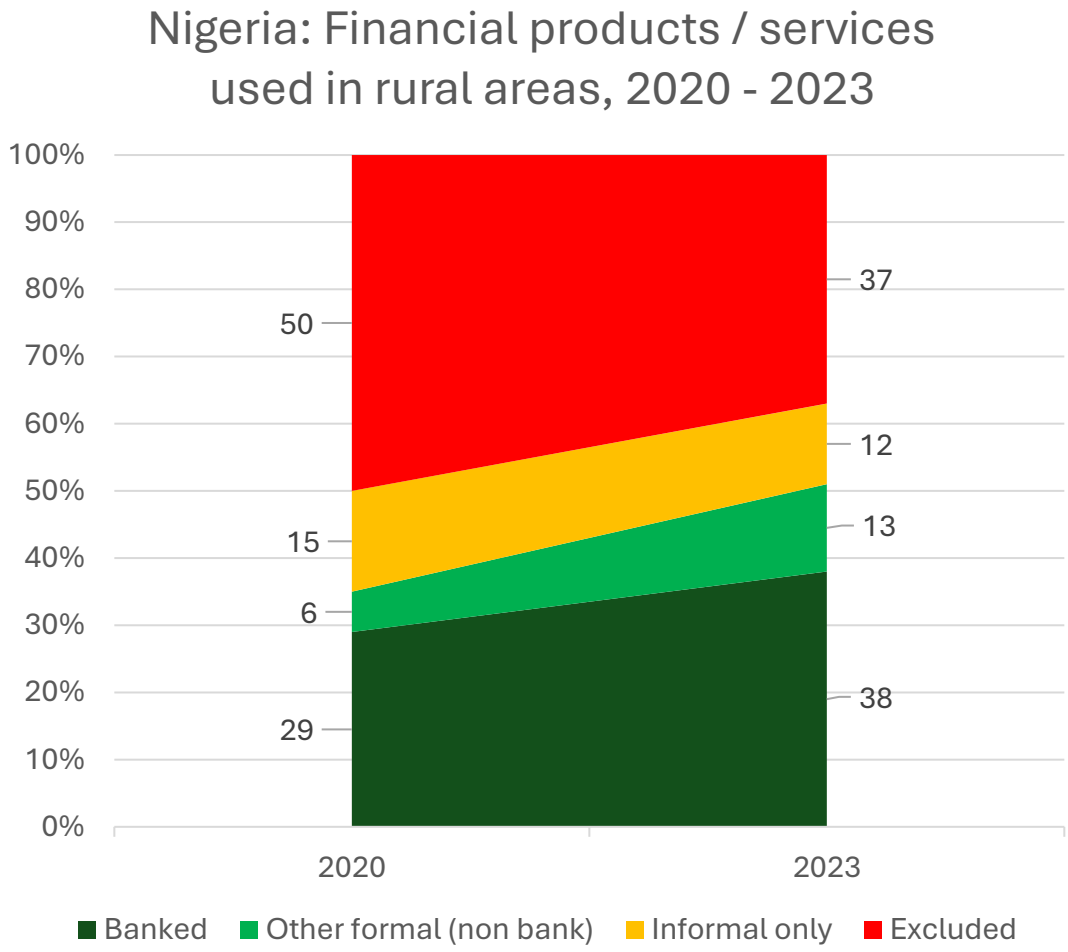
Nigeria: Financial products / services used by livelihood (%), 2023



Source: Eromosele, et al. (2023). Access to Financial Services in Nigeria Survey 2023.

Background (II)

- Recent growth in the use of formal financial products and services in rural areas driven by:
  - Increased access to financial service agents
  - Proliferation of mobile banking and digital platforms
  - Growing digitalization of government programs
- But this growth has been driven mostly by mobile payment and cash services (Agri Logic, 2021; Eromosele, et al., 2023).

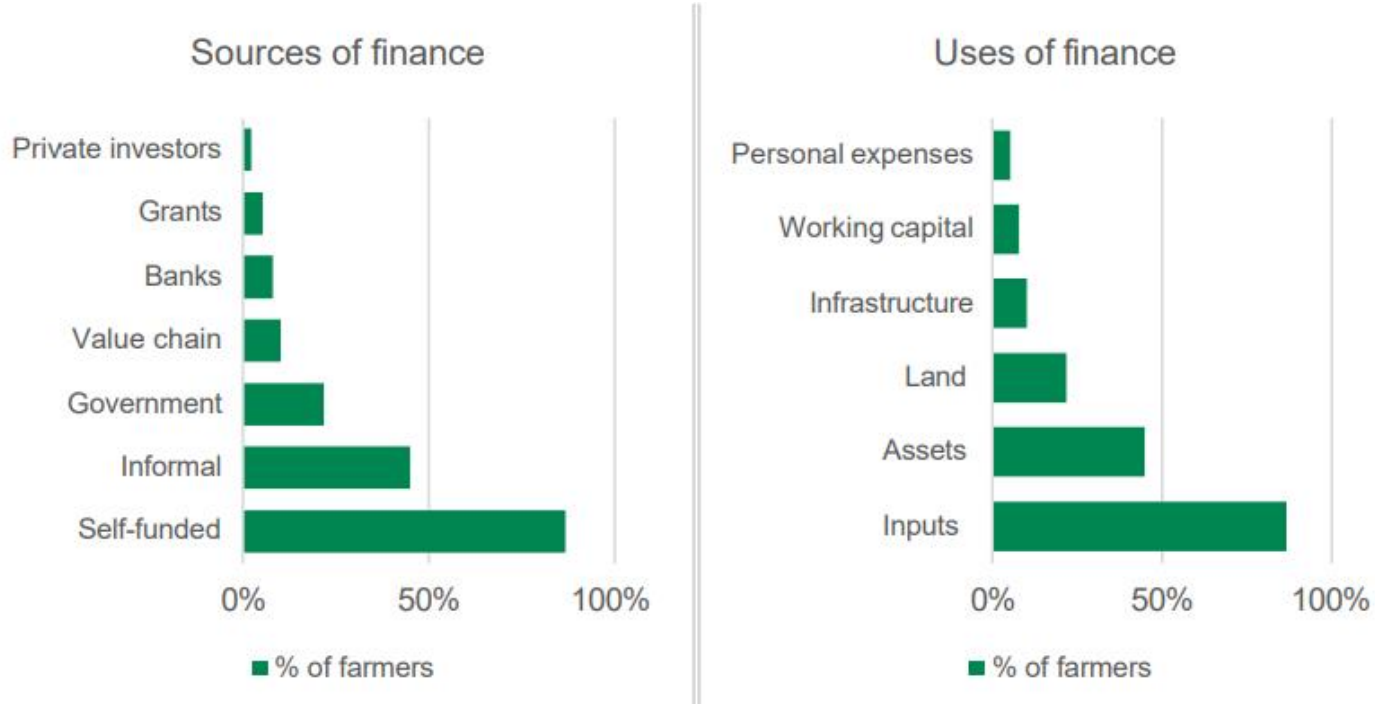


Source: Eromosele, et al. (2023). Access to Financial Services in Nigeria Survey 2023.

Background (III)

- The expansion of digital financial services in rural areas has had little impact on farmers' access to credit.
- Most farmers rely exclusively on their own funds, informal credit, and government support to finance their activities.
- The main use of these funds is to cover the costs of purchasing farm inputs.

Nigeria: Farmers' sources and uses of finance, 2021



Source: Agri Logic (2022).

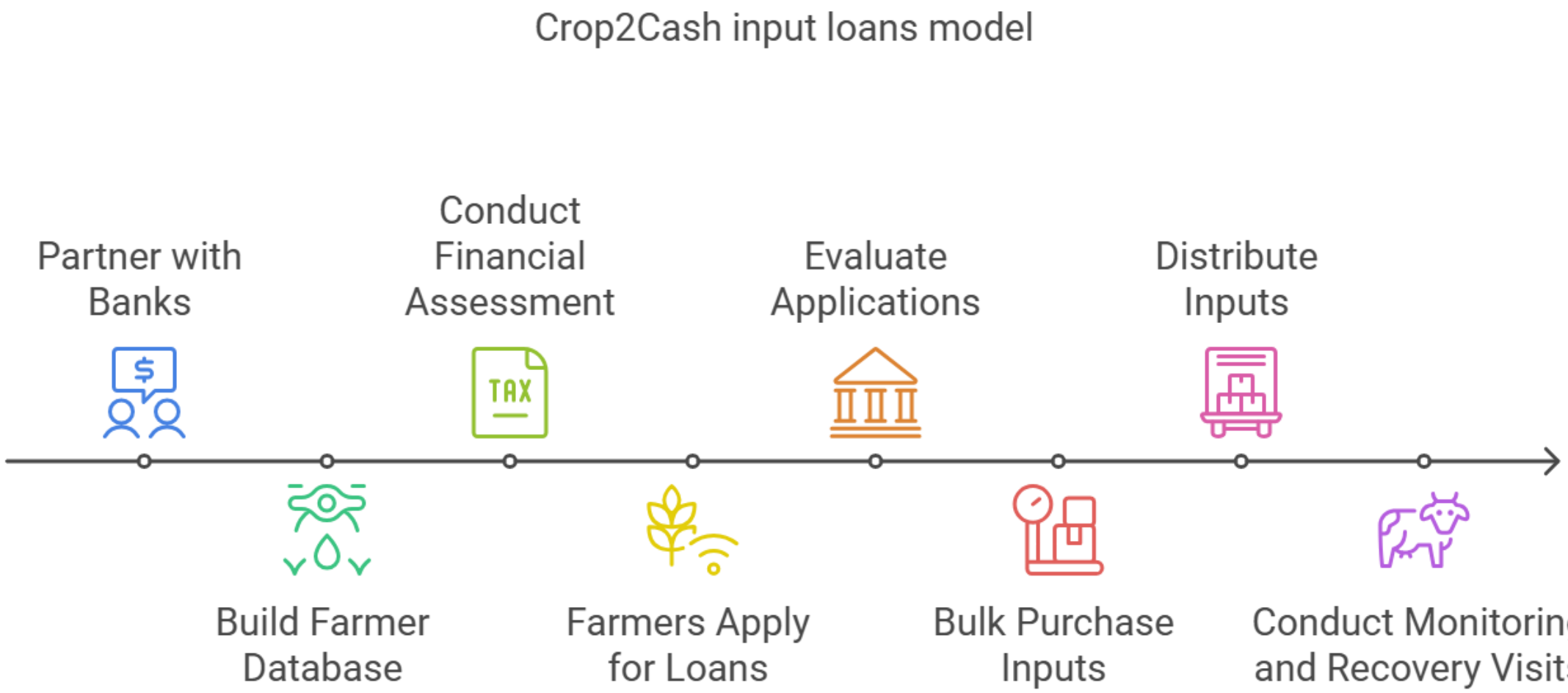
Our partner: Crop2Cash

- An agro-tech startup Crop2Cash Ltd was identified as the local partner for this intervention.

- Crop2Cash facilitates easy access to agricultural inputs and services for smallholder farmers in Nigeria through a USSD-based platform that allows farmers to:
  - save money through Crop2Cash agents recruited from input distributors located close to them
  - get paid by buyers through their phone number
  - receive market price updates via SMS
  - build up their financial identity and improve their creditworthiness
  - buy farm inputs on credit

- While all these products are closely linked to each other, the farm inputs on credit specifically stands out as its most popular service.

How does a typical C2C input loan work?



Voices of Crop2Cash Clients

- IFPRI conducted focus group discussions with more than 40 farmers actively engaged in Crop2Cash services in Kebbi State (May 2023).

- Farm inputs on credit was the most popular Crop2Cash service, with 70% of the focus group participants having applied for the input loan, and 40% of them receiving it.

- Generally positive experiences with input loan, but many farmers indicated that a small cash loan would help them meet their other obligations such as labor and equipment costs, which would help them make the most of their input investment.

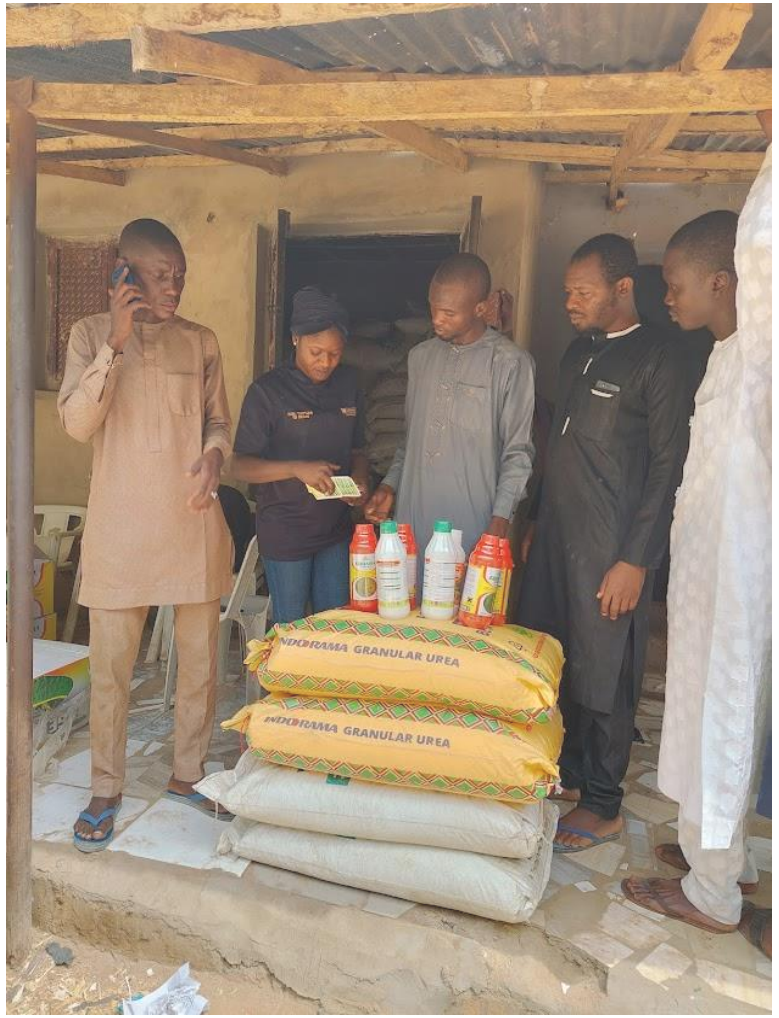
Research objectives

- Digital financial service (DFS) providers such as Crop2Cash can help commercial banks reduce the risk and transaction costs associated with providing credit to farmers.

- The objective of our study is to assess whether making Crop2Cash's agricultural loans more fungible can improve loan repayment rates and reduce the overall risk of the banks' input loan portfolio.
    - A secondary objective is to assess whether the increased loan fungibility helps increase farmers' productivity and incomes.

Study context

- Our study, originally intended as a pilot, was conducted during the dry season (November 2023 to April 2024) in 3 LGAs in Kaduna state.
- 286 farmers approved by Crop2Cash to receive a standard input loan were selected to participate in our study. This standard loan had a value of ₦200,000 (~US$250 in November 2023) and consisted of:
    - NPK
    - Urea
    - Herbicides (land clearing, pre-emergence, and post-emergence)
    - Insecticides
    - Insurance
    - Aggregation and extension services



Experimental design

- The 286 participants were randomly assigned into 3 groups:
    - Treatment group 1: Received C2C standard input loan and a 10% cash loan offer (₦20,000).
    - Treatment group 2: Received C2C standard input loan and a 10% additional input loan offer (worth ₦19,600).
    - Control group: Received C2C standard input loan.
- The additional input loan consisted of land clearing and post-emergence herbicides.
- IFPRI provided a full guarantee fund for the 10% cash and input loans.

Data sources

Administrative data (November 2023 to September 2024)	C2C administrative data with basic information about loan applicants and loan data (loan amount, collateral, interest, payments, loan balance).
Dry season mini-survey (May 2024)	Short survey of study participants (276 responded out of 286) to capture motivations behind loan take-up decisions and views and opinions regarding the input and cash loans.
Main survey (November to December 2024) [currently ongoing]	Full survey of 1,000 dry season farmers in Kaduna (including study participants) to measure household and farm characteristics, agricultural production and marketing outcomes, financial inclusion and access to credit.

Dry season mini-survey: Summary statistics

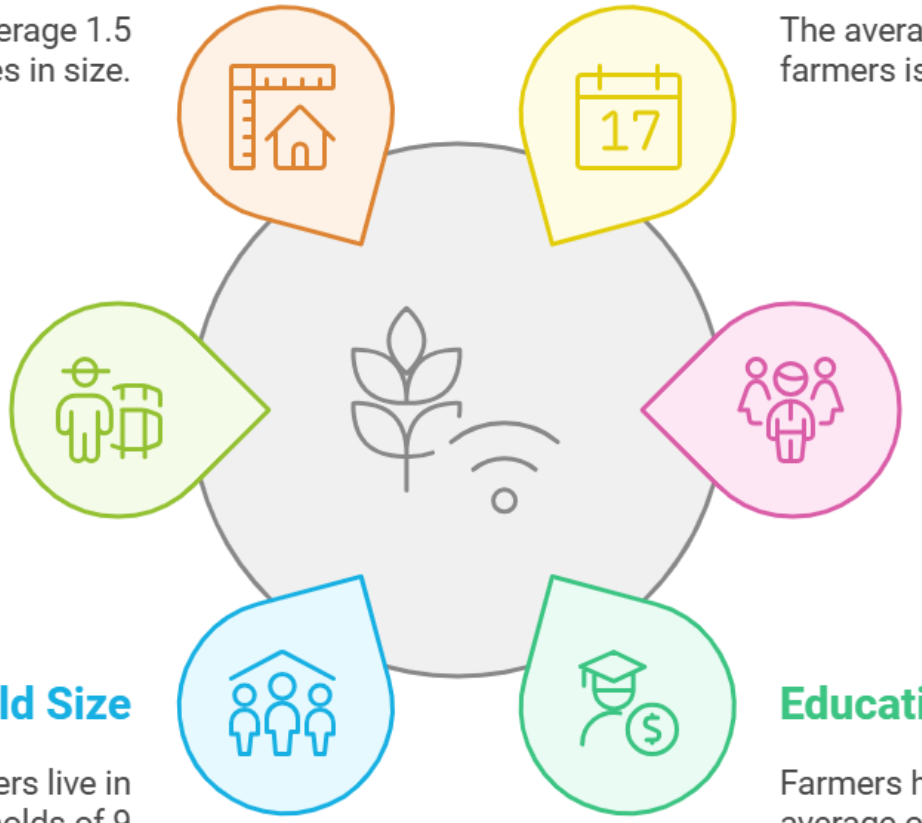
CGIAR | INITIATIVE ON Rethinking Food Markets

Farm Size

Farms average 1.5 hectares in size.

Age

The average age of farmers is 41 years.



Crop Cultivation

All farmers grow maize, and 2 out of 5 grow beans.

Gender Ratio

Less than 2 out of every 10 farmers is female.

Household Size

Farmers live in households of 9 members on average.

Education

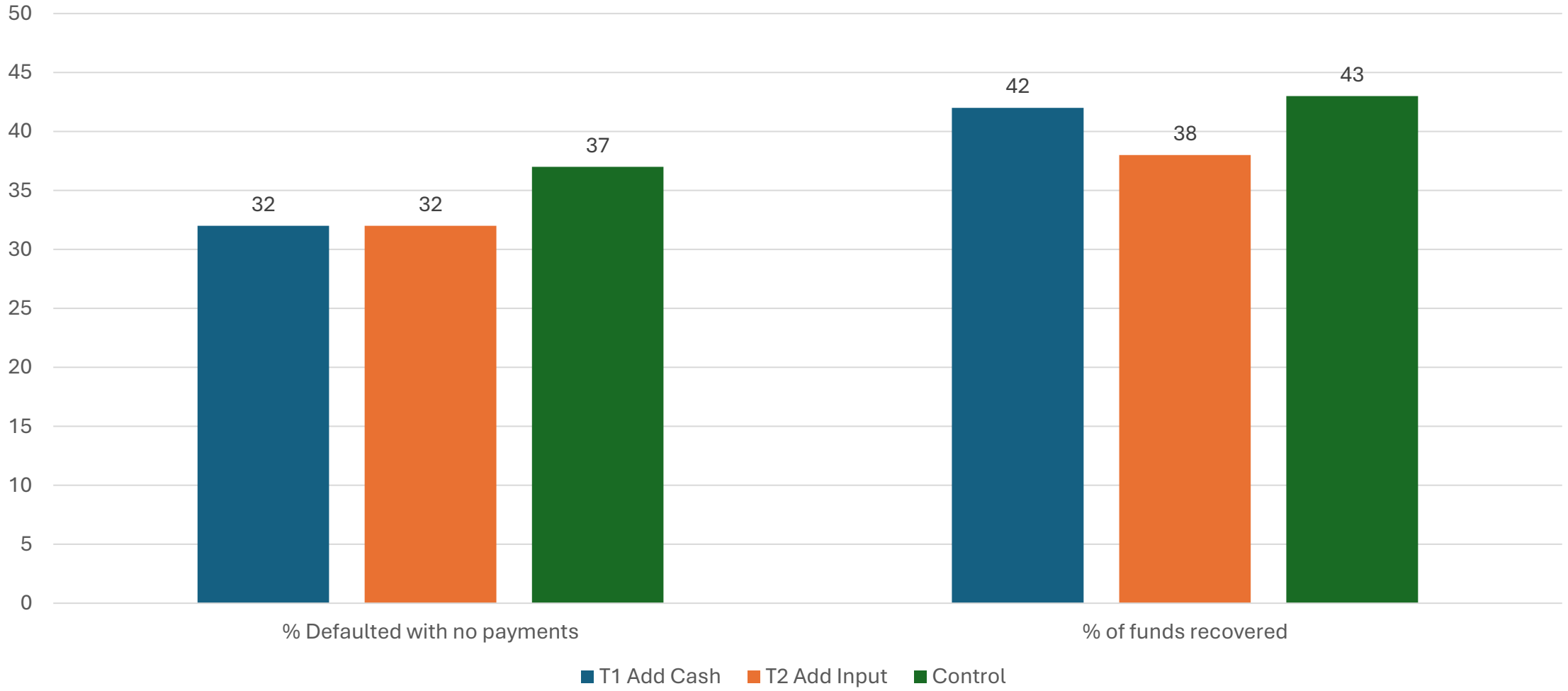
Farmers have an average of 9 years of education.

Treatment take-up

	(1) Full Sample	(2) Female	(3) Male	(4) Education < 7 years	(5) Education > 6 years	(6) Farm size < 1 hectare	(7) Farm size > 1 hectare
T1: Cash loan	0.398***	0.308**	0.412***	0.314***	0.500***	0.333***	0.556***
	(0.051)	(0.134)	(0.055)	(0.066)	(0.078)	(0.0585)	(0.0975)
T2: Input loan	0.604***	0.818***	0.575***	0.511***	0.696***	0.623***	0.567***
	(0.052)	(0.122)	(0.056)	(0.075)	(0.069)	(0.0625)	(0.0923)
T1 = T2 (p-value)	0.005	0.008	0.040	0.049	0.062	0.001	0.934
Observations	276	35	241	152	124	198	78
R-squared	0.282	0.461	0.267	0.233	0.333	0.307	0.256

Notes: Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Loan recovery



Loan recovery

	(1) Full Repayment	(2) Partial Repayment	(3) No Repayment	(4) Total Repayment	(5) Loan Balance	(6) Recovery Ratio
T1: Cash loan	-0.010	0.066	-0.055	-694.5	8,694	-0.015
	(0.010)	(0.069)	(0.069)	(12,661)	(12,787)	(0.054)
T2: Input loan	-0.010	0.062	-0.052	-8,013	19,715	-0.047
	(0.010)	(0.069)	(0.069)	(12,442)	(12,787)	(0.054)
T1 = T2 (p-value)	N/A	0.961	0.961	0.552	0.388	0.537
Observations	286	286	286	286	286	286
R-squared	0.007	0.004	0.003	0.002	0.008	0.003

Notes: Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Final remarks

1. While many farmers stated interest in an additional cash loan both in focus group discussions before the intervention, and in the mini-survey conducted immediately after, the take-up rate of the additional cash loan was lower than the take-up rate of the additional input loan. However, it is worth noting that a 40 percent take-up rate for the additional cash loan does suggest that there is meaningful demand for cash loans.
2. One sub-group of farmers in our sample where we do observe similar take-up rates of the additional cash loan and the additional input loan is farmers with more than one hectare of cultivated land. This motivates further investigation into heterogeneity by farm size and other factors that could influence demand for cash loans.
3. Compared to typical seasons where between around 90 percent of farmers repay the loan to Crop2Cash in full, the repayment rates in our study were extremely poor. A combination of factors—such as high rates of inflation and a volatile agricultural input pricing environment—likely contributed to these low loan repayment rates but further research is needed to understand this outcome.