Can relaxing credit constraints boost farmers' profits?

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Credit and grants ease farmers' financial pressures, allowing them to invest in their farms, but on their own, these tools rarely boost farmers' profits. Integrating credit or grants into bundled input programs enables farmers to take part in programs that address multiple barriers simultaneously, helping farmers increase their profits.

Women working with argan fruit in Morocco. Photo: danm12 | Shutterstock.com

Summary

Listen to a VoxDev Talks podcast episode featuring Craig McIntosh, an academic lead for this insight, discussing these findings.

Many small-scale farmers in low- and middle-income countries depend on agriculture for their livelihoods, yet their productivity has stagnated over the past decades.[1] Farmers may be constrained from investing in their farms because they do not have access to capital. In theory, alleviating farmers' financial constraints could help them make investments in inputs and other technologies to boost their productivity and ultimately increase their profits.

There are multiple tools to reduce farmers' financial barriers. Credit, a tool typically provided by financial institutions, requires farmers to pay back loans with interest. Grants, on the other hand, are often provided by governments or large-scale NGOs and do not require repayment. Both credit and grants can be unconditional, allowing farmers to choose how to spend the money, or conditional, encouraging or requiring farmers to make specific investments. For example, traditional microcredit[2] allows farmers to choose how to spend their loans, while credit can also be provided to farmers in exchange for a specific input like fertilizer or improved seeds. Similarly, grants can be unconditional, in the form of cash, or subsidize the cost of a specific input.

A review of 23 randomized evaluations shows that farmers make limited use of traditional microcredit because loan structures do not align well with farming cycles. When credit is tailored to agriculture or when farmers are offered grants in the form of cash or subsidies, they invest in their farms, which often increases their yields and farm revenues. However, these tools rarely affect their profits, suggesting that financial constraints are not farmers' only barrier to improving their businesses. When credit or grants are incorporated into bundled input programs—combining access to inputs with additional services to reduce risk, provide information, and/or facilitate access to markets—they enable farmers to access multiple services at once that, when well designed, increase their profits. Policymakers should incorporate tailored credit or grants into bundles of services when possible to tackle more than just farmers' financial constraints to unlock their productivity and profitability simultaneously.

Supporting evidence

Farmers rarely use traditional microcredit because repayment schedules and collateral requirements do not align well with the agricultural cycle. Traditional microcredit requires borrowers to repay loans on a rapid, regular schedule, often biweekly beginning one to two weeks after the loan is disbursed. This is difficult for farmers who earn income primarily at harvest time once or twice per year. Small-scale farmers also struggle to meet collateral requirements because they often do not hold formal land titles. Even when they do own land or equipment, it is rarely sufficient to meet the bank's threshold.[3], As such, microcredit often uses group liability, where borrowers share responsibility for repayment instead of requiring physical collateral. However, farmers often face the same shock—like droughts, floods, or rising input prices—as their neighbors that would reduce their harvest and therefore profits. This limits one farmer's ability to repay another's default, making them less attractive loan applicants. In the four studies where farmers were offered traditional microcredit programs in Morocco, Ethiopia, Bangladesh, and Malawi, between 13 and 33 percent of eligible farmers took up the loans that they were offered [1], [2], [3], [4].

Tailoring traditional microcredit to the agricultural production cycle increases its use among farmers. Altering repayment structures [5], [6], , disbursing loans at harvest instead of at planting [7], , allowing assets to be used to secure loans [8], , and harnessing digital tools [9], [4], all increased farmers' use of credit to between 22 and 59 percent. In Tanzania, rice farmers who were offered a loan of about US$50 were allowed to defer 80 percent of the total payment until the harvest when they made their income [5], . About 39 percent of farmers chose to borrow under these terms, and over 92 percent of farmers repaid the loan. Adjusting loan repayment structures to match farmers' income cycles made credit more accessible to farmers. In Kenya, a dairy cooperative offered farmers credit to purchase a tank to collect rainwater for their cattle's drinking water [8]. Rather than having to put up their own assets, if farmers failed to repay the loan, the cooperative could repossess the tank. Under these terms, 44 percent of farmers borrowed, whereas 2.4 percent of farmers took up a loan under the typical loan where borrowers guarantee each other's payments. The asset collateralization eased farmers' access to take out the loan and did not increase default rates. Lenders wanting to reach the agriculture sector should design credit with farmers' realities in mind—like seasonal income or limited asset ownership—to make loans easier to access.

Financial tools—including both credit and grants in the form of cash—encourage farmers to invest in their farms. In eight out of nine studies where farmers were offered credit, they invested more in their farms [1], [2], [3], [5], [6], [7], [8], [9], . Similarly, farmers offered cash transfers invested more in inputs in all seven studies that measured input use [10], [11], [12], [13], [14], [15].

In Ghana, farmers were offered digital credit to buy inputs like fertilizer and insecticides through a mobile phone-based program with a three-month grace period to start repayment [9], . Fifty-nine percent of farmers took out this loan, enabling them to not only use fertilizer and insecticides but also invest in other inputs like rented farm equipment that they were not offered on credit. This demonstrates that when farmers take up credit, it removes a financial constraint to invest in their farms. In Zambia, women who were offered a cash transfer every two months that was worth the equivalent of one meal a day spent more on seeds and

fertilizer and owned more agricultural tools and livestock compared to those not offered cash [10]. While the cash was not earmarked for agriculture in these studies, farmers still chose to invest in inputs, demonstrating that agricultural investments were a priority for households.

Receiving credit or grants is rarely enough for farmers to increase their profits or overall income. Farmers increased their yields or made more revenue from their farms in eleven out of fifteen studies where they were offered credit or grants [1], [2], [3] , [6], [8], [10], [11], [13], [14], [15], [16], . However, only two of the ten studies that reported profits found increases in this outcome [10], [12], . In Bangladesh , tenant rice farmers were offered credit between US$63 and US$625, depending on their crop production needs, and were expected to repay in monthly installments [3], . Farmers used more high-yielding and hybrid rice varieties, resulting in higher yields and additional farm income. However, the increase in farm income did not cover the loss of income from wage labor, as households chose to take fewer jobs outside of their farms. Similarly, in Zambia, farmers were offered a small loan, enough to purchase three bags of maize to consume during the lean season before the harvest, with repayment due after nine months [17]. Farmers increased their agricultural output by 9 percent, but loan repayments were comparable, leaving farmers roughly breaking even rather than earning higher profits. Policymakers and lenders should be mindful that while financial tools can help farmers increase their productivity, higher revenues often come with higher costs. Because expenses like labor and inputs usually rise alongside production, higher yields and revenue do not automatically lead to bigger profits.

There is a growing body of evidence on offering farmers postharvest credit to allow them to store their crops or to sell at a more competitive price. A review of randomized evaluations shows that when farmers are offered credit paired with access to storage (i.e., hermetically sealed bags or access to warehouses), they have sufficient funds to cover their household needs as they wait to sell their crops for a higher price when markets are no longer flooded with crops. Farmers offered these tools increased their income or profits,[5] showing how earmarking credit for farmers to take specific actions beyond encouraging general investment in their farms can help their profitability. Policymakers and other lenders should consider offering support to farmers during downstream activities to strengthen market participation as a complement to loans at the planting stage.

Government input subsidy programs (ISPs), another type of grant, increase farmers' yields when subsidies are in place but rarely affect their profits. Many governments fund large and costly ISPs to lower farmers' barriers to purchasing fertilizer and other inputs with the goal of boosting national food security. While there is limited evidence from randomized evaluations on ISPs, a review of eighty mixed method studies from seven countries in sub-Saharan Africa found that farmers typically increase their fertilizer use and yields while they can access fertilizer subsidies [18], . However, the effects on farmers' profits are mixed, and the impacts on productivity often do not last once the subsidy is removed. A 2010–2011 ISP in Mozambique for fertilizer and improved maize seeds raised farmers' yields during the program and for two years afterwards [19], . Incorporating longer-term changes in input use and effects on other farmers not offered the subsidy, the authors estimate a benefit-cost ratio ten times as high as when only the farmers who received the subsidy after one year are included. The lasting impacts found in this study are rare, likely due to the fact that more than two-thirds of farmers had never used fertilizer before. In contrast, an ISP implemented in Haiti in 2014 provided farmers with vouchers for fertilizer and other inputs [20]. The subsidy crowded out farmers' own spending on inputs, leading to lower total input use. Consequently, farmers' yields dropped both during and after the subsidy was in place, and profits did not increase.

Effectively targeting farmers with subsidies at scale is a challenge, making ISPs less cost-effective in the long run. First, ISPs often reach wealthier or more politically connected farmers, excluding those who need the most support [18], . Second, subsidies can also crowd out commercial fertilizer use, harming the development of agribusinesses, as demonstrated in the study in Haiti [20]. Governments should carefully design ISPs in contexts with low fertilizer use and limited existing markets for inputs to avoid crowding out businesses. Furthermore, ISPs should not be the only tool policymakers implement to alleviate farmers' financial

constraints, as these programs do not consistently support farmers' profitability, nor do they typically support agricultural productivity once subsidies are removed.

Unlike credit and ISPs, unconditional cash grants can incentivize farmers to start small businesses beyond farming to boost their income. In three out of six studies where farmers were offered grants and nonagricultural outcomes were measured, they pursued nonfarm business or other employment [6], [10], [12], ; in the other three, they reduced off-farm work to focus more on their farms [14], [16], [11], . In the study in Zambia where women were offered cash transfers, women who invested in new inputs were also more likely to own a nonfarm enterprise and increase their monthly revenue from these businesses [10], . The cash transfer allowed households to optimize their labor and income-generating streams to both strengthen their existing revenue from agriculture and diversify into new areas. Farmers made additional income equal to double the value of per-person spending before receiving the transfer. In contrast, in Malawi, monthly cash transfers (US$14) gave farmers the security to focus labor on their own fields, helping them grow more maize [11]. These households chose to take fewer casual jobs elsewhere. Helping farmers optimize across multiple economic activities to maximize income will require deeper insights into how relative profitability and diversification needs shape their decisions.

Financial tools support farmers who are already positioned for growth, while those with fewer resources—limited education, assets, or income—struggle to turn these tools into real gains. In all eight studies where farmers were offered credit, whether traditional or tailored to agriculture, those who took up credit had on average more income, assets, or education before taking out a loan, demonstrating that formal credit markets are more effective for farmers closest to commercialization [1], [2], [3], [4], [5], [6], [8], [9], . While grants are easier for farmers to access than loans, those with fewer resources often still face challenges turning financial support into real opportunities to grow their businesses. For example, in Mali, women farmers were offered a loan, and then cash grants were offered to individuals who would not have elected to take a loan [6]. Farmers who would have chosen to take out a loan had on average more land, livestock, or profits beforehand than those who did not take up the offer and in turn made more productive investments in inputs and increased their farm output. Farmers who did not choose to take credit did not increase their farm output when given cash grants. This demonstrates how credit and grants tend to benefit farmers who are already on a path to growth, while those facing deeper challenges need more than financial tools to move onto a productive path.

Credit and grants can help farmers take up bundled input programs that, when well designed, increase incomes and profits. In all four studies where credit or a grant was included in an input bundle of services, farmers increased their revenue and, in three of the four, also increased their income or profits [21], [22], [23], [24], . In Kenya, farmers were offered a three-part bundle including credit to buy inputs, training on good agricultural practices and export standards, plus logistics support to export French beans and baby corn [22]. For farmers who received the bundle with or without credit, their income increased by 32 percent among those who were new to growing these export crops. While credit did not further enhance income, it enabled more farmers to participate in the bundled program, as 41 percent of those in the credit group joined the program, compared to 27 percent in the group not offered credit.

In all four studies, information or training successfully complemented farmers' access to financial tools [21], [22], [23], [24], . In Tanzania, maize farmers were either offered a voucher to purchase inputs or fertilizer recommendations based on tests of their soil, or both [24]. Only the group that received both increased their yields and revenues. The group that received only the voucher used more fertilizer but only to address one of their soil deficiencies, thus limiting the fertilizer's effectiveness. The farmers that just received information did not increase their fertilizer use or yields at all. When farmers had access to relevant information and a financial tool to help them make a productive investment, they thrived.

Alleviating financial constraints as a standalone policy is not enough to support farmers' profitability. These findings align with a growing body of evidence on multifaceted livelihood programs, often referred to as the Graduation approach, which shows that combining complementary services improves living standards for low-income households. Similarly, in agriculture, policymakers

should incorporate credit or grants into bundles of services to tackle multiple, context-specific constraints that farmers face to increase their profits and support incomes.

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5. For an in-depth review of the rigorous evidence on increasing small-scale farmers' access to agricultural markets, including evidence on crop storage, see this J-PAL Policy Insight.

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