



CLIMATE-SMART AGRICULTURE

Food aid supports climate-adaptive investments by farmers in sub-Saharan Africa

For many farming households in sub-Saharan Africa the adoption of climate-adaptive practices and technologies (CAPT) is constrained by a lack of resources, and the potential risks to household food security posed by changes in farm management. Identifying policy instruments to reduce these constraints is critical for unlocking farmers' investments in climate-adaptive agriculture. For poor and resource constrained farmers one possible mechanism for addressing these constraints is by leveraging food aid transfers, which are widespread in the region.

Food aid transfers hold potential for addressing barriers to the adoption of climate-adaptive farm investments through two potential channels: 1) reducing liquidity constraints by offsetting the need to purchase food when production is insufficient or by re-selling food aid in private markets, and; 2) insuring against downside risks, particularly food insecurity risk, associated with changes in agricultural practices. By providing predictable access to food, food transfers can enable a shift in farmers' investment horizons from a short-term myopic focus on meeting immediate consumption needs to longer-term investments that improve productivity and resilience.

This brief explores the evidence on the relationships between food aid transfers and investments in climate-adaptive agriculture using data from Ethiopia, Malawi and United Republic of Tanzania. Four climate-adaptive agricultural investments are considered, namely: adoption of cereal-legume intercropping, use of organic fertilizers such as manure and compost, construction of soil and water conservation structures in fields, and investments in livestock diversification. These practices differ in their levels of capital and labour intensity, and their appropriateness will vary depending on the context farmers operate in.

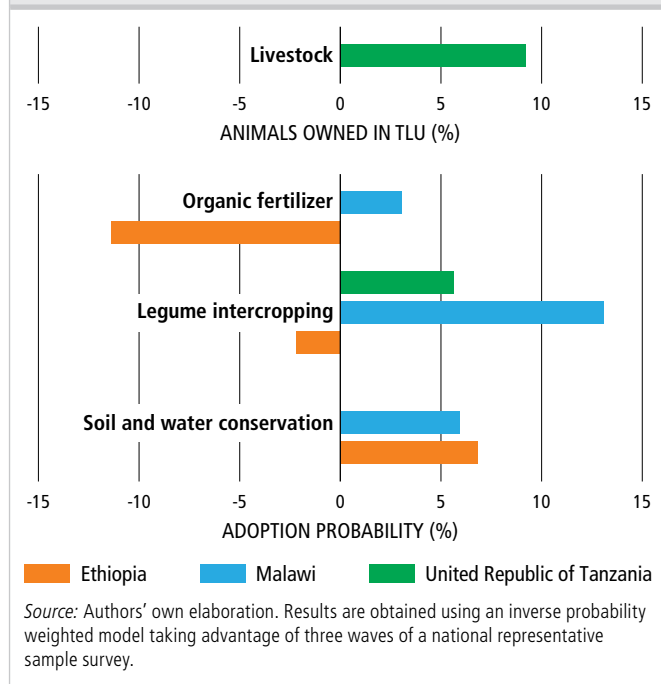
KEY MESSAGES

- ▶ Food aid provided to resource poor farmers reduces constraints to investing in improved, climate-adaptive agricultural practices.
- ▶ The size of the food transfer influences investment choices, with larger transfers increasing the likelihood of making capital-intensive investments, such as purchasing livestock.
- ▶ In most cases, food aid is insufficient to support new agricultural investments in regions exposed to high climate risks.
- ▶ Food aid will enhance farm investments more prominently when it is provided to households alongside context appropriate extension advice on improved agricultural practices, and targets households vulnerable to climate and food insecurity risks, but that also have viable farm assets, such as land.

Food aid reduces barriers to the adoption of climate-adaptive agricultural investments

Farmers that receive food aid are more likely to make investments in climate-adaptive practices than similar farmers who do not receive aid, with important differences seen between countries and practices. In Ethiopia and Malawi, for example, households that receive food aid, regardless of the face value of the aid received, are 6.9 and 6 percent more likely to invest in soil conservation structures than those that do not (Figure 1). In Malawi and United Republic of Tanzania receiving a transfer of food increases the probability of adopting legume intercropping by 13.2 and 5.7 percent, respectively. In Malawi, food aid also increases the probability of adopting

FIGURE 1. Receiving food aid influences farmers' agricultural investments



organic fertilizer (+3.1 percent) while in United Republic of Tanzania it increases livestock investments (+9.3 percent). Interestingly, in Ethiopia, where food aid transfers have been historically larger, the analysis shows that food aid recipients are 2.2 percent less likely to invest in legume intercropping, and 11.5 percent less likely to apply organic fertilizer relative to non-beneficiaries. This suggests the food aid may also be influencing a reduction in crop-focused agricultural investments, and potentially enabling diversification of activities. This includes diversification into livestock.

Larger food aid transfers trigger investments in livestock accumulation

Diversification into livestock production and accumulation of livestock units can help to reduce household's vulnerability to weather shocks, by spreading the risks posed by these shocks over different activities, and by serving as an asset that farmers can sell if needed. In the three countries studied, analysis shows that an increase of 1 percent in the value of the food aid transfer a household receives leads to an increase in the number of animals the farmer owns of 5.6 percent in Ethiopia, 3.6 percent in Malawi and 9.1 percent in United Republic of Tanzania. Interestingly, the results do not find any relationship between increasing transfer value and the adoption of the crop-focused investments.

Alongside with the results in the previous section, these findings suggest that, on average, transfers are effective at helping farmers overcoming barriers to adopting labour intensive investments, such as crop-focused investments, but larger transfers are needed to trigger investments in more capital intensive ones. Understanding these specificities is critical for improving the targeting and the use of food aid to support specific behaviour changes and investments by farmers.

Food aid alone is not sufficient to change farmers' investments in places where drought risk is extremely high

The impacts of receiving food aid vary depending on the historical frequency of droughts experienced in the farmers' area of residence. In all three countries the results show that as the historical frequency of drought rises, the impacts of food aid on the adoption of climate-adaptive investments (when different from zero) falls. These results suggest that in areas prone to low rainfall conditions, where production shortfalls and associated food insecurity are more likely, food transfers appear to be insufficient to trigger the scaling up of investments in agriculture.

The only exception is related to the impact of food aid on investment in soil and water conservation structures in Malawi, which increases as drought risk increases. This practice is particularly well-suited for managing drought risks in the hilly terrain that characterizes much of the country. Thus, where well-suited adaptive practices exist, food aid can support climate-adaptive investments even under high risk conditions.

Maximizing synergies between food aid and climate-adaptive investments

The transfer of food aid is not frequently linked to the promotion of new agricultural investments. However, in practice, food aid does help to address important constraints that farmers face. These complementarities can be enhanced by:

1. Providing food aid to households alongside context- appropriate extension advice on improved agricultural practices.
2. Targeting households with food aid that are vulnerable to climate and food insecurity risks, but also have viable farm assets, such as land.

Ultimately, breaking down silos and improving coordination and coherence between agricultural support initiatives and social protection systems can contribute to a better use of resources, and can help achieve improved production and food security outcomes.