

BUILDING SUSTAINABLE INPUT SUPPLY CHAINS THROUGH YOUTH EMPOWERMENT IN KENYA

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This brief is intended for policy makers and development practitioners who are interested in engaging with rural youth in sub-Saharan Africa (SSA). Providing youth with access to economic opportunities is a major challenge across the developing world. This problem is particularly acute in sub-Saharan Africa (SSA) because [20%](#) of the world's rural youth live in the region and that number is expected to reach [37%](#) by mid-century. With nearly 14 million youth entering the workforce every year, mostly in rural areas, providing youth with economic opportunities has a transformative potential to bring individuals, families and communities out of poverty.

At the same time, linking rural smallholder farmers to the last mile of the agricultural input supply chain is another challenge in SSA and elsewhere in the developing world. Even after substantial public and private-sector investments to promote the use of modern agricultural inputs, many smallholder farmers in SSA still have difficulty accessing these inputs [when and where they need them](#). Limited access to modern inputs is a major constraint to reducing food loss and waste (FLW). In SSA, the lack of effective drying and storage technologies means smallholder farmers experience high losses as they struggle to preserve what they produce throughout the year, with estimated losses between [5% and 12%](#) of total harvest. This level of FLW has major implications for the income and health of millions of smallholder farmers and consumers in SSA and elsewhere.

With these considerations in mind, Purdue University in collaboration with KALRO implemented a project in the eastern Kenyan counties of Machakos, Makueni and Kitui starting in the short rains of late 2021

- Technical training and skill development programs have potential to improve economic outcomes for rural youth.
- Targeting youth with existing businesses which inputs can be incorporated into will lead to more successful scaling of the inputs.
- Future projects that work with youth should offer year-round income generating activities, rather than seasonal opportunities.

Key Takeaways

and 2022. The objective of the project was to understand if rural youth who lacked economic opportunities could be incentivized to sell FLW-reducing inputs to smallholder farmers who were under-served by existing input supply chains. In order to evaluate the impacts of the intervention causally, we designed it as a clustered randomized controlled trial (RCT). The project recruited and trained 397 youth who were members of 40 agricultural youth clubs (with 20 treatment clubs and 20 control clubs). Treatment youth were trained in business management, post-harvest loss reduction, and gender considerations. They were also linked with agricultural input suppliers (henceforth, agro-dealers, see figure 2) and provided the opportunity to sell post-harvest inputs that included [hermetic bags](#) and low-cost moisture meters called [hygrometers](#).

The agro-dealers provided youth group members with support in the form of in-kind capital, equivalent to \$25 worth of inputs on credit (e.g., 10 hermetic storage bags). The youth were required to put up \$5 in collateral for the agro-dealer as a sign of their seriousness and commitment to the project.

Benefits of the Youth Intervention

In February and March 2022, local agro-dealers provided each youth with ten hermetic bags and hygrometers to sell to smallholder farmers during the post-harvest period of February to April. The project completed the first post-treatment round of data collection in May 2022. The results that compared average incomes between treatment and control youth groups after one season showed that the intervention increased average income for treated youth who sold post-harvest inputs. However, it is important to note that the incomes generated from selling inputs were not evenly distributed among the youth. For example, the median youth in the treatment group generated only about \$10 additional monthly income over the selling period. When we looked across the distribution of treated youth, those at the top of the income distribution (above the 90th percentile) who were randomly assigned to the treatment group increased their income by more than \$75 over the period (see figure 1).

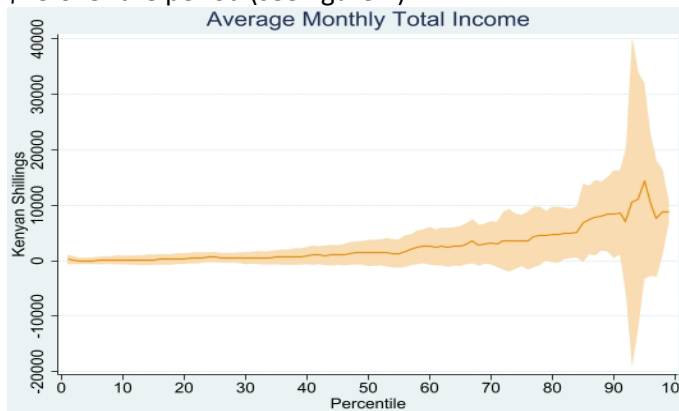


Figure 1: Distribution of Average Monthly Income for Treated Youth in the Intervention.

Our results highlight that youth who were most successful selling post-harvest inputs had an existing business, such as motorcycle taxis and shops. These participants added the FLW reducing inputs to their existing businesses to supplement their established income generating activities. Youth without existing business, had trouble generating significant income from selling the inputs alone. There was too limited demand for the post-harvest inputs to support a standalone business. Also, older youth who were closer in age to 35

years made more money selling inputs than did youth who were closer in age to 18.

It is also worth noting that the prolonged drought currently affecting the horn of Africa has decreased demand for these post-harvest inputs with farmers harvesting smaller yields. This was cited as the number one most common challenge to selling by the youth as well. Other challenges included trust issues between agro-dealers and the youth, along with the need for youth to sell additional products to sustain a year-round business.

Implications for Future Projects that Work with Rural Youth

Results from this study suggest that involving youth to sell post-harvest inputs alone are likely not scalable beyond the context of a project like this. Youth enjoyed the training that the project offered, but they needed more bundled products to sell for higher profit margins to make a successful business across seasons. In addition, Information Communication Technology (e.g., apps or a website) could be used to link youth to more potential customers for inputs to increase sales. Overall, this intervention successfully trained nearly 400 rural youth and offered them entrepreneurship skills and opportunities. It also created new market linkages for rural smallholder farmers at the last mile of the supply chain to access to post-harvest inputs more easily.



Figure 2: Successful Agro-dealers Who Worked with Youth During the Intervention.

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