

Do Women Control What They Grow? The Gendered Use of KickStart's Pumps for Irrigation in Kenya and Tanzania

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THE KICKSTART INTERNATIONAL PROJECT'S OBJECTIVE IS TO INCREASE CROP PRODUCTION AND productivity through the use of human-powered, low-cost micro-irrigation pumps. Direct benefits of the project include increased incomes and improved food security for households using pumps. The Gender, Agriculture, and Assets Project collaborated with KickStart to better understand the gender dynamics of who purchases and controls pumps, as well as the intrahousehold effects of pump use on decisionmaking and use of income from irrigated crops.

The majority of Kenyan and Tanzanian households depend on rain-fed agriculture, even in arid and semi-arid regions where weather is variable and precipitation is inconsistent (Rockström et al. 2007). In such agricultural systems, irrigation can have a significant positive impact: farmers can make use of more land, plant more crops per annum, and reap higher yields while reducing their vulnerability to climate variability.

Many smallholder farmers have adopted new technologies such as motorized pumps and human-powered pumps to acquire water otherwise unavailable to them and use that water more effectively in their fields.

Today, organizations such as KickStart International are using market-based approaches to disseminate some of these technologies (treadle pumps and hand-operated pumps, specifically) to smallholder farmers. This study by the Gender, Agriculture, and Assets Project (GAAP) examines KickStart pump ownership and use by women, including their relationship to women's decisionmaking power within their households.

INTERVENTION AND STUDY SITE

KickStart International works to generate demand for and encourage adoption of their human-powered irrigation pumps through marketing, education, and awareness-building activities. KickStart works in five African countries

and sells its products to even more countries under its Global Institutional Program. KickStart has released six different pumps with varying pumping distances (the distances the pumps can transport water from its source to an irrigated field), pumping capacities, irrigable areas (the areas the pumps can irrigate daily), weights, and prices. The pump models range in price from US\$73.00 to \$155.00.

In Kenya and Tanzania, KickStart distributes these pumps through local private-sector dealers and works to build market demand for them by raising awareness about irrigation, training farmers to use the pumps, and developing local private-sector supply chains to sell both the pumps and spare parts.

Starting in the mid-2000s, KickStart began supporting women farmers' uptake of pumps through, among other avenues, female extension workers and sales representatives and demonstrations and outreach activities that include women. KickStart paid attention to gender issues for two reasons. First, women play important roles in agriculture yet face constraints in accessing and using technology. Second, gender is often neglected in irrigation programs, resulting in ineffective and inadequate options for women.

Although women are one of KickStart's targeted groups, little is known about the extent to which women benefit from the irrigation technologies.

STUDY OBJECTIVES

This study seeks to understand (1) women's ownership of and access to KickStart pumps, (2) constraints women face in purchasing and using those pumps, and (3) the implications of women's ownership of pumps (or lack thereof) for their ability to make decisions about and use the income from crops irrigated by the pumps.

OVERVIEW OF METHODOLOGY AND DATA COLLECTION

Qualitative data for the study was collected in three regions of Tanzania and three districts in Central and Western Kenya. Sites were selected to represent areas with high numbers of pump purchases (because they include agroecological areas requiring irrigation), different levels of gender stereotyping, and proximity to urban centers. Twenty-seven focus group discussions (FGDs) of 18 or fewer people were facilitated across the two countries, including 11 women-only discussions, 11 men-only discussions, and 5 mixed discussions.

During the end-term review of the project, the team decided to add in-depth individual interviews to provide more data on questions related to decisionmaking and control over income. The data collected was analyzed and has been organized by theme below.

RESULTS

Awareness, Purchase, and Perceptions of KickStart Pumps by Men and Women

Sales data showed that only 6 percent of pump sales in Tanzania and 18 percent of pump sales in Kenya were made to women between 2005 and 2013. Among common pump varieties, women liked the "MoneyMaker Hip Pump" (MMP), a hand-operated lightweight pump. The MMP was preferred because it was easy to use and had no operational cost and, in some cases, because it did not require women to use their legs to pump water, which is considered culturally inappropriate in some areas.

Ownership and Use of the KickStart Pump and Other Assets

Men dominated ownership of the pumps and the majority of other household assets. According to both men and women respondents, men owned most "big assets" (bicycles, electronic equipment, houses, land, and livestock), while women owned "smaller" assets (clothing, cooking utensils, mobile phones, and poultry). Some assets were reported to be jointly owned. These included assets shared by men and women within a household, including furniture, farm tools, and businesses.

In Tanzania the majority of participants stated that men and women decided jointly whether or not to buy a pump, although, if there was disagreement, the husband made the final decision. In some cases, men simply bought the pumps (without joint decisionmaking) and brought them home. A few women, especially from female-headed households, also bought pumps.

Women knew less about the pumps than the men did. This was because of lower levels of education, less mobility, and unequal access to information. Pump information was distributed through agricultural shows, the NGOs that sold pumps, and field days and demonstrations. Men stated that KickStart leaflets, radio, and television were important sources of information. Women stated that their husbands or other farmers were important sources of information.

KickStart pumps were used mainly to irrigate the owners' land, though some farmers leased out their pumps for a fee or payment in kind or lent them to friends or neighbors free of charge. Female respondents from central Kenya reported that men rarely lent pumps to women because, "men do not like women to progress."

Both men and women would lay irrigation pipes, sometimes with the help of children. However, men pedaled the pump because it was considered one of the more difficult tasks. Children were also involved in the pedaling because they thought of it as a fun activity.

Women reported difficulties using the treadle pumps and found them culturally inappropriate. Some of the FGD participants indicated that women took longer to irrigate the same piece of land compared to men because the women had many other work responsibilities that required them to take breaks from irrigation.

Intra-household Decisionmaking on Crop Choice and Use of Income

Men and women had several criteria for choosing which crops to grow under irrigation: the crops' potential for both home consumption and sale, the availability of a ready market, and the ability to grow with minimal labor and external inputs. In both Kenya and Tanzania, women and men had different preferences about which crops to irrigate, with women preferring leafy vegetables. In both countries FGD participants indicated men usually discussed with their spouses which crops to grow and irrigate, even though men made the final decision when there was disagreement. Women who had their own plots, or whose husbands were working or living away from the homestead, made their own decisions about which crops to grow and which crops to irrigate.

While men, women, and children jointly weeded and harvested crops, men usually conducted all sales alone. Money earned could be handled in several different ways. First, men could keep the money, but decisions about the money were made jointly. Second, men could keep the money and use it on purchases or activities that they and their spouses did not agree upon. Third, men could give the money to their spouses for safekeeping (women would not spend this money without asking their husbands' permission). Fourth, women who sold leafy vegetables (or some other "women's" crops) at the farmgate or in local markets made independent decisions on how the money was spent. Women's pump ownership did not seem to influence decisions about which crops would be irrigated and who would control and manage income earned from those crops.

Impacts of KickStart Pumps on Household and Individual Well-Being

Respondents said owning a KickStart pump led to farmers cultivating larger plots because of their improved yields. Further, some farmers focused on horticultural production, which assured them of reliable and higher income. The pumps also resulted in general improvements in household well-being: more income, better food security, and improved health status among all household members. Improved well-being was described by participants as having led to "good relationship and more love" within families. Women's labor in fetching water was reduced. Women were also able to access social capital because income from crops sold enabled them to join women's groups. Positive perceptions and self-perceptions of women grew.

Buying and using the MMP involved some trade-offs. For example, women had less time for social activities such as group meetings and church activities, leisure activities, or playing with their children. Very few negative impacts were reported, but women did report men misusing money on alcohol and extramarital relationships.

CONCLUSION AND POLICY IMPLICATIONS

KickStart's market-based introduction of human-powered pumps is improving some smallholder farm households' well-being. Their approach has not led to gender-equitable ownership of pumps, however: women account for just



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10 percent of pump buyers across Kenya and Tanzania. Also, well-intentioned technology interventions can have both positive and negative impacts. For example, while the KickStart pumps increased the land area under cultivation and household incomes, they also had some negative social impacts such as increased labor.

Some conclusions and recommendations for future work follow:

- ▶ To reach and benefit women, market-based approaches need to be accompanied by specific strategies for addressing women's information and financial constraints so that they can access the new technological asset(s) introduced.
- ▶ Technology design should take into account women's needs: by addressing their labor constraints, for example. Two major constraints faced by women in the use of KickStart's pumps were (1) the requirement for two people to operate the pump and (2) the cultural inappropriateness of women operating the pump in some areas.
- ▶ While men may own assets such as the pump, women can still benefit from user rights over these assets. Women's asset ownership is a critical indicator of their empowerment, however, and can influence their bargaining power and other outcomes for themselves and other household members including children. Therefore, the impact of women's pump ownership on their decisionmaking, bargaining power, and income expenditure requires further study.

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FOR FURTHER READING

Njuki, J., E. Waithanji, B. Sakwa, J. Kariuki, E. Mukewa, and J. Ngige. 2013. *Can Market-Based Approaches to Technology Development and Dissemination Benefit Women Smallholder Farmers? A Qualitative Assessment of the Ownership, Purchase, and Use of Kickstart's Irrigation Pumps in Kenya and Tanzania*. IFPRI Discussion Paper. Washington, DC: International Food Policy Research Institute, forthcoming.

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The Gender, Agriculture, and Assets Project (GAAP) aims to promote women's ownership and control of productive assets in developing countries by evaluating how well agricultural development projects improve men's and women's access to assets and identifying ways to reduce gender gaps. GAAP is jointly led by the International Food Policy Research Institute and the International Livestock Research Institute and receives funding from the Bill & Melinda Gates Foundation for 2010–2014. For further information on GAAP, see gaap.ifpri.info.

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