FEED THE FUTURE
The U.S. Government's Global Hunger & Food Security Initiative

Small-scale irrigation water lifting in Bahir Dar, Ethiopia
Photo: Petra Schmitter

ETHIOPIA: SUCCESS STORY

Benefiting from small-scale irrigated gardens in Ethiopia

Yenenesh Ewnetu and her husband Girma are smallholder farmers from the Dangeshta kebele in Ethiopia. They have five children. To generate an income and also for consumption at home, they grow fruit and vegetables, such as oranges, papaya, mangos and avocados as well as onions, green peppers, garlic, tomatoes, and cabbages, and also sorghum and teff, in their backyard. They're not land owners and have in the past found that returns from renting farm land have not been sufficient to justify the cost.

Yenenesh and Girma joined the *Feed the Future Innovation Laboratory for Small Scale Irrigation* (ILSSI) project in 2015 to explore ways of reducing labor and increasing the productivity of their farming. Before this they irrigated using water from three nearby wells, of a depth of around 11m, which they sourced using a pulley that they bought for 300 ETB (approximately US$ 11). Through the ILSSI project they received a rope and washer pump which they began to use, as well as their existing pulley system, to lift water for small scale irrigation. ILSSI also provided them with improved onion and green pepper seeds to help boost their yields. Yenenesh and Girma combined the use of these water lifting systems with drip irrigation to ensure more efficient water use.

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Although water levels in the wells drop during the dry season, and their plot is too small to cultivate large volumes, Yenenesh and Girma have been able to achieve three crop production cycles each year. This enables them to provide for themselves and their family and also to generate an income through sale of surplus in local markets. Reducing labor costs and improving productivity through the use of a rope and washer pump, and improved seeds, has resulted in an increase in their household income. Not only that but the rope and washer pump has made it easier for them to source water for other needs as well, such as drinking, bathing, washing and for watering livestock.

With new expertise, Girma is now supplementing their household income by offering maintenance and repair services locally for pulley and rope and washer pumps. Nonetheless, both Yanenesh and Girma said they're interested in now exploring the potential of solar irrigation pumps as a way to further improve productivity and reduce labor costs.

Yenenesh commented that if the right training is provided, the weather is conducive and crops can be adequately protected from pests, small scale, irrigated gardens like this can be lucrative, and provide an important alternative, or additional, livelihood option to rearing livestock. Such diversification would help smallholder farming families in Ethiopia like Yenenesh's to become more resilient and food secure, while also offering the potential for improved household nutrition.

Gared Tibeb attending to tomato plants on his 62m² plot loaned by his father, Robit Photo: IWMI

Other positive outcomes from ILSSI in Ethiopia include a group of young farmers in Robit, keen to try small scale irrigation but lacking land, who were able to secure small areas of land (under 100m² each) from their families to start growing vegetables in the dry season. These small plots were so successful that the young men were offered larger pieces of land to do the same the following year and other members of their family were then also keen to give small scale irrigation a try.

Another Robit farmer achieved profits of equivalent to around US $100 through irrigated production of tomato and peppers, enabling her to pay off debts on other productive investments. Over thirty farmers involved in ILSSI in Ethiopia reported that their crop yields had increased following introduction and use of the new technologies and/or practices proposed by ILSSI, sometimes as much as doubling their yields. Irrigated fodder production was also found to double yields particularly in the dry season when compared with non-irrigated fodder production.

ILSSI worked with farmers like Yanenesh and Girma and others in Robit, Ethiopia and also in Ghana and Tanzania (from 2013 to 2018) to create research-based evidence that would contribute to increased food production, improved nutrition, accelerated economic development and protection of the environment. The project involved stakeholder-driven field studies to evaluate small scale irrigation (SSI) interventions, and household surveys to assess the impact of SSI on nutrition, economic status and women's empowerment. An integrated suite of analytical models, the Integrated Decision Support System (IDSS) was used to evaluate and interpret results from field studies.

Further information

This success story has been produced by the ILSSI project: ilssi.tamu.edu

For more information on this project contact: Neville Clarke: neville.clarke@ag.tamu.edu

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