

FROM INDIA TO MALAWI: SEEPAGE WELLS

Feed the Future India-Africa Agriculture and Natural Resource Management Innovation Sharing Platform, a USAID/India initiative, is a unique and conceptually innovative donor support program aimed at demonstrating the success of a bridge mechanism to transfer demand-led agriculture and natural resource management (NRM) innovations from India into Africa, specifically Kenya and Malawi.



A completed seepage well in Malawi

UNTAPPED WATER RESOURCES

The small-scale farmers in Mkwaira village of Dedza district in Malawi have limited prior exposure to groundwater management practices. This constraint has trapped agriculture in the community at a subsistence level, as the farmers are completely dependent on rainwater for irrigation. Almost all of them plant only a single crop each year, which provides insufficient yield to feed their families. Food insecurity therefore is the single biggest issue plaguing the community.

The village is located near the confluence of three rivers, and even though water is not immediately visible at the surface, a very significant, relatively easily accessible body of groundwater is available. After the initial visits and discussions with the community, the demand for a technique to systematically use the available groundwater emerged. Thus with the end goal of helping farmers grow a second crop in the year and of helping them achieve food security, TechnoServe partnered with Catholic Relief Services (Malawi) and CADECOM as the African Innovation Adopters, and with GRAVIS (India) as the Indian Knowledge Partner to launch an intervention.

THE SEEPAGE WELLS PILOT

Through multiple meetings with the farmers in Mkwaira village, the consortium analyzed the main sources of irrigation, as well as the community's needs and historical efforts at harnessing underground water. Through this demand-led approach: seepage wells were identified as a low-cost, environmentally friendly and long-lasting solution for accessing groundwater in the village. These wells will ensure that 0.1 hectare of farming land for each household can be adequately irrigated for harvesting a second crop in the dry season.

Seepage wells, or *beri* as they are known in India, are shallow dug wells constructed in places where possibilities of high groundwater recharge is available at shallow depth. These wells get recharged from the available seepage. The available water in wells is then lifted for crop irrigation.

As part of the intervention, GRAVIS visited Mkwaira, confirmed the initial diagnosis, and provided on-site training to the community, including guidance on how to construct the wells, what materials to use and how to maintain them once built. Over the course of July to December 2015, with support from the community and under the guidance of the consortium of CRS, GRAVIS and TechnoServe, eight seepage wells were constructed in the village. Post-construction, the GRAVIS team trained the community members in setting up a village committee as well as in designing by-laws for maintenance and usage of the wells.

The seepage wells are currently helping 250 farming households cultivate a second crop, despite a devastating drought in Malawi, which has destroyed crops in many places.

PROJECTED PILOT IMPACT



USD 14,000

Revenue increase for farming families



250

Households benefited



8

Seepage wells built, irrigating 25 hectares of land

Farmer Story | Dorofino and Theresa

Dorofino and Theresa are farmers from the village of Mkwaira in the Dedza district of Malawi. They have never harvested any crop outside of the rainfed season due to the unavailability of water in the dry season. During the last dry season – for the first time, they decided to plant vegetables.

“We both have six to eight members each in our families. The maize we plant in the wet season isn’t enough for feeding the entire household. Last year, when I noticed the wells being constructed, I rented a piece of land for the first time in the dry season. During the construction, most of the muddy water in the well was being thrown away and was unused. Since nobody else was using it, Theresa and I decided to try planting pumpkin leaves and use the well water for irrigation.”

The Pumpkin leaves harvest gave Theresa and Dorofino an additional revenue of 1000 MWK and 2500 MWK in the dry season apart from supplementing their household consumption needs. They report that the closer availability of water will eventually bring better returns for their household. Although there hasn’t been adequate rains in Malawi this year, they are confident that in the next dry season, the seepage wells will provide enough water to allow them to grow diverse vegetables in a much higher quantity.



FARMER QUOTES

“My vision is that things are maybe going to change. Now that we have water so close to us perhaps we can do maize, tomatoes, beans and other different types of crops.”

–Patricia

“I am extremely thankful. On our own we could have managed to excavate the wells – but the skills, capacity and procuring the material involved would have been difficult. In the few years, if the wells bring us water, the community will automatically change for the better.”

–Germena

“We went upstream to try diverting water to the community, but we didn’t have the scientific know-how on how to move water over the hill. There have been other programs in agriculture or afforestation – but for the first time the problem of accessing water has been addressed.”

–Maxensio

Partner Speak | Catholic Relief Services

As the implementing partner in Malawi, Catholic Relief Services (CRS) provides invaluable local context to the program as they understand the real challenges and gap areas in the areas of operation.

“Being a part of this intervention has been unique,” says CRS Project Manager, Grey Sagawa. “The GRAVIS team has brought in a lot of technical know-how which we wouldn’t have been able to source locally. They have been very hands-on and extremely dedicated. The TechnoServe Operations team has also been extremely supportive. They took time to know the community and have always provided very relevant suggestions and inputs. It would be great if there could be an experience sharing platform – we would love to share our learnings with other Indian and African partners within the innovation transfer program.”

TechnoServe and CRS look forward to continue engaging over a longer period and jointly deliver sustainable impact for the community.

Way Forward

As of August 2016, TechnoServe – in partnership with CRS, CADECOM and GRAVIS – has completed construction activities of eight seepage wells in Mkwaira village and is constructing five more. In addition to the seepage wells, 20 Agro-Horticulture Units (AHUs) have been established to demonstrate that when assured water is available, it can help support alternative crops beyond mere subsistence farming. These AHUs will also complement the nutrition requirements of the community.

Although the rains have been extremely low in the current season, the seepage wells should hold enough water to support a second crop for the farmers. Through this unique innovation transfer program, TechnoServe aims to create lasting transformative economic impact for its beneficiaries.

