



## SUCCESS STORY - 07

### Rope & Washer Pump Technology: a Supplement to the Water-Harvesting Schemes

**In view of combating the persistent food insecurity situation that prevails in large parts of the Amhara Region, USAID/AMAREW supports local initiatives that deliver appropriate technologies for increasing crop production and productivity**



Photo: AMAREW Project

*In Tehuledere woreda the socio-economics and extension research team of Sirinka Research Center demonstrates the use of the rope and washer pump that delivers water efficiently and at low cost.*

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The Amhara National Regional State (ANRS) government has been engaged in a massive campaign of construction of water harvesting structures to improve food security and income of smallholder farmers. Farmers have already started growing different fruits and vegetables through small-scale irrigation for their own consumption and the local market. However, if this initiative is not supported with a suitable water management and delivery system, the harvested water may not be accessible to satisfy the crop water demand. Using the hand carried bucket method of lifting water from the storage tank and applying it to plots leads to intensive labor use and excessive wastage of water.

To solve this problem, with AMAREW support, the Sirinka Agricultural Research Center of Amhara Regional Agricultural Research Institute (ARARI) developed the rope and the washer pump which is a promising technology to assist the regional water-harvesting program. The center carried out in Tehuledere woreda demonstration trials of the new pump technology on 21 households owning water harvesting structures and growing fruits and vegetables. More demonstration trials are also planned in other woredas. The growing popularity of this technology can be confirmed through the woreda offices of agriculture and rural development giving lots of purchase orders to local business to produce the pump in massive numbers. The Kalu woreda, for example, has ordered a total of 640 of such pumps for distribution in the woreda.

The rope and washer pump is simple to construct from locally available materials using local skill. It is also easy to operate, saves labor, and helps avoid wastage of water during lifting operations. The major components of the rope and washer pump are a long rope, preferably plastic, with a series of closely spaced circular rubber washers mounted on the rope at their centers. As the rope moves from the water storage tank through the inclined PVC pipe in the structure, each of the washers with about the same diameter as the pipe, takes up a certain quantity of water and discharges it in a trough at the upper end of the PVC pipe. The movement of the rope and washers upward through the pipe and back to the storage tank from outside the pipe is made possible by a grooved wheel cranked with a handle at the center, which in turn is mounted on a wooden frame above the ground.