

Sustainable Land Management



Drip irrigation - a fresh prospect for small-scale Eritrean farmers?

By Pablo Loosli

The program in Eritrea has been promoting drip irrigation systems for some time. In this report, consultant Pablo Loosli traces the stages through which this system is gradually finding its way into the country's agriculture.

1 First stage: taking stock of irrigation agriculture

Since Eritrea became independent in 1993, several dozen companies and organizations have invested in drip irrigation systems - with varying degrees of success. However, on my first mission in October 2000 on behalf of the Sustainable Land Management (SLM) program, there was not a single small-scale farmer using this type of system.

Small-scale farmers are those cultivating less than one hectare of land. The mini-systems that are appropriate for them - such as those that have been successfully tested and now marketed by International Development Enterprises, a charitable organization in India, with substantial support from the Directorate for Development and Cooperation - are completely unknown there. Our mission was finding out whether drip irrigation is a fresh prospect for small-scale farmers. The first three affordable microsystems for drip irrigation - known as low-cost microdrip systems - that I am supervising have been installed in favorable locations, and the users have been instructed on how they work and how to use them.

My conclusion after this initial investigation is that the idea of using simple and inexpensive good-quality systems for drip irrigation in Eritrea - with the prospect of marketing them through the private sector throughout the country if they are successful, and perhaps even manufacturing them locally, appears to be well worth considering. To prevent "low cost" from being equated with poor quality, we will refer to the system from now on as "affordable micro-irrigation technology" (AMIT). AMIT can

make a substantial contribution to improving self-sufficiency, food security, and income for many poor and war-damaged families.

2 Second stage: presenting the irrigation system to potential users

In March 2001, a team of Eritrean, Swiss, and Indian experts visited agricultural schools and other potentially interested partner organizations in Eritrea as part of a follow-up mission. The aim was to get AMIT known and to find partners for the test phase who would be willing to introduce the system on their own farms and among small-scale farmers in their neighborhood, while taking part in the testing process. In addition, farmers who were equipped with AMIT in October were visited, so that their initial experiences with it could be discussed.

During our visit to the first farm, near Gaden, a town in the Eritrean highlands that is well known for its orange and vegetable crops, there was a welcome sight. The drip kit that had been installed in the fall of 2000 was in use. At the time of the mission's visit, the onion harvest was due. The employee responsible appeared to be delighted with the installation: "I can just turn the water on, and during the irrigation period I can get on with other household work. Before this, irrigation meant hard, time-consuming work for me." This comment makes AMIT's potential for small-scale farmers in the Eritrean highlands clear. The same picture was seen with the second farmer in Shiketi, who has been using the drip kit since January 2001. He uses it to water a small garden where he grows lettuce. The garden was fenced in to protect it from the chickens.

The harvest was in April, and the farmer's wife was taking a note of water consumption every day - providing the first data on water consumption. Profitability estimates show that the costs of the system are recovered after two to three cycles of cultivation if the produce is sold on the local market. AMIT was also presented to our new partners at the University and in colleges, as well as to the farmers.

- At the University of Asmara's Agricultural College, there was a sense of tremendous interest and personal commitment on the part of specialists, professors, and students. The demonstration, with a lecture by our Indian specialist attended by more than 100 students, was very well accepted.
- In Hagas, a fast-growing town in Eritrea's dry western lowlands, the Salesian Order runs a widely recognized modern Agricultural Boarding School. The AMIT demonstration and lecture there were heard attentively by some 120 graduates from all over Eritrea - and this was for two hours under the hot midday sun. The school appears to be well suited for carrying out

extended testing and further investigations in the areas of marketing, sales, and financing systems.

The Director has shown a strong interest in future collaboration.

- In Hamel Malo, in the central highlands north of Keren, we visited another agricultural school, this time a state one. Here again, the students and teachers were very interested in our explanations. The demonstration and lecture were attended by about 60 students, and were followed by a question-and-answer session that finished only when it started to get dark.

To sum up this second stage, it can be noted that the demonstrations aroused great hopes. The question of the extent to which these expectations can be met is still open. Supervision by the University of Asmara's well-qualified irrigation specialist is unfortunately only guaranteed until September 2001, since after that he is going abroad to study for a doctorate. The fundamental question of which local partners are capable of supervising the introduction and test phase of AMIT will then come up once again. Unfortunately, interest on the part of the state Agricultural Research Institute is limited - possibly due to competition with the University. Nevertheless, the clear signs of the future value to small-scale farmers in Eritrea of this (affordable) technology cannot be ignored.

3 Future stages

The next step will be the analysis of the crop results of the 25 or so systems that have been installed, and evaluating the experiences of the farmers concerned. If the results are encouraging, a test using 50-100 systems will be carried out with the assistance of two or three partner organizations (with the two agricultural schools mentioned being obvious candidates). At the same time, there is a need to assess AMIT's market potential. Initial clarifications regarding the distributor system (spare parts, sales of new systems) and local production facilities need to be made. In addition, consideration needs to be given to the selection and training of project staff to supervise the tests.

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