
Learning from a Post-Program Review

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Have you ever wondered about the long-term impact of a project with which you were involved? Wouldn't it be nice to know whether changes in a community lasted after an official program ended? Do you wish you knew what worked and what did not, so you could adjust for a more effective program next time?

In 1998, World Renew and partner institutions introduced grain amaranth to two villages in a semi-arid region of Kenya. Over time, the program expanded into more parts of Kenya and into Uganda. The program included both agricultural and nutritional training.

The grain amaranth program ended in 2008. Five years later, World Renew conducted a post-program evaluation (<http://edn.link/ecgwtm>), led by Dr. Tom Post and Dr. Dorothy Nakimbugwe. We summarize the evaluation here because the lessons learned might be helpful for people planning to start an agriculture or nutrition project, whether or not grain amaranth is the focus.

The purpose of the 2014 evaluation was to determine the level of adoption of grain amaranth, and to understand challenges to adoption. What worked? What did not? The evaluation also was intended to "document the process of change in rural communities."

- World Renew used several evaluation methods:
- They interviewed the staff of partner institutions.
- 480 farmers from seven sites filled out a questionnaire.
- World Renew staff also led focus group discussions in six communities.

Key findings

The evaluation led to several key findings. The biggest takeaway: amaranth use is well established and has continued to spread from farmer to farmer. Grain amaranth is a culturally appropriate food in the East African context. According to the report, "...Amaranth flour mixes easily with maize, millet, wheat, and cassava flours to [make] improved traditional foods, such as porridge, mandaaazi, chapati, etc.—and meets taste preferences of East African cultures." Amaranth grain provides a range of essential nutrients, including well-balanced protein that is high in the amino acid lysine. (The leaves of grain amaranth are also edible; they become available early in the growing season—i.e., in the hungriest season—and are high in

Vitamin A.) Special training around nutrition really paid off; farmers ranked amaranth as “a highly important crop for their wellbeing,” in terms of both health and income (though the latter depended on location, as marketing could be difficult). Amaranth grain is especially beneficial for children, mothers, and people living with HIV/AIDS. Many farmers eat grain amaranth as part of a breakfast porridge that consists of one part amaranth flour to three parts maize or millet flour.

The evaluation also revealed information about growing conditions. Amaranth plants flower well and produce grain within 75 days (about 15 days earlier than the fastest-maturing available maize varieties), within the constant day lengths found near the equator. Amaranth is suited to a range of climatic conditions, from semi-arid to sub-humid. It is particularly useful for semi-arid regions of East Africa (especially with rains becoming more unpredictable), because of the plant’s drought resistance and rapid maturation. However, amaranth requires reasonable soil fertility with adequate amounts of nitrogen and phosphorus. In many parts of East Africa, where soil fertility is “fragile,” growing grain amaranth could further harm the soil unless techniques such as crop rotations and cover-cropping are used to restore fertility. The original amaranth program did not include training in these techniques, but the post-program review recommended that they be included in such programs in the future.

Few Kenyan farmers grow amaranth on a large scale. According to one survey, more than half of farmers grow 0.1 hectare (¼ acre) or less of amaranth, and harvest up to 30 kg of grain per growing season. They use amaranth as an important source of nutrition, but not as a main source of carbohydrates. Still, the amount grown is usually enough to provide 40 g of flour per adult per day (or, for a child, 20 g of flour per day). [Dr. Benito Manrique Lara, former director of Nutrisol in Mexico, recommended these amounts. Dr. Post shared that he has recently seen recommendations for higher daily amounts, but that “the 40 g and 20 g minimal amounts have proven a useful starting point guideline [to improve nutrition] in World Renew’s East Africa experience.”]

The evaluation revealed some challenges. For example, seed degeneration (from grain amaranth plants crossing with other types) can be a problem. Farmers are encouraged to buy good seed where possible. Where seed is not available for purchase, farmers should exercise seed selection themselves, by removing black-seeded plants from seed-production areas or removing the heads of black-seeded plants before flowering to reduce cross-pollination. [Stacy Swartz commented that these black-seeded plants “are vegetable amaranth, which is a regularly consumed leafy green (locally called mchicha) that is cooked before eating and is an important part of household nutrition.”] At the end of the season, farmers should identify the best plants and keep those heads, once fully matured, for seed.

Another challenge was that many farmers would like to sell grain amaranth as a cash crop, but marketing has been difficult. When I asked Dr. Post about this, he commented that, in two areas of East Africa, World Renew’s partner organizations “have taken on the role of gathering the product from farmers, processing and marketing.” He added, “While this is not a usual role for non-profits, it seems that, at this point, it is a needed intermediate step towards integrating [grain] amaranth in the market.”

Key recommendations

This evaluation led to several key recommendations for World Renew going forward, namely that they:

- Experiment with promoting amaranth as a nutrition supplement for “mothers and children in the first 1000 days of life.”
- Teach methods to promote soil fertility, either along with promoting amaranth or before introducing it.
- Train on seed selection and provide quality seed from Kenya.
- Introduce grain amaranth first as a “nutrition supplement for home consumption,” and avoid promising a market for cash crops.
- The evaluators also suggested the need for research on the effects of amaranth consumption on immune systems. Just a small amount of grain amaranth consumed daily in breakfast porridge has a disproportionate impact in cases of malnutrition. People with AIDS who eat amaranth experience significant increases in the number of CD-4 T cells in their blood. (The number of CD-4 cells gives an indication of the strength of a person’s immune system; a higher number is better.) It would be interesting to understand how amaranth consumption results in such benefits to health.

Whether or not amaranth is a crop that would grow well in your area, we hope you will find the results of World Renew’s evaluation informative as you and your community work to address local needs. Perhaps reading the results of someone else’s program will help you ask better questions and consider new angles as you plan.

Reference

Post, T. and D. Nakimbugwe. 2014. Ex-Post Evaluation of the Introduction and Promotion of Grain Amaranth Program in Eastern Africa (1998-2008) (<http://edn.link/ecgwtm>). World Renew. 69p.