



## GROWING ORGANIC PINEAPPLES IN TANZANIA



### Location: Karagwe District, Tanzania

*A collaborative project between farmers in northwest Tanzania's Karagwe District, the development organization Community Habitat Environmental Management and Matunda Mema, an organic produce exporter, demonstrates that small-scale East African farmers can benefit from the growing demand for organic products.<sup>1</sup>*

### CHALLENGE

Ihanda and Nkwenda are two wards (groups of villages) in northwest Tanzania's Karagwe District. Ihanda consists of three villages with about 250 families; Nkwenda has five villages with about 300 families. Farmers in both rely on traditional cropping and livestock keeping. The average farm covers about 0.5 hectares. Four-fifths of the farmers farm less than one hectare; another 10 to 20 percent own between one and two hectares, and only five percent have more than 2.5 hectares. Traditional crops include bananas, maize, beans, sorghum, fruits—pineapples, papayas, mangos, and oranges—and spices, such as garlic and lemongrass.

Until the late 1990s, most farmers practiced organic agriculture because they could not afford fertilizers and pesticides. At the same time, they also used unsustainable practices such as setting bush fires to clear land. Other villagers depended on cattle, leading semi-nomadic lifestyles that involved traveling with herds on communal lands and in forests. Free grazing was common and overgrazing resulted in severe environmental degradation. Regular bush fires, soil erosion, declining soil fertility, and pest and disease attacks were all contributing to declining food-crop yields, which created hunger periods. The problem was particularly acute after the dry season, from September to December. Calorie shortages unfortunately coincided with the most arduous work period, as planting and sowing crops requires enormous energy and preparation. Without enough food or money to feed their families, many men left home to search for work. Families could not afford to send their children to school or access healthcare.

### RESPONSE

In 1997, Community Habitat Environmental Management (CHEMA), a nonprofit organization, initiated a sustainable agriculture project using natural resources and locally available materials. More specifically, the project stressed:

- Community planning and action
- Training on watershed management, low external-input sustainable agriculture, afforestation, beekeeping, and seed security
- Internal inspections of certified organic farms

Together with its existing partners—the Mavuno Learning Assistance Centre and the NGO World Vision—CHEMA trained three groups of 25 farmers in Ihanda, and two groups of 20 farmers in Nkwenda. Trainings included several two-day modules, with a day of theory and a day of practice. They were spread over time for farmers to implement their learning and covered the following topics:

- Soil fertility, including composting and the use of cover crops to fix nitrogen
- Integrated pest management, including biological, cultural, physical and sanitary measures
- Soil and water conservation, including contour farming
- Agroforestry, including how to start a tree nursery
- Crop management, including intercropping, using farmyard manure and compost, mulching, and double-row planting.

Farmers were encouraged to grow organic pineapples to earn money. However, the low prices for all agricultural products limited the potential for improved incomes.

In 2001, Siegfried Hermann, a retired German pastor who had imported organic fruits from Uganda to Germany, decided to establish a similar business in Karagwe. Farmers would then be able to sell their organic fruit at premium prices in foreign markets.

After consultation with CHEMA, Hermann set up a firm called Matunda Mema Co. Ltd., to buy, process, and export pineapples. Matunda Mema invited 50 organic farmers from Ihanda and Nkwenda to grow pineapples and enter into a business cooperation. The company offered to buy pineapples at a premium price, on the condition that the farmers would agree to produce their pineapples under contract conditions. The farmers would have to undergo a certification process, which the company would organize; they agreed to regular internal field visits and external inspections and to sell their pineapples at pre-fixed prices to Matunda Mema. In 2002, the 50 farmers and Matunda Mema signed an agreement. The Institute for Marketecology (IMO) provided certification.

The company decided to concentrate on dried fruits, beginning with pineapples. It bought a piece of land in Nkwenda, constructed a processing unit, and imported two solar driers from Germany. Two field officers, a processing manager, an assistant and some temporary laborers were hired. As the number of participating farmers rose, it was necessary to increase the number of driers. Because there was no electricity in Nkwenda, the company—which created jobs for ten local people—decided to shift the processing unit to Kihanga, on the main road from Karagwe to Uganda. The Kihanga relocation made it possible to use electric

When participating farmers' yields and incomes rose, their neighbors started to copy the organic techniques.



Dry pineapple produced in Tanzania and sold in Germany. © Kipepeo



Matunda Mema's pineapple processing facility. © Kipepeo



Pineapple farmer. © Kipepeo

fruit driers during the rainy season when solar driers were less effective.

Though conversion to organic production normally takes five years, the initial 50 farmers' previous organic farming experience enabled them to deliver the first pineapples after only two years. During the conversion period, the company's field officers advised the farmers on best practices. CHEMA staff conducted internal inspections every six months, and organized follow-up trainings on organic crop management that farmers attended at least once a year. IMO staff conducted annual inspections and made recommendations on pest management, soil fertility measures, and crop management.

As required by the certification process, chemicals cannot be used anywhere on the farm. Farmers left buffer zones along borders with neighboring farms so that drifting pesticides would not contaminate the organic products. In less than three years, they had sufficient experience to continue on their own. CHEMA withdrew from active involvement in Ihanda and Nkwenda at the end of 2004, leaving coordination of the project with Matunda Mema and the Mavuno Learning Assistance Centre.

## RESULTS

- Of the 115 initial farmers who attended training, 80 percent adopted mulching, 76 percent adopted mixed cropping, 66 percent applied manure, and 40 percent took up composting. Mulching was popular because it reduced the amount of weeding work. Fifty farmers shifted entirely to organic farming. By 2006, training expanded from the initial 115 farmers in two wards to over 1,000 farmers in three districts.
- Ihanda and Nkwenda farmers reported a significant boost in their yields as a result of their agro-ecological practices. For instance, Mrs. Bitakwate, a bean and banana farmer, reported that before the project she could harvest a sack of beans—worth about TSh 18,000 (\$10)—from her 0.4 hectare plot. By applying grass mulch and compost, she harvested three bags, worth a total of TSh 50,000 (\$28). A bunch of bananas used to weigh 15 kg; they now weigh 55 kg. The widowed Mrs. Bitakwate was able to send her children to school; they now work as organic farming extension officers in Ihanda.
- In 1997, before the project began, the average pineapple weighed 0.5 kg and fetched TSh 40 in the local market.

Area food supplies have improved, especially during the former hunger season. The food shortage period decreased from four to two months.

In 2006, one fruit weighed 4 kg and sold for TSh 200. With proper crop management, it is now possible to harvest pineapples year round. One stem can produce two fruits a year.

- Area food supplies have improved, especially during the former hunger season. The food shortage period decreased from four to two months.
- According to a 2006 estimate, the average pineapple farmer grew about 500 pineapple stems on a quarter acre (0.1 hectare), bringing in about TSh 200,000 (\$113) per year. When participating farmers' yields and incomes rose, their neighbors started to copy the organic techniques. They later approached CHEMA and requested formal training. The Diocese of Rulenge gradually extended its sustainable agriculture program to cover other parts of Karagwe District, as well as Ngara and Biharamulo, the other two districts in the Diocese. Between 1998 and 2002, CHEMA trained about 1,000 farmers in the three additional districts.
- In 2004, the company Matunda Mema extended its business to four other wards in Karagwe—Kihanga, Karaizo, Iteera and Chabalisa—and in 2005, it signed contracts with 100 new farmers, for a total of 300. Also in 2005, the firm started expanding its business by marketing dried sweet bananas and papayas.
- With training and certification, this experience shows that farmers can transition to successfully becoming part of complex international value chains with high-quality products.
- Since 2001 Matunda Mema has been selling its dried fruit to the German food company Kipepeo Bio & Fair Limited, and until 2007 its throughput was on average 8 – 9 kg per day per drier.<sup>2</sup>
- By 2010, Matunda Mema began to form a more organized operation. With over 30 permanent employees and over \$60,000 in annual turnover, Matunda Mema has begun to focus and organize their expanding growth and resources.<sup>3</sup>

**FOR MORE INFORMATION**

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**ENDNOTES**

- 1 This case is adapted from *Sustainable agriculture: A pathway out of poverty for East Africa's rural poor: Examples from Kenya and Tanzania*. GTZ, Sustainet, 2006. <http://www2.gtz.de/dokumente/bib/06-0712.pdf> (accessed October 13, 2014).
- 2 Ringo, Edmond. *Dried fruit and vegetables Sub Sector/Value Chain Analyses*. SME Competitiveness Facility, 2008. <http://www.eac-driedfruits.org/docs/market/competitivenesslatinamerica.pdf> (accessed October 13, 2014).
- 3 Tesar, George and John Kuada. *Marketing Management and Strategy: An African Casebook*. New York: Routledge, 2013.

**FRONT PAGE PHOTO:**

Pineapple field along the road. © melkor100