



LEARNING BRIEF

Targeting Hunger and Building Resilience

CARE Mozambique uses conservation agriculture to help farmers cope with drought.

OVERVIEW During one of the worst droughts to affect Mozambique, the combination of growing disease-resistant cassava alongside early maturing cowpea seed and ratooned pigeon peas has proven to withstand one of the worst droughts and provide both the caloric and protein content that families need to avoid suffering through a hunger season.

1 Month

Amount hunger season is cut short using early maturing crops

CARE has developed a sustainable farming system that can provide nutritious food and ensure food security in a degraded, drought-prone environment.

300%

Increase in maize yields, using intercropping methods

Background

Mozambique has the potential to become a breadbasket in Southern Africa, with its fertile land and strategic location along major trade corridors and ports. However, despite this potential, 55 percent of the population lives below the poverty line, and the country ranks 178 out of 187 countries on the UNDP Human Development Index. Unpredictable rainfall patterns, climate change and environmental degradation, coupled with farmers' lack of access to resources, information and market connections, have all conspired to keep rural farmers mired in poverty and food insecurity.

EXPERIMENTING WITH FOOD

CARE provides farmers access to the resources, support and information they need to invest in their small plots of land, businesses, families and communities so that they can make decisions that help their families get nutritious food, and maximize market opportunities. Through the **Farmer Field Schools (FFS)**, CARE helps farmers build skills they need and puts them in charge of experimenting and building the skills to make the best investment decisions for their families, rather than top-down lessons that make assumptions about what farmers need to know. CARE also targets women farmers, convinces extension agents to reach out both to women and men, and persuades men and leaders to work together with women to change their circumstances. This can transform the status and recognition of women, supporting them to become successful farmers, business people, leaders and agents of change.

Through the FFS, CARE works with farmers to identify new and innovative methods to build local knowledge of agricultural practices that can help farmers adapt to climate change and build their long term food security. CARE recently piloted a study to find simple technologies that increase protein content, improve soil fertility and are resilient to drought and climate change.

Experimenting with a process called intercropping, a practice of growing a crop among plants of a different kind, usually in the space between rows, farmers in the FFS in Nampula Province used the technique **to improve soil health, reduce the risk of crop failure, and in some cases, find a new and lucrative source of income.**

A TRIPLE YIELD

In an area prone to crop disease and pest infestations, the FFS tested the viability of **disease resistant cassava** and found that the improved variety of the plant was effective in controlling prevalent viruses that decimated harvests in prior years. Farmers were not only enthusiastic about the results, but were eagerly planting the new cassava varieties in their fields as fast as the FFS plots could produce the cuttings. In addition to testing the disease resistant cassava, farmers tested new methods of using ratooned pigeon peas and 60-day cowpea, which hold incredible promise for smallholder farmers in Mozambique.

Farmers who intercropped ratooned pigeon peas with maize have **tripled maize yields**. The pigeon pea is rapidly becoming one of the most lucrative crops across Mozambique. Asian traders scour rural areas to buy pigeon peas that they will export to India. **An improved variety of pigeon peas can boost the incomes of small-holder farmers**, as it becomes one of Mozambique's best cash crops as a result of the increasing unmet demand for this grain.

In both Nampula and Inhambane Provinces, cowpeas are the second most important crop grown by smallholder farmers (after cassava) and very likely the most important single source of protein. CARE introduced two varieties of early maturing **cowpeas** to the FFS as an effective way to increase dietary diversity, protein content and overall food security. The 60 day cowpeas produce dry beans about 20 to 30 days sooner than any of the traditional varieties used in Mozambique. Since cowpeas are usually the first grains to be produced after the rains start, **the ensuing hunger season is cut short by almost a full month.** The intercropping of cowpeas in other systems **could easily increase total food productivity by 30%, and protein availability by around 50%**, at very little added cost, with virtually no complications and with a higher over-all food security because of its drought-resistance. This alone can have significant impacts on household food and nutrition security.

MAKING THE HUNGER SEASON DISAPPEAR

The next effort of CARE Mozambique will be to test the viability of lablab beans as part of the intercropping system, along with jackbeans, cowpeas and maize. Farmers could use this system on part of their land, and continue using the traditional cassava/cowpea system on the rest of their land, very likely rotating one with the other. Lablab is very nutritious, and is a good source of fresh beans through and after the dry season. With plentiful fresh grains available year round, this system could very well eliminate the hunger season, while improving the fertility of the farmers' soil for future planting. **CARE Mozambique can take the findings from this study and implement them in a year round program to target hunger reduction, even during drought.** The FFS can promote resilience to drought by incorporating improved varieties of 60-day cowpea, disease resistant cassava, ratooned pigeon peas and jackbeans, simultaneously experimenting with other varieties of improved crops such as lablab, and also working to improve the ecological conditions under which these crops are grown so that they will be more resilient to future droughts.