

# Zambia

**Total population:** 11.5 million

**Labour force:** 5 million

**Agricultural population:** 85% of labour force

**Share of women in agricultural labour force 2004:** 44%

**Prevalence of undernourishment in total population 2004:** 46%

**Government spending on agriculture 2006:** 6.3% of total national budget

**Official Development Assistance for agriculture 2003:** 41.4 million

**% of total ODA for agriculture:** 3.0



Organization: CARE Canada and  
CARE Zambia

## Integrated Food Security in Zambia: Building a Path Towards Resilience

This case study highlights the efforts to strengthen conservation farming in rural Zambia. Engaging farmers in learning with one another and building upon their existing knowledge to introduce conservation practices are central aspects of this case. Farmers practice ecologically diverse farming systems, which are coherent with broad community action plans which they help formulate in order to better understand the climate hazards affecting their livelihoods and how they plan to minimize and adapt to climate variances. Knowledge sharing takes place through exchange field visits and the 'early adopters' mentoring other farmers. Networking with NGOs, research groups, government and suppliers are also part of the system's resilience.

*The background paper for these case studies, "Pathways to Resilience: Smallholder Farmers and the Future of Agriculture" is available online at [www.ccic.ca/e/003/food.shtml](http://www.ccic.ca/e/003/food.shtml).*

## Country Context: Zambia's food insecurity at critical levels

With 86% of the population living in poverty, the UN has ranked Zambia among the 11 most underdeveloped countries in the world. Approximately 85% of the population depends on agriculture as a means of subsistence, and often as the only means of income generation. Food security has been undermined by consecutive years of drought and increasing environmental hazards such as floods and changing rainfall patterns which are projected to increase with further climate change. Corn farmers in southern Zambia used to be able to predict the year's first rainfall, almost to the day. Now, October often stretches into November and December before the rain comes. Droughts and floods in Zambia are leading to crop failures or crop damage, increasing the number of people who go hungry.

The major food crop and main food staple grown in Zambia is maize; other staple foods include cassava, sweet potatoes, millets and sorghum, as well as legumes such as groundnuts (peanuts), beans, cow peas and bambara nuts. Cash crops include cotton, tobacco, soya beans, wheat, sunflower, vegetables and potatoes. With the increase in extremity and frequency in flood and droughts farmers are only able to harvest a tiny fraction what they would usually produce.



Resilience is further weakened by the spread of HIV & AIDS; over 920,000 people are infected with the virus in a total population of 11.5 million. Those who care for the sick have increased workloads; often this role falls to women who struggle to balance caring for sick family, neighbours and orphans while faced with scratching out a living on eroded, flooded and degraded lands.

## **Building Resilience: Facilitating Zambian farmer perseverance**

CARE has responded to Zambia's food security crisis, with particular focus on building the capacity of marginalized groups, through the C-FAARM1 initiative. C-FAARM - Consortium for Food Security, Agriculture and Nutrition, HIV/AIDS, Resiliency and Markets –partners CARE Zambia with World Vision (Zambia), Land O Lakes and Catholic Relief Services (CRS). CARE provides technical direction in key intervention areas including agriculture, marketing and nutrition. The initiative began in 2007 and will run until 2011.

The goal of C-FAARM is to help vulnerable communities in Southern and Western Provinces move from a state of chronic food insecurity towards long-term resiliency, and to improve livelihoods so that vulnerable and extremely vulnerable people in six rural districts of Zambia have increased food security. C-FAARM promotes diverse and sustainable livelihoods through conservation agriculture, and increased access to local markets while paying close attention to the relationship between food security and HIV/AIDS. C-FAARM strives to strengthen traditional safety nets and build community capacity to conduct risk and vulnerability

## **Conservation Farming (CF)**

The definition of CF in the Zambian context is similar to the UN FAO description: that CF should improve soil moisture management and increase soil fertility so that agricultural productivity is increased to ensure household food security and income. In the Zambian context, CF farmers use reduced tillage practices like ripping or preparation of planting basins before the onset of the rainy season; practice crop rotations that include legume crops; do not burn crop residues after harvesting, practices weed control and plants early. As farmers start regularly using these practices, they then graduate into more long-term practices like agro-forestry.

During the 2007/8 season an estimated 3,080 farmers were trained in conservation farming (CF) by C-FAARM. This included best practices in land preparation (ripping and planting basins options), manure and lime application methods, crop rotations, green manures, and weed control options. Farmers that adopted the CF practices, especially ripping or basin-making, were able to harvest some crops despite the excessive rains that caused water-logging or outright flooding in some fields; this was attributed to early planting, early land preparation using the minimum tillage options, so that crops were able to withstand the waterlogged soils.

In order to allow farmers to practice some of the CF components like rotations, cover crops, etc, provision of small seed packs and the promotion of crop diversification through direct seed distribution of strategic crops and establishment of demonstration plots is proving useful. The seed types distributed were open-pollinated varieties, which allow farmers to recycle the seed in the



subsequent growing seasons. Since the seeds are open-pollinated, each beneficiary of the seed pack has agreed to pay back part of the harvest (using a ratio of 1:2) to be passed on to other vulnerable households as seed. The paybacks are managed by a local community management structure and capacity building in seed handling is being done for these community management structures.

Building the path towards sustainable livelihoods while strengthening resilience through conservation farming is found in the following examples:

- The area under legume cultivation by the target group increased by 30% due to seed supplied by the project.
- Crop diversification has increased by two crops due to introduction of sweet potato vines and cow pea seeds.
- A total of 3,037 households benefited from the certified seed, and experimented with crop rotations consisting of cereals and legumes.
- Conservation farming practices like minimum tillage have increased as early adopters recorded better yields despite the excessive rainfall during the season.
- Food production has expanded in amount and in diversity, allowing households to feed themselves for longer and with more options.
- Cross-learning opportunities take place by early adopters sharing concrete results with other farmers; exchange field visits are planned amongst communities, and these are complemented by workshops on specific topics.

There is still a knowledge gap of CF among farmers which is being addressed slowly as results start to show; the project has started with interested, innovative and keen farmers, so that they can use their own plots as demonstration sites to show other farmers.

### **Conclusion: small farmers, big changes**

The threats to the lives of small farmers from climate change require proactive measures, not simply reactive. Modeling new agroecosystems using diversified designs are extremely valuable to farmers whose systems are collapsing due to climate change (among other things), providing a buffer against natural or human-induced



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variations in production conditions. There is much to learn from endogenous modes of production, and traditional methods provide a perspective on agricultural management under conditions of climatic variability, and new ideas for connecting up food systems around agro-ecological, knowledge-based and community-oriented principles. However, farmers still need support, especially in terms of information, new alternatives or opportunities for low-cost and readily available technologies to increase food production, and for bringing together communities to proactively and collectively plan for the future.

In Zambia, women form one of the largest marginalized and vulnerable groups, nevertheless they are a key element to ensuring household food security. As traditional family custodians, women cultivate food crops while caring for the sick, elderly and orphaned. Climate change often results in the exacerbation of pre-existing inequalities as women must search further afield for access to food, land and clean water. Not only does this threaten household food security, but often, the only source of income for a woman is what she earns at market by selling her extraneous crops.



All photos: CARE Canada

## Farmer's Voices

At 53 years old, Julia Mansaga is a hard-working Zambian widow trying to sustain herself, 3 orphan children and her own son. Subsistence agriculture and the baking and selling of scones at a local market are Julia's main means of survival. In the past, Julia kept part of their harvest as seed for the following planting season, but with the incidences of crop failure, she had to resort to buying grain from the market sold as seed, but germination and performance of resulting crops was poor.

C-FAARM serves as the support system for Julia and her children. Julia was given seeds and training on new, more sustainable crop production methods, including land preparation to help improve the likelihood of a good harvest. Within one season, Julia reported that the germination of the crops was excellent and the crop stand was promising.

Despite continuous rains from December to February, causing extensive flooding and soil erosion, Julia was able to harvest enough grain to subsist on for a longer period due to early planting; winter crop production now uses residual moisture along the shores of the Lake Kariba.

Julia's interest in the project arose from a meeting she attended during the introduction of the project in her community. "I was particularly attracted to the project when they explained that they would be giving agricultural seeds to the vulnerable, based on a 1:2 payback ratio of seed to grain; and that there would be capacity building opportunities on new farming methods", says Ms Mansaga.