



Bundesministerium
für Ernährung
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Food Security in rural Zambia: Integrating Traditional Fruit and Vegetable Crops in Smallholder Agroforestry Systems

country/countries	Zambia
funding agency	Federal Ministry of Food and Agriculture - BMEL
project management	Federal Office for Agriculture and Food – BLE
project coordinator	Leibniz Universität Hannover - LUH
project partner(s)	Technische Universität München (TUM), University of Zambia (UNZA), Copperbelt University (CBU), Zambia Agricultural Research Institute (ZARI), Ministry of Agriculture (Zambia), Ministry of Fisheries and Livestock (Zambia), Ministry of Forestry (Zambia)
project budget	890.234,55 €
project duration	01.11.2016 – 31-12.2020
key words	Diversification, Food Security, Integrated Farm System, Action Research

background	Zambia ranks among the five most seriously affected countries in the world that show alarming levels of food insecurity and hunger. In the FOSEZA study region in northern Zambia, severe malnutrition is prevalent, causing severe developmental disorders, especially among young women and children. The reasons are the cassava-dominated farming system, degraded soils, enormously reduced fish stocks and a lack of knowledge about agroecological principals and system linkages.
objective	FOSEZA supports the diversification of agriculture by integrating indigenous fruit trees, traditional vegetable growing, fish farming, livestock production and fodder production into cassava-dominated farming systems prevailing in northern Zambia. The diversification aims to combat severe malnutrition, improve soils and yields, and increase climate resilience. The basic method applied is participatory action research for knowledge transfer, capacity building and social learning. Most project activities are linked to the demonstration farm, which was set up together with the village community and the local government. Participating farmers cultivate individual plots, a tree nursery, an orchard, fishponds, an enclosure for draught oxen and a small assembly and storage building. Farmers developed their own governance system of the pilot farm. Students involved in the project were trained in Germany and Zambia, and their agronomic and chemical research is closely related to the activities taking place in the village. All research components focus on the active participation of the local population and are designed to enable participants to benefit directly from the research.
results	The situation in Northern Zambia is very serious and alarming in all livelihood aspects; although social networks improved and innovative strategies were partly adopted, there is very little progress in coming out of poverty and improving dietary diversity within the short-term horizon and reach of the project; the team established good cooperation with local government authorities, but the local government does not have means to perform their tasks and ensure the sustainability of project investments. Participatory methods and outputs, i.e., establishment of the integrated pilot farm, roleplaying games for nutrition education, training video for propagation of indigenous fruit trees, capacity development, network & agroecological planning models, tree nursery, reverse auction of banana seedlings, demonstrate the usefulness of action research and market-based instruments to enhance the adoption of innovations.
recommendations	Participatory action research can develop context-specific solutions if it is long-term and sustainable. A network of actors from science, local administration and the village community is essential, but requires a start-up phase and long-term cooperation with local actors, which is usually not guaranteed by short-term projects.

The agroecological approach is knowledge- and labor-intensive and implementation is lengthy, but it shows great potential for sustainable income generation, especially in poorly infrastructured and ecologically sensitive regions, if continuous extension service is provided. The continuous dialogue between different actors in a spirit of partnership is particularly important to generate trust. It is recommended to support the sustainability of started projects over a longer period of time; for the project discussed here this should be the support of local administration staff who do not have the financial means to continue monitoring and supporting the invention after the end of the project. The promotion of integrated agroecological farming systems is strongly recommended to reduce dependence on external inputs, improve degraded soils, and enable adaption to climate change.



Nutrition education game & training fodder production in FOSEZA building



Banana auction success after one year & propagation of banana seedlings



Women participated in sunflower experiment

photos



Training Ploughing & vaccinating of oxen



Fodder production & feed formulation and storage training



Celebration of first Fish harvest & construction of additional fish pond