



Agroecology for home and market: a winning combination for rural communities in Mashonaland East, Zimbabwe

Introduction

The main cause of food insecurity for many communal households in Zimbabwe is their reliance upon a form of subsistence-based agriculture which is dependent on a limited range of inputs often poorly suited to local conditions. The current agricultural system prioritizes monocropping and grain yield over other factors of food security. This has degraded the ecosystem which should sustain food security and farmer livelihoods. As a result of all these factors, 50% of Zimbabwe's smallholders are regular recipients of food aid today¹.

A baseline survey in Mashonaland East Province revealed that all farming households were producing below subsistence-level, with extremely low levels of agrobiodiversity, leaving them vulnerable to adverse ecological, climate social and economic pressures. Those exposed to the highest levels of political insecurity lived in the areas with the most acute resource challenges, with land, food and agricultural inputs regularly used as political tools.

Levels of farmer coordination and cooperation were low, affecting information sharing, transaction costs, and collective action to address natural resource challenges. In addition, insecure land tenure was a significant disincentive to the uptake of organic and other sustainable land-use systems, which require medium to long-term investments to restore soil organic matter.

Description of the Agroecology system

"Livelihood Security in a Changing Environment: Organic Conservation Agriculture" is an initiative involving 1,189 resource-poor smallholders, 58% of whom are women. It was undertaken in 2011 as a partnership between three organisations: GardenAfrica, Fambidzanai Permaculture Centre, and Zimbabwe Organic Producers & Promoters Association. Initially the initiative was an 18-month action research phase, but it was extended a further two year phase which ended in 2015.

The initiative sought to facilitate livelihood opportunities based on the market realities while applying sound ecological management based on agroecological principles, to restore ecosystem functions for sustained productivity and growth. The primary objective of this project was to promote a shift to agroecological farming. The second objective was to explore the opportunities presented by organic certification and market development for Zimbabwe's smallholder sector, establishing national standards through the low-cost Participatory Guarantee Scheme. The rationale was that access to lucrative organic markets would increase the incomes and status of participating farmers, which in turn would stimulate a wider uptake of agroecological practices.

¹ United Nations: Zimbabwe Humanitarian Gaps (OCHA 2013),
https://docs.unocha.org/sites/dms/CAP/2013_Zimbabwe_Humanitarian_Gaps.pdf



Mashonaland East Province was selected as the project site due to its proximity to Harare, where the primary demand for organic produce was located. It spans four agroecological zones from semi-arid to dry sub-humid, providing a strong empirical basis for testing the project's permaculture² methods and the different soil and water management strategies to be employed.

Project Interventions

The project's approach was to deliver a wide-ranging series of training courses; to support and guide the establishment of peer networks; to provide farmer field support; and to engage and gain the support of influential actors, from community leaders and buyers to policy-makers, who can, wittingly or unwittingly, represent barriers to change.

Community organizing

A careful task-based selection process, in partnership with Agritex (Department within the Ministry of Agriculture, Mechanisation & Irrigation), led to the selection of 32 'access farmers' with an interest in organic farming, who could work closely with neighbouring farmers to share skills and rebuild contiguous ecosystem corridors. Each of the 32 farmers then selected up to twenty peers to form associations, creating more entry points for women. Course attendance by different representatives on a rotational basis enabled more women to attend, who may otherwise have been constrained by other commitments³.

Capacity-building in agroecological practices

The focus of this project was to build confidence and competence in agroecological practices and to enhance ecosystem functions. By increasing farm resilience and building market-based skills, the project team was confident that farmers would soon see the desired food security and livelihood gains. This knowledge acquisition stage was backed up by farmer exchange visits and regular field support to assess the level and quality of knowledge exchange and accumulation in-situ at association level. The topics in the capacity building programmes are listed below:

(1) Facilitating Change to Restore Ecosystems

Permaculture training and peer transfer; Change Laboratory Workshops; local leadership exchanges for wider Community-Based Natural Resource Management (CBNRM); organic standards development and training; market research, development and facilitation; District Packhouse development and management; market stimuli: organic media campaign; institutional training and support to build farmer representation and agency; and engagement with policy-makers to address structural barriers to change.



Figure 1. Fambidzanai mulch demonstration. The demonstration shows the level of run-off experienced on different soils if not protected by mulch. The volume and colour of the water percolating to the bottles demonstrates that less water and soil are lost by different forms of soil covering/protection, which holds the water, soil and its nutrients in place. (Photograph: George McAllister – GardenAfrica)

² Permaculture is a social and agricultural system that mimics natural ecologies, working with nature to manage resources efficiently and equitably. As one of the approaches under the umbrella of Agroecology, it is increasingly recognised as an appropriate system for production and resource management that resonates with traditional farming techniques and cultures.

³ It is interesting to note that even without affirmative action, 56% of participating farmers were women.



(2) On-Farm Resource Management

Introduction to ecology; soil conservation and management; water management and tank building; companion planting; dryland cropping; integrated pest management; post-harvest management; and livestock integration.

(3) Farmer Agency & Market Training

Training for transformation; association building and representation; farming as a family business; agri-planner; participatory market systems; development; internal savings and lending; value addition and wild harvesting; and bee keeping and organic honey production.

Building leadership and access

One of the factors influencing the success of the highest performing association was strong leadership support. An exchange between chiefs and headmen was arranged early in the second phase. Within three months, all but one association⁴ had been granted secure access to reverted⁵ land to enable rapid certification, with all leaders stating that they would no longer prioritise high-input conventional agriculture, but allocate land to *“our organic farmers who are protecting the environment and bringing benefits to the community”*⁶. Each association now has secured access to market gardens of up to 5 hectares, which they manage communally either on an intercropped or rotational basis.



Figure 2. Sugar snaps – a crop for market (domestic & export) and household consumption. They are produced in a seasonal rotation, and sold on informal markets & through wholesalers. In some cases producers sold to local markets and got a 50% better price than offered by wholesalers. This built farmers' confidence to negotiate the price. (Photograph: Tichaona Charova – ZOPPA)

Outcomes of the practices

Successful cultivation at their market gardens further encouraged the transfer of techniques and integration of communal household plots into certification where maize and other dryland crops are cultivated for family use. The average maize yield in Zimbabwe in 2012 was 85 kg per ha, bearing in mind that the US average is 10 tons per ha. Having started at below subsistence productivity levels, some of the project farmers have since achieved the equivalent of 8 tons per ha, using only organic methods. The word equivalent is used, as on the communal smallholdings of between 1 to 1.5ha each, the farmers are encouraged to diversify their crops to include herbs, fruits and vegetables, some for household consumption and some for market. This is generally not considered in standard measurements of farm outputs which focus on primary crop yields only.

The success of the project was measured through a series of qualitative and quantitative indicators such as well-being, relative increases in the farm diversity, yields and incomes of the initial 591 participating farmers. Within the first 18 months of the project, agrobiodiversity had increased by 122%, yields by 72%, and incomes by up to 90%. And by the end of phase two, yields and income had increased by 290% and 265% respectively, and value addition for storage and sale had increased

⁴ The remaining association is still waiting for land, due to lack of land availability.

⁵ Unlike virgin land which may not have seen any conventional practices/inputs, reverted land is that which may have once been under conventional practice, but not for 3 years or more. This then needs to be confirmed by the traditional authorities who distribute land and so they have a knowledge of land-use history.

⁶ Quote from a community leader from Hwedza district.



by 44%. The marketed output under the project in the 12 months of 2014-15 totalled 246 tons of fresh horticultural produce, yielding \$132,000 for participating farmers.

Market research undertaken through the project demonstrates that while market demand and routes to market are sufficiently diverse, “the quantity of organic produce that is currently entering the market” currently represents only 10% of the actual demand. This provides ample opportunities for other farmers, NGOs and institutions to convert farmers participating under schemes such as those using conservation farming approaches. There is no statutory premium attached to organically certified produce in Zimbabwe, meaning that farmers have the power to decide on prices, depending on the different markets, and ensuring that demand remains high. This strategy also ensures that organic produce remains within reach of even the poorest consumers.



Figure 3. Solar drying of seasonal vegetables to be consumed and sold out of season when their nutrients are not readily available, and when better prices can be gained by selling out of season (when gaps appear beyond the supply gluts). (Photograph: George McAllister – GardenAfrica)

Having begun with 591 pioneering smallholders making up 32 associations, by the end of phase two there were 1,189 participating farmers, who either joined existing associations or established new ones⁷. There are now 44 associations with 195 ha of certified land, and a further 10 associations now coming through compliance monitoring. Having demonstrated the market demand and its value, a further 8,104 farmers are coming through certification nationally, with a total of 440 ha already certified.

Both access to well-resourced land, on the basis of an on-going duty of care, and access to markets have been considerable incentives in motivating other farmers to convert to agroecological practices, driven by the sheer determination of the initial group of organic farmers. Perhaps most significantly for ecosystems and natural resource management, community leaders have become more aware of and engaged in issues relating to the over-exploitation of natural resources and the impact this has on farming livelihoods.

Ongoing and Emerging Challenges

While many of the resource challenges are being addressed by better erosion control, good soil management practices, and natural pest management strategies, not all associations have fared equally well. The ongoing challenges are a combination of lack of individual motivation, weak social organisation and set beliefs in conventional agricultural practices that are difficult to change.

One thing is however clear; the farmers with the lowest agrobiodiversity have the lowest levels of confidence, yields and incomes. This presents a challenge to the project implementation team. It is clear that more work needs to be done to address the persistent barriers to change. Possibly, not all farmers are ready or able to cultivate for trade, in which case increasing their food security and resilience is even more essential. This, however, requires all the same conditions as those who meet market success: fully functioning ecosystems which Agroecology makes possible.

⁷ Organic standards training are now being undertaken by farmer standards trainers, three of which were trained in each district. Formal certification under the PGS remains the responsibility of ZOPPA.



It is often reported that a market focus has negative impacts on household food security due to the monocropping of high value crops for markets alone. This project has not found this to be the case, however, due to its focus on diversification for household *and* market. That said, it was initially found that increased horticultural production had a negative impact on groundwater levels despite water reuse and conservation practices. The solution was not a simple one, requiring effective community-based natural resource and watershed management to recharge groundwater supplies, thus reducing potential conflicts between household and farm irrigation needs. These off-farm measures, in combination with improvements in soil organic matter over time, which has effectively reduced water use, has led to increases in levels of available groundwater.

For farmers to engage in these critical but essential off-farm activities requires time and foresight, and the engagement of community leadership. The role of NGOs engaging in projects of this nature is to encourage community leaders to use foresight in taking the lead on matters of natural resource conservation.

Conclusions

From the outset, it was clear that aligning the demands of the market with sound ecological practices would be a delicate balancing act. The encouraging fact was that the market was also demanding diversity. The initiative plans a third phase (2016-19) in order to cement gains for future scaling, with projected increases in farmer participation of 3,000 and income by 422%. Central to this initiative has been facilitating and encouraging the development and exchange of knowledge and skills to restore confidence and cooperation. While organic certification is by no means the only way to protect ecosystems, the farmers' experiences in this initiative demonstrate that where conditions are favourable, organic certification *can* serve as a significant market-based mechanism to build confidence in farmer-led ecosystem restoration. Through approaches of this nature, viable farming communities can once again emerge.

Message from farmer to farmers

“We are taking advantage of this knowledge to grow organically, and learning about existing and potential markets. With what I have learned, I am now training 35 people and have set up our organic association. We have all upgraded our skills so that we can access more lucrative markets, and have improved technologies to enhance the quality and quantity of our production cost-effectively.”

— Beauty Katsenga in Zimbabwe (translated from Shona)



Figure 4. Beauty Katsenga