

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



Figure 1: 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 is lost by different forms of soil covering/protection, which holds the water, soil and its nutrients in place.

Structured Delivery Components

- Permaculture training and peer transfer (x 20 week-long modules & refreshers)
- Change Laboratory Workshops (x 2)
- 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
- Engagement with policy-makers to address structural barriers to change

The State Of Food Security In Zimbabwe

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 promoted by the government prioritizes monocropping and grain yield over other factors of food and natural resource security. This has degraded the very 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 today.

Agricultural Livelihood Security Project

Rationale & Stakeholders

Livelihood Security in a Changing Environment: Organic Conservation Agriculture is an initiative involving 791 resource-poor smallholders. It was undertaken in 2011 as a partnership between three organisations: GardenAfrica, Fambidzanai Permaculture Centre, and Zimbabwe Organic Producers & Promoters Association. Initially an 18-month action research project, it was extended a further two years, to end in 2015.

The project was founded on social and market research which revealed a steadily growing domestic demand for organic produce. Such demand was being serviced by imports from South Africa while Zimbabwe's resource-poor smallholders remained net recipients of food aid. The initiative therefore sought to facilitate livelihood opportunities based on market realities, while applying sound ecological management to restore ecosystem functions for sustained productivity and growth.

Objectives

The primary objective of this project has been to promote a shift to agroecological farming. This involves rebuilding soil organic matter and protecting it from further depletion, and promoting a return to productive diversity through intercropping and rotation. By increasing biodiversity and habitats, farmers are restoring the balance between pests and their natural predators and attracting pollinators to improve yields. Such diversity is not only important in restoring the balance of nature, it also minimises farmer dependence on costly inputs.

Agrobiodiversity provides important benefits for farmers and their families: nutritional diversity, health, while reducing ecological and market risks associated with monocropping. With markets in mind, our second objective was to explore the opportunities presented by organic certification and market development for Zimbabwe's smallholder sector in providing certified organic produce. The hypothesis was that access to lucrative organic markets would increase incomes which, in turn would stimulate a wider uptake of agroecological practices.

Project Area

Mashonaland East Province was selected as the project area due to its proximity to Harare, where demand for organic produce is focused. Furthermore, its nine districts span four agroecological zones from the semi-arid to dry sub-humid, providing a strong empirical basis for testing the project's permaculture methods and the different strategies to be employed.

The initial baseline revealed that all the farming households were producing at below subsistence-level, with extremely low levels of agrobiodiversity, leaving them vulnerable to adverse ecological, 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 required medium to long-term investments.

Project Approach And Intervention

The project's approach has been 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 influential actors (from community leaders and buyers to policy-makers) who may, wittingly or unwittingly, present barriers to change.

Community Organizing

A careful task-based selection process, in partnership with Agritex, 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.

A decision was taken early in the process to actively avoid the term 'lead farmer'; guarding against information capture, and creating awareness amongst the associations that every member had something to contribute. Course attendance by different representatives on a rotational basis enabled more women to



Figure 2: Sugar snaps - a crop for market (domestic & export to SA, UK & Holland) and household consumption. They are produced as part of seasonal rotation, followed by courgette, which are sold on informal markets & through wholesalers to supermarkets. This provides a level of market diversity and reduced dependence on supermarkets. In some cases producers sold to local markets and got a 50% better price than that offered by wholesalers. This built farmers confidence to negotiate to get the best price for their niche products.

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
- Livestock Integration

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
- Bee Keeping and Organic Honey Production



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).

Supported by:



attend, who would otherwise have been constrained by other commitments.

Facilitating Behavioural Change to Restore Ecosystem Functions

Capacity-Building in Agroecological Practices

The focus of the intervention 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 regular field support to assess the level and quality of knowledge exchange and accumulation at the association level. The training courses are listed in the box in the sidebar.

Building Leadership and Access

It soon became clear that one of the factors influencing the success of the highest performing association was strong leadership support. An exchange between chiefs and headmen was soon arranged to enable each to see what was possible when this support was present.

Within three months, all but one association had been granted secured access to virgin or reverted land, with all leaders stating that they would no longer prioritise high-input conventional agriculture, but would instead allocate land to "our organic farmers who are protecting the environment and bringing benefits to the community".

Furthermore, both access to well-resourced land, on the basis of an ongoing 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 ecosystem 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. The farmers are now able to articulate their concerns clearly and openly.

Successes

This project on small-scale family farming in Zimbabwe is indicative of the situation in the whole country. The average maize yield in Zimbabwe in 2012 was 83 kg per ha, bearing in mind that the US average is 10 tons per ha. Having started at below subsistence-level productivity, some of the project farmers have since achieved the equivalent of 8 tons per ha, using wholly organic methods. The word 'equivalent' is used here because on their communal smallholdings of between 1 to 1.5 ha 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, and so remains invisible to national statistics.

The success of the project was measured through a series of indicators such as 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%.

By the time the project entered its second phase, a further 200 farmers had joined, either through new or existing associations. Furthermore 3,562 more members were incorporated into the national organic membership body, resulting in Zimbabwe's first 160 ha of locally certified organic land with its produce entering the domestic supply chain. After only 30 months, the (now) 40 associations, having begun at below subsistence productivity levels had, between them, earned US\$ 69,800.

Ongoing & 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 attachment to 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 respective associations and practitioners alike. 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 enter markets, in which case increasing their food security and resilience needs to be prioritised. This however requires all the same conditions as those who meet with market success: fully functioning ecosystems which agroecology makes possible.

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, due to its focus on diversification for household and market. That said, this initiative has found that market-led production, albeit through ecological agriculture, has had some negative impact on groundwater levels despite water reuse and conservation practices – somewhat inevitable with commercial horticultural production.

The solution is not simple, requiring effective community-based natural resource and watershed management to recharge groundwater supplies, thus reducing potential conflicts between household and farm irrigation needs. For farmers to engage in these critical but essential off-farm activities, this requires time and foresight.

Any initiative seeking to promote livelihood development through horticultural production and market development will need to address such potential resource conflicts and manage them effectively. Those farmers who navigate this challenging path successfully will thrive, while those who do not will wither. The role of NGOs engaging in projects like this is to encourage community leaders to use foresight in taking the lead on matters of environmental conservation.

Conclusion

From the outset, it was clear that aligning the demands of the market with sound ecological practices would be a delicate balancing act. The emerging reality is that the market is also demanding diversity. Central to this project has been facilitating the generation and transfer of knowledge, skills and confidence to harness the potential of natural and social capital, and aligning this to existing consumer concerns and demand. While organic certification is not the only way to protect ecosystem services, the farmers' experiences in this project 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 this approach, viable farming communities can once again emerge in Zimbabwe, and perhaps elsewhere in sub-Saharan Africa.