

Assessment of the existing and potential business models supporting agroecological transitions in Zimbabwe



INITIATIVE ON
Agroecology

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December 2023



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Assessment of the existing and potential business Models supporting agroecological transitions in Zimbabwe

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December 2023

Executive Summary

Work Package Three (WP3) of the Agroecology Initiative (AE-I) aims to enhance the integration of agroecology principles in businesses as a way to facilitate the transition of agrifood systems towards agroecology. To achieve this, WP3 aims to collaborate with selected private sector companies to develop and implement business models (BMs) that support or are compatible with the agroecological transition further. This report outlines the re-engagement activities carried out by the AE-I team in Zimbabwe with the private enterprises between June and August 2023. The rationale was to engage with the private business entities identified in 2022, assess their interest in business models identified to have the best potential to support agroecology transition and propose to co-design new or existing business models that incorporate agroecological principles. Through consultative and participatory learning methods, three business entities (Hamara Chicks, PHI-Commodities, and PHI-livestock) are interested in partnering with the AE-I in Zimbabwe. The relevance of these business models from the perspectives of the 13 principles of Agroecology is also outlined. This activity is critical in improving intra-WP synergies, in particular linking output 3.3 on "Business model canvas development" to other succeeding activities and outputs.

Introduction

Food value chains are integral to the transformation of food systems and remain dominant in driving food systems' resilience, supporting market integration, and improving regional food supply at the farm, organizational, and institutional levels [1]. The CGIAR Initiative on Agroecology proposes that low-income rural communities can equitably capitalize on new or existing business opportunities arising from agroecological transitions in agricultural and food systems. Agroecology as a holistic application of ecological concepts and principles to the design and management of sustainable agroecosystems [2] has implications for a span of agricultural practices, from farming systems to soil management practices, and crop diversification strategies, integration in value chains, and business models that can sustain locally adapted practices and provide greater market opportunities for farmers and consumers.

In Zimbabwe, the Agroecology Initiative (AE-I) is making strides in driving agroecological transformation by enhancing producer-market linkages and developing innovative financial mechanisms for inclusive, profitable business models that embrace agroecological principles. The Initiative is collaborating with all food system actors (FSAs) to integrate evidence-based agroecological innovations for agroecological transformation across different contexts. Within the Initiative, Work Package 3 (WP3) aims to support the development of business models responsive to agroecological principles and, at the same time, economically and financially sustainable for local small-scale producers, enterprises, and other FSAs. To achieve this, WP3 ensures strong connections between agroecological innovations and market viability with financial mechanisms that bolster these innovations through private partnerships.

This report builds on prior activities implemented by the Initiative in Zimbabwe on Value Chain Analyses (VCA) and Business Model Canvases (BMCs) development that identified the potential, functionality, and inclusivity of business models that can support agroecology transition in the context of Zimbabwe. Based on the VCA, 13 value chains were identified, only six (6) key value chains were selected and prioritized, and BMCs were developed. These include livestock, sorghum, and cotton in the Mbire district, along with poultry, horticulture, and maize in the Murehwa district. The VCA and BMCs not only depicted the interactions among various actors but also assessed the existing constraints and opportunities for sustainable and inclusive agroecological transitions.

This report outlines the business engagement process by WP3 of the AE-I in bridging Output 3.3 on "Business model canvasses development" and Output 3.2 on "Current business model financial modalities", and these align with outputs within WP3 and other work packages in the Initiative. The rationale was to engage with the private sector, assess their interest in the developed business models, and propose to co-design new or existing business models incorporating agroecological principles such that they increase the inclusion of women, youth, and marginalized members of society and empower producers and producer groups to participate more effectively in markets by establishing more-inclusive producer-buyer links. Several activities have been carried out with the business enterprises, including Cost-Benefit Analysis (CBA) and appropriate financial modalities for identified business models.

The rest of the report is structured as follows. Section 2 presents the methodology used to identify and classify the selected business models, and section 3 reports the alignment of the identified and prioritized business models to AE principles. Section 4 presents the prospected business models and lessons learned. The final section highlights how the findings from WP3 support other work packages and document lessons learned.

Methodology

Our approach followed a participatory and consultative process to inform the business enterprise model development and selection. All the identified 13 business models were selected based on their interest and willingness to align or implement the new or re-designed model in line with the 13 AE principles. A series of discussions were conducted by the AE-I team and private sector businesses through the Agricultural Partnership Trust (APT) between June and July 2023. We conducted preliminary screening of the agro-business enterprises and assessed them on three operational principles of sustainable food systems: strengthening resilience, improving resource efficiency, and securing social equity. In addition to that, a call to submit business proposals was issued to all identified partners to bid for a US\$ 10 000 (max) incubation capital to support the implementation of the re-designed business models. Moreover, field visits were conducted to assess the feasibility of the models and the extent of investment needed to implement the plans and, lastly, to sensitize farmers to the business models. Farmer meetings in the selected wards

were organized to assess farmer buy-in and identify financial modalities to support the implementation of the business cases.

Identification and assessment of the business model's alignment with agroecology Principles

We used a two-step process for preliminary screening to identify and assess inspiring and promising business enterprises' alignment to agroecology. We used the Agroecology Check for Enterprises (ACE) tool and the "dry test" assessment of the enterprise business model.

We assessed whether the existing enterprise business model, value-generating activities, or strategy/scalability are, to some extent, aligned with agroecology and the potential of the current model to incorporate some of the principles based on the developed business model canvases. The ACE tool was applied to assess business enterprises that are aligned with agroecological principles and areas with potential for improvement or activities that conflict with agroecology. The assessment is classified into three grades - "pass", "partial pass", or "no pass" per each focus area [Regenerative, Diversified, Healthy, Fair and connected, and overarching] and develops an overall assessment grade.



Business models identification and assessment

Based on the 13 business models identified by APT, we managed to contact seven (7) private business enterprises engaged in crops and livestock production. Under crop production, we re-engaged with the National Tested Seeds (NTS) (who also represents FarmShop), Paperhole Investments (PHI Commodities), and Sabi Thorn, whilst PHI Livestock and Sondelani/Hamara Farmer were re-engaged for livestock production. NTS and Hamara Chicks had proposed their operations in Murehwa Ward 4 and 27, whereas PHI sorghum contract farming and livestock abattoir targeted wards 2 and 3 in Mbire district. The Shumbatafari chilli production model was targeted for both districts but was not pushed further as the company was liquidated in 2022.

Hamara Farmer Business Model- Sasso Chicks

Sondelani Ranching (Pvt Ltd) is a subsidiary of the Hamara Group trading under Hendrix Genetics. Hamara Farmer Centres is a chain of one-stop agricultural service and supply shops. Their goal is to service the poultry farmers in Zimbabwe with all the skills, training, and inputs (including Hamara feed) needed to succeed in a competitive poultry-producing environment. Hamara Chicks division focuses on broiler and layer day-old chick production, as well as producing point of lay birds. Working together with Sondelani Ranching, they can hatch over 60,000 day-old chicks a week and sell them through their respective agents nationwide. The enterprise proposes to introduce Sasso chickens to the market, a versatile, rapid-growing, cost-efficient, sizable, and flavourful poultry breed that can serve as an improvement over indigenous chickens and an intermediate to broiler birds. In Zimbabwe, Hamara is marketing three Sasso breeds, namely (i) Sasso Sussex- egg production, (ii) Sasso T-Rainbow- egg and meat production, and Sasso C431- meat production. This gives a good opportunity for the community to generate income, improve the food and nutrition status of the farmers, and diversify their livelihoods. The primary clientele includes local brooding businesses responsible for rearing chicks from day-old to four weeks, as well as general walk-in farmers. Key

revenue streams will arise from the sale of day-old Sasso chicks, poultry feed, and related products. Hamara Chicks intends to reach customers through an established retail outlet in the Murehwa Center, in-person meetings, and training, as well as virtual communication via platforms such as WhatsApp.

Capacity-building training will be conducted to include brooding, teen bird rearing, marketing, budgeting, and record-keeping for anyone, although more vulnerable families will benefit from the program. These training modules will be made available through the E-learning application (Hamara App), where farmers can access the materials at any point in time. To enhance the success of the program and sustainability, the careful selection and appointment of Mother Unit farmers (MUF) will be made in conjunction with AE-I and local Agritex staff. These MUFs will raise the day-old chicks for four weeks and sell them to local farmers.

To establish strong customer relationships, Hamara Chicks will employ various strategies, including farmer clubs, regular and effective communication, placing a field officer in the Murehwa district, and providing comprehensive training to farmers on Sasso chicken rearing techniques. The company has already conducted a joint visit with CIMMYT staff working on AE-I to assess the existing chicken housing facilities employed by local farmers and has initiated sensitization meetings with farmers in preparation for comprehensive business training sessions, enabling them to make informed decisions about their level of investment in the poultry venture.



Figure 1. Small-scale Sasso production units

Box 1. Sasso Model's Alignment to Agroecology Principles.



Economic Diversification: Sassos are new and allow farmers to diversify from their traditional broilers and indigenous chickens to an efficient breed that can be free-ranging or contained. Farmers choose to produce either meat or eggs for home consumption and the market. They can make money from chicken sales and egg sales. Manure can also be used to diversify into other value chains like crops.

Co-creation and sharing of knowledge: The company will provide training and extension through a resident officer. Farmers will learn about the advantages of the breed and the most effective ways to raise and market the chickens. The training will be done for extension and other interested farmers.

Synergies: Farmers can raise chickens on homegrown cereals. Chicken litter can be used as manure in crop production reducing the dependence on outsourced inputs. It may also be used to supplement livestock feed. In phase two of brooding, feed formulation using black soldier fly- a high protein content feed produced locally can be used to reduce feed costs.

Input reduction/Efficiency: Sasso is a hybrid, dual-purpose breed with a high food conversion ratio. It does not require the high formulation stock feeds that are used on broilers such that it is cheaper to feed. The company will arrange with an existing agro retailer to become an agent, a more cost-effective approach than renting a store. The company's current distribution route will be changed to include Murehwa, rather than doing a more expensive single-store replenishment approach. Savings in distribution costs will keep the costs of chicks and feeds within reasonable levels. Stocking up in Murewa would mean farmers experience reduced costs of transportation than going to Harare. Farmers can also use local materials to feed on teen birds without full reliance on purchased seed.

Recycling: Chicken litter will be used as manure in crop production. The litter can also be used as an ingredient in stock feed manufacture. In some cases, chicken litter is used in livestock feeding.

Soil health: Manure from chickens and bedding can be used to improve soil fertility.

Animal health: The chickens are hardy and can be raised in free-range systems. They are less susceptible to diseases than broilers.

Social values and diets: This business model is easily accessible to women and youth. Barriers to entry are low due to reasonable start-up costs. The payback period is quick making it attractive to youths. After the brooding stage farmers can choose to buy the number of teen birds according to how much they can afford, making them accessible to all. Chickens and eggs will contribute to household food and nutrition security, as they will be available locally and accessible to all.

Connectivity: The business model will ensure proximity and confidence between local producers and consumers through the promotion of short distribution networks of the Sasso birds at brooding stage or full growth thereby reembodying food systems into the local system. Efforts will also be made to link up farmers with buyers who will be sourcing chicken and eggs. Thus, the model boosts the local economy with farmers selling locally and to buyers outside the district.

Fairness: All farmers can be involved in this business model with some focusing on the brooding stage, whilst after 4 weeks, more farmers with various capacities can access the number of teen birds they can afford. They have a free choice to venture into egg production, for meat, or do both. This opens up the business to farmers of different capacities.

Land and Natural Resources Governance: n/a

Participation: The project ensures the participation of all. It also ensures equitable access to all farmers.

National Tested Seeds Business Model

National Tested Seeds (NTS) is a supplier of quality seeds with a diverse portfolio of different seed types, including vegetables, oilseeds, small grains, legumes, grains, and cereals, and has established itself as a trusted brand and a leading supplier of seeds in Zimbabwe. In the past, NTS has focused on the marketing of Open Pollinated Seed Varieties (OPVs), both concerning Crop and Horticultural Seeds. However, it has two excellent maize hybrid varieties, and both varieties are well suited to the small-scale farmer market since they are drought tolerant, with one being very short-seasoned and the other early to medium maturing.

In previous discussions with National Tested Seeds (NTS), collaborative plans were devised for a mobile truck service originating from the Guruve store, aimed at assisting Mbire farmers with input supplies and chemicals, as well as a model of facilitating local vegetable seed production. However, a recent re-engagement revealed a shift in NTS's focus away from the mobile truck input model. Their emphasis now centers on local production of vegetable seeds, specifically for butternut, squash, and watermelon, as part of a strategic effort to reduce reliance on seed import.

An essential challenge in the production of vegetable seeds is the proper disposal of edible portions. In 2022, APT proposed a solution wherein the fruit from these crops would be sent to a processing facility like Cairns Holdings, a processing company in Harare. Cairns would handle the processing and extracting of the seeds, which would then be passed on to NTS. This concept presented an attractive opportunity, providing farmers with income from both the fruit and the seed sales. As a result, the company expressed interest in engaging with AEI.

The planting of these crops typically occurs in August. NTS, however, was reluctant to assume the production risks involved. Consequently, they sought to extend the project's scope to cover the planting stage. A significant factor in NTS's decision-making was their desire to minimize the reporting burden, as extensive reporting had proven costly in previous projects, and they preferred a more streamlined reporting process.

Initially, a structured roadmap was outlined to initiate joint activities involving Cairns, AE-I, and NTS. However, NTS eventually withdrew from this proposed idea, leading to a shift in the planned approach.

Box 2. NTS model alignment to agroecological principles



Biodiversity: Diversity: Seed contract farming is an alternative to producing fresh produce for the market. The model will provide Murehwa smallholders an opportunity to diversify into new crops, or a new product with existing crops. It also allows them to develop a new market channel, providing relief from existing informal markets characterized by fluctuating demand and prices.

Co-creation and sharing of knowledge: Contracted farmers will acquire new knowledge from the training and extension support provided by the company. For their part, farmers have considerable Indigenous knowledge of production systems from which the company could benefit. NTS will collaborate closely with EMA and Agritex to educate farmers on the negative effects of stream bank cultivation which could result in changes in farming practices.

Synergies: The business model involves the delivery of cucurbits to jam manufacturers who extract the edible parts and separate the seeds for NTS. There are considerable synergies with existing horticultural activities in the district.

Input reduction: The model is highly efficient, utilizing and increasing the value of the full vegetable.

Recycling: The seed, which is usually discarded, gains value providing farmers with additional income.

Soil Health: Increased income will increase household and community resilience.

Social Values and Diets: Vegetable farming has a relatively quick turn-around and is suitable for youth and women. Farmers consume the crops that they grow, and the promotion of cucurbits will improve diets within the communities.

Land and Natural Resource Governance: As is the case with all horticultural interventions, it will be important to enforce stream bank cultivation regulations.

Connectivity: The entrance of a contracting company into the community brings many benefits including the boosting of productivity and incomes.

Paperhole Investments (PHI) Model

Paperhole Investments (PHI) is a company that runs contract farming for companies related to Inncor Africa Limited. PHI compliments government efforts to empower and supply tools and equipment to the small-scale farming sector. Its various projects boost the livelihoods of communities and assist in poverty alleviation and the reduction of social ills. The projects also facilitate skills transfer and capacity development through corporate farming programs and joint venture partnerships with investments in irrigation equipment, equipment, and machinery. PHI Farming operations apply conservation agriculture with mulch techniques over a 3-year cycle and are already showing signs of benefiting the prospective yield per ha. It prioritizes conservation agriculture over conventional agriculture techniques, and the company has developed a very high-quality seed industry in the country, financing 300 hectares of seed maize, 80 hectares of popcorn, 38 hectares of potatoes, 3 700 hectares of soybeans, and 400 hectares of seed and commercial sugar beans.

PHI Commodities, also called AGrowth, play a pivotal role in bolstering agricultural commodities' production and marketing across Zimbabwe. Notably, one of its clients, Buffalo Breweries, recently ventured into sorghum beer production in late 2022, with an annual demand of 1,000 MT of sorghum. PHI aims to secure approximately one-third of this sorghum requirement from smallholder farmers, contributing to local sourcing. In addition to Buffalo Breweries, PHI's diverse client base includes National Foods, which seeks 500 MT/year of various small grains. Moreover, PHI has a pending order for white sorghum, with intentions to source it from previous Zimbabwe Resilience Building Fund (ZRBF) districts, including Mbire. PHI recognizes the potential of initiating a smaller-scale project in the Mbire districts, paving the way for future development.

This project not only provides PHI with an opportunity to establish a presence in the district but also allows them to pilot a contract farming scheme specifically designed for smallholder sorghum producers. The company is prepared to apply some conservation methods to sorghum farming in the coming season by contracting up to 50ha of sorghum in the trial year. Through the baseline survey database, AGrowth will select farmers based on their typologies for inclusion and equity of marginalized groups. PHI brings valuable experience to the table and is aware of the risks and opportunities inherent in such initiatives. In their proposals, the enterprise will try out mechanized sorghum threshing business in the district to reduce post-harvest losses and maintain good agricultural practices. Currently, the company actively supports a smallholder maize contract farming program in Chiweshe, showcasing its commitment to sustainable agriculture and aiming to mimic the same model in sorghum farming. This model will be supported by hands-

on training and support to farmers through private extension staff working under PHI.



Figure 2. Red sorghum plot in Mbire communal district.

Box 3. PHI model Alignment to agroecology principles.

Biodiversity: Fewer chemicals used and only after scouting increase soil diversity. The development of new market channels results in the diversification of markets and farmer income streams. Sorghum is a climate-smart crop that is tolerant of dry conditions and produces grain at times when maize would fail.

Co-creation and sharing of knowledge: Many contracted farmers have not done commercial production. The knowledge that farmers receive through the contracting company can be applied to farmers' self-funded sorghum fields. The company could potentially benefit from Indigenous knowledge of sorghum production since the farmers have experience in the production of the crop.

Synergies: Sorghum stalks and panicles are used as livestock feed or roofing materials compared to cotton stalks which are usually burnt at the end of the season. There are opportunities for crowding-in of service providers such as no-till and threshing operators.

Input reduction: Contracted farmers receive seed from the company. Sorghum is a low-input-requiring crop and farmers usually use manure.

Box 3. continued...

Recycling: Sorghum stalks can be used for mulching in CA systems, protecting the soils and increasing biodiversity. Many farmers use the stalks as cattle feed which is not optimal but is synergetic with livestock production. Some put the stalks in kraals as bedding for cattle, where they will eventually turn into good manure.

Animal Health: Stalks can be used in livestock feed and mixes.

Soil Health: Use of minimum tillage techniques conserves the soil.

Social values and diets: The production of sorghum in the district aligns well with the social values and diets of the local people. The contract farming model is accessible to all farmers including women and youth however access to land is likely to be a barrier for the latter. Mbire is a dry area and farmers tend to produce drought tolerant crops. White sorghum is healthier for consumption than maize, and increased production through contract farming will contribute to food nutrition and security.

Land and Natural Resource Governance: The contracting company introduces farmers to a formal system that they should work within in order to achieve the best outcome.

Connectivity: Processors with contracting schemes source commodity direct from farmers, resulting in a short food circuit. The costs are lower than sourcing through third parties and there can be more flexibility with producer prices. Farmers engaged by contracting companies access a new income stream which when used to procure goods locally can increase the circular and solidarity economy.

Enterprise Strengthening & Transformation (BEST) Project to develop Cattle Business Centres so that local farmers can pen feed their cattle there, purchase hay bales, cattle and stock feeds, and vet products, and eventually sell the fattened cattle to PHI.

PHI Livestock, locally known as Tinotenga Mombere in Mbire, is actively engaged in the purchasing and slaughtering of cattle and goats. The company is experiencing significant growth and has strategic plans to expand by establishing additional abattoirs, addressing the existing market demand that remains unmet. The Mbire Rural District Council (RDC) has prioritized the completion of an abattoir at Mushumbi Business Centre, utilizing devolution funds, and seeks commercial partners to operate this facility. Due to financial constraints, the RDC is keen on establishing a collaboration with the private sector, recognizing the limitations in independently managing the abattoir. This presents an opportunity for PHI Livestock to align with the expansion goals they have in mind.

PHI Livestock was still interested in exploring the abattoir project and has emphasized the positive contributions their business can make to the agroecological (AE) transition. Several benefits are anticipated, including value chain shortening, leading to economic gains for farmers and the RDC. By utilizing cattle gut contents such as manure and feedlot byproducts, a market can be developed for crops used in pen fattening. One key area will be vermiculture. The output of vermiculture is called vermicompost which is rich in nutrients and other plant growth-promoting substances, which are capable of supplying necessary mineral nutrients to help and sustain plants' growth. The circular economies stemming from PHI's group of companies, including Gain Cash and Carry Wholesalers, which are establishing a presence in Mbire, further contribute to the economic ecosystem. A planned trip was discussed during the meeting, to engage with the RDC, presenting the idea, and understanding their expectations. This Initiative aims to facilitate productive discussions, initiate the collaborative process, and pave the way forward for the successful realization of the abattoir project.

PHI Livestock Business Model- Tinotengamombe

To complement the row crop operations, PHI started a Livestock Division in 2019. The Division operates from a Joint Venture farm in the Shamva District and rents an abattoir that slaughters up to 300 animals per week. The Division is building up its breeding herd of Mashona cattle to ensure a supply of quality animals each year to fatten on an established permanent pasture and in its fattening pens. It has a team of experienced cattle buyers who buy communal and resettlement cattle and arrange transport to the abattoir. The abattoir also encourages private producers to deliver their cattle to the abattoir for sale or toll slaughter. PHI operates two Cattle Business Centres, with the local communities in the Dotito and Mayo Districts, where cattle are aggregated for transport to the abattoir in Shamva. PHI has been working with the local community under the Beef



Figure 3. Cattle production in communal areas



Figure 4. Stakeholders visit to Mushumbi abattoir.

Box 4. Tinotengamombe model's alignment to agroecology principles.

Economic diversification: Higher producer prices will increase the viability of livestock production, resulting in more farmers diversifying into livestock production, and can have funds to diversify their cropping system through livestock feeds and other enterprises. Soil biodiversity will be improved with the application of manure/abattoir waste sourced from the abattoir and feedlots; there will be a reduction in veld fires as farmers develop a greater appreciation of the value of pastures. The company requires crops to manufacture stock feed locally. Access to a new more profitable market channel for livestock (and fodder crops) will result in farmers increasing their investments in livestock, and increased resilience to shocks and stresses.

Co-creation and sharing of knowledge: The company will commence with a sensitization process, alerting farmers to the numerous benefits of the new market channel. The proximity of the abattoir will allow more farmers to learn about livestock grading and value addition. These insights will result in a greater emphasis on commercial livestock rearing, rather than the status quo of livestock keeping.

Synergies: Manure/abattoir waste sourced from the abattoir and associated feedlots will be used on farmers' fields, boosting productivity, and improving the health of soils. The model would also result in strong synergy between the Rural District Council (RDC), Agritex, the Department of Veterinary Services, and other actors like transporters and butcheries. Fodder crop production will compliment efforts to increase diversity for soil improvement.

Input Reduction: Marketing efficiency will increase significantly with the development of the abattoir. Local abattoir will result in lower transport costs.

Recycling: Manure from the abattoir and feedlots will be used to increase soil fertility. Abattoir waste can be used for composting.

Soil Health: Manure from cattle guts and vermiculture will improve soils.

Animal Health: Increased farmer knowledge about livestock production will improve animal health.

Social values and diets: The spread of diseases such as Foot and Mouth Disease (FMD) will be reduced as farmers reduce sales to intermediaries, some of whom are involved with illegal animal movements from FMD and designated red zones. Ease of market access and improved incomes will increase the involvement of women and youth in livestock production. Improved access to meat and meat products by farmers will improve diets.

Fairness: The location of the abattoir within the locality shortens the value chain taking out the middleman. And there will be access for anyone who wants to sell cattle.

Connectivity: The establishment of an abattoir in Mbire district will have a significant impact on the local economy by increasing the efficiency of livestock marketing, providing market access for farmers in areas locked down by FMD quarantine. The model brings greater equity to livestock marketing by diminishing the role of intermediaries, increasing farmer profits. Reduced intermediary activity will also reduce the occurrence of livestock theft. It creates local employment opportunities through abattoir construction and operation. This model has potential to contribute immensely to RDC revenues and the local economy through rental, taxes, and levies. Increased local economic activity will result in the establishment of more businesses.

Sabi Thorn Business model - Onions storage

To support the planting, PHI was instrumental in the formation of a specialized entity to handle and store potatoes under Sabi Thorn. The company grades and packs up to 180 tonnes of potatoes a day, which are stored in specialized cold rooms with a capacity of up to 4,000 tonnes of potatoes to ensure quality product supply all year round. Sabi Thorn originated as a potato storage facility but is now exploring the prospect of acquiring onions from Murehwa to broaden its business scope. The business model of Sabi Thorn is to expand its operations by combining potato and onion storage, utilizing its warehousing space during periods of dormancy, or reserving space specifically for onions.

At present, the storage timeline for potatoes spans from August through April. The facility reaches capacity between August and December each year, with excess capacity emerging in January as sales commence. On the other hand, late-maturing onion varieties (known for better storage compared to shorter season types) can be planted from March to May and harvested approximately 6 to 7 months later, ranging from August to November. These onions undergo a drying process and can be preserved for three to five months at a temperature of zero degrees, depending on the cultivar. Consequently, there is a limited overlap between the storage periods of potatoes and onions. This scenario might be altered by adjusting planting schedules using newer cultivars or through the establishment of a dedicated cold room for onions.

However, there is currently a lack of substantial information available about onions in the conceptual stage. An investment is required to adapt existing potato storage facilities for onion storage, alongside the necessity of establishing relationships with both commercial and smallholder suppliers. The company is exploring diverse business models for sourcing onions from Murehwa. However, due to the strict quality standards demanded by the export market, the company is inclined towards a contract farming approach, supplemented by extension support.

Regarding inputs, Sabi Thorn is in business with Kukura Seed Company, which supplies imported potato seeds to Sabi Thorn farmers and has the potential to furnish onion seeds as

well. Additionally, Nutrimaster is in the process of developing packages for smallholder potato cultivation, a concept that could be adapted for onion production. Moreover, collaborations with Profarmer, a firm involved in farmer training programs utilizing their inputs, are also underway. Profarmer maintains connections with a South African input supply company specializing in organic products.

The prospective engagement of Sabi Thorn's new business model is anticipated for the 2024 season due to its logistical timelines. However, Sabi Thorn's existing business is facing challenges stemming from heightened competition due to an oversupply of potatoes from government-supported smallholder growers. This excess supply has led to diminished prices and disrupted the conventional market trends, causing prices to fall during their usual peak period. Consequently, the company has struggled to cover the expenses of cold storage and is currently experiencing financial losses. Additionally, there is an ongoing shareholder restructuring effort that is expected to take several months to finalize.



Figure 5. Onion production under smallholder plots in Murehwa district.

Prioritized business models

the re-designed business models. Hamara Chicks' business model will be implemented in Murehwa, whilst PHI livestock and PHI AGrowth's sorghum contract farming project will be in the Mbire district. We had a preliminary assessment of an enterprise's alignment with the 13 principles using the ACE tool and found out that all three identified models are well aligned with the agroecology principles. A detailed report on the three business enterprise alignments will be documented in the B-ACT report.

Table 1. below shows an overview of the Business enterprises engaged and those interested in implementing

Table 1. Businesses identified and engaged.

Business Enterprises	Commodity	ALLs Area	Engaged	Implementing
Hamara Ranching	Poultry	Murehwa	✓	✓
PHI Commodities	Sorghum	Mbire	✓	✓
PHI- Tinotenga mombe	Livestock (Abattoir)	Mbire	✓	✓
Sabi Thorn	Horticulture (Onions)	Murehwa	✓	×
Shumbatafari	Horticulture (Chilli)	Murehwa & Mbire	×	×
National Tested Seeds (NTS)	Various Seed Crops	Murehwa	✓	×
FarmShop	Input Distribution	Murehwa	✓	×

Lessons learned.

- Companies are willing to embrace agroecological technologies if they also facilitate the expansion of their business and make them align with global changes.
- If there is an offer for an incentive, companies would think of incentivizing their operations other than incentivizing farmers. The AE need to think about incentive-compatible business models that benefit farmers.
- Private business enterprises were skeptical about the incubation money, considering the risks of changing their current business model to a new one. This has led to other
-

business enterprises, e.g., Delta and National Tested Seeds, pulling out.

- Other innovations can be galvanized into the existing business models but cannot be scaled out due to limited funding (grain threshing business or mechanization) and politics e.g., Mushumbi Abattoir, which affects project impact in the short term.
- The re-engagement process was critical in gathering information for implementing the data-intensive B-ACT exercise. We had missing information to support the assessment of the business enterprise's alignment to the AE principles, especially on the existing business models.

Conclusions

The business model identification and prioritization process left the project with only three business models considering the lifespan of the project, which are Hamara Chicks, PHI Commodities, and PHI livestock business models. The process showed that companies are operating in a dynamic environment where their decisions on a certain aspect can change in less than six months. The companies are also willing to further their business models by adhering to the key principles of agroecology. For most of them, it is an opportunity to reach out to more farmers, which also gives AE-I an opportunity for farmers to transition to AE through these businesses. The next steps would be to assess the business models through the B-ACT tool to get their AE-I score. In addition to that, we document the financial modalities of the identified business models and finally perform the cost-benefit analyses. This will be the basis for the co-designing of new business models and, finally the establishment of the implementation.

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We would like to thank all funders who support this research through their contributions to the CGIAR Trust Fund: www.cgiar.org/funders.

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