Agriculture Value Chain Analysis

Takunda Resilience Food Security Activity

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Disclaimer

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ACRONYMS

AGRITEX	Agricultural Technical & Extension Services
AGRIBANK	Agricultural Bank of Zimbabwe
AMA	Agricultural Marketing Authority
BACOSSI	Basic Commodities Supply Side Initiative
BPC	Bulawayo Projects Centre
DDC	District Development Coordinator
DR&SS	Department of Research and Specialist Services
DVS	Department of Veterinary Services
EA	Environment Africa
ENSURE	Enhanced Nutrition Stepping Up Resilience and Enterprising
FGD	Focus Group Discussion
FHI 360	Family Health International 360
GMB	Grain Marketing Board
ICT	Information Communication Technology
IDI	In-depth Interviews
IYF	International Youth Foundation
KII	Key Informant Interviews
LFSP	Livelihoods and Food Security Program
MFS	Masvingo Farm Supplies
NAZ	Nutrition Action Zimbabwe
NGO	Non-Governmental Organization

OPV	Open Pollinated Varieties
POSB	Post Office Savings Bank
RFSA	Resilience Food Security Activity
SuPER	Sustainability Productivity Equity and Resilience
SA	South Africa
SHF	Small Holder Farmer
SWOT	Strengths Weaknesses Opportunities and Threats
TOC	Theory of Change
VCA	Value Chain Analysis
VC	Value Chain
WFP	World Food Program
ZAGP	Zimbabwe Agricultural Growth Program
ZRBF	Zimbabwe Resilience Building Fund
ZRP	Zimbabwe Republic Police

EXECUTIVE SUMMARY

An agriculture value chain analysis study was commissioned by CARE International-led, USAID-funded Resilient Food Security Activity (RSFA) called Takunda and was conducted in four districts of Manicaland (Buhera and Mutare) and Masvingo (Chivi and Zaka) provinces between September and November 2021. The aim of conducting the VCA study was to guide intervention areas for the Activity by identifying current and emerging crop and livestock value chain enterprises that are viable and exhibit scope for private sector engagement and promote inclusive growth. This executive summary headlines key findings and recommendations for the program and its stakeholders.

Specific Objectives Of The Study

1.) To assess and identify viable and the most important crop and livestock value chains preferred/and or viable for women, men, boys, girls, and people living with disabilities in the project areas.

2.) Conduct value chain analyses for each of the selected commodities. The value chain assessments will entail:

    a.) the agronomic production profiles (e.g., agricultural management practices, land ownership, and use practices).

    b.) Value chain mapping (key stakeholders, the flow of supplies and products, flow of funds and information, etc.).

    c.) Functional analysis of each value chain (profiling of industry structure, adoption of skills, technology, and innovation).

    d.) Climate change implications – economic analysis of potential opportunities to add value along the chain.

    e.) Policy and institutional conditions are necessary to create a suitable enabling environment for value chain development.

3.) To identify the key services and sectors that enhance or impede the competitiveness of the identified crop and livestock value chains (e.g., extension, financial services, storage and transportation, macro-economic conditions including inflation).

4.) To identify the constraints and opportunities for inclusive growth for the identified crop and livestock value chains – including formal and informal regulations and rules and integration of women, men, boys, girls, and people living with a disability.

This understanding of the market dynamics then informed the market-based recommendations to Takunda in terms of interventions that provide solutions to smallholder agriculture, factoring in some of

CARE's SuPER principles[1]. The agriculture VCA entailed engaging with value chain actors across the three levels of the market system: core value chain, supporting functions, and policy and regulatory functions.

Methodology

Overall, the study adopted a descriptive survey design method which used both qualitative and quantitative tools like Focus Group Discussions (FGD) and in-depth interviews (IDI) with adult men and women and young men and women to capture their perceptions and constraints with regards to current and preferred crops and livestock value chains. Key Informant Interviews (KII) were conducted targeting local and distant input suppliers and dealers, buyers, aggregators, traders, transporters, formal and informal financing institutions, processors, wholesalers, and retailers, as well as local governance bodies like rural district councils, to better understand their quality and quantity expectations for different products, financing models, value addition as well as operations of formal and informal rules and regulations within specific value chains.

A gross margin tool was used to collect and analyze quantitative data. Data collection was done by trained enumerators drawn from Takunda staff in eight (8) wards in Buhera, Chivi, Mutare, and Zaka districts. The data collection process involved audio recordings, transcribed and analyzed using Atlas-ti, with robust data quality assurance mechanisms. During the selection process, alignment of the preferences with the SuPER principles was also considered, which meant that the value chains were selected based on the need to promote inclusive market systems and value chain development that benefit a wide range of actors, including vulnerable groups such as women and youths. For in-depth analysis, the study considered those value chains which exhibited potential for commercialization and for which incentives exist for local market actors (private companies and MSMEs) to engage commercially with targeted communities and provide technical support services to farmers.

Findings

Value Chain Preferences

The participatory identification, selection, and prioritization of agriculture value chains produced almost similar preferences for the different demographic categories of men, women, young men, and young women. Revealed preferences confirmed that adult men prefer commercially oriented crop and livestock enterprises while the choices and preferences for the other demographic groups are influenced by other non-commercial considerations like the value chain's potential for contribution to household nutrition and gender (women's empowerment). Takunda has the opportunity to promote those women favored value chains that not only contribute to household income but also to the availability of diversified nutritious foods by household members (IO 2.1.1). This aligns well with CARE's women's empowerment

[1] , Focus is on promoting Sustainable, Productive & profitable, Equitable and Resilient (SuPER) agriculture practices and technology dissemination

framework (She feeds the World), which puts women and girls at the center of development with great potential to significantly contribute to the income, food, and nutrition security of the household.

Overall, smallholder farming households in the two provinces prioritized indigenous chickens, goats, groundnuts, sorghum, and cowpeas. In Masvingo Province, sesame was identified as an emerging value chain in Zaka District with potential for promotion under the Takunda Activity.

Value Chain Constraints And Opportunities

The analysis of the prioritized agriculture value chains reveals that the two livestock and three crop value chains are currently not well developed. Still, they have massive potential for development if properly promoted. Value chain performance is still deficient for all the prioritized value chains due to various production and marketing constraints that the farmers have to grapple with. Accessibility of finance, inputs, extension services, and viable markets are some of the challenges that are militating against value chain performance for the smallholder farmers in the target districts. Although productivity levels are still very low, value chain promotion and upgrading interventions by Takunda can enhance the current crop and livestock production and marketing systems practiced by the smallholder farmers in the four target districts.

Value Chain Actors

The study revealed the availability of buyers, input suppliers and dealers, financiers, and extension service providers for the selected sorghum, cowpeas, groundnuts, indigenous chickens, and goat value chains.

Risks

Risks to Takunda's facilitation activities include the potential for disruption of bonafide private sector engagement in market linkages and financial inclusion activities as a result of on-going government free-inputs support programs such as Pfumvudza/Intwasa and command livestock, which may negatively impact the Activity's quest for market-based solutions to addressing challenges in the prioritized value chains. Takunda needs to work with both government and private stakeholders through multi-actor innovation platforms to promote inclusivity and fairness within the market system. Intensive livestock breed improvement interventions for market development may result in high mortality rates and loss of adapted genetics in indigenous breeds, resistant to diseases and prevailing climatic conditions in the semi-arid regions. Takunda should therefore strike a balance between introducing new breeds and promoting local breeds that are more adaptable. Local breed upgrading can yield desirable and sustainable results in improving livestock productivity without damaging local and indigenous systems in the communities. In its facilitation of market systems and value chain development in the target districts, Takunda could also face risks associated with community structures, dynamics, and networks, including resistance to change from traditional customary beliefs and norms. Participatory engagement of communities and local systems and structures through the community visioning process is vital to managing such risks. Furthermore, reliance on external markets, like sesame and legumes, can be

seriously impacted in the event of international trade policies changing when local demand and markets remain limited. Investment in market facilitation activities might be misconstrued for conventional free handouts perpetuating donor-dependency syndrome.

Recommendations

The **overall recommendation** is that there is a need to improve agricultural value chain support systems sustainably. This can be achieved through engagement and strengthening of the capacity of all relevant stakeholders – like input suppliers, financial service providers, government extension workers, and marketing agents – to effectively collaborate and offer market-based solutions that address identified constraints and challenges, mitigate risks, and exploit available opportunities for improvement in value chain performance.

Specific recommendations are as follows:

i. The shortage of service markets that are specifically designed to serve smallholders presents opportunities for Takunda to capacitate groups of young people and emerging individual entrepreneurs to fill the gap and provide essential services to the farming communities. Specific "supporting" function opportunities for facilitation include:

   - Supporting the establishment of VSLAs and an "agricultural production and marketing fund" for enhanced financial inclusion.

   - Capacity building of women- and youth-led farmer group enterprises with training to embark on on-farm animal feed formulation to produce affordable supplementary feeds using locally available resources such as crop residues, acacia leaves, and pods to produce 'bushmeal'.

   - Matching grant facility to support the acquisition of appropriate scale mechanization technologies such as 2-in-1 hammer mill.

ii. Takunda should facilitate the strengthening of farmers' groups for aggregated input purchases and output marketing in the four districts for reduced transaction costs to private sector partners, thus incentivizing them to participate.

iii. Market opportunities for goats and indigenous chickens can be increased through breeding and breed improvement programs to enhance the quantity and quality of supply.

iv. Takunda can leverage on Fivet-Agrosave's day-old chicks and poultry feed business initiative at Murambinda Growth Point to facilitate good agricultural practices in the poultry value chain.

v. There is potential for Takunda to leverage the increasing mobile phone penetration and increased use of smartphones and social media to promote ICT-based market information and extension service provision, mainly targeted at young farmers.

vi. Takunda can leverage existing structures initiated under its predecessor program (ENSURE) to scale up value addition capacity-building activities leveraging existing ward-based market facilitators.

vii. Takunda can leverage the availability of localized market stalls, feedlots, and livestock auction infrastructure established by predecessor projects to facilitate viable market linkages. A good example is the recently established Zaka Agrihub at Gumbo Business Centre.

viii. The Basic Commodities Supply Side Initiative (BACOSSI) van and container model being implemented by Masvingo Farm Supplies (MFS) to bring inputs and groceries closer to the farmers every first weekend of the month in mobile trucks needs to be promoted for scaling up as a market linkage initiative that offers convenience to the smallholder farming communities.

ix. There is scope in both districts to promote the adoption and use of improved technologies, including improved seed and climate-smart agricultural techniques.

x. The newly constructed Marovanyati dam offers potential for the development of micro-irrigation for communities around the dam. This presents Takunda with opportunities for introducing interventions that enhance the viability of food and cash crops production and market linkages for fish and high-value crops.

INTRODUCTION

Takunda, a 5-year program, is being implemented by CARE International in Zimbabwe together with its partners Family Health International (FHI360), International Youth Foundation (IYF), Nutrition Action Zimbabwe (NAZ), Bulawayo Projects Centre (BPC), Environment Africa (EA), and Sun Mountain International (SMTN). Takunda is a USD 55 million USAID-funded Resilience Food Security Activity (RFSA). The program serves more than 301,636 people in two districts in the Masvingo Province, Chivi and Zaka, and two districts in Manicaland Province, Buhera and Mutare. The program seeks to increase on-farm and off-farm incomes, improve nutrition, and work with women, men, girls, and boys to build resilience to shocks and stressors. The program has cross-cutting components of gender, youth, social dynamics, and governance. Takunda program utilized the *Refine and Implement* period (Year 1) to carry out extensive formative research and community engagements, among other things, to better respond to the opportunities and challenges in the local context.

The Agriculture Value Chain Study was therefore used to fill some evidence and knowledge gaps on the Theory of Change (TOC), such as identification of current and potential crop and livestock value chain enterprises, their viability, acceptance, and prioritization by women, men, boys, girls and people living with disabilities to guide the Takunda intervention areas. Results from the analysis of the prioritized agriculture value chains reveal that the two livestock and three crop value chains are currently not well developed, but they have huge potential for development if properly promoted. Value chain performance is still very low for all the prioritized value chains due to various production and marketing constraints that the farmers have to grapple with. Accessibility of finance, inputs, extension services, and viable markets are some of the challenges that are militating against value chain performance for the smallholder farmers in the target districts. Although productivity levels are still very low, value chain promotion and upgrading interventions by Takunda can enhance the current crop and livestock production and marketing systems that are being practiced by the smallholder farmers in the four target districts. There is a need to strengthen value chain support systems through the engagement of all relevant stakeholders like input suppliers, financial service providers, government extension workers, and marketing agents to collaboratively offer market-based solutions and address identified constraints and challenges, mitigate risks and exploit available opportunities for improvement in value chain performance.

Problem Statement And Justification

Participation of extremely poor and chronically vulnerable households in markets and value chains is riddled with inefficiency and inequality between these socio-economic groups. This can be caused by several factors such as limited access to critical market information inputs, business development services, and finance. Takunda needs to contextualize and tailor its interventions based on a strong understanding of the current market systems in the targeted areas. Discussions with BHA/PCS on information gaps on the preferred and viable crop and livestock value chains also highlighted the need to understand market requirements in terms of quantity and quality for different products. In addition, there are information gaps on the existing formal and informal rules governing value chains and market

systems. All these information gaps require a market systems and value chain analysis to help refine the Takunda Theory of Change.

The Takunda Agriculture Value Chain Study was commissioned to examine current crop and livestock on-farm market conditions and actors and to inform more specific design interventions in Purpose 1 (P1) in the Theory of Change, which seeks to increase household incomes from on-farm, off-farm, and non-farm livelihoods activities. Findings of the Agriculture Value Chain study provided solid market and value chain data to address gaps and validate assumptions in the Initial Economic Analysis. A detailed analysis of selected value chains identified constraints inhibiting vulnerable households, women, men, young women, young men, and people living with disabilities from participating in and/or receiving maximum benefits from value chains. Market-based solutions addressing these constraints have been identified and prioritized so that program facilitation activities are designed to have the maximum impact on the ability of targeted households and vulnerable women, men, young women, young men, and people living with disability's to participate and compete in the selected value chains.

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Study Sites

The study was conducted in eight wards across all four districts, namely, Buhera, Chivi, Mutare, and Zaka, where Takunda is operating. As shown in Table 1 below.

Table 1: Geographical Targeting

DISTRICT	WARD NUMBERS
Buhera	7 and 15
Chivi	10 and 12
Mutare	9 and 12
Zaka	14 and 27
Total # of Wards Targeted:	**8 wards**

LITERATURE REVIEW

This section gives insight into the relevant literature pertaining to the study areas and the value chain assessment at hand. It starts by presenting a contextual background of the two provinces, where the four study districts of Buhera, Chivi, Mutare, and Zaka are found. The literature review covers the concept and applications of the value chain concept, value chain analysis giving insights on findings that are of significance and relevance to the current study, for Manicaland and Masvingo Provinces in particular and for Zimbabwe in general. Literature from elsewhere in Africa has been consulted, where necessary, to augment information and findings relevant to Zimbabwe and the study districts.

Contextual Background To The Study Sites

Agriculture in Masvingo Province is characterized by livestock more than crop production rendering the province a food deficit area, particularly as it pertains to cereal grains. The province is typically a medium to low-intensity area in terms of crop production but exhibits a comparative advantage in livestock production. As such, Masvingo is predominantly a livestock-producing province, where cattle contribute 19% (1,028,976), goats 17% (659,430), sheep 20% (109,675), and pigs 21% (58,417) of the national livestock populations according to recent crop and livestock assessment reports[2]. Food insecurity is rampant in the province mainly due to poor agro-ecological conditions that are characterized by poor soils and rainfall. The province has a total land area of 5.8 million hectares (ha), of which 2.2 million ha are arable, but only about 24% (521,000 ha) is put under crops (MLAFWRR, 2020b). Besides sugarcane grown commercially as an estate and plantation crop, maize is the dominant crop grown by all categories of farmers, accounting for 43% of the total provincial cropped area, followed by sorghum (17%), groundnuts (9%), pearl millet (8%), cotton (7%) and nyimo/Bambara nuts (6%) [3]. Other crops grown by smallholder farmers include finger millet, soya bean, sunflower, sugar beans, sweet potatoes, cowpeas, sesame, and rice. Average yields for cereal grain crops range between 280 and 540 kg/ha. As a result of poor agricultural performance, households in Masvingo Province are reportedly abandoning agriculture-based livelihoods for off-farm and non-farm opportunities [4]. As a result of the dominance of cereal crop enterprises, household diets are predominantly cereal-based, a situation that contributes to high nutritional deficiencies[5]. Thus, the prevalence of undernutrition and malnutrition rates is high, resulting in a relatively higher prevalence of food aid programs compared to other provinces.

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[2] Ministry of Lands, Agriculture, Fisheries, Water and Rural Development (2021). First Round Crop and Livestock Assessment Report

[3] Ministry of Lands, Agriculture, Fisheries, Water and Rural Development (2021). Second Round Crop and Livestock Assessment Report

[4] Chingarande D, Matondi P, Mugano G, Chagwiza G. and Hungwe M. (2020). Zimbabwe Food Security Desk Research: Masvingo Province. Washington, DC: Research Technical Assistance Center.

[5] Chingarande D, Mugano G, Chagwiza G and Hungwe M. (2020). Zimbabwe Market Study: Masvingo Province. Research Technical Assistance Center: Washington, DC.

Chivi and Zaka districts are semi-arid districts located about 65km and 86km, respectively, southwest and southeast of Masvingo Town. Chivi District measures about 351,000 ha while Zaka is 308,630 ha. The districts are situated in the drought-prone Natural Regions V of the country, with an average rainfall of 450 mm per year. **Most farmers in the Chivi and Zaka districts are smallholder and subsistence-oriented, with marketing activities largely oriented towards meeting local consumption demands**. The dominant farming system is the "crop-livestock integrated model," where livestock is kept for manure, draft power, milk, and slaughter at social gatherings like funerals. In terms of ownership, large livestock like cattle and goats are owned by men, while women own small livestock like chicken and goats for household consumption and occasional/emergency sale. Whereas women may have ownership of the small livestock, the marketing and decision-making on the use of money from these assets may still be in the hands of men due to patriarchal arrangements/relations, thereby undermining the benefits that would be expected to result from women's 'ownership'. The farming system practiced in the two districts is characterized by low-input and low-output production dependent on manual and draft power. There is a limited practice of crop rotation due to growing land pressure. However, crop and livestock diversification are prevalent in the two, with over 20 types of crop and livestock value chains[6] being practiced by the farming households. Horticulture production is also practiced in irrigation schemes and nutrition gardens, where a variety of green vegetables and high-value crops such as green mealies, sugar beans, tomatoes, onions, and carrots are grown on very small portions of land for household consumption and local sales.

Close to 80% of Manicaland Province's rural population are farming areas located in agro-ecological zone Natural Regions (NR) III to V, characterized by an annual rainfall of 450 to 750 mm, severe mid-season (January to February) dry spells and high temperatures, and frequent seasonal droughts (one in three years). In both Mutare rural and Buhera, the farming system is based on subsistence crop production and semi-intensive livestock farming. The rural farming households grow mainly drought-tolerant crops, namely sorghum, finger millet (rukweza), pearl millet (mhunga), that are suited to the drier and low rainfall environment. Other major crops grown with surplus marketed within and outside the districts are roundnuts (nyimo), groundnuts (nzungu). In both Buhera and Mutare, crop yields are extremely low due to the low rainfall, which is exacerbated by the limited use of improved crop agronomic practices. As a result, the households experience food deficits on an annual basis, with the food deficit severe in October to December when households run out of harvested retained grain (maize, sorghum, millets). Both Buhera and Mutare Rural have been devastated by tick-borne cattle disease that has decimated the cattle heads leaving households without oxen draft power. Conservation farming has become dominant but on small portions of the arable land, leaving a sizeable portion uncultivated annually.

[6] Maize, sorghum, millet, Bambara nuts, cowpeas, sweet potatoes, sugar beans, cotton, sunflower, sesame, cattle, goats, sheep, chickens, turkeys, ducks, guinea fowl, rabbits, and a variety of horticulture crops grown in gardens.

Value Chain Analysis: Concept and Application

A value chain is defined as a set of interlinked activities that work to add value to a product and consists of actors and functions that improve the product while linking commodity producers to processors and markets, which includes final consumers.[7] Key elements of agricultural value chains include the following: development and dissemination of plant and animal genetic material, input supply, farmer organization, on-farm production, post-harvest handling, the provision of production techniques, handling and grading criteria and facilities, cooling and packaging technologies, local post-harvest processing, industrial processing, storage, transport, and feedback from markets.[8]

Development practitioners and researchers have undertaken value chain analysis in various ways for selected value chains to (i) *examine the inter-relationships between diverse actors involved in all stages of the production, processing, and marketing of diverse commodities*[9]*;* and (ii) *to identify strengths, weaknesses, opportunities, and threats of the selected commodities with a view to value chain upgrading, capacity building, and business development interventions*.

Value chain analysis has four main components. First, it systematically maps the actors participating in the production, distribution, marketing, and sales of a particular product (or products). Second, it highlights the governance of the value chain, that is, the form of formal and informal relationships and coordination mechanisms that exist between actors in the value chain.[10] The analysis of chain governance is important for a policy as it allows for the identification of institutional arrangements that may need to be targeted to improve capabilities, remedy distributional distortions, and increase value-added. Third, it examines the impact of upgrading within the chain. Upgrading can involve improvements in quality and product design, access to new markets, and diversification. An analysis of the upgrading process includes an assessment of the profitability of actors within the chain as well as information on constraints that are currently present—upgrading further addresses the innovation capability of actors, ensuring continuous improvement in product and process. Finally, value chain analysis can play a key role in identifying the distribution of benefits of actors in the chain. That is, through the analysis of value-added within the chain, one can determine who benefits from participation in the chain and which actors could benefit from increased support or organization. This is particularly important in the context of development-oriented programs or interventions in agriculture, given concerns that the poor are vulnerable to the process of market linkages.[11] VCA has to be used to include vulnerable groups such as

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[7] World Bank (2007) Using Value Chain Approaches in Agribusiness and Agriculture in Sub-Saharan Africa: A Methodological Guide: *Tools That Make Value Chains Work: Discussion and Cases.*

[9] Kaplinsky, Raphael and Michael Morris (2000) A Handbook for Value Chain Research," September 2000

10 World Bank (2007) Using Value Chain Approaches in Agribusiness and Agriculture in Sub-Saharan Africa: A Methodological Guide: Tools That Make Value Chains Work: Discussion and Cases

[11] Kaplinsky, Raphael and Michael Morris. "A Handbook for Value Chain Research," September 2000.

people with disabilities, the elderly, women, and children, and adjustment to developments such as climate change adaptation. Value chain analyses are conducted through a combination of qualitative and quantitative methods, featuring a further combination of the primary survey, focus group work, rapid participatory appraisals (RPAs), informal interviews, and secondary data sourcing.

Review Of Other Value Chain Analysis Studies

Numerous value chain analysis studies have been undertaken, as well as reports published, characterizing value chains that are of interest in this study. In Zimbabwe, these studies were conducted at both local (province, district) and national levels. This section reviews a number of these value chain analysis studies that have been undertaken to understand and characterize the linkages and structure of livestock and crop value chain as the basis for identifying constraints and opportunities and entry points for interventions for inclusion of supporting smallholder farmers participation in value chain markets. Most of these studies share common findings and give recommendations that are applicable to the value chains across the different countries and regions in Africa. Given the substantial literature on the various value chain analysis studies, this review will focus on those that give unique insights that are of particular relevance to Takunda.

Indigenous Chicken

Most households keep flocks of indigenous chicken as the main source of protein in rural human diets, supplement income through sales of eggs and birds, and access essential goods and services through barter. Poultry production has a gender aspect in that women and children prefer poultry production as it easily fits in with their other duties around the homestead. The Indigenous poultry value chain has enormous potential for contributing to rural economic and national development. However, it has been neglected as most policies on agriculture have been biased towards crop and large livestock production.[12] As a result, the indigenous poultry subsector is still highly underdeveloped, with poor linkages between producers and consumers. Growth is constrained by a poor marketing system due to a lack of information. The key findings and recommendations from the literature include:

i. Although over 95% of smallholder households keep indigenous poultry, these are kept as a part-time activity, and there are few, if any, that are keeping indigenous poultry on a commercial basis.

ii. Productivity and production are very low, leading to low and unplanned sales at the farmgate level.

iii. The absence of processors along the chain means that chickens are sold live (in open markets) and consequently cannot be retailed through formal channels like supermarkets leading to the exclusion of potential customers in the middle- and high-

[12] Kabwe Stephen and Kalinda, Thomson and Chirwa, Josephine (2012) Value Chain Analysis of Iindigenous Poultry in Lusaka and Sounding Districts

income categories who normally shop from supermarkets. Non-availability and high prices are generally cited as the main reasons households do not consume indigenous chicken.

It is observed that with increases in the urban population as well as growing incomes due to the growing economy, demand for indigenous chicken has been growing, especially among the high-income groups who not only prefer it for its taste, but also for health reasons (due to its low-fat content). This indicates the need for investment in the value chain.[13] Based on these findings, the following are recommendations from the various indigenous chicken value chain analysis studies:

- Capacity Development on Improved Production Process: Farmers need to be trained on improved poultry production methods such as proper housing, provision of medications, and supplementary feeding.

- Value Addition in the marketing process: Generally, since indigenous chicken are sold live, they are never stocked in supermarkets and are mostly found in isolated markets, making them highly accessible. This could involve slaughtering, dressing, and packaging the chickens in such a way that they can be sold in formal retail outlets such as supermarkets. This is not only going to bring the product closer to consumers but also provide it in a more convenient form for those busy urban households, increasing demand. Furthermore, this is likely to reduce the cost of storage, as currently, the chickens are stored live and have to be fed, leading to losses. This will also ensure a steadier supply as dressed, and processed chickens can be kept in cold storage, avoiding the seasonality of supply.

- Group Marketing: Survey findings show that at the farm level, the best prices were obtained when farmers marketed their chickens through cooperatives (bulking centers). Group marketing not only gives the farmers bargaining power but also reduces the search costs for the assemblers. These groups can also serve as avenues for sharing information on improved production methods. These producer groups can also play an active role in sharing and exchanging critical backward and forward linkage information in collaboration with the various value chain actors.

Producer/marketing groups also provide an opportunity for gender mainstreaming in the value chain as women and youth groups could be targeted. Some of the key intervention activities include:

a.) Incorporating indigenous poultry enterprises in women farmers' groups' activities and actively linking women's groups with knowledge service providers (NGOs, universities,

[13] Kabwe Stephen and Kalinda, Thomson and Chirwa, Josephine (2012) Value Chain Analysis of Iindigenous Poultry in Lusaka and Sounding Districts

extension departments, and embedded services of large private sector enterprises such as the case of Zimbabwe Irvines, Novatek, Masvingo Chicks).

b.) Although indigenous poultry is a low-cost enterprise, productivity in the sector can be highly improved through modernizing the production system (i.e., provision of modern veterinary drugs, proper housing, and supplementary feeding). One way in which this can be addressed is to increase access to finance both at the production level (leading to increased production) and the marketing level (leading to improved services). Microcredit institutions could boost some of the traders who could then be able to procure larger quantities and process (i.e., slaughter, dress, and package) the chickens into a form that can be supplied through modern supermarkets.

c.) Infrastructure development – involving the development of feeder roads for linking the farm with the main access road to market or growth centers. Lack of these roads increases the cost for head load carrying and, at the same time, increases losses in transit. Most markets do not have specialized places for keeping live chickens until they are sold. They are normally kept in crowded cages under the sun with little food leading to stress, weight loss, and consequently deaths. Provision of a live poultry section within market structures where chickens could be received, tagged and treated for disease while awaiting purchase would reduce losses due to deaths in storage.

d.) Creating linkages among value chain players is one way in which search costs for assemblers could be reduced. This is possible when producers bring chickens in one place during market days. This would not only benefit assemblers through reduced search costs but also producers who are likely to get better prices as they would have more choice of whom to sell to.

Goats Value Chain Analysis Studies

Using a dynamic systems approach, a study on the commercialization of smallholder goat production in Mozambique yielded results that are of significance to Takunda[14]. Simulation results showed that improving goat production and animal health practices alone, without concomitant improvements in market access, had negative impacts on the financial performance of producers and no impact on other value chain actors.[15]

In contrast, a study of goat commercialization projects in Shurugwi noted that because of contribution to household food security, generation of income, and participation or ownership by resource-

[14] Hamza, et al

[15] Kamar H. Hamza, Karl M. Rich, A. Derek Baker, and Saskia Hendrick Commercializing Smallholder Value Chains for Goats in Mozambique: A System Dynamics Approach

constrained households, development partners prioritized the goat value chain for its potential in poverty reduction and benefiting women, other disadvantaged and vulnerable groups.[16] The interventions were designed to transform goat production and marketing from an informal activity to a profitable enterprise through a business model that tapped into a growing market. The study makes the assertion that the goat development interventions failed to make the expected impact on the livelihoods of the targeted smallholder farming households due to beneficiaries having failed to access external markets because of a lack of business knowledge, skills, and innovation and not making any investments of their own. The take-home for Takunda is that facilitating business knowledge, skills, and innovative entrepreneurial attitude is critical for commercialization to take hold among targeted beneficiaries, that is women, other disadvantaged and vulnerable groups. (IO 1.1.3 Access to markets and business services).

Of relevance to Zimbabwe in general and the Takunda Activity areas is the impact of value chain governance. An observation was made that farmers are prevented from engaging in goat trading in the market by societal perceptions of trading in stolen livestock if they send their livestock to the market for sale, and high transaction costs and costs of compliance force farmers to sell at the farm gate to middlemen who offer lower prices for the livestock[17]

An interesting observation that applies to goat marketing and consumption in Zimbabwe and the study areas is that consumers' preferences for live goats are influenced by the color of the goat hair.[18] It was a widely held belief in the communities that goats with white hairs signify a good omen and therefore attract higher prices than goats with other color types, while black hair-colored are used for ritual purposes and are also more expensive. Traditionalists looking for goats to slaughter for ritual purposes also demand the white and black colors for their purposes and pay whatever price that the goat is sold at. This implies there is scope to produce goats of a given color, targeting specific buyers.

Recommendation From The Various Studies Can Be Summarized As Follows:

i. To achieve an increase in the profit margins realized by the smallholder farmers, it is recommended that government institutes should use a standardized weighing system in the marketing of goats, and this measure is also expected to counter the effects of traditional and cultural beliefs in price determination as well as reduce transaction cost.

ii. Once the marketing of goats has been standardized, it is recommended that the private sector, with the support of the government, facilitate the institution of direct sales as a marketing option. This will be undertaken through facilitating the establishment of goat sales points within the communities where farmer groups or individual farmers will market their livestock, including through auctions to obtain competitive market prices,

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[16] Phiri, 2012. "The effectiveness of the Goat Value Chain on Poverty Reduction among Smallholder Farming Households in Shurugwi District's Ward 9"". MS Thesis, Midlands State University.

[17] George Wooed. 2013. An Analysis of the Goat Value Chain as A Strategy fir Poverty Reduction in Ghana.

[18] George Wooed. 2013. An Analysis of the Goat Value Chain as A Strategy fir Poverty Reduction in Ghana.

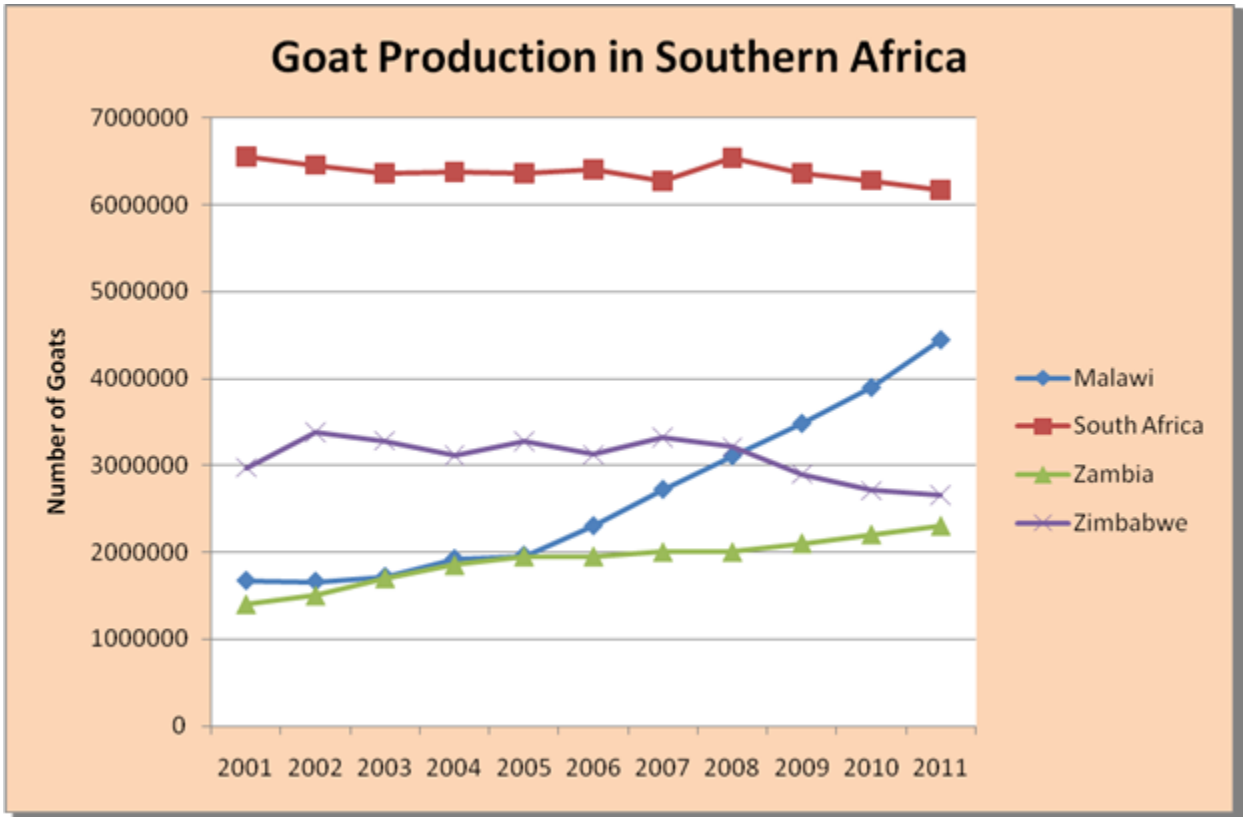
while the government provides the enabling environment to reduce the impact of social barriers.

iii. There is also a need to organize farmers into farmer-based organizations (FBO). Key functions of the FBO include sharing of information among the actors, engaging in bulk buying of inputs, access to services, and marketing of goats on behalf of members. (1.1.3.2 Organization and capacity of producer farmers to engage with market systems improved).

iv. FBOs that are open and inclusive of resource-poor and those living with disabilities are better at facilitating the participation of these categories of producers in accessing services and markets than when they are not members (when they are more likely to face exclusion and or discrimination).

Trends in Goat Production and Consumption in Zimbabwe and Southern Africa

A strong and growing market for goats exists within the region, on the African continent, and internationally (particularly in the Middle East). Emerging consumers of goat meat in Southern Africa, in general, and Zimbabwe, in particular, include restaurants, hotels, institutions, and locals/individuals in urban areas. Other huge end markets include traditional ceremonies as well as holiday celebrations and festivities where live animals are the primary commodity. There are no clearly identified exports for goat products in the region, with the few exports that exist being mainly live goats. At the moment, this market is poorly regulated, organized, and largely inefficient.



Graph 2: Goat production trends in Southern African countries of Malawi, South Africa, Zambia, and Zimbabwe between 2001 and 2011: Source Heifer International Value Chain Study, 2014

Groundnuts

Public and private sector contribution and participation in value chain development are important, as observed in a value chain analysis of groundnuts in Zambia.[19] The study assessed and identified challenges, opportunities, and pathways for private sector involvement and contribution through assessing the challenges affecting the full functioning of the groundnut value chain and interactions of the key players. The value and relevance of this study for Takunda is in the outlining of the opportunities and pathways for increasing the private and public sector participation at different stages of the groundnut's value chain in order to improve production, trading and wholesaling, storage, processing, and marketing. These include:

i. Supporting the development and strengthening of farmers' organizations through deliberate capacity-building programs is one way of upgrading the value chain through encouraging bulking and coordination in negotiating prices and for facilitating collective bulk selling, which in turn facilitates improved pricing in favor of individual farmers.

ii. Given that there is little processing of groundnuts into vegetable oil, private sector investments in groundnut value addition into vegetable oil would stimulate production as the value addition improves the value of the groundnuts, hence the prices that accrue to the producers.

iii. Establishing a platform for coordination between value chain actors can result in investment and strategies to increase productivity and improve quality.

iv. Improve productivity of smallholder farmers by enhancing their access to improved and particularly certified and hybrid seeds. The private investment supported by the government is critical.

v. Increase investment in research and extension to develop varieties that respond to the needs of the manufacturing industry (e.g., varieties with high oil content) or preference of export markets.

vi. Address the problem of aflatoxin contamination to improve quality. This will improve prospects for increased assess to lucrative markets (domestic, regional, and international). This will also contribute to addressing aflatoxin-induced liver cancer in communities and consumers. In this regard, Takunda can work with the private sector to

[19] Rhoda Mofya-Mukuka and Arthur Shipekesa (2013) Value Chain Analysis of the Groundnuts Sector in the Eastern Province of Zambia. Indaba Agricultural Policy Research Institute. Working Paper No. 78

offer laboratory services for determining aflatoxin levels which would guide policy measures to reduce the levels critical for groundnut exports.

vii. Promote better storage and post-harvest handling practices for groundnuts to minimize the risk of aflatoxin contamination (e.g., promotion of drying on A-frame platforms and trade-in shell groundnuts).

viii. Conduct awareness campaigns on the dangers of ingesting groundnuts contaminated with aflatoxin to stimulate demand for reduction in aflatoxins.

ix. Explore and take full advantage of regional trade markets based on existing regional trade protocols or agreements to facilitating sustainable markets

Sesame

Sesame is one of the oldest oil crops and is thought to have originated in Africa. It is widely grown in tropical and subtropical regions. Its production is often concentrated in marginal and sub-marginal lands[20]. Sesame is a warm-season annual crop that is primarily adapted to areas with long growing seasons and well-drained soils. However, lack of wider adapting cultivars, shattering of capsules at maturity, non-uniform maturity, poor stand establishment, lack of fertilizer responses, profuse branching, and low harvest index were identified as the major constraints in sesame production worldwide[21]. When the capsules mature, they split from the top downwards and shed their seeds if not harvested in a timely manner, causing yield losses. According to FAOSTAT, India and China are the world's largest producers of sesame. Within Africa, Ethiopia, Sudan, Uganda, Nigeria, and Tanzania are among the top producers. Of late, production has been increasing in Mozambique and Zimbabwe due to growing demand in the confectionery industry. The just ended Livelihoods and Food Security Program (LFSP) also promoted sesame production linked to private sector players like Sidella and Export Trading Group (ETG). Some farmers have continued to grow the crop without project support targeting various market outlets, including exports to Mozambique, where prices are favorably high. They are even reportedly attaining comparatively higher yields than those attained in leading country producers. The production of sesame was estimated to have reached 11,802 MT during the 2021 Second Round Crop and Livestock Assessment, which is a more than a 100% increase from the 5,037 MT obtained during the 2019/2020 season[22]. By weight, sesame seeds contain approximately 50% oil and 25% protein, and if oil is extracted by pressing, the cake residue is a very high-protein (34-50%) feed for poultry and livestock[23]. An estimation done by

[20] Ashri (1998)

[21] Ashri (1994)

[22] 2021 Second Round Crop and Livestock Assessment Report

[23] https://www.zimagrihub.org.zw/sites/default/files/documents/Sesame%20Production%20in%20Zimbabwe.pdf

ZimAgriHub in 2015 revealed that smallholder producers could attain average yields of around 600kg/ha and realize profits of around USD 446.20 per hectare.

Trends in Demand and Supply: Implication for Takunda

Interventions that support or result in increased smallholder production of any value chain should be underpinned by growing demand for the value and its by-products. A number of studies and reports give indications of the trend in demand (and supply) and the associated determining factors for some selected value chains of interest to Takunda. These are outlined below.

Groundnuts

The South African Bureau for Food and Agricultural Policy (BFAP) conducted a value chain study in 2019 with a focus on the trade competitiveness challenges faced in the groundnut value in South Africa.[24] [25] The following are findings of relevance to initiatives for promoting the commercialization of smallholder groundnuts targeted at local and export markets.

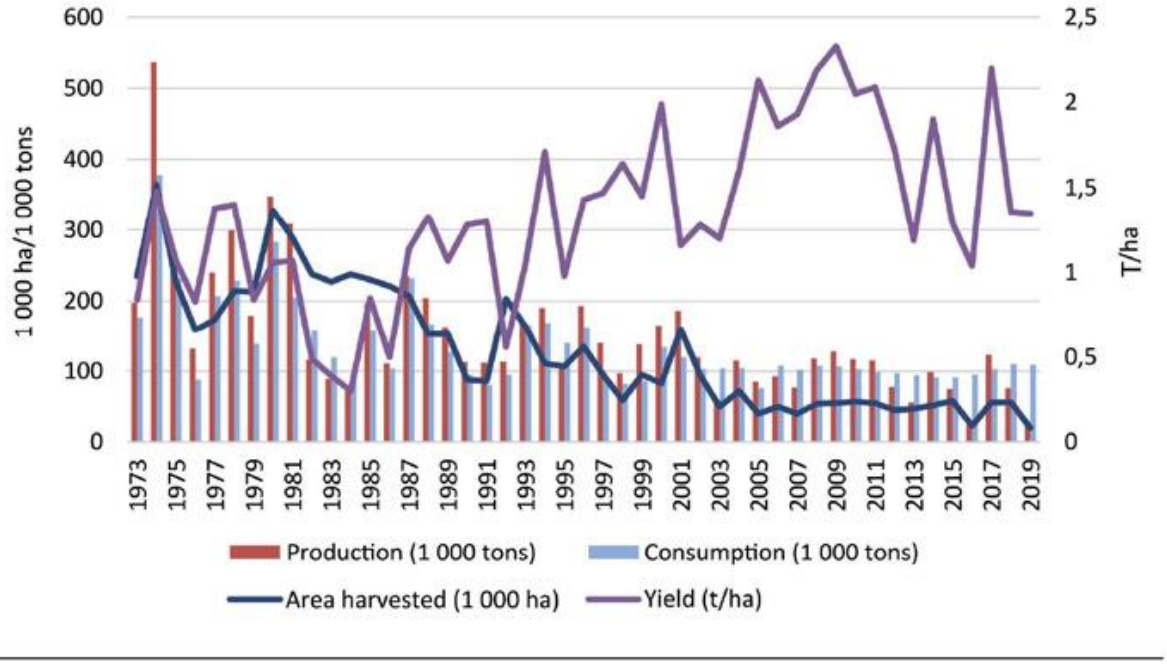
- The quality and quantity of groundnuts produced to determine the marketing channel and ultimate market. Higher quality groundnuts are either exported (Japan and the Netherlands predominantly) or locally sold into the edible (flavored/roasted) snack and confectionary markets. The Spanish-type groundnut is desirable in the European snack market due to its oval shape and related favorable coating attributes.

- Groundnuts for groundnut butter production are largely sourced from 'sundry' quality groundnuts as well as 'splits' from the local market but are also supplemented with imported products from Argentina, the United States of America (USA), Brazil, China, and Nicaragua. Imports occur partly due to the seasonality of local groundnut production, but in recent years this is also due to a shortage of local groundnut supply as a result of the severe and persistent droughts in the main groundnut producing regions. Prior to 2015, these were imported from Malawi, but this stopped because of high aflatoxin levels.

- In South Africa, the groundnut area harvested has constantly been decreasing over time, notably since 1990. While there has been an upward trend, though with fluctuations, in yields over the same period, the increase in yields has not compensated for the loss in hectares. Consequently, production levels have also been declining over time. As a result, South Africa has become a net importer (from previously being a net exporter) of groundnuts to meet local demand.

[24] Marion Delport 2020. Groundnut industry at a crossroads https://sagrainmag.co.za/2020/02/07/groundnut-industry-at-a-crossroads/

[25] Bureau for Food and Agricultural Policy. 2019.The Groundnut Value Chain –update 2019



Graph 1: South African supply and demand (USDA and BFAP).

The take-home is that South Africa is a latent market for local groundnuts and derived products, such as peanut butter if the right varieties are produced and low aflatoxin levels are achieved.

The BFAP study identified three key factors that, if addressed, could make significant contributions to the industry's turnaround strategy. BFAP found that at an average production cost of R26,36/kg, it is R2,39 (10%) more expensive to produce groundnut butter locally than to import pre-packaged groundnut butter.

Even though local groundnut production has dropped, South Africa has maintained demand for its product due to the varietal choices (producing predominantly Spanish type groundnuts) that have created a niche market opportunity. The take-home for Takunda is that if export markets are to be targeted and maintained, it is crucial to maintain competitiveness at the primary production level (in terms of cultivar adoption and yield achievement) to support the producers. The second crucial factor contributing to competitiveness in the global market is a quality action plan, ensuring adherence to the latest quality standards. Consistency in quality and quantity supplied to the international market are vital for supporting local prices and the ultimate sustainability of the groundnut industry.

Cowpeas

In 2016 it was noted that in the Sahel region (Ghana, Nigeria, Côte d'Ivoire, Mali, Burkina Faso, and Niger), demand for cowpeas was growing at a faster rate than production.[26] The increase in demand was due to increased consumption in restaurants, fast food outlets, and supermarkets for cowpea and its products. There was also an associated increase in demand for greater quality and consistency as consumption was going up. This implies producers and other value chain players had to meet demands for greater consistency and quality (consistent size grains, no insect damage, consistent variety, and no mixing of varieties) of cowpeas they offer. Meeting this consistency and quality requires that farmers cooperate in groups or associations to address these demands. Working in associations, farmers can agree to use a common seed for a common variety and work together to learn about the use of other appropriate inputs. This is something that Takunda will need to put in place from the onset of intervention in support of the cowpea value chain.

[26] USAID. 2016. Cowpea Value Chain Assessment. USAID Resilience and Economic Growth in the Sahel –Accelerated Growth (REGIS-AG) Project

STUDY DESIGN AND OVERALL METHODOLOGY

Overall, the study adopted a descriptive survey design method which used both qualitative and quantitative tools like Focus Group Discussions (FGD) and in-depth interviews (IDI) with adult men and women and young men and women to capture the perceptions, constraints as well as preferred crops and livestock value chains. Key Informant Interviews (KII) were conducted targeting local and distant input suppliers and dealers, buyers, aggregators, traders, transporters, formal and informal financing institutions, processors, wholesalers, and retailers. Local governance bodies like rural district councils were also included as key informants. The purpose was to better understand their quality and quantity expectations for different products, financing models, value addition, as well as operations of formal and informal rules and regulations within specific value chains. A gross margin tool was used to collect and analyze quantitative data.

Sampling

The study used a multi-stage sampling technique to select districts and wards. Districts of the study were selected through purposive sampling to target all Takunda operational areas. Targeting also considered differences in geographical location or remoteness (proximity to towns and growth points) and socio-economic, gender, and life stage. Ward selection was based on agroecological regions (natural regions 4 and 5). From each district, two wards were purposively selected from each natural region. A total of eight wards were selected for the study. In-depth interviews and focus groups, discussions targeting adult men, women, and young men and women were used to capture their specific barriers, perceptions, priorities and make recommendations to address the identified challenges for these priority groups for Takunda. Individuals who did not participate in the FGDs were selected for in-depth interviews (IDI) using a structured questionnaire. Stratified sampling methodology was used to identify a total of 30 people per district, comprised of adult men and women and young men and women from the village list, targeting those who would not have participated in the FGDs. This was followed by random sampling of six individuals from each stratum for in-depth interviews. Sampling for key informant interviews and observations went beyond the targeted geography of Takunda to capture supply and demand conditions for both input and output marketing that can be accessed and utilized by the Takunda target participants. These included distant input and output markets, financial services, and other business development services that may be suitable for Takunda participants. Government officials from Agritex, district development coordinators, and the Ministry of Women Affairs and Youth were also purposively sampled for key informant interviews. The table below shows the number of people reached during the study:

Table 2: Number of KII, FGD and IDI conducted

DISTRICT	FGDs	IDIs	KIIs
Buhera	8	30	11
Chivi	9	30	10
Mutare	8	30	7
Zaka	8	30	8
TOTAL	**33**	**120**	**36**

Data Analysis

The analytical approach was largely descriptive and exploratory to adequately capture the risks, constraints, and opportunities for Takunda's interventions, as well as the respondents' perceptions and aspirations as they pertain to their preferred crop and livestock value chains. Data collected was analyzed using both qualitative and quantitative methodologies. For qualitative methodology, all data were transcribed and analyzed using Atlas-ti, with robust data quality assurance mechanisms. Financial value chain viability was done with support from LEAP III, while value chain mapping was used to map different value chains. Opportunities and challenges were analyzed through SWOT analysis for each value chain, while risks were analyzed using a risk profile matrix. The analysis of the selected agricultural value chains was not only conducted to identify the most profitable value chains but also to understand the constraints and opportunities within the existing market systems. It is the understanding of these market dynamics that enabled the recommendation of market-based solutions, which also factored in some of CARE's SuPER principles that focus on promoting *Sustainable, Productive & profitable, Equitable, and Resilient (SuPER)* agriculture practices and technology dissemination.

Methodology for the value chain analysis and program design exercise

It is important to note that the analysis of agricultural value chains under this assignment was not only conducted to identify the most profitable value chains but also to understand the constraints and opportunities within the existing market systems. Understanding these market dynamics enabled the recommendation of market-based solutions, while also factoring in some of CARE's SuPER principles.

In line with the market systems approach (see Figure 2 below), the study sought to engage with value chain actors across the three levels of the agricultural market system through:

- Core value chain- this is where farmers and the markets interact, i.e., demand and supply. The objective here was to understand the constraints and opportunities at the farmer/household and market level. Questions regarding production, productivity, market access, and prices were asked to ascertain dynamics within the core value chain.

- Supporting functions- these are ancillary services that support the effective functioning of the core value chain. Examples include financial services, transport/logistics, and information, among other services. The objective here was to understand the maturity of the markets for services in the four districts and to what extent these could support sustainable market-based engagements by Takunda target households and beneficiaries.

- Policy & Regulatory functions- this represents the policy environment within which the core value chain operates, i.e. what policies affect (positively and negatively) the effective functioning of the core value chain.

To this end, the study adopted a participatory approach to data collection with participants being involved through FGDs and IDIs in the identification, selection, prioritization, and ranking of the value chains for analysis. The study also used a descriptive research design that involved both qualitative and

quantitative techniques for data collection and analysis. FGDs and IDIs with men, women, young women, and young men were conducted to capture the perceptions, risks, constraints, opportunities, and aspirations as they pertain to their preferred crop and livestock value chains.

Key Informant Interviews (KIIs) were also conducted targeting agro-dealers, such as input suppliers, buyers, aggregators, traders, processors, wholesalers, retailers, and transporters as well as formal and informal financing institutions and local government bodies like rural district councils (RDCs) and government ministries and departments. The KIIs were conducted to better understand the expectations of the value chain players and stakeholders in terms of quantities and quality for the different products, value addition initiatives, financing models, and application of formal and informal rules and regulations within specific value chains.

Data collection tools in the form of FGD, KII, and IDI guides and crop and livestock gross margin templates were designed and administered to gendered farmer groups during FGDs and to individual adult female, young female, adult male, and young male farmers to get an in-depth understanding of their gendered market-related constraints in the sourcing of inputs, production techniques and preferences for crop and livestock value chains. The data collected was analyzed qualitatively using Atlas-ti software.

Value Chain Selection

This section describes the approach taken to first identify a long list of value chains[27] based on farmer preferences. The long list was then narrowed down for in-depth analysis using both the market-based criteria developed during the inception phase and the CARE SuPER principles. The study team then recommended selecting value chains of focus based on "market-based" findings from the value chain analysis.

Value Chain Selection and Methodology

A detailed description of selection criteria

> *While it is fundamental that maximum profit margins drive the selection of the appropriate value chains, the approach used in this study recognizes the need for incorporating the voices of men, women and youth in the selection of the value chain enterprises of their preference over and above the profit margins. Profit margins may be impacted by other factors, including the age, gender, life stage and social status of the producer or market actor, her capacity to produce consistent quantity and quality of various products for the market, how dietary practices influence market demand.*
>
> ***Source:*** *TOR for Takunda Market Systems & Value Chain Analysis*

To achieve the impact required, various parts of the agricultural market system must be functional and well-integrated. Market-based solutions can focus on core support services or regulatory functions by the private sector, public sector, or through collaborative governance. The criteria that were considered to determine if a solution was indeed market-based and therefore compatible with CARE's vision for Takunda. The criteria were further juxtaposed with CARE's SuPER principles to strike a balance between purely private sector-led facilitation solutions and those that are sustainable, productive & profitable, equitable, and resilient.

Aligning with the SuPER principles meant that the value chain selection process was therefore guided by the need to **promote inclusive market systems and value chain development which benefit a wide range of actors**, including vulnerable groups such as women and youths. Thus, while the "profit and productivity" motive is important in market systems development projects, for Takunda, the aspect of inclusivity was also prioritized to promote the inclusion of vulnerable groups and resource-constrained households. The value chains were selected in such a way that the number of resource-poor smallholder farmers, particularly women, are engaged in the market system and could potentially benefit from improvements in the market system.

[27] The most common value chains identified by other USAID-funded projects include sorghum, finger millet, pearl millet, cow peas, sugar beans, groundnuts, bambara nuts, maize, sunflower, soya beans, tomatoes, potatoes, sweet potato, watermelon, sugarcane, carrots, kale, onion, cabbage, spinach, banana, goat, beef and chicken

Overview of the Selection Process

The process of value chain identification and selection was conducted through focus group discussions (FGDs), where the participants were asked to initially identify a long list of all crop and livestock enterprises practiced in the area. From the long list, a short-listing of preferred value chains was done using the criteria outlined above, encompassing market-based and SuPER principles. From the shortlist, priority ranking was then done using a weighting procedure, where each participant chose their preferences against each of the short-listed value chains in line with the criteria.

STUDY FINDINGS

The participatory identification, selection, and prioritization of agriculture value chains produced almost similar preferences for the different demographic categories of men, women, young men, and young women. Revealed preferences confirmed that adult men prefer commercially oriented crop and livestock enterprises while the choices and preferences for the other demographic groups are influenced by other non-commercial considerations like the value chain's potential for contribution to household nutrition and gender (women empowerment). Overall, smallholder farming households in the two provinces prioritized indigenous chickens, goats, groundnuts, sorghum, and cowpeas. In Masvingo Province, sesame was identified as an emerging value chain in Zaka District with potential for promotion under the Takunda Activity. The culmination of the value chain analysis, taking cognizance of the market-based criteria and the CARE SuPER principles, was the identification of potential facilitation activities for consideration by Takunda to improve household level incomes, resilience, and foster sustainable linkages with local, provincial, or national markets where feasible.

Results from the analysis of the prioritized agriculture value chains reveal that the two livestock and three crop value chains are currently not well developed, but they have huge potential for development if properly promoted. Value chain performance is still very low for all the prioritized value chains due to various production and marketing constraints that the farmers have to grapple with. Accessibility of finance, inputs, extension services, and viable markets are some of the challenges that are militating against value chain performance for the smallholder farmers in the target districts. Although productivity levels are still very low, value chain promotion and upgrading interventions by Takunda can enhance the current crop and livestock production and marketing systems that are being practiced by the smallholder farmers in the four target districts. Consistent with the Takunda Theory of Change, priority will focus on strengthening of the livestock extension system through the paravet system which is linked to both the private and public sector to improve animal health issues. Takunda can work with some private companies like Coopers, which is very willing to work with farmers on animal health issues. Through the resilience design interventions, Takunda will also facilitate establishment of water harvesting and local ecosystem improvement and preservation with the intension of improving the capacity of the system to support increasing agricultural productivity. Additionally, farmers need to be trained on improved animal shelter, fodder production and local feed formulation with locally available materials, to improve management of their current stock before bringing new or improved breeds. Where applicable, in some areas, Takunda can establish water points for livestock watering at all water points that are to be established or rehabilitated to increase livestock access to water. There is a need to strengthen value chain support systems through the engagement of all relevant stakeholders like input suppliers, financial service providers, government extension workers, and marketing agents to collaboratively offer market-based solutions and address identified constraints and challenges, mitigate risks and exploit available opportunities for improvement in value chain performance.

Description Of The Short-listed Value Chains Considered

For the two Masvingo Province districts, revealed preferences and prioritization for the identified value chains were almost similar between the two districts. However, different categories of farmers had slightly different priorities and revealed preferences, as shown in Table 3 below.

Table 3: Value chain prioritization and revealed preferences in Masvingo Province

FARMER CATEGORY	REVEALED PREFERENCES FOR CHIVI	REVEALED PREFERENCES FOR ZAKA
Adult women	Maize, sorghum, groundnuts, cattle, chickens	Groundnuts, nyimo, horticulture, maize, chickens
Adult men	Cattle, groundnuts, goats, chickens, and sorghum	Cattle, goats, groundnuts, maize, chickens
Young men	Chickens, goats, sorghum, maize, finger millets	Sugar beans, groundnuts, chickens, maize, goats
Young women	Maize, groundnuts, chickens, vegetables (covo) and roundnuts	Sugarbeans, groundnuts, chickens, maize, and cattle

The overall ranking of the value chains produced similar results for the two districts, with **maize, sorghum, groundnuts, goats,** and **indigenous chicken** being selected as the top five prioritized value chains in the province.

In Manicaland, revealed preferences and prioritization for the identified value chains were almost similar between the two districts, a s shown in Table 4 below.

Table 4: Value chain prioritization and revealed preferences in Manicaland Province

FARMER CATEGORY	REVEALED PREFERENCES FOR BUHERA	REVEALED PREFERENCES FOR MUTARE RURAL
Adult women	Groundnuts, broilers, indigenous chickens, millet	Groundnuts, roundnuts, goats, cowpeas, sorghum, maize
Adult men	Groundnuts, goats, broilers, roundnuts, millet	Cattle, goats, groundnuts, roundnuts, maize
Young men	Groundnuts, goats, broilers, roundnuts, indigenous chicken	Groundnuts, goats, cattle, roundnuts, indigenous chickens
Young women	Broilers, groundnuts, roundnuts, indigenous chickens	Broilers, groundnuts, roundnuts, indigenous chickens

Value Chains Selected For In-Depth Analysis

For in-depth analysis, those value chains exhibiting potential for commercialization and for which incentives exist for local market actors (private companies and MSMEs) to engage commercially with targeted communities and provide technical support services to farmers were selected. The potential for Takunda to stimulate and facilitate increased investments by these private actors was also considered during the selection process. As earlier noted, the SuPER principles of sustainability, productivity, profitability, equity, and resilience were also considered in selecting value chains for in-depth analysis.

In **Chivi, goats, chicken, and groundnuts** were selected for in-depth analysis, while in **Zaka, indigenous chicken, goats, groundnuts, and sesame** were selected for in-depth analysis**.** Although sesame did not feature prominently during the FGDs and IDIs as a prioritized value chain, it was highlighted by some key informants in Zaka as an emerging value chain with potential for substituting cotton, which used to be the dominant cash crop in the district. Growing of sesame is already prevalent with some discernible market linkages in the nearby districts of Chiredzi and Chipinge, taking advantage of the growing market demand across the border in Mozambique.

Gross margin analysis was used to rank the selected value chains based on their profitability. Table 5 below summarizes findings from the gross margin analysis of the selected value chains in Manicaland and Masvingo.

Table 5: Results for Gross Margin Analysis of the selected value chains

	MASVINGO			MANICALAND					
Item	Indigenous chickens	Sesame	Goats	Groundnuts	Cowpeas	Groundnuts	Sorghum	IndigenousChicken[28]	Goats[29]
Yield (kg/ha)		800		1,200	308.88	544.0	650.0	80 birds	11 goats
Price per kg ($)		1.00		0.68	0.33	1.20	0.425	7.00 per bird	37 per goat
Revenue ($)	734.00	800.00	225.00	810.00	142.70	652.80	276.44	560	406.88
Total Variable Costs ($)	286.84	472.00	234.32	1,013.00	74.18	250.50	210.89	339.0	96.68
Gross Margin ($)	447.16	328.00	-9.32	-203.00	68.53	402.30	65.55	221.00	310.20
Cost per kg ($)	1.43	0.59	19.53	0.84	0.24	0.39	0.32	4.24	8.79
Break Even Yield (kg/ha)	57	472	9	1,200.00	222.53	208.75	0.50	48.42	8.39
Net Return per $ invested ($)	1.56	0.69	-0.04	-0.20	0.92	1.61	0.31	0.65	3.20
Family Labor required (days)	180.00	52	180	0	43.57	102.55	56.0	60.00	18,25
Return to family labor ($)	2.48	6.37	-0.05	-$1.35	1.57	3.92	1.17	3.68	17.00

[28] (20 bird unit) x 5 per year

[29] 12 doe unit

In Masvingo, indigenous chickens exhibited the highest returns per dollar invested at $1.56, followed by sesame ($0.69), goats ($-0.04), and groundnuts (0.20), as shown in Table 4. In Manicaland, goats exhibited the highest level of return on investment at $3.20, followed by groundnuts ($1.61); while sorghum had the least ($0.31). The smallholder farmers normally regard the use of family labor to be free of charge. However, in this study, the opportunity cost of labor was regarded to be not equal to zero, contrary to the farmers' assertion. The imputed labor costs then contributed the greatest proportion to total variable costs (TVCs) due to the use of shadow prices; TVCs ballooned as a result.

Despite featuring prominently in both districts as highly prioritized value chains, **maize was not selected for in-depth analysis** due to the low productive potential and limited rainfall in the districts. However, it is important to highlight that households will continue to produce maize nonetheless, irrespective of the low yield potential in Natural Region IV and V. In that vein, there might be merit in facilitating activities that educate households on the transition from maize to crops with higher-yielding potential in region IV such as cowpeas and millet, for household use. In addition, the existence of the GMB as a key buyer with attractive floor prices provides an incentive for farmers to keep producing maize.

Indigenous chickens were selected due to their high **profitability, nutritional value, control by women, and growing demand for chicken meat in the province**. Like indigenous chickens, goats were also selected for their profitability, relative control by women, and availability of local markets in the province. Groundnuts were selected because of the availability of market opportunities both domestically and regionally, particularly in South Africa (informal market channels), where local peanut butter is said to be highly preferred by migrant Zimbabweans living and working there.

In **Buhera, cowpeas, groundnuts, and sorghum** were selected for in-depth analysis based on the existence of some private sector market channels, albeit not fully developed. In addition, the ability to **increase household level resilience was considered in line with SuPER principles for sorghum and cowpeas.** These two were found to do well in the semi-arid conditions prevalent in the district.

In **Mutare rural, goats, indigenous chickens, groundnuts, and sorghum** were selected for further analysis. As was the case in Masvingo, indigenous chickens were selected because of their relatively higher profitability, nutritional value, control by women, and growing demand for chicken meat in the province. Goats were selected for their hardiness and resilience, given that they can survive mainly on browsing as opposed to cattle that require abundant grazing to be productive.

Factors determining farmers' current VC preference

Table 6 presents factors influencing farmers' current VC preference, as well as constraints influencing the performance of the VCs and implications for their selection or prioritizing.

Table 6: Factors determining farmers' current VC preference

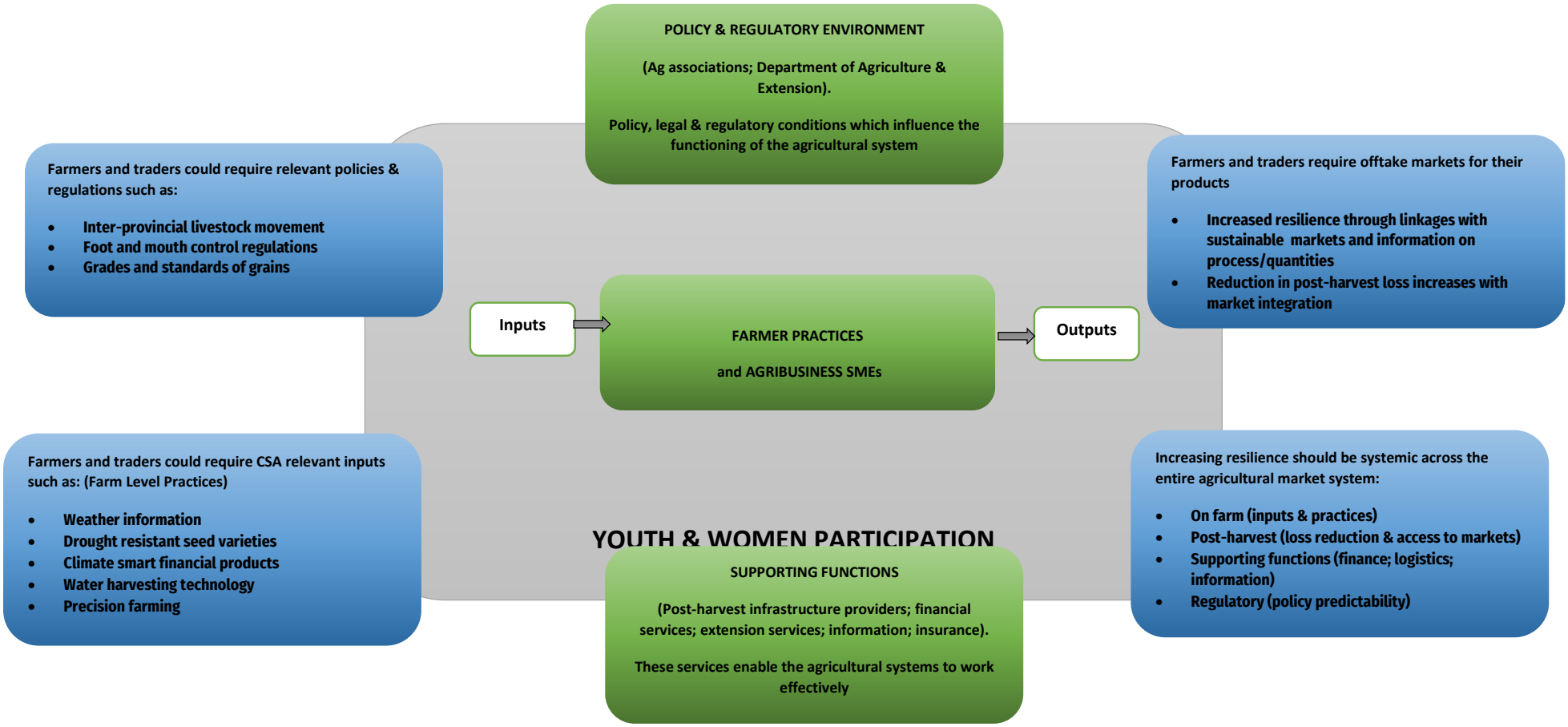
VALUE CHAIN	FACTORS DETERMINING OR CONSIDERED IN THE CURRENT SELECTION OF THE VC	CONSTRAINTS TO CURRENT PERFORMANCE	OPPORTUNITIES FOR CHANGES
Groundnuts	1. Local knowledge for production 2. Ease of establishment 3. Contribution to nutrition security as a protein source in the household 4. Versatile uses through home value addition, i.e., peanut butter for bread, in porridge, peanut butter in green leafy vegetables 5. It can be eaten roasted, boiled, in *mutakura*, fresh-cooked, etc. 6. Readily available local markets within the community 7. It can be sold readily for cash 8. Can be bartered for goods or services	1. Lack or shortage of improved seed 2. Lacking knowledge of gypsum application 3. Requires early and adequate soil moisture for optimum germination 4. Labor intensive at weeding, soil banking, and harvesting 5. Prone to post-harvest pest attack	1. Ready local and external markets for the raw crop and value-added products 2. Both adult and young female farmers grow the crop 3. Good local knowledge for production upon which to build 4. Offers an opportunity for value addition on and off the farm 5. Improved varieties are available
Round nuts	1. Local knowledge for production 2. Ease of establishment 3. As a protein source contribution to	1. Lack of improved seed 2. Shortage of selected improved seed 3. Easily infested with pests in post-harvest and storage	1. Both adult and female youth farmers grow the crop 2. Has ready local and external markets that can be built on

VALUE CHAIN	FACTORS DETERMINING OR CONSIDERED IN THE CURRENT SELECTION OF THE VC	CONSTRAINTS TO CURRENT PERFORMANCE	OPPORTUNITIES FOR CHANGES
	nutrition security in the home 4. Can be eaten roasted, boiled, in Mutakura, fresh--cooked	4. Labor intensive at weeding, soil banking, and harvesting 5. Thin markets	
Cowpeas	1. Local knowledge for production 2. Ease of establishment 3. As a protein source contribution to nutrition security in the home	1. Use of selected retained seeds 2. Lack of improved seed 3. Shortage of selected improved seed 4. Easily infested by pests in storage	1. Both adult and female youth farmers keep on the crop 2. Has ready local and external (export) markets that can be built on 3. Improved varieties available
Indigenous Chicken (Road Runners)	1. Easy start-up requirements, i.e., can be started based on available stock or small start-up capital 2. Low costs of production since they can survive on scavenging and household waste 3. Production is spread over an extended period 4. Can multiply quickly if properly taken care of 5. Women have control and can make independent	1. Low productivity requiring upgraded management 2. Housing and shelter are not ideal for intense and or commercialized production 3. High mortality due to diseases (Newcastle) 4. Left to scavenge 5. No supplementary feeding 6. Easy prey to predators	1. The low initial investment can be used to start the enterprise 2. Opportunity for introducing improved management 3. There is growing demand and market for indigenous chicken, which can be exploited

VALUE CHAIN	FACTORS DETERMINING OR CONSIDERED IN THE CURRENT SELECTION OF THE VC	CONSTRAINTS TO CURRENT PERFORMANCE	OPPORTUNITIES FOR CHANGES
	decisions regarding sale or slaughter	7. No cold chain so sold live	4. Suited to collective aggregation and marketing
Goats	1. Can be started with a local stock of goats at the home 2. Adapted to local environmental and climatic conditions 3. Readily available to liquidate for cash 4. Occasionally slaughtered for protein	1. High mortality of kids 2. Poor housing and management 3. Feeding practices do not promote efficient growth 4. Local breed inefficient in feed conversion and carcass quality 5. No supplementary feeding 6. Uncontrolled breeding 7. Local demand is there but easily saturated 8. The practice of letting the goats free-range brings conflicts with neighbors	1. There is a growing demand in the urban meat market and potential for exports 2. Suited to collective aggregation and marketing 3. Breeds with high productivity available 4. Can be pen fattened to attain desirable weight and quality demanded in markets
Sorghum	1. Local knowledge for production 2. Grown to supply household food 3. It can be grown for specific households and market	1. Use of retained seed with low yield potential 2. Agronomic practices in use are not ideal for optimum yields 3. Intense labor needs at thinning, harvesting,	1. Improved varieties available 2. Improved agronomic practices for higher yields available

VALUE CHAIN	FACTORS DETERMINING OR CONSIDERED IN THE CURRENT SELECTION OF THE VC	CONSTRAINTS TO CURRENT PERFORMANCE	OPPORTUNITIES FOR CHANGES
	needs, i.e., beer brewing, food	and post-harvest processing	3. Can be produced for targeted markets
Sesame	4. Highly adaptable to local climatic conditions in Zaka District 5. Relatively easy to produce by smallholder farmers 6. Lucrative producer prices being offered by off-takers 7. High oil and protein content as both food and feed for livestock	4. Lack of support from local agro-dealers in terms of supply of certified seed and off-take 5. Limited extension support 6. The crop is intolerant to water logging conditions	4. Growing demand in the export market 5. Opportunity for inputs agro-dealership supplying farmers that are switching from cotton production 6. Potential for private sector engagement in local aggregation and exportation

Figure 1- Market Systems Approach to Analyzing Value Chains in Manicaland and Masvingo

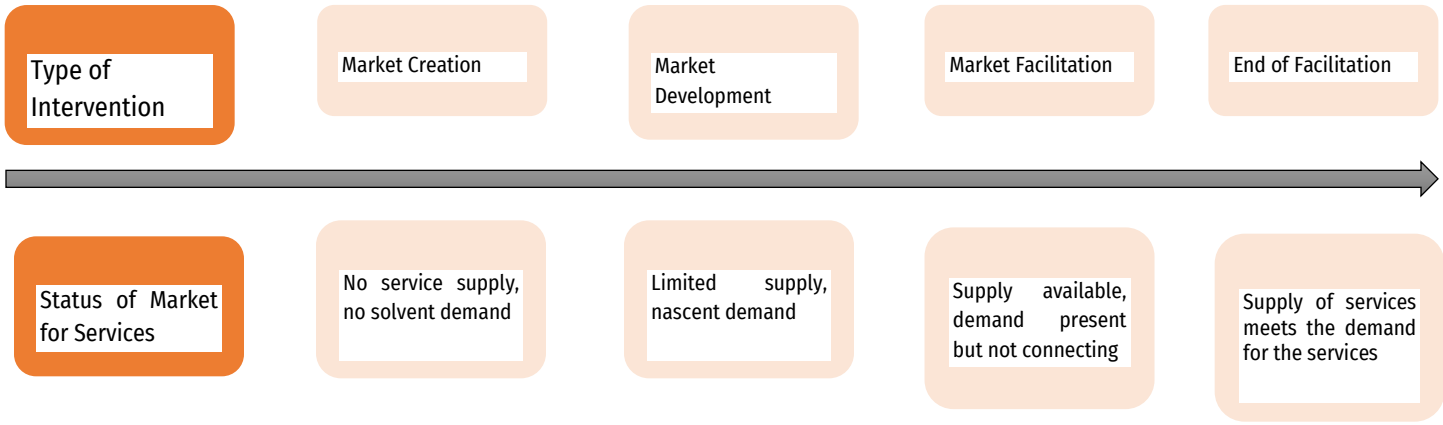


Approach to Facilitation Activity Identification

Takunda uses a market systems approach that integrates "pull" strategies such as **market facilitation** activities with "push" strategies, including **direct transfers to participants**[30]. The figure below outlines the market maturity model, which recognized that different value chains/market systems in Manicaland and Masvingo require different levels of facilitation (and direct transfers). The diagram illustrates the different levels of maturity of the agricultural sectors of the two provinces. **Market-based solutions in some instances will be facilitative and, in some instances, involve direct delivery**, depending on the level of maturity within the provinces and districts.

The approach to facilitation activity identification, therefore, used a hybrid of market systems and direct delivery based on the socio-economic profile of the districts of focus. However, the focus was more on market-led value chain interventions in line with the understanding of Takunda's priorities.

Figure 2 Market System Development Continuum



Therefore, during the analysis, an understanding was gained of the different levels of maturity within each of these markets and how this affects the system's ability to contribute to smallholder farmer market linkages and improved household income and food security. Maturity cuts across both the private and public sectors and refers to the "willingness and ability" of actors within these sectors to participate gainfully in commercial agricultural activity. The table below (Table 7) illustrates the different levels of maturity of the considered value chains and whether they lend themselves to market-based facilitation activities or direct delivery type of activities.

[30] TOR for Takunda Market Systems & Value Chain Analysis

Table 7: Value Chain Maturity per District

MANICALAND			
	VALUE CHAIN	**LEVEL OF MATURITY**	**TYPE OF ACTIVITIES**
Buhera	Cowpeas	Medium	Cowpeas have been produced in the district for decades, but there is a need to support private sector development on the offtake side
	Groundnuts	Medium	Phytosanitary issues such as aflatoxin affect export potential, but local and national markets are relatively developed, so activities would be to improve quality and productivity on the supply side
	Sorghum	High	Local and national markets for sorghum are relatively well developed. Consistency in quality, especially post-harvest handling and storage, presents challenges for smallholder farmer households
Mutare Rural	Goats	Medium	Supply and demand are there, but market-clearing conditions are not obtained due to lack of proper VC facilitation
	Indigenous chickens	Low	There is growing market demand for chicken, and the supply base is not well developed to adequately respond to market needs
	Groundnuts	Medium	Phytosanitary issues, such as aflatoxin, affect export potential, but local and national markets are relatively developed, so activities would be to improve quality and productivity on the supply side

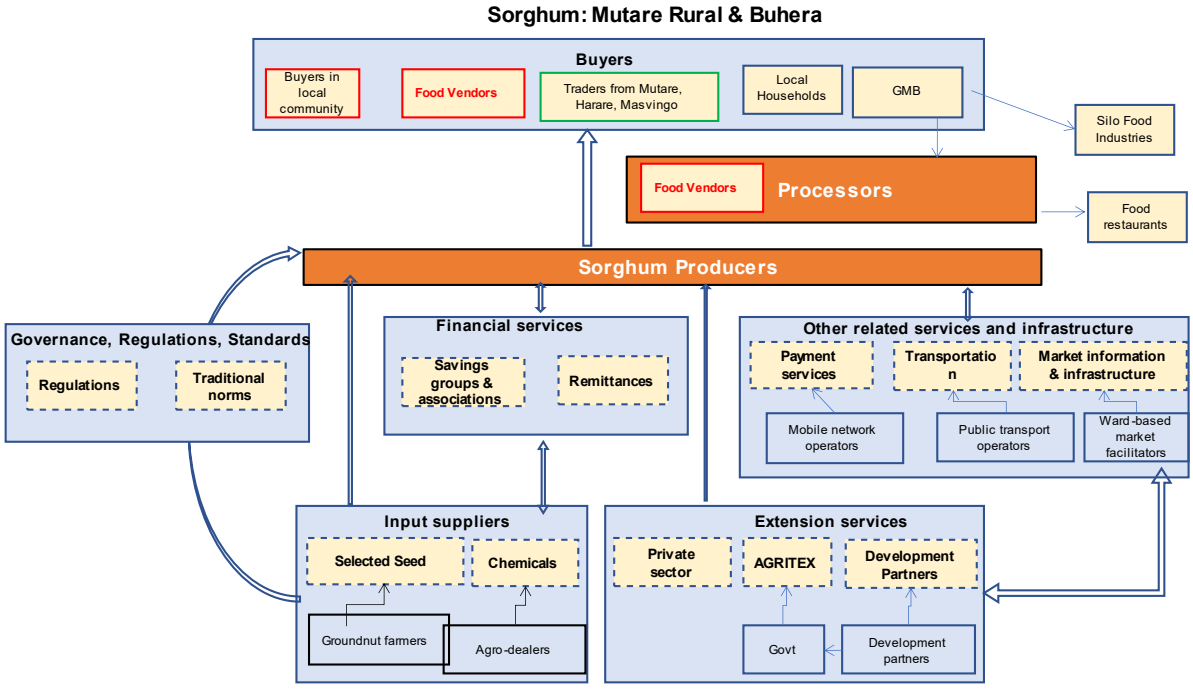
	Sorghum	High	Local and national markets for sorghum are relatively well-developed. Consistency in quality, especially post-harvest handling and storage, presents challenges for smallholder farmer households
MASVINGO			
Chivi	Indigenous chickens	Low	Supply and demand are there, but market-clearing conditions are not obtained due to a lack of proper VC facilitation
	Goats	Medium	Supply and demand are there, but market-clearing conditions are not obtained due to lack of proper VC facilitation
	Groundnuts	Medium	Demand for groundnuts and byproducts is there and growing, but there is a need for VC facilitation and promotion for market growth
Zaka	Sesame	Low	Willingness and production capacity are available among farmers but local demand and market need creation and development
	Indigenous chickens	Low	There is growing market demand for chicken, and the supply base is not well developed to adequately respond to market needs
	Goats	Medium	The presence of market demand is not matched with supply capacity
	Groundnuts	Medium	Available demand requires VC facilitation to ensure adequate supply for market equilibrium conditions to prevail.

Source: DevPact field observations

Sorghum

Sorghum is a climate-smart crop with drought-tolerant properties and is grown by smallholder farmers in the target districts. Both subsistence and commercial cultivation is practiced in the four districts. The value chain processes cover input supply, production, marketing, processing, and consumption. The value chain mapping for sorghum shares the characteristics of the maize value chain, as the two are all staples and ensure increased food security. The sorghum value chain in the target districts shows three levels of chain actors and three major service providers, as depicted in Figure 3 below.

Figure 3 Sorghum Value Chain in Buhera and Mutare Rural



Core Value Chain

The supply of inputs is dominated by agro-dealer retail outlets, local agro-dealers, and the government through its various support programs for farmers. Most sorghum farmers do not apply fertilizers in sorghum production, and chemicals are mostly used for the control of weeds, insect, and fungi infestations. For retail outlets, payment is on a "cash and carry" basis; the same applies for local agro-dealers, though in some cases, they do have arrangements with development partners through which farmers access inputs through voucher systems. While under the Pfumvudza program, where small grains are included, distribution has been overshadowed by maize enterprises. In some cases, inputs are given for free, depending on the source of the inputs. The seed that is mainly used is retained seed, though a few purchases from the market or from a contractor (lead firm) are involved.

Production is carried out by communal farmers who have a limitation of small land sizes and poor agricultural soils as major challenges. Sorghum is an ideal crop in all the target districts as it survives under very harsh weather conditions. However, it also has its share of challenges, such as reduction in yield due to quelea birds and lack of appropriate technologies to harvest. Sorghum is a short-season crop and therefore unlikely to suffer from intermittent rains received in these districts. Feedback from the FDGs showed that elderly household heads prefer the crop as well as farmers who major in livestock production, **as they use sorghum as an input in the production of stockfeed**. On the other hand, **younger household heads are wary of the harvesting challenges and the often significant losses associated with quelea birds infestation and tend to steer clear of producing sorghum.**

The GMB is the biggest buyer of sorghum in the two districts. Middlemen, though not that significant, buy the crop as they do local trading among households, which make substantial contributions. Since Chivi and a greater part of Zaka are potentially high sorghum producing areas, the GMB purchased more small grains (400 tons) in Chivi compared to maize (250 tons) during the 2020/21 marketing season.[31]. Some farmers find it cheaper to use sorghum in livestock production as input in stock feeds production leading to local trading among the communities.

GMB is the most significant player in this value chain, managing both the prices as well as the grades (quality) of the product. Farmers are expected to conform to the quality standards set by the GMB, which acts as both the buyer and the regulator.

Supporting Functions

Extension services are mainly provided by AGRITEX, and where commercial contractors are involved, these tend to also have their own extension personnel. As is the case with maize, AGRITEX also works with input suppliers to estimate demand for both inputs and produce and with GMB to arrange for mobile buying points and grain movement. Although farmers indicated the visibility of AGRITEX, they also noted that due to transport and increased extension worker to farmer ratios, officers are now resorting to increased use of digital technologies for group extension service provision through social media such as WhatsApp, which are increasingly being used for conveying extension advice.

The other service providers are private transporters. These transporters work with GMB to transport the produce from the buying points; in some cases, they negotiate with farmers who would want to deliver on time to depots. They also work with input suppliers for the delivery of inputs to retail outlets. The major constraint for these transporters relates to low volumes of business in terms of quantities of produce and inputs to be transported given the small production volumes, geographic dispersion, and fragmented nature of the smallholder farmers. Thus, business is generally low and follows seasonal trends for these transporters.

There are also financial services providers, including banks and mobile money transfer agencies. These are involved in making payments for produce delivered and the inputs purchased. Except in a few

[31] Information provided by the GMB Chivi Depot Manager

instances, the services are considered indirect; as for this type of service provider, there is no need for physical presence, but they just play facilitator roles.[32] Products and services are not properly structured for smallholder farmers, who find them to be expensive and inaccessible.

In Zaka, there is a farmer-run agro-hub link managed by farmers whose responsibility is to ensure that farmers engage in enterprises for which there is a market. While interest is waning due to lack of supporting institutional arrangements and adequate incentives, the objectives are noble and are meant to ameliorate livelihoods challenges faced through ensuring income-related production at the farm level. As with maize, the agro-hub can also be used to promote the sorghum value chain, but its use is relatively low because of the ready market for the crop through GMB.

The Government of Zimbabwe is promoting the production of resilience-enhancing crops such as sorghum and is supporting these through input provision and market offtake via GMB. Farmers reported a vast improvement in GMB's payment schedule and now view this channel as a viable channel through which to sell their sorghum. However, because of limited access to high-yielding seed varieties in the local markets, farmers plant local open-pollinated varieties whose seed is sourced from fellow farmers who retain and select the seed. The varieties mostly planted are open-pollinated local varieties. Improved varieties are available from local agro-dealers who buy from the large seed houses in bulk and repackage into smaller units (1kg, 2kg, and 5kg) for re-sale to farmers. The improved seeds are sold on a cash basis compared to local varieties that are procured through the exchange for labor and community networks. Although the germplasm for improved varieties is available in the country, improved sorghum seed is not readily available as it is not stocked frequently by agro-dealers due to low demand. In addition, the price of hybrid sorghum seed is much higher than that of OPV seed; hence farmers tend to buy the cheaper OPV seed.[33]

Some farmers reported having accessed improved seed through a contract production arrangement with Delta Beverages, which contracted some farmers to produce red sorghum with limited extension advice from Delta. Other inputs required for sorghum production are compound D or cereal fertilizer and ammonium nitrate. These are available in local agro-dealers/hardware shops, but farmers purchase and apply limited quantities due to limited financial resources. Most of the farmers in the target districts do not apply any fertilizer at all.

In terms of marketing, the sorghum producers use four main marketing channels, namely: (a) selling directly to households in the local community buying for home consumption; (b) selling directly to GMB; (c) selling to buyers in the local community buying for resale elsewhere; (d) wholesale traders procuring

[32] From the FGDs conducted, it was indicated that Empowerment bank at some point supported sorghum farmers through availing of loans to purchase inputs. The loans were then recovered by the bank from a stop order facility through a lead firm managing this value chain. However, the bank operated only for a season and is not active in the two districts. The GMB also makes payments for the delivery of produce through local banks and through Ecocash.

[33] Prices of OPVs range from USD 0.63-0.88 per kilogram whilst prices of hybrid seed range from USD 1.1-1.32 per kilogram

to sell to large scale traders at popular markets such as Sakubva wholesale market, with some shipping to Harare's Mbare Musika.

Commercial sorghum producers in the target districts make use of production loans, mostly within contract growing arrangements with companies like Delta beverages, which provide inputs upfront and deduct when farmers deliver the sorghum after harvest. Delta Beverages (Chibuku Breweries) is the target market for red sorghum intended for beer brewing. Of late, Delta Beverages has been supplying farmers with only seed and without the other requisite inputs. The arrangement can be negotiated if Takunda can intervene and make arrangements for guaranteeing repayment of input loans.

Policy and Regulatory Functions

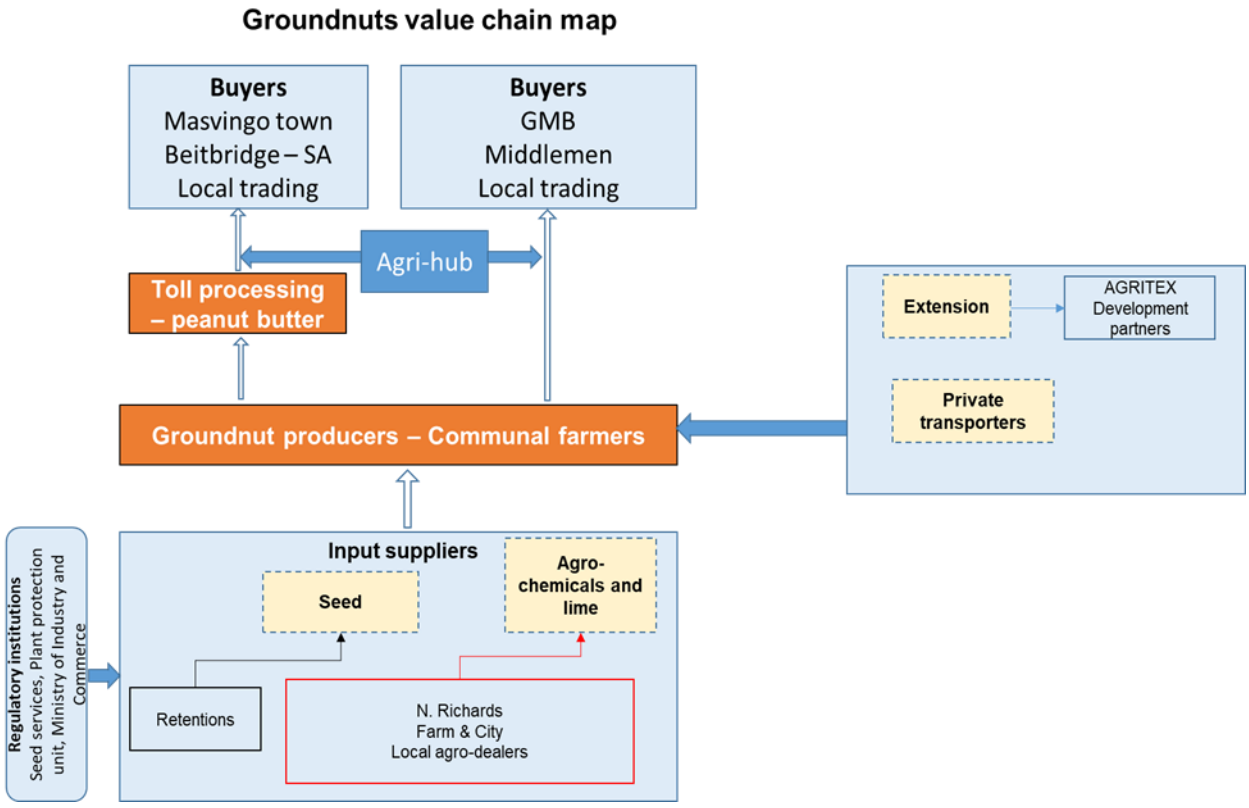
The governance system in the sorghum value chain can be categorized more as modular. This is because sorghum is, to a larger extent, a controlled product, and GMB sets the specifications for product quality that, in most cases, are adopted by the other market players. However, when buying, the other buyers take full responsibility for competencies surrounding process technology and use generic machinery that limits transaction-specific investments. The regulations for maize and sorghum are the same as all are considered staple foods. Seeds and agro-chemicals bought from retail outlets are regulated by the Seed Services Unit under the Department of Research and Specialist Services (DR&SS). The GMB regulates product prices, grading, and movement of the product.

Groundnuts

The groundnut value chain mapping shows four key stages for value chain actors (input suppliers, producers, toll processors, and buyers), facilitated by supporting service providers. In short, the core processes in the groundnut value chain in the target districts **are input supply, production, buying (which includes wholesaling and trading activities), processing, retailing, and consumption**. The input supply chain actors are households selling seed for cash or in exchange for labor and hardware shops selling agricultural inputs. Production is done by the farming households. Buying is done mostly by commodity traders as there are no established private sector buyers in the districts. Processing involves households grinding groundnuts into peanut butter and roasting nuts into ready-to-eat snacks. Actors in retailing and consumption include: women and men selling unprocessed groundnuts for consumption; small-scale individual food vendors selling consumption products (such as salted peanuts); households and the local inhabitants who are the consumers of their own produced groundnuts or those procured from neighbors and others selling within the community (local markets).

Groundnut production is an ideal crop in natural region IV; it has a short season and survives under relatively high moisture stress conditions. It is an enterprise preferred by women and is relatively less labor intensive. Challenges can be found at the harvesting stage, where technologies are now being developed to reduce the labor demand for this stage.

Figure 4 - Groundnuts Value Chain Map



Core Value Chain

The supply of inputs is dominated by agro-dealer retail outlets, local agro-dealers (at growth points), and the government through its various support programs for farmers. Most groundnut farmers do not put fertilizers in production, and the inputs most used are retained seed, lime, and agro-chemicals. For this value-chain, there is limited interaction with input suppliers as most of the inputs used are obtained through barter trade within the community or through retention of previous year produce. Within the core value chain, on the input side, seed is the most important input for production. The source of seeds can be classified into formal and informal sources. The formal sources provide certified seeds sold by agro-dealers at Murambinda (Buhera) and Mutare City (Mutare Rural). The Murambinda based agro-dealers source their stocks from larger agro-dealers and wholesalers such as N. Richards, Farm Shop, Farm & City Centre, and MFS. The informal sources are retained seeds from farmers, open markets, and seeds obtained in exchange for labor (maricho). The informal source is the most common source of groundnut seeds in Buhera and Mutare Rural.

On the production side, three groups of groundnut producers were identified, namely: (a) farming households cultivating small portions of land (a quarter of an acre and below) mainly for home use; and (b) farming households who specialize in groundnut production, allocating large portions of land (up to half an-acre) to the crop. These are grown with the aim of selling surplus to diverse markets. The third group is farmers in the Marange irrigation scheme who grow groundnuts commercially, cultivating an average of 0.5 ha. These specialize in growing groundnuts for the fresh market. According to the farmers, there is **little post-harvest value addition**. **Often the groundnuts are stored and sold unshelled as**

shelling adds labor. The unshelled groundnuts are sold at farmgate to other farmers as and when there is a cash need.

Supporting functions

Extension services are mainly provided by AGRITEX, and where commercial contractors are involved, these tend to also have their own extension personnel. AGRITEX focuses only on farmers, though farmer frequency contact has reduced over the years due to a myriad of challenges that the public extension provider is facing. The group approach is now the major form of extension, and the greater part of it is done through mobile platforms. In terms of extension, although the most prominent service provider in the groundnuts value chain in the focus districts is AGRITEX, donor-supported programs implemented by NGOs are also providing extension services. There is potential for some seed houses such as Zadzamatura and Agri-seeds, which are active in providing support services such as market information, improved varieties, and extension for improved groundnut seed production. Although both companies are not currently active in the Takunda districts, they are in nearby districts such as Chipinge and Chimanimani, where they contract smallholder farmers to grow groundnut seed for bulking. Takunda can engage these companies for linkages with groundnut farmers in its target districts to venture into the lucrative seed contract farming.

On the financing side, groundnut producers in the two districts generally do not seek agricultural finance as they are not growing the crop commercially. There is also apprehension of seeking loans due to the consequences of non-payment or not obtaining yields that will generate enough return to pay back the loan.

The other service providers are private transporters. These transporters do carry the product, mostly for the farmers, to the selling point. It must be mentioned that to a large extent, groundnut purchases are made on a cash basis, and because of this, the enterprise offers better production incentives than most other enterprises that farms in the area covered are engaged in.

Government programs for this value chain have been limited. However, because this is one traditional crop that does well in this natural region, most farmers are engaged in this value chain. Also, prices tend to be high relative to other enterprises, and this has sustained groundnut over the years. It is also associated with women compared to men, and women tend to be more involved in agricultural production; this is a self-sustaining system that has enabled groundnut production not to be affected the way other enterprises have by the general low viability experienced over the past few years.

The Grain Marketing Board (GMB), whilst a significant buyer of groundnuts, does not have a sole monopoly over purchasing of the produce. Middlemen and local traders are also major buyers of the crop. GMB depots in the target are also major buyers of groundnuts, which are then delivered to GMB Aspindale in Harare for shelling. The shelled groundnuts are then sold to various private sector companies like Cairns and Lyons, who in turn process the commodity into peanut butter. GMB indicated that groundnuts are one special crop where it can pay hard cash and not through money transfer arrangement, indicative of the stiff competition for this produce. Additionally, because it is. a relatively storable produce, prices tend to go up as the next growing season approaches.

Emerging from the focus group discussions, is the revelation that farmers toll-process the groundnuts to peanut-butter[34]. Local processing of groundnuts into peanut butter is done by small-scale processors usually located at business centers using hand-driven or electric drive processing machines. They customize processes for clients who would have bought the shelled groundnuts from market traders. These are entrepreneurs in the districts who process the peanut butter on behalf of the farmers for a fee. The farmers then package the peanut butter and sell it to areas like Masvingo town, Beitbridge, and some of the product crosses the border to SA through informal cross-border traders. Farmers also trade among themselves either through cash or barter.

On the marketing side, **buyers are mainly from the local community**. External buyers are traders from Mutare's Sakubva market and Harare's Mbare Musika. The wholesale traders bulk and transport in hired trucks or lorries, and some farmers have standing arrangements with the wholesale traders who they call when they have **aggregated enough volumes for a full truckload**. The frequency of buying by the wholesalers is determined by sales of stocks bought, which in turn is determined by the demand for the commodity in the destination markets. The wholesale traders are mostly self-financed from their buying and selling business, although some have procurement loans from group lending and saving schemes.

Retailing of groundnuts is done by market traders at Sakubva market in Mutare, where urban households buy groundnuts for home consumption, and small traders buy groundnuts for resale in their own businesses. Traders, mainly women, who come to the market from the various suburbs in Mutare, buy groundnuts and then return to the suburbs to retail the shelled groundnuts in gallon containers or cups. Most of these market traders and food sellers are self-financed or sponsored by family; or, they access revolving funds or loans from women groups.

Policy and Regulatory Functions

The governance system can be categorized more as market-based since there is competition among the players in the buying of the produce. This is because of limited monopolistic regulations, which allow players to compete and obtain the best possible prices. Seed quality is regulated by Seeds Services, although most farmers use retained seed. Currently, there are no regulations relating to the marketing of groundnuts, and a lot of private players are involved. The GMB, whilst a significant buyer of groundnuts, does not have a monopoly over purchasing of the crop, with middlemen and local traders also serving as major buyers of the crop. GMB has indicated that groundnuts are one special crop where it can pay through cash and not through money transfer arrangement, indicative of the stiff competition for this crop. Additionally, because it is relatively storable produce, prices tend to go up as the next growing season approaches.

[34] Toll processing is when a processor produces a product on behalf of an owner, who maintains sole ownership of the product. The processor charges for the services provided.

Table 8: Groundnut Value Chain SWOT Analysis

STRENGTHS	WEAKNESSES
• **Nitrogen fixation in the soil by the plant hence low N2 fertilizers is required, making groundnut an ideal crop for low resource farmers** • **GMB has storage and processing capacity that can absorb increased production** • **Local markets in rural communities and growing demand in urban markets for peanut butter and snacks provide a stable market** • **With improved productivity, groundnuts production offers relatively high returns to land and labor, which would contribute to improved incomes for producers** • **Groundnuts are suitably adapted to the agro-ecological conditions of Chivi, Zaka, Mutare Rural and Buhera** • **Versatile and multiple uses are the basis for domestic markets** • **It can be stored for an extended time period** • **Good source of protein, which is good for improved household nutrition in rural areas** • **Producers are quite knowledgeable of production, making it an easy crop for facilitating production**	• Low production levels as a result of low productivity attributed to extensive use of retained seed and application of low levels of input; farmers rely on low input varieties which are saved from previous season/harvests • Supply of improved and certified seed is generally inadequate as a result of low demand, which in turn does not motivate local general dealers to stock the seed • High incidents of pests and diseases, e.g., Rosette, Early Leaf spot • Challenges with postharvest handling and storage may result in increasing aflatoxin • Roads that link farmers to input and output markets are in a poor state and impassable during the season • Not much market information is available to producers on quality, storage, aflatoxin, and market prices • Extensive death in cattle due to tickborne disease results in loss of ox draught power, the lack of appropriate land preparation machinery creates land preparation bottleneck, which contributes to delayed planting hence yields

• **Improved varieties suited to the target districts are available**	
OPPORTUNITIES	**THREATS**
• **Not much processing of groundnuts into vegetable oil and challenges with production and importing of soya beans, the traditional source of vegetable oil, presents an opportunity for increased ground processing targeting vegetable oil processing** • **Huge market potential in South Africa due to its own shortfalls in production** • **Economic stability in Zimbabwe is likely to result in increased disposable income, which could see increased demand for snacks, peanut butter consumption**	• Pests and disease levels and incidents (leaf spot, aphids, thrips, Rosette) pose threats to the production and supply of groundnuts, and chemical control pose risks to consumers and may render the grounds not marketable to potential external markets (outside Zimbabwe) • Regular or frequent droughts and variability of rain due to climate change are a threat to production and supply to markets • Aflatoxin, due to poor handling and storage facilities for groundnuts threaten local markets and potential exports • Proximity to Mozambique and the porous border presents opportunities for side marketing, thereby threatening supplies to internal markets

Cowpeas

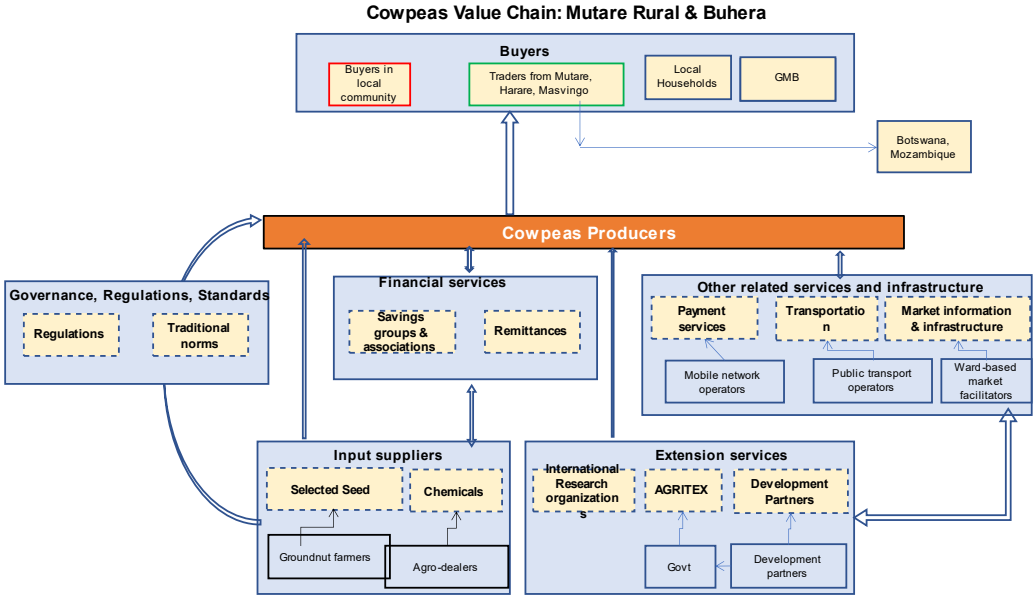
The key actors in the cowpea value chain in the two Manicaland districts are farmers supplying retained seed, the producer households, traders buying the dried crop for sale elsewhere, and final consumers. There is not much processing beyond household use. Private sector involvement in processing is limited as a result of limited consumer demand for cowpea products.

In both districts, cowpeas are widely grown and predominantly done so for own home consumption. It is a versatile crop as it is a protein source, the pods can be boiled and eaten fresh, and the leaves are cooked and eaten as a relish. The leaves can be harvested whilst fresh and tender for blanching and drying to be stored and available throughout the year. **Women are heavily involved in cowpeas production, storage, and marketing, including processing for consumption,** and the dried grain can be stored for consumption and sale over months. In terms of SuPER principles, **cowpeas, as a source of protein, contribute to family nutrition and food security.**

Cowpeas are drought tolerant, nitrogen-fixing, and are early maturing, so their production is over a relatively shorter duration. They are labor intense at weeding, soil banking, and post-harvest processing (drying, winnowing). This is one of the factors for why cowpeas are mostly cultivated on small patches of land, marginal or at the periphery of land allocated to the bigger crops such as maize. Generally, the cowpeas are sole cropped because of the need for soil banking.

Apart from allocating marginal and small land units, the growth limiting factor in cowpeas is **farmers not investing in yield-enhancing technologies and management practices.** Much of the interest in the value chain is derived from **cash generated in the short period the cowpeas are sold as fresh pods for boiling and selling fresh green leaves and the versatile aspects of home use**, i.e. blanching and drying leaves for eating. The demand for cowpea products outside rural production areas is limited and needs to be developed, but it was highlighted as a crop that improves household-level food security and resilience.

Figure 5 Cowpeas Value Chain in Buhera and Mutare Rural



Core Value Chain

In the cultivation of cowpeas in both Buhera and Mutare Rural, seeds are the most important input for farmers. The source of seeds can be classified into formal and informal sources. Mutare-based agro-dealers such as Farm Shop and Farm & City did not have stocks of cowpea seed. They indicated that cowpea seed is generally not available as it is not stocked due to lack of demand by the farmers who prefer to plant retained seed. The informal sources are saved seeds from farmers and the open markets. In terms of production, **women are the main producers of cowpeas, which are essentially grown for subsistence**. Farmers use selected retained seed from their own production or buy for cash or in exchange for labor (maricho). Informally, the farmers identified two local seed varieties, -- one referred to as “the upright variety” and one as the “creeping variety.” The upright variety is preferred due to its higher yield potential and ease of management in the field. Mukushi Seeds has improved varieties that

are drought tolerant and mature in about 85 days which is suitable to the growing environment in Mutare Rural and Buhera.

Cowpea production is labor intensive at weed control, harvesting, post-harvest threshing, and bean selection. Therefore, farmers do not plant it over a large hectarage. To cope with the labor demand, **cowpea farmers hire labor to augment available family labor, thus creating labor opportunities in the community.**

In terms of marketing, buyers are mainly from the local community and traders who buy and aggregate for resale in Mutare and Harare. Not much is sold to **GMB, which offers better prices and a guaranteed market** because farmers experienced delayed payments in the past. According to most of the farmers interviewed, this is not the case anymore as GMB now pays on time, but the perception of delayed payments persists. More importantly, farmers also avoid GMB because of its **strict grading in terms of size and color, which should not be mixed**. Not planting mixed varieties and post-harvesting grading are essential if farmers are to supply GMB.

Supporting Functions

In both Buhera and Mutare Rural, farmers access agricultural market information from three main sources, namely (i) AGRITEX field officers, (ii) other farmers, and (iii) buyers or traders. Farmers learn about what type or variety, grade, and quality requirements to grow **through procurement patterns and suggestions of buyers, based on prices they would have obtained or are likely to obtain when they sell in the various markets.** Farmers are not well informed about product quality and grade requirements as there is no formal body that provides the information, and there are time lags in the information flow. There is, therefore, information asymmetry and a market failure that requires intervention. Other supporting functions, like finance and transport, were deemed unnecessary due to the reluctance of households to borrow for fear of indebtedness and the fact that traders traveled to the districts to buy.

Post-harvest handling and lack of appropriate storage have a negative impact on product quality, in extreme cases resulting in farmers losing up to 40% of stored output. The deterioration of quality during storage prompts farmers to dispose of their produce immediately after harvest when prices are not necessarily most favorable.

Policy and Regulatory Functions

The government issued a directive that all grain be delivered to the GMB, effectively prohibiting buying or selling to private traders. As a result, both farmers and buyers were reluctant to provide full information about the marketing of cowpeas outside their own consumption.

Table 9: SWOT analysis for the Cowpea Value Chain

STRENGTHS	WEAKNESSES
• **Strong demand for cowpea at local, national, regional levels** • **Enthusiasm by farmers to engage in cowpea production** • **Existence of improved varieties** • **Favorable agro-climatic conditions** • **Availability of labor**	• Low level of productivity • Poor soil fertility • Lack of cash and limited access to credit for inputs • Strong seasonal price fluctuations • Limited access to market information systems • High cost of improved seeds • Limited availability of improved seeds • Inadequate organization of the value chain actors • Limited availability of suitable land for cultivation • Poor storage capacity • Limited access to high-quality inputs • Very limited diversification of income sources • Farmers lack cash on hand • Lack of draft to enable early planting and weed control
OPPORTUNITIES	**THREATS**
• **Diversification of processing opportunities** • **Possibility to modernize the processing of cowpea into flour meal** • **Female groups involved in processing and value addition, such as fritters** • **Improved storage techniques (use of PICS bags)**	• The danger of parasite infestation • Climate change, variability in weather • Drought • Depletion of soil nutrients

Indigenous Chickens

In both Manicaland and Masvingo provinces, the indigenous chicken value chain can be viewed as consisting of five main categories of actors with various connections/relationships within and between the categories. The value chain is similar across all the four rural districts assessed. The main actors along this value chain are the households keeping the birds, buyers of live birds and live bird traders and agents, wholesalers, and retailers. There are limited to no supporting activities along the marketing chain such as slaughtering, dressing, and packaging in all four districts.

Core Value Chain

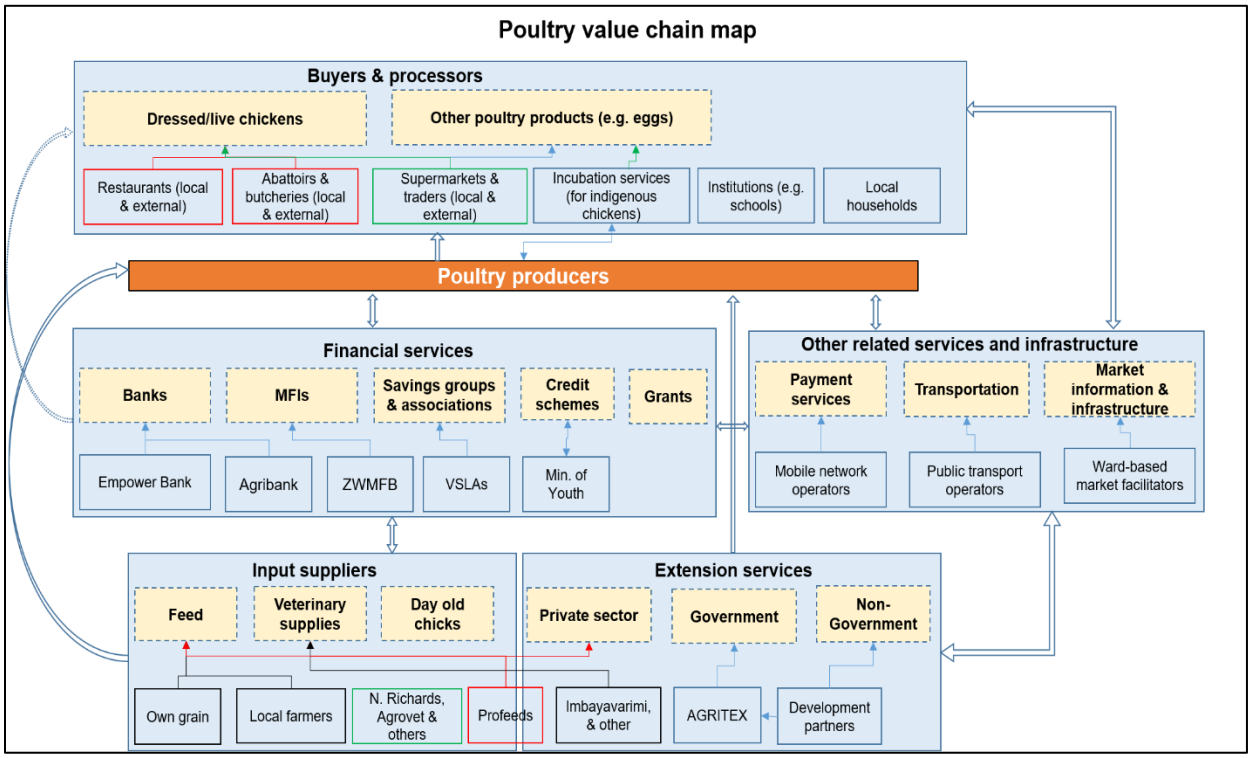
The majority of households in all the four rural districts own indigenous chickens for home consumption as part of their livelihood. Occasional selling of the birds is done to raise cash income to meet household cash needs such as paying school fees, getting bus fare for traveling on urgent family business (such as visiting sick relatives or going to distant funerals of close relatives), and meeting hospital or medical expenses. These are occasional sales, with the number sold usually being one or two depending on the need. Generally, the birds are sold at $5 to $8 per bird, but the asking price depends on the urgency of the cash needed. Women, particularly elderly women, are the most prominent producers in this value chain for a number of reasons that include, but are not limited to:

i. Poultry is not considered a priority livestock value chain by most men in the target districts.

ii. Migration of youth to neighboring cities and countries leaves more women in charge of farming activities at the household level.

As shown in Figure 6, the primary category of value chain actors consists of poultry producers, shown in the figure anchoring the center of relationships and interactions in the value chain. They mostly produce indigenous chicken breeds and eggs for both home consumption and sale, while some produce with the main purpose of selling.

Figure 6: Poultry value chain map



There is little supplementary feeding provided, and the farmers use indigenous knowledge for managing their flocks. Consequently, the mortality rate is very high due to poor management of diseases such as Newcastle, which is highly infectious.

Indigenous chicken breeds are preferred among producers as they have relatively lower initial investment capital, feed, and management requirements and can more easily contribute to household food and income needs. The chickens are often fed some grains (sorghum) in the morning and evening and free-range during the greater part of the day. Chicks are separated from hens to allow for continuous breeding. The indigenous chicken breeds were also reported to be relatively less prone to diseases.

Most of the elderly women demonstrated a high level of skill in the rearing indigenous chickens. Some younger women and men expressed interest in this value chain but felt that they would require capacity building to enhance their husbandry skills. In some households, where poultry production is at a relatively larger scale, the male counterparts often have oversight of the production and marketing processes.

In terms of supply, it appeared unanimous from both producers' and buyers' perspectives that the quantity of poultry products being supplied, particularly meat, are not commensurate with the quantities required by buyers. This is one of the factors that affirmed the opportunity that the poultry value chain has to alleviate poverty in the target communities. One particular woman entrepreneur, who owns Phenes Motel in Zaka district, also runs a multi-faceted enterprise but has the poultry value chain as an important part of her business model that includes education, catering, and community development. She highlighted that she had failed to maintain a market that required 50 indigenous chickens weekly due to inadequate or inconsistent supply from the producers. This further supports the opportunity within this value chain and particular opportunities for services such as the hatchery/incubation business in the value chain.

Supporting Functions

Supporting functions along the value chain such as slaughtering, dressing, and packaging the indigenous chickens are nonexistent in both Buhera and Mutare Rural. There is a general lack of extension and veterinary services in both districts, and consequently, producer knowledge of methods of disease prevention and breeding practices is quite low. Farmers are still using traditional herbs for the prevention of diseases, while chickens are housed in unconventional houses that expose them to adverse weather elements such as rainfall and cold, leading to high mortality and seasonality of production. In Buhera, Met Bank is reported to have supported the bushveld poultry value chain by providing credit for production inputs and procuring the birds for its market.

In terms of marketing, there are three main marketing channels, namely: (1) from farming household to consumer; (2) farming household to a retailer and then to consumer; and (3) farming household selling directly for slaughter and meal preparation by food sellers or restaurants. Some traders buy from farmers to supply to retail markets at local business centers and urban markets. The end market of indigenous chickens is domestic consumption sourced through market retailers. Buyers and processors often include households and institutions such as mines (Renco), schools in the local community, restaurants like Tabika Tagocha, abattoirs like Molusi, butcheries, supermarkets, traders, and other poultry value

chain actors, e.g., those individual entrepreneurs providing hatchery services. While demand is both local and external, the pandemic-induced movement restrictions and other disruptions in the transport system have seen most interactions happening with local buyers. Most of the local buyers do not have structured/well-defined quality or grading systems, though some common quality expectations between the buyers and producers often influence prices and decisions to buy. The output markets work hand and glove with other local institutions providing supporting functions such as financial support, capacity building, among others.

Financial service providers that have the propensity and capacity to serve poultry producers in the target districts and other relevant value chain actors include banks (such as Empower Bank), microfinance institutions (e.g., Zimbabwe Women's Microfinance Bank), government grants, and savings groups. However, most respondents demonstrated a low affinity for formal credit due to unfavorable borrowing conditions, specifically high-interest rates. The local presence of the formal financial service providers is also still limited; for instance, Empower Bank did not have a branch in Chivi. The accessibility of financial services is also linked to the state of other value chain-related services such as payment services, transport, and market infrastructure.

The government, specifically through the Ministry of Youth, Arts and Recreation, also collaborates with other service providers in the implementation of credit schemes for the youth in the form of revolving funds. These have been implemented previously in the poultry value chain (broilers). However, various challenges that include accessibility of the services, defaulting, and misappropriation linked to high youth mobility, and lack of follow-up at district and ward level were encountered.

The main source of extension support is the government crop and livestock extension workers. On the other hand, private sector actors selling feed and veterinary supplies also provide some form of extension support over the counter or during interactions with producers. One of the main concerns from the producers was the difficulty in accessing veterinary services as the workers were not residents in the ward, and they reportedly did not have adequate vehicles and fuel to travel to the community. This was a huge concern for producers who often then resort to their own traditional methods of treating livestock, which are not scientifically verified.

Policy and Regulatory Functions

There are currently no known regulations governing the indigenous poultry industry in Zimbabwe. This presents a cost advantage to the producers since this will reduce the cost of compliance with regulatory requirements.

Table 10: SWOT analysis of the Indigenous Chicken

STRENGTHS	WEAKNESSES
• **Interest by women, especially young women, to be involved in the value chain** • **Availability of household flocks as start up capital**	• Limited knowledge and information on organized and commercial production and marketing • Lack of knowledge on management, breeding and diseases control • Expensive and scarce inputs (remedies, vaccines, feeds) • No practices of supplementary feeding • Rudimentary shelter • Farmers not in any organized groups • Lack of business knowledge and skills for commercial production • Limited access to credit facilities. • Locally available markets easily saturated
OPPORTUNITIES	**THREATS**
• **Increase in demand for goats and goat meat** • **Availability of high performing goat breeds** • **Potential to participate at export goat markets** • **Presence of extension services** • **Production of pearl millet offers option for supplementary feed** • **Hatching services could be availed**	• Competition among retail business operators, especially food outlets • Animal disease outbreaks • Indigenous chicken markets not well organized • Crop production is rainfall dependent as district characterized by low and unreliable rainfall and frequent droughts • Stock thefts • Animal predation

Goats

Goat rearing is a prominent livelihood activity in the target districts. Development organizations such as Heifer International have invested in building the capacity of goat farmers in the target districts of Masvingo. Specifically, farmers have been capacitated on ways to supplement goat feeding, for instance, through fodder production in the form of Leucaena trees and pigeon pea. During the winter and dry season, the goats free-range during the day and are penned at night, while during the summer, the goats are tended during the day and then penned at night. Unlike cattle, goats do not directly contribute to the cropping system, and farmers are more willing to dispose of them than cattle. Consequently, goats are considered as a possible vehicle for introducing commercial farming in communal areas.

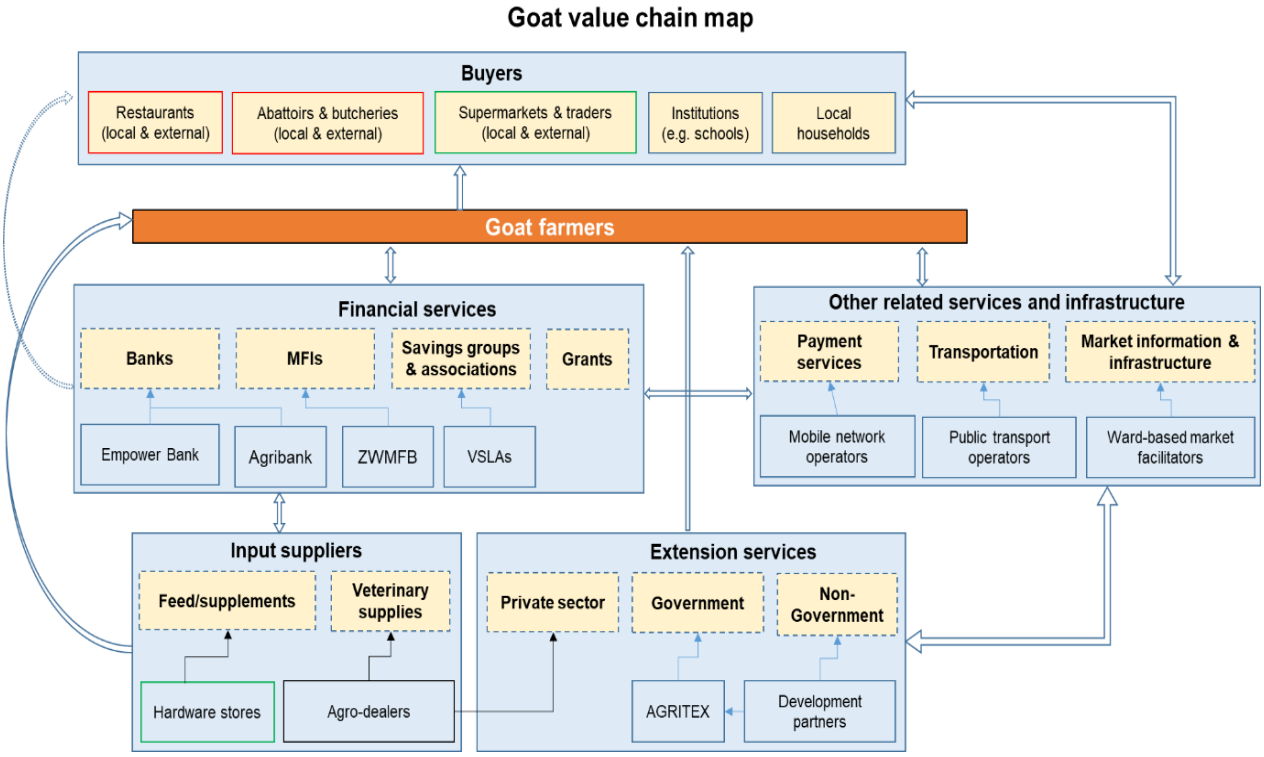
Core Value Chain

Low rainfall, which was noted as one of the key challenges for the farming community over the years, has seen some animals such as cattle succumb to starvation or drowning in swamps whilst searching for water. However, for goats, it proved easier to ferry water for them and to supplement the feed with Leucaena trees and pigeon pea.

Although veterinary supplies for goats are accessible from agro-dealers in the district centers, for instance, Chivi growth point, they are not available in the local community. The prices, however, were reportedly prohibitive for everyone to buy their own supplies. As a result, farmers purchase the veterinary medicines in groups of three or four and then share or take turns administering or using the medicines.

In terms of marketing, local households sell goat meat among themselves, but food outlets/restaurants in the local areas and district centers/growth points are also major buyers. Pandemic-induced transport system disruptions have negatively affected the ability to access external markets. Specific regulations on the movement of livestock are also in place to minimize theft. These also need to be adhered to in the trading of goats.

Figure 7 Goat Value Chain Map



Goat production in the target districts can be characterized by farmers owning goats that they occasionally sell to raise cash for immediate needs. Very few farmers raise goats as a commercial business enterprise. As a result, production and productivity are very low at both the individual animal and flock levels. Farmers' goat management practices are not based on improved production technologies. The goat breeds are mainly indigenous breeds with limited crossing with improved breeds. Goats are left to roam around, browsing in grazing areas as well as around homesteads, with only a few farmers having improved or suitable goat housing. The animals are therefore at risk of predators and theft.

Supporting Functions

As similarly highlighted by poultry farmers, access to veterinary-related extension services in the local communities is a challenge. Farmers are most likely to incur additional costs if they are to access the veterinary extension services they need at the local level. Formal financial service providers such as banks and MFIs remain open to provide services, though there was no clear demand for formal credit from the goat farmers. The community-based financial services such as savings and lending groups or associations appeared to be the most common among goat farmers with credit from such sources being utilized, for instance, to procure veterinary medicines. Grants that are specifically provided through NGO programs are also a source of financing, providing key inputs such as tree seedlings for supplementary feeds. Extension services are provided mainly by AGRITEX with farmers indicating that they mainly seek AGRITEX's advice on diseases, animal health, and feed production, especially during periods of feed shortages as a result of droughts. Oher key supporting actors include the Department of Veterinary Services, which provides advice on good animal health and hygiene as well as establishing and

maintaining key infrastructure for animal disease control. The Livestock Production Department is also involved in animal production extension services, including goats, but their services are hampered by a lack of resources to travel into all wards in all districts. There are no private sector service providers in both Buhera and Mutare Rural. It was indicated that DVS services are not easily accessible as they are not available with reach.

In terms of business support services, the Ministry of Women Affairs, Community, and Small to Medium Enterprises Development has been offering a wide range of value chain support services. They offer financial support through the Ministry itself, through Empower Bank, and Zimbabwe Women's Bank.

Goat farming is not taken as a business by most farmers, so they do not seek financial services from banks or financial institutions for goat production **but rather make use of savings and loans clubs for production finance.** However, formal banking services are provided by CABS, POSB, and AGRIBANK.

In terms of marketing, most of the goats produced in the two districts are marketed within the districts through farmer-to-farmer transactions. Thus, the main goat market in both districts is the local market, namely neighbors and other households in the district. Occasionally, traders and buyers from Mutare and distant markets such as Chivhu and Masvingo (in case of Buhera) and Harare (for both Mutare rural and Buhera) come to source live goats which they aggregate and ferry to these distant markets. Some buyers linked to large meat processors such as Carswell Meats and Montana Meats procured goats (and cattle) on arrangements with LFSP projects in Mutare. Retailers (supermarkets, butcheries, restaurants, and food outlets) buy from farm gates or abattoirs as carcasses and package it for sale to final consumers. Local butcheries, such as Mhumhi, noted that there is price competition with live goat buyers from Harare and established meat wholesalers, so they have to offer higher prices to secure supply. However, the high prices demanded by farmers is not consistent with the quality of goats.

Policy and Regulatory Functions

Animal movement is regulated, and both farmers and government agricultural officers in both districts revealed that under normal circumstances, farmers should have livestock movement permits. This is facilitated by clearing their livestock with both the Zimbabwe Republic Police (ZRP) and DVS. The Animal Health Act of 2001 stipulates specific regulations regarding the requirements for the movement of livestock to control diseases and to minimize theft. However, DVS noted that few goat farmers follow the procedure as most goat sales are within the communities and usually for slaughter. Farmers are of the view that the cost of compliance with animal movement permits is unnecessarily high for goats relative to the value of the animal. While it is important that these regulations are adhered to in the trading of goats, the **process of acquiring movement permits was reported to be costly and cumbersome for the smallholder farmer,** given the expected revenue and return from selling such a small animal, particularly so for smaller quantities.

Table 11: SWOT analysis of the goat value chain

STRENGTHS	WEAKNESSES
• **Availability of large goat numbers in the district** • **Availability of markets like abattoirs and sale pens**	• Limited knowledge and information on goat production and marketing • Low prices offered by buyers • Limited knowledge on fodder production and utilization • Lack of knowledge on management, breeding and diseases control • Scarcity of and competition for water with cattle • Farmers not in any organized groups for collective action for marketing and negotiations with other value chain actors • Limited access to credit facilities
OPPORTUNITIES	**THREATS**
• **Increase in demand for goats and goat meat** • **Availability of high performing goat breeds** • **Presence of extension services** • **Presence of irrigation infrastructure in some areas – fodder production and water availability** • **Potential to participate at goat markets** • **Presence of locally-based abattoirs with interest in investing in business partnerships with local producers**	• Animal disease outbreaks • No dipping facilities and practices by the farmers • Goat markets are not well organized • Crop production is rainfall dependent as the district is characterized by low and unreliable rainfall, and frequent droughts threaten reliance on grazing crop residues. • Veld fires threat to browsing trees • Stock thefts • Animal predation • High RDC levies are being charged

VALUE CHAIN GENDER DYNAMICS OBSERVED

As a starting point, the qualitative analysis shows that less-resourced smallholder farmers are not fully participating in the market value chains hence the continued persistence of food and income poverty. Nonetheless, maize is the most produced value chain across all sex and age categories even though the SHF's reported that it is not suitable for the climate conditions obtained in their localities. All sex and age categories tend to have a strong inclination towards the production of maize, followed by groundnuts and indigenous chickens. Interestingly, young men in the four districts have a stronger inclination towards the production of groundnuts compared to the rest of the sex and age categories. This contradicts a number of reports on African agriculture, which tend to view groundnuts as women's crops.[35]

Regarding gender and viability of value chains, data shows that across all sex and age categories, groundnuts are perceived as profitable, although young women have the largest proportion that views groundnuts as profitable, followed by adult women, adult men, and young men. It is important to note that although young men have the highest inclination towards groundnuts production, their perceptions of the profitability of the value chain are lowest. With maize, mostly young women view it as viable. Regarding livestock, the gender divide on viability is clear. For instance, with the goat value chain, in particular, it is mostly adult men who regard it as profitable, followed by young men. A very small proportion of young women perceive goats as profitable.

The study also reveals the nuances underpinning value chains preferences. In gendered terms, the largest proportion of adult men prefers maize, followed by groundnuts and cattle. On the other hand, the largest proportion of adult women prefers groundnuts, followed by maize and Bambara nuts. The largest proportion of young men prefers maize followed by groundnuts, while the largest proportion of young women prefers groundnuts, followed by maize and indigenous chickens. Although food and income considerations are key in the selection of the value chain, the decision-making process is quite crucial. The decisions on which value chain to select are made by household members, and such decisions may be inclined towards one or more of the SHFs' household members. Invariably, most crop value chain selection decisions are jointly made by the spouses in three districts, with only Buhera having the least proportion of participants reporting joint crop value chain selection. This finding is quite revealing in as far as it paints a clear picture of what is obtained on the ground based on everyday realities and practices on SHF decision making. It also challenges the almost universal application of a patriarchal model of decision making, which dominates both academic and development discourse.

In that regard, unpacking the subtleties shows that crop value chain selection in the households is highly negotiable even under the circumstances where one of the spouses is regarded as the decision-maker. This resonates with the social model of household gender analysis where a household is an arena of complexities – negotiation, conflict, competition, collaboration, and compromise, not necessarily an arena for male dominance and female subordination. That is rather a misleading dichotomy, as our study shows that decisions seem to be based on the type of value chain in question and vary by household.

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[35] Curtis et al.2015, Sabine Homann-Kee Tui et al. 2018 Mugisha et al. 2019

While men are pronounced as decision-makers, the decision-making process reflects that there is some degree of negotiation. Women participants reported that they give men space to make crop value chain decisions as a way of showing respect. In other cases, women, as well as men, reported that men make decisions because men have the skills with respect to the crop value chain(s) in question. Some men further reported that while they make crop value chain selection decisions, they do it with close consultations with their spouses though ultimately, they are reported to be the ones making the selection decision.

In most of the reported cases where women make independent value chain decisions, the females reside in rural areas while their spouses work in town and therefore become the sole crop value chain decision-makers. In other cases, the respective females are either single parents or widows and therefore by default, head of households and take the responsibility of making decisions regarding what crop to grow. There is only one case where the husband had some (mental) disability, and the female became the sole crop value chain, decision-maker. In a few cases, men reported that their wives are responsible for crop value chain selection as they are more knowledgeable, while in other cases, polygamous relationship empowers female spouses to make decisions about their sub-households. Where crop value chain selection decisions were reported to be joint, the process involves one of the spouses initiating the suggestion, followed by a discussion, and the pair reaching an agreement on whether to engage in the production of the crop value chain or not. In some instances, SHFs reported that crop value chain selection involves the whole family, including children. Thus, there is a lot of negotiation among gender categories, a scenario that can further be upheld and encouraged by promoting crop planning that involves all household members prior to the cropping season. As noted by some SHFs, joint crop planning is critical to encourage labor investment throughout the cropping season and to take joint ownership of the investment results.

With the livestock value chain, the selection is also joint and negotiable, although some variations exist. In Mutare, a larger proportion of SHFs reported that livestock decisions are made by adult women. In the Chivi District, the largest proportion of SHFs reported that decisions about which livestock to keep is made jointly. As reported, joint management is also driven at times by the need to reduce or avoid conflict between the spouses. In some cases, the decisions are also determined by the type of livestock. For example, some female SHFs reported that they make decisions on small livestock such as chickens and goats, while the traditional status quo still exists where men are expected to make cattle-related decisions.

However, there are a number of constraints noted. Across all ages and sexes, lack of fertilizer, draught power, and seeds emerged as the main crop production-related challenges. Only young men seem not to be affected so much by seed challenges. Climate-related constraints were also noted. Both adult men and young men had the highest proportion of those who reported erratic rains and lack of water respectively to be both crop and livestock production constrains. Regarding livestock only, adult men and young women shared equal sentiments on poor rains; adult women noted excessive rains and diseases for cattle production. Poor pastures for cattle and chicken diseases were also reported by adult men, but young men had the highest proportion of those facing inadequate water for cattle and chicken diseases.

In terms of marketing, adult men reported that cattle marketing decisions resided with men, whilst young women mostly thought it was a joint decision. Across all ages and sexes, poultry is sold in local markets, including local schools, as the main outlets as reported by mostly adult men and women in all districts. Crops are also sold locally in neighborhoods, with adult men having the highest proportion of those who sell to GMB. However, the highest proportion of young women indicated that they do not produce enough to have something to sell. Young men also tend to sell at provincial and district markets. Supporting functions are also important for SHFs in order for them to thrive in any value chain. All sex and age categories have almost equal access to crop extension services. Access to livestock extension is generally low, with young women reporting the lowest access to the veterinary department. The proportion of SHFs reporting no access to financial services is highest among young men and women. Only adult women and young women reported having grain input support.

In selected religious communities, specifically the Marange Apostolic faith, gender dynamics are not so different from the four districts studied under Takunda VCA. In terms of crop production, maize and groundnuts are popular with young women, adult men, and women, a pattern similar to other communities. However, livestock such as cattle and goats were recorded only among adult men and women. Young women were reported to be only involved in poultry, which is consistent with young women under Takunda VCA who are most inclined to the production of indigenous chickens. It was also acknowledged by adult women that for a married woman, cattle are for the man; hence women have no voice on those cattle because it is only the man who can decide. The absence of any reference to joint decision-making in crop and livestock value chains is in sharp contrast to what is obtained in other communities. Climate-related constraints such as droughts are also found in the communities. Young women also noted constraints related to the livestock value chain they are involved in (poultry), such as lack of fencing material and drugs. Across all sexes and ages, marketing is mostly done locally in tandem with what is the case in other districts studied under Takunda VCA. Apart from some married women who noted that they could not access outside markets because this is prohibited by their husbands, crops and livestock are sold locally. It was also reported that access to financial services was generally low, not because of the nature of religious affiliation but because there are no loan provisions from both government and private sector, just as in non-Apostolic communities. All sex and age categories noted self-financing (from crop or livestock sales), VSLAs, and married women sometimes get start-up capital from their husbands. In particular young women noted that lack of collateral hampered access to loan facilities.

CRITERIA TO IDENTIFY MARKET-BASED SOLUTIONS

As described in Section 1, the study used **market systems-based criteria to identify market-based solutions** (see Table 1). However, these market-based criteria were used in conjunction with CARE SuPER principles to try and include inclusivity and resilience in the solutions.

CARE's approach to agriculture focuses on promoting Sustainable, Productive & profitable, Equitable, and Resilient (SuPER) agriculture practices and technology dissemination. The SuPER approach promotes:

- Sustainable agriculture systems that address climate and environmental impacts
- Productive, profitable, and nutrition-sensitive intensification that specifically addresses the needs of women producers while ensuring maximum returns on investment
- Equitable outcomes in smallholder agriculture – right to food and access to nutritious food, equal access to opportunities, resources, services, and rewards for women, men, young women, young men, and people living with disabilities
- Resilience for communities and systems to be able to withstand and recover from climate-induced shocks and stresses and other shocks and risks

The table below highlights how these SuPER principles were aligned with the market-based criteria defined at inception.

Table 12: Aligning Marketbased Criteria and CARE SuPER Principles

MARKET-BASED CRITERION	CARE SuPER PRINCIPLES	NOTES
Private sector-led		The identified solution must have an identified private sector company leading the implementation.
Market is driven (responsive to market dynamics)	**Productive, profitable,** and nutrition-sensitive intensification that specifically addresses the needs of women producers while ensuring maximum returns on investment. Resilience for communities and systems to be able to withstand and recover from climate-induced shocks and stresses and other shocks and risks.	The solution must be responsive to value chain dynamics identified during the value chain analysis in terms of demand & supply dynamics, supporting functions, and regulatory functions. Resilience as a function of the ability to respond to changing market dynamics is a key consideration.
Implementable		The solution must be implementable within the confines of the conditions prevailing in the particular district and value chain.
Systemic	Sustainable agriculture systems that address climate and environmental impacts. Equitable outcomes in smallholder agriculture – right to food and access to nutritious food, equal access to opportunities, resources, services, and rewards for women, men, young women, young men, and people living with disabilities	The solution must not be purely transactional but systemic, considering impacts on/from other parts of the value chain. Whilst aspects of equity and equal access to opportunity do not necessarily align with MSD dictates, these were considered in some of the value chains
Existence of change agents to drive the transformation		The solution must have champions, change agents, or enablers who are in the frontline and ready to help implement the initiative as quickly and effectively as possible for transformative change to happen.
Finding the right entry points to reach scale		A market-based solution must not try to solve everything. Instead, it should focus on critical changes that are most likely to stimulate agricultural trade, i.e., points of leverage.

ANALYSIS OF PRIORITIZED MARKET-BASED SOLUTIONS

To potentially increase the incomes of the targeted households, there is a need for Takunda to prioritize emerging value chains like sesame, which present **vast market opportunities for integrating smallholders into export-oriented agricultural production**. The profitability of the value chain and its adaptability to local semi-arid conditions presents great potential for Takunda to offer market-based solutions for enhancing incomes and livelihoods for the target beneficiaries. Sesame also affords the farmers the necessary resilience to climatic shocks, given its drought-tolerant characteristics.

Given the limited availability of animal draft power due to livestock deaths, there is a need for Takunda to consider the possibility of promoting **appropriate-scale mechanization technologies such as two-wheel tractors and implements, targeting youth groups for the provision of tillage and transportation services in the communities**. Youth- and women-led groups can also be assisted to acquire farm production and post-harvest processing technologies such as egg incubators to offer hatchery services, multi-crop shelling machines for grain threshing, and 2-in-1 hammer mills for grain milling and animal feed processing.

Egg incubation and hatchery services present huge opportunities for the supply of fertilized eggs and day-old chicks in all four target districts. There is also potential to introduce improved breeds like Boschveld, Sasso, and Kroiler. The same applies to goats, where improved goat breeds like Matabele, Boer, Savanna, and Kalahari Red can be introduced for increased live and carcass weight, which will result in higher household incomes because most goats are sold using live weight in local markets, so the larger the animal, the higher the potential for higher income.

These labor and time-saving technologies have the potential to encourage increased participation of youth in agriculture and increased income generation for participating households. This will also reduce manual labor and time requirements for undertaking farm operations, thereby freeing more time for women to engage in other household activities such as nutrition-sensitive food preparation. However, there is a **need to minimize beneficiary dependency by avoiding direct hand-outs through encouraging some form of cost-sharing** when procuring the technologies, where the farmer groups will be encouraged to use proceeds from their VSLA/ISAL activities.

Masvingo

The culmination of the value chain analysis, taking cognizance of the market-based criteria and the CARE SuPER principles, was the identification of potential facilitation activities for consideration by Takunda to improve household level incomes, resilience, and foster sustainable linkages with local, provincial, or national markets where feasible.

1.) The **shortage of service markets that are specifically designed to serve smallholders presents opportunities for Takunda** to capacitate groups of young people and emerging individual entrepreneurs to fill the gap and provide essential services to the farming communities. The opportunities exist across the agricultural value chains from financial markets for inputs supply to post-harvest processing and outputs marketing. Specific "supporting" function opportunities for facilitation include:

    - Supporting the establishment of VSLAs in the four districts, specifically an "agricultural inputs fund" to ensure that farmers have access to appropriate seed varieties which are well adapted to the arid conditions prevalent in region IV.

    - Capacity building of farmer group enterprises with training to embark on on-farm animal feed formulation to produce affordable supplementary feeds using locally available resources such as crop residues, acacia leaves, and pods to produce 'bushmeal' for farmers who may want to get into intensive livestock production systems. A matching grant facility can be established to support the acquisition of appropriate scales mechanization technologies such as 2-in-1 hammer mills from suppliers (e.g., Appropriate Technology Africa, Kurima Machinery, and Tanroy Engineering).

2.) Smallholder farmer market opportunities for goats and indigenous chickens can be increased through breeding and breed improvement programs aimed at enhancing the quantity and quality of supply. The introduction of improved goat breeds like Boer and Kalahari Red for cross-breeding with local goats has the potential to enhance the quality of goat meat on the market, while egg incubation and hatchery services have the potential to stimulate the supply of live birds and chicken meat on the market. Potential offtake partners for goats include MC Meats which indicated that it had a monthly unmet demand for goat meat and would be willing to collect if a full load could be guaranteed. Suppliers of the breeding stock include Zvikomborero Farms, Mash Goats, and Mzilikazi Kalahari Red Goat Breeders, who have previously partnered with large development programs such as the Zimbabwe Agricultural Growth Program (ZAGP), Zimbabwe Resilience Building Fund (ZRBF), and the Livelihoods and Food Security Program (LFSP).

3.) There is potential for Takunda to leverage the increasing mobile phone penetration and increased use of smartphones and social media to promote **ICT-based market information and extension service provision, particularly targeted at young farmers**. Emerging digital solutions such as SMART

Connect[36], which provides real-time market information, can facilitate quicker and easier market-based transactions, which can be cheaper, affordable, and more rewarding to the farmers compared to traditional marketing channels. A potential private sector partner for this facilitation activity is Cassava Smartech which currently provides digital business solutions through the Eco farmer platform.

4.) Takunda can leverage existing structures initiated under its predecessor program (ENSURE) to scale up value addition capacity building activities leveraging on existing ward-based market facilitators. Specific value addition activities identified during this study include:

    a.) In Chivi, there is scope to shell and package groundnuts in partnership with Empretec Zimbabwe, which is promoting these value chains for export markets.

    b.) In Zaka there is scope to aggregate indigenous chickens for slaughter in potential collaboration with Phene's Motel and Molusi Abattoir.

5.) Existing VSLA/ISAL groups initiated under the ENSURE program should be capitalized on to facilitate group-based inputs procurement, production and marketing approaches for reduced transaction costs and viability of promoted value chains. In particular, seed purchase for farmers in Chivi and Zaka can be coordinated with a company like Zimbabwe Super Seeds (ZSS), which is already active in the districts and is willing to support smallholder farmer development initiatives.

6.) There are a few localized market stalls, feedlots and livestock auction infrastructure established by predecessor projects in the two Masvingo districts which Takunda can leverage to facilitate viable market linkages. A good example is the recently established Zaka Agrihub, which is a market linkage facility established by Heifer International for the farmers at Gumbo Business Centre. Takunda can consider adopting the Hub and support revival of its initially intended purpose, which was to facilitate market linkages for surrounding farmers in the district. The management committee running the affairs of the hub need capacity building in leadership, group governance, business management, financial literacy, fundraising and networking skills as well as lobbying and advocacy. These skills will enable them to effectively run the affairs of the hub in a sustainable manner.

7.) Local institutions such as hospitals, schools and mines are also critical in facilitating viable market linkages for the preferred value chains. The Basic Commodities Supply Side Initiative (BACOSSI) van and container model being implemented by Masvingo Farm Supplies (MFs) to bring inputs and groceries closer to the farmers every first weekend of the month in mobile trucks needs to be promoted for scaling up as a market linkage initiative that offers convenience to the smallholder farming communities in Masvingo. The farmers indicated during FGDs that the initiative also presents

[36] Smart Connect is a platform that links farmers to markets and other agricultural services through a mobile phone based application

them with an opportunity to sell various agricultural and non-farm products they may have as people come to access the goods from the mobile shop.

Manicaland

1.) There is potential for production expansion given the vibrant demand in local and Mutare markets for commodities such as cowpeas, groundnuts, and indigenous chickens. However, production expansion requires access to good quality inputs and extensions. Takunda can therefore explore a "farmer support and linkages" activity in Buhera and Mutare Rural to ensure that the increased supply finds guaranteed off-takers so that farmers do not incur losses if their output is not sold.

2.) Strengthening of farmer groups for collective input purchase and output marketing (with increased productivity and output). Agro-dealers and output buyers pointed to the high transaction costs involved in aggregating cowpeas and groundnuts for resale in urban markets. On the other hand, input suppliers also noted that smallholder farmer plots are far apart and distant, so this increases their costs of input access. To address this, Takunda should consider facilitating the strengthening of farmers' groups for aggregated input purchases and output marketing of cowpeas and groundnuts in Buhera and Mutare Rural. This will lower transactions costs to private sector partners, thus providing an incentive for them to participate. Potential partners identified in Buhera/Mutare include LEAD-US Africa Development Foundation (ADF) for capacity building and organizational strengthening of farmer producers' groups, collective action, community-owned enterprise for effective participation in commercial production and marketing as well as engaging private sector partners. LEAD/USADF is currently involved in both Mutare Rural and Buhera and could potentially partner with Takunda.

3.) Low levels of productivity in both crop and livestock value chains were evident during this study. This makes farmers uncompetitive in commercial markets channels as their return on labor is much lower than those producers achieving higher rates of productivity per unit cost. There is scope in both districts to promote the adoption and use of improved technologies, including improved seed and climate-smart agricultural techniques. This will increase productivity and overall crop outputs of all crops. Ideally, this facilitation activity could focus on cowpeas in Buhera, which require less rainfall than the maize that farmers are currently producing. In terms of partnerships, Takunda can support local market development/organization because there is no fully functional private sector-led market for cowpeas in either district, but rather traders and middlemen who buy and consolidate for resale in urban markets. Potential private sector partners include seed houses such as Zadzamatura and Agri-seeds, who are active in Chimanimani and Chipinge, where they contracted smallholder farmers to grow groundnut seed for bulking.

4.) There is much interest and demand for indigenous chicken production in response to apparent market demand. Women, especially young females with young and growing children, have much interest in this value chain as they offer opportunities to generate cash income over relatively short time periods and the startup investment is low. Takunda can support this value chain for women's economic empowerment. Potential private sector partners include Mumhi abattoir and butchery, who indicated an interest in working with goat and indigenous chicken producers in Mutare rural to

facilitate aggregation targeting meat markets through offering slaughtering, packaging services, and marketing services for their goats and chickens.

5.) There was widespread death of cattle in Mutare rural and some parts of Buhera, leaving most households without oxen for land preparation. Households are resorting to hiring oxen, conservation farming practices, and reducing land under-cropping. Takunda can invest in activities to address the shortage of oxen for draft power and for households to adapt to the shortage. A potential partner is Kurima Machinery which is importing and assembling tillage machinery and implements targeted at smallholder farmers.

6.) The newly constructed Marovanyati dam has potential for the development of micro-irrigation for communities around the dam which presents Takunda with opportunities for introducing interventions for viable food and cash crops production and market linkages for high-value crops

7.) Agrosave at Murambinda, an agent for Masvingo Fifet day-old chicks and poultry feed, is looking into training on poultry production. Takunda can leverage this by partnering with Agrosave to facilitate good agricultural practices in the indigenous poultry value chain.

General Facilitation And Beneficiary Support Activities

- Financial Health knowledge and information, particularly on cash flow budgeting and analysis at households, community projects, loans, and savings groups
- Budgeting and financial planning at family and community project levels
- Recording of activities with financial implications
- Market planning and negotiations
- Identify and take advantage of changes brought about by COVID-19 measures
- Identify, work with, and facilitate innovative young women and men, agri-business entrepreneurs, to engage with young women and mothers
- Build capacity for groups to qualify and apply for small grant facilities such as the USADF (the United States Africa Development Foundation) organizational development support grants (S$20 000 to $200 000).

Based on the value chain gender dynamic observations, the implication for Takunda is to be facilitative of joint decision-making processes within households in the four districts. This will not only minimize introducing potential conflicts within the beneficiaries' decision-making processes and outcomes but also reduce outward token acceptance of suggested interventions, thereby rendering them sustainable over time. These processes offer fertile ground for equipping the households or family members with skills, knowledge, and information on Farming as a Family Business, which will enhance family decision-making.

RISKS TO FACILITATION ACTIVITIES

On-going government free-input support programs such as Pfumvudza/Intwasa and command livestock may impact negatively Takunda's quest for market-based solutions to addressing challenges in the prioritized value chains. The intervention of the government usually results in disruption of bonafide private sector engagement in market linkages and financial inclusion activities.

Intensive livestock breed improvement interventions for market development may result in loss of adapted genetics in indigenous breeds, which are resistant to diseases and prevailing climatic conditions in the semi-arid regions. Furthermore, mortality rates may increase due to limited compatibility between local indigenous breeds and exotic ones and/or limited adaptability of the offspring crossbreeds to the local conditions.

In its facilitation of market systems and value chain development in the target districts, Takunda could also face risks associated with community structures, dynamics, and networks, which include resistance to change from traditional customary beliefs and norms. For instance, community leadership structures are male-dominated, and this may present challenges for Takunda to facilitate gender-sensitive value chains and market systems with the potential to uplift women. The dominance of elderly people in terms of ownership and control over productive resources such as land may present hurdles for the Activity to promote value chain and market system interventions that include young people. This is particularly so in the case of community gardens and irrigation schemes, where the youths highlighted challenges related to their exclusion in terms of plot ownership and decision-making due to limited access. There are also risks related to contested power dynamics in the communities, where political power may override technical decision making, resulting in political activities being prioritized at the expense of value chain development activities.

Social and cultural norms may impede the facilitation of preferred value chains. For instance, the production of mhunga/pearl millet is banished in some traditional domains in Zaka despite it being preferred as a good source of poultry feed, particularly in the indigenous poultry value chain most preferred by women.

Takunda's facilitation activities may result in the overproduction of value chains like indigenous chickens, if the market fails to adequately respond to the production stimulus. Furthermore, reliance on external markets, like in the case of sesame and legumes, when international trade policies can change at any time for such crops when local demand and markets are limited. This has the potential to negatively affect the farmers whose hopes for increased benefits from participation in cash crop markets may have grown.

Investment in market facilitation activities might be misconstrued for conventional free handouts. Thus, Takunda should discourage donor-dependency syndrome by promoting cost-sharing during the acquisition of technologies for farming households and communities.

CONCLUSIONS

Production and productivity levels for the selected agricultural value chains are currently very low due to a variety of reasons, chief amongst them the quality of inputs used and outdated husbandry practices (not using GAPs). Takunda interventions at this level of the markets system should therefore seek to either increase or aggregate SHF production to give them a better chance at entering mainstream offtake markets.

Post-harvest processing and storage are also a significant challenge for SHF, especially post-harvest cleaning and storage of small grains such as sorghum. Interventions in this regard must therefore seek to link SHF to development-oriented service providers willing to adapt post-harvest and storage technologies to the realities of SHFs in the target districts, i.e., low volumes and limited capacity to operate sophistication technologies.

Market development and market linkage facilitation will be crucial under Takunda to align increased supply from the SHFs with potential offtake markets. Facilitating SHFs to produce more without a proper **demand plan for offtake will lead to disillusionment and loss of capital** for SHF households. Therefore, all market-based Takunda interventions must be designed with an offtake market in mind. Where markets are nascent, Takunda will engage in more direct delivery approaches in the first part of the project, slowly transitioning to facilitation activities as market players mature in the later years of the project

The key supporting service required by SHFs is a **technical extension both for crops and livestock** value chains. Services such as production loans were not identified by the SHF as key at this stage in the farm businesses, as they prefer to use informal savings groups through fear of non-repayment of commercial bank loans.

A key player in the policy and regulatory space is the GMB, being a **major buyer but also regulator for most of the recommended crop value chains.** Takunda will have to engage GMB, in addition to relevant government departments such as AMA, AGRITEX, DVS, and DR&SS, to mitigate against risks identified and facilitate the effective functioning of the core value chains.

To ensure improved access to veterinary services for the Indigenous chicken and goat value chains, there is a need for Takunda to **capacitate local agro-dealers**, including in villages, wards, and district centers to adequately stock appropriate vaccines, drugs, and medicines and to provide services to the farmers.

In summary, there is significant scope for Takunda to facilitate market-based solutions and support beneficiaries in the four target districts to increase production and actively participate in semi-commercial and commercial markets. Promoting the active participation of rural households in the different types of markets (inputs, outputs, and services, including financial services) has the potential to **significantly build the resilience of at-risk rural communities and improve their livelihoods.** However, Takunda needs to factor in SHF and private sector market maturity, as these have a direct bearing on the success or failure of market-based interventions. As noted earlier, Takunda uses a **market systems approach that integrates "pull" strategies such as market facilitation activities with "push" strategies, including direct transfers to participants.** Therefore, understanding that the recommended value chains/market systems in Manicaland and Masvingo require different levels of facilitation (and direct

transfers) is essential in the design of Takunda interventions. Interventions **in some instances will be facilitative and, in other instances, involve direct delivery; depending on the level of maturity of the SHF and private sector within the district and linked markets.**

Appendix 1: Takunda Private Sector Engagements as of 09 November 2021

NO.	NAME OF PRIVATE SECTOR	WHAT THEY DO OR AREA OF COLLABORATION (SPECIALIZATION)	WHAT THEY ARE PROVIDING TO TAKUNDA/WILL PROVIDE TO PARTICIPANTS	PROVINCE	VALUE CHAINS FOR ENGAGEMENT	
1	Molu's Meats	Offtake and slaughter services	Market	Manicaland	Indigenous chickens and goats	
2	Leaverbord Investments Pvt Ltd t/a Tsimba Produce.	Offtake	Market	Manicaland	Horticultural produce – Baby corn, shelled peas, Peas (Mange-tout and Sugar snaps), and Fine beans (local and export)	
3	Agricultural and Rural Development Authority (ARDA) seeds	Seed contractor, only providing seed, mostly cowpeas, and sorghum	Training, Seed, and Market; Seed is through input loans	Mash Central but would love to start with Mutare Rural	Cowpeas_ CBC1, CBC2, IT18, Sorghum	
4	Zimbabwe Super Seeds (ZSS)	Seed contractors and farmers should source inputs for themselves Production, processing, packaging, marketing with national distribution networks	Training and seed offtake	Manicaland Masvingo, Midlands	maize, sugar beans, cowpeas, sorghum, pearl millet, Bambara nuts, and groundnuts.	

		through Farm and City as well as MFS, among others				
5	Coopers	Input suppliers	Training	All	Drugs for all livestock, disinfectants, etc.	
6	Zimbabwe Free Range Poultry Association	Provision of capacity-building initiatives, technical support, and Market linkages to its members.	Training, technical support, and market linkages (input and output)- for members only upon payment of membership fees	All	Indigenous chickens	
7	Afrideli - a subsidiary of Cluster Agricultural Development Services (CADS)	Offtake	Training at a cost-sharing condition and Market	All	Bambara Nuts	
8	SCOPE – Welt Hunger Hilfe (WHH) Project	Bambara Nut offtake and export Promoting Marula and chilis production	Training farmers in Chivi wards	Referred us to Bambara nuts local market actors (Afrideli, Shasha market, and Peak Trading)	Bambara nuts	
9	Shasha Market	Seed supplier and Offtake	Market	All	Bambara Nuts	
10	Redsphere – Commercial Bank of	Financier	Pre-disbursement training	All	Financial services provider	

	Zimbabwe (CBZ) subsidiary					
11	ECONET	ICT Provider – e-extension	Services provision at a cost	All	E-extension services	
12	VIAMO	ICT Provider	Services at a cost	All	E-extension services	
13	Steward Bank	Financier	Still deciding on possibilities for engagements	All	Financial services provider	

Previous private sector engagements under the Enhancing Nutrition, Stepping Up Resilience and Enterprise (ENSURE) Project

NO.	NAME OF PRIVATE SECTOR	WHAT THEY DO OR AREA OF COLLABORATION (SPECIALIZATION)	WHAT THEY WERE PROVIDING TO ENSURE	VALUE CHAINS FOR ENGAGEMENTS
1	National Organic Produce (NOP)	Contractor, input supply and offtake	Market	Indigenous Chickens - boschvelds
2	Metbank	Financier	Input loans – feeds and chicks (had a tripartite relationship with the farmer and NOP)	Financial services provider
3	CAIRNS	Contractor, input supplier, and market	Market	Michigan peas
4	VIRL Financial Services (Microfinance)	Financier	Input loans and support Village Savings and Lending Associations	Sugar beans and groundnuts

			(VSLA) Income Generating Activities	
5	World Food Program (WFP)	A buyer for white sorghum under the Purchase for Progress (P4P) program – BHA funded	Market	White sorghum
6	Emkambo	ICT Provider	Market information provision	Market information services
7	ECOFARMER	ICT Provider – e-extension	E-extension services	E-extension services
8	Montana Carswell (MC) Meats	Offtake	Market	Goats
9	Vantos Meats	Offtake	Markets	Goats
10	Pilchards Investments	Offtake	Market	Groundnuts
11	Hotels (Chevron and Flamboyant); Local restaurants – Tabika tagocha	Offtake	Market	Indigenous chickens and goats
12	Sidella	Offtake; contractor	Input and output market	Sesame
13	CBZ	Financier	Financial services provision	Financial services
14	Masvingo chicks an agent for Novatech	Input supplier	Provision of chicks for production	Boschveld chicks

15	Seed Houses – ZSS, Agriseeds, SeedCo, Panna, and Pioneer	Input supply	Input market	Maize seed NUA 45 beans - ZSS

ANNEX

DATA COLLECTION TOOLS

Focus Group Discussion

Province: _____ District: Ward: _____ VIDCO/Cluster: .....Village: _____

Date of Focus Group Discussion: _____

Venue: _____

Name of Farmer Group: _____

Number of Adult men: ____ Young men: _____Adult women: _____ Young women: _____

Facilitator: _____Note Taker: _____ Audio file number: _____

Supply side
FGD Question Guide for farmers (Adult women, adult men, young women and young men, people living with disability) (lead farmers/ordinary farmers/poor farmers/) Minimum 7 Maximum 9 participants (can be mixed or FGDs adult men and women, young men and women, adult women and youth women, and people living with disability FGD if many).

Theme	Questions	Comments
General information	1. Please provide a brief history of your community, how it was founded, ownership/access status of land, leadership structure, tradition, religion, social cohesion/social capital, and any important information etc	Make the question as open as possible. Probe to understand the general relational structure (usually intricate)
	2. What are the people's main livelihoods (crops, livestock, business, employment, etc.)? perceptions on community poverty status, general land fertility, experiences of rainfall regimes/patterns, disasters, migrations, etc	Probe for how the community classify itself in terms of wealth status – poor, middle, better off; community experiences in general
Objective 1: To assess and identify **viable** and **most important** crop and livestock value chains preferred and/or viable for adult women, adult men, young women and young men and people living with disability in the project areas.		

Crop/livestock value chains	3. Which cash and food crops and livestock (including field/horticulture) are mainly grown/reared in the community and why? 4. Who in the households decide which crops to grow and livestock to rare and sell? And why? Adult women and Men, young women and men, disabled members of the family	***Can be carried out as a value chain and institutional mapping exercise.*** Probe for general experiential and cultural practices and separate between food and cash crops.
	5. What are the farming practices in the community? Which crops/livestock are preferable to adult women, men and young women and men and why? 6. Which crops/livestock are viable/profitable for your community, why? What is the community experience with each identified value chain?	Probe for cultural, economic, sociological etc Probe input/output market relations,
Objective 2: Conduct value chain analyses for each of the selected commodities. The value chain assessments will entail: A. the agronomic production profiles (e.g. agricultural management practices, land ownership and use practices)		
Crop production systems	7. How much land does a typical household in this community possess and how much on average is fully utilised? 8. Is there unused or underutilized land and why? 9. Who in the community own/ has access to/ and control of arable land for crop production? Adult women/men, young women/men? 10. Which farming systems do households in this community practice? 11. Which pests and diseases are experienced in this community? Do households here use modern technology/fertilisers/insecticides, costs, affordability, and availability? 12. Who are the major suppliers of inputs for crop production in the area? 13. Are there any arrangements and terms that exist between farmers and input suppliers in the area for the supply of inputs? explain 14. Where is finance for production sourced from? (Farmers'own savings, VSLA, Borrowing, Remittances, Micro-finance institutions, Contractor, Banks, NGO, Government, etc.) 15. What type of machinery and equipment is required for crop production and harvesting in the area/community, and how accessible to women, men, youths? How much does it cost? 16. What are the major constraints faced and opportunities in production of these crops in terms of: (Establish constraints for women, men, young men and young women) i. Input supply and services?	Probe history of land acquisition Probe for variability in land utilisation and reasons thereof. Probe for farming system on different patches/parcel of community land (conservation/smart/rotation agriculture and which household members) Probe for the main inputs, suppliers and distance to nearest outlet?

	ii. Production? iii. On-farm post-harvest processes? iv. Markets and marketing? 17.	
Post-harvest practice	18. Do people in this community practice post-harvest treatment (which chemicals, availability, affordability, source), storage and value addition, grading, what are the experiences of losses (proportions) and reasons	Probe for traditional postharvest management
Gardens	19. Do community members have equitable access to a community/individual gardens (adult women and men/young women and men? and why? What crop (and cash crops) do they grow? Why? What can be done to enhance access for all? How are community gardens managed? Land and water (sources & adequacy during wet and dry periods).	Probe for informal and formal rules and regulations in access to land/water, and practices Probe why others have no access. What can be done to enhance access for all?
Irrigation schemes	20. Do community members have access to irrigation schemes, which schemes and ownership status? History of the schemes? Which members of the community have access (adult women, adult men, young women and young men), how and why? How are the schemes managed and by who? How much land and which crops? Who decides which crops to grow? Men women youths market, gvt extension, private sector.	Probe for historical nuances over management and cropping systems
Livestock production system	21. Which livestock (small & large) systems is practised in the community? (Free range, communal grazing, intensive, semi-intensive etc). Pasture quality and water availability/sources in dry and wet seasons within the community? 22. Which livestock pests and diseases are experienced in the community? 23. What is the status of use of modern production technology/vaccines/dipping, fodder, costs, affordability and availability, suppliers	Probe for historical changes noting milestones
B Value chain mapping (key stakeholders, flow of supplies and products, flow of funds and information, etc.);		
Crop value chain	SUPPLY AND DEMAND 24. What quantities do you produce and supply to the market per annum, including horticulture crops? 25. What time of the year do you supply and which market and are they markets accessible to women, men both old and young?	*Probe for total for community/average for household for each identified value chain?*

	26. ? 27. Who are the buyers & final consumers of your crop commodities? *(Specific names)* *28.* What are the requirements of the market per annum? (*Quantities and quality for each value chain.)* 29. Do you think there is surplus or deficit of the commodity/ies? Why do you think so? 30. Is there any grading system used in buying the commodity/ies? If Yes, who decides the market grade and what are the grades and related prices? 31. On average, how much income does a household in this area earn from the sale of each crop? 32. What proportion of total agricultural income does each crop contribute? 33. What proportion of total household income (including off-farm) does the crop contribute? 34. Does the community access crop value chain market information, how and from where/who? How easy and any cost implications? Usefulness of market information? Opportunities for improvement? 35. Are there other preferred markets which you fail to access? If yes, what are the reasons for failure to access such markets? Why do you prefer such markets over others? What do you think need to be done and by who for you to access such markets?	Probe for historical changes of buyers/off-takers, demands, market information
Livestock value chain	36. Do community members sell livestock/products, what proportion of the community, 37. Who are the buyers for different livestock and livestock products, from where? (*probe for specific names of each livestock value chain*) 38. What livestock or products quality do the buyers demand? 39. Do community members (women, men, youth) access livestock value chain market information, how and from where/who? How easy and any cost implications? Usefulness on market information to the community?	Probe for historical changes of buyers/off-takers, demands, market information
C functional analysis of each value chain (profiling of industry structure, adoption of skills, technology, and innovation);		

Skills	40. What skills do people in the community have for crop and livestock production, value add, marketing (adult women, men, youths)? From whom and with what benefits? Are they using the skills, if not why? What more skills and what support does the community need to improve productivity and market participation? Are people willing to pay for skills training services?	Probe for skills dynamics and utility
D climate change implications; **economic analysis** of potential opportunities to **add value** along the chain		
Crop/livestock	41. How has climate variability, economic changes-inflation impacted crop/livestock production and marketing in the community? If so, can you explain how much this affects production? 42. How can the community improve income from crops/livestock under these climate/economic regimes?	Probe milestone impacts and opportunities
E policy and institutional conditions necessary to create suitable **enabling environment** for value chain development		
Crops/livestock	43. What are the local/regional rules/regulations/institutions for the marketing of field/horticulture crops/livestock in the community? What is their impact on crop and livestock marketing? 44. Are there any rules (formal and informal) and regulations that influence agriculture production and marketing in this area/district? 45. Do you have a commodity-based organization or farmer group? *(Names)* 46. If YES, what services does it/they provide to farmers? 47. Are there any rules governing members in relation to production and marketing? Explain 48. Are there any specific gender roles in (i) production, (ii) marketing and (iii) membership of farmer organizations? and how are the roles organized?	Probe for dynamics in regulations and associated value chain developments
Objective 3: To identify the key services and sectors that enhance or impede the competitiveness of the identified crop and livestock value chains (e.g. extension, financial services, storage and transportation, macro-economic conditions including inflation).		

Extension services	49. What crop and livestock extension services do you have access to in this community, how do you access them? Do they respond to community needs? What are the cost implications of getting extension services, and how beneficial are they for improved crop and livestock production and marketing in the community? 50. What are the challenges around access to extension services for women, men, youths? What can be done to improve access? 51. At what stage is the producer price announced to the farmers and with what implications? (At the start of production, at the time of marketing the crop etc).	
Financial services and economic conditions	52. What financial services does the community access for crop (field & horticulture) and livestock production, value addition and marketing? How useful and affordable are they to community people? Do they respond to community needs? (disaggregate by sex and age) 53. Which MFIs are supporting /supported farmers in this community? 54. Who in the community/households decides which financial services to access? 55. How has economic conditions/inflation affected community crop and livestock production and marketing, what opportunities are there? 56.	Probe for experiences past ten or five years
Infrastructure, Transport and logistics	57. What is the infrastructure status in the community? Roads, bridges, markets, water, etc 58. Do community people provide own or contract transport to markets for your cash crops and livestock? How affordable, reliable are transport services in the community?	Probe how transportation is organised,

Gross Margin Guide for Crops

	I hectare				
Input	**Quantity**	**Unit**	**Currency**	**Unit cost**	**Cost**
Seed (list type - OPV, hybrid, certified/improved))					
Nursery bed					
Land prep (plough costs)					
Basal fertiliser					
Top dressing fertiliser					
Manure					
Herbicides (specify)					
Pesticides (specify)					
Labour (...people*....hrs*.....days)					
Planting					
Weeding					
Spraying					
Harvesting					
Grading and Packaging					
Packaging material costs					
Transport to market					
Transport inputs from markets					
Total Variable Cost (TVC)					

Gross Margin Guide for Livestock

Input	**Quantity**	**Unit**	**Currency**	**Unit cost**	**Cost**
Livestock (list type Goats/cattle/poultry/– improved or indigenous breed)					
Feeds					
Vaccines (specify)					
Housing					
Labour (…people*….hrs*……days)					
Feeding/cleaning/grazing					
Other (specify)					
Total Variable Cost (TVC)					

Supplier_Agrodealer Key Informant Interview

Province: _____ Ward: _____ Village:_____ VIDCO _____

Date of KII Interview: _____

Venue: _____

Name of interviewee: _____

Sex : _____ Age _____(Adult/Youth): _____ Disability: _____

Value chain: _____Company name: _____

Facilitator: _____ Note Taker: _____ Audio file number: _____

Demand side

Key Informant Interview (KII) Guide for Input Suppliers & Service Providers

Theme	Questions	Comments
General information	1. Please provide a brief history of yourself/organisation, when it started operating, location, – and your participation in this crop or livestock value chain. 2. What is the key objective of you and your organisation in this (***specific***) value chain?	Make the question as open as possible.
Agro-dealer •	3. What is your key business? If input supplier, which range of inputs do you supply for crop and/or livestock production, and what are the prices ranges? 4. Who are your main target market and their location/distance? 5. How many farmers do you think you service? 6. Who are the main buyers (large commercial/smallholder farmers/adult women/men/youths)? 7. What is the demand for your products? Are you able to meet the demand, what are the demand fluctuations?	Probe the pricing model for the inputs

•	8. Where do you get information about what inputs are required by crop/livestock farmers? Do you interact/communicate with extension staff or farmers and other input suppliers? Where do you get your supplies from? (name and location) 9. What is your marketing strategy – over the counter, deliver to individual farmers, part of contract farming? (Probe for 4Ps, product, price, promotional,) 10. Which stakeholders do you work with in the crop/livestock value chains? Do you have contracts with clients, which specific clients? What are the terms of the contracts?	
Extension service providers (gvt and private sector)	1. Which extension services do you provide? To who, when, at what cost? Service cost model?/Service delivery model? 2. Which areas do you serve and how? 3. What is the demand for your service by your clients? 4. Do you work with other service providers (gvt/private sector/NGOs? Which ones and with what advantages for you and the crop/livestock producers, and merchants? If not why?	
Infrastructure services (irrigation/road etc)	1. Describe the infrastructure services you provide, and to who? 2. How does it benefit crop and livestock producers, merchants, etc? 3. How sustainable is your service provision? What has been your experience working with crop/livestock producers? 4. Do you work with other service providers in the district? Which ones, and how does that help infrastructure maintenance and development? 5. What are the key challenges in the interactions and infrastructure service provision?	
Financial service providers •	1. Describe the financial services you provide to crop/livestock value chain(s)? 2. What is the premium for loan repayment if any? Repayment model/period? Are your clients able to repay on time/penalty for non-compliance? How accessible for poor resourced producers/adult women/men/youths and disabled? 3. What is the financial service demand-uptake level (and for poor producers? How viable is your business, sustainable? 4. What challenges have you or are you facing in dealing with crop/livestock value chains actors/producers/especially poor resourced smallholder producers? What are the options going forward? 5. Do you work with other stakeholders, which ones and why? Which ones are key, and why so? Do you have any contractual arrangements with them? 6. What are the benefits/challenges from the interactions? What can be done to improve your benefit stream from working with other players in the industry and area? 7. Which other players do you think need to be part of the network?	Probe for any conscious inclusion of servicing the very poor producers and whether this is a viable niche market.

Market place minders	1. What services do you offer to crop/livestock producers/merchants etc? 2. What are the requirements/rules/regulations/penalties for crop/livestock value chain players to participate in marketing their products here? Cost and payment methods/participation of poor farmers/quality expectations? 3. What has been the demand for your service (market place)? Are you able to accommodate all clients, including poorly resourced producers? 4. What are the key challenges in your service delivery? What support needs to be put in place to ensure increased participation of crop/livestock producers especially the vulnerable adult women, men, young women & men and the disabled? 5. Of what benefit to your organisation is the participation of crop/livestock value chain players? What programmes are in place to promote continued participation of your clients?	Probe for how the services allow participation of poorly resourced producers (adult women/men, youths and disabled)
Policy, rules & regulation	1. Are there any policy or regulatory challenges in running your business e.g. taxation, VAT, certification of certain inputs etc 2. If yes, have there been any initiatives to work with the relevant Government department to address these?	

Buyer Key Informant Interview

Province _____ Ward: _____Village_____VIDCO/Cluster_____

Date of KII Interview: _____

Venue: _____

Name of interviewee: _____

Sex: _____Age _____ (Adult/Youth) _____Disability_____

Value chain _____

Facilitator_____ Note Taker _____ Audio file number _____

Demand side
Key Informant Interview (KII) for buyers/offtakers/wholesalers

Theme	Questions	Comments
General information	1. Please provide a brief history of yourself/organisation/company when it started operating, location, – and your participation in this crop or livestock value chain. 2. What is the key objective of you and your organisation/company in this value chain?	Make the question as open as possible.
Objective 1:. To understand demand side dynamics in the value chain based on the buyers experiences, market need and product availability		
Value chains (respective)	3. How viable do you think is the (respective crop/livestock) value chain for adult women/men, youths and disabled in this district? 4. How is the uptake of the value chain in the area? What impact has the uptake rate had on your business and its viability? 5. How much (*quantities*) of the crop/livestock do you require per (month/season/year), and what prices range do you offer? What determines the price? (*price model*) 6. Do you get the quantities you demand and from where and who – adult women/men/youths producers? If not why, and how have you in the past closed the deficit, and going forward how do you plan to close the gap?	Probe for personal experiences of interacting with farmers (poor resourced smallholder producers – women/men/young women and men, people with disability).

	7. How do you get, and prefer to get your products (through middlemen, farmers groups etc).	
Objective 2: Conduct value chain analyses for each of the selected commodities. The value chain assessments will entail: • the **agronomic production profiles** (e.g. agricultural management practices, land ownership and use practices)		
Crop/livestock production systems	8. Which production system for the respective value chain is commonly practiced in the area? 9. How appropriate is the system in meeting your product demand (quality & quality)? If not, what need to improve, what would attract you more? 10. Which crop or livestock/crop or livestock products are in most demand in your area? 11. Where do you buy most of this crop or livestock/product? 12. Are you getting enough volumes based on the demand from your customers? 13. Are you getting the right quality of product? 14. If not, what is your deficit and how are you meeting it? 15. What is the profile of your normal suppliers i.e., smallholder farmer (less resourced women, men, youths, people with disability), trader/middleman, commercial farmer etc? 16. How do you determine the price you offer to farmers, and what currency do you pay for the produce? (do you consider viability for the (less resourced) producers? 17. Are your customers using predominantly ZWL cash, USD cash or swipe to pay for their products? 18. What are the major challenges you are facing in sourcing crops or livestock/products for your business? •	Probe for suitability of the production system in assuring demanded products
• **a) Value chain mapping** (key stakeholders, flow of supplies and products, flow of funds and information, etc.);		
	19. Apart from you, who are the other buyers/takers for the value chain? 20. Do you and other players get enough/viable quantities? If not why? 21. How is the competition, and how are you managing it?	Probe for historical changes of buyers/off-takers, product supply, pricing shifts and strategies

• **b) functional analysis** of each value chain (profiling of industry structure, adoption of skills, technology and innovation);		
Industry profile	22. How is the value chain (respective) industry organised? Producers, Regulatory body(ies)/authority, merchants, markets (primary/secondary), manufacturers, final products, consumers, locations of each	
Skills	23. Are the value chain producers have the requisite skills as demanded by your industry? If not, Which specific skills are lacking? what is being done to ensure product improvement through skills training, what are the constraints, and opportunities for skills improvement? Do you have any skills challenges/needs that if addressed will improve your business and that of less resourced producers? Are you willing to support less resourced women/men/youths/disabled smallholder producers? 24. Who do you think can come in to assist?	Probe for opportunities for skills improvement
• **c) climate change** implications; **economic analysis** of potential opportunities to **add value** along the chain		
Climate change impact	25. How has climate variability, economic changes-(inflation) impacted your value chain? (Quantities and quality supplied). 26. What opportunities are presented by climate change and variable economic conditions? How are you (and suppliers/farmers) prepared for the impact of climate and economic conditions variability - resilience? 27. What need to be done to improve producer and your resilience to these shocks?	Probe milestone impacts and opportunities
• **d) policy and institutional** conditions necessary to create suitable **enabling environment** for value chain development		
Crops/livestock	28. What are the local/regional rules/regulations/institutions for the marketing of your respective value chain (field/horticulture crops)? 29. What is their impact on respective (crop and livestock) marketing? 30. What changes need to be done to improve product (crop and livestock) value for your sustained participation? How do you relate with the different institutional structures, and what are the incentives for the interactions?	Probe for dynamics in regulations and associated value chain developments
Objective 3: To identify the key services and sectors that enhance or impede the competitiveness of the identified crop and livestock value chains (e.g. extension, financial services, storage and transportation, macro-economic conditions including inflation).		

Other services	31. Do you provide any other services apart from buying e.g. extension to farmers? Which services?	Probe as many services as possible
Extension services	32. Do you supply/support (crop and livestock) extension services? What is the model of your extension support? What are the cost implications for you/organisation, and how beneficial is the support for you and product producers especially less resourced men/women/youths producers? 33. What are the challenges in offering extension services? What need to be improved, by who? 34. How do you relate with government extension services in the value chain market development?	
Financial services and economic conditions	35. Do you offer financial services (loans, input support (cost recovery), open market etc) and why? 36. Who are your target producers for financial service support and why? (Adult women, men, youths, people living with disability). 37. Any interaction with other financial service providers for the *(specific)* value chain? 38. Do you use commercial bank finance (credit) to run your business? 39. If so, which financial institutions do you deal with and are they in your area or in Mutare/Masvingo/Harare?	Probe for experiences past ten or five years, any support changes over the years
Infrastructure, Transport and logistics	40. Do you provide logistics/transport support to markets for your value chain (crops and livestock)? How affordable, reliable are (*your*) transport services? If not, are farmers (*including less resourced producers*) able to supply the value chain? 41. What is the state of infrastructure (roads, access bridges, bulking storages etc; what effect has this on product market development? 42. What are the opportunities and bottlenecks? 43. What interactions/support do you render to infrastructure service providers?	Probe how transportation and logistics is organised,
Information technology	44. Do you provide adequate communication and market information to your product producers, and how? How useful has been the information and communication on product market development? 45. How has IT improved value chain quality/quantity?	Probe for more interactive attempts by the merchant/organisation and incentives thereof

Policies and regulations	46. Which policies regulate your business activities? 47. Are there any challenges that you experience on the policy/regulatory side? 48. Which government departments do you interface with and for what purpose? 49. What policy changes would you like to see to facilitate growth of your business and viability for less resourced producers (adult women, men, youths and people living with disability?	

In-depth Interview Guide

Province: _____District: _____Ward: _____Village:_____ VIDCO/Cluster: _____

Date of In-Depth Interview: _____

Venue: _____

Name of participant: _____

Sex: _Age _____ (Adult/Youth) _____Disability_____

Facilitator: _____Note Taker: _____Audio file number: _____

Supply side
In-Depth Interview Guide for farmers (Adult men and women, young men and women, people living with disability) (lead farmers/ordinary farmers/poor farmers)

Theme	Questions	Comments
General information	1. Please provide a brief history of yourself– birthplace, age, educational background, marital status, how many children you have, how long you've lived in the current community, etc	Make the question as open as possible. Probe to understand the relationship (usually intricate)
	2. What is your main livelihood (crops, livestock, own business, employment, retired etc.)? Do you have other sources of income (e.g. remittance, pension, rents?	Probe for how they classify themselves in terms of wealth status – poor, middle, better off?

Objective 1: To assess and identify **viable** and **most important** crop and livestock value chains preferred and/or viable for women, men, young women and young men and people living with disability in the project areas.		
Crop value chains	3. Which cash or food crops (field/horticulture) do you grow and why? 4. Who in your household decide which crops to grow? And why? Adult women and Men, young women and men, disabled members of the family	Probe for as more personal reasons as possible. Make it open and as exhaustive as possible.
	5. Which crops do you prefer as an individual and which crops are preferred by other household members and why? 6. Which crops are viable/profitable for your household, why?	Probe for cultural, economic, sociological etc
Livestock value chains	7. Which livestock (small and large) do you or household members keep as income/business projects or for consumption? Who decides which livestock to keep and who owns the livestock? Adult women, men young women etc	Probe for cultural interference
	8. Which livestock types do you prefer as an individual, and which ones are preferred by other household members and why? Which livestock types are viable/profitable for your household, why?	Probe for economic, cultural, skills reasons
Objective 2: Conduct value chain analyses for each of the selected commodities. The value chain assessments will entail: a) the **agronomic production profiles** (e.g. agricultural management practices, land ownership and use practices)		
Crop production systems	9. How much land do you own/ have access to or control for crop production? Who owns? Adult women/men, young women/men? How did you/they obtain it? 10. How much/what proportion of the land do you utilise for each commodity? 11. Which farming systems do you practice? Pests and disease experience. Use of modern technology/fertilisers/insecticides, costs, affordability and availability 12. Who are your suppliers of inputs for crop production? Give the main inputs, suppliers and distance to nearest specific outlet? Are there any arrangements and terms that exist between you and your input suppliers? Explain the arrangements and terms? 13. Where do you get finance for crop production? 14. What type of machinery and equipment is required for your crop production and harvesting, Do you have access to these, and if so at what cost? 15. . 16. What are the major constraints you face in production of these crops in terms of:	Probe for variability in land utilisation and reasons thereof. Probe for farming system on different patches/parcel of land (conservation/smart/rotation agriculture and which household members)

	i. Input supply and services? ii. Production? iii. On-farm post-harvest processes? iv. Markets and marketing? 17. What opportunities do you perceive in these value chains you produce? 18. What are the major inputs and costs of production for XXX crop? (*see annex 1*)	
Post-harvest practice	19. Post-harvest treatment (which chemicals, availability, affordability, source), storage and value addition, grading, experiences of losses (proportions) and reasons	Probe for traditional postharvest management
Gardens	20. Does your household members have access to a community/individual garden? Which household members, and why? What crop (and cash crops) do you grow? Why? How is the community garden managed? Land and water (sources & adequacy during wet and dry periods)	Probe for informal and formal rules and regulations in access to land/water, and practices
Irrigation schemes	21. Does your household members have access to an irrigation scheme? Which members, how and why? How is the scheme managed and by who? How much land and which crops do you grow? Who decides which crops? Men women youths market, gvt extension, private sector	Probe for historical nuances over management and cropping systems
Livestock production system	22. Which livestock (small & large) systems do you practise? Free range, communal grazing, and intensive. Pasture quality and water availability/sources in dry and wet seasons? 23. Who owns and who decides what livestock to own? Adult women/men, young women/men? How did you/they obtain livestock? With what objectives? 24. Pests and disease experience. Use of modern production technology/vaccines/dipping, fodder, costs, affordability and availability, suppliers	Probe for historical changes
Value chain mapping (key stakeholders, flow of supplies and products, flow of funds and information, etc.);		
Crop value chain	SUPPLY AND DEMAND 25. What crops and quantities do you supply to the market per annum, including horticulture crops? 26. What time of the year do you supply and which markets? 27. Who are the buyers of your crop commodities? *(specific names).* Who are the final consumers when processed? *28.* What are the requirements of the market per annum? (*Quantities and quality for each value chain.)*	Probe for historical changes of buyers/off-takers, demands, market information

	29. Do you think there is surplus or deficit of the commodity/ies? Why do you think so? 30. Is there any grading system used in buying the commodity (ies)? If Yes, who decides the market grade and what are the grades and their prices? 31. On average, how much income do you earn from the sale of each crop and livestock commodity? 32. What proportion of total agricultural income does each crop contribute your household income? 33. What proportion of total household income (including off-farm) does the crop contribute? 34. Do you access market information, how and from where/who? How easy and any cost implications? Usefulness on market information?	
Livestock value chain	35. If you sell livestock/products who are the buyers of the different livestock and from where? *(specific).* What products quality do they demand? 36. Do you access livestock market information, how and from where/who? How easy and any cost implications? Usefulness of market information?	Probe for historical changes of buyers/off-takers, demands, market information
Functional analysis of each value chain (profiling of industry structure, adoption of skills, technology, and innovation);		
Skills	37. Are you or any household member (adult women, men, youths) trained in crop or livestock production, value addition and marketing? If so from who and with what benefits? Are you using the skills, if not why? 38. What more skills and what support do you need to improve your productivity? Are you willing to pay / spend time for skills training services?	Probe for skills dynamics and utility
climate change implications; **economic analysis** of potential opportunities to **add value** along the chain		
Crop	39. How has climate variability, economic changes-inflation impacted your crop and livestock production? How can you improve your income from crops under these climate/economic regimes?	Probe milestone impacts and opportunities
	40.	
Policy and institutional conditions necessary to create suitable **enabling environment** for value chain development		

Crops/livestock	41. What are the local/regional rules/regulations/institutions for the marketing of field/horticulture crops in the community? What is their impact on your crop and livestock marketing? What policy changes need to be done to improve your crop and livestock value chains? 42. Do you belong to a commodity-based organization or farmer group? *(Names)*, and what services do you get? 43. Are there any rules governing members in relation to production and marketing? Explain. 44. Are there any specific gender roles in (i) production, (ii) marketing and (iii) membership of farmer organizations?	Probe for dynamics in regulations and associated value chain developments
Objective 3: To identify the key services and sectors that enhance or impede the competitiveness of the identified crop and livestock value chains (e.g. extension, financial services, storage and transportation, macro-economic conditions including inflation).		
Extension services	45. Do you get crop and livestock extension services and who are the providers? What are the cost implications of getting extension services, and how beneficial are they ? What are the extension delivery methods and how would you rate the quality of the extension services? 46. What are the challenges with extension services? What need to be improved?	
Financial services and economic conditions	47. What financial services do you access for crop (field & horticulture) and livestock production, value addition and marketing? Kindly name the financial service providers if any? How useful and affordable are they to you? 48. Who in the household decides which financial services to access? 49. How has economic conditions/inflation affected your crop and livestock production and marketing, what opportunities are there?	Probe for experiences past ten or five years
Infrastructure, Transport and logistics	50. Do you provide own/contract transport to markets for your cash crops and livestock? How affordable, reliable are transport services?	Probe how transportation is organised,