

A NEW APPROACH TO LABOR MARKET ASSESSMENTS – REPORT

Insights from Systems Labor Market
Assessments in Zimbabwe and Haiti

DECEMBER 2022



ABOUT IDEAL

IDEAL is an activity funded by the USAID Bureau for Humanitarian Assistance (BHA) that works to support the United States Government's goal of improving food and nutrition security among the world's most vulnerable households and communities. IDEAL addresses knowledge and capacity gaps expressed by the food and nutrition security implementing community to support them in the design and implementation of effective emergency and non-emergency food security activities.

ACKNOWLEDGEMENTS

This publication was compiled and written by DevLearn. The lead writer for this report was Dhita Larasati Radcliffe with support from Nayeem Kashem, Pedzisai Mufara, and Luc Hilhorst. The authors would like to thank Sara Murray, Ashely Aarons, Chris Maclay, Stephen Hunt, and Rachel Shah for their invaluable support and guidance in reviewing and finalizing the report. In addition, the authors would like to thank Mercy Corps Haiti, Mercy Corps Zimbabwe, CNFA Zimbabwe, CARE Zimbabwe, the program team members of Amalima Loko and Takunda, Norma Toussaint, Alexandra Kirton, and Meghna Phalke for their contributions and review of the report.

RECOMMENDED CITATION

DevLearn. (2022). *A New Approach to Labor Market Assessments – Report: Insights from Systems Labor Market Assessments in Zimbabwe and Haiti*. Washington, DC: Implementer-led Design, Evidence, Analysis and Learning (IDEAL) Activity.

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Abbreviations

BAC	<i>Bureaux Agricoles Communaux</i>
BHA	Bureau for Humanitarian Assistance
CAHW	Community-based Animal Health Worker
CRM	Customer Relationship Management
DDA	<i>Directions Departementales Agricoles</i>
DFI	Non-development Finance Institutions
ERP	Enterprise Resource Planning
FSC	Forest Stewardship Council
FTLR	Fast Track Land Reform
GMB	Grain Marketing Board
GDP	Gross Domestic Product
HE	Household Enterprise
HTG	Haitian Gourde
ICT	Information and Communications Technology
IDEAL	Implementer-Led Design, Evidence, Analysis and Learning Activity
INFP	<i>Institut national de formation professionnelle</i>
IPP	Independent Power Producer
KII	Key Informant Interview
LMA	Labor Market Assessment
LMP	Lupane Meat Processors
LWG	Leather Working Group
MARNDR	Ministry of Agriculture, Natural Resources and Rural Development
MFI	Microfinance Institution
MSD	Market Systems Development
MSD4E	Market Systems Development for Employment
MSME	Micro-small and Medium-sized Enterprises
NEET	Not in Employment, Education, or Training
PAYGO	Pay-as-you-go
PV	Photovoltaic
RFSA	Resilience Food Security Activity
SLMA	Systems Labor Market Assessments
TVET	Technical and Vocational Education and Training
USAID	United States Agency for International Development
USD	United States Dollars
USSD	Unstructured Supplementary Service Data
WTO	World Tourism Organization
ZTOA	Zimbabwe Tour Operators Association

Executive Summary

The majority of the world's poor still depend on agriculture for their livelihoods. The United States Agency for International Development (USAID) Bureau for Humanitarian Assistance (BHA) is a key actor in development initiatives that boost employment globally, enhancing the productivity and incomes of smallholder family producers. However, the COVID-19 pandemic and subsequent mobility restrictions set by governments have reduced incomes and increased global poverty on an unprecedented scale, particularly among those most impacted by shocks. At an operational level, programs are struggling to adapt to COVID-19. They lack effective methodologies for data collection and analysis on market impacts in the current reality, and ideas for system-catalyzing interventions.

To assist rural households to take advantage of the on- and/or off-farm opportunities most likely to sustainably increase their productivity, food security, and economic well-being, it is necessary to shift from traditional Labor Market Assessments (LMAs) to Systems Labor Market Assessments (SLMAs).

While traditional LMAs generally focus on the target population—their capacities, skills gaps, and challenges in entering desired occupations—SLMAs dig deeper. They assess the performance of economic sectors that workers seek to enter. This report presents two assessments that use Market Systems Development (MSD) tools to evaluate job seeker capacities and needs, and the performance of the surrounding economic sectors.

The USAID/BHA-funded Implementer-Led Design, Evidence, Analysis and Learning (IDEAL) activity contracted DevLearn to pilot the SLMA methodology in Haiti and Zimbabwe. SLMAs are key to designing MSD programs focused on employment, referred to as Market Systems Development for Employment (MSD4E). In MSD4E programs, implementers analyze why employment systems aren't working better, and then intervene to change the way those systems work. MSD4E programs work entirely through existing system actors, such as government and the private sector, rather than delivering services directly to job seekers.

USAID/BHA has ongoing resilience and food security programming in Haiti and is currently funding two resilience food security activities (RFSAs) in Zimbabwe. The assessments took place between October 2021 and March 2022. These two contexts were chosen following a competitive ranking of applicants across the following criteria: research questions focused on employment and market systems development, clear connection to food security, and relevance to USAID/BHA and logistical feasibility, including adherence to COVID-19 safety protocols.

Learning from these pilots resulted in a standard, six-step SLMA process:

1. **Profile the target group:** Develop an understanding of the capacities, needs, and employment preferences of the target group and relevant sub-populations within that group.
2. **Scan the labor market:** Conduct a literature review and a limited number of key informant interviews (KIIs) to identify the sectors and systems with the highest potential employment outcomes for the target population. This produces a “long list” of sectors that hold high employment potential.
3. **Develop sector short list:** Using relevance, feasibility, and impact as a guide, develop context-specific evaluation criteria to support selection of three to four sectors that the SLMA will focus on. These may be economic sectors (e.g., household solar or tourism) or crosscutting systems that influence employment outcomes (e.g., transportation or credit for micro-entrepreneurs).
4. **Conduct preliminary analysis of shortlisted sectors:** Develop preliminary market maps, market actor lists, and hypotheses on what types of jobs will be created for the target population in this sector.
5. **Conduct a deep analysis of selected sectors:** This usually involves primary qualitative research and may require additional secondary research to identify sector underperformances.

6. **Produce intervention proposals:** The implementation team pinpoints root causes of sector underperformance and develops implementation proposals that include clearly identified partners and estimates for job creation.

In **Zimbabwe**, the labor market scan yielded a long list of 21 sectors across the services, energy, industry and manufacturing, agriculture, and forestry industries. These sectors were then scored against a set of criteria based on the relevance to project objectives, growth potential, and feasibility of the MSD approach for the country context. Following this process, the SLMA examined the solar-energy, agro-processing, timber, and tourism industries. When diagnosing sector underperformance, the agro-processing analysis showed that most processors are operating at only 40-80% capacity due to poor access to raw material. Proposed interventions indicate that improving the reliability and quality of domestic input supply, such as grains and fruits, could reduce dependency on expensive food imports and generate employment opportunities not only at the processor level, but also for farmers producing those inputs. The proposed intervention models identified opportunities to strengthen contract farming to address the input supply issue, expanding employment opportunities at various points in the agro-processing market.

In **Haiti**, the labor market scan resulted in a long list of 12 sectors across the services, energy, industry and manufacturing, agriculture, and forestry industries. From the shortlisting process, the agroforestry, transportation/distribution, and meat sectors were prioritized in order to support August 2021 post-earthquake recovery. The transportation and distribution sector analysis found that 30% of Haiti's agricultural production, like mangoes or avocados, is lost due to a lack of access to markets and spoilage. The transportation services sector in Nippes and other regions in Haiti are expensive and fragmented with multiple small operators. In addition to poor road quality, the high cost is driven by a low level of organization among transporters and poor access to local maintenance services. Supporting the development of specialized transport services for fresh produce and improving the capacity of local mechanics to complete more complex repairs at a local level could increase efficiency within the transportation value chain and beyond.

In addition to presenting detailed findings from high priority employment sectors within Haiti and Zimbabwe, this report also reflects on lessons learned about the SLMA process to help inform ongoing and future employment programming, including USAID/ BHA-funded RFSAs. Four key lessons learned about conducting an SLMA include:

1. Following the shortlisting process, preliminary research—supported by a deeper literature review and limited number of key informant interviews (KIIs) with market stakeholders—should be conducted before designing field research tools. Developing a fuller picture of the market system prior to engaging in primary research helps define and focus the deep dive into the prioritized market systems.
2. Whenever possible, the team responsible for writing up SLMA results and findings should be on the ground, working hand-in-hand with the implementation team. While COVID-19 and the multi-country nature of this assignment necessitated remote support, this is not an ideal set-up for future SLMAs.
3. Intervention design is a heavily iterative process and requires full knowledge of the market system as well as the implementation organization. The intervention team, not external consultants, should lead intervention design.
4. Projecting potential job creation estimates requires an understanding of the size of potential partners. While it is possible to generate rough estimates based on qualitative consultations with market actors, more refined estimates around job creation will only be possible once intervention partners are identified.

While resilience and food security programs are actively seeking to adapt to the impacts of COVID-19, capacity to assess and effectively facilitate off-farm and non-farm employment opportunities remains a key

challenge. This study generated a tremendous amount of learning not only around job opportunities for vulnerable communities in Haiti and Zimbabwe, but also around how humanitarian and development implementers approach employment programming through a new, more systemic lens. The learning and insights captured in this report will also support USAID/BHA-funded RFSAs in adopting more effective approaches to facilitating off-farm and non-farm income-generating activities.

1. Introduction

The Implementer-Led Design, Evidence, Analysis and Learning (IDEAL) activity assigned DevLearn to assess and facilitate a Systems Labor Market Assessment (SLMA) by applying the market systems approach in Zimbabwe and Haiti. To align with IDEAL’s vision, this study focuses on off-farm and non-farm employment opportunities that meet basic needs and lead to food security. The study also examines the COVID-19 pandemic’s impact on mobility and collapsed market demand.

1.1. Purpose and Scope of the Study

1.1.1. BACKGROUND TO THE STUDY

In Zimbabwe, youth unemployment and underemployment¹—particularly among young women—has worsened over the years. There is a need to assess the capacities, incentives, and constraints for increased youth employment at scale. Like many countries, Zimbabwe is becoming aware of the risks of climate-related shocks and has taken initiatives to invest and transform into a greener economy.

Haiti has suffered from increasing unemployment and underemployment over the years. The impact of natural disasters and socio-political crises has limited the country’s economic growth. For instance, while agriculture is the economy’s most important sector—employing 60% of the rural population—it generates less than 25% of national gross domestic product (GDP). Many people work in unregulated, informal sectors. In Haiti, as in many other countries, economic activities outside farming can become pathways out of poverty.² Hence, there is a need to assess employment opportunities related to off-farm activities—agriculture upstream (input supply), downstream (value addition and processing)—and non-farm activities (outside of the farming sector). Originally, the SLMA in Haiti was to focus on the Northeast, Centre, South, and Grand’Anse Departments of Haiti. However, on August 14, 2021, a 7.2 magnitude earthquake hit the southwestern region of Haiti, severely devastating the South, Nippes, and Grand’Anse departments. Since IDEAL was focused on learning from markets in crisis, the study’s geographic focus shifted to only Nippes Department—the area hardest hit by the earthquake.

1.1.2. PURPOSE OF THIS REPORT

This report provides an analysis into a focused number of market systems with high potential for employment generation and is based on the information gathered in key informant interviews (KIIs) and literature reviews. The study explores the current underperformance of selected market systems, which if addressed, can provide employment opportunities for the target group. In each market system, the report suggests several intervention ideas to create and support employment at scale. These intervention ideas are based on feasibility and the potential to create sustainable impact

1.2. Methodology

1.2.1. STRATEGIC FRAMEWORK

The analysis largely followed the steps outlined in Mercy Corps’ “The World of Work: Employment, Entrepreneurship, & Job Creation Approach & Principles,” beginning with a market analysis to understand the health of the private sector and the current landscape for both employment and self-employment. Specifically, the study followed the Market Systems Development (MSD) approach (as advised in the terms of

¹ Underemployment has been broadly interpreted and has come to be used to imply any sort of employment that is “unsatisfactory” (as perceived by the worker) in terms of insufficient hours, insufficient compensation or insufficient use of one’s skills (ILO, Labour Force Statistics, n.d.).

² Barbara Coello, 2014.

reference for this study). Under this approach, the core value chain (supply and demand of products) was investigated, along with the supporting functions and rules—all of which make up a market system.

To identify opportunities for women and youth, the analysis was based on two areas. First, the **supply and demand of skills** in the market system. This relates to availability of skills, vocational training, and specific barriers (i.e., rules and norms) preventing women and youth from entering specific roles. Second, the relationship between **supply and demand of wage employment** for a specific market system. This relates to the ability of employers to absorb more women and youth workers, which is linked to the inefficiencies in the market system. The analysis also considered how these inefficiencies impact the ability of young, self-employed people and microenterprises run by young people to grow and thrive.

Subsequently, the study puts forward ideas and interventions for **improving portfolios of youth and women's work**, either by (a) strengthening the breadth and diversity of their portfolios; (b) making work more regular and meaningful; and (c) increasing chances for higher income. Many intervention ideas also outline initiatives where implementers can facilitate **both technical and transferable life skills**. It is important to recognize that in the economies investigated in the study, formal, full-time employment may not be feasible. Therefore, implementers should ensure that the jobs that are advocated for are—at minimum—**safe, decent, and equitable** for women and youth.

1.2.2. STEPS FOLLOWED

This assessment was divided into three stages. The first stage entailed a literature review to provide preliminary insights into the current economic climate, youth and female participation in the economy, and a list of possible market systems where they could be employed at scale. The research team explored each system's potential for employment opportunities. This included rural urban linkages, demand, enabling environment, etc., with a scoring system based on relevance, growth potential, and feasibility of an MSD approach. There is an overview of the scoring system for each of the country sections, as the scoring criteria design is underpinned by different country contexts.

The second stage involved a deeper dive into three to four high-potential market systems, investigating market dysfunctions and root causes for low youth and female employment. In this stage, KIIs were conducted over the course of 2-3 weeks with relevant market actors and target groups to gain a deeper understanding of their constraints.

Finally, the third stage involved an analysis of opportunities and growth pathways for youth employment in off-farm, non-farm, and green jobs. After synthesizing and combining findings from the KIIs, additional literature reviews were conducted to provide a full picture of the underperformance in the market systems and to develop intervention proposals. The research team also analyzed the potential impact of these interventions (including job creation estimates), listed potential partners, and detailed potential facilitation activities.

1.2.3. LIMITATIONS

This SLMA is largely based on qualitative methodologies (KIIs and secondary data analysis). Therefore, the research team interviewed a limited number of actors and did not follow statistical methodologies to determine sample size. Additionally, the estimate for direct and indirect jobs is largely based on KIIs and the market analysis. Economic modeling was not performed, so the estimated job impact is only an indication.

Another limitation in this study is the inability to project the number of potential jobs created in Haiti. This is for two reasons. First, the research team had very limited data on specific market sizes in Haiti, particularly in Nippes. This hampered projections on the number of market actors participating in each market system, and the number of actors potential implementers could work with. Second, the proposed intervention ideas for Haiti were not made in the context of an active MSD-focused project. The lack of specific project location and focus further limited the research team's ability to estimate the scale of the

proposed intervention ideas. In addition, the research team struggled to identify specific actors to partner with on suggested new initiatives.

1.3. Key Definitions

1.3.1. JOBS DEFINITION BY MARKET SYSTEMS AND LOCATION

The study categorized three different job types according to the sector and location:

- Off-farm Jobs**
Off-farm jobs encompass all agriculture-related activities that occur beyond the farm. Viewed through a value chain lens, off-farm income includes the “middle” and “end” of the process, as agricultural goods leave the farm to reach consumers.³ This includes the supporting services that enable agricultural production. Examples of off-farm income and enterprise include extension services, processing, packaging, storage, transportation, distribution, and retail sales. These jobs are indirectly agricultural. Off-farm jobs exclude jobs at the “beginning” of the value chain, for instance, casual and seasonal farm labor.
- Non-Farm Jobs**
Non-farm jobs exist outside the agricultural market systems and refer to livelihoods not linked with agricultural activities. These jobs are usually found in non-agricultural sectors, such as industry and services. Examples of non-farm jobs include mechanics, carpentry, hairdressing, tailoring, vehicle repair, information technology work, and handicrafts.
- Green Jobs**
Green jobs are employment that positively impact the environment, be they in traditional sectors such as agriculture, manufacturing, and construction, or in new, emerging green sectors such as renewable energy and energy efficiency.⁴ Hence, green jobs may also fall under off-farm or non-farm jobs. Jobs are green when they help reduce negative environmental impact, specifically limiting consumption of energy and raw materials, greenhouse gas emissions, waste, and pollution, and protect and restore ecosystems.

Green jobs can be viewed from two perspectives: through the lens of final outputs or through production processes.⁵ From an output perspective, green jobs generate goods or provide services that benefit the environment. For example, jobs that produce solar equipment, clean transportation, or green construction. On the other hand, jobs can be green when they contribute to environmentally friendly production processes that reduce water consumption or waste, control air pollution, or improve recycling services, even though the final product is not 100% environmentally friendly. For example, introducing certifications such as Leather Working Group (LWG) in the leather industry or Forest Stewardship Council (FSC) in the timber industry can reduce negative environmental impact, making jobs in these sectors green. Other examples of green jobs may include recycling workers, water resources engineers, solar installers in the final output category, sustainable farming managers, and ecotourism guides in the production process category.

1.3.2. JOBS DEFINITION BY EMPLOYMENT FUNCTION

- Wage or Salary Jobs**
This includes (a) **steady, regular jobs** in a modern private firm or in the public sector; (b) **casual, informal wage work** on traditional production units such as farms or microenterprises, or seasonal work on construction sites or in factories; or (c) **wage work in households**, such as security,

³ Lambert, 2019.

⁴ ILO, 2016.

⁵ Kees van der Rees, 2019.

housekeeping, or childcare. Jobs in modern firms (with higher productivity) pay better and grow as a share of total employment as GDP grows.

- **(Self) Employment in a Household Business (Microenterprise)**
Household enterprises (HEs) are **unincorporated non-farm businesses owned by households**, located in either rural or urban areas. This type of employment includes the business owner as well as any family members working in the business. Most HEs are one-person operations. Most employment in the gig economy falls in the self-employment category.
- **(Self) Employment on a family Farm**
This refers to **employment on a family farm in the agricultural sector** (including crop and livestock production, aquaculture, and similar activities), where at least 50% of the labor comes from family members. This category includes landless farmers. This study primarily focuses on wage or salary jobs in off-farm and non-farm sectors. Employment on a family farm is beyond the scope of the study.

1.4. Structure of the Document

Section 2 of this report shows the analysis of market systems in Zimbabwe, and Section 3 shows the analysis of market systems in Haiti. Finally, lessons learned and recommendations for future studies are discussed in Section 4.

2. Findings: Zimbabwe

2.1. Area of Focus

The study investigated off-farm, non-farm, and green job opportunities across rural and urban parts of Zimbabwe, focusing on youth and female employment. In line with Zimbabwe’s official definition, youth is defined as people aged 15 – 35 years old. In this study, “employment” can mean both self-employment and wage work, formal and informal.

For the field research, the location was largely based on two factors:

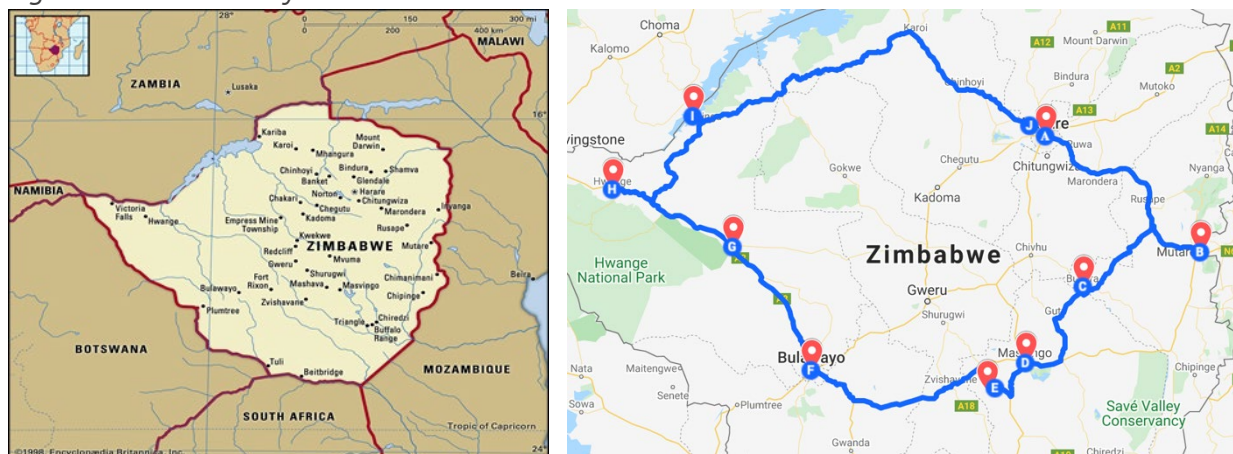
- Relevance to stakeholders’ active intervention locations, particularly areas which are more challenging and complex. Stakeholders include Mercy Corps Zimbabwe, Amalima Loko, and Takunda. The two latter are resilience food security activities (RFSAs) RFSAs funded by the United States Agency for International Development (USAID) Bureau for Humanitarian Assistance (BHA) and led by Cultivating New Frontiers in Agriculture and CARE respectively.
- Distinctly different districts, allowing the exploration of different contexts and opportunities for youth.

Kills were conducted in three provinces—Manicaland, Matebeleland North, and Masvingo—and two metropolitan areas that provide linkages with rural areas. The areas of interest are listed and highlighted in the table and map below.

Table 1. Areas of study in Zimbabwe

Districts	Province	Urban/Rural
Harare	Metropolitan	Urban
Mutare	Manicaland	Urban and Rural
Buhera	Manicaland	Rural
Masvingo	Masvingo	Urban
Chivi	Masvingo	Rural
Bulawayo	Metropolitan	Urban and Peri-urban
Lupane	Matebeleland North	Rural
Hwange	Matebeleland North	Urban and Rural
Binga	Matebeleland North	Rural

Figure 1. Areas of study in Zimbabwe



2.2. Country Context

Contraction of the formal economy gave rise to the informal sector, which has been the primary source of employment for youth in recent years. This trend accompanied an employment shift from high-productivity towards low-productivity activities and from industry and services to agriculture. An estimated 80-90% of the working-age population engage in informal economic activities, contributing almost 40% of GDP.⁶ Seventy-four percent of Zimbabweans earning a living in the informal economy are between 20-44 years old, meaning that youth are highly represented in the informal sector. Women in both urban and rural informal sectors are mostly involved in wholesale and retail trade, operating from their homes or the streets. Men working in the informal sector are more often employed in relatively complex and labor-intensive jobs, such as construction, transport, welding, and carpentry, according to the 2012 Labor Force Survey.

In Zimbabwe, almost 300,000 young people enter the labor market annually, but less than 10% are absorbed into formal employment.⁷ This implies that as the population grows and more young people seek employment, fewer formal jobs are available to absorb them, even for those with in-demand skills. The current economic climate, along with political instability, contributes to low private sector investment in Zimbabwe, reducing availability of formal jobs.

As jobs in the formal sector stopped growing, the population turned to the informal sector for employment. According to the 2019 Labor Force Survey, only 2.9 million people in a population of 14 million are currently employed. The majority work in the informal sector and live in rural areas. Informal employment rose from 84% in 2011 to 95% in 2014,⁸ falling to 76% in 2019.⁹ Besides unemployment, underemployment—which applies to 21% of the population currently working for less than 8 hours per day—is also an issue among workers in the informal economy.¹⁰

People working in the informal sector are mostly unskilled and semi-skilled due to weak access to education and training. Out of the total workforce in Zimbabwe, only 54.3% have attended elementary education. Forty-seven percent of youth are not in employment, education, or training (NEET).¹¹ A skills audit conducted by ILO in 2019 uncovered a deficit of skilled professionals, particularly in formal sectors such as engineering, science, technology, health, and agriculture. Many had migrated to other countries in search of employment since educated and skilled graduates struggled to find work within the country. Around 73% of these migrants had some secondary education, and approximately 7% had post-secondary qualifications, suggesting that the country is losing precious human capital.

2.2.1. IDENTIFIED LONG LIST OF MARKET SYSTEMS

The literature review of the Zimbabwean economy noted the current macroeconomic situation—especially the impacts of the COVID-19 pandemic—and opportunities and challenges for employment at scale. Using this information, the research team identified 21 market systems to potentially explore (see Table 2).

⁶ Harvard University Center for African Studies, 2021.

⁷ African Development Bank, 2013.

⁸ Zimbabwe National Statistics Agency (ZIMSTAT), 2015.

⁹ ZIMSTAT, 2020.

¹⁰ ILO, 2019.

¹¹ ZIMSTAT, 2020.

Table 2. Long list of market systems

Sector	Market systems
Services	Tourism ICT (Information and Communications Technology.) Cross border and petty trading Waste recycling and management
Energy	Solar energy Hydropower Biomass
Industry and manufacturing	Small-scale manufacturing Artisanal mining Retail of motor vehicles, spare parts, maintenance, and repair Construction and infrastructure
Agriculture and forestry	Fisheries Poultry Goats Tobacco Cotton Timber Horticulture Agro-processing Mopane worms Small grains

Subsequently, the research team scored each of the market systems against the criteria listed in Table 3.

Table 3. Market system selection criteria for Zimbabwe

Category of selection criteria	Selection criteria	Weight	Justification for weight
Relevance (40%)	Potential for young women and men to find off-farm and non-farm employment and increase their incomes	8	As described in the ToR, identifying off-farm and non-farm job opportunities, particularly for youth, remains a challenge and is the main objective of this study. Therefore, this criterion carries a high weight.
	Potential for green growth, cleaner production, and compliance with environmental safety standards, leading to accessing green jobs	7	Green jobs are a core focus of this study, as they offer high opportunity and relevance to youth. Therefore, this is weighted high.
	Relevance to support food and nutrition security	4	This study must align with IDEAL's food security and nutrition goals.
	Potential for jobs in rural areas	4	Create job opportunities to benefit the rural areas to support inclusive growth.

Category of selection criteria	Selection criteria	Weight	Justification for weight
	Potential for jobs in peri-urban and urban areas	4	Growth in peri-urban and urban areas will eventually spill over to rural areas.
	Relevance to support linkages between rural and urban economies	5	Linkage between rural and urban economies is key for inclusive growth.
	Work conditions for employees/entrepreneurs are fair and do no harm	4	Create decent job opportunities for young people that do not impose a potential negative impact.
	Potential to increase resilience to shock, for example, COVID-19	4	Shocks like COVID-19 adversely affect supply chains and food security, which negatively impacts jobs.
Growth potential (30%)	End market demand of the product/service	8	Growth in demand (domestically and internationally) ensures that the market is growing, which implies resilience and security of jobs. Therefore, this criterion carries a high weight.
	Potential to produce and supply product/services at scale by domestic producers/suppliers	5	Growth of domestic producers/suppliers can support labor demand.
	Value addition opportunities	5	Value addition is a factor for overall market growth.
	Investment trends, robust business case for investors, prospects for attracting more players or services	7	Business case/incentives for market entry is essential for market growth and sustainability.
	Resilience of the value chain actors' and their abilities to respond to crisis	5	Shocks and crisis remain probable (due to climate change or the pandemic), and the resilience of actors (in the form of diverse supply chain, financial sustainability, ability to digitize) can support sustainability of markets and jobs.
Feasibility of MSD approach (30%)	Availability of market information to market actors in terms of needs, demands, and constraints of target market	3	Well-functioning markets require minimum information asymmetry.
	Will and skill of private sector to expand employment opportunities for young women and men	8	This study uses an MSD approach, therefore incentives and capacity of private sector to create inclusive growth is crucial. Hence, this criterion carries the highest weight.
	Availability of role model actors already working in the market system, such as private sector actors or public agencies	3	Availability of existing actors implies replication / innovation is possible, and the cost of market entry (esp. R&D) will not be as high.

Category of selection criteria	Selection criteria	Weight	Justification for weight
	Alignment with government priority	4	Alignment with government priority implies there is a higher possibility for enabling regulatory environment
	Enabling infrastructure, such as roads, energy, mobile network, etc.	3	These infrastructure support rural-urban linkage as well as growth of VCs.
	Availability of equitable and affordable financing for business start/scale-up	3	Access to finance is one of the enablers for business expansion, which supports growth of jobs.
	Probability for robust market competition without distortion or negative influence by government or donors	3	Market distortion can discourage market actors to provide products/services at market price, negatively affecting their incentives.
	Probability of impact without displacing the people of our concern	3	While the probability is small, it is important to be mindful of displacement, particularly in the case of jobs that require workers that are more skilled.
TOTAL points for market system		100	

2.2.2. SHORTLISTED MARKET SYSTEMS

Based on the scoring system and discussions with stakeholders, solar energy, agro-processing, timber, tourism, and ICT market systems were shortlisted. Due to time and scope constraints, solar energy and agro-processing were selected for a deep-dive analysis along with ICT as a supporting function. Timber and tourism were selected for a light touch analysis.

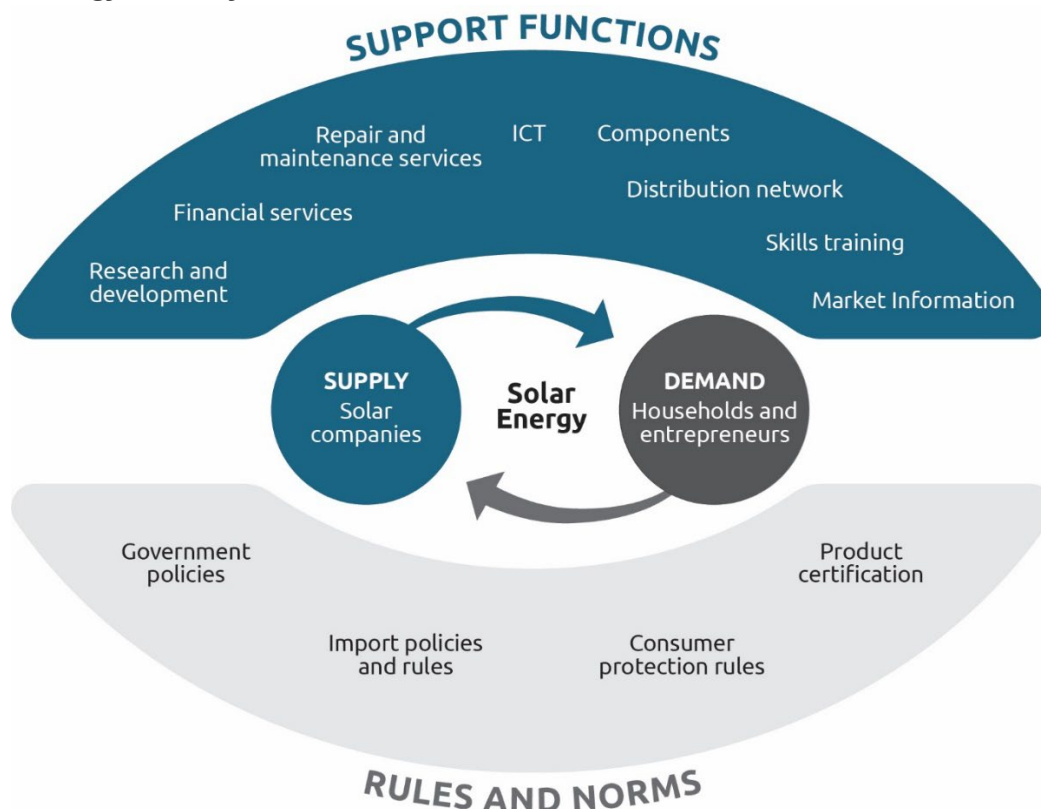
Table 4. Selected market systems

Market system	Rationale
Solar energy	The power crisis in Zimbabwe has opened new possibilities to use renewable energy in domestic and commercial settings. The use of solar for power generation, charging, and lighting equipment is quite common in rural areas. An increase in the use of solar power has lured many small and large-scale private investors to this sector. It represents a growing market and can potentially increase non-farm green jobs for the target group.
Agro-processing	Growing population and urbanization in Zimbabwe has led to increased demand for processed food and food products. There are over 100 small and large-scale industrial agro-processors in the market, and increased demand has encouraged more private sector investment. Agro-processing ranks high in value-addition opportunities, implying higher potential to provide off-farm and non-farm jobs for the target group.
Timber	Construction of residential housing and buildings in urban areas is increasing the demand for wood and wood-based products, for both rural and urban areas. The timber industry is dominated by micro and small enterprises with very few large-

Market system	Rationale
	scale companies, with the presence of 236,000 wood-based micro-small and medium-sized enterprises (MSMEs) in Manicaland Province alone.
Tourism	<p>Tourism is one of the largest industries in Zimbabwe, employing many people. It is considered a labor-intensive sector compared to other non-agriculture sectors and has a very wide value chain, providing good employment opportunities for the target group.</p> <p>As the world moves towards sustainable tourism, there are also opportunities to promote ecotourism. Zimbabwe, for instance, has made ecotourism a major focus, offering potential green job opportunities for the target group.</p>
Information and Communications Technology	ICT is the fastest growing sector in Zimbabwe’s economy and is prioritized by the government. Increased mobile and internet penetration has opened avenues for ICT inclusion in sectors like financial services, health, education, business, entrepreneurship, agriculture, and other services.

2.3. Solar Energy Market System

Figure 2. Solar energy market system



2.3.1. MARKET SYSTEM DEFINITION

The market segment investigated in this study focuses on solar energy products used for domestic and small-scale commercial purposes in rural and some urban areas. This comprises products for household purposes (e.g., power generation, charging, and lighting equipment), and for small-scale commercial purposes (e.g., irrigation in rural areas, powering equipment, and other productive uses). The market actors supplying these services are mainly small to medium importers and manufacturers providing solar

photovoltaic (PV) technology. The market system excludes large operators such as independent power producers (IPPs) who are normally licensed to feed the national electric power grid, as they have low relevance to rural-urban linkages and require high-skilled workers. These operators are unlikely to create jobs for this study’s target group.

The solar market system has a significant potential to induce a multiplier effect to the overall economy and employment in other sectors. Improved access to power would increase efficiency of microenterprises, especially in rural areas, where electrification rate is only 13%, compared to 83% in urban areas.¹² It would also increase service offerings from public facilities, such as schools and clinics (currently 5,300 of which are un-electrified), and improve productivity in other sectors, including agriculture (10,000 other facilities including pumps are un-electrified).¹³

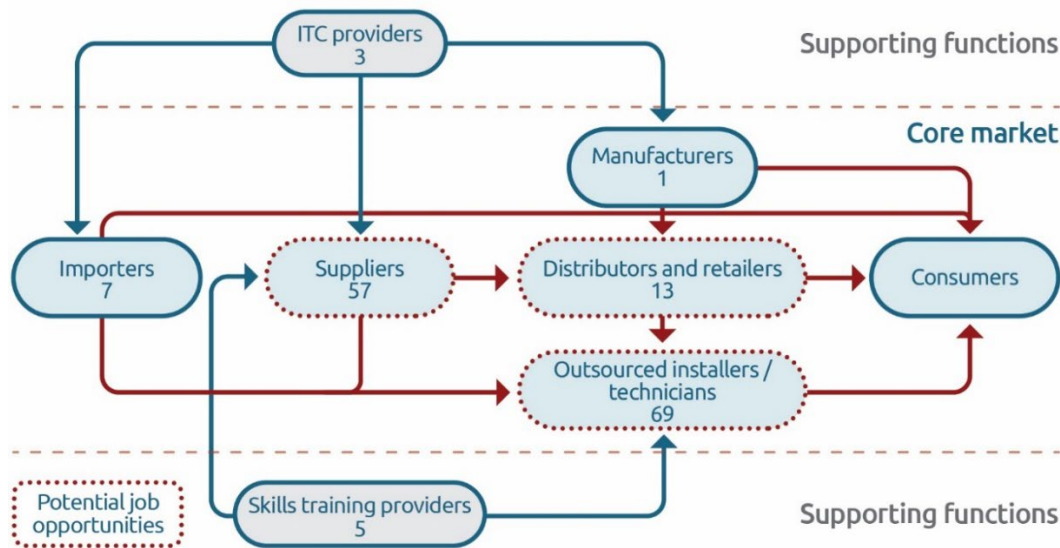
2.3.2. MARKET SYSTEM BACKGROUND

Most solar energy products in Zimbabwe are supplied by businesses that import various solar energy products, such as solar electric power systems, batteries, and component supply. They can also obtain these products from specialist importers. Field interviews only identified one local manufacturer in Zimbabwe producing old-technology lead acid batteries. Suppliers, specialist importers, and manufacturers sell their products through distributors and retailers, but may also sell to consumers directly. These businesses, along with the distributors and retailers, provide installation and maintenance services, either with in-house resources or by outsourcing the service to entrepreneurial technicians and businesses.

Based on interviews, most solar businesses (suppliers, specialist importers, and manufacturers) employ 10-20 people, most of whom are young men paid \$260 in U.S. dollars (USD) per month on average.

Respondents did not disclose any salary differences between men and women. Most of them stated that skills and years of experience determine salaries. Distributors and retailers also employ an average of 10 people. However, a specialist installation company that sources its own components reported having 22 employees. Street level vendors that sell solar products only employ one extra person, usually a family member. An average rural hardware shop that sells solar products has three permanent employees and contracts some youth for installations.

Figure 3. Solar energy market map and estimated number of market actors in Zimbabwe



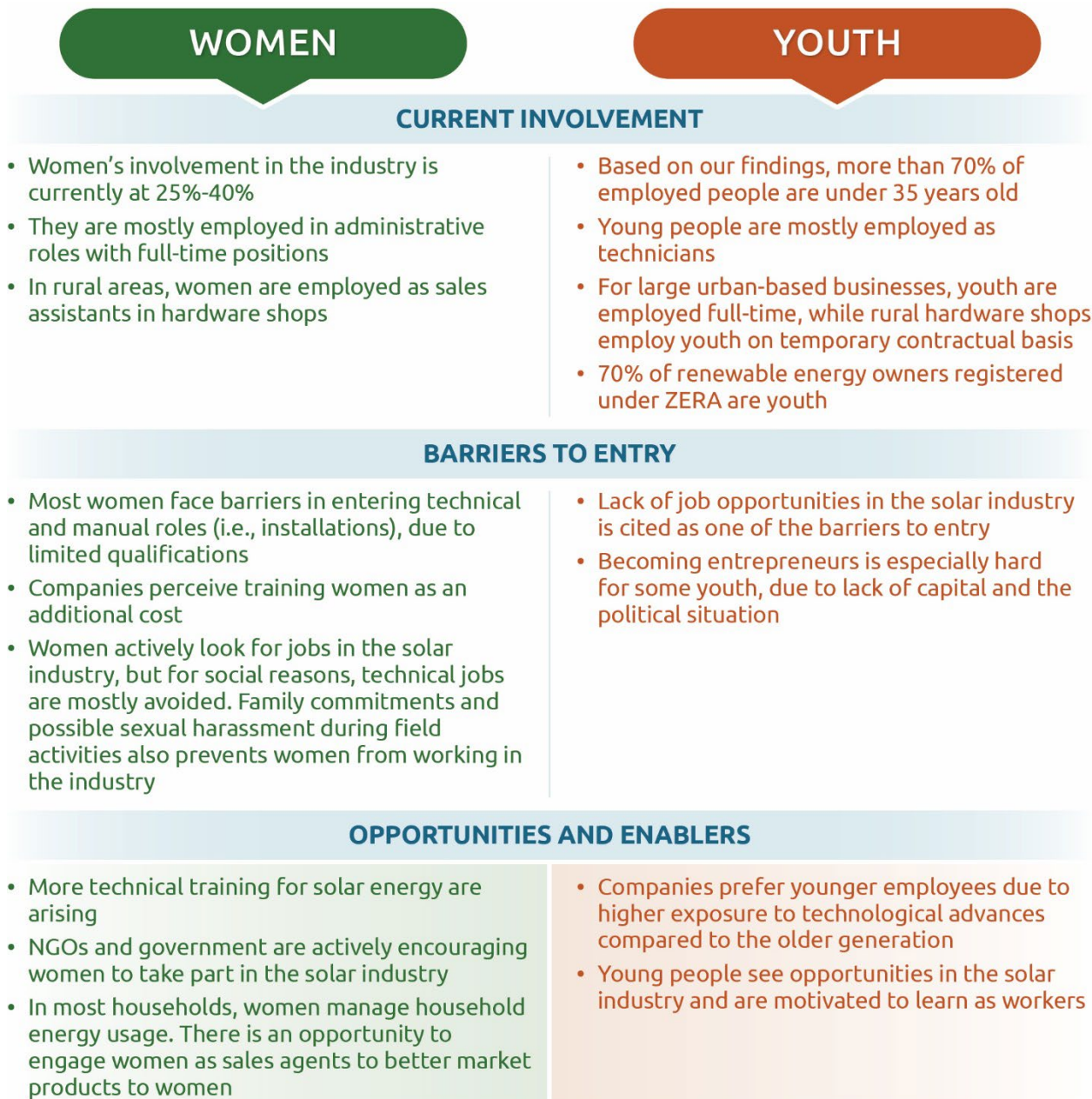
Source: Zimbabwe Energy Regulatory Authority (ZERA) database and online secondary research

¹² Ministry of Energy and Power Development, 2019.

¹³ Mzezewa & Murove, 2017.

Most women face barriers to perform technical and manual work (i.e., installations), and primarily perform administrative duties in solar energy businesses. Women’s low uptake of technical engineering skills places them at a disadvantage to becoming more involved in the industry. Based on discussions with technical and vocational education and training (TVET) providers, women are more attracted to hotel management, catering, cosmetology, and baking courses. Nevertheless, more women are entering the engineering discipline, though the proportion of this uptake is still only 25%. Some solar companies have increasingly employed women for technical positions. For example, Chloride has started employing women in their graduate trainee program.

Figure 4. Summary of key barriers and opportunities for women and youth in the solar industry



2.3.3. AREAS OF UNDERPERFORMANCE

Zimbabwe's national electrification rate is 42%, where 83% of urban households have access to electricity compared to 13% in rural areas.¹⁴ The solar energy industry can address these gaps, but the market is currently performing under capacity. High cost of imports, low purchasing power, limited availability of supporting services (i.e., installation and maintenance), and limited distribution hinder the industry's potential. Removing these barriers would not only address the country's energy deficit, but also create more jobs, particularly for youth and women. In the solar industry, these include positions such as sales agents, distributors, factory workers, entrepreneurial technicians, and other jobs created by home industries using solar power.

Price

Zimbabwe has suffered chronic power undersupply due to recurring drought and climate change, leading to a growing market for private solar energy use. However, products for alternative energy sources are still unaffordable for many. These products vary in price and application, from small lighting units (mainly used for lower income households) for \$10 USD, solar water heaters varying from \$150 to \$1,200 USD, solar PV panels from \$80 to \$340 USD, inverters from \$150 to \$300 USD, and solar batteries from \$48 to \$360 USD.¹⁵ Most packages offer multiple solar panels, inverters, batteries, and protection kits, but are not affordable for most people in Zimbabwe. For reference, in 2020 the government set the minimum wage for the private sector at \$62.5 USD per month.¹⁶ Most civil servants only earn about \$150 USD per month.

High import prices of solar energy products and suboptimal demand lead to high operating costs, limiting industry growth and its ability to absorb more jobs. In addition, rural distribution may impose high risks and costs for businesses. The high import costs are due to the high import taxes and customs, which were set to protect local manufacturers. Nevertheless, local production is not large enough to meet demand, leading to policy failures. For instance, a Chinese-made 12-volt battery for use with a small solar system costs \$75 USD for sellers. However, import costs, taxes, as well as margins increase the market price to \$350 USD.¹⁷ Recently, the government enacted import duties and tax exemptions to address power shortages, but these products are still subject to 15% value-added tax. To offset these additional expenses, particularly when entering rural areas, businesses need to fully understand potential market demand and costs of setting up last-mile distribution systems.

Quality

Low purchasing power has led urban and rural consumers in Zimbabwe to use low-quality, and often defective, solar energy products to address their needs. This includes second-hand products often brought in by cross-border traders. Zimbabwe shares porous borders with South Africa, Botswana, Zambia, and Mozambique, creating smuggling avenues for these products. This informal trading is not subject to quality and safety checks and approval, and the products are often defective and impossible to return. In addition, most solar products imported from Zimbabwe have not been quality-certified by international standards, such as VeraSol.

Even though the number of solar installers and maintenance service providers are growing, the availability of these services and skills in rural areas are limited. In general, the number of installation businesses are growing, creating more employment opportunities, especially for youth. Nevertheless, these companies are mostly based in Harare and Bulawayo, limiting service access for rural consumers.

¹⁴ Ministry of Energy and Power Development, 2019.

¹⁵ Mzezewa & Murove, 2017.

¹⁶ Vinga, 2020.

¹⁷ Ndhlovu, 2019.

Quantity

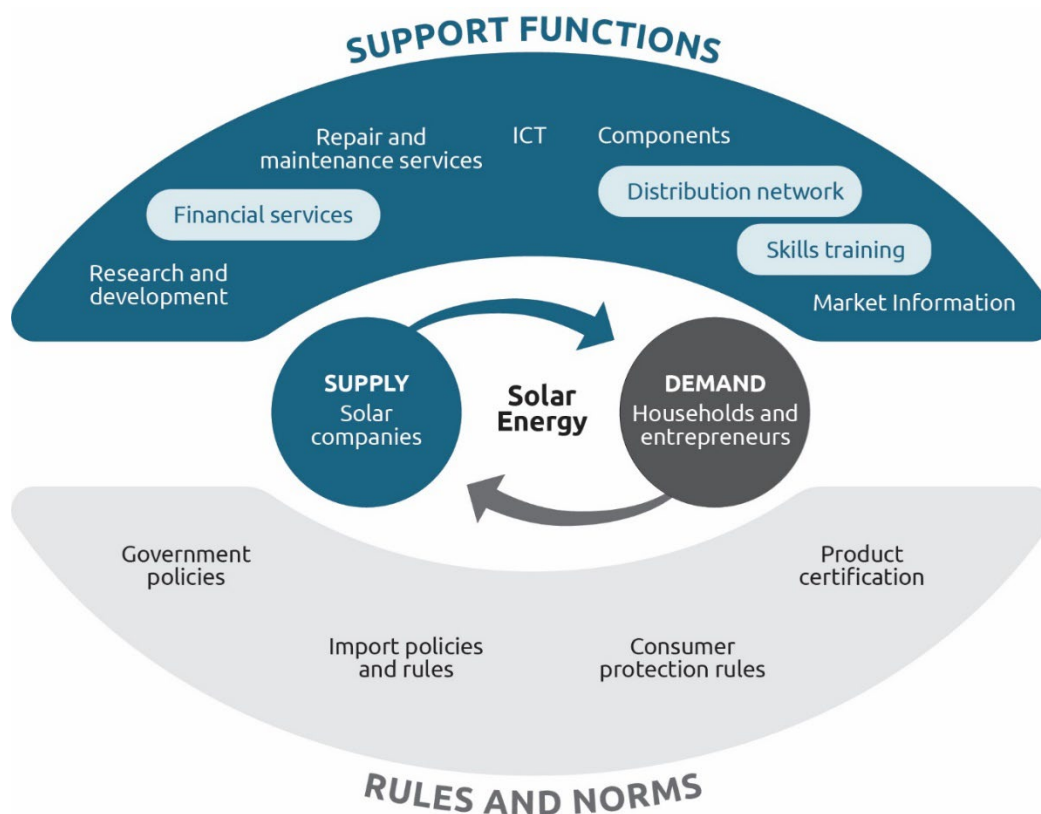
Based on discussions with solar energy businesses, consumer proportion between rural and urban individual consumers is almost evenly distributed, although rural consumers lack both information and purchasing power. The demand for solar energy, particularly for lighting and irrigation, is higher in rural areas than urban ones. However, affordability challenges hinder rural uptake. This may cause companies to limit sales channels and quantity of products distributed in rural areas, reducing sales and distribution jobs for women and youth.

The pandemic has also caused a supply shortage of solar energy products. Mobility restrictions and border closures led to temporary shutdowns of manufacturing units and import of materials. This has prevented businesses from producing and procuring solar energy products and components.

2.3.4. ROOT CAUSE ANALYSIS

Based on these underperforming areas, the research team analyzed the underlying causes influencing the growth of the solar market industry. These root causes are linked to three main supporting functions: financial services, distribution channels, and skills training. Once these root causes are addressed, it can unlock the solar industry’s potential, creating more jobs. These root causes can also be addressed in the short- and medium-term, making it feasible for a quick-win intervention.

Figure 5. Root causes of underperformance in the solar energy industry



Limited Access to Finance Across the Market Chain

High procurement and product costs, along with consumers’ low purchasing power, mainly in rural areas, has curtailed the industry’s growth. Moreover, most consumers must pay in cash for solar products, with costs as high as 2-3 times their monthly income. In many other African countries, pay-as-you-go (PAYGO) schemes, in which consumers pay 10-20% of product price upfront and the rest as a loan over 1-2 years, can improve affordability. Under PAYGO, companies not only provide products and services

but also the necessary capital to finance consumers, but it may take more than three years for companies to materialize product inventory into cash flow. This requires companies to have strong access to capital in order for the scheme to work.

Based on field interviews and secondary research, only three solar businesses (Elaine Solar, Zonful Energy, and Chloride) offer PAYGO schemes to consumers. In 2018, Zonful Energy secured capital from impact investor Energy Access Ventures,¹⁸ while Chloride is a part of a large holding company.

Interviews indicate most businesses in Zimbabwe are self-financed and do not have access to capital, making it difficult to implement PAYGO schemes. They cited instability in financial markets (caused by dual currency and parallel exchange rates), high and unstable interest rates, and discouragement of financiers (due to perceived risks) as the main impediments. Most local investors were also skeptical about renewable energy investments because the intended beneficiaries, mainly rural households, have no financial security.¹⁹

Limited Distribution and Maintenance Channels and Market Information

Although demand for solar energy products among rural consumers and entrepreneurs is rising, the distribution channels and supporting services, such as installation and maintenance, linking urban businesses and rural consumers are weak. According to the ZERA database of solar energy providers, 84% (120 out of 142) of businesses are located in Harare, while Bulawayo-based businesses follow with 8%. Often, rural consumers are forced to travel to urban areas to purchase products, incurring transportation costs.

In addition, installation, repairs, and maintenance are undertaken by technicians based in urban areas, placing the extra costs of transport and logistics on rural consumers. This also applies to rural entrepreneurs installing solar-powered irrigation systems and food dryers for their businesses. In an interview, a farm owner stated that he spent around \$3,000 USD to install an irrigation system. His farm is in Chivi, 350 kilometers (km) from Harare, and he had to transport both the products and installation workers from Harare, which cost him an additional \$350 USD. Despite awareness from rural consumers and entrepreneurs, solar usage in rural areas is still limited to relatively high-income earners. Limited information on rural market potential hampers urban business expansion to rural areas.

Shortage of Skilled Workers in Rural Areas

Minimum availability of workers trained in solar technology, particularly in rural areas, also prevents solar businesses from expanding their operations to rural areas. Some interviewees in the solar industry, located in urban areas, reported providing skills training in-house to perform sophisticated installation and maintenance tasks, as well as providing product information. However, these trainings can be difficult for rural people to get to. GREEN Solar Academy and Young Africa Zimbabwe, for example, are located in Harare and Bulawayo. There are also installation courses offered at local vocational training institutions. However, they do not have any placement programs guaranteeing young people employment upon graduation.

2.3.5. ENVISIONED SYSTEMATIC CHANGE

Unreliable power sources gave rise to the solar energy industry. Ensuring women and youth have the necessary technical skills can prepare them to enter the industry. By working closely with skills institutions, implementers should develop training curriculums that match industry demand and cater to the needs of rural women and youth, who may have less technical experience. In parallel, removing barriers for solar businesses to address the growing demand in rural areas will further induce growth for the industry and enable more absorption of women and youth into employment. When businesses realize the business viability to address rural demand, and identify profitable ways to reach rural consumers, they will be more willing to invest in and expand their distribution channels in rural areas. Other supporting services, such as installation and maintenance, and retailers would also respond to the growth and create job opportunities.

¹⁸ Impact Alpha, 2018.

¹⁹ ESI Africa, 2021.

Solar power is needed not only for personal consumption, but also for production, as many entrepreneurs are located in rural areas. Growth of the solar market in rural areas would also positively influence job creation for women and youth in the off-farm and non-farm industries.

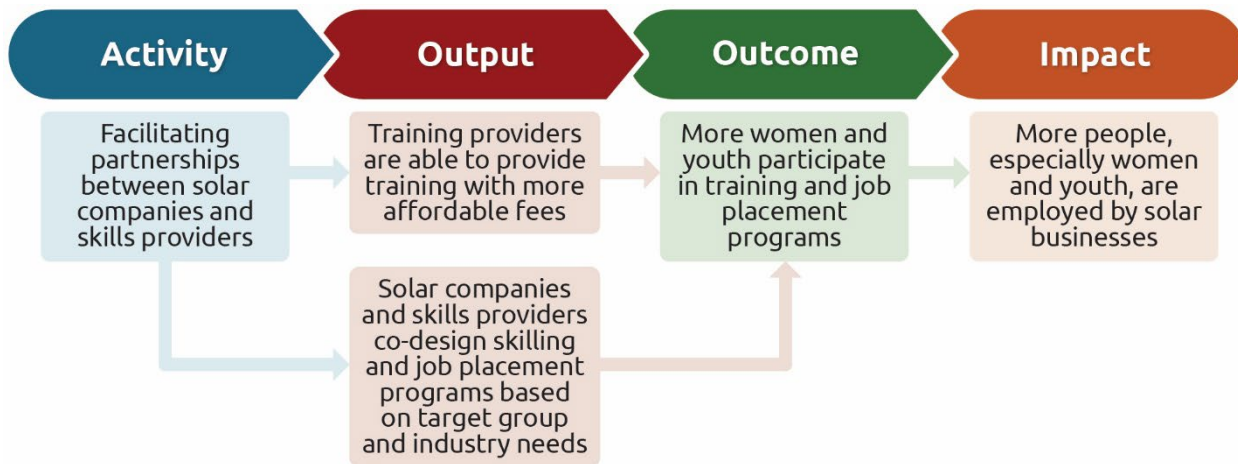
2.3.6 INTERVENTION IDEAS TO AVHIEVE SYSTEMIC CHANGE

Intervention 1: Design Appropriate Skilling and Job Placement Programs for Rural Youth and Women

Theory of change

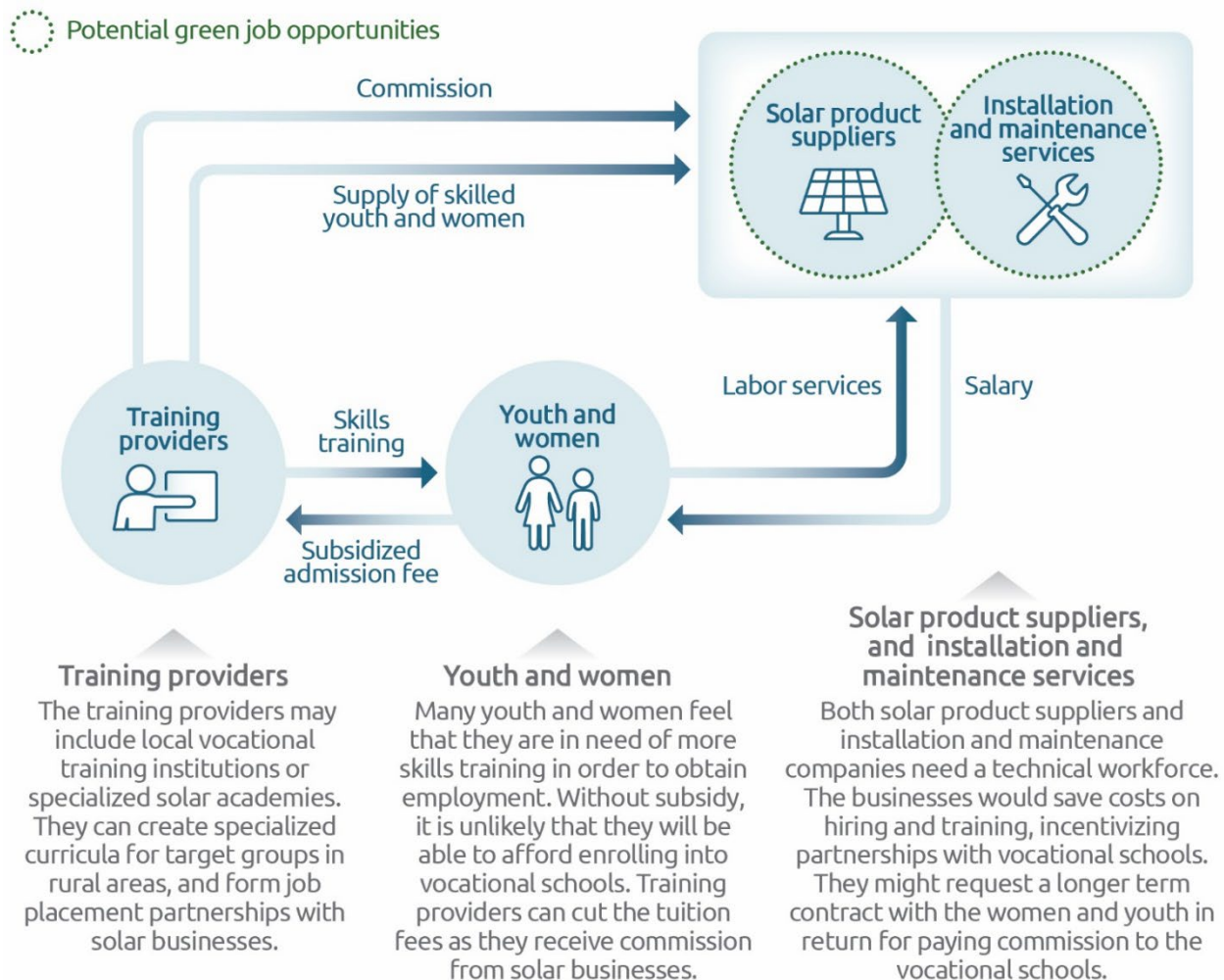
Facilitating partnerships between skills institutions and solar companies would enable the creation of industry-appropriate training programs responsive to the needs of women and youth. Creating a partnership model between solar companies and skills providers could also allow skills providers to cover some costs of the training, lowering the tuition fee for women and youth. The target groups would then be able to participate in more skilling and job placement programs, increasing their likelihood of becoming skilled workers in the solar industry.

Figure 6. Theory of change for Intervention 1: Design appropriate skilling and job placement programs for rural youth and women



Business model

Figure 7. Business model for Intervention 1: Design appropriate skilling and job placement programs for rural youth and women



Potential Partner

TVET institutions should be the main partner for this intervention. Specialized solar academies are often dedicated to people already working in the industry or those with more advanced math skills. There are TVET schools available in rural areas, for example Mushagashe Training Center in Masvingo, Mutare Vocational Training Center and Magamba Training Center in Mutare, and Don Bosco Technical College in Hwange. If needed, the TVET institution could also partner with specialized solar academies, like Green Solar Academy, to enhance their solar training curriculum. There is also potential to engage with existing NGOs already experienced with projects and training programs around solar markets in Zimbabwe, for example, SNV. This would allow implementers to learn from their experience and modify the intervention accordingly.

Potential Facilitation Activities

The primary facilitation activity should start with skill needs identification, focusing on rural areas and target group needs. Women and youth in rural areas have different access to technical skills (i.e., engineering qualifications) compared to their urban counterparts, and may need additional introductory courses. They may also have different interests and aspirations, which is why it is important that the target group be involved in the skills analysis process.

The primary facilitation activity should be complemented by a detailed mapping of labor skills demand in the solar industry. To design an appropriate program, there should be a match between labor supply and demand. In addition to technical and vocational skills, companies may need “soft skills,” which rural target groups may lack. These include communication, language, and job-search skills, entrepreneurship development (for promoting self-employment), and other skills.²⁰

Lastly, facilitate a partnership between TVET institutions and solar companies. This partnership may entail co-design or skilling and job placement programs. Since many companies in Zimbabwe must outsource skilled workers from other countries, partnering on programs could reduce hiring and training costs. They might request a longer-term contract from trainees in return for paying for vocational schools.

Potential Risks and Mitigation

Possible risks for this intervention include the target group’s low motivation to attend TVET education, as they would forgo their income stream while attending the program, and the target group dropping out before finishing their courses. The target group may already be engaged in an economic activity with a relatively stable income stream and enrolling in a 6-month skilling program may set them back financially. This may also cause high dropout rates among students.

Possible mitigations include: (a) designing intensive courses that take less time and provide scholarships; and (b) designing a rigorous selection process for women and youth to enter the skilling program. Organizing training periods to accommodate participants’ outside work schedules can further reduce risks. Scholarship support would also be important and could be provided by partnerships with local governments. A rigorous selection process for women and youth, to identify motivation and commitment, could also reduce dropout rates.

Route to Scale

For the pilot phase, implementers would work with one TVET institution in Masvingo (for Takunda), and one in Hwange (for Amalima Loko), as well as two solar companies. Masvingo has great accessibility to Harare and Bulawayo, where most solar businesses are located. Additionally, its economy relies on tourism and agriculture, suggesting rural businesses demand solar energy products—an incentive for businesses in Bulawayo and Harare to open distribution centers there. A Masvingo TVET institution interviewed by the research team also offers boarding, accommodating students with transportation issues. Hwange also relies on tourism, which creates potential demand for solar products, and is a short distance from Bulawayo.

The scale-up phase would entail continuing the pilot intervention with existing partners for a second year and working with two additional TVET institutions in rural areas of Mutare (Takunda) and Lupane (Amalima Loko), with two additional solar companies. The choice of these locations is based on the proximity to Harare and Bulawayo, respectively, allowing trained women and youth access to employment in urban-based solar companies. It would also be easier for them to open new solar retail businesses in Mutare and Lupane. The proximity would also reduce logistical costs in transporting products from urban areas. In addition, Mutare and Lupane also have a selection of TVET institutions.

Impact Projection

The pilot intervention, which would be implemented in Masvingo and Hwange districts, is projected to create 90 jobs in the first year. The underlying assumption is that each TVET school would take 50 students in one term, expecting a 10% dropout rate. In the second year, TVET institutions would likely take on the same number of students, while implementers expand the intervention to two additional districts. It is also assumed that 40% of these students would work for factories in urban areas, and the rest would either be employed by the solar company in the rural distribution centers or set up their own business. As this would be a direct intervention for youth and women, it is difficult to estimate the indirect impact on

²⁰ Lange, Hofmann, & Di Cara, 2020.

jobs. Please note that these projections are for the first and second year only. A continued scale-up for another three years, for instance, would result in a larger impact.

Table 5. Intervention's projected impact on job creation

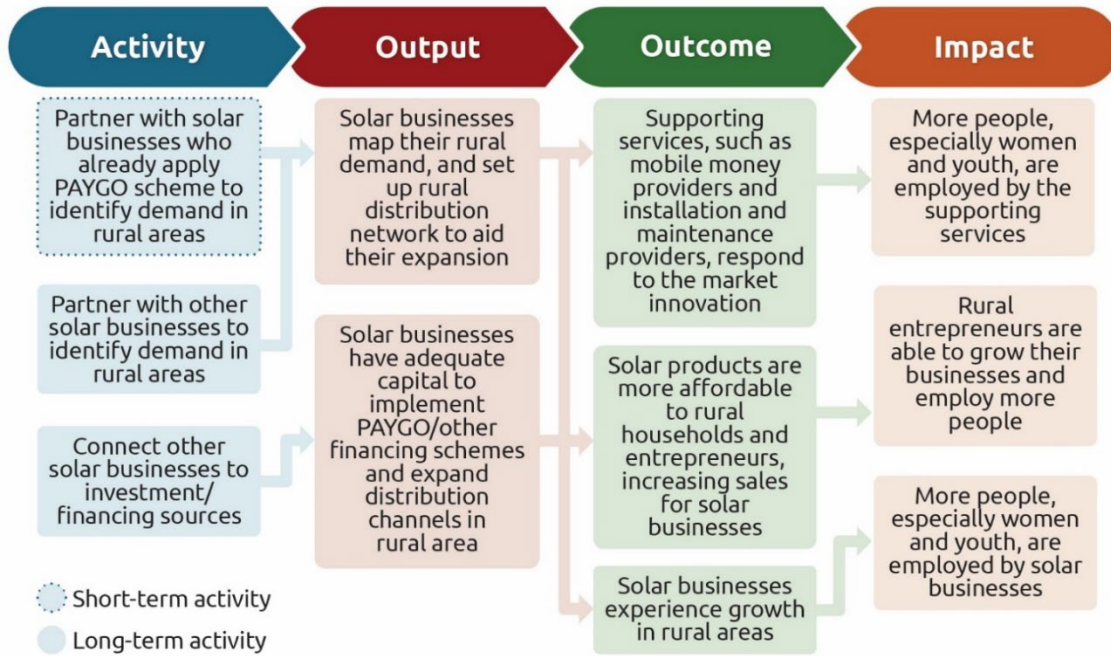
Job type	Pilot	Scale up	Percentage of women beneficiaries	Percentage of youth beneficiaries	Potential income (in USD)
	Expected number of beneficiaries	Expected additional number of beneficiaries			
DIRECT JOBS					
Factory workers	36	72	20%	60%	\$300
Installations and maintenance technicians	54	108	10%	60%	\$150
Total direct jobs	90	180			

Intervention 2: Facilitate the Adoption of PAYGO or Other Product Financing Models by Connecting Solar Companies to Financing Sources

Theory of Change

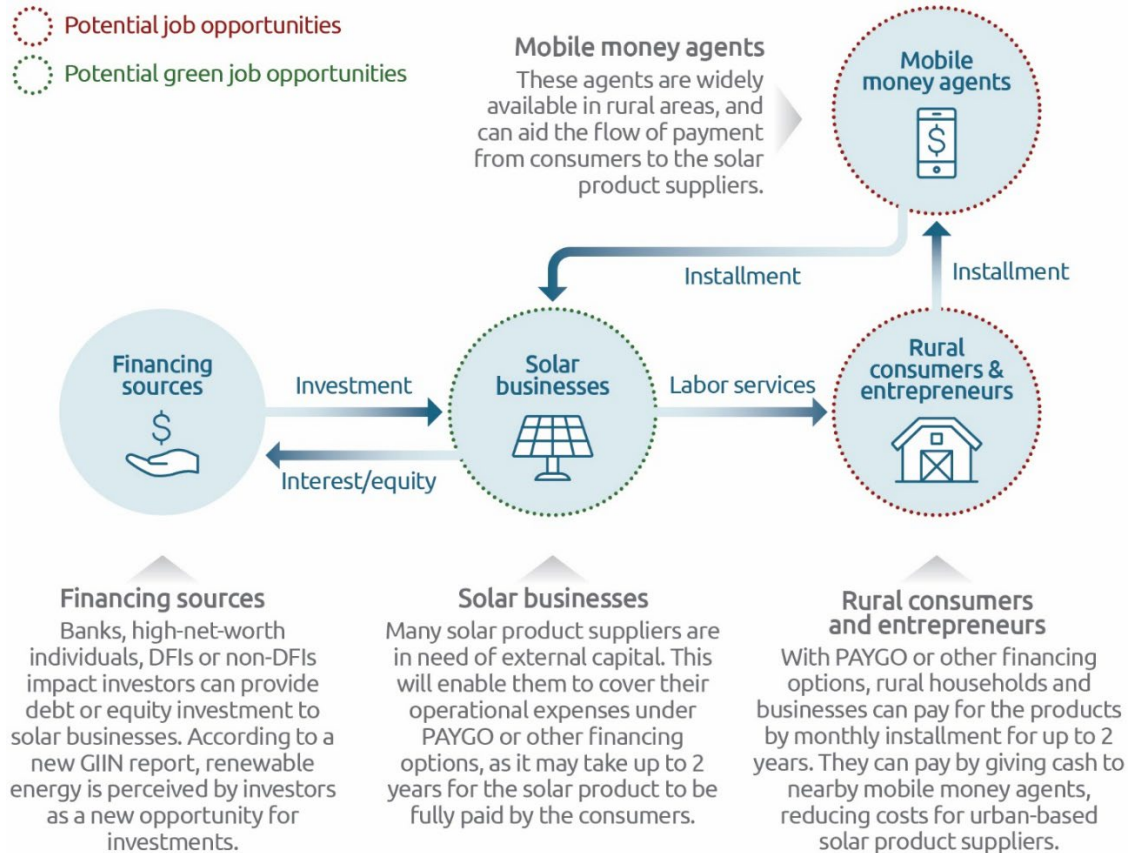
By assisting PAYGO solar product suppliers to map demand in rural areas and connecting other solar businesses to financing providers—such as commercial banks, high net-worth individuals, and impact investors—they could better enter the rural market. PAYGO businesses could expand their operations to rural areas with cost-efficiency, and other solar businesses would have more resources to cover their initial operational expenses to provide PAYGO or other credit schemes to rural consumers and entrepreneurs. This would enable growth not only for the solar businesses but also for other supporting services such as mobile money providers and installation and maintenance providers. Rural entrepreneurs would also experience growth in their businesses. Altogether, this would lead to increased employment for women and youth.

Figure 8. Theory of change for Intervention 2: Facilitate the adoption of PAYGO or other product financing models by connecting solar companies to financing sources



Business Model

Figure 9. Business model for Intervention 2: Facilitate the adoption of PAYGO or other product financing models by connecting solar companies to financing sources



Potential Partner

In the short-term, the main partner should be an existing PAYGO provider, as they would have already secured funding to operate and expand their PAYGO models in rural areas. This business model has already been proven to work in other African countries and has great potential to address rural energy needs.

For long-term scale-up, implementers should partner with a relatively large-scale solar supplier, as they are more likely to secure funding. Investors see opportunity in renewable energy, particularly because it is not heavily dependent on licenses or government.^{21 22} Financial providers are more incentivized to fund large-ticket size disbursements (>\$100,000 USD) and large-scale return potentials. These partners may wish to provide their consumers with a traditional credit financing service, or a PAYGO scheme. To operate efficiently with this new financing scheme, a solar business may also need a strong ICT system in place to synchronize mobile money payment to the customer relationship management (CRM) system. However, solar suppliers could outsource this service to an ICT systems provider for PAYGO, such as Angaza, which has operations in Burkina Faso, Côte d'Ivoire, Kenya, Senegal, Tanzania, Uganda, and Zimbabwe.

Potential Facilitation Activities

Short-term Activities:

The primary facilitation activity should begin with mapping the rural market demand for solar energy. The mapping should include the 4As aspect of rural marketing: acceptability, affordability, availability, and awareness. First, implementers would map types of products most in-demand by rural households (lighting and charging equipment) and rural entrepreneurs (solar powered dryers and irrigation systems). Second, they would identify the best payment structure (down payment and installments) most convenient for rural consumers, who mostly have unstable income streams. In terms of availability, implementers would need to map the required distribution system to reach new consumers and entrepreneurs located in the most remote, rural areas, and the required financial and human resource investment to do so. Finally, they should map how information spreads in rural communities, as it would be useful for developing marketing strategies that educate, introduce new solar products, and generate demand. Overall, this mapping would advise implementers on the required investment for rural expansion.

Secondly, implementers should develop an inclusive recruitment policy and inclusive workplace policy for women and youth. The intervention would help solar companies expand, requiring new hires. However, due to a lack of network and technical background, women and youth would be at a disadvantage in the hiring process. By identifying barriers and creating workplace solutions for these populations—such as providing in-house training and flexible working hours—more women and youth would gain and retain employment.

Long-term Activities:

For other solar businesses who have not adopted the PAYGO model, implementers should assist them in identifying appropriate financing models for their businesses' risk appetite, financial strength, and target market. The PAYGO model is desirable because it drives down the cost of distribution and follow-up. It also makes payment recovery easier because companies can remotely switch units off when customers miss payments. A PAYGO model can also include a utility-based payment, where customers only pay for what they use, without ever owning the systems in their homes. Nevertheless, companies need to have a strong operational system (or relationship with ICT and mobile money providers) in place to apply the PAYGO model. Without this, some companies may be limited to providing traditional credit mechanisms to rural

²¹ GIIN and Open Capital Advisors, 2016.

²² Clarke, 2020.

consumers. This will come at a cost, requiring more physical distribution systems and agents, and more robust credit background checks for rural consumers.

Second, implementers should map the potential financial service providers based on the current financial sector landscape in Zimbabwe. Implementers could start by engaging with banks and high-net-worth individuals²³ that invest in local businesses. Despite the high interest rates, banks have generally shown some willingness to lend, indicated by high loan-to-deposit ratios.²⁴ Local high-net-worth individuals are also accessible through fund managers, along with trusts and foundations aiming to provide communities with access to basic services.²⁵

Impact investments could be another long-term option and would provide a more sustainable pathway for financing. Their availability, particularly for non-development finance institutions (DFIs), is still limited, but is growing at a modest rate. VC4 Africa, an impact investment network, is a key player in the Zimbabwean impact investment industry. Public finance from DFIs like the African Development Bank, the IFC, or the CDC Group could also play a key role in the intervention. They may also already have locally based impact fund managers willing to support smaller ticket sizes. Several DFI-supported investment funds already support renewable energy initiatives in Africa, for example, The Africa Renewable Energy Fund, Beyond the Grid Fund for Africa, and The Clean Technology Fund.²⁶

Third, implementers should assist the private sector to develop a pitch to attract financing. Experience working with PAYGO businesses in rural areas will generate good learning, knowledge, and networks in the industry. Because information asymmetry may cause banks to provide higher interest rates to solar businesses, it is important to showcase a detailed business case to potential investors. Some investors provide technical assistance to ensure business readiness for investment, which could be utilized to improve the business model. Otherwise, implementers could co-invest in this intervention through hiring a corporate finance consultant or strategy consultant to assist companies in preparing their business pitch.

Route to Scale

The intervention should start with a pilot phase, where implementers would work with an existing PAYGO service provider. A good starting point would be in Chivi (for Takunda) and Lupane (for Amalima Loko) districts, where solar equipment retail shops already exist. Initially, the solar supplier business could partner with existing retail shops to cut down initial costs. These two districts also have many agro-processors in place, indicating potential demand for solar energy products.

Once the business model is proven, there are two ways to scale-up the intervention:

- 1. Expand the reach of the short-term intervention (with the same PAYGO provider) to two additional districts,** such as Buhera (Takunda) and Binga (Amalima Loko), and work with one additional PAYGO provider. Buhera has a few solar hardware shops in place, and Binga has ample agro-processors and farms requiring solar-powered dryer and irrigation products.
- 2. In the long-term (possibly in the third year of implementation), partner with two additional solar suppliers and connect them to financial service providers.** Sharing the success of the pilot intervention would incentivize actors to crowd-in. This intervention could be implemented in Masvingo, Hwange, Mutare, and Lupane, to complement the first intervention idea that improves youth and women's skills in solar technology.

²³ Individuals or families who have an annual income exceeding \$150,000.00 USD and have investable assets of more than \$1 million USD.

²⁴ Dube, Abel, & Mugocha, 2013.

²⁵ For an overview of the list of foundations or trusts by high-net-worth individuals, see: SIVIO Institute, 2020.

²⁶ The International Renewable Energy Agency (IRENA), 2022.

Potential Risks and Mitigation

Possible risks for the intervention include negative profitability of last-mile distribution, low collection rate on the installment payment, and competition from low-quality products. Some PAYGO companies in other countries have stated that rural, physical last-mile distribution incurs too many costs for companies. Companies may also face unfair competition from smuggled low-quality products in rural areas. Unstable rural incomes may also hamper rural consumers' ability to pay.

These risks could be mitigated by (a) estimating the profitability of a last-mile distribution unit²⁷ and testing the business model in a rural area with a relatively dense population; (b) developing an incentive system for sales agents; and (c) providing proper education and information to consumers. Testing the intervention in a densely populated rural area may be cost-effective for initial investment, and then the company could expand distribution into more remote areas once they have more experience and knowledge of the local context. Developing an incentive system for sales agents, where they obtain commission each time a consumer pays their installment fees, would prompt agents to be more careful in their due diligence process when selecting consumers. Lastly, education-based marketing would inform rural consumers about different solar product qualities.

Impact Projection

The pilot intervention for Chivi and Lupane districts, in partnership with PAYGO companies, is projected to create 196 direct and indirect jobs. Implementers should expect to reach 200 rural consumers, 40% of whom would be rural entrepreneurs. This assumes that each sales agent would reach 20 rural consumers—five of whom are expected to be entrepreneurs likely to hire three new people due to business growth. Based on interviews, a retailer would need eight additional employees to open a completely new branch. As implementers would start the intervention with existing retailers, we assume they would hire four additional people.

The scale-up intervention would create a cumulative of 784 jobs. This would be achieved by first expanding to two new districts and partnering with one additional PAYGO provider. In the long-term, implementers would also partner with two additional solar businesses who have not adopted the PAYGO model and implement the intervention in four additional districts. Please note that the impact projected only covers the first three years of implementation and does not account for overlap with impact numbers obtained from the first intervention idea.

Table 6. Intervention's projected impact on job creation

Job type	Pilot	Scale-up	Percentage of women beneficiaries	Percentage of youth beneficiaries	Potential income (in USD)
	Expected number of beneficiaries	Expected additional number of beneficiaries			
DIRECT JOBS					
Factory workers	10	40	20%	60%	\$300
Administration officers	3	12	80%	70%	\$200
Company sales agents	10	40	50%	70%	\$300

²⁷ TIL Ventures and Lighting Global, 2018.

Job type	Pilot	Scale-up	Percentage of women beneficiaries	Percentage of youth beneficiaries	Potential income (in USD)
	Expected number of beneficiaries	Expected additional number of beneficiaries			
Installation and maintenance technicians	10	40	10%	60%	\$150
Retail shop workers	8	32	50%	60%	\$150
Total direct jobs	41	164			
INDIRECT JOBS					
Mobile money agents (part-time)	5	20	50%	50%	\$100
Rural workers	150	600	40%	40%	\$130
Total indirect jobs	155	620			

2.3.7 SUMMARY OF THE SOLAR ENERGY MARKET SYSTEM

Given the potential to create impact at scale, the solar market system is worth the investment. Of the intervention ideas, the skills intervention is the most feasible but may not reach scale as quickly as the second intervention idea. While the second intervention idea requires more time and effort, it would create more sustainable change and have a wider impact on the market system. To obtain a full picture of the impact projection, as a next step, stakeholders should conduct a demand mapping study for solar products in rural areas, based on the rural electrification rate, willingness to switch to alternative energy sources, and willingness to pay for solar products. Additionally, there should be a needs assessment for youth and women potentially targeted for the skilling intervention. The study should cover current levels of competency, skills demanded from the solar industry, and appropriate training options for women and youth.

2.4. Agro-processing Market System

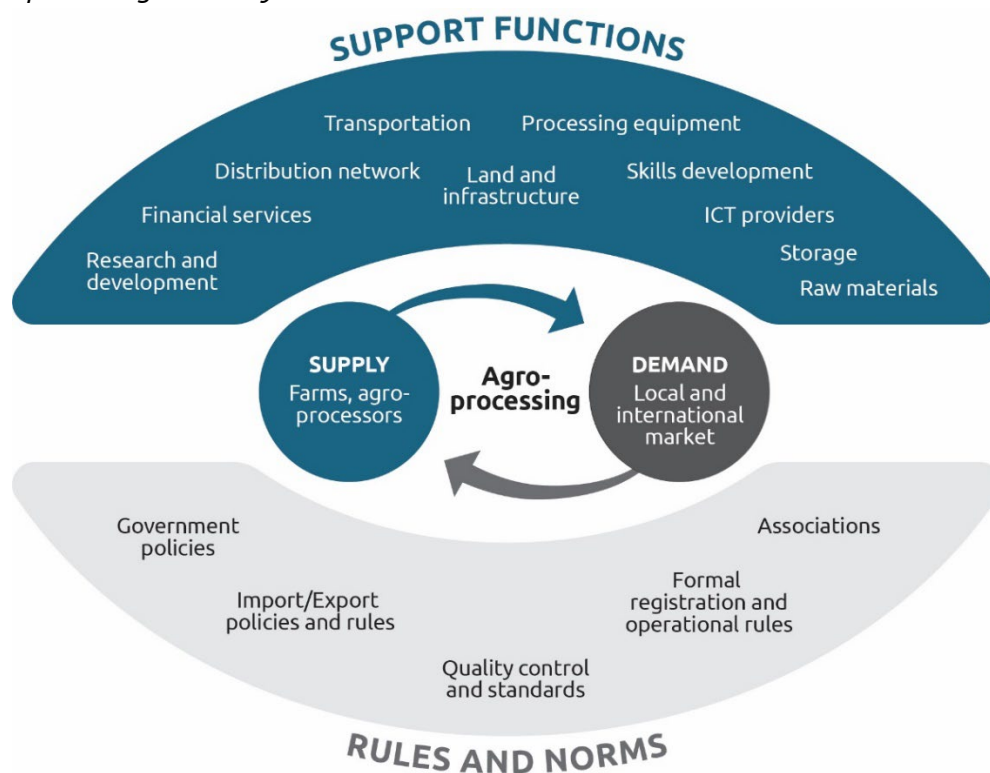
2.4.1. MARKET SYSTEM DEFINITION

Agro-processing is a set of activities carried out on an agricultural commodity to transform it into food. The activities encompass all subsequent operations after harvest until the product reaches the final consumer in the desired form, packaging, quantity, quality, and price.²⁸ This study focuses on crop processing activities, mainly for grains (maize, sorghum, wheat oilseeds, and livestock feed), horticulture (canned fruits and vegetables), and meat processing activities. Cereal and cereal products (maize, sorghum, and wheat), horticulture products, and beef, are the most processed commodities in Zimbabwe, and are produced by most large-scale processors. Small, medium, and large-scale processing businesses in rural and

²⁸ Mhazo, Mvumi, Nyakudya, & Nazare, 2011.

urban areas are included in the analysis section. The dairy value chain was not explored in this study, as it was not identified as a high potential sector when selecting market systems.

Figure 10. Agro-processing market system



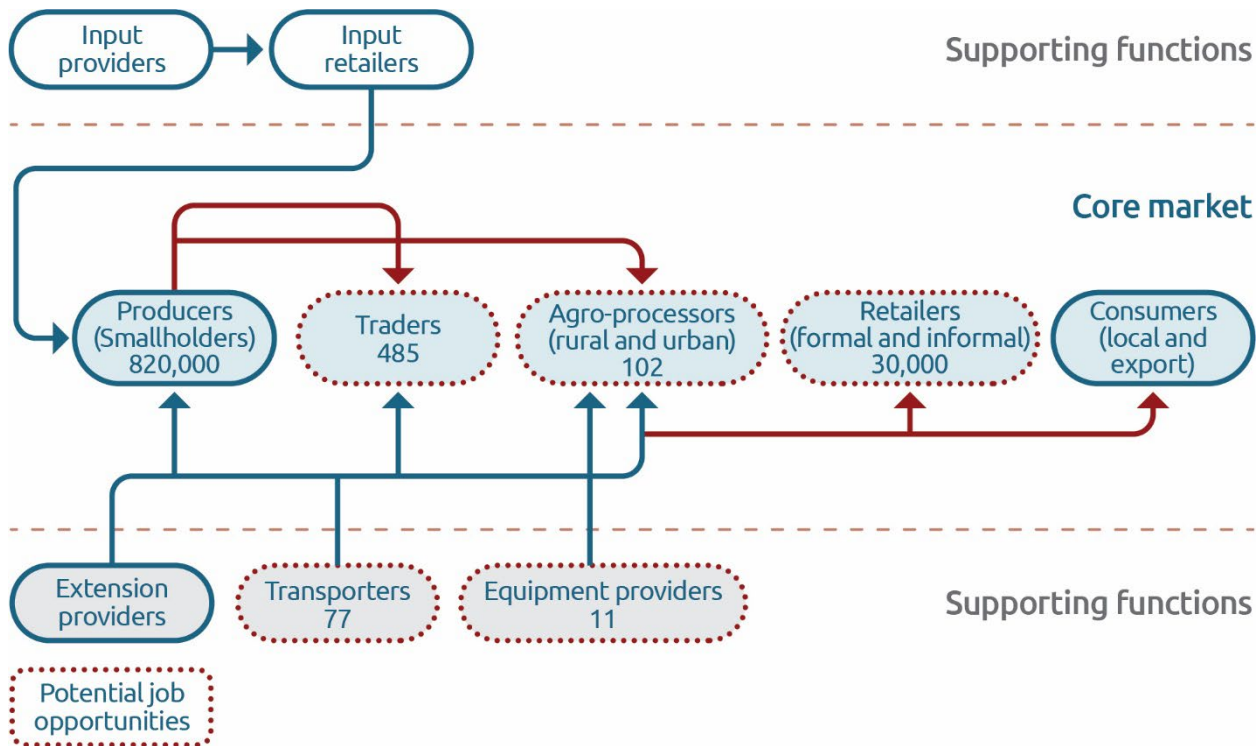
2.4.2. MARKET SYSTEM BACKGROUND

The main market players in Zimbabwe’s crop processing industry include small-, medium-, and large-scale processing businesses. Small-scale processors are mainly in high-density areas of major cities and rural areas. Medium-scale processors are usually located in low-income residential areas while large-scale processors are located in industrial sites of towns or cities. Each have different processing capacities. For example, small-scale processors can mill about 250-300 kilograms (kg) of maize per day, while medium- and large-scale processors can process 8-15 tons of maize per hour.²⁹ While smaller scale, rural-based processors mostly cater to walk-in customers and local markets, larger processors export processed food. The processed food sector, such as canned vegetables and fruit extracts, has experienced steady growth over the years, recording 17.96 % growth from \$98 million USD in 2019 to \$115 million USD in 2020.³⁰

²⁹ Kapuya, et al., 2010.

³⁰ Vinga, 2021.

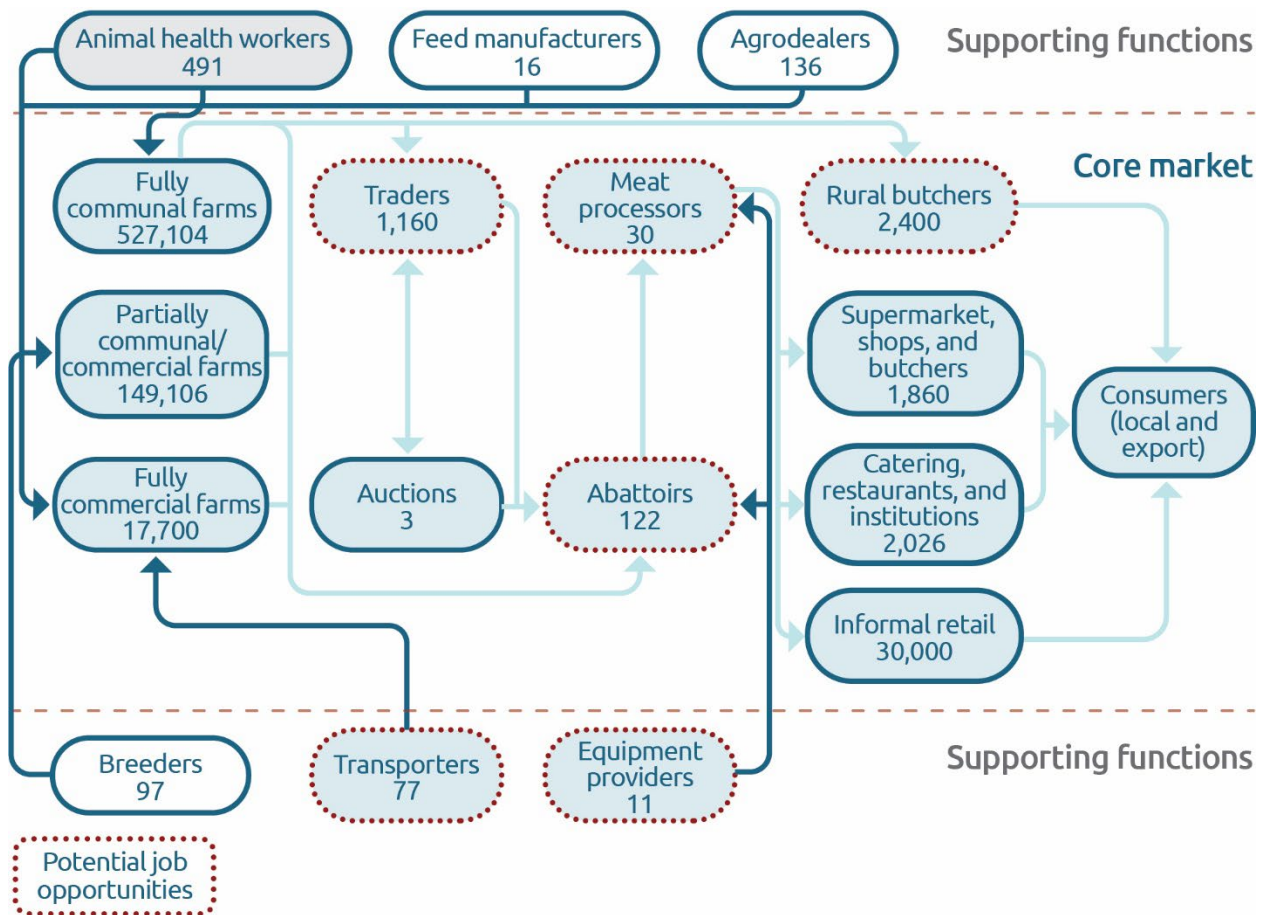
Figure 11. Crop processing market map and estimated number of market actors in Zimbabwe



Source(s): (Kapuya, et al., *The Grain Industry Value Chain in Zimbabwe, 2010*), (Log Cluster Zimbabwe, 2022), (Mhazo, Mvumi, Nyakudya, & Nazare, 2011), and (Bennett, Figuié, Vigne, Chakoma, & Katic, 2019). Please note that the numbers reflect formal and registered businesses only. In reality, the number of actors in the market might be higher. Furthermore, since 2010 the growth of value added (net output) in the agriculture sector has been mainly stagnant, so it is assumed the market size as well as the number of actors has stayed the same.

Based on interviews, the number of people employed by processors varies. Small-scale processors employ 5-20 people, while larger businesses may employ 100-500 people. While youth employment ranges from 30-45% across the industry, gender proportion is largely affected by the scale of the business. Many jobs in agro-processing are physically taxing and demand technical knowledge for large machinery operation. These types of roles prevent women from participating, leading them to become more involved in office operations. Nevertheless, in rural-based processing businesses, which are mostly small, women work across all functions. This is due to smaller businesses using smaller and less sophisticated machinery. Women are usually employed full-time, while youth, especially young men, are more likely to be employed part-time. This is due to having less job experience, often attempting different jobs to explore their work preferences and abilities, and higher interest in migrating abroad.

Figure 12. Meat processing market map and estimated number of market actors in Zimbabwe



Source(s): (Bennett, Figue, Vigne, Chakoma, & Katic, 2019), (Log Cluster Zimbabwe, 2022), and (Mhazo, Mvumi, Nyakudya, & Nazare, 2011). Please note the numbers only reflect beef value chain, but it should be representative of the meat value chain in Zimbabwe.

In the crop processing value chain, roles within processing companies offer the biggest remuneration.

Most of the interviewed companies declined to disclose workers' salaries, but one large-scale processor stated that the average wage they offer is \$150-250 USD per month. This is higher than the wages of traders and transporters, who operate informally and do not receive regular income streams (it is largely seasonally based). These two roles obtain an estimated \$100-150 USD per month.

Zimbabwe has been a net importer of food, especially of raw grains, for the past two decades. For instance, the cereal import dependency ratio was 42.7% in 2010-2012.³¹ Agro-processors mainly source their raw materials by importing from neighboring countries, such as Zambia and Malawi. The proportion of imported materials can be as high as 70%, and they fill the rest from local collectors and smallholder farmers. This high proportion of imports is due to the low availability and quality of domestically produced raw materials, particularly as a result of the Land Reform Program and unaffordable quality inputs for farmers.

³¹ FAO, 2016.

Although women are less involved in the sector as formal employees (24% work as formal employees and 61% as contract employees),³² they have an important role in the value chain as traders³³ of raw materials. Based on interviews, women own as much as 60% of the produce aggregation business in rural areas. Thirty percent of traders are youth, some of whom also perform primary processing activities alongside trading. A small-scale trader does not typically employ formal employees, but they may hire up to five people, mostly part-time youth workers able to perform physically taxing tasks. Large-scale collectors can employ up to 20 people, with a female proportion of 15% and youth proportion of 60%.

For meat processing, the value chain is slightly different, but faces challenges similar to those in crop processing. Livestock is produced by either a fully communal farm, a partially communal/commercial farm, or a fully commercial farm.³⁴ The livestock is either slaughtered for local use or transferred via middlemen or auctions to abattoirs, where traders play an important role in intermediating between abattoirs and farmers.³⁵ After slaughter, meat is sold to retailers, butchers, caterers, and meat processors (who flavor meat or transform it into by-products such as sausages and burgers). Most meat is sold as mixed meat pieces through urban butchers, retail outlets, restaurants and door-to-door meat and meat product traders. Unlike agro-processing, livestock availability is not scarce. However, abattoirs still need to secure supply from farmers, as climate fluctuations (i.e., drought) and the economic situation of farmers can affect livestock availability.

Women's involvement in the meat value chain is limited to the farm level, due to gender-based differences in occupational exposure. Youth also have less interest in being involved in the meat value chain, due to stronger interest in immigrating to neighboring countries and more competitive wages in other industries, such as mining. A medium-sized abattoir typically employs up to 20 people, comprising 40% youth and 25% women, while larger scale abattoirs can employ up to 200 workers, with a similar proportion of youth and women. Employees are paid between \$200-250 USD per month. Large meat processors, such as MC Meats (a merger between Montana Meats and Carswell Meats) for example, employs more than 300 employees, consisting of less than 10% women. In interviews, the company did not disclose the proportion of youth they employed but stated that they are the minority.

³² ZEPARU, 2014.

³³ Traders in Zimbabwe exist at various scales and levels. Wholesalers and supermarkets, informal traders, processors, and grain storage entities are all classified as grain traders. Nevertheless, the vertical integration mechanisms in the grain sector made it difficult to distinguish this in the agriculture value chain. Hence, for the purposes of the study, we define traders as a person/institution engaged in buying crops or grain from farmers or in the importation of raw or processed grain.

³⁴ Communal farm refers to extensive mixed cattle farming on shared land using traditional methods, where the farming objective is mainly self-sufficiency, while partially communal includes some fencing, a limited amount of supplementary feeding and some stock improvement, and fully commercial involves intensive production using improved stock in both open and closed farming systems.

³⁵ Bennett, Figuié, Vigne, Chakoma, & Katic, 2019.

Figure 13. Summary of key barriers and opportunities for women and youth in the agro-processing industry



2.4.3. AREAS OF UNDERPERFORMANCE

Agro-processors, both in crops and meat processing, are currently operating below capacity (in interviews, this ranged from 40-80%) due to high production costs, aging machinery, bottlenecks in the supply chain, low demand, and low access to raw material supply. Tackling these areas of underperformance would lead to growth in the value chain and rectify job scarcity in agro-processing. Job opportunities for women and youth in this industry include workers in processing companies, butcheries, or abattoirs, owners and part-time workers of trading businesses, workers in transportation companies, and workers in equipment companies.

Price

Agro-processors, both in crops and meat processing, are suffering from high production costs stemming from expensive raw materials, high equipment costs, and high taxes and levies. Currently, crop-processors import 70% of their raw materials as local production is insufficient, sub-standard, and difficult to procure. For example, one respondent stated that importing peanuts costs \$600 USD per Metric Ton (MT) from Malawi, while procuring locally would cost \$1,200 USD per MT. Raw materials and livestock from local farmers can be expensive due to scarcity caused by low productivity. While it requires further research, improvements in local production techniques may stabilize prices, and if companies procure locally, more jobs will become available, such as transporters and factory workers. Even though importing may be less expensive, processors need to secure foreign currency to make the purchase, and it can take months to obtain USD, if approved. This incurs high opportunity costs for processors from supply uncertainty. The country also faces persistent shortages of foreign currency due to limited confidence in the financial services sector and the government's foreign exchange regulations.

Based on interviews, many companies cite aging equipment, machinery, and infrastructure as one of the drivers of high production costs. Many processors, particularly those in rural areas, are unable to afford high-quality machinery due to high import costs and low access to capital. Consequently, they rely on old equipment and poor-quality machines, which often break down. The cost of fixing these machines can also affect profitability and productivity. For meat processing businesses, maintenance of hygiene and cold storage rooms are essential to longevity but is quite expensive.

Various levies, regulation and compliance costs also negatively affect the cost of doing business for agro-processors. In the meat industry, MC Meats reported that prices are affected by numerous statutory payments, especially levies collected by the government and local councils, clearance processes costs, sales permit costs, and multiple council inspection fees. There is also a governmental tax (ZIMRA) which requires buyers to pay 10.5% of the value of the animal. These levies and charges can make up a significant portion of the costs incurred by businesses.

Quality

Local producers have not been able to supply raw materials due to farmers' inability to meet quality standards. Post-harvest losses account for the most significant quality constraint in the value chain. Inadequate drying, poor storage, and poor-quality transportation services are the main causes of low supply and low quality in the crop processing value chain. Contract farming schemes, where businesses deploy field officers to supervise and source from farmers, have been unsuccessful in the past, particularly for grains. Businesses have cited many cases of side selling, which is also exacerbated by the current policy of the Grain Marketing Board (GMB). The policy allows GMB, which controls the supply of grains in Zimbabwe, to purchase grains at prices higher than the import value.

For the meat industry, there are fewer quality challenges in the handling of meat in abattoirs and butcheries, although there are some cases of animal health issues affecting meat quality and supply. For example, communal farms mostly produce smaller cattle (which are considered low-grade), as they do not have access to inputs such as quality breeds, feed, and animal health services.

Quantity

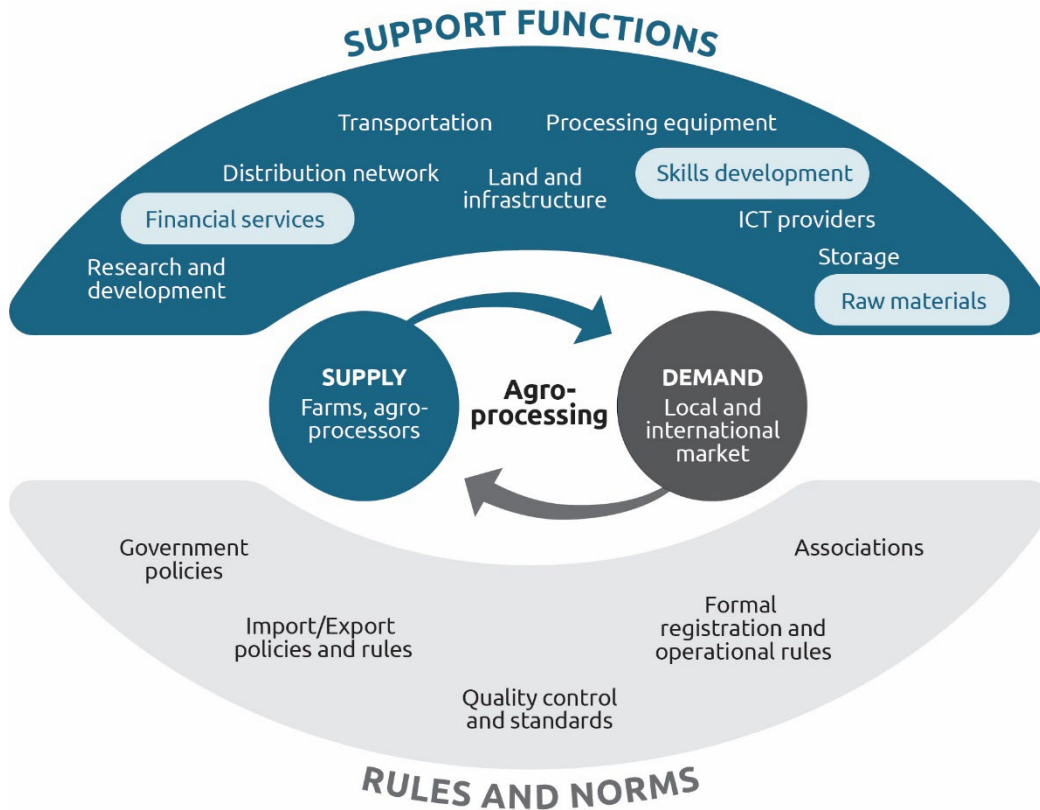
Many processors in Zimbabwe are operating below full capacity (40-80%), due to a general shortage of domestically produced raw material. Low crop productivity and quality at the farm level has led to unreliable domestic supply, making it difficult for businesses to plan their operations properly. Furthermore, crops such as maize and soya are controlled by the government through the GMB to maintain the country’s food security. Agro-processors also purchase crops from the GMB, however, bottlenecks in distribution of supplies by the GMB also lead to bottlenecks in the supply chain. Therefore, businesses rely more on imports.

The meat industry is also failing to meet the desired supply quantities, with abattoirs reporting as low as 50% capacity utilization. Poor access to livestock management technologies and economic downturns are their main constraints. At the farm production level, farmers have limited access to extension services and livestock health-management inputs. Economic uncertainty has also prevented farmers from selling livestock commercially, causing them to pause their sales and use livestock as a risk aversion strategy. Off-take rates are quite low, 11% for commercial farmers and 5% for communal farmers.³⁶

2.4.4. ROOT CAUSE ANALYSIS

This section outlines the underlying causes inhibiting growth and job creation in the agro-processing industry. These root causes are prioritized due to their high-impact potential and feasibility in the short- and medium-term. They are linked to raw material supply, financing, and skills-supporting functions.

Figure 14. Root causes of underperformance in the agro-processing market system



³⁶ Bennett, Figuie, Vigne, Chakoma, & Katic, 2019.

Weak Post-harvest Purchasing and Logistics Network

Agro-processors in Zimbabwe currently rely on manual systems to manage supply, which can be inefficient and costly. Contract farming arrangements have not been successful as farmers end up side-selling, and companies find it difficult to manage farmers who are sparsely located across different areas. Monitoring farmers can also incur high transportation costs for field staff, which drives up the cost of operations. In setting up village-level collection centers, businesses are better able to monitor farmers' production and plan for future supply. This setup would also create jobs, such as field officers, collectors, and transporters. However, this may come with a significant initial investment cost for agro-processors. High costs of quality input supply are also cited as the cause of low productivity at the farm level. This indicates a need for processors to provide quality inputs to farmers to address their affordability challenges. The input costs could be deducted from farmers' commission, not only to increase production, but also to improve farmers' commitment to adhere to contract farming agreements.

Use of Outdated Technology and Traditional Power Sources Due to Limited Capital

The use of outdated machinery by crop and meat processors reduces output productivity and drives up production costs. Frequent power cuts also contribute to machine breakdown. Based on interviews, machine breakdown can take a long time to fix, causing income loss. One meat processor stated that they could only afford low-quality machinery from China, which requires expensive maintenance. In addition to limited access to affordable finance, businesses also experience difficulties accessing foreign currency to import machinery. Access to alternative and more reliable sources of energy, such as solar, has not been fully explored by rural crop and meat processors, as they perceive that the initial costs are too high.

Limited working capital prevents businesses from upgrading their equipment and procuring solar equipment (for example, solar dryers and mini-grids). Access to affordable capital remains a challenge in Zimbabwe. Nearly half of banks in Zimbabwe face liquidity challenges, and microfinance institutions (MFIs) charge very high interest rates, typically between 4-5% per month. As a result, these MFIs are able to serve traders looking to meet short-term financing needs but are too expensive to act as long-term funders.³⁷

No Formal Training for Small and Medium Agro-processors

Only a few small- and medium-scale agro-processors received formal training in food and meat processing techniques. There is also a need for training institutions to revise their curricula and suit the manufacturing industry's needs. As much as 51% of laborers in the agro-processing industry are unskilled.³⁸ Currently, training institutions, particularly those in rural areas, only offer basic home processing techniques, such as solar drying of fruits and vegetables. No trainings offer meat processing, which requires a high level of technical skill and hygiene. There are also trainings in basic technical and business skills, entrepreneurship, financial access, and financial management. Based on interviews, rural and smaller scale entrepreneurs need packaging, branding, and advertising skills to boost sales, especially when using online marketing platforms. They also need to be taught sophisticated manufacturing techniques, warehousing, and required technology.

2.4.5. ENVISIONED SYSTEMIC CHANGE

Expanding agro-processors' supply operations to source local raw material and livestock would not only improve their production capacity and growth, but also open up opportunities for employment, particularly in rural areas. This would create employment along the value chain, such as field managers, factory workers, traders and collectors, transporters, and other supporting providers. In addition, access to efficient technologies, along with proper capacity building for employees and small-scale entrepreneurs,

³⁷ GIIN and Open Capital Advisors, 2016.

³⁸ ZEPARU, 2014.

would increase agro-processors’ capacity and productivity. This would further induce growth and employment opportunities in the industry, including in equipment manufacturing companies.

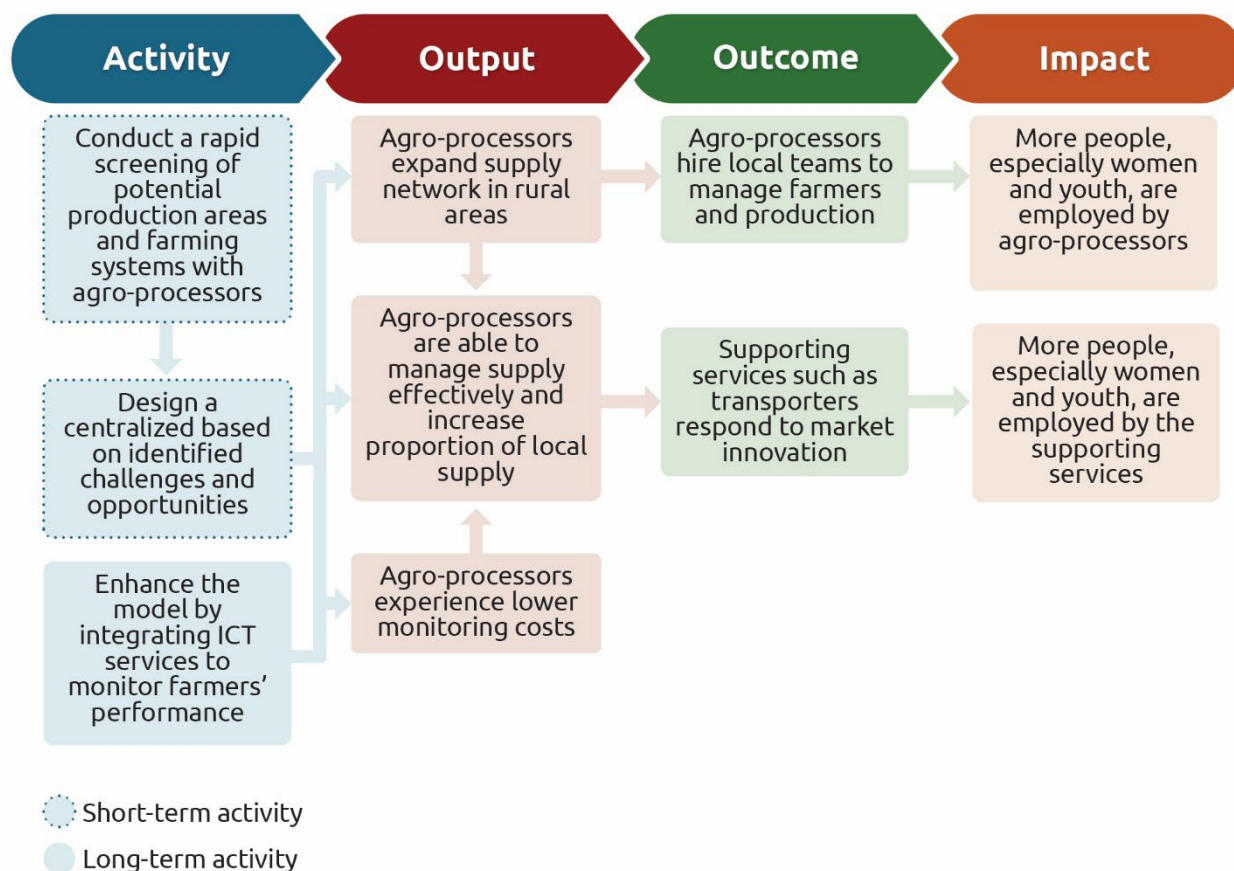
2.4.6. INTERVENTION IDEAS TO ACHIEVE SYSTEMIC CHANGE

Intervention 1: Design an Innovative Contract Farming Model

Theory of Change

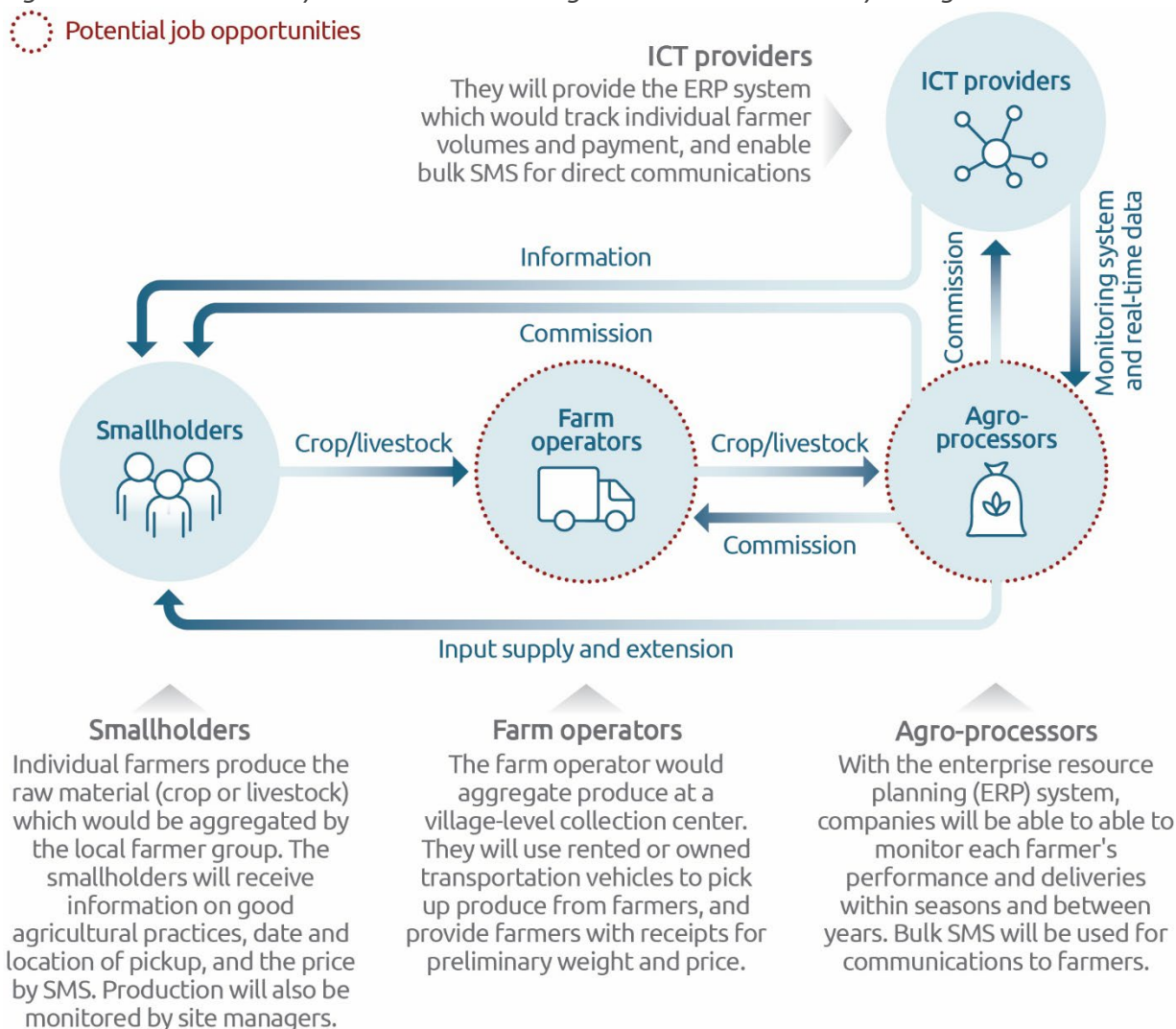
Designing a direct-sourcing model for crop and meat processors would increase local raw material supply and processors’ capacity utilization, which currently stands at 40-80%. This would expand their supply network in rural areas, particularly to smallholders. This model would require close monitoring of hundreds of farmers, therefore requiring a considerable number of human resources. In addition, the stronger linkage between agro-processors and rural value chains would also induce growth along the value chain—increasing demand for more traders and collectors, transporters, and other supporting providers, such as input suppliers. This intervention could be enhanced by using ICT to improve the efficiency of raw material production and aggregation.

Figure 15. Theory of change for Intervention 1: design an innovative contract farming model



Business Model

Figure 16. Business model for Intervention 1: Design an innovative contract farming model



Potential Partners

The main partner for this intervention should be a medium- or large-scale crop or meat processing company to create wide-scale impact. These processing companies currently import most of their raw material or operate under capacity due to quality issues. Under this model, they would procure a significant amount of locally sourced crops or meats from hundreds of farmers. The agro-processor would be incentivized to implement this model, as it would provide more certainty in terms of supply and would increase production efficiency. Importing raw materials can take time, as processors need to procure international currency, which may take more than three months. Procuring directly from farmers also cuts down logistics and distribution costs for processors. Higher yield and availability of raw materials would drive prices down, but farmers would still benefit, as they would be able to sell more produce.

The success of the intervention would influence crowding-in from other medium/large processors, who would copy the sourcing model after seeing higher efficiency from locally sourced crops or livestock. To use the sourcing model, implementers could connect processors to agri-ICT providers such as eMkambo (Knowledge Transfer Africa) or Cropin.

Potential Facilitation Activities

Short-term:

First, map potential sourcing areas and design the sourcing model, based on the sourcing needs of the agro-processor. The mapping would entail type of crop (or livestock), quantity needed, number of farmers, and potential productivity improvements for farmers. Farmers in Zimbabwe are constrained by low yield and inability to meet factory standards, thus, intensive training and access to quality inputs would be required. The number and location of farmers would also inform the possible supply chain process for the processors, along with required amounts of input supply and training, the number of site managers, coordinators, aggregators, and clerks. For meat processing, the intervention model would be the same, where farmers drop-off their livestock at the collection point. Implementers could facilitate the intervention by (a) providing a match-grant toward staffing costs in the first years of the program to derisk the high cost per unit of sourcing while volume is initially low; and (b) by providing a match-grant toward setting up the collection centers.

Second, set up selection criteria for farmers and farm aggregators. Implementers need to ensure that they recruit the right profile of farmers for this model, filtered through some criteria such as yield, access to land, and references (either by local NGOs or by local farmer groups). In designing the criteria, make sure not to exclude marginalized groups like women and youth from participating. This could be done by (a) allowing group registration, so farmers with smaller yields could still participate in the model; (b) basing membership eligibility on the principle of control, instead of legal ownership; and (c) using references instead of credit background checks. As for farm aggregators, the criteria may include educational background and past reference checks.

Third, design a contract easily understood and adhered to by farmers. Contracts should be written in plain language, without complicated technical terms. The most important contractual components include the price and minimum supplied yield, quality (i.e., moisture level or a disease-free livestock), required activities (for example, training attendance), applicable benefits or bonuses, terms of payment, and conflict resolution (possibly by forming a council with representatives of all involved stakeholders or by local authorities). For more information on the requirements of successful contract farming, please refer to this [guide](#) published by University of Wageningen. To compare different models of contract farming and their advantages, please refer to this [handbook](#) published by GIZ.

Long-term:

After the business case is proven, implementers must map the ICT solution to allow the sourcing model to run smoothly. ICT could provide operational efficiency to processors and provide ease of monitoring to farmers. This would enable agro-processors to collect a database of farmer mobile contacts, and the enterprise resource planning (ERP) system provided by the ICT providers would be updated to enable each farmer to be entered as a separate supplier. At the time of purchasing, agro-processors could send details of the date and location of pickup, and the purchasing price. The produce and livestock received by the coordinator and site team would be weighed, checked for quality, and entered into the ERP system. Subsequently, agro-processors would send mobile money payments by the next day. With the ICT system, agro-processors, through site managers, would also be able to monitor each farmer's performance and deliveries within seasons and between years. Reminders on planting or harvest could be sent to farmers by bulk SMS, as frequently as needed. Implementors could facilitate agro-processors' access to ICT service providers, such as eMkambo, or Cropin, by providing co-investment.

Route to Scale

The pilot phase of this intervention should start in Mutare (Takunda) and Lupane (Amalima Loko), where large-scale agro-processors' branches, such as Cairns Foods, Associated Foods Zimbabwe, MC

Meats, and Lupane Meat Processors (LMP), are located. The pilot phase should begin with two companies, where implementers could source from nearby areas around Mutare and Lupane.

At the scale-up phase, implementers would continue working in Mutare and Lupane while partnering with one additional company and expanding the intervention territory in Masvingo (Takunda), Buhera (Takunda), and Binga (Amalima Loko). Masvingo is relatively close to Mutare and has a variety of crop and meat processor branches. This proximity would benefit the processors engaged in the scale-up phase, as they could see the successful pilot project in nearby Mutare. In addition, Masvingo currently suffers from low-quality livestock supply, but the model could benefit from engaging existing community-based animal health workers (CAHWs) to oversee farmers’ animal management techniques. Buhera and Binga are highly accessible to Masvingo and Lupane, respectively. Both districts have many livestock farmers and crop producers. The intervention would be especially important in these areas, as smallholders currently engage in subsistence farming. Seeing the opportunity to directly supply to large-scale companies would incentivize local farmers to perform commercial farming.

Potential Risks and Mitigation

The main risk of this intervention would be smallholders’ failure to commit to the supply agreement, as experienced by many processing companies. This could be addressed by designing incentive-based schemes for farmers and aggregators, stated clearly in the contract. To encourage smallholders to meet the target, agro-processors could provide a price premium and volume incentives when farmers and aggregators lead annual delivery targets.

Another risk would be companies’ willingness to engage in this model in the face of lower import prices. This could be addressed by conducting a further study focused on the opportunity costs of importing raw materials, the regulations around imports, quality of imported raw material, and the potential financial gain for processors from procuring locally.

Impact Projection

The expected off-farm and non-farm jobs created by this intervention would be 50 in the pilot phase, and 170 in the scale-up phase. The pilot phase assumes sourcing from 300 farmers, where each aggregator would collect from 30 farmers. Each site coordinator could train and monitor 100 smallholders, assisted by site clerks to check yield quality and input payment. In the scale-up phase, it is assumed that most increases in job creation would come as site coordinators, clerks, butchers, and aggregators. The increase in raw supply availability would improve at least 40% of capacity utilization, inducing 20% growth for companies due to reduced costs, increased operational capacity, and increased sales. Please note that the impact projected only covers the first three years of implementation.

Table 7. Intervention’s projected job impact

Job type	Pilot	Scale-up	Percentage of women beneficiaries	Percentage of youth beneficiaries	Potential income (in USD)
	Expected number of beneficiaries	Expected additional number of beneficiaries			
DIRECT JOBS					
Factory workers	10	30	50%	50%	\$200
Administration officers	6	18	80%	70%	\$150

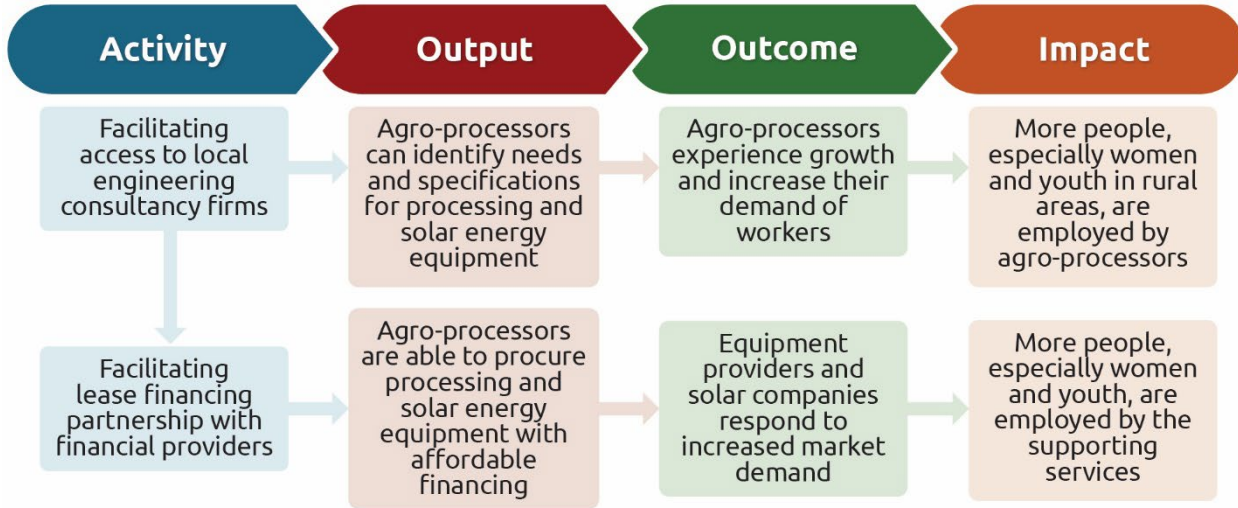
Job type	Pilot	Scale-up	Percentage of women beneficiaries	Percentage of youth beneficiaries	Potential income (in USD)
	Expected number of beneficiaries	Expected additional number of beneficiaries			
Company sales agents	6	18	50%	70%	\$250
Site coordinators	6	24	40%	70%	\$200
Site clerks and butchers	4	16	100%	100%	\$150
Aggregators (part-time)	10	40	80%	60%	\$100
Total direct jobs	42	146			
INDIRECT JOBS					
Input suppliers	2	6	30%	60%	\$150
Transporters	6	18	20%	60%	\$150
Total indirect jobs	8	24			

Intervention 2: Improve Access to Equipment and Technology through Access to Consultancy and Lease Financing

Theory of Change

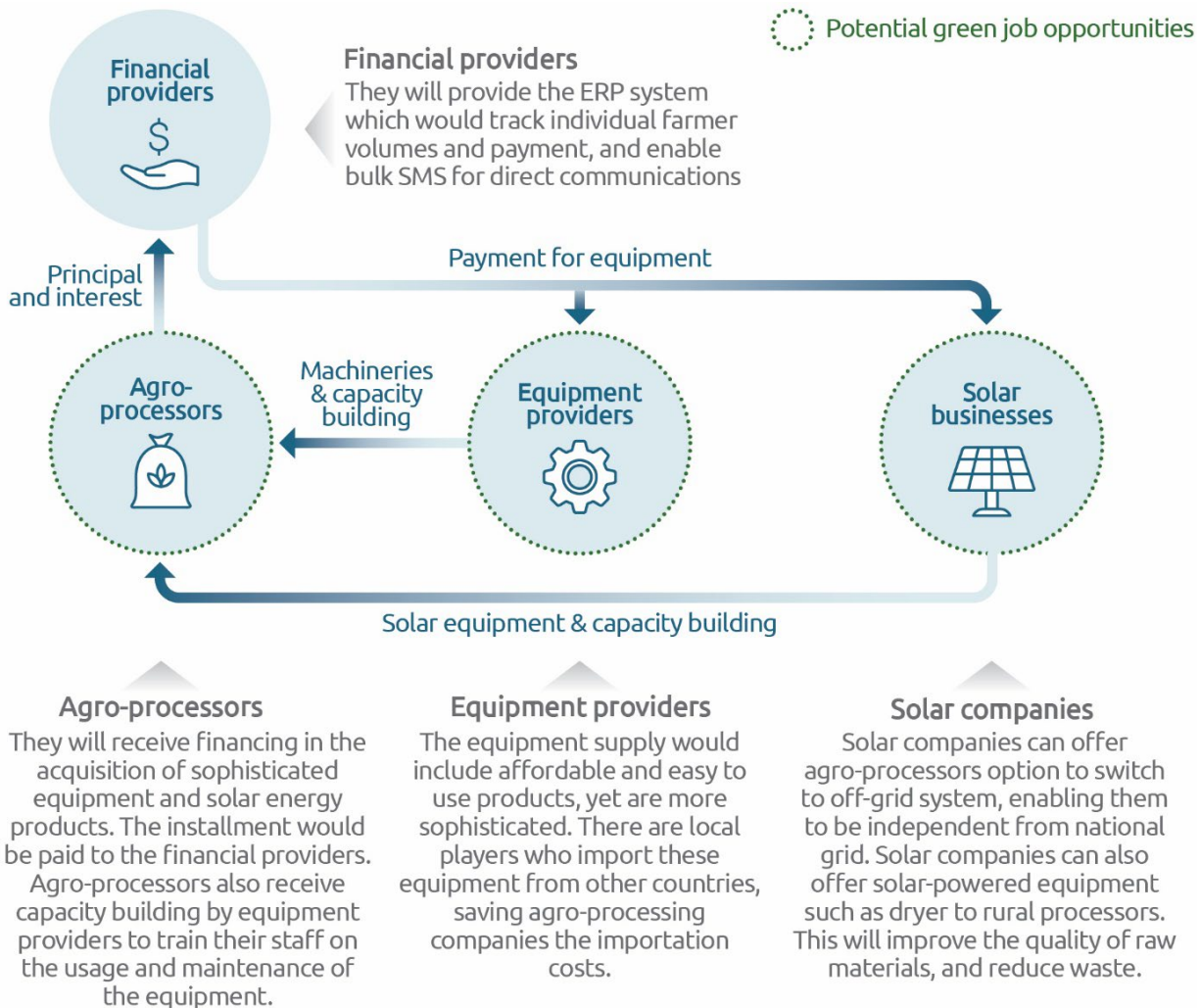
Facilitating local processors' access to local engineering consultancy firms, along with financial providers, would allow processors access to appropriate technology. Local engineering firms could help processors identify processing or solar equipment based on their needs and financial and skills capacity. Financial providers could help processors address their affordability issues. Access to improved equipment would enhance productive capacity, and as a result, would create more employment opportunities for women and youth in the agro-processing industry. In addition, the intervention would also induce growth for equipment companies, and would enable these businesses to create more job opportunities.

Figure 17. Theory of change for Intervention 2: Improve access to equipment and technology through access to consultancy and lease financing



Business Model

Figure 18. Business model for Intervention 2: Improve access to equipment and technology through access to consultancy and lease financing



Potential Partners

For this intervention, the main partner should be large to medium crop and meat processing companies and smaller rural processors. The intervention could be implemented in two phases, first, with agro-processing companies, and subsequently by applying the learning generated from the first phase to another cohort of rural processors. For the first phase, the team could engage medium-scale crop processing companies, as they may have less capital and technical capacity to procure processing equipment.

Potential Facilitation Activities

First, connect agro-processors with local mechanical engineering consultants to identify equipment and energy requirements to advance their business. The agro-processing sector is constrained by inadequate access to advanced processing equipment, impeding production efficiency. With the assistance of consultants, businesses could identify their equipment needs. Implementers could support this activity by paying consultants' fees. Processors also experience power cuts that harm equipment's durability, so consultants could suggest solar equipment capable of withstanding power cuts. If needed, implementers could also hire and pay a financial consultant to project how better equipment will improve financial performance, productivity, and efficiency.

Second, facilitate a leasing agreement between the financial service provider, processor, and equipment provider. Once implementers identify the required processing equipment and/or solar product as well as the providers, they could map out potential financial service providers. MFIs in Zimbabwe commonly provide lease or asset financing capable of stimulating the country's productive sector. Leasing also reduces the need for agro-processors to provide collateral security. African Century Limited for example, is a renowned lease-financing provider for SMEs in Zimbabwe, and is financed by FMO, a Dutch DFI. However, their service reach to smaller agro-processors is still limited.

Third, ensure that equipment providers provide inclusive capacity building to employees to operate new equipment. Based on interviews, training providers and TVET institutions already offer training to agro-processors but cited outdated technology and equipment as the main constraints. These institutions may lack knowledge about the latest technology, making them unable to provide training on equipment operations and maintenance. As such, equipment providers need to build staff capacity. Implementers could facilitate this by hiring a consultant to revise equipment providers' training modules, aiding people without engineering backgrounds, especially women, to operate new equipment. By adopting an inclusive training module, the equipment provider could attract a whole new range of agro-processors, particularly smaller ones based in rural areas with less experienced employees. In time, this would also create inclusion of low-skilled workers in the industry.

Route to Scale

The intervention's pilot phase should start in Mutare (Takunda) and Lupane (Amalima Loko), as these districts have a number of agro-processors, mainly crop-processors, able to commit resources to a pilot. The agro-processors in Mutare and Lupane process fruits and vegetables, small grains, and meat. For this pilot, implementors could work with two medium-sized agro-processors; one equipment provider, and one solar company. Mutare also includes rural and urban areas, and the intervention could build economic linkages between the two by improving the value chain flow and increasing opportunities for employment in rural areas.

Continue the pilot intervention in the scale-up phase, while expanding to Masvingo (Takunda), Bulawayo, and Buhera (Takunda). The intervention could be implemented with three additional medium-sized processors (for a total of 33) and should focus on the meat value chain. The selected towns contain many small-scale agro-processors and variously scaled livestock farms, traders, butcheries, and abattoirs. The density and availability of many meat processors could make facilitation activities more efficient. Applying learnings from the pilot, especially around developing an inclusive employee training module, would also

improve efficiency. While implementers would mainly work with one equipment provider and one solar company, implementors could also facilitate crowding-in by engaging with an additional equipment provider and solar company.

Potential Risks and Mitigation

The main risk of this intervention would be lower employment demand due to higher efficiency and automation from the new equipment. While Nutrition for Africa stated in an interview that they might hire less people, other processing companies (e.g., Cairns Foods and Associated Foods Zimbabwe) stated that they would still need workers due to increased utilization of their processing capacity. One possible mitigation for this risk, particularly for smaller-scale processors, would be to help them identify additional markets for their products. Therefore, they could expand their operations and provide more non-technical employment opportunities, such as in sales and operations departments.

Another risk would be companies’ credit worthiness and their ability to attract financing institutions. Financial service providers may doubt companies’ ability to satisfy financing obligations due to their underperformance. As many as 73% of agro-processors already have access to loans, though typically limited to relatively short-term tenure (mostly under 3 years).³⁹ This indicates that processors already have credit history in place, which eases future applications. As discussed in the previous section, this risk could be mitigated by providing a robust financial analysis of the company’s financial performance and potential earning improvements due to increased technology access. This analysis could be presented at the time of lease financing application.

Impact Projection

The pilot intervention, which would be implemented in Mutare and Lupane districts, would create 85 jobs. The underlying assumption is that the increase in efficiency would create a 20% increase in growth and employment opportunities. The pilot intervention requires a partnership with a medium-sized company, with an average of 250 workers. In the second year, implementers could work with two additional medium-scale processors and 30 rural crop and meat processors, where each would have the potential to add two additional factory workers. The scale-up would create an additional 192 direct and indirect jobs. Please note that the projected impact only covers the first 2 years of implementation and does not account for overlap with impact numbers obtained from the first intervention idea.

Table 8. Intervention’s projected impact on jobs

Job type	Pilot	Scale-up	Percentage of women beneficiaries	Percentage of youth beneficiaries	Potential income (in USD)
	Expected number of beneficiaries	Expected additional number of beneficiaries			
DIRECT JOBS					
Factory workers	40	140	50%	50%	\$200
Administration officers	20	40	80%	70%	\$150
Company sales agents	20	40	40%	70%	\$250
Total direct jobs	80	180			

³⁹ ZEPARU, 2014.

Job type	Pilot	Scale-up	Percentage of women beneficiaries	Percentage of youth beneficiaries	Potential income (in USD)
	Expected number of beneficiaries	Expected additional number of beneficiaries			
INDIRECT JOBS					
Equipment technicians	3	6	30%	60%	\$300
Solar product sales agents	2	6	50%	50%	\$300
Total indirect jobs	5	12			

2.4.7. SUMMARY OF THE AGRO-PROCESSING MARKET SYSTEM

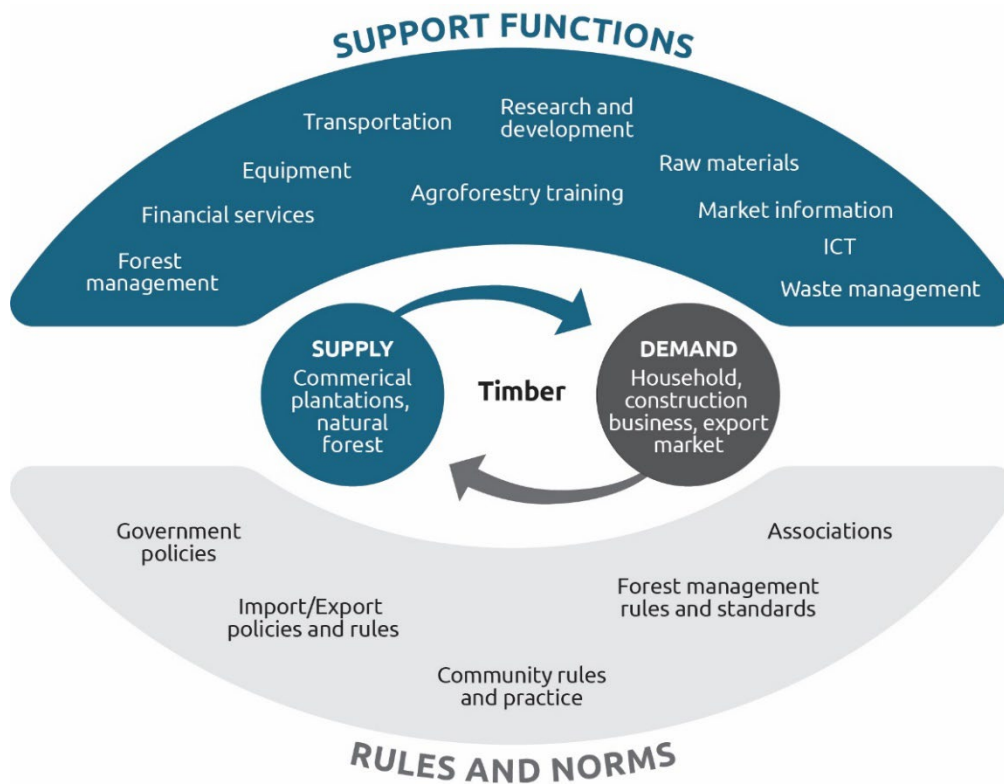
The agricultural market system is worth investing in, given its potential to create impact at scale. Of the intervention ideas, intervention 1: Designing an innovative contract farming model, is the most feasible to implement. This intervention could also be enhanced with the support of ICT. This would create scale faster, as agro-processors would have greater resource efficiency. Intervention 2: Improving access to equipment and technology through access to consultancy and lease financing, should also be considered, and possibly implemented in parallel to the contract farming intervention. The equipment intervention has potential to make systemic change, improving inclusivity by changing how companies transfer knowledge to marginalized groups, especially women and youth. For the whole market system, conducting a further study on potential efficiency and profitability gains from procuring raw materials locally could inform and incentivize potential partners. The study should cover current import quantity, quality, average lead-time to import and potential opportunity costs, as well as the costs of procuring locally

2.5. Timber Market System

2.5.1. MARKET SYSTEM DEFINITION

The timber market system investigated in this study includes timber supply, mostly procured and processed by timber growers and millers, transformed into products consumed by industries or households. Timber processing is a set of activities to transform logs from forests or plantations into new products. This study includes sawmilling, furniture products, and construction material in the analysis. Subsequent sections outline a light-touch overview of the market system and its opportunities to absorb more youth and women into employment.

Figure 19. Timber market system



2.5.2. MARKET SYSTEM BACKGROUND

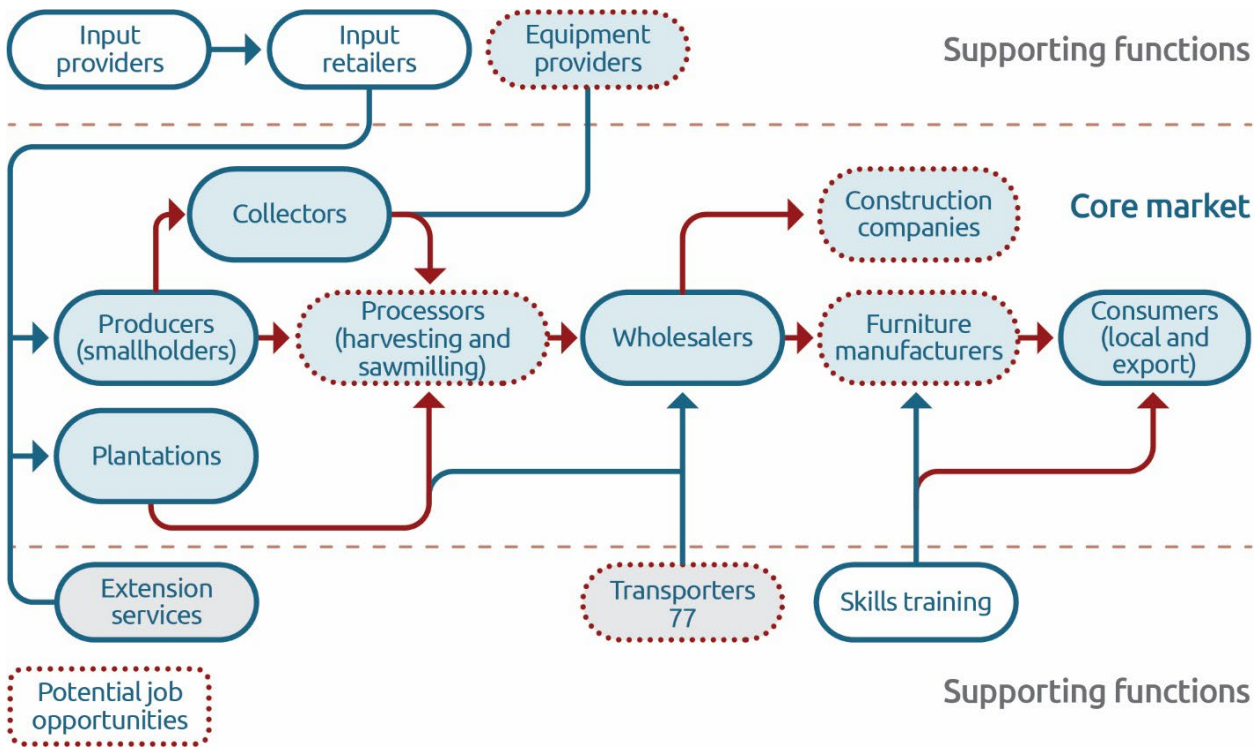
The timber industry in Zimbabwe comprises approximately 69,892 hectares of plantations, with at least 93% based in Manicaland province, owing to its high rainfalls, cool temperature, and high altitudes.⁴⁰ Industry growth has stalled due to undersupply of raw materials. The government’s land relocation program, Fast Track Land Reform (FTLR), is partially to blame. Land repossession and illegal occupations by local communities has not only disturbed replanting programs, but also caused illegal harvesting and forest fires. An estimated 20% of the plantation area and 20 years’ worth of trees have been lost. This has caused much uncertainty for industry players and prevented further investment.

A number of large-scale timber producers currently dominate the industry. One of which is Allied Timbers, a state-owned business occupying about 87% of processed lumber production, while the remaining 13% is processed by around 35 medium and small mills.⁴¹ Overall, there are 236,000 wood-based MSMEs in Manicaland Province.

⁴⁰ Charis, Danha, & Muzenda, 2019.

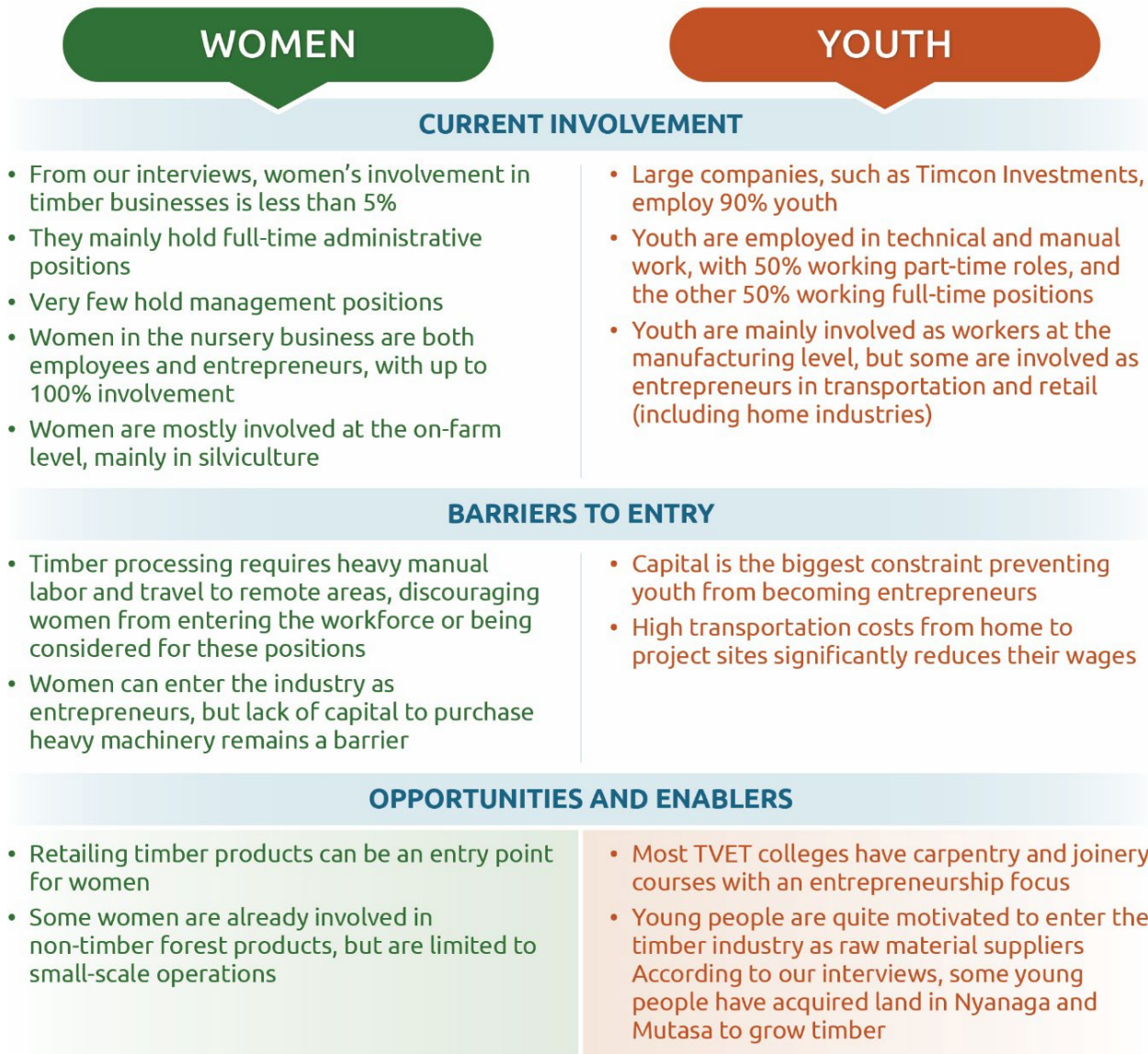
⁴¹ Ibid.

Figure 20. Timber market map



The large-scale businesses are mostly vertically integrated, where they source from their own plantations and process their own timber, although some may outsource the milling to smaller millers due to equipment unavailability. Only a few businesses (mostly small) source from smallholders. The timber products are either exported to surrounding countries, mostly in Southern Africa, or sold by wholesalers and retailers to construction and furniture businesses.

Figure 21. Summary of key barriers and opportunities for women and youth in the timber industry



Full time employment in the timber industry declined from 16,000 jobs in 2015 to 15,000 jobs in 2016.⁴² In addition, meaningful participation of youth and women in the industry still lags. Young people are engaged in the industry, but mostly as informal and part-time workers for timber processing companies. Many young people also struggle to become entrepreneurs and grow their businesses. For example, three university graduates operating in timber retail—in which they buy materials from sawmills and sell it back in cities—cited that lack of venture capital prevents them from expanding their businesses. They stated that they needed loans to construct sheds and buy trucks and new equipment. Instead, they rent open spaces and haulage trucks.⁴³

Women, due to the remoteness of plantation locations, are less inclined to take up technical positions in the industry. Rather, they mostly work as administrative officers in timber companies, and dominate the

⁴² Nyakudanga, 2021.

⁴³ Mwenje, 2016.

nursery business. There is opportunity for women to participate in the value chain as retailers, however, they are constrained by access to capital and networks within the industry.

2.5.3. AREAS OF UNDERPERFORMANCE

Similar to agro-processing, timber companies are unable to create formal and stable jobs, particularly for youth, as they are operating below capacity (30-60% according to interviews), mainly due to low supply of quality raw materials.

Price

Illegal harvesting by settlers, forest fires, and old equipment have caused declines in profits for actors in the timber industry. Illegal harvesting and loss of land contribute to the loss of quality and potential revenues, while old equipment has driven up production costs. As most businesses use out-of-date technology, only 40-45% of raw materials are recovered, leading to higher input losses. Furthermore, large businesses, such as Allied Timbers, sub-contract most of the harvesting and sawmilling activities, while others harvest with small equipment that can damage the environment.

Quality

Illegal harvesting and limited skills has diminished timber quality. Trees take 15-25 years to mature and produce quality timber. But settlers occupying plantations cut down trees to address economic needs, leaving younger trees behind. Currently, there are not enough skilled professionals technically qualified in forestry and timber issues. Availability of these professionals can contribute to better plantation management practices, resulting in higher quality trees.

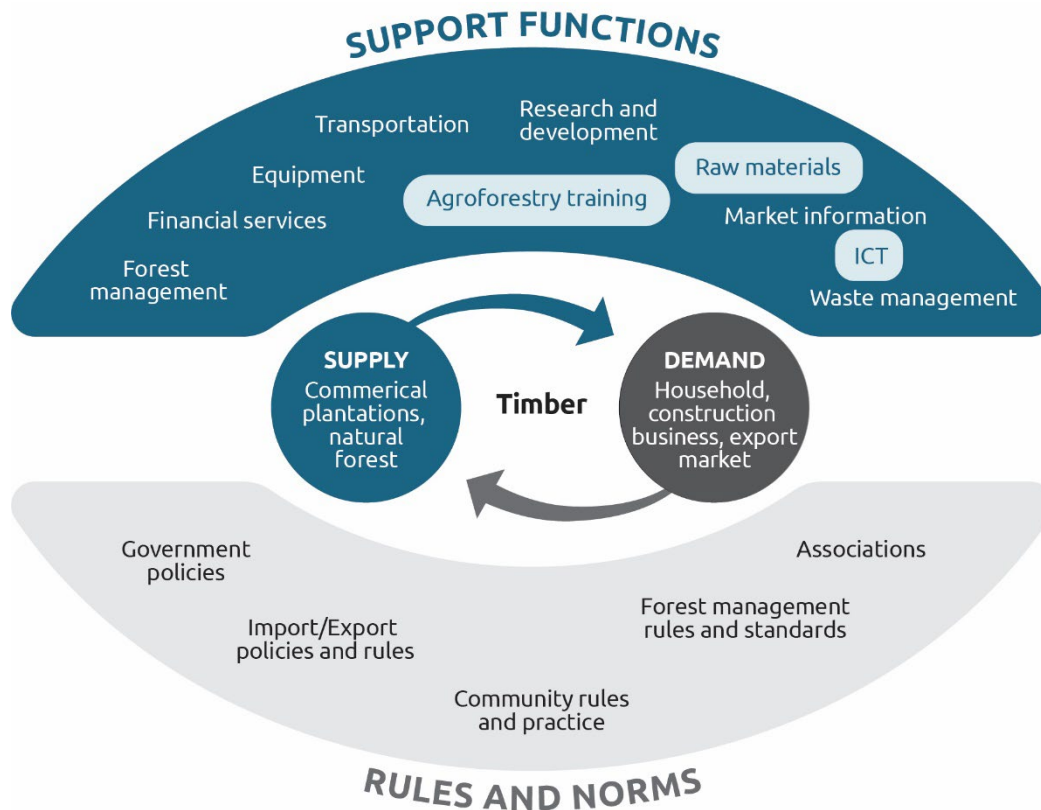
Quantity

While demand is increasing, especially as a result of the construction boom in the Southern Africa region, the supply of timber in Zimbabwe is declining as a result of settlers' occupation and lack of tree replanting programs. For instance, younger trees are destroyed by stray cattle and goats brought by settlers. In addition, illegal occupation also reduced the plantation space, preventing timber companies from conducting replanting activities. Plantations have been unable to meaningfully plant for the last 10-15 years. This has depleted the timber resources base by as much as 20%.

2.5.4. ROOT CAUSE ANALYSIS

The main underlying constraints impeding the growth of the timber industry and its ability to absorb more employment can be traced back to raw materials, ICT, and skills supporting functions. Addressing these root causes are feasible in the short- and medium- term, and critical to the revitalization of the industry as well as increasing jobs for youth and women.

Figure 22. Root causes of underperformance in the timber industry



Weak Coordination with Settlers

The illegal occupations have caused conflicts between plantations and settlers, depleting the planting area. Some settlers have also performed illegal mining activities, which depletes the plantations' soil quality. So far, the government has made no meaningful effort to resolve these issues. At the same time, timber businesses have no power to relocate settlers.

Limited Use of Technology to Monitor Supply

Low efficiency in monitoring supply also contributes to the depletion of raw materials supply. Many companies in different countries have utilized ICT to systematically monitor their timber plantations and manage harvests sustainably. Border Timbers, for example, has used Macro-Forest software, an inventory program that monitors forests using a GPS system. Allied Timbers and many other companies, however, are still using manual methods of counting and monitoring its forests due to the costs of initial investment.

Limited Number of Skilled Workers Knowledgeable in Timber and Forest Management

Based on interviews with companies, there are not enough technically skilled workers knowledgeable in agroforestry and timber issues. Many TVET schools in Zimbabwe offer agroforestry and carpentry courses, which attract youth. However, many of the graduates have immigrated to neighboring countries to pursue more competitive incomes.

2.5.5. ENVISIONED SYSTEMIC CHANGE

Addressing supply issues by resolving settlement conflicts in plantations through long-term partnerships would induce industry growth and address youth underemployment. Better supply management through ICT systems and a higher supply of technical workers would also contribute to sustained businesses growth. These improvements would create certainty in the industry, encourage investment, and create more jobs

along the value chain, such as transporters, small-scale millers, retailers, furniture makers, and construction workers.

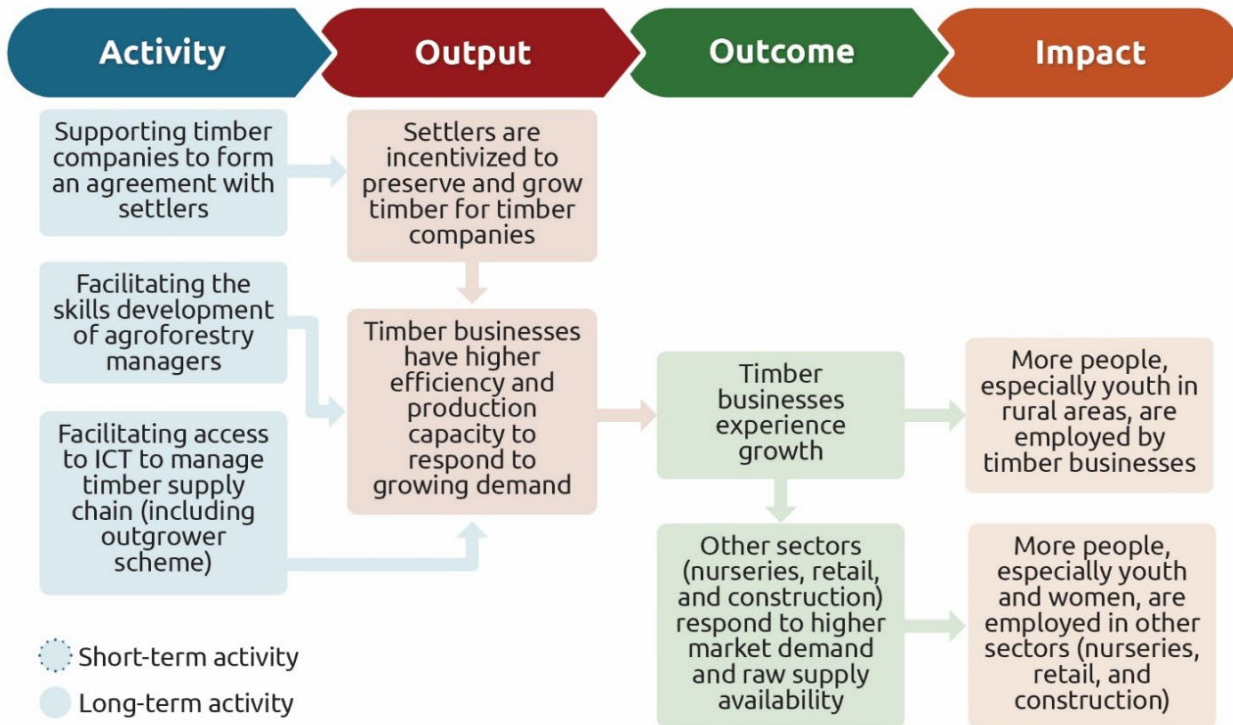
2.5.6. INTERVENTION IDEAS TO ACHIEVE SYSTEMIC CHANGE

Intervention Idea: Improve Raw Supply Availability through Outgrower Programs and Integrated Supply Management

Theory of Change

Supporting and facilitating outgrower partnership agreements between timber companies and settlers, along with sensitization and awareness training, would incentivize settlers to preserve, plant, and grow timber for companies. At the same time, facilitating skills development for agroforestry managers, and access to ICT for supply chain management would lead to higher efficiency and lower production costs. Subsequently, timber companies would be able to satisfy growing demand from the construction and furniture markets, experience growth, and create more jobs. The replanting activities would stimulate growth for nurseries, and increased timber supply would stimulate the retail, construction, and furniture sectors, all leading to employment at scale for youth and women.

Figure 23. Theory of change for Intervention Idea: Improve raw supply availability through outgrower programs and integrated supply management



Potential Partners

The primary partner for this intervention would be one of the large-scale timber businesses. Working with a larger company would greatly impact employment and showcase the business case to other players in the industry. Before engaging a partner, there needs to be a mapping study of timber businesses in Zimbabwe and an analysis of their interests.

Potential Facilitation Activities

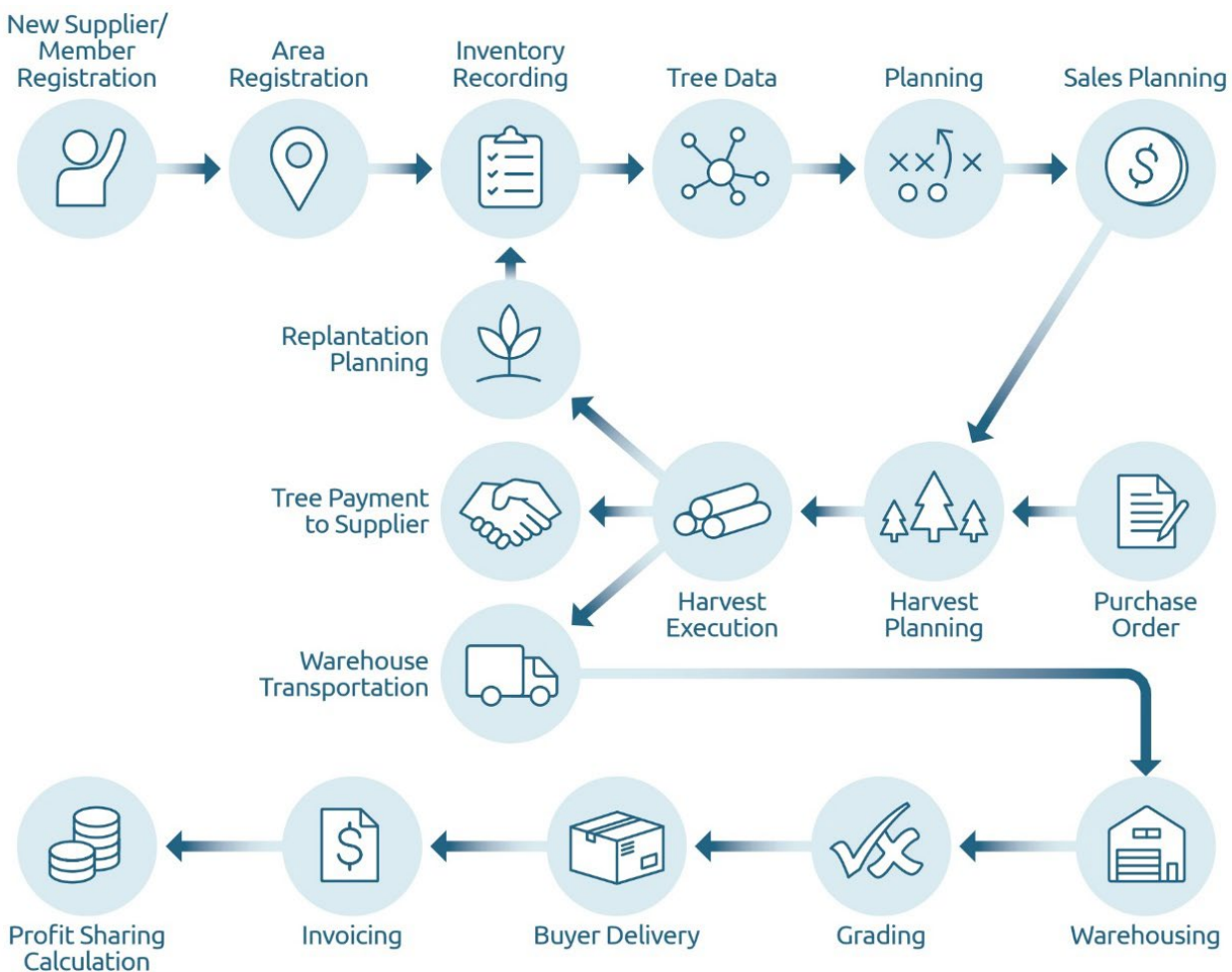
First, design a commercial partnership scheme and sensitization efforts for the settlers on the timber plantations. To ensure that settlers will grow and preserve the trees, the design should involve representatives from the settlers’ community to identify their incentives. For instance, most settlers cut

down trees to fulfill economic needs and see little benefit in preserving the trees for 15-20 years. This could be addressed by (a) setting up a revolving fund for settlers, which they could use for urgent economic needs; and (b) teaching settlers silviculture and agroforestry practices, so they could preserve the trees while obtaining sustainable incomes from short-term crops.

Second, map the skills gap and facilitate skills development of agroforestry managers as needed. Implementers could link them to technical skills providers and assist timber companies to set a competitive salary package for young agroforestry/carpentry graduates. To support this, implementers could provide match-grant funding for the training investments and contribute to graduates' salaries for the first 2 years. Timber companies would then see the business benefits of building partnerships with technical skill providers and offering competitive salaries to young graduates.

Third, facilitate the partner's access to the ICT system for improved supply management. Implementers could also provide match-grant funding for this initiative, to incentivize adoption of the system. As illustrated below, the system would allow the partner to manage forecasting, operating, and predicting harvests, tracking inventory of timber, and managing contracts with the suppliers (e.g., settlers). Settlers, through field officers, could update the stock condition in real time and the system could adjust the productivity plan for the partner.

Figure 24. Improved supply management using an ICT system



2.5.7. SUMMARY OF THE TIMBER MARKET SYSTEM

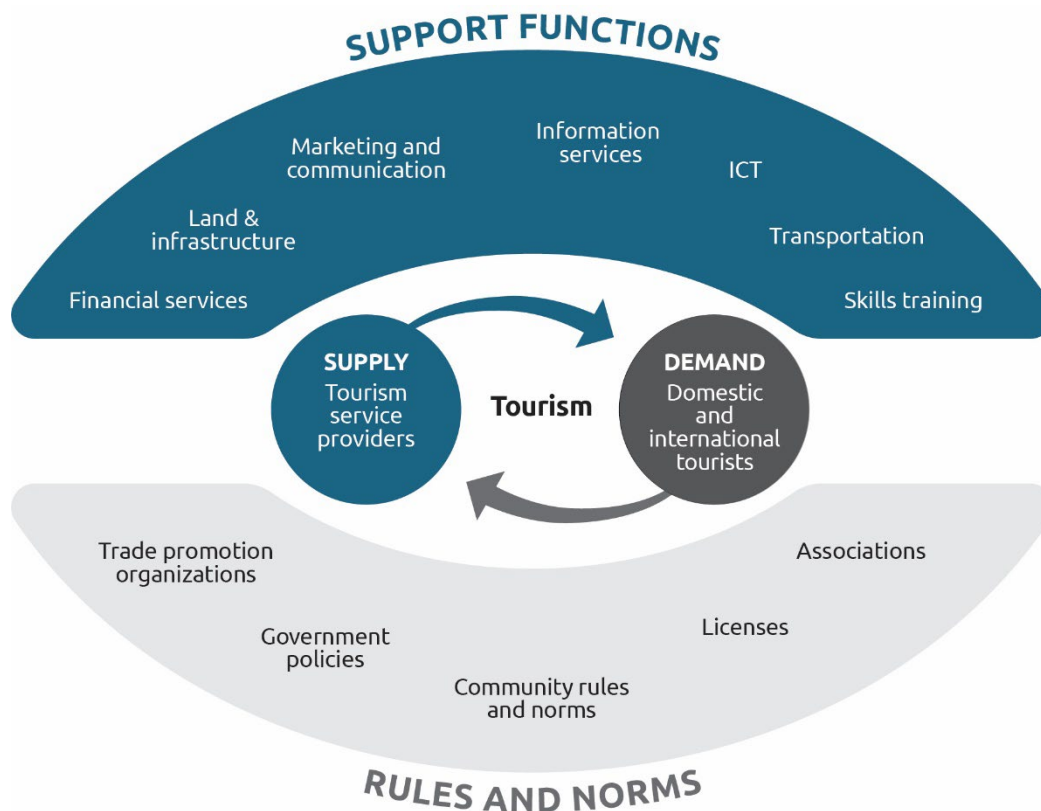
Although demand for timber is growing, the market system may not be lucrative enough for a 5-year program investment. Progress in Zimbabwe’s timber market system requires a multi-decade investment, negotiations with settlers (that may or may not work), and most importantly, government action to solve the land tenure issues. Timber market interventions have worked in other countries, addressing issues around certification, smallholder involvement, and access to investment. The key success factor for these interventions is strong governance and clear mandate over forestland use, which Zimbabwe still lacks.

2.6. Tourism Market System

2.6.1. MARKET SYSTEM DEFINITION

This study investigates the tourism market system, examining delivery of services such as tourism attractions, accommodation, and transportation, for people traveling and staying in places outside of their usual environment. The subsequent sections outline a light-touch overview of the market system and its opportunities to absorb more youth and women into employment. This section focuses on ecotourism, due to Zimbabwe’s abundance of natural landscapes and opportunities to create green jobs for women and youth. According to the UN World Tourism Organization (WTO), ecotourism includes “all nature-based forms of tourism in which the main motivation of the tourists is the observation and appreciation of nature as well as the traditional cultures prevailing in natural areas.”

Figure 25. Tourism market system



2.6.2. MARKET SYSTEM BACKGROUND

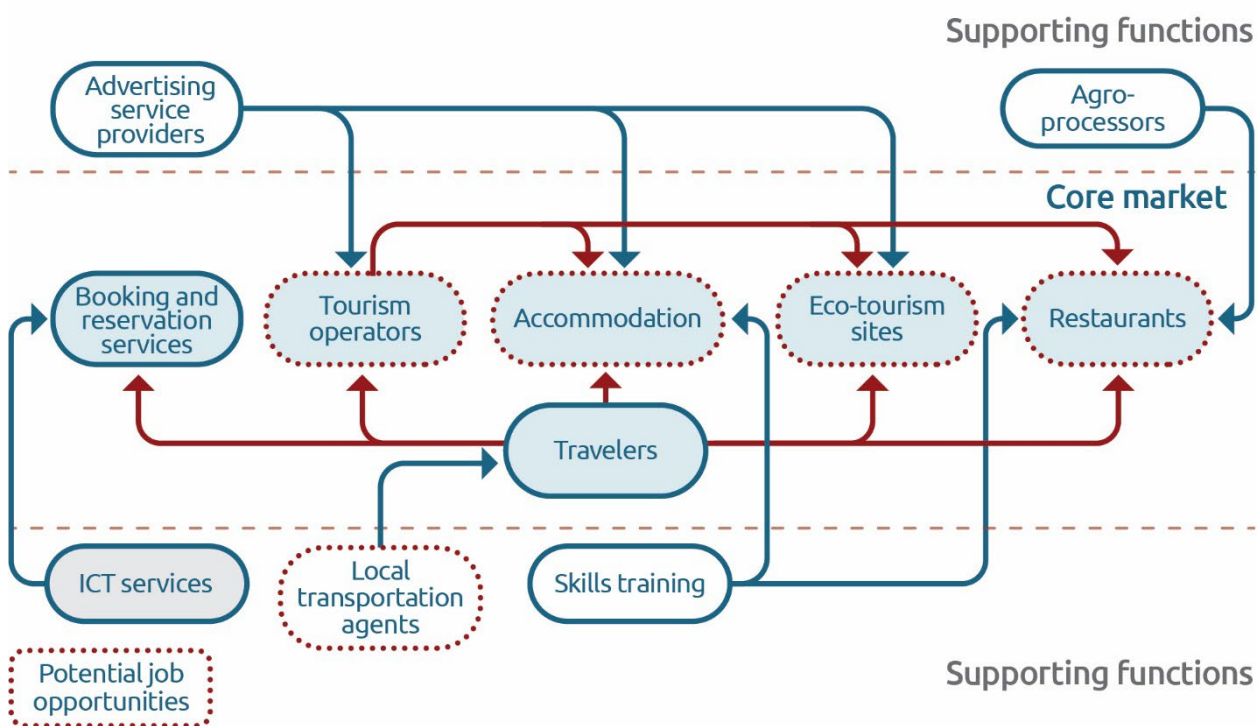
Zimbabwe has a number of ecotourist attractions, including unique scenic sites such as Victoria Falls, Kariba Dam, Gonarezhou National Park, Matobo Hills National Park, and wildlife conservations such as Mana Pools and Hwange National Parks. The country’s economy is dependent on the tourism industry,

which contributes significantly to GDP, employment, investment, and export earnings. Like many other countries, this industry was hit hard by the pandemic. Nevertheless, the decline of the tourism industry started well before the pandemic, owing to a harsh macroeconomic climate and rapid inflation. For instance, the industry contracted by 18.56% compared to 2016, and the arrival of new tourists fell by 11% in 2019.⁴⁴

The tourism industry in Zimbabwe is fragmented, where each market actor plays a different role.

Tourists can organize their trips on their own, booking their accommodation, transportation, and activities separately. Otherwise, tour operators organize tourist activities in specialized packages. The number of tourism market actors has not grown significantly; there were 1,265 tourism players in 2012, compared to 1,192 in 2000—growing only 6% in a decade.⁴⁵ Most tourism sites in Zimbabwe are sustained by domestic visitors—except for Victoria Falls, which receives many travelers from abroad. In 2011, domestic tourists made up 80% or more of hotel and lodge occupancy.⁴⁶ Nevertheless, domestic tourists often visit the sites for business and conferences, implying that their consumption of other tourism products may be limited.⁴⁷

Figure 26. Tourism market map



Depending on the type of tourism provider, the industry can be largely favorable to women and youth.

Hotels may employ up to 40% young people, and 30% women. Safari providers, on the other hand, are more likely to attract men, as the job requires traveling to remote places and more technical knowledge, where certification courses are much costlier than typical hospitality courses in TVET schools. Many young people, mostly university or TVET school graduates, say that the number of available jobs available is insufficient, as there are few new businesses and limited investment. The tourism industry also requires very high start-up capital and a wide network in the industry.

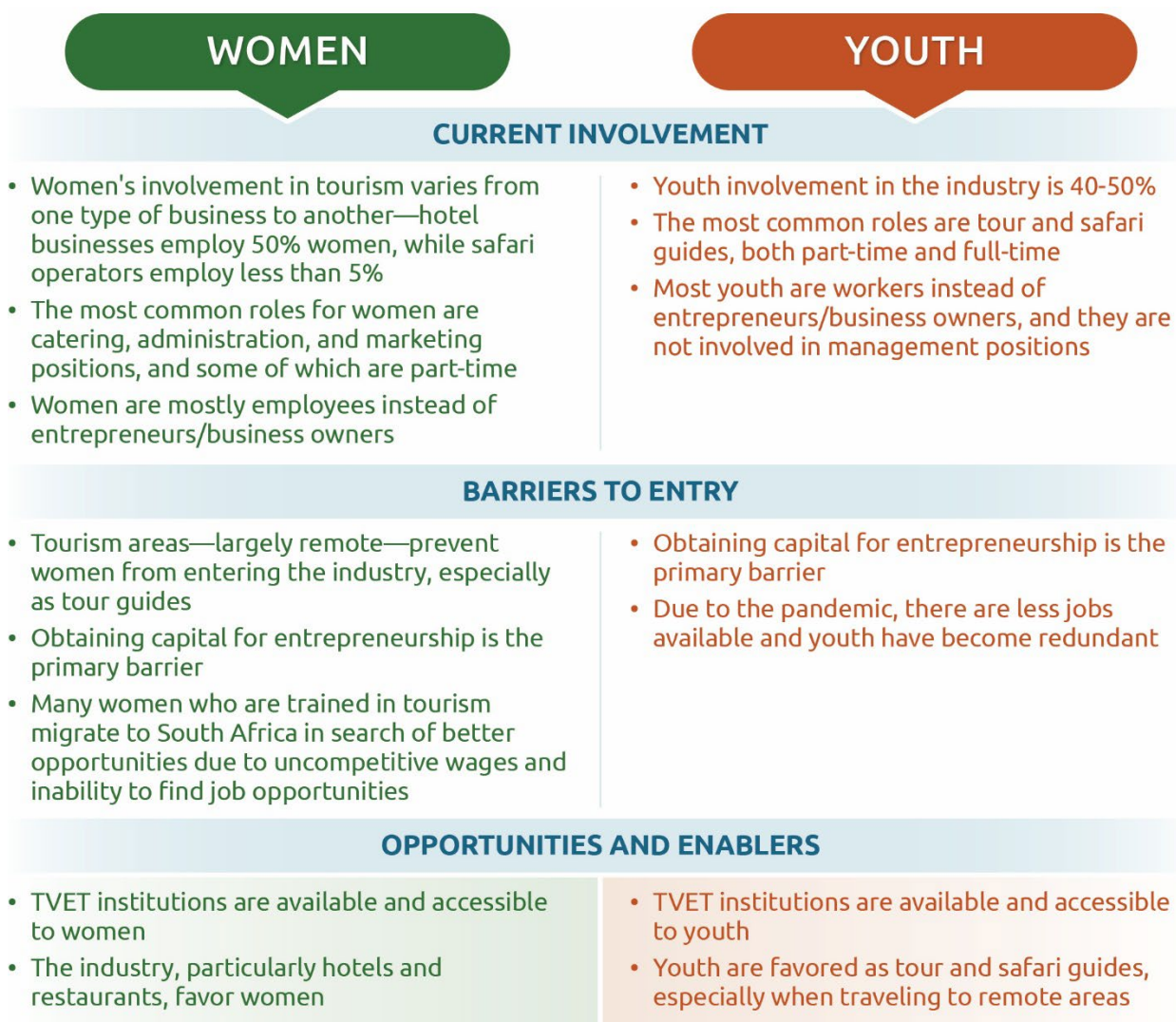
⁴⁴ Abel, Nyamadzawo, Nyaruwata, & Moyo, 2013.

⁴⁵ Ibid.

⁴⁶ Ibid.

⁴⁷ Ibid.

Figure 27. Summary of key barriers and opportunities for women and youth in the tourism industry



2.6.3. AREAS OF UNDERPERFORMANCE

The tourism industry has not only suffered due to the pandemic, but also from years of political instability and high inflation. The market underperformance has negatively affected the industry's ability to create jobs for young people and women. Based on a COVID-19 survey by We Are Victoria Falls, the pandemic has cost 7,000 jobs in the area due to retrenchment.⁴⁸ Identifying areas of underperformance could improve the industry's contributions to the economy and create jobs.

Price

High cost of doing business and lower consumer spending has negatively affected the revenue of tourism market actors. Zimbabwe is regarded as one of the most expensive tourist destinations in the region, due to multiple tax and levy burdens imposed on actors. For example, hotels currently need a license for each television they possess, rather than one license for the whole business. At the same time, consumer

⁴⁸ We Are Victoria Falls, 2020. We are Victoria Falls is an independent, public-private partnership initiative representing the tourism community of Victoria Falls.

spending has decreased across destinations and profiles, not only due to lower occupancy levels, but also because tourists tend to be local residents who are more budget conscious and look to spend less.

Quality

Poor infrastructure, power cuts, and a limited number of skilled workers negatively affects the service quality delivered to tourists. The poor-quality road network also impedes access, decreasing the destination’s attractiveness. Operational challenges because of ongoing fuel, power, and water shortages also affect service quality. Market players in the industry also cited difficulty finding skilled workers. While local skills providers offer many hospitality courses, they are often below tourism providers’ standards.

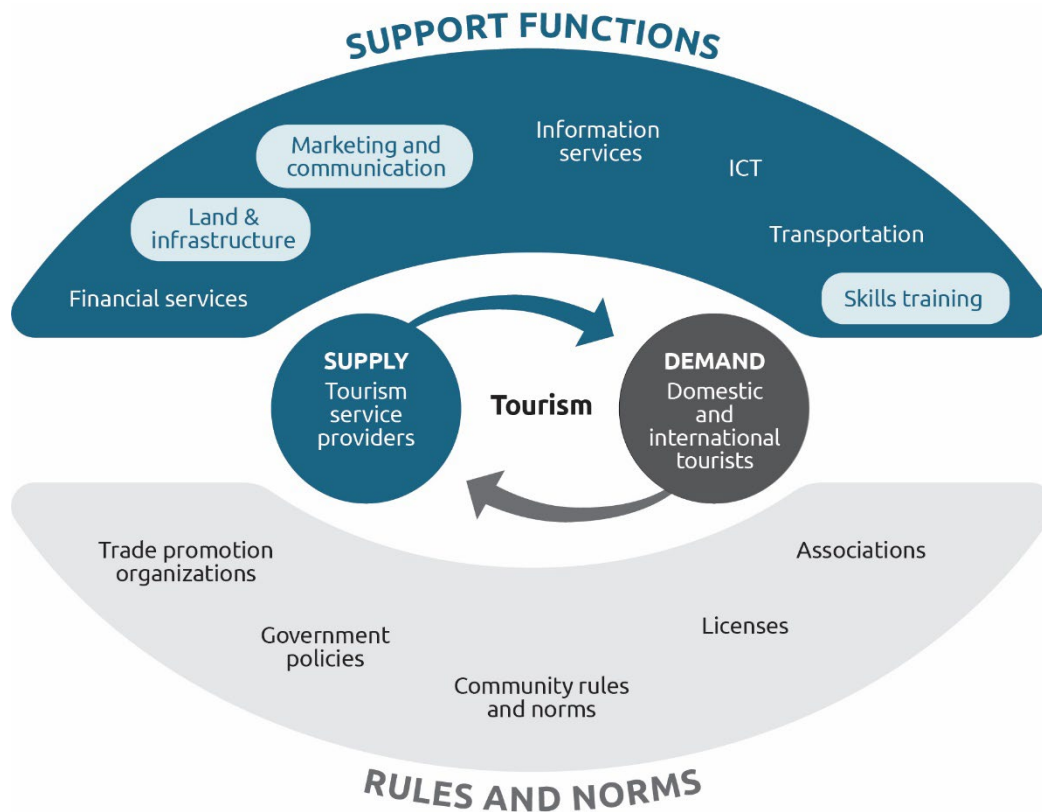
Quantity

On average, lodges and hotels have been operating below 50% capacity. The political and economic crises, along with the pandemic, have decreased the number of visitors. For example, tourists visiting Victoria Falls declined by 84% in 2020.⁴⁹ Low occupancy over the years is also underpinned by legacy issues of the decade-long economic crisis characterized by record inflation rate, worthless currency, low investor confidence, and dilapidated infrastructure.

2.6.4. ROOT CAUSE ANALYSIS

Inefficiencies in marketing, communications, skills training, and infrastructure underpins the underperformance of the tourism industry in Zimbabwe. It is possible to address some of these issues in the short- and medium-term, however, land and infrastructure issues may take longer to address.

Figure 28. Root causes of underperformance in the tourism industry



⁴⁹ IFC, 2021.

Inability to Attract Larger Consumer Profiles

Some tour operators reported challenges keeping pace with modern marketing, resulting in lower business volumes. Lack of marketing skills at the operator level and limited knowledge about online marketing tools for business promotion are key issues. And despite ecotourism's growing importance, tour operators have not fully explored ecotourism activity packages as a means of boosting their business. Ecotourism is generally cheaper, incurring lower costs for providers, which suits the domestic market. Ecotourism also accounts for 20-40% of international tourists.⁵⁰ Furthermore, a 2020 survey by We Are Victoria Falls indicated that 80% of respondents reported that nature-based safari lodges or camps would be travelers' preferred accommodation in the next 5 years.⁵¹ Special offers and bespoke ecotourism packages should incentivize guests, particularly domestic tourists, to stay longer.

Weak Engagement between the Tourism Industry and Skills Training Institutions

The tourism industry in Zimbabwe reportedly has insufficient numbers of experienced and skilled middle managers, many of whom have immigrated to surrounding countries in search of more stability. In parallel, there has also been a decline in the quality of graduates from local skills training institutions. The shortage of qualified teaching staff and the profit motive behind enrollment into institutions has contributed to the skills quality gap. Stakeholders in the industry believe the training curricula should be updated to accommodate industry demands and match international standards.

Low-Quality Infrastructure

There is currently massive underinvestment in the industry. Poor road infrastructure and lack of signage in local tourist destinations has discouraged new tourist arrivals. Water and electricity cuts—which strongly affect the quality of the stay—could be addressed by installing generators, solar energy equipment, and water pumps, however, low availability of affordable capital has prevented tourism actors from doing so.

2.6.5. ENVISIONED SYSTEMIC CHANGE

Better understanding of the tourism market by the market players as well as skills providers, particularly on the demand of ecotourism and needs of domestic tourists, would contribute to the growth of the industry and its ability to absorb more women and youth. Creating ecotourism products as well as training programs that better suit the needs of domestic and international tourists would create a more resilient and sustainable market system. This would spur industry investment, further advancing growth and job creation.

2.6.6. INTERVENTION IDEAS TO ACHIEVE SYSTEMIC CHANGE

Intervention idea: Support the Development of an Ecotourism Marketing Strategy and Facilitate Investment and Training for the Industry

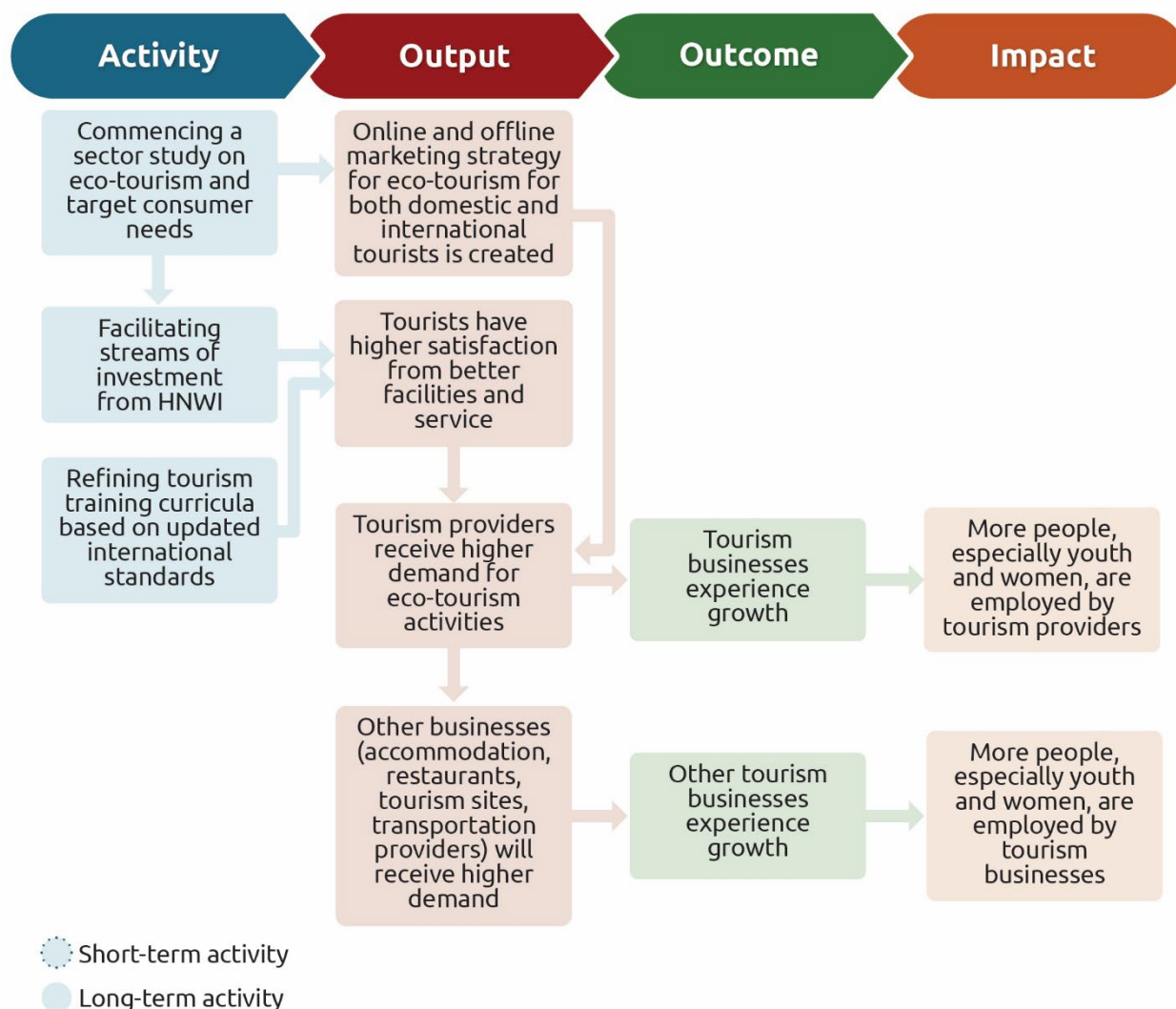
Theory of change

By studying ecotourism demand and crafting a marketing strategy adapted to different consumers, the ecotourism industry in Zimbabwe will attract more consumers. In parallel, facilitating investments and skills development would improve service quality for tourists, prompting repeat visits. Overall, industry growth will create more green jobs for women and youth.

⁵⁰ Abel, Nyamadzawo, Nyaruwata, & Moyo, 2013.

⁵¹We Are Victoria Falls, 2020.

Figure 29. Theory of change for Intervention Idea: Support the development of an ecotourism marketing strategy and facilitate investment and training for the industry



Potential partners

The intervention’s primary partner would be the Zimbabwe Tour Operators Association (ZTOA), a subsector body of the Zimbabwe Council for Tourism representing the business interests of tour operators, tour wholesalers, and destination management companies. As the industry is largely fragmented, working directly with an association would ensure a scaled impact of the intervention. Working and coordinating with ZTOA would also ease the facilitation of investment and skills development phase of the intervention.

Potential Facilitation Activities

First, conduct and publish a study on ecotourism. The study should capture emerging ecotourism demand from not only the international market, but also from domestic tourists, as they have the highest potential to sustain the industry. This would inform ZTOA members, other stakeholders (most importantly, investors), and market players in the industry. Subsequently, the team could engage marketing consultants to assist tourism operators to develop their activity packages based upon the findings of the study. The team could also facilitate access and usage of ICT for marketing and tourism management purposes.

Second, facilitate partnerships between tourism operators, ecotourism providers, and other market actors, and assist in designing a feasible commercial model. The pandemic and slow industry growth has led to declining commercial relationships between industry players. Tour operators need to map the potential partners to design the most attractive packages possible, mitigate high costs of doing business, and increase operational efficiency.

Third, facilitate engagement between ZTOA and potential investors, such as local financial service providers, high-net-worth individuals, or impact investors. Creating a Tourism Fund for developing and maintaining ecotourism related projects would ensure investment is continually channeled into the industry. The investment could finance infrastructure projects or other ecotourism site development.

Fourth, facilitate engagement between ZTOA and TVET providers to design an improved curriculum for hospitality training. To ensure that graduates advance in their careers to management positions, the training curriculum should be redesigned to respond to industry demands. The improvement in graduate quality, along with industry growth, would also influence salary competitiveness, incentivizing women and youth to pursue hospitality careers in Zimbabwe.

2.6.7. SUMMARY OF THE TOURISM MARKET SYSTEM

The tourism market is worth investing in given its potential to create jobs for women and youth, and strong demand from the domestic market (ensuring resilience). Nevertheless, further research is needed. Conducting a study on potential wages in the tourism industry, average sizes of market actors and their investment appetite, types of businesses favorable to women and youth entrepreneurs, and their motivation to participate in the tourism market is key. This would inform implementers about the potential employment impact and additional intervention ideas or facilitation activities.

3. Findings: Haiti

3.1. Area of Focus

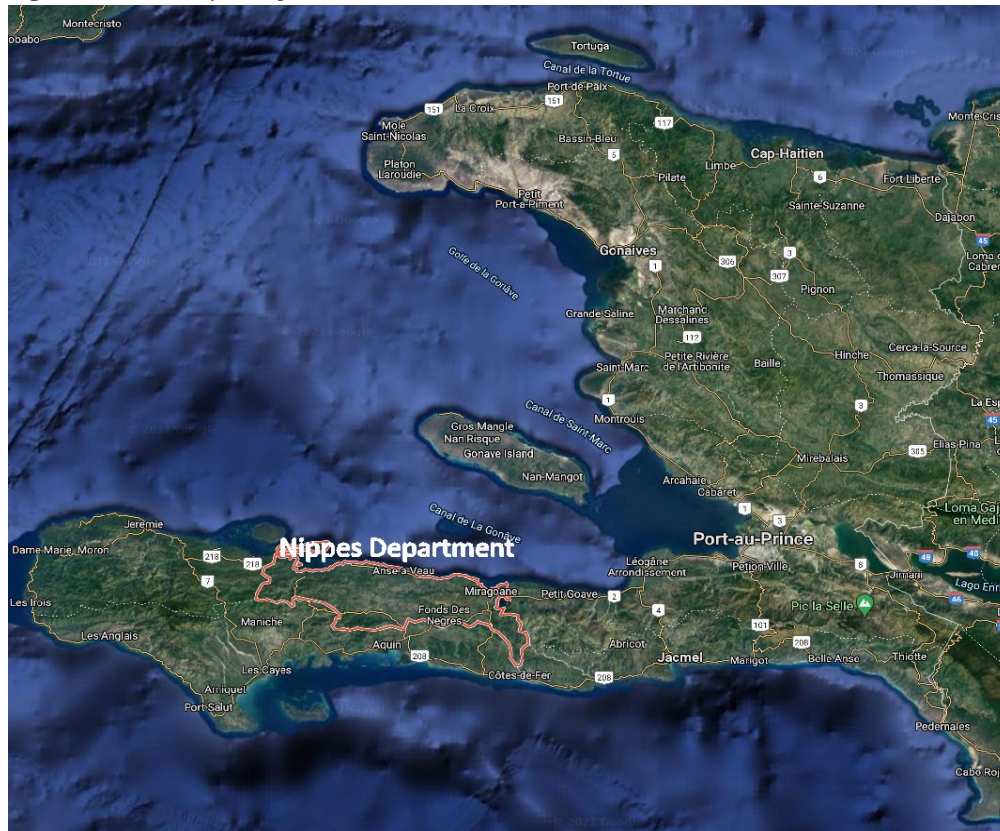
In Haiti, the study focused on off-farm and non-farm jobs that have strong linkages with agriculture. Due to the August 2021 earthquake, there was a strong emphasis on quick-win employment solutions relevant for post-earthquake recovery. However, these solutions are also market systems-based and sustainable in the long term. The target group was mostly the rural population, such as farmers’ cooperatives and smallholders, with special attention to groups with barriers to inclusion, such as youth and women.

KIIs were conducted in Nippes Department in Haiti (highlighted in Figure 2). Communes within Nippes were selected based on two factors:

- Communes representing the urban and peri-urban areas particularly affected by the August 14, 2021 earthquake.
- Communes that are distinctly different and allowed exploration of different contexts and opportunities for the youth and women.

To investigate any strong linkages with value chains in Nippes, insights from interviews in Port Au Prince were also included.

Figure 30. Area of study in Haiti



3.2. Country Context

Agriculture is one of Haiti’s most important economic sectors, generating an estimated 25% of the country’s GDP and employing almost half of its total population. Approximately 71% of all rural households participate in at least one agricultural activity. The services sector is largely informal and makes up the largest percentage (57%) of the country’s GDP, employing around 25% of the labor force. Haiti’s industrial sector, which includes construction, contributes an estimated 24% to national GDP, with manufacturing including production of beverages, butter, cement detergent, edible oils, flour, refined sugar, soap, and textiles. In the 2000s, the average GDP per capita declined.

Haiti suffers from very high levels of unemployment, and a deficit of skilled and professional labor continues to be a barrier to inclusive growth. Over two-thirds of the labor force do not have formal jobs and currently rely on unsteady incomes, which are often insufficient to pull them out of poverty. This is linked to lack of adequate education for many Haitians. Only 50% of children in Haiti attend school, hurting their future prospects securing formal jobs. In addition, Technical, Vocational, Education, and Training (TVET) in Haiti does not align with the country’s current challenges and direction of economic growth. Only a few TVET graduates manage to enter the labor market. According to *Institut national de formation professionnelle* (INFP) figures, just 9% of 5,700 graduates enter the national workforce per year. Graduates cite chronic unemployment, unavailability of government jobs, as well as long-term secure jobs as barriers to finding employment.

Most rural households in Haiti engage in multiple income-generating activities, with 70% employed in the agriculture sector. However, the non-farm sector accounts for 45% of rural employment. As agriculture remains a low-productivity sector, many are diversifying their revenue streams into activities outside of farming. Self-employment in low-productivity sectors such as commerce and construction remains the norm outside the farm sector. In order to alleviate poverty, access to basic infrastructure, education, and increased financial inclusion would be crucial to enable households to engage in higher productivity off-farm and non-farm sectors.

In urban areas, wholesale and retail trade dominate economic activities, a large part of which is petty trading, which is largely informal. However, a large share of full-time formal jobs in Haiti are concentrated in the manufacturing and apparel industry. The formal manufacturing and service sectors have the potential to be an important source of employment for low-skilled workers. The apparel sector is Haiti’s largest formal employer, employing more than 55,000 Haitians and supporting around 450,000 people.⁵² Due to low investments and low economies of scale, these sectors can only hire a small share of the labor force. Consequently, even with very high growth rates, they will be unable to absorb more than a fraction of new entrants.

3.2.1. IDENTIFIED LONG LIST OF MARKET SYSTEMS

Prior to field research, the research team conducted a literature review of the Haitian economy, outlining the current macroeconomic situation—including the impacts of the recent earthquake and COVID-19 pandemic—and most importantly, opportunities and challenges for employment at scale. Despite limited secondary data, the research team identified 12 possible market systems to explore (see Table 9).

⁵² Garcia, 2021.

Table 9. Long list of market systems in Haiti

Sector	Market systems
Services	ICT Financial services Transport and distribution
Energy	Solar energy
Industry and manufacturing	Cold chain logistics Construction and infrastructure
Agriculture and forestry	Fisheries Meat processing Agroforestry Food processing Agricultural services (i.e., equipment, inputs) Wood fuel

Each market system was scored against the following criteria to determine relevance, growth potential, and feasibility of an MSD approach in the context of Haiti:

Table 10. Selection criteria for market systems in Haiti

Category of selection criteria	Selection criteria	Weight	Justification for weight
Relevance (40%)	Potential for target groups (i.e., rural population) to find off-farm and non-farm employment and increase their incomes in rural and peri-urban areas	8	As described in the ToR, identifying off farm and non-farm job opportunities, particularly for youth, remains a challenge and is the main objective of this study. Therefore, the criteria carries a high weight.
	Relevance to increase resilience to future shocks, particularly climate shocks, and to post-shock recovery solutions	8	Climate shocks, particularly in Haiti, adversely impact the economy, which in turn negatively impacts jobs. Another focus of this study is to identify solutions relevant to the recent earthquake in Haiti, August 2021.
	Relevance to support linkages between rural and urban economies	6	Linkage between rural and urban economies is key for inclusive growth
	Relevance to support food and nutrition security	6	Food security and nutrition are a major issue in Haiti
	Relevance to existing interventions	4	Interconnectedness with existing interventions will scale-up impact, particularly if current interventions can be transitioned or scaled up using an MSD approach.

Category of selection criteria	Selection criteria	Weight	Justification for weight
	Potential for jobs in rural and peri-urban areas	4	Job opportunities benefit rural areas to support inclusive growth.
	Work conditions for employees/entrepreneurs are fair and do no harm	4	The job opportunities for target groups are decent, and do not impose a potential negative impact.
Growth potential (30%)	End market demand of the product/service	7	Growth in demand (domestically and internationally) ensures the resilience and security of jobs in the sector. Therefore, the criteria carry a high weight.
	Resilience of the value chain actors' and their ability to respond to climate change-related crisis	7	Shocks and crises remain probable (due to climate change or the pandemic), and the resilience of actors (can be in the form of diverse supply chain, financial sustainability, ability to digitize, infrastructure that will sustain through natural disasters) can support sustainability of markets and jobs.
	Potential to produce and supply product/services at scale by domestic producers/suppliers, who can thrive alongside import flows	6	Haiti imports a lot of products from neighboring countries, and high inflation makes it difficult for some products to compete with imported products. Domestic producers/suppliers' ability to thrive alongside imports can support the demand of labor.
	Value addition opportunities	5	Value addition is a factor for overall market growth.
	Prospects for attracting more players or services	5	Business case/incentives for market entry is an essential factor for market growth and sustainability.
Feasibility of MSD approach (30%)	Will and skill of private sector to expand employment opportunities for young women and men in the long-term	8	Private sector firms tend to produce the most formal, highest-paying jobs, therefore incentives and capacity of private sector to create inclusive growth is crucial. Hence, the criteria carries the highest weight.
	Enabling regulatory environment (i.e., import tariffs, protection towards local investors)	4	Enabling regulatory environment is a pre-condition for achieving scaled-up impact.
	Enabling infrastructure, such as roads, energy, mobile networks, etc.	4	The infrastructure supports rural-urban linkages as well as growth of VCs.

Category of selection criteria	Selection criteria	Weight	Justification for weight
	Availability of equitable and affordable financing for business start / scale up, especially those local to the area (local MFIs, local credit unions)	4	Access to finance is one of the enablers for business expansion, which supports job growth. In Haiti, this is currently a huge obstacle for businesses.
	Probability for robust market competition without distortion or negative influence by government or donors	4	Market distortion can discourage market actors from providing products/services at the market price, negatively affecting their incentives.
	Availability of market information to market actors in terms of needs, demands and constraints of target market	3	A well-functioning market requires minimum information asymmetry.
	Availability of role model actors already working in the market system, such as- private sector actor or public agencies	3	Availability of existing actors implies replication / innovation is possible, and the cost of market entry (esp. R&D) will not be as high.
TOTAL points for market system		100	

3.2.2. SHORTLISTED MARKET SYSTEMS

Based on the scoring system outlined in the previous section and discussions with the country team, the meat processing, transport and distribution, and agroforestry market systems were selected to explore in the next stage of the study, due to the reasons provided below:

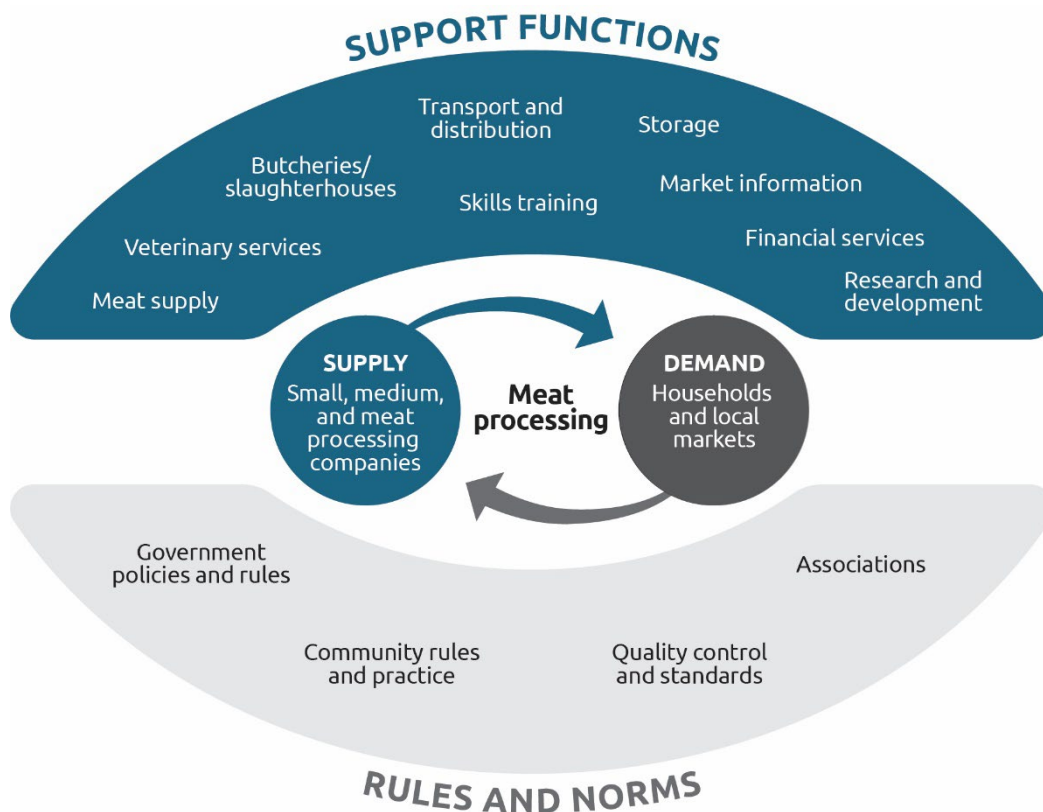
Table 11. Shortlisted market systems in Haiti

Market system	Rationale
Meat processing	This sector has high potential to generate off-farm and non-farm employment for rural people. There is also high demand for the product/service. It is also likely the private sector will invest in this market system for employment for women and youth. Additionally, it addresses food security concerns—a priority for Haiti.
Transportation and distribution	The transportation and distribution sector has potential to facilitate supply of products/services at scale by domestic producers/suppliers who can thrive alongside import flows. It could potentially improve the trade balance. There is also a great potential for employment generation and investment by the private sector and other market players.
Agroforestry	Existence of agroforestry training encourages youth participation and employment generation in this sector. Youth could potentially work assisting traders in the market, and Madan Sara could work as transporters and distributors. The sector is also relevant when it comes to resilience with an

Market system	Rationale
	emphasis on watershed management. The labor market may not be as strong compared to the transport and distribution sector, but extension services and other supporting functions (credit, grain facilities etc.) may benefit the job opportunities for the target groups.

3.3. Meat Processing Market System

Figure 31. Meat processing market system



3.3.1. MARKET SYSTEM DEFINITION

The meat processing market system in Nippes includes slaughtering, cutting, conditioning, packing, transporting, distributing, wholesaling, and retailing meat of all sorts (mainly beef, pork, goat, and chicken). This study also takes a closer look at the livestock and meat production segments, since meat processing activities are rudimentary and mostly limited to a short value chain, where livestock is produced and transported live to the nearest markets for direct slaughter and retail. By far, most of the meat produced and processed in Nippes is produced locally. A small portion of the meat sold in Nippes is imported from Port Au Prince, mainly chicken and pork meat.

3.3.2. MARKET SYSTEM BACKGROUND

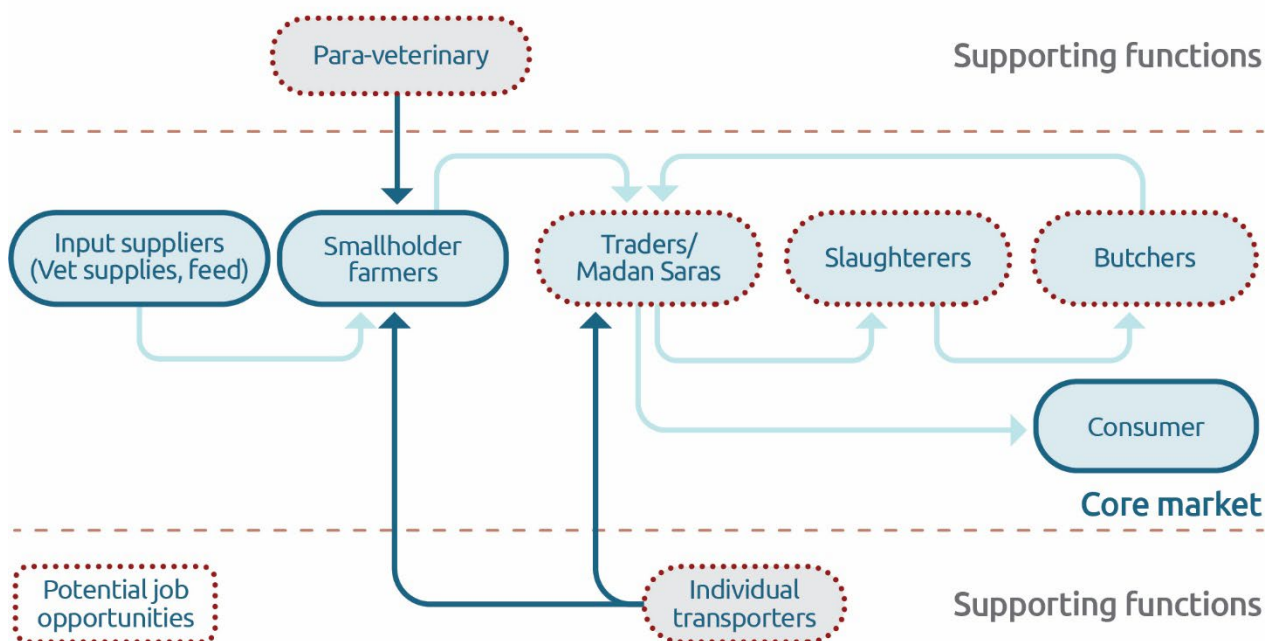
During 2018, Haiti imported \$99.03 million USD worth of meat and edible meat offal,⁵³ a 15.46% increase from 2017. Though Haiti’s total meat production has fluctuated substantially in recent years, it

⁵³ Haiti - Agricultural Sector. Privacy Shield Framework.

generally increased from 1970-2019, with 107,930 tons produced in 2019. Based on interviews, local meat sales have decreased due to devaluation of local currency, leading to price increases amidst low consumer purchasing power. Furthermore, the price of local meat is less competitive than imported meat, as market players increasingly find cheaper sources of meat (Brazil and the European Union for instance).

The meat production and processing markets in Nippes are highly fragmented. A plethora of individual micro-entrepreneurs or trade opportunists dominate the market. Like agriculture and many other sectors in Haiti, there exists no formal organizational structure such as companies, associations, or cooperatives. The market in Nippes begins at the production level, where there is a range of smallholders, most of whom operate individually and/or at an economic subsistence level. Average monthly revenue for these actors recorded during field research ranges between 25,000 in Haitian Gourdes (HTG) or \$238 USD and 119,000 HTG (\$1,133.3 USD) for poultry and livestock farmers. The average monthly income recorded for youth working in this sector, who mostly work as on-farm labor, is considerably lower: between 2,500 HTG (\$23.8 USD) and 15,000 HTG (\$142.8 USD). Consumers we surveyed spend between 45 HTG (\$0.42 USD) and 250 HTG (\$2.38 USD) on meat per week. The animals sold at the farm level also have low weight and poor health due to improper livestock management and limited access to quality feed and preventive and curative veterinary care.

Figure 32. Meat processing market map in Nippes



Most livestock farmers hire individual transporters who bring their animals to a livestock or public market, where traders and Madan Saras buy the live animals. The traders and Madan Saras then bring the animals to someone for slaughter, who then pass it on to informal butchers to cut the carcass. They retrieve the cuts of meat to either sell directly as is or brine them into *vyann sale* (salted meat) to better preserve it. The traders, usually male, are more involved in large livestock (such as cattle and goats), while the Madan Sara mostly control the marketing of poultry. The poultry market presents less barriers to entry, due to its relatively low start-up capital requirements. While margins for poultry are higher (35-45%) relative to larger livestock (25-30%) due to its growing market demand, the poultry market is more fragile and riskier.

Traders and Madan Saras also act as retailers who sell the meat to the final consumers. The main supermarket in Nippes, Tiz Market in Miragoane, stopped selling meat in 2020. The reasons stated were two-

fold: first, because less people were purchasing from their stores in Nippes, and second, the spike in fuel prices and decreased availability of fuel made it difficult and costly to keep fridges and freezers running.

All off-farm actors in the meat market work individually and rarely employ anyone, as they operate on such a small scale. Technology and equipment used in the Nippes meat processing sector is rudimentary. Most people use machetes and knives to cut up the meat. There is no cold storage infrastructure available, making conservation or long-term storage impossible. There is also little efficiency and margin in most of the value chain—people offering services like cutting up animals are paid in low-value pieces of meat, e.g., the heads or necks, rather than money. In addition, the absence of food safety regulation not only presents a public hazard but is also a major obstacle to the improvement of the overall meat supply. Final consumers remove themselves from the market by either not eating meat, or accepting the low-quality product, as they do not have alternative sources for meat products.

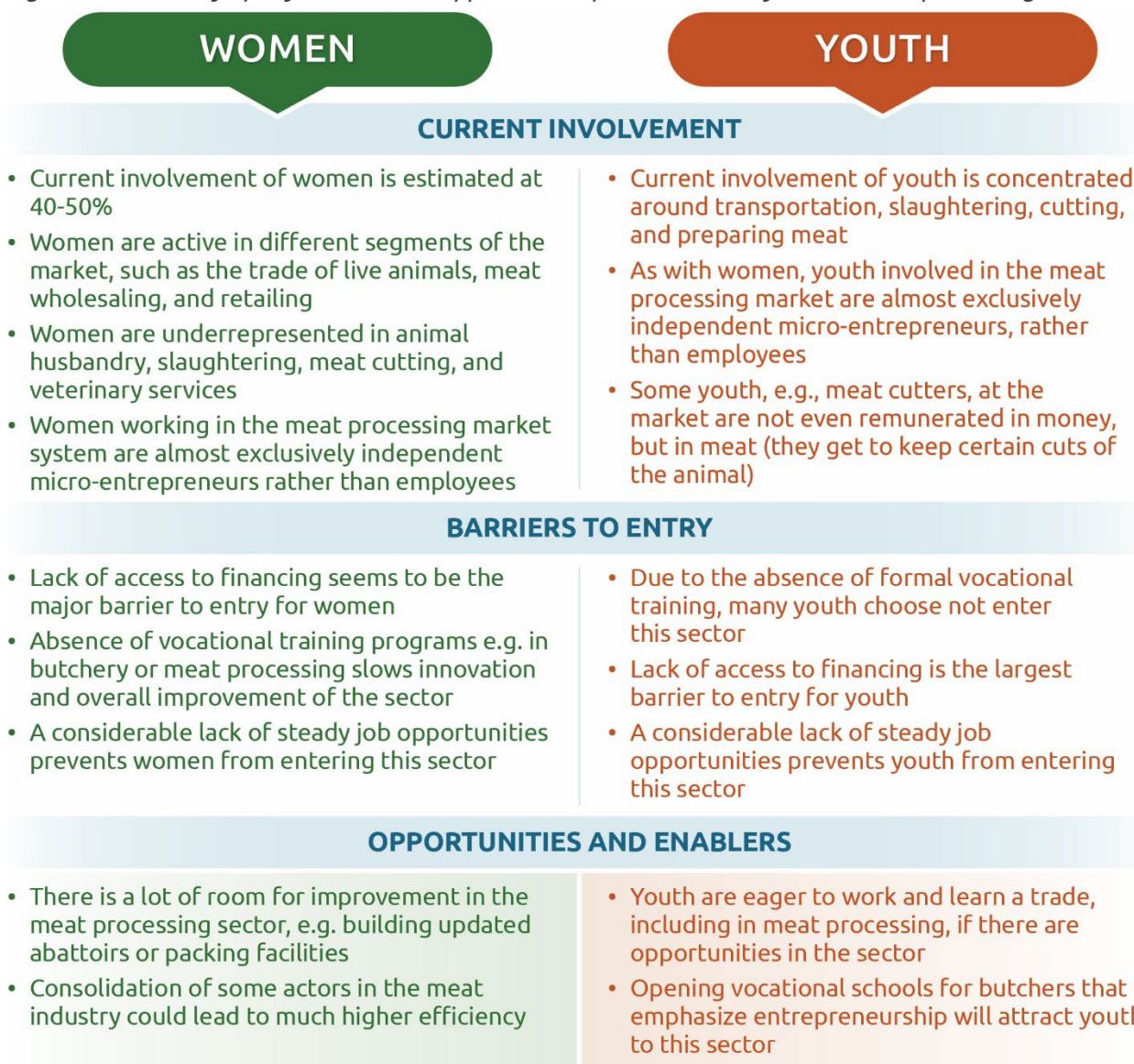
The Win-win of the Cooperative

Mackendy, Roselyne, Wendel, and Marjorie are all active in the livestock trade in Nippes. They each trade around two or three animals (mostly goats and pigs) per week. They buy mature animals from smallholder livestock farmers in different localities in Nippes. Because they each only buy a few heads of cattle, their negotiation position with livestock farmers is weak. If the farmer refuses to sell, they will lose their monthly income. Now they each need to arrange transport for their animals to the Miragoane market. Their two or three animals don't even take up half of the space in the pick-up trucks they hired. Yet the pick-up trucks have a set rate for that route, whether the truck is fully loaded or only half loaded. At the Miragoane market, our four protagonists are directly in competition with each other. Buyers take advantage by playing them out against each other.

Now let's assume the four traders create a small cooperative through which they will work together and pool resources. At the livestock farmer level, they will buy more animals, thus having a stronger negotiation position. They can now transport their animals together and optimize costs. At the market, they sell as one unit with harmonized prices, meaning buyers can't drive the price down. Another "win" is for the final consumer who will pay less for the meat because cost was optimized throughout the chain.

The Madan Saras are almost exclusively women, operating in similar sizes, with the biggest ones selling 4-5 animals per week. Most traders, however, are men. The age group of these Madan Saras positively correlates with the size of their businesses, where older Madan Saras usually have larger scale due to more experience and established networks. Meanwhile, around 60% of slaughterers and butchers are young people, almost all of whom are men. Both women and youth face common barriers to grow their businesses and meaningfully participate in the market. Limited access to financing, low levels of skills training, and few job opportunities impede their participation.

Figure 33. Summary of key barriers and opportunities for women and youth in meat processing



3.3.3. AREAS OF UNDERPERFORMANCE

The meat market system in Nippes not only suffers from currency devaluation, but also low quality and added value in each stage of the value chain. Lack of coordination, inexistence of quality standards, and government regulations in the market also contribute to the market’s weak performance and inability to absorb more employment, particularly for women and youth.

Price

There is no proper pricing system in the meat market in Nippes. Rather than advertising prices (such as per kilo or pound), they estimate the weight and value of each sale to individual customers. Customers, instead of ordering a specific weight, will tell the retailer the price value of the meat they would like to buy, for instance, “100 HTG of pork” or “50 HTG of goat meat.” Therefore, each transaction becomes a micro-negotiation.

Consumers’ low purchasing power forces actors to operate at a very low margin, thus sacrificing quality. Due to inflation, increasing fuel prices, and decreasing purchasing power, many consumers state

that meat is getting too expensive. When asked whether they would be willing to pay more for higher quality meat, most say they would choose price over quality.

Quality

During field research, one of the most common complaints heard from consumers is poor-quality meat. The quality issues are present in each step of the value chain, from the production level to the processing level. At the production level, low availability of grain and fodder, especially during the dry season, and limited access to veterinary services contributes to low yield and livestock diseases. Moreover, veterinary services in Haiti are scarce (~80 practicing veterinarians nationwide), expensive, and inefficient.⁵⁴ At the processing level, due to the lack of cold storage facilities and high sub-tropical temperatures, meat does not stay fresh for more than a day. Retailers have found different tricks to conceal the loss of freshness by adding acid (e.g., vinegar, lemon juice), or brine. Some consumers stated they stopped eating meat due to the high risk of food poisoning.

Researchers were not able to identify any applied hygiene norms or regulations, be it at the slaughter, cutting, wholesale, or retail levels. What is considered the “abattoir area” at public markets is usually nothing more than an open-air area with some tables. Blood and waste are not properly cleansed away, attracting many flies and other pests. The same goes for the wholesale and retail environments, where cuts of meat for sale sit out in the open, often covered in flies. Many retailers conserve meat in plastic buckets with high risk of cross-contamination.

Quantity

Based on interviews held in several localities in Nippes, there is a shortage of reliable high-quality meat in Nippes, curbing demand from rural consumers. The demand for premium quality meat, though still niche, also presents an untapped market. In addition to financing challenges that hamper further investment, a newer challenge is the recent violent gang activity around main entrances and exits of Port-au-Prince towards the South. This has reduced economic linkages between Nippes and Port-au-Prince. Like Port-au-Prince, Quest Department has many large industrial chicken farms and slaughterhouses. Buyers from all over the country would come to both areas to buy live chickens and chicken meat (frozen and fresh) in bulk for resell in public markets across different departments. This lucrative trade has decreased drastically due to the risks of driving through certain gang-controlled areas. Today, gangs continue to grow, federate, and annex areas of control.

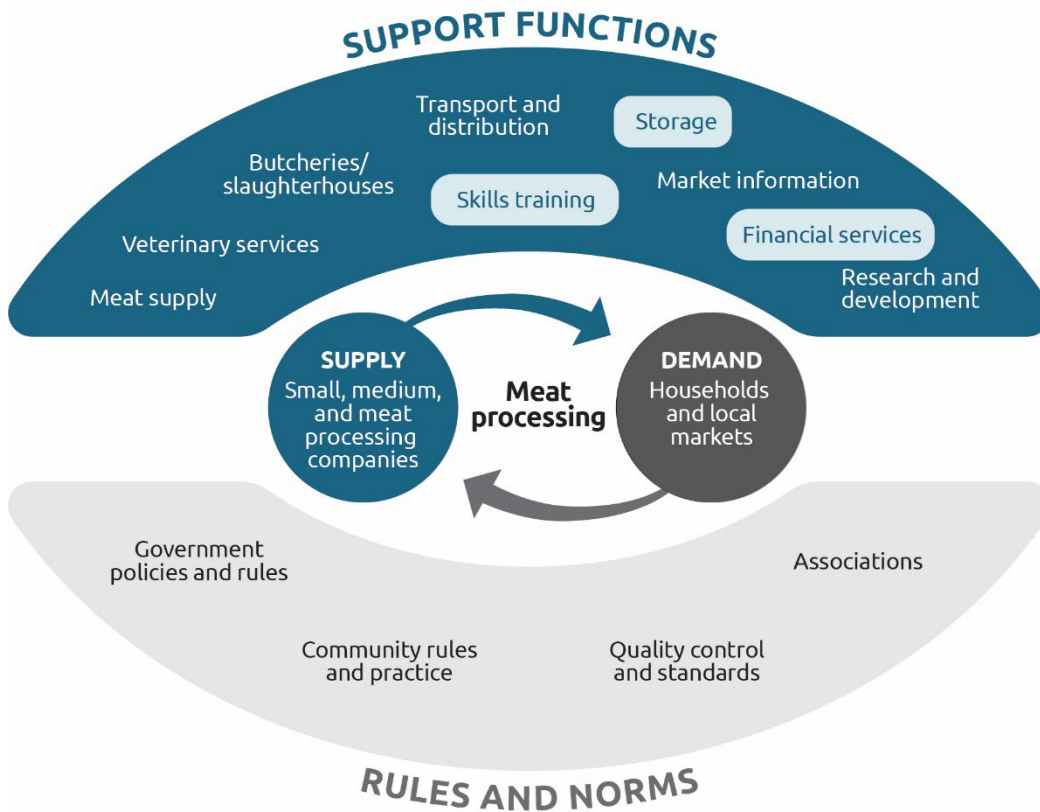
The absence of adequate (cold) storage infrastructure in Nippes also leads to difficulties for market actors in stabilizing supply. Depending on the animal breeding season, or periods of socio-political trouble, meat is sometimes unavailable in the market. When these variables suddenly change, it leads to too much supply and too little purchasing power to absorb it, causing waste.

3.3.4. ROOT CAUSE ANALYSIS

Based on the areas of underperformance highlighted in figure 34, this section lists the main underlying causes impeding growth of the meat processing industry and its ability to absorb more employment. The root causes are prioritized due to their potential impact and strongest feasibility to address in the short- and medium-term, and can be linked to meat storage, capital availability, and skills training.

⁵⁴ Adreani, 2018.

Figure 34. Root causes of underperformance in the meat processing industry



Weak Storage Infrastructure

In Nippes, there are few to no options to freeze or refrigerate large quantities of meat. In Nippes, there are small hardware shops selling electric and solar-powered refrigerators, mostly second hand, but affordability has been an issue for market players. The deepened fuel crisis has also made it even more difficult to run a cold storage facility. Consequently, the time between slaughter and sale to the final customer needs to be very short. This also means that each animal needs to be slaughtered, cut, and sold individually to avoid possessing excess meat that won't sell. Ultimately, this leads to a very inefficient meat processing industry.

Limited Access to Financing

Market actors in the meat processing market reported that low access to financing is among their largest constraints, hampering them from expanding their business operations (i.e., through quantity of meat sold). The main reasons most people (youth, women, and men alike) have a hard time accessing credit is that they do not have the required profile (personal or risk profile) or collateral to secure a loan. They are also unable to generate enough income to repay the interest rates. There are multiple negative consequences for micro-entrepreneurs operating with minimal resources. First, they will likely never be able to grow at a rate where they can hire employees. They will remain a one-woman or one-man enterprise operating on a day-to-day basis. Furthermore, it prevents them from planning for the long-term and anticipating business opportunities. Lastly, if the micro-entrepreneur (or someone in their family) falls ill or has an accident, it will paralyze their activity and slow or stop income entirely.

Additionally, banks and MFIs' aversion to lend, especially to agricultural actors, is caused by high operational costs, leading to high interest rates. This is due to (a) inexistence of insurance/guarantees to lower lending risks; (b) a lack of in-house expertise to investigate this type of demand and assess risks given

the largely informal nature of these activities; (c) the costs and complexity of this type of financing; and (d) the small scale of the businesses. Some MFIs have subsidized interest rates to keep a low percentage, as seen in Fonkoze, one of the country's leading and most established MFIs. When not subsidized, commercial interest rates can easily go into the double digits.

Low Access to Skills Training

None of the meat processing actors interviewed have received any formal or recognized training on meat handling, processing, or sanitary standards. Many learned the trade from their parents or family members, while others learned on the job. There are government or NGO training programs in meat handling or processing, but there are no slaughterhouses large enough to provide proper training to workers in Nippes. Access to veterinary services is key for healthier animals and higher quality meat. Yet, Haiti has no graduate schools for veterinary medicine and only has around 80 practicing veterinarians nationwide.

3.3.5. ENVISIONED SYSTEMIC CHANGE

Establishing up-to-date meat processing facilities will improve meat quality and address inefficiencies by connecting different actors in the meat industry. It is important to move from the highly informal nature of the sector to a more modern one with key infrastructure, such as cold storage facilities and skilled workers. Focusing on these systemic improvements will boost productivity and create more jobs along the entire value chain.

3.3.6. INTERVENTION IDEA TO ACHIEVE SYSTEMIC CHANGE

Intervention Idea: Supporting the Development of Small-scale Meat Processing Facilities in Nippes

Theory of Change

In partnership with a local cooperative, implementers could set up a small-scale meat processing facility in Nippes, including an abattoir/slaughterhouse, equipped with a meat packing machine. In this initiative, the aim is to create more coordination and organization among market actors in the value chain using the following business model:

- The facility would be mainly managed by an existing local cooperative catering its meat processing services to livestock traders and Madan Saras.
- The livestock traders and Madan Saras could purchase the processed meat and sell it to retail consumers. The facility could also establish its own network of retailers based in different markets across Nippes.
- The facility could recruit either local butchers or youths as workers to slaughter and cut the meat received from traders and Madan Saras.
- The facility could arrange access to solar-powered cold storage, an appropriate meat packaging machine, and a transportation service for traders and Madan Saras.

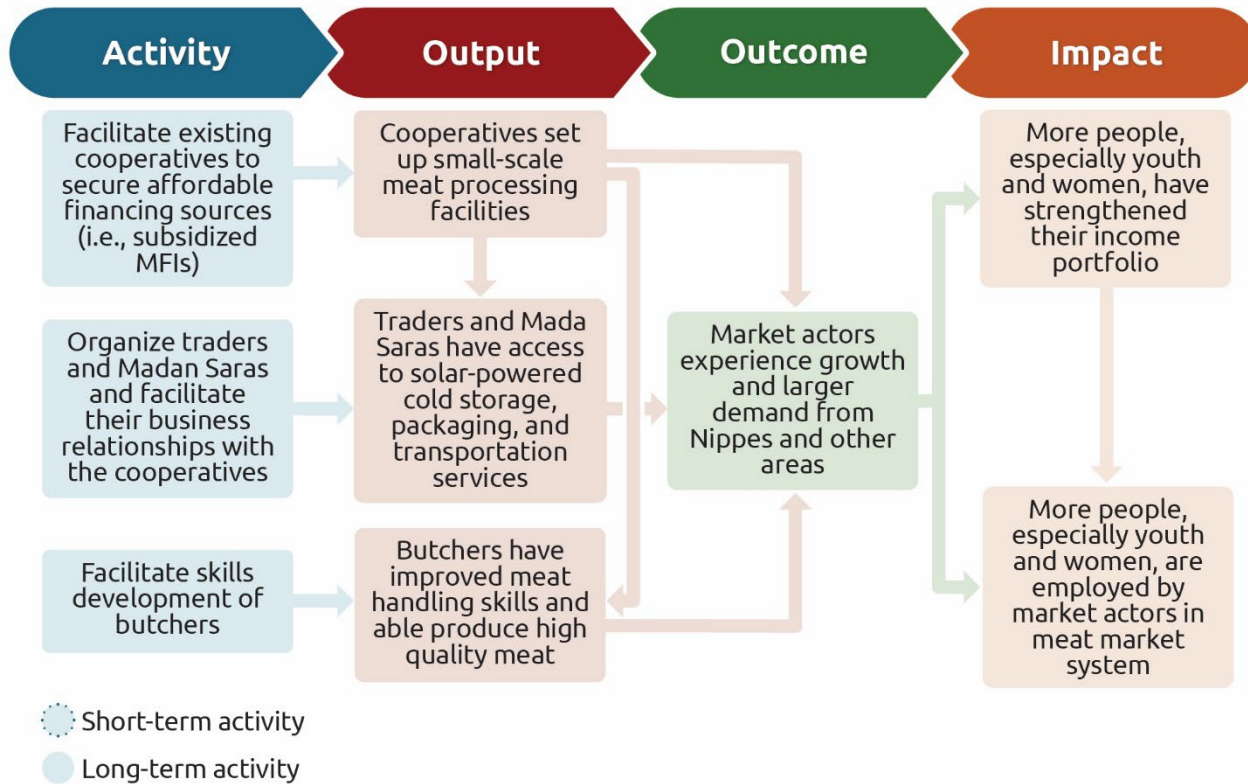
To make this work, the processing facility would need a clear business case, where (a) the revenue model is identified (i.e., whether the facility will gain revenue from each transaction fee, or will apply a flat membership fee); and (b) whether the cooperatives will organize the finances from the beginning or implementers will provide this assistance in the initial years. Implementers can also learn from [Mercy Corps' experience in Jijiqa, Ethiopia](#), where a slaughterhouse and meat processing facility were set up, creating 200 new jobs.

Simple equipment, such as meat washing stations, dehorners, meat slicers, and vacuum packing machines, could be offered at the facility for livestock traders. The butchers and slaughterhouse workers could produce and process meat in hygienic conditions without driving costs too high. A small, cold storage unit running on solar energy would also allow safe storage to better preserve the meat and plan production. Currently, the business operations of traders, Madan Saras, and butchers are limited to small

transactions, making it difficult to reach scale or to supply to larger consumer groups. This integration would enable cost efficiency, massive improvements in meat quality, and market expansion to areas within and outside Nippes.

This intervention could create employment for a variety of workers, including youth and women. This would include logistics workers, slaughterhouse workers, packers, transporters, and warehouse employees. Furthermore, this initiative would require technical staff to maintain tools and machines, the cold room, and vehicles.

Figure 35. Theory of change for Intervention Idea: Supporting the development of small-scale meat processing facilities in Nippes



Potential Partners

The ideal partner for this intervention idea would be existing local cooperatives or entrepreneurs open to establishing a small-scale processing facility. Implementors should investigate the feasibility of having Fonds-des-Nègres area as the pilot location.

Once the business case has been proven, a scale-up would be feasible by engaging other investors or larger meat processing businesses from other departments (for example, Ouest Department) and replicating the intervention idea. Miragoane, the capital city of Nippes, could be a potential scale-up location, due to its geographical ability to serve the entire Nippes territory.

Potential Facilitation Activities

- **Start by hiring a consultant to conduct a feasibility study for the partner.** The study would outline potential demand and business projection, based on the partner’s financial capacity, as well as the required investments. The feasibility study would inform and attract potential funders.

- **Map the financial market landscape in Nippes, and facilitate access to affordable financing of potential partner (if needed).** During the mapping, identify the size of financing and the type of funders who need to be engaged.
- **Co-invest in meat processing equipment for the facility,** such as solar-powered cold storage, packaging machines, etc., to lower the risk to market actors and funders.
- **Co-invest in skills training for butchers and provide linkages for farmers who participate in existing livestock programs in Nippes.** The farmers would be trained to apply good rearing practice and should be encouraged to supply their livestock to the meat processing facility. This would ensure quality meat is produced.

Route to Scale

- **After the business case is proven, conduct a feasibility study to set up a larger-scale meat processing facility, replicating the business model in the pilot intervention.** The study would identify meat production capacity in Nippes and potential returns on investment.
- **Pitch new investment to commercial chicken farms and slaughterhouses** either in Nippes, or from investors or existing businesses in other areas (for example, the Ouest department).
- **Provide a matching grant to investors** by providing technical expertise or co-investing in new equipment, to lower the risk to market actors and investors.

3.3.7. SUMMARY OF THE MEAT PROCESSING MARKET SYSTEM

Advancing the meat processing practices in Nippes presents a great opportunity to create a systemic change in the market system. By setting up proper meat processing facilities with advanced equipment, hygiene standards, and trained workers, the quality of the market will evolve. This will instigate higher demand from consumers within and outside Nippes, increase financial returns for the market actors involved, and open opportunities for young people and women to have meaningful participation in the sector. The market system would be a good investment for implementors.

To inform the investment decision further, conduct a study on:

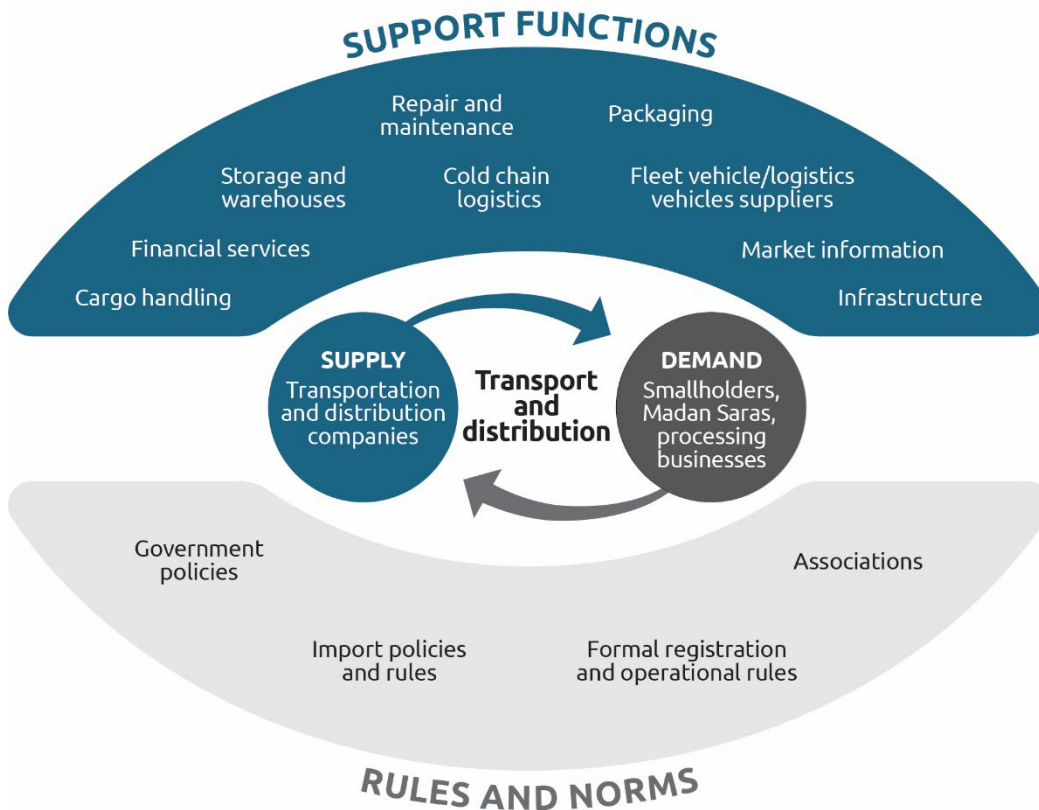
- The market size and share of imported meat in Nippes, compared to locally produced meats, and the size of market demand for quality meat. This would reveal potential supply gaps and strategies to address them.
- The number of value chain actors in the meat processing market system. After identifying the market size and the production or trading capacity of each market actor, it would be easier to estimate the number of actors and potential job opportunities.

3.4. Transport and Distribution Market System

3.4.1. MARKET SYSTEM DEFINITION

The transport and distribution market system in Nippes encompasses all types of transport via land or water of people, goods, and animals. Means of transport include motorbikes, passenger cars, pick-up trucks, tap taps (modified pick-up trucks mostly serving as public transport for people), regular trucks of all sizes, minivans, buses and, to a lesser extent, boats. The analysis excludes air transport as Nippes department has no airport. In this study, distribution is defined as the movement of (commercial) goods and commodities from one area to another, from producers to either end consumers or intermediaries. This section also examines storage and warehousing because they are key supporting functions in the Nippes transport and distribution market system.

Figure 36. Transport and distribution market system



3.4.2. MARKET SYSTEM BACKGROUND

Transportation in Haiti is an important economic sector, especially for rural livelihoods. The services are mainly provided via road networks, however, these networks are limited and in poor condition. Based on the 2015 Rural Access Index, only 39% of the population in Haiti lived within 2 km of an all-season road (roads which can be used despite extreme weather changes), with most tertiary and rural networks in very poor condition and barely trafficable. The poor accessibility has contributed to high transportation services costs in Haiti, further isolating many rural communities from major economic and trading centers in urban or peri-urban areas. Up to 30% of agricultural production, like mangoes or avocados, is lost due to a lack of access to markets. Further damage caused by the August 2021 7.2-magnitude earthquake exacerbated this problem, particularly in the Nippes and South departments.

The transportation services sector in Nippes and other regions in Haiti are expensive and fragmented with multiple small operators. The price per ton-km transported is \$0.43 USD for freight, the highest in the Caribbean region and about 3.9 times the average for Central America. Road conditions are a significant contributor to this high cost of transport. In addition, there is a low level of organization in the market system. Tap tap driver associations exist, but their mandates do not go beyond issuing permits to drivers wishing to serve a certain route. Attempts by the government to organize a public transport system or introduce a national network of buses have all failed.

In the mountainous terrain of Haiti, people and goods travel via motorized transport, such as motorbikes, cars, tap taps, and trucks. The network of primary roads connecting major cities across the ten departments is in fairly good condition. Most trucks transport goods for a wide variety of industries, often in one load, damaging agricultural produce and other fragile items. There are no specialized or separate transport services for specific goods, e.g., livestock, cold transport, fragile items, etc. Many truck owners

offer so-called *Express Partout* (“Express Everywhere”) services, meaning that they will drive anywhere with anything, as long as the client pays the right price. Based on interviews, monthly revenues of transport and distribution companies (based in Miragôane and Fonds-des-Nègres) range between 11,667 HTG (\$111 USD) and 833,333 HTG (\$1,904.7 USD). Youth employed in this sector recorded monthly earnings between 7,500 HTG (\$71.4 USD) and 30,000 HTG (\$285.7 USD). These companies employ between three to 20 full-time employees and 10 part-time employees. Most common jobs in the transport and distribution sector are drivers, handlers, and administrative assistants.

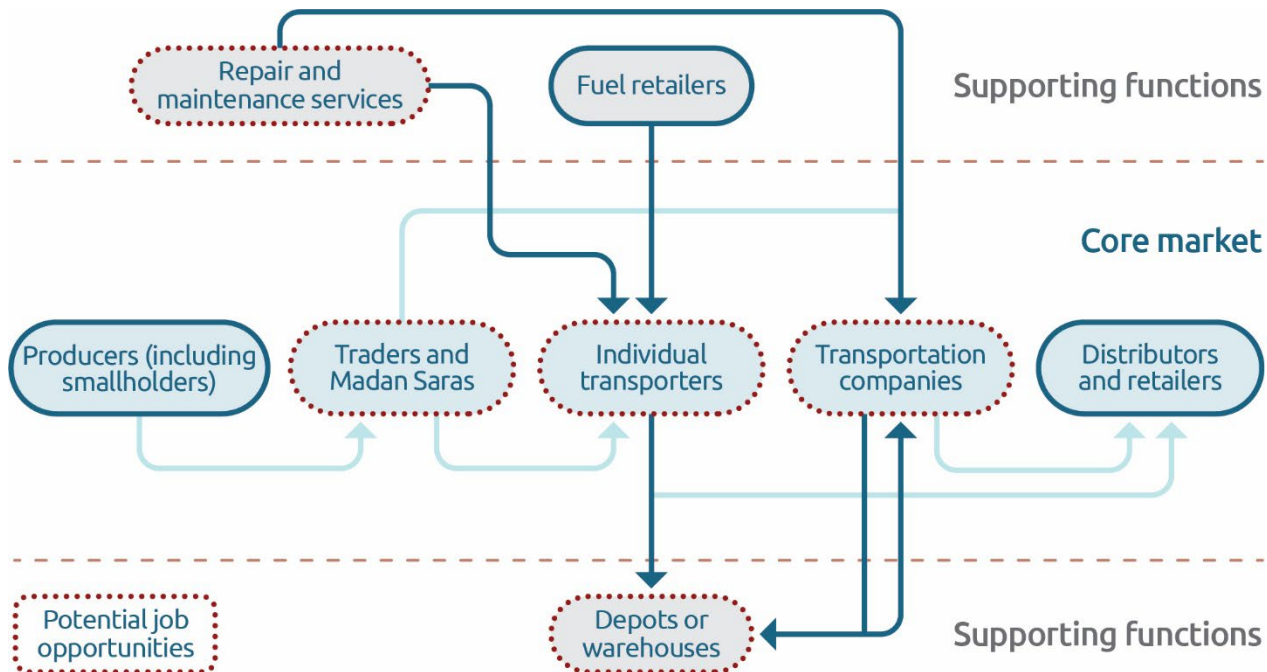
Is Nippes Getting Cut Off?

Jean is a micro-entrepreneur from Fonds-des-Nègres who owns his own truck. For many years he used to drive to Port-au-Prince public markets to buy mostly foodstuffs and commodities in bulk. He would load his truck with bags of rice, flour, cans of vegetable oil, butter, biscuits, and frozen meat, mostly chicken. Once the truck was full, he headed back to Fonds-des-Nègres, an approximately 5-hour drive. By doing this once a week, Jean was able to secure an above average income of 50,000 HTG per month, enough to pay for his kids’ school, clothing, and other items.

One day, when Jean finished loading his truck at the public market in Carrefour, he decided to head back home. Soon after, when driving through the Martissant neighborhood, heavily armed men on a motorbike forced him to stop and pulled him out of his truck. The men confiscated the truck and disappeared. He was left in shock. Hours later, they returned the truck, empty. They needed the food for people in their community, the men said. They handed back his keys and he drove to Fonds-des-Nègres with an empty truck and no goods to resell.

Jean is one of the lucky ones as most drivers never see their trucks again, or they get kidnapped for ransom, or simply killed. This reality has caused most truck drivers to refuse to serve the road between Port-au-Prince and Nippes or are asking exorbitant fees to do so. Since most imported goods are concentrated in Port-au-Prince, this means the south is slowly getting cut off. They increasingly rely on their own production for which there exists virtually no support structure, be it the government, financial, or private sector. As a result, this leads to increased scarcity of products and hikes in prices.

Figure 37. Transport and distribution market map in Nippes



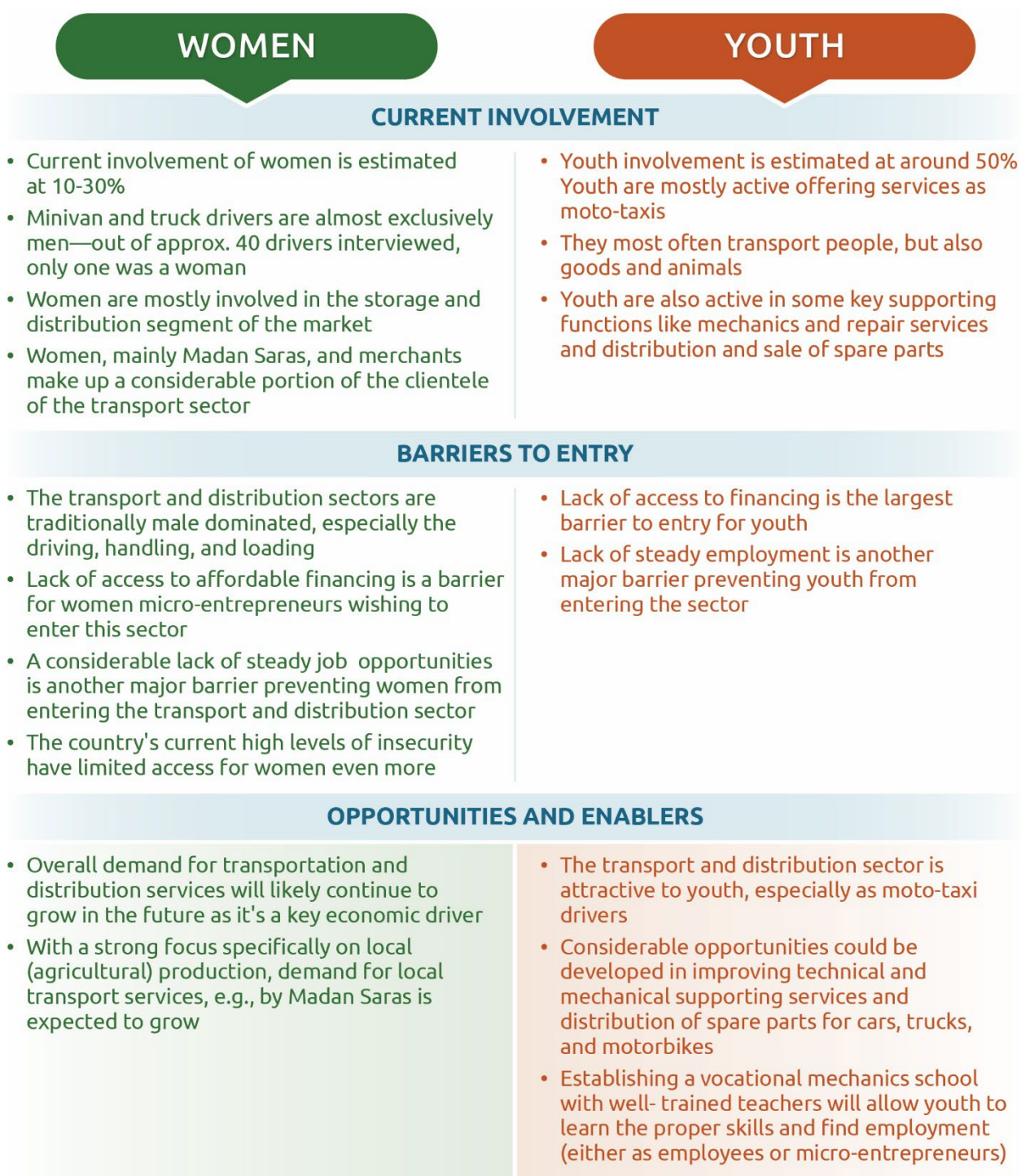
Since the early 2000's, Haiti has seen an explosion in the import and sale of motorcycles.⁵⁵ By far, most of the motorcycles are in use as moto-taxi, transporting people and goods. This has since become a considerable segment of the transport market system. Becoming a moto-taxi driver is attractive for many, especially (peri-) urban youth. Aspiring to economic independence, many youth move from rural areas to more populated areas to become moto-taxi drivers.

Based on interviews, women's estimated involvement in the transport and distribution sector is the lowest out of our three selected market systems. The jobs or roles mostly available in this sector, which are often related to driving and handling, have traditionally and culturally been linked to men. One respondent even said he would not feel safe if a woman drove the bus he takes to work. Women in urban areas are not attracted to work as moto-taxi drivers since they are very vulnerable to crime, often robbed for the cash they carry or for their motorcycle.

Women's involvement in this market system is concentrated in the storage and distribution segments of the market. Their activities revolve around managing small "depots" (storage spaces) stocking food and other items. The transport company interviewed by the research team employs about 50% women, mostly in the administrative department. This company also owns a gas station and employs three women as gas station attendants. Women are also prominent in trading activities, mostly operating as Madan Saras.

⁵⁵ McFadden, 2015.

Figure 38. Summary of key barriers and opportunities for women and youth in transport and distribution



3.4.3. AREAS OF UNDERPERFORMANCE

The transport and distribution market system can benefit from improvements in cost efficiency and quality of service provision, particularly in rural areas.

Price

Users who only transport goods within Nippes and are located in urban and peri-urban areas, consider transport prices in Nippes to be fair. For rural communities however, the price of transportation services is much higher, impeding their access to more lucrative markets. Between tap taps, moto-taxis, buses, and small trucks, urban and peri-urban customers have a variety of choices to transport their goods, which has helped keep prices stable. However, rural communities have less connectivity due to poor road networks. During the past decade, the government subsidized fuel, largely stabilizing prices of transport services. Nevertheless, in December 2021, the government announced they would increase fuel prices, with a 20% price increase on gasoline, and close to 100% increase on diesel. This increase in price is expected to continue through 2022 and 2023, likely slowing demand for transportation services, particularly in rural communities.

Quality

Users perceive the overall quality of transport services in Nippes as acceptable, but this is only because products make it to the destination and does not consider the quality decline of the transported goods. There are no existing specialized or dedicated transport services in Nippes. This means that different goods and commodities are mixed in one truck, often causing damage and cross-contamination. Bulky or heavy items are transported with fragile and inadequately packed produce. Consolidating different goods is what has allowed service providers to keep prices low.

Quantity

Overall, the availability of transport services in Nippes department is sufficient in urban and peri-urban areas, but less so in rural areas. Also, the high levels of inflation and fuel prices may cause further uncertainty in the future. Some service providers may be unable to keep up with rising costs. More geographically isolated parts of Nippes are considerably underserved. Though population concentrations in those areas are lower, altogether they represent a number that cannot be neglected. Connecting these isolated communities to the new markets in the existing commercial centers in Nippes will create an economic boost. Motorbikes would be best suited to provide these services to the rural communities.

Inadequate repair and maintenance service in Nippes also affects the quantity of fleets available. Due to capital shortage, transporters often do not upgrade their fleet, making them more prone to breakdowns. Repairs take a long time (often due to unavailability of required parts), leading to a hiatus of service provision, and are often badly executed by local mechanics.

3.4.4. ROOT CAUSE ANALYSIS

This section discusses the underlying causes impeding growth and job creation in the transport and distribution industry. These root causes are prioritized due to their potential impact and strongest feasibility to address in the short- and medium-term. They are linked to poor infrastructure of secondary and tertiary roads, low access to finance and skills training, and the absence of dedicated or specialized transport services.

Lack of Infrastructure Besides Primary Roads

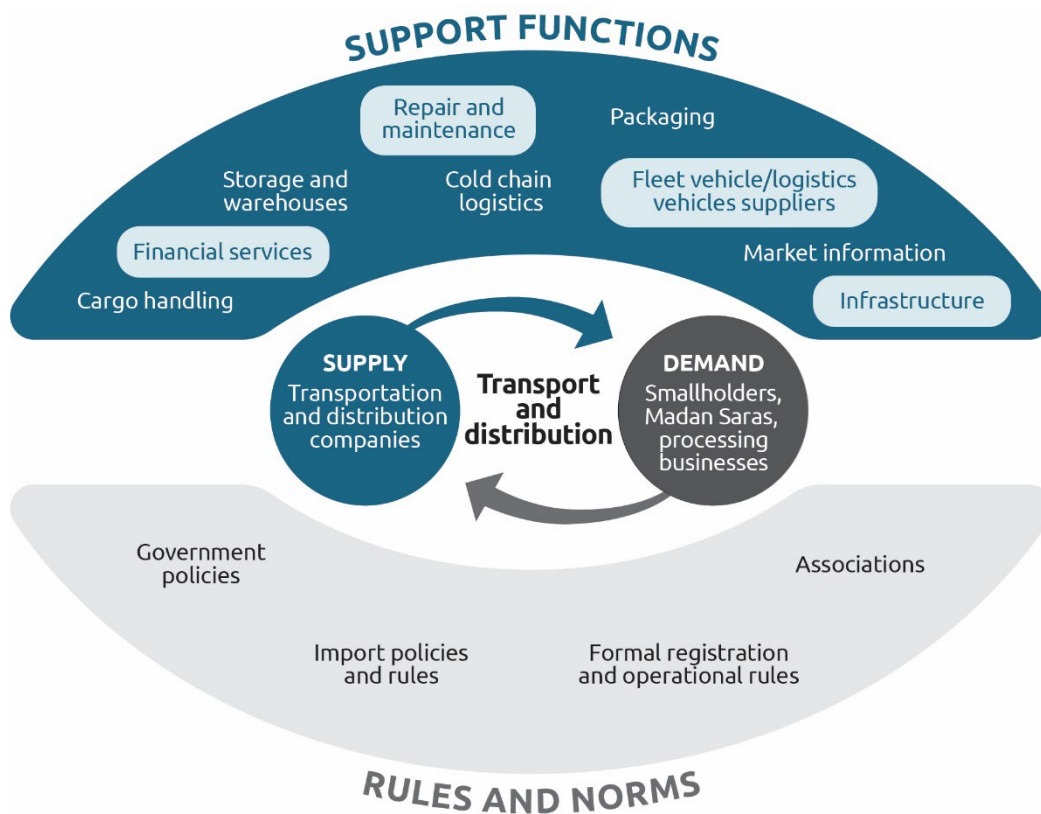
With an estimated 70-80% of roads in Haiti unpaved, there is still a long way to go to properly connect villages and smaller towns. Many communities and large numbers of people remain isolated from the main road network, impeding access to new markets. This makes it difficult for agricultural products to find a way

to these markets, especially to more isolated areas.⁵⁶ Due to long traveling times and poor road conditions, it is more expensive to transport goods (and people) to and from these communities.

Low Access to Financing

As with most market systems, limited access to financing prevents and slows the growth of companies and micro-entrepreneurs. Like other sectors, it is very difficult for most people to meet MFI requirements when applying for a loan (credit history, collaterals, and formal registration). Furthermore, high interest rates hamper loan demand as businesses don't generate enough revenue to repay the interest in time. Due to limited access to financing services, entrepreneurs in this market system have few resources to invest in growing their companies, or to repair, maintain, or upgrade their fleets.

Figure 39. Root causes of underperformance in the transport and distribution industry



Low Access to Mechanical Skills Training

There are only a few recognized vocational schools for mechanics and technicians in Nippes. For major repairs, truck owners must often go to Port-au-Prince to find parts and mechanics to do proper repairs, which drives up costs. If a vehicle breaks down on the spot, drivers have no choice but to use a local mechanic or do it themselves. Drivers and vehicle owners frequently complain that repairs take too long. This typically happens because they use aging fleets, making it more difficult to find the necessary parts for repairs. And when repairs do happen, they are often badly executed by local mechanics.

Absence of Dedicated or Specialized Transport Services

In Nippes, particularly in remote areas, no dedicated transport services for specific commodities exist, leading to losses incurred by producers. For instance, if users opt for the most economical option of

⁵⁶ Anglade, B., Swisher, M. E. & Koenig, R., 2021.

transport, fresh produce could be loaded next to or on top of charcoal or bags of compost, affecting the quality of food products. Fragile items could be damaged easily and lose their value during transport, further shortening the shelf life of many perishable commodities, such as fruits, vegetables, or dairy products.

3.4.5. ENVISIONED SYSTEMIC CHANGE

Improving transportation services and logistics management for transported goods, particularly for fresh produce, could minimize inefficiencies and losses along the value chain. Enhanced quality of transported goods could increase revenue for actors in the transport and distribution market system, triggering growth and employment creation. Additionally, access to affordable finance and skills development for mechanics would lead to better and safer fleets of vehicles, increased road safety, and improved service quality, further creating demand and jobs in the market system.

3.4.6. INTERVENTION IDEA TO ACHIEVE SYSTEMIC CHANGE

Intervention 1: Promoting a Specialized Transport Service for Fresh Produce

Theory of Change

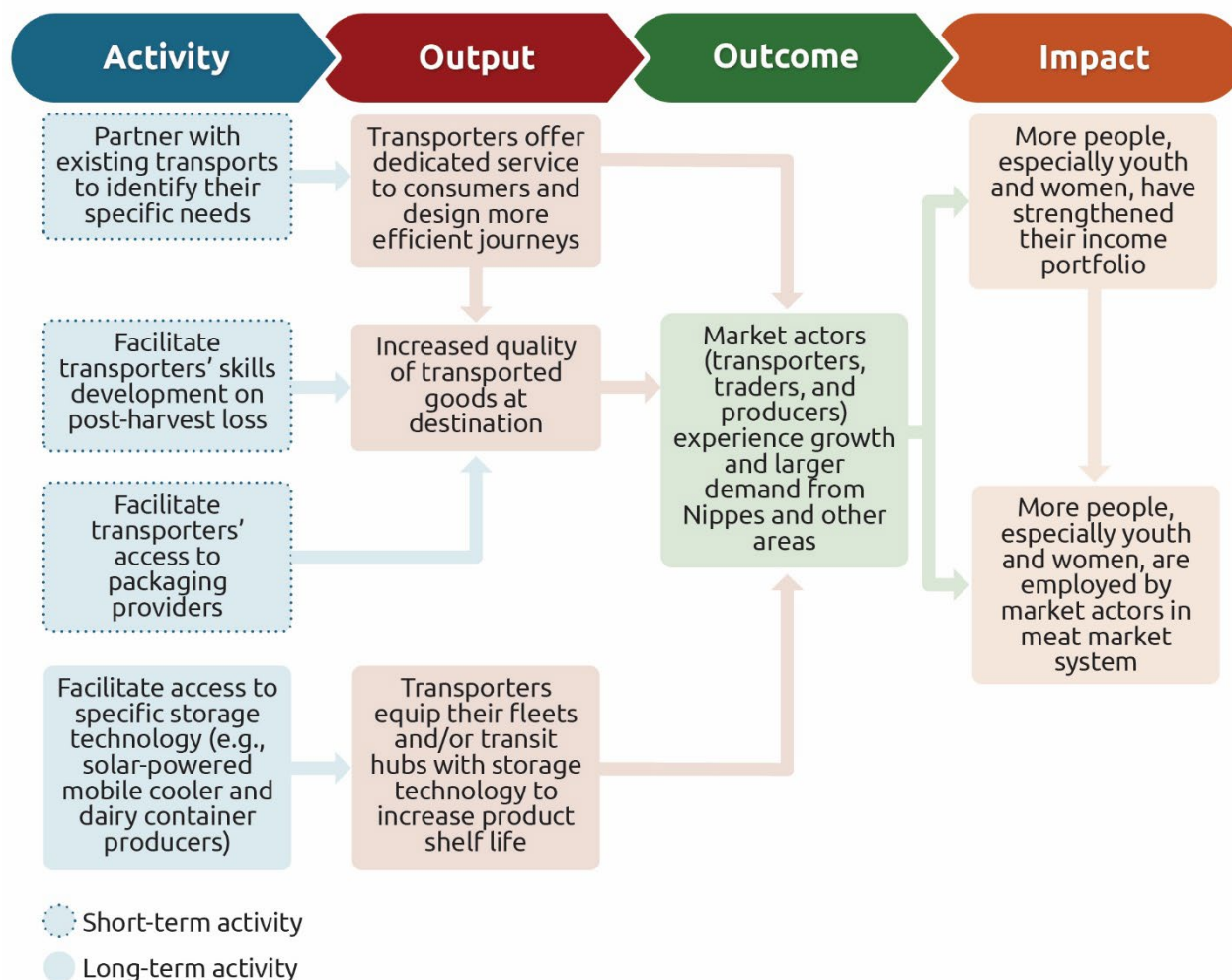
In partnership with local transporters, implementers could identify the needs of consumers' services, most efficient transporting routes, and facilitate access to post-harvest knowledge and packaging providers. This initiative would focus on fresh produce (horticulture, dairy, and meat), where shelf life is short and quality decline often occurs at each stage of the value chain. Designing more efficient transport routes would allow transporters to use resources effectively and preserve produce quality. This would require coordination among actors to establish a consistent pick-up and delivery schedule. Improving transporters' knowledge on post-harvest management (i.e., vegetable washing, meat packing, or milk handling) and required packaging methods for different produce would also reduce quantity and quality losses at destinations, leading to increased market access and revenues for producers, traders, and transporters.

Once the transporters have more experience providing a dedicated service, implementers could take the initiative further by facilitating transporters' access to specific storage technology. Solar-powered cooler boxes or refrigerators have been used by development initiatives in Haiti in partnership with a solar electricity organization.⁵⁷ This initiative could be further expanded as a commercial model for transporters as well, where the coolers could be installed in their fleets or in transport hubs (i.e., depots and warehouses). The transport hubs could also be equipped with washing stations for horticulture products. Additionally, transporters could also partner with container businesses to provide hygienic containers for dairy products. This would significantly increase the shelf life and quality of milk.

This intervention could create employment for a variety of workers, including youth and women. This would include drivers, movers, packers, and warehouse employees, and could indirectly support jobs such as workers for packaging providers and solar businesses.

⁵⁷ World Health Organization, 2015.

Figure 40. Theory of change for Intervention 1: Promoting a specialized transport service for fresh produce



Potential Partners

The ideal partner for the pilot intervention would be a local transportation company that mostly interacts with agricultural traders and smallholders. After the business case is proven, the focus of the scale-up should be on equipping transporters' fleets or transport hubs (such as depots and warehouses) with storage technology that regulates the temperature of produce. Implementers would ideally partner with an existing transportation company, or work with an additional transportation company operating on a larger scale.

Potential Facilitation Activities

- **Match transporters with logistic systems consultants** to map consumers and develop an efficient transport route that preserves produce quality.
- **Co-invest in skills training for transporters** on the importance of post-harvest handling and packaging. They could then share this knowledge with Madan Sara or traders, who would then be able to advise the smallholders from whom they procure produce.
- **Co-invest in required packaging containers.** In parallel, transporters could also offer appropriate packaging equipment (boxes or pallets) for producers to maintain produce quality.

Route to Scale

- After identifying a potential scale-up partner, implementers should conduct a **feasibility study** to identify the potential market and business case, and map required storage technology or equipment for fleets and transport hubs, as well as the required investment.

- **Provide a matching grant to the partner** by co-investing in equipment to lower risks for transporters or facilitate access to potential funders.

Intervention 2: Supporting Skill Development of Local Mechanics

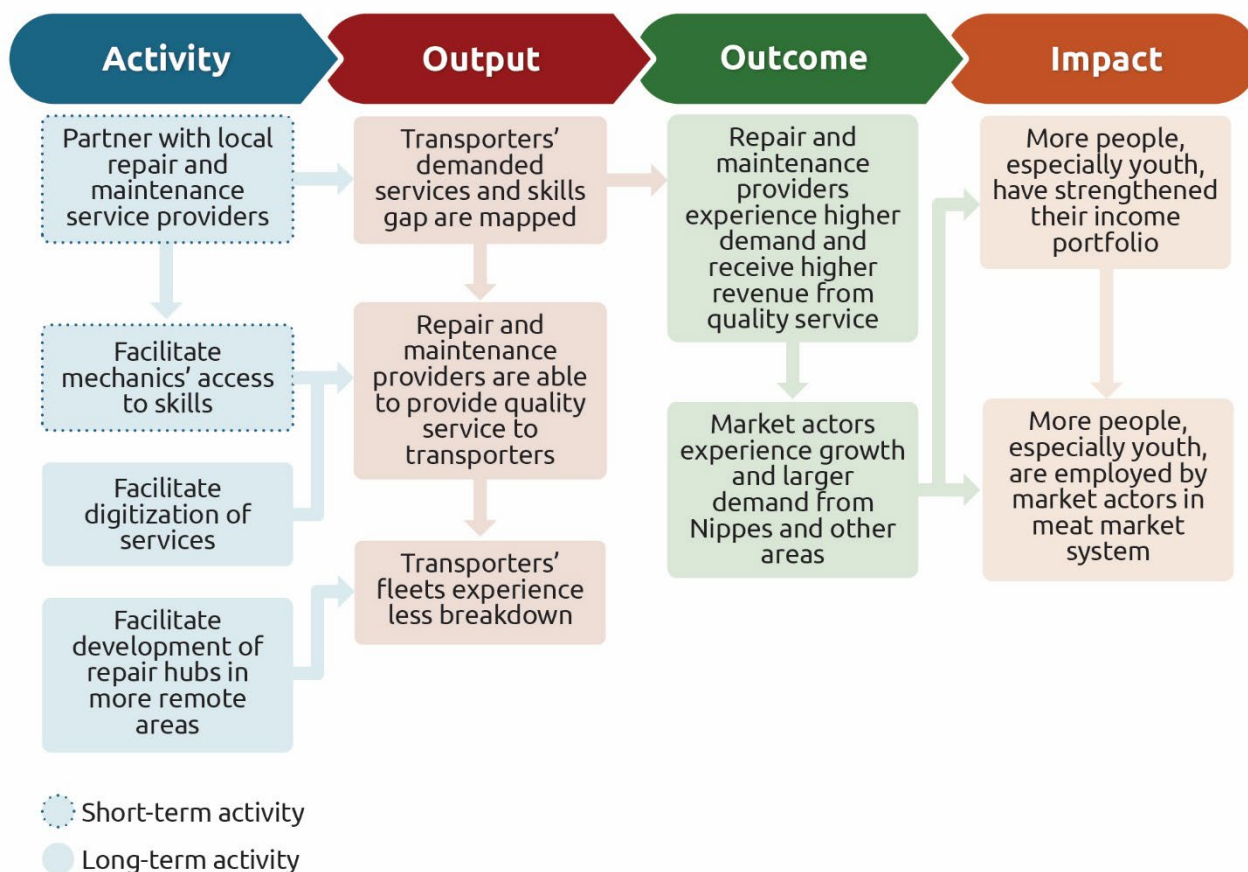
Theory of Change

One of the major challenges in the transport market system is the quality of local repair and maintenance services. In this initiative, the intervention would work on strengthening the skills and service provision of local repair and maintenance service providers. An immediate action required for the intervention, after identifying a local partner, would be to improve mechanics’ skills by connecting them with experts (either from within or outside Nippes), and develop a training workshop. At the end of the training, the mechanics would obtain a certificate to increase their credibility. In parallel, implementers should map the available transportation fleets in Nippes to identify the spare parts most in demand, and where to procure them.

The Nippes Department is characterized by plains, valleys, and mountains, which increase the possibility of vehicles breaking down in remote areas. In the long-term, implementers could assist service providers to set up a simple digital service (for example, by phone, SMS, or Whatsapp for Business) to request mechanical services at the breakdown’s location. In parallel, implementers could facilitate the development of repair hubs in remote areas.

This intervention would have more limited direct job creation impact but would immensely improve employment creation in the transport market system. The direct job impact would include mechanics and administrative workers for service providers.

Figure 41. Theory of change for Intervention 2: Supporting skill development of local mechanics



Potential Partners

The ideal partner for the pilot intervention would be a local repair and maintenance service provider. After the business case is proven, the focus of the scale-up should be on enhancing the service providers' service offerings by digitizing their services and setting up repair hubs in more remote areas. At the scale-up stage, implementers could work with an existing partner as well as larger service provider.

Potential Facilitation Activities

- **Facilitate repair and maintenance service providers' access to skills providers and co-invest in training activities.** The training activities should be preceded by a skill needs assessment for both existing mechanics and young people aspiring to work in the industry. This would help service providers craft similar training programs for new recruits.
- **Certify and raise awareness of qualified mechanics.** Providing certification upon training completion would enhance mechanics' credibility and increase consumer demand for quality services.
- In parallel, **conduct a mapping study of transportation fleets in Nippes and the required spare parts.** This would increase cost efficiency for the service provider and bolster service demand due to greater trust from potential customers.

Route to Scale

- As a scale-up activity, implementers could **co-invest in digitizing repair and maintenance services** (i.e., by setting up an Unstructured Supplementary Service Data (USSD) feature or help set up a WhatsApp business account). This would enable mechanics to serve broken down vehicles in any location.
- **Provide a matching grant to establish repair hubs in remote areas.** This would not only increase transporters' access to the service, but also open up job opportunities for young people in remote areas.

3.4.7. SUMMARY OF THE TRANSPORT AND DISTRIBUTION MARKET SYSTEM

The transport and distribution services market system is critical to other value chains, particularly for the meat processing and agroforestry market systems explored in this study. Facilitating transporters' knowledge of post-harvest management and handling would also influence the knowledge of other market actors up the value chain, such as traders, Madan Saras, and smallholders. This would eventually improve quality standards in the industry. Working on the service and repair maintenance supporting function would also open job opportunities for young people. This initiative could potentially be linked to existing youth skill development programs.

Implementers investing in this market system should conduct a further study on:

- The opportunity costs of fresh produce quantity and quality losses at destinations. This would inform the business case for a specialized transport service for fresh produce.
- How a specialized transport service would affect the pricing structure of transport services to buyers, and how this would affect the profitability of actors upstream in the value chain.
- The number of value chain actors in the transport and distribution market system. Once this is done, it would be easier to estimate the number of actors and potential job opportunities.

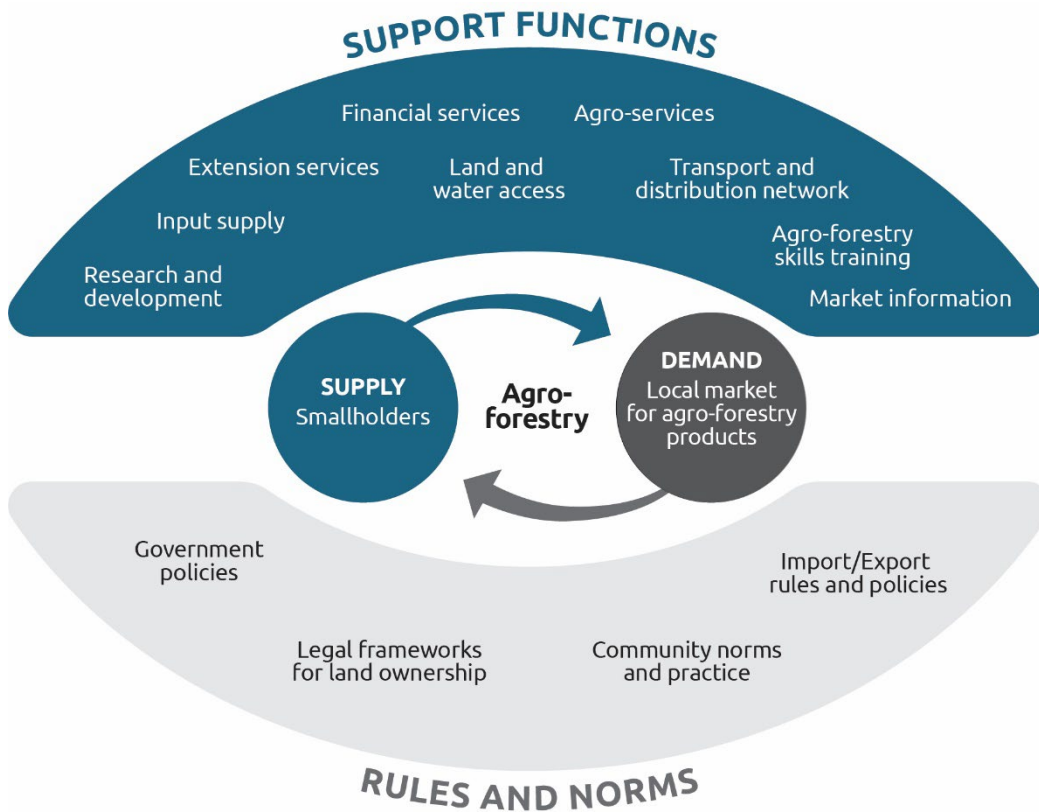
3.5. Agroforestry Market System

3.5.1. MARKET SYSTEM DEFINITION

Agroforestry encompasses land use systems in which trees and shrubs are intentionally grown, in association with seasonal or perennial crops, on land used for cultivation and/or livestock. Agroforestry systems are therefore very varied. The study focuses on specific crops that are the main products in Nippes, such as banana/plantain, breadfruit, sugar cane, peanuts, malanga, cassava, and other fruit trees and horticultural products. The analysis also entails all activities related to seed production and selection, soil

preparation, planting, growing, harvesting, conditioning, and transforming of crops produced in agroforestry systems.

Figure 42. Agroforestry market system



3.5.2. MARKET SYSTEM BACKGROUND

Despite accounting for 25% of the country’s GDP, the agriculture sector’s contribution to the Haitian economy has been declining since the 1980s. Haiti currently imports about 60% of the food consumed in the country. In 2020, an estimated 3.67 million Haitians suffered from food and nutrition insecurity. Low productivity and extreme weather events such as hurricanes and droughts are recurring and represent a constant threat to food security. Furthermore, as much as half the population depends on agriculture for their livelihoods.⁵⁸ Consequently, the decline in sector growth exacerbates the country’s poverty levels.

Nippes has great agricultural potential but suffers from poor market access, fishing and farming techniques, and environmental protection.⁵⁹ Farmers active in agroforestry systems in Nippes are almost exclusively smallholders cultivating on five hectares or less. In fact, most of these smallholders produce on less than one hectare and are considered subsistence farmers. Access to extension services and technical support is extremely low, but in high demand. Agroforestry techniques have long been applied in Haiti’s hilly regions. Similar to other areas in Haiti, farmers in Nippes utilize the “Creole Garden”, or *jaden lakou* in Haitian Creole. In this planting system, farmers create multipurpose gardens primarily based on coffee, banana, breadfruit, and cocoa production, while also planting fruit trees, such as avocado and citrus.⁶⁰ Woody trees, such as cassia, Haitian catalpa, Australian pine, and cedar, act as a source of fuelwood and timber, while

⁵⁸ IFAD.

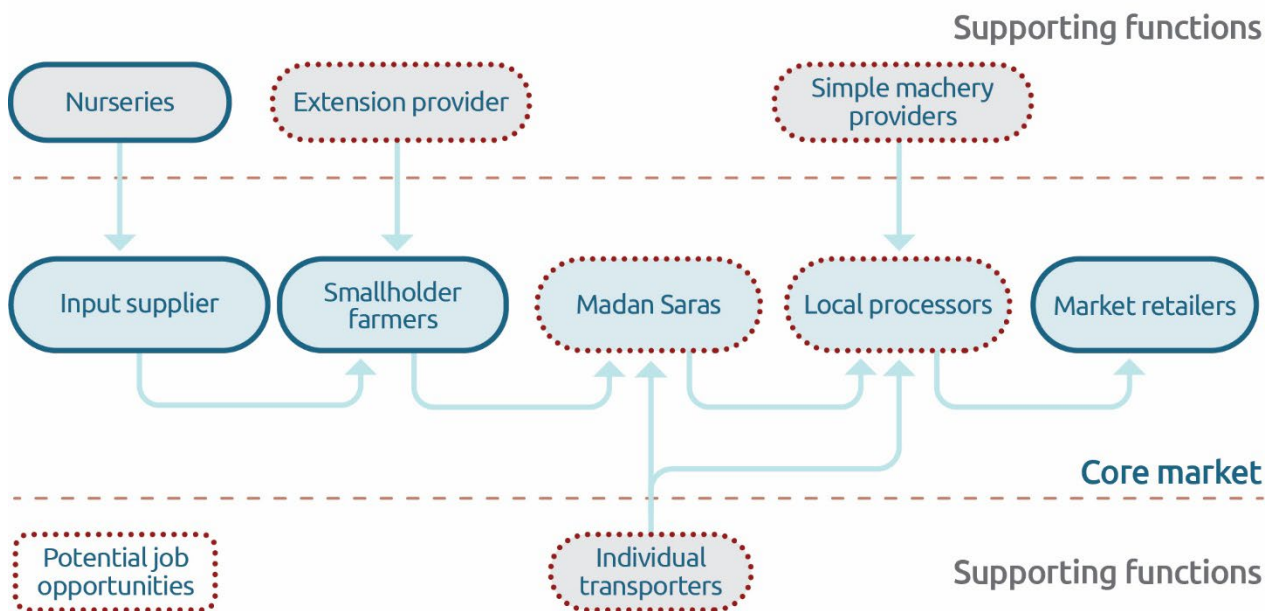
⁵⁹ Department Profile: Nippes, 2016.

⁶⁰ Jacquet, 2016.

plants like the jatropha sometimes function as fences. This system provides revenue, food security, and wood to farmers.

However, the costs of farming, including implementing agroforestry systems, are high. It costs approximately \$2,000 USD to pay for seedlings, soil preparation, and phytosanitary treatments for a one-hectare plot. Access to financing, irrigation, and high-quality inputs in Nippes is low. As a result, farmers are often unable to apply improved agroforestry practices without subsidies.⁶¹

Figure 43. Agroforestry market map in Nippes

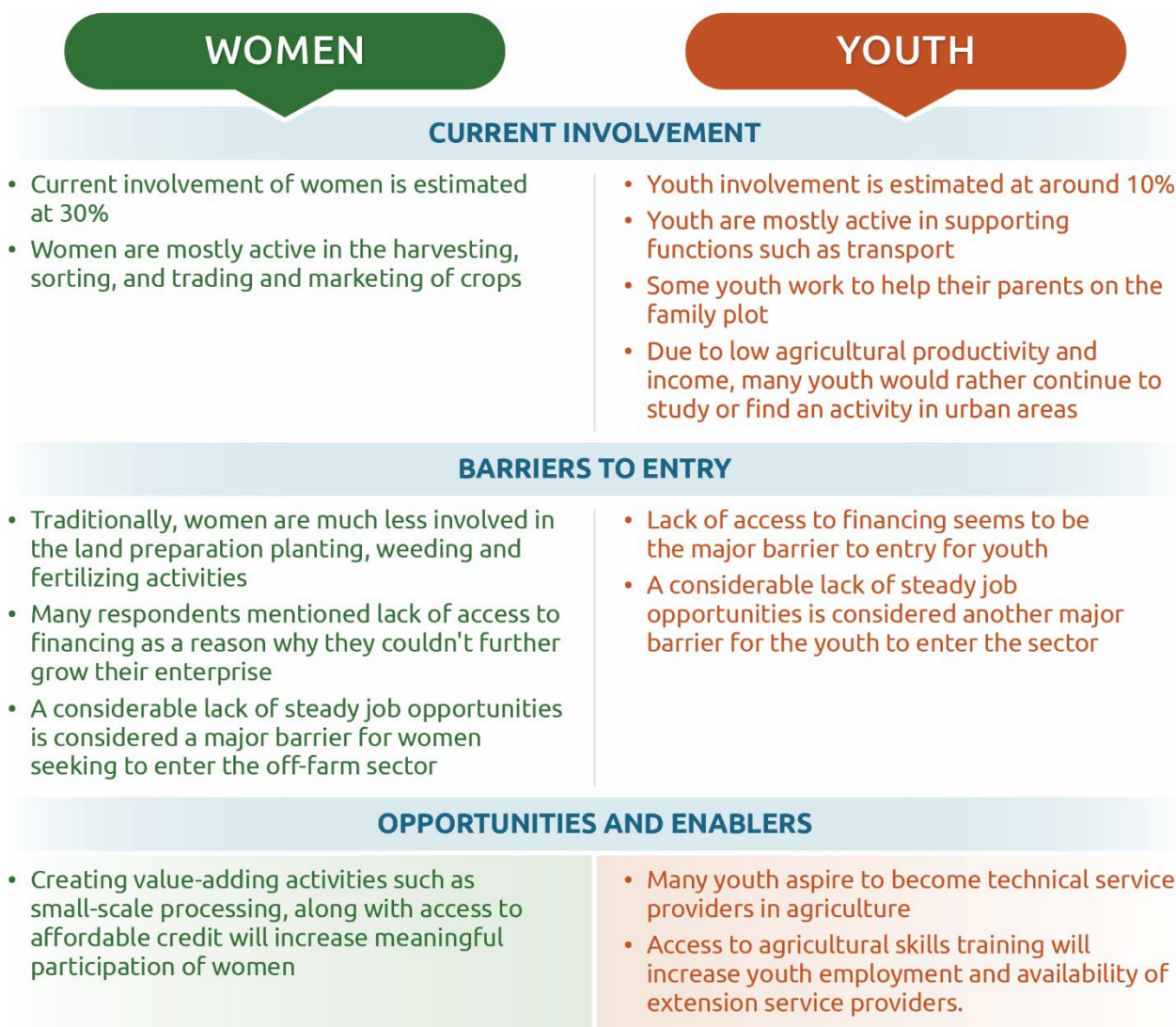


In the agricultural sector, 73% of work is carried out by men. Women typically work in domestic spaces, in small businesses, or as Madan Saras. Women are less involved on the production side, but are dominant in harvesting, conditioning, packing, transporting, and marketing products. Based on interviews, some women are involved in micro-processing agroforestry products. This includes turning fruit into juice or jams, peanuts into peanut butter, plantains into plantain chips or flour, or turning cassava, malanga, and other roots into flour. The consumer base for these processors is very wide. Products are sold directly from processors to consumers, or via micro-retailers, street vendors, or (small) supermarkets.

Processors mostly employ young women, but they are largely day laborers, working only 4 to 8 days per month. They earn 750 HTG (\$7.03 USD) per day. For most micro-entrepreneurs active in the transformation of agricultural products, monthly incomes range between 5,000 HTG (\$47.6 USD) and 16,667 HTG (\$158.7 USD). A larger micro-entrepreneur can employ up to 10 day-laborers, working on average 6 days per month.

⁶¹ Ibid.

Figure 44. Summary of key barriers and opportunities for women and youth in agroforestry



Most young adults in Nippes are students. Due to low productivity as well as lack of incentives, many youth move away from agriculture and migrate to urban areas such as Les Cayes or Port Au Prince. However, youth involved in agriculture work along all segments of the value chain. Most youth help their parents on the family plot. Those with education may become agronomists and/or small producers. Monthly incomes recorded for the smallholder farmers interviewed range between 2,500 HTG (\$23.8 USD) and 9,583 HTG (\$91.2 USD). Youth are also present in supporting functions such as transport, mostly short distances by motorbike from field to peri-urban markets. Similar to Madan Saras, these youth largely operate by themselves.

3.5.3. AREAS OF UNDERPERFORMANCE

Agroforestry industry growth is hampered by low productivity across all actors in the value chain. To identify off-farm opportunities for women and youth, examining the processing side of the value chain is key.

Price

Production costs remains high for micro-processors, and based on interviews, they are operating under capacity. Processors often procure their products from either the local market or smallholders. They claim

that for the price they pay, the produce quality is not up to par. Consequently, these processors resort to imported raw materials, which are more expensive than local produce. In addition, simple machineries often break down and require service 4-6 times a year, costing 2,000 HTG (\$19 USD) for each repair. A larger processor must service their machine every month, costing 25,000 HTG (\$235 USD) for each service.

Quality

Based on interviews, poor-quality raw materials remain a major issue for processors. Due to minimal use of agricultural inputs (fertilizer and phytosanitary products) by smallholder farmers, most agricultural crops are low-quality. Produce is also harvested in small batches by smallholders, causing many inefficiencies in the value chain.

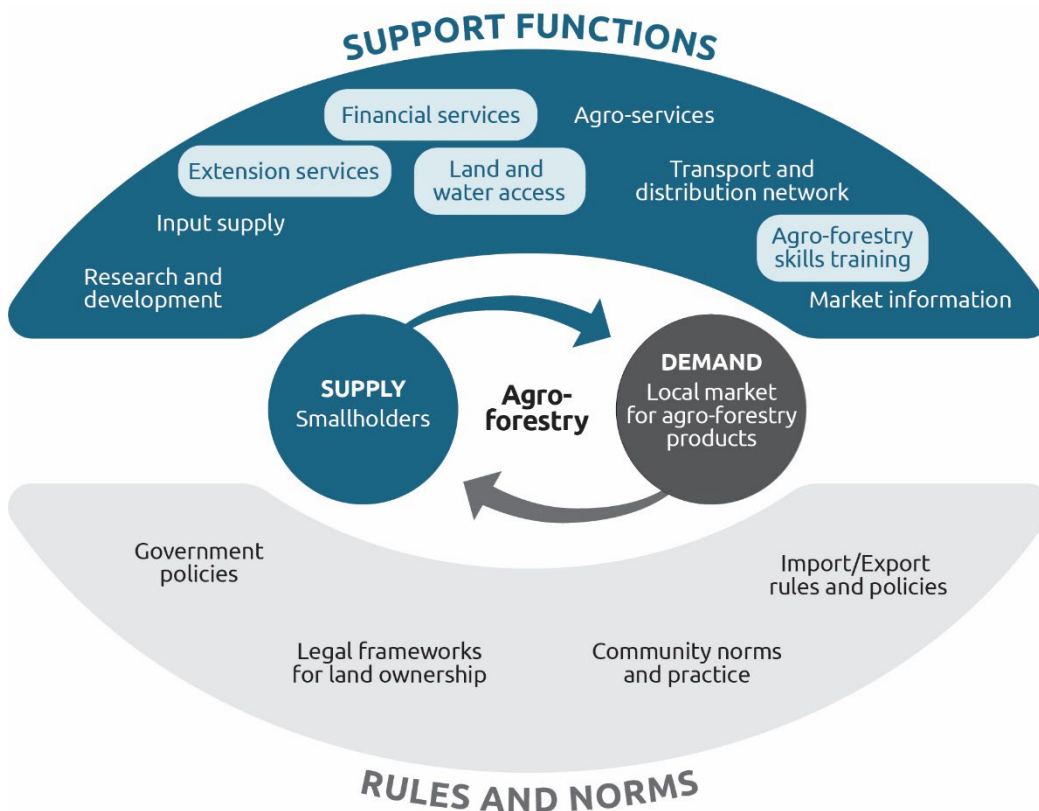
Quantity

High-quality agroforestry produce remains in low supply, and the current quantity of processed agroforestry products does not fully meet its demand potential. Processors cite that their limited ability to expand production and market their products to a wider consumer base constrains their growth. They also say that, due to low purchasing power, some local consumers buy their products on credit, but many of them never repay their loans. In addition, due to accessibility and transportation issues, many producers have limited reach to consumers, preventing them from accessing wider markets.

3.5.4. ROOT CAUSE ANALYSIS

This section discusses the underlying causes inhibiting growth and job creation in the agroforestry industry. The below root causes mostly hinge on smallholders’ ability to provide quality raw materials to local processors, which affects the overall value addition as well as revenue in the market system. The root causes are linked to access to finance, extension services, agroforestry skills training, and land and water.

Figure 45. Root causes of underperformance in the agroforestry industry



Low Access to Financing

Inefficiency in the value chain is largely caused by low-quality yield quality from farmers. Because of limited access to credit and capital to re-invest, farmers don't have the resources required to buy inputs that would boost productivity. One processor informed researchers that if he could procure more and better raw material, he could expand his production.

High risk of natural disasters, political instability, low productivity, and absence of crop insurance systems cause very few MFIs provide credit to smallholder farmers. Haitian commercial banks don't provide credit to smallholder farmers at all. The MFIs that do offer micro-credit programs to producers, e.g., Fonkoze, mostly do so using a humanitarian assistance approach rather than an economic one. International donors usually subsidize these programs. Conducting a crop insurance study would be key to map market opportunities, farmers' risk appetite, and willingness to pay—especially important in a natural disaster-prone country like Haiti.

Low Access to Extension Services and Agroforestry Skills Training

Almost all smallholder farmers interviewed stated that they need technical support to improve productivity, quantity, and quality of their crops. Some said the extension services provided by the government are politicized, focusing only on areas where family members of local politicians are located. The Ministry of Agriculture, Natural Resources and Rural Development's (MARNDR), through its *Directions Departementales Agricoles* (DDA) and *Bureaux Agricoles Communaux* (BAC) is the major provider of extension services.⁶² However, with only 3.4% of the national budget allocated to agriculture, resources are too limited to address the wide range of challenges faced by farmers.⁶³

The situation in Nippes contrasts with neighboring departments, such as the South, where agriculture is more developed overall, and the availability of extension services is higher. Unfortunately, Nippes does not have a vocational school or university offering courses in agronomy or agricultural engineering. The South department, by contrast, has the American University of the Caribbean, which has partnered with several international (research) organizations, NGOs, and private sector actors to advance extension services and agricultural research. Due to its proximity, Nippes department could approach these institutions to explore whether programs could be expanded to their farmers.

Difficult Access to Land and Water

Many farmers do not own the land they farm, instead paying some sort of rent (either in money or production), impacting their already low income. Informal land tenure is often thought to stifle agricultural output and limit rural incomes. A lack of clarity in property rights obstructs investments, access to finance, and transfers that may lead to more effective land use and natural resource protection. However, Haiti's land management system has worsened in recent decades after performing well throughout the country's first century and a half of independence. Conducting a further study on the land rental market, which could benefit farmers with limited access to land tenure, is key. Studies in other countries have shown that farmland rental activity can enhance farming productivity efficiency and poverty alleviation among rural households.^{64 65}

The 7.2-magnitude earthquake of August 2021 caused considerable damage to an already fragile irrigation system. Though donors like the World Bank and IDB are continuously investing in irrigation systems, the country still lacks many innovative infrastructures, such as solar irrigation systems, shade or green houses with sprinkler systems, and hydroponics production. For many years, extreme weather events

⁶² Global Forum for Rural Advisory Services (GFRAS), 2022.

⁶³ AlterPresse, 2020.

⁶⁴ Chamberlin, J., & Ricker-Gilbert, J., 2016.

⁶⁵ Han, W., Zhang, Z., Zhang, X., He, L., 2021.

such as prolonged droughts, tropical storms, hurricanes, and earthquakes have exposed the poor (agricultural and soil) water management systems in Haiti.

3.5.5. ENVISIONED SYSTEMIC CHANGE

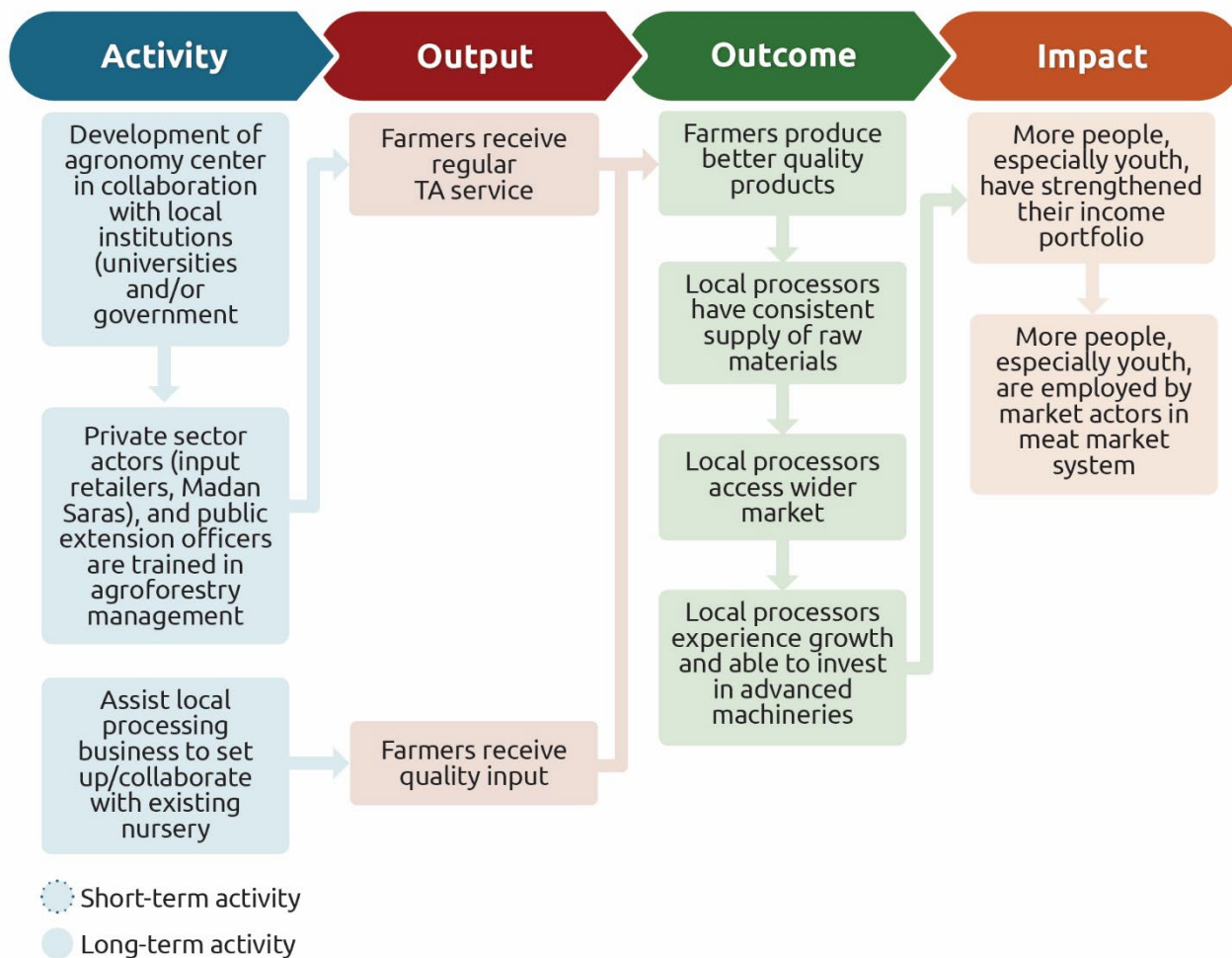
By improving the quality of raw material supplied by smallholders, operational efficiency of agroforestry processors will improve, helping processors serve wider markets and employ more women and youth. This could be achieved by connecting smallholder farmers with extension services, facilitating processors' access to nurseries, and increasing their reach to the wider market. These initiatives will also support job creation in the value chain, such as extension providers, traders or Madan Saras, transporters, as well as machinery providers.

3.5.6. INTERVENTION IDEA TO ACHIEVE SYSTEMIC CHANGE

Intervention Idea: Setting Up an Agronomy Center in Nippes

Theory of Change

Figure 46. Theory of change for Intervention Idea: Setting up an agronomy center in Nippes



This intervention idea would require setting up an agronomy center, where a local university or government institution would help develop the agronomy skills of local actors, such as input retailers, traders, Madan Saras, and public extension officers. These actors would provide extension services as a part of their embedded service to the farmers they interact with. This center would offer training programs on quality inputs supply, irrigation, and low-tech mechanization services (rototillers, cultivators, and planters). The financing of this center, at least in the initial years, would come from both the implementer

and a local partner institution. In the long-term, local universities would own the curriculum and extension manuals so they could continue to provide extension services beyond the intervention period. Additional courses could be launched, e.g., on how to produce organic compost. The compost that is produced could then be sold to local farmers. Courses on sustainable and responsible tree growing for charcoal production could be offered to local farmers and micro-entrepreneurs active in charcoal production.

At the same time, implementers could also assist local processing businesses to collaborate with existing nurseries, or to set up a nursery of their own. One of the major constraints in this market system is the quality of raw materials, but there are advanced crop varieties that have less input requirements (e.g., water, fertilizer, or pesticides). If farmers had access to these, they could deliver higher quality products and minimize their production costs. This would enable local processors to have a consistent supply of quality raw materials, access to wider markets, and generate more profit.

This intervention could create jobs for extension agents, technical officers, trainers, and workers in the agronomy center. In addition, this initiative would also create more jobs at the processing level, and indirect jobs for local transportation businesses and machinery providers.

Potential Partners

Universities, such as Université Notre Dame des Cayes or American University of the Caribbean, local government institutions, and local agro-processing business would be the ideal partners for this intervention. Implementers should consider administering the intervention in the irrigated areas around Anse a Veau (Plaine de Baconois), Paillant, or Petite Rivière de Nippes.

Potential Facilitation Activities

Agronomy Center Set-up:

- **Start by mapping potential training providers**, either universities that already have an agronomy training curriculum, or government institutions. This should follow mapping smallholders' skills gaps to inform training course design.
- **Identify investment requirements, and appropriate revenue generation model to ensure sustainability.** The agronomy center must have its own management (i.e., a local government institution) and revenue generation model (for example, from participants' training fee).
- Once the investment requirement and the revenue generation model has been identified, **design a co-investment structure** for the agronomy center.

Processor – Nursery Collaboration/Set-up:

- First, **identify the crops to focus on**, ideally a commodity with the highest social and commercial impact. This would inform the type of advanced crop variety, and type of agro-processor to work with.
- Subsequently, **map the local nursery market and required investment** to procure the advanced crop variety. If there are no local nurseries available, depending upon the processors' willingness, they could also develop their own seed supply by contracting some smallholders.
- **Facilitate processors' access to affordable financing (if needed)** and co-invest in new equipment or other resources for nursery development.

Route to Scale

In the scale-up phase, implementers could expand the reach of the agronomy center, and work with an additional agro-processor. Implementers could apply the learnings from the pilot intervention, specifically on the best ways to engage with smallholders.

3.5.7. SUMMARY OF THE AGRO-PROCESSING MARKET SYSTEM

Investing in the agroforestry market system may not create a significant number of off-farm jobs, but its potential to create systemic change makes it worth the investment. As market system constraints largely stem from the on-farm side, improving supply will take considerable effort. Eventually, improvements on the on-farm practices could trigger further growth in the processing industry and create more off-farm jobs for women and young people. This initiative could be linked to existing agriculture development programs

Conduct a further study on:

- **The main commodities of interest.** Nippes has several main crops, ranging from banana/plantain, breadfruit, sugar cane, peanuts, malanga, and cassava, to other fruit trees and horticultural products. Implementers should select a commodity of focus (based on social and commercial impact) to be able to map demand, project the business case, and identify specific market actors.
- **The number of value chain actors in the specific commodity value chain.** Knowing this would make it easier to estimate the number of actors and potential job opportunities

4. Lessons Learned

This section documents DevLearn’s learnings for future SLMA assessments. The main recommendation is to allocate more resources and time to produce a more detailed assessment. Suggestions for each assessment process are outlined below:

SHORTLISTING MARKET SYSTEMS

During the shortlisting process, the research team was aware that the market systems selected could be subjective and influenced by other factors. There were competing interests, such as perceived donor appetite to invest, alignment with current and future programming, and appetite of the implementation team (which were influenced by their prior knowledge and experience in a sector). For future studies, it’s important to ensure that the scoring criteria allows for objective scoring and considers any factor that may influence the decision. For example, adding “alignment with implementation team’s capacity and experience” under the relevance criteria if this is an important decision point for the teams.

FIELD RESEARCH DESIGN

After the shortlisting process, additional steps are required before designing field research tools. Once the market system is selected, allocate more time for a deeper literature review for each market system. Based on those findings, conduct a limited number of KIIs to verify key constraints and opportunities for employment. Discuss the results of these KIIs with implementation teams, to identify key information areas for the team to ensure feasibility of future interventions. These discussions could inform key information areas, a more specific (and possibly additional) list of market actors, and the question guides.

DATA COLLECTION

In this study, national consultants in Zimbabwe and Haiti supported data collection for DevLearn. This was expected to improve efficiency, but ultimately did not present good value for money. In the analysis and write-up process, the DevLearn team spent 50% more time than allocated to coordinate and synthesize findings. Because of these challenges, it’s important for team leads to travel to research locations (even for a week), following initial research. This allows for a deeper dive on certain market actors, filling any information gaps and helps present clearer insights in the write-up. Additionally, there is value in involving the implementation team more closely in the data collection process, so they learn more about potential partners and key insights from the field research.

DATA ANALYSIS

Due to the challenges with data analysis, the research team identified a number of information gaps only after conducting key informant interviews. Additional literature reviews and phone calls with market actors helped fill these gaps. To prevent this after-the-fact knowledge gathering, it’s important that team leads visit the field to validate findings and ask additional questions to market actors. While this requires more time and money, it will help develop a fuller market picture and streamline the data analysis process.

INTERVENTION DESIGN

Throughout the process, the research team found it difficult to provide important information required for robust intervention design. Selecting potential partners, detailing business models, and offering deal-making and scale-up strategies were all beyond the team’s scope. Intervention design is a heavily iterative process and requires full knowledge of the market system and implementation organization. Consultants cannot accomplish all of these. However, they can provide indicative business models, types of facilitation activities, and possible types of actors and partners. During this stage, it’s important for consultants to heavily engage the implementation team, especially around intervention design workshops and feasibility discussions with potential partners. Future field studies should further assess feasibility, but still balance this goal with transformational ideas and visions for systemic change.

IMPACT PROJECTION

A market sizing exercise, along with providing a market map with estimated numbers of actors, is useful. This exercise is also feasible during the study timeline and can provide early indication of impact. However, projecting the number of direct jobs requires knowing the size of the intervention's intended partners, and the level of intensity intervention for implementation. Therefore, estimating impact will be more robust with a consultative approach with potential partners, and a strong understanding of the interconnectedness between each economic sector.

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