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BASELINE SURVEY REPORT (FINAL)

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LIST OF ACRONYMS AND ABBREVIATIONS

CEED	Center for Entrepreneurship and Executive Development
DQA	Data Quality Assurance
FAD	Food Assistance Division
FAIS	Food Aid Information System
FAS	Foreign Agricultural Service
FFPr	Food for Progress
FTF	Feed the Future
GOT	Government of Tanzania
M&E	Monitoring and Evaluation
MT	Metric Tones
PIRS	Performance Indicator Reference Sheet
PMP	Performance Monitoring Plan
PTT	Performance Tracking Table
RF	Results Framework
SEAF	Small Enterprise Assistance Funds
SMEs	Small and Medium Enterprises
SO	Strategic Objective
TA	Technical Assistance
TAHA	Tanzania Horticulture Association
TOR	Terms of Reference
TOR	Terms of Reference
USD	United States Dollar
USDA	United States Department of Agriculture

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EXECUTIVE SUMMARY

This document comprises a baseline survey report for the KASI Agriventures program in Tanzania. The three year program is being implemented by Small Enterprises Assistance Funds (SEAF) and is funded by the United States Department of Agriculture (USDA).

Overall, the KASI Agriventures program will contribute towards achievement of USDA's *Strategic Objective 1* which is *Increased Agricultural Productivity* and *Strategic Objective 2* which is *Expanded Trade of Agricultural Products (into Domestic, Regional, and International Markets)*. The major goal of the KASI Agriventures program is therefore to strengthen the agricultural sector in Tanzania by adding value to agribusiness investees and their supply chain of small holder farmers in order to increase agricultural productivity and expand the trade of agricultural products.

The objectives of this baseline survey were; (1) to establish the baseline values for the program indicators. The baseline was designed to collect the data needed to track indicators in the program's Performance Monitoring Plan (PMP) over the life of the program. (2) To collect the necessary data for establishing or validating the indicator targets described in the PMP; and (3) to capture any additional data that should be tracked during the course of the program period.

Respondents for the baseline survey were selected using stratified and proportionate random sampling methods. The strata (and sub-strata) were based on the categories (and sub-categories) of key KASI Agriventures target beneficiaries and partners. A total of 323 respondents were interviewed including 134 individual poultry keepers, 137 fruits, vegetables or spices producers, 26 SMEs involved in manufacturing poultry feeds and 10 SMEs involved in processing fruits as well as 12 non-bank financial institutions. This was despite a number of limitations which meant that some target respondents were not achieved.

Total annual volumes of fruits, vegetables and spices sold by sampled respondents in the last one year averaged 10.3 MT for fruits, 25.6 MT for vegetables and 1.3 MT of spices. Fruits, vegetables and spice producers marketed approximately sold approximately 10.3 tons of fruits, 25.6 tons of vegetables and 1.3 tons of spices. Within the last one year, poultry producers purchased an average of 23.3 tons of feeds valued at USD.11,486. In return, poultry producers earned an average of USD.13,148.

Producers were however, not organized for marketing purposes and are therefore unable to access high end markets. This is indicated by the choice of local market outlets as well as the low quantities marketed through contractual arrangements with buyers. With better organized marketing, producers are more likely to access more formalized (and often more lucrative) markets. This may be a strategy that the KASI Agriventures can use to improve access to new markets; which is one of the program indicators.

SMEs procured raw materials from among others small-scale producers, aggregators and middlemen. On average, each SME involved in processing of fruits purchased an average of 1,404 tons of raw materials per year valued at USD.72,336 annually. Fruits, vegetables and

spices processors converted fruits into juices, pulp, canned or dried products; vegetables into pastes and canned products while spices were dried and ground into powders. Within the last year, each of the fruits, vegetables and spice processors sold an average of 481 tons of fruits and fruit products valued at USD 342,594, 268 tons of vegetable products valued at USD 246,900 and 1.4 tons of spices valued at approximately USD 30,080. On the other hand, each SME involved in poultry feed manufacturing procured 236 tons of raw materials mainly from aggregators, wholesalers and middlemen. These were used to produce an average of 85.7 tons of assorted feeds per month. Each poultry feed manufacturer sold an average of 1,008 tons of feed valued at USD. 434, 316. SMEs mainly sold their products in the domestic market (100% for poultry feed manufactures and 79% for fruits, vegetables and spices processors). Distributors were a major outlet for the SMEs products. These can be used by the KASI Agriventures program to improve targeting and linkages. For example ensuring that they distribute only high quality poultry feeds or to specific target consumers; particularly since SMEs involved in poultry feed manufacturing noted that competition with low quality feeds is a major challenge.

Non- bank financial institutions (MFIs, Community banks and leasing companies) in Tanzania, offered various products including those targeted by the KASI Agriventures program i.e term loans and leasing. While term loans were common, leasing products were limited to a few organizations. On average, agricultural portfolios as a percentage of the total portfolios were approximately 22.3% which is comparable to the average of 25% in Tanzania. However, suppliers still considered agricultural lending to be relatively risky with a total of 16% of the agricultural portfolio being at risk.

Out of an average of 743 loan clients per institution, non-bank financial institutions, offered a higher number of loans to associations/co-operatives or groups (477) within the last year and lowest number to corporate clients (6). The high number of group based loans is consistent with the group based lending approaches which are preferred by non-bank financial institutions. While the low number of corporate clients may indicate a low preference to lend to corporate clients, it may also suggest that non-bank financial institutions do not have enough funds to lend to corporate clients; who ordinarily require more funding compared to individuals or groups.

KASI Agriventures program targets fruits, vegetables and spices as well as poultry value chains. But as expected, the baseline survey noted that non-bank financial institutions mostly financed cereals, vegetables and pulses in that order. This is because cereals and pulses are also the major categories of value chains that are produced by majority of Tanzanians. However, fruits and vegetables/spices as well as poultry provide major opportunities for financing as they are considered commercial products.

Despite producers having a number of financial needs, demand for borrowings was low as only 31% of the poultry keepers and 14% of the fruits, vegetables and spices producers had ever borrowed loans. These low rates of borrowing were however, associated with unfavorable terms of conditions set by financial institutions. Demand for loans amongst SMEs was higher with majority borrowing to fund raw materials supplies/stocks as well as product distribution and marketing costs. On average, SMEs involved in fruits, vegetables and spices borrowed loans valued at USD. 10,230 while those involved in manufacturing of poultry feeds borrowed an

average of USD. 19,210. Rates of borrowing for fruits, vegetables and spices processors was however lower at only 30% compared to 77% for SMEs engaging in poultry feed manufacturing.

Supply and demand of lease financing products was very low for both producers and SMEs as on average sampled organizations had offered 10 leases within the last one year. Only 10% of fruits, vegetables and spices processors and 12% of poultry feed manufacturers had ever accessed leasing products. The major assets financed included plant and machinery, industrial and farm equipments as well as vehicles. This presents a gap which the KASI Agriventures program can fill in by facilitating increased access to leasing services.

With regard to capacity building, access to training and extension services amongst producers was low. Only 27 % and 32% of fruits, vegetables and spices producers and poultry producers respectively, had accessed training and extension services in the last one year. This was mainly associated with inadequate supply of providers. The major training and extension providers to producers were government extension staff, private extension staff and NGOs but contact with the trainings and extension service providers was rather infrequent with majority of the producers interacting with providers on monthly basis or longer intervals.

In comparison, access to capacity building amongst SMEs within the last one year was relatively high at 80% for fruits, vegetables and spices processors and 63% for poultry feed manufacturers. Improved processing technologies, product quality standards and marketing were the main training offered to staff of vegetables, fruits and spices processors. For poultry feed manufacturers, feed manufacturing technologies and product quality standards management were the main training modules offered. major training service providers to SMEs were private companies/individuals and NGOs/donor programs. This findings suggests that it will be important for CEED to liaise with companies, individual experts and NGOs and donor programs that are involved in provide training to SMEs.

The baseline survey makes a number of recommendations key amongst them the following: (1) re-looking into the target value chains as some target value chains were not common amongst producers. this will ensure that the program is able to meet its targets. In absence of this, the program will have to review its targets on the production volumes and values for target value chains; (2) working with program partners such as TAHA and TAFMA to organize target producers into groups. This will ease the processes of linkages as well as facilitate contractual arrangements and trainings; (3) With regard to provision of financial services the program may need to consider inclusion of commercial banks since they have a wider outreach and were used as preferred sources of borrowing by both producers and SMEs. Alternatively, the KASI Agriventures program will need to increase the number of non-bank financial institutions involved in the program with special considerations to outreach within the target regions; (4) With regard to program performance indicators, the baseline survey recommends that some of the program targets may need to be revised or redistributed. Recommendations for each of the indicators are contained in Table 3.31

I INTRODUCTION

I.1 About the KASI Agriventures Program

This document comprises a baseline survey report for KASI Agriventures, a three-year program in Tanzania implemented by the Small Enterprise Assistance Funds (SEAF). Through KASI Agriventures, SEAF will provide financing to small and medium size enterprises (SMEs) in the agricultural sector of Tanzania. The program will invest in agribusinesses in three key sectors including (i) Poultry Feed Production, (ii) Fruit/Vegetable/Spice Processing, and (iii) SME Lending. The program will also establish a Center for Entrepreneurship and Executive Development (CEED), through which SEAF will provide technical assistance and training to agribusiness SMEs, including investees. For the Fruit/Vegetable/Spice processor(s), SEAF will establish a mentorship program with international partners to support investees in accessing international markets. SEAF will also provide specific technical assistance as needed to the suppliers and/or customers of these agribusiness SMEs.

The project is being funded by the United States Department of Agriculture (USDA) through its Food for Progress Program. This baseline survey was conducted as per the Terms of Reference (TOR) attached as *Annex I*.

I.2 Objectives of the KASI Agriventures Program

Overall, the KASI Agriventures program will contribute towards achievement of USDA's **Strategic Objective 1** which is **Increased Agricultural Productivity** and **Strategic Objective 2** which is **Expanded Trade of Agricultural Products (into Domestic, Regional, and International Markets)**.

The major goal of the KASI Agriventures program is therefore "to strengthen the agricultural sector in Tanzania by adding value to agribusiness investees and their supply chain of small holder farmers in order to increase agricultural productivity and expand the trade of agricultural products".

The specific objectives of the KASI Agriventures program are as follows:

- To help investees' (agricultural SMEs) access new markets and increase revenues, which in turn will create jobs in their communities;
- To help smallholder farmers providing raw inputs to fruit/vegetable/spice processing investee(s) to benefit from increased incomes as well as knowledge transfer and technological improvements through SEAF and its partners; and
- To help smallholder and medium-sized farmers (customers of the investee(s) producing animal feeds) to benefit from access to higher quality feed products, thereby making a significant impact on the value chain in Tanzania.

I.3 Program Activities and Outcomes

Specifically, KASI Agriventures will be involved in the following activities:

- i. Develop poultry feed processing capacity through an investment into small and medium-sized poultry feed producer;
- ii. Develop horticultural processing capacity through an investment into a small and medium-sized fruit, vegetable, and/or spice processing facility;
- iii. Enhance agricultural finance using a lease-to-own lending mechanism through an investment in a finance company that provides equipment leasing finance or working capital to agribusiness SMEs, to increase affordability of farm equipment and to increase availability of working capital loans to farmers;
- iv. Establish a Center for Entrepreneurship and Executive Development (CEED) to provide technical assistance to poultry feed producers, fruit/vegetable/spice processors, and other agribusiness SMEs as well as their suppliers and/or customers;
- v. Expand trade of agricultural products through a mentorship program between international corporations and fruit/vegetable/spice processor(s), aimed at bringing the fruit/vegetable/spice processor(s) products up to international standards; and thus increase access to international markets.

The program outcomes include:

- Increased agricultural productivity;
- Increased leverage of private sector resources in agricultural production and post-harvest processing;
- Increased capacity and knowledge of smallholder farmers involved in agricultural production;
- Increased use of improved agricultural technologies and techniques;
- Increased availability of improved inputs;
- Increased use of financial services;
- Increased quality of post-production agricultural products; and
- Expanded trade of agricultural products.

I.4 Target Value Chains

The KASI Agriventures program will target fruits, vegetables and spices value chains as well as the poultry value chain. Further, through an investment in an SME lending vehicle, KASI Agriventures may also be able to support farmers and agribusiness entrepreneurs in other agricultural value chains.

I.5 Target Beneficiaries and Partners

KASI Agriventures program will directly benefit an estimated 40 agribusiness SMEs, 18,040 smallholder farmers, and indirectly benefit 90,200 members of farming families in Tanzania¹.

¹ These numbers are subject to change based upon baseline findings. Indirect beneficiaries are based on the assumption that each household has an average membership of 5.

The target beneficiaries for the KASI Agriventures program will include already existing SMEs engaged in poultry feed manufacturing as well as those engaging in processing of fruits, vegetables and/or spices for export. Beneficiaries of the program will also include poultry producers (customers of feed manufacturers) as well as fruits, vegetables and spice producers (suppliers to fruit, vegetables/spices processors). In order to offer equipment leasing finance, short-term working capital, and short term loans to agribusiness SMEs, KASI will target non-bank financial institutions (NBFIs), community banks and leasing companies.

The program's key partners will include the Tanzanian Horticultural Association (TAHA), Tanzania Feed Manufacturers Association (TAFMA), Cargill Animal Nutrition and Tesco PLC.

2 METHODOLOGIES AND APPROACHES FOR THE BASELINE SURVEY

2.1 Background

The baseline survey for the KASI Agriventures program was conducted in the months of November and December, 2015. This chapter outlines the approach and methodologies that were used in conducting the baseline survey for the KASI Agriventures program in Tanzania.

2.2 Objectives of the Baseline Survey

The objectives of the baseline survey were as follows:

- To establish the baseline values for the program indicators. The baseline was designed to collect the data needed to track indicators in the program's Performance Monitoring Plan (PMP) over the life of the program;
- To collect the necessary data for establishing or validating the indicator targets described in the PMP; and
- To capture any additional data that should be tracked during the course of the program period.

2.3 Baseline Survey Design

The survey design involved use of semi-structured questionnaires to collect data from a sample of target respondents. These included SMEs involved in manufacturing poultry feeds, SMEs involved in processing fruits/vegetables/spices; smallholder farmers involved in fruits/vegetables/spices production; smallholder farmers involved in poultry keeping; and target financial institutions. Data was also collected from potential program partners using key informant interview guides.

2.3.1 Baseline Survey Team

The baseline survey team comprised of 5 key experts and 17 researchers. The following key AFREDEC team members executed the baseline survey (Table 2-1).

Table 2-1: Baseline Survey Team Composition

No	Team	Name	Nationality	Position
1	Key Experts/ Field Team Leaders	Joel Maina	Kenyan	Project Director/Agricultural Economist
2		Samuel Kibuchi	Kenyan	Socio-Economist
3		Timothy Waweru	Kenyan	Overall team leader/ M&E Expert
4		Basili Liheta	Tanzanian	Agricultural Economist/Team leader Kilimanjaro & Arusha
5		Deo Seimu	Tanzanian	M& E Expert/Team Leader Dar es

No	Team	Name	Nationality	Position
				Salaam
6	Morogoro & Pwani	Grace M. Thomas	Tanzanian	Researcher
7		Godwin Majahasi	Tanzanian	Researcher
8		Hamisi Suleiman	Tanzanian	Researcher
9	Iringa & Mbeya	Joanita Jonathan	Tanzanian	Researcher
10		Albert Godson	Tanzanian	Researcher
11		Amos Kashaija	Tanzanian	Researcher
12	Kilimanjaro & Arusha	Gaudence Kapinga	Tanzanian	Researcher
13		Pius Kirenga	Tanzanian	Researcher
14		Nelson Kileo	Tanzanian	Researcher
15		Brown Mamaya	Tanzanian	Researcher
16	Dar Es Salaam	Consensa Mauki	Tanzanian	Researcher
17		Edward Chapa	Tanzanian	Researcher
18		Rugazia Nyombi	Tanzanian	Researcher
19		Frank Cyprian	Tanzanian	Researcher
20		Pelesia Lyimo	Tanzanian	Researcher
21		Angel Mwanya	Tanzanian	Researcher
22		Nelson Lema	Tanzanian	Researcher

2.3.2 Sampling and Sample size

Respondents for the baseline survey were selected using stratified and proportionate random sampling methods. The strata (and sub-strata) were based on the categories (and sub-categories) of key KASI Agriventures target beneficiaries and partners. First, a sampling frame was developed following mapping and listing of key program target beneficiaries operating in the target regions in Tanzania². This was based on the information obtained from document reviews and engaging with key stakeholders such as the Tanzania Horticultural Association (TAHA) and Tanzania Feed Manufacturers Association (TAFMA). The illustrative sampling frame is attached in Annex 2. Target respondents in each strata (and sub-strata) were then selected randomly from the sampling frame.

A total sample size of 252 respondents was initially targeted³. The initial targeted respondents included 50% of sampling frame for non-banking financial institutions and 30% of poultry feed manufacturers, and fruits, vegetables, spices processors (SMEs). The sample size for the individual poultry farmers and individual fruit, vegetable and spices farmers (producers) was determined using Cochran (1963:75) formula for calculating a representative sample for proportions where the population is large. The formula yielded a sample of 100 respondents in each category of producers. In each of the organizations/institutions selected, the key decision makers were targeted for interviews.

² Target regions for the KASI Agriventures program include, Dar es Salaam, Pwani, Morogoro, the Southern Agricultural Growth Corridor of Tanzania (SAGCOT) as well as Arusha and Kilimanjaro regions.

³ As per the program M&E plan

Table 2-2 below illustrates the initially proposed sample sizes for the various categories of respondents.

Table 2-2: Sample Size

Category of respondents (Strata)	Sub-categories(Sub-strata)	Data collection tools	Proposed sampling frame	Total targeted sample size
Non- Bank Financial institutions involved in agribusiness SME lending, equipment leasing, working capital and term loans		Semi-structured questionnaires	23	11
SMEs involved in poultry feed production		Semi-structured questionnaires	33	11
SMEs involved in fruit, vegetable and spices processing		Semi-structured questionnaires	67	22
Individual poultry farmers (producers)		Semi-structured questionnaires	8,000 ⁴	100*
Individual fruit, vegetable and spices farmers (producers)		Semi-structured questionnaires	10,000 ⁵	100*
Other stakeholders agreed upon with SEAF such as Government officials, other relevant USG funded program s/projects (e.g. TAPP), Apex organizations (e.g. TAHA) -Key	Tanzania Horticultural Association (TAHA)	Key informant interview (KII) guides/checklists (Qualitative research method).	1	1
	Tanzania Agriculture Productivity Program (TAPP)		1	1
	Tanzania Private Sector Foundation (TPSF) Cluster Competitiveness Program		1	1
	Tanzania Animal Feeds Manufacturers Association (TAFMA)		1	1
	Southern Agricultural Growth Corridor of Tanzania (SAGCOT)		1	1
	Ministry of Trade and Industry		1	1
	Ministry of Agriculture, Food and Co-operatives		1	1
	Ministry of Livestock and Fisheries		1	1
Total			18,131	252

**Determined by Cochran (1963:75) formula*

However, before the actual data collection exercise, the sampling frame was adjusted after confirming location of the organizations to be within the target regions. Additionally, a 30% margin of the target respondents was added to the sample size for each stratum to compensate for any non-responses. The resultant sample size and the actual responses is presented in Table 2-3 below.

⁴ Based on program individual beneficiaries in the poultry value chain

⁵ Based on the program individual beneficiaries involved in fruits, vegetables and spices value chains

Table 2-3: Adjusted and Achieved Sample Sizes

Category	Adjusted Sampling frame	Adjusted sample Size	Achieved sample size	Percent Achieved
Individual poultry producers	8,000	130	134	103%
Individual fruits/vegetables/spices producers	10,000	130	137	105%
SMEs involved in poultry feed manufacturing	64	21	26	124%
SMEs involved in fruits/vegetables/spices processing	31	13	10	77%
Financial institutions (NBFIs, community banks and leasing companies)	20	13	12	92%
Other program partners	8	8	4	50%
Total	18,123	315	323	103%

A total of 323 respondents were interviewed against an adjusted target of 313 respondents resulting to an overall achievement of 103% of the adjusted sample. However, the targeted sample size was not achieved for some categories especially, other program partners, SMEs involved in fruits, vegetables and /or spices processing as well as non-bank financial institutions. Some of the key limitations are outlined in section 2.4 below.

2.3.3 Training and Pre-testing

A two-day training for the research team was conducted on 26th and 27th November, 2015. The training exercise was meant to acquaint the researchers with the data collection tools as well as equip the researchers with the necessary data collection skills. Researchers were also given background data on the client (SEAF), and the KASI Agriventures program.

Training was followed by a one day pre-testing exercise on November 28, 2015. Pre-testing was conducted in four different areas neighboring Dar Es Salaam. These were Bagamoyo, Chanika, Mlandizi and Mkuranga. The sites were selected based on proximity to Dar es Salaam, the fact that they were major producer zones for poultry as well as fruits, spices and vegetables. A total of 17 respondents were interviewed during the pre-test. Pre-testing was designed to check on the logic flow of the data collection tools, approximate the time required to conduct an interview, check the understanding of the researchers and check for any ambiguous questions. After the training and pre-test exercise, the data collection tools were amended (questions changed, deleted, added, re-arranged or rephrased) as was found appropriate. The final data collection tools that were used are attached as Annex 3.

2.3.4 Data Collection Approaches

During data collection, researchers were split into four teams, each supervised by a key expert. Each team was allocated a proportion of target sample based on the prominence of the target

value chains in their respective areas. The eventual teams organization and the sample sizes are summarized in Table 2-4.

Table 2-4: Team Organization and Sample Allocations

#	Team	Category	Allocated Sample size
1	Dar Es Salaam and Coast	Financial institutions	12
		Individual poultry farmers	40
		Fruit/spice processors	13
		Poultry feed manufacturers	15
2	Iringa Mbeya Team	Financial institutions	2
		Individual poultry farmers	20
		Fruit/spice processors	3
		Individual fruit/spice farmer	55
		Poultry feed manufacturers	2
3	Arusha and Kilimanjaro	Financial institutions	6
		Individual poultry farmers	20
		Fruit/spice processors	10
		Individual fruit/spice farmer	45
		Poultry feed manufacturers	12
4	Morogoro and Coast	Individual poultry farmers	60
		Fruit/spice processors	3
		Individual fruit/spice farmer	30
		Poultry feed manufacturers	4
	Total		352

NB: The allocated sample size is much higher compared to the target adjusted sample size of 315 respondents

For each of the teams, data collection was pre-defined in three steps as shown in figure 2-1 below.

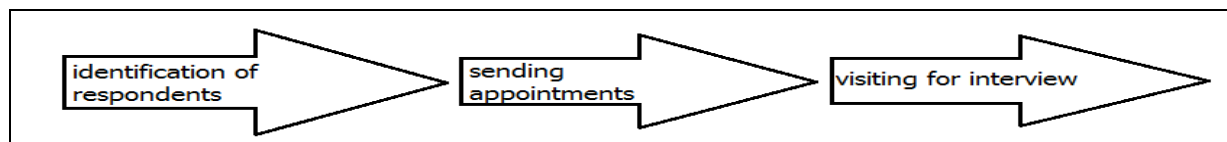


Figure 2-1: Data collecting approach

The first step was to identify location of the target respondents as well as categorizing them as either individuals or organizations. In the case of organizations, the research team identified the contact person particularly the decision makers in the organization. The second step was to send out appointment requests. In cases where the respondents agreed to be interviewed on the spot, the interviews were conducted immediately but where interviewees preferred a later date, the researchers followed up as agreed. Team leaders were responsible for guiding the researchers as well as quality control of the data collected.

2.3.5 Data Entry and Analysis

Collected data was entered into Statistical Packages for Social Sciences (SPSS) software by qualified data entry clerks⁶. Separate data entry templates were developed for each group of respondents. The data was then cleaned to check for missing values, incorrectly entered data, inconsistent data and outliers. Data was analyzed using the SPSS software but for some cases data was exported to STATA software and analyzed to generate the required statistics. Different methods such as frequencies, descriptive statistics, cross tabulations and multiple responses analysis were used. Where necessary, data was re-coded and new variables generated, split or merged to arrive at the required results. To improve the quality (validity and reliability) of data, triangulation (comparison of data with other sources), was applied where necessary.

2.3.6 Reporting

Results of the data analysis are presented in this baseline survey report. The report concentrates on information necessary to describe or generate baseline values for the program indicators.

2.4 Limitations for the Baseline Survey

While the achievement of the overall target sample was exceeded, major limitations for the baseline survey included:

- Reluctance of some of the targeted organizations and institutions to grant interviews. This was common for more formalized financial organizations and SMEs who cited confidentiality of information. Other organizations and institutions needed authorization to respond, delaying the interview process;
- Reluctance to provide some data, especially financial data, that was considered confidential, resulting in incomplete questionnaires and therefore incomplete data;
- Unavailability of key contact persons in the targeted organizations and institutions. In some cases, researchers were unable to secure appointments with key decision makers in the organizations and **opted not to** interview employees who were not involved in management; and
- Time limitations. Given that the data collection exercise was time bound, not all the responses were received within the set deadlines;

To address some of these limitations the consultant used the following approaches:

- Additional sample to cater for non-responses. As noted an additional 30% of the sample size was added so as to cater for any non-response that might occur during data collection
- Replacement of unavailable or unwilling respondents. Replacement was done by randomly selecting other organizations in the sampling frame or as encountered during the survey exercise; and

⁶ All data entry and analysis was carried out at a central place to ensure homogeneity.

- Data triangulation. This included getting information from secondary sources such as relevant reports and literature to verify reliability and credibility of the survey data.

3 RESULTS AND FINDINGS

3.1 Findings on Agricultural Production and Processing

To generate baseline values for primary production, a total of 134 individual poultry keepers and 137 fruits, vegetables or spices producers were interviewed. In addition, 26 SMEs involved in manufacturing poultry feeds and 10 SMEs involved in processing fruits, vegetables and/or spices were interviewed to generate baseline values for post-production processing. The results are presented in the sub-sections that follow.

3.1.1 Agricultural Production by Primary Producers

3.1.1.1 Fruits, Vegetables and Spices Production

The KASI Agriventures program targets key fruits, vegetables and spices value chains in Tanzania. On average, sampled farmers have been producing fruits, vegetables or spices for about six and half years (6.5 years). Average land holding for sampled farmers was 3.4 acres (1.4 hectares) out of which 2.6 acres (approximately 1 hectare) was dedicated to crop production; amongst them fruits, vegetables and spices. Amongst fruit value chains, pineapples were the most commonly produced followed by mangoes and lastly bananas. For vegetables, tomatoes were the most commonly produced, followed by onions, green pepper and carrots in that order. Only a few respondents produced spices with chilies being the most common. Other spices included paprika and vanilla.

Table 3-1: Major Produced Fruits Vegetables and Spices

Category	Value chain	N	Percent
Fruits	Pineapple	21	48.8%
	Mango	10	23.3%
	Oranges	4	9.3%
	Watermelon	3	7.0%
	Pawpaw	2	4.7%
	Passion	2	4.7%
	Banana	1	2.3%
	Total fruits	43	100%
Vegetables	Tomatoes ⁷	85	49.7%
	Onion	33	19.3%
	Green Pepper(Capsicum)	31	18.1%
	Carrots	13	7.6%
	Okra	4	2.3%
	Eggplant	3	1.8%
	Butternut	1	0.6%
	Cabbage	1	0.6%

⁷ While tomatoes are technically (botanically) classified as fruits, this report has classified tomatoes as vegetables based on their uses and understanding within the region.

Category	Value chain	N	Percent
	Total vegetables	171	100%
Spices	Chili	4	50.0%
	Paprika	3	37.5%
	Vanilla	1	12.5%
	Cinnamon	0	0.00%
	Total Spices	8	100%

Source: KASI Agriventures Baseline Survey, 2015

Within the last 1 year, sampled respondents produced 10.3 tons of various fruits, 25.6 tons of vegetables and 1.3 tons of spices. Quantities produced for various categorizes are as shown in Table 3-2 below.

Table 3-2: Average Volumes of Major Produced Fruits, Vegetables and Spices

Produce Category	Commodity	Total Annual Production (Kgs)
Fruits	Pineapple	4,255
	Passion	0 ⁸
	Mango	5,402
	Watermelon	0
	Pawpaw	600
	Total fruits	10,257
Vegetables	Carrots	5,268
	Tomatoes	14,063
	Onion	4,097
	Green pepper	2,049
	Cucumber	105
	Total Vegetables	25,582
Spices	Vanilla	12
	Cinnamon	0
	Paprika	48
	Chili	1,200
	Total Spices	1,260

Source: KASI Agriventures Baseline Survey, 2015

3.1.1.2 Poultry Production

On average, sampled farmers had been rearing poultry for eight and a half years (8.5 years). The percentage of farmers with less than 50 birds has decreased from 11.7% at the start (8.5 years ago) to 3% at the time of the baseline survey. Meanwhile, the number of respondents (poultry farmers) that were keeping more than 200 birds had increased from 34% to 57% during the past 8.5 years (Table 3-3). This implies that poultry stocks have been increasing over time.

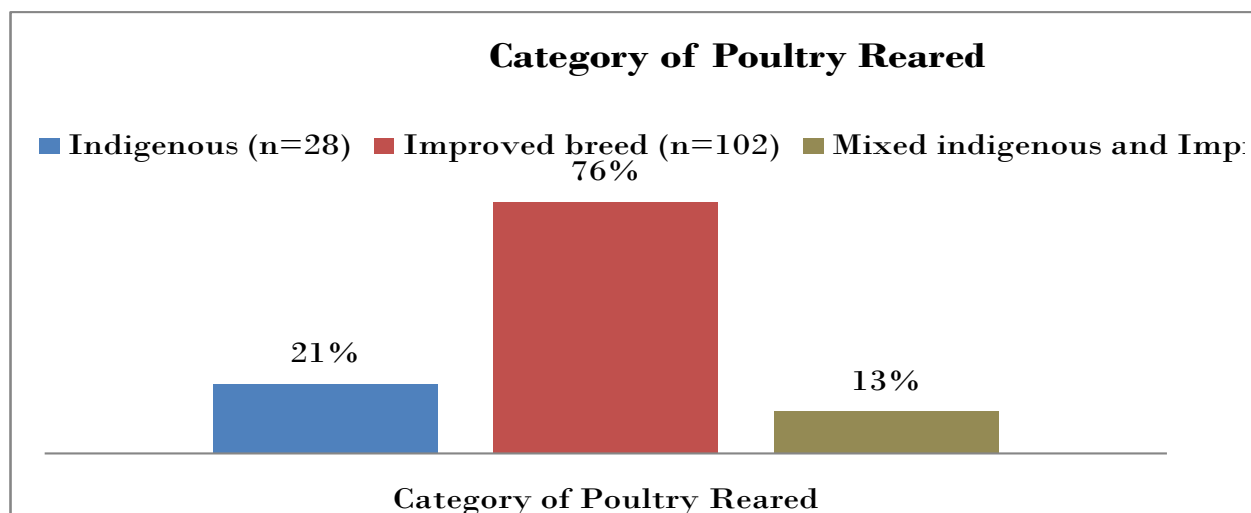
⁸ Despite water melons and passion being produced, none of the respondents indicated to have harvested within the last 1 year.

Table 3-3: Average Number of Poultry Stocks

#	Number	Starting Point ⁹		At the Baseline	
		Frequency	Percent	Frequency	Percent
1	<10	6	4.5%	0	0%
2	10-50	11	8.2%	4	3%
3	51-100	38	28%	39	29%
4	101-200	33	25%	15	11%
5	>200	46	34%	76	57%
	Total	134	100%	134	100%

Source: KASI Agriventures Baseline Survey, 2015

Of the sampled farmers, majority (76%) mostly reared improved breeds of chicken. A total of 21% of the sampled farmers kept indigenous chicken while 13% kept both indigenous and improved breeds (Figure 3-1).

**Figure 3-1: Category of poultry reared**

Source: KASI Agriventures Baseline Survey, 2015

The KASI Agriventures program targets to increase production of poultry by improving access to quality and affordable poultry feeds for poultry producers. From the baseline survey, poultry producers purchased feeds frequently, with majority of the respondents (44%) having to purchase at least on a weekly basis, and another 24% purchasing feeds every 2 weeks. The survey also found that 15% of respondents purchased feeds on a monthly basis. This implies that there is high demand for poultry feeds but may also point to the fact that producers purchase feeds in smaller quantities but do so more frequently.

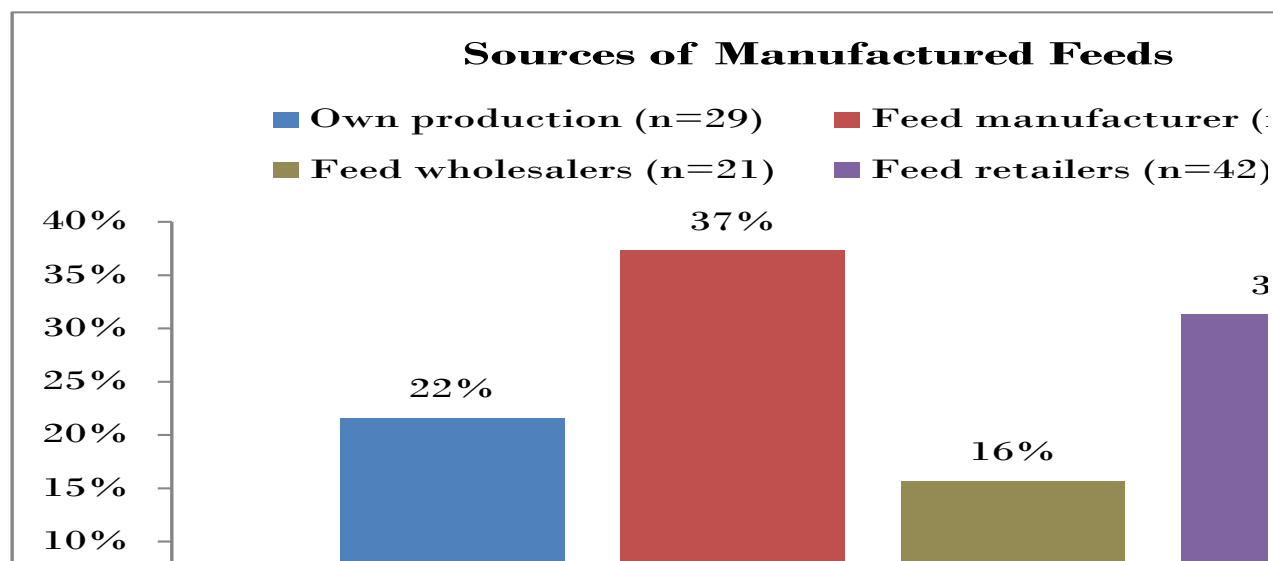
⁹ Starting point is on average eight and a half years before the baseline period.

Table 3-4: Frequency of Purchasing Poultry Feeds

Frequency of Purchasing Feeds	N	Percent
Weekly	58	44%
Every 2 weeks	32	24%
Monthly	20	15%
Daily	9	6%
Three times per Month	4	3%
Three times per Week	2	2%
Twice a Week	2	2%
Quarterly (every 3 Months)	2	2%
Irregularly	2	2%
Total	131	100%

Source: KASI Agriventures Baseline Survey, 2015

The major sources of poultry feeds for majority of the respondents were feed manufacturers (37%), feed retailers (31%) and feed wholesalers/distributors at 15.7%. It was also noted that approximately 22% of the respondents manufactured poultry feeds on-farm as a way of minimizing the costs of production.

**Figure 3-2: Sources of Poultry Feeds**

Source: KASI Agriventures Baseline Survey, 2015

Results also indicate that feed manufacturers played a major role not only in supplying feeds to producers but also in providing other services. Of the 61% of respondents that received other services from feed manufacturers, 67% received drugs and vaccines, 13% received day old chicks, 11% received poultry equipment and tools, and 9% received extension services from feed manufacturers. This creates an avenue for KASI Agriventures to use manufacturers for improving access to other poultry production inputs needed by poultry producers in addition

to poultry feeds. On average, poultry producers purchased approximately 1.9 tons of different types of poultry feeds valued at USD 957 per month. This would translate to an average of 23.3 tons valued at USD 11,486 per year¹⁰.

Table 3-5: Average Monthly Quantity and Value of Poultry Feeds Purchased

	N	Minimum	Maximum	Mean
Quantity of Feed Purchased (Kgs)	134	200	27,500	1,938
Value of Feed Purchased (USD)	133	7	13,302	957

Source: KASI Agriventures Baseline Survey, 2015

The major types of poultry feeds used by poultry producers (whether purchased or prepared on the farm) included chick mash, broilers mash and growers mash as mentioned in 60%, 49% and 42% of the cases. Other types included layers mash and maize bran. While these results suggest that farmers may be producing more broilers than layers, it should also be noted that broilers are heavy feeders compared to layers.

Table 3-6: Main Feed Bought/Produced by Farmers

Feed type	Percentage of farmers buying/producing	N
Chick mash	60%	80
Growers mash	42%	56
Layers mash	37%	50
Broilers mash and pellets	49 %	66
Maize bran/swam	10%	14

Source: KASI Agriventures Baseline Survey, 2015

Although majority (60%) of the poultry producers purchased chick mash, farmers bought higher quantities of broilers and layers mash. These two feed types also comprised the highest costs. Table 3-7 shows the average monthly and annual quantities as well as value of purchases.

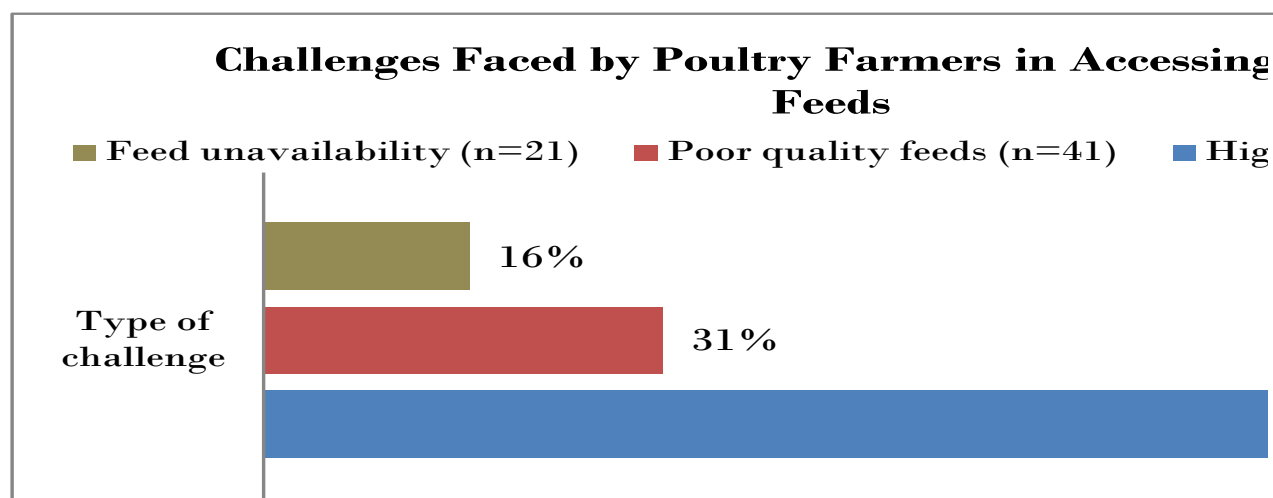
¹⁰ Average quantities and values was calculated the regardless of the type of feed purchased. This was done by creating two new variables from the data set which was a summation of all quantities and value of feeds purchased for each of the respondents. This was then analyzed to give a minimum, maximum and an average.

Table 3-7: Average Monthly/Annual Quantities and Value of Feed Purchased by Type

Feed type	N	Average Quantity Purchased per Month (Kgs)	Average Cost per Month (USD)	Average Quantity Purchased per Year (Kgs)	Average Annual Cost (USD)
Chick mash	80	492	373	5,906	4,476
Growers mash	56	1,162	734	13,946	8,808
Layers mash	50	1,128	887	13,531	10,643
Broilers mash	61	1,290	844	15,475	10,128
Broilers pellets	5	480	270	5,760	3,240
Maize bran/swam	14	268	96	3,214	1,152
Homemade ration	25	823	77	9,880	924

Source: KASI Agriventures Baseline Survey, 2015

The major challenge regarding access to poultry feed was the high cost of feed as mentioned by 90% of the respondents. Other challenges included poor quality of feeds as well as unavailability of poultry feeds. These responses validate the rationale for the KASI Agriventures program's interventions focused on lowering the cost of feeds as well as improving the quality of poultry feeds supplied to poultry farmers by manufacturers.

**Figure 3-3: Challenges Faced by Poultry Farmers in Accessing Poultry Feeds**

Source: KASI Agriventures Baseline Survey, 2015

3.1.1.3 Access and Use of Farm Labor amongst Producers

Fruits, vegetables and spice producers employed an average of four permanent laborers and five casual laborers in addition to two of the household members for a total of 11 laborers. The total monthly cost of labor was estimated at USD 490. Approximately 67% of the poultry producers employed labor, on either casual or permanent terms, in addition to two family

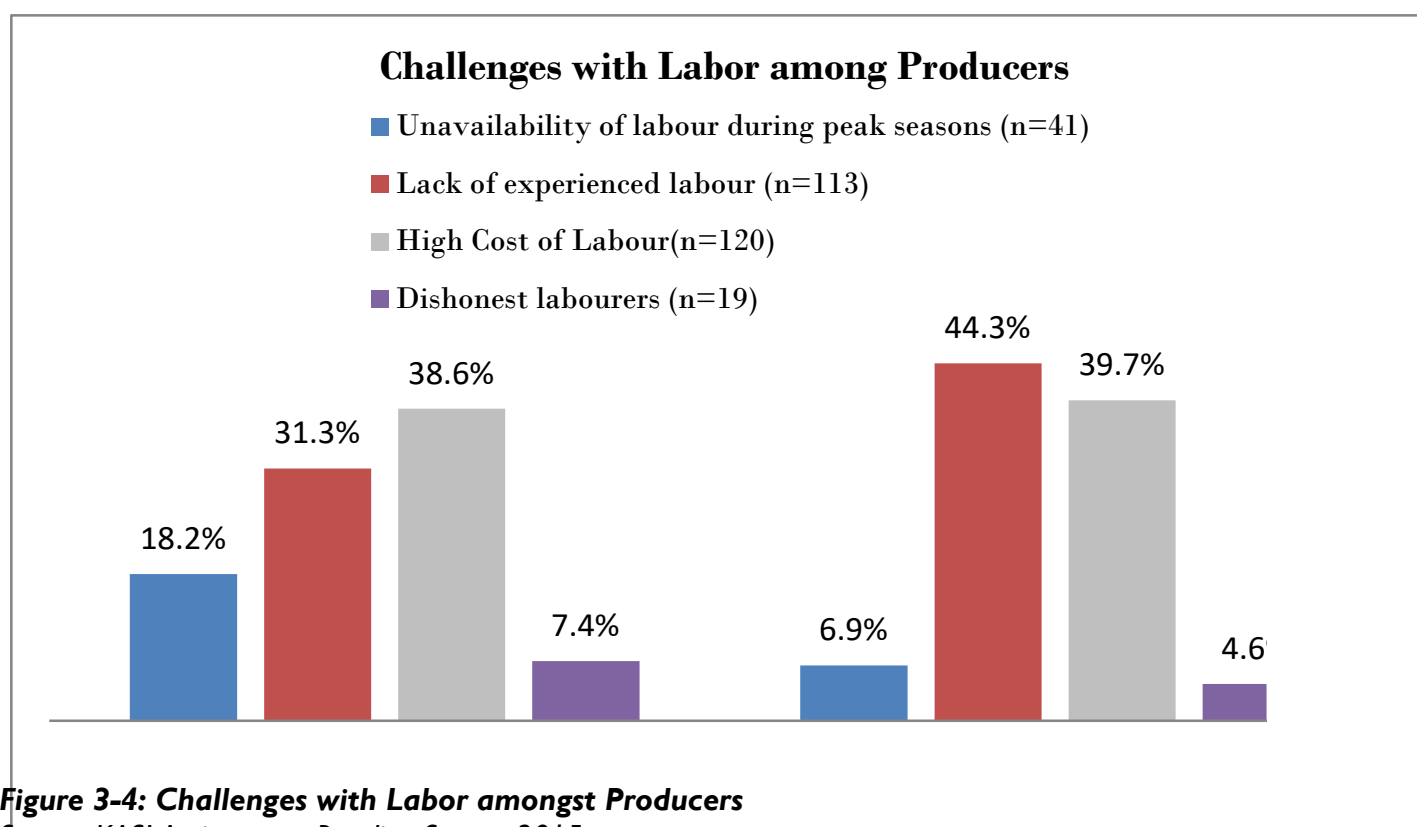
members. On average, poultry keepers incurred approximately USD 361 per month on labor, with casual labor having the highest share of costs. The average number of family, permanent and casual labor was two, making a total of six laborers per month (Table 3.8).

Table 3-8: Monthly Labor Size and Cost Amongst Producers

Labor source	Fruit, Vegetables and Spices Producers		Poultry Producers	
	Average Number of Employees	Total Monthly Labor Cost (USD)	Average Number of employees	Total Monthly labor cost (USD)
Family labor	2	100	2	100
Permanent labor	4	265	2	122
Casual labor	5	128	2	139
Total	11	490	6	361

Source: KASI Agriventures Baseline Survey, 2015

Despite the fact that producers employed labor, they faced a number of challenges, key amongst them being the lack of experienced labor, high cost of labor and unavailability of labor especially during the peak seasons¹¹ (Figure 3-4).



Source: KASI Agriventures Baseline Survey, 2015

¹¹ Unavailability of labor during the peak season was not a major challenge for poultry producers as it was mentioned by only 6.9% of the respondents.

3.1.2 Quantity and Value of Products Marketed by Producers

Within the last year, fruits, vegetables and spice producers that were surveyed sold approximately 3.4 tons of fruits, 8.5 tons of vegetables and 0.6 tons of spices on average. Most of these were marketed as raw materials (Table 3-9).

Table 3-9: Average Value of Commodities Marketed by Fruit, Vegetables and Spices producers

Produce Category	Commodity	Quantity Marketed per Year (Kgs)	Weight	weighted quantity (kgs)
Fruits	Pineapple	4,255	49%	2,076
	Passion	0	5%	0
	Mango	5,402	23%	1,259
	Pawpaw	600	5%	28.2
	Total Fruits			3,363
Vegetables	Carrots	5,268	8%	400
	Tomatoes	14,063	50%	6,989
	Onion	4,097	19%	791
	Green pepper	2,049	18%	371
	Cucumber	105	1%	1
	Total Vegetables			8,552
Spices	Vanilla	12	12.50%	1.5
	Paprika	48	38%	18
	Chili	1,200	50%	600
	Total Spices	1,260		620

Source: KASI Agriventures Baseline Survey, 2015

Within the last year, fruits, vegetables and spices producers earned an average of USD12,348 per producer with a minimum of USD 450 and a maximum of USD 361,860 (Table 3-10)¹².

Table 3-10: Average Annual Incomes for Fruits, Vegetables and Spices Producers

Annual Incomes	N	Minimum	Maximum	Mean
Annual Incomes - TZS	115	967,500	778,000,000	26,548,995
Annual Incomes - USD	115	450	361,860	12,348

In comparison, poultry producers marketed various products including mature birds, eggs and manure as reported by 68%, 49% and 37% of the poultry producers respectively. Only 19% of the sampled producers were selling chicks (Figure 3-5).

¹² Calculated using similar approach as Table 3-5

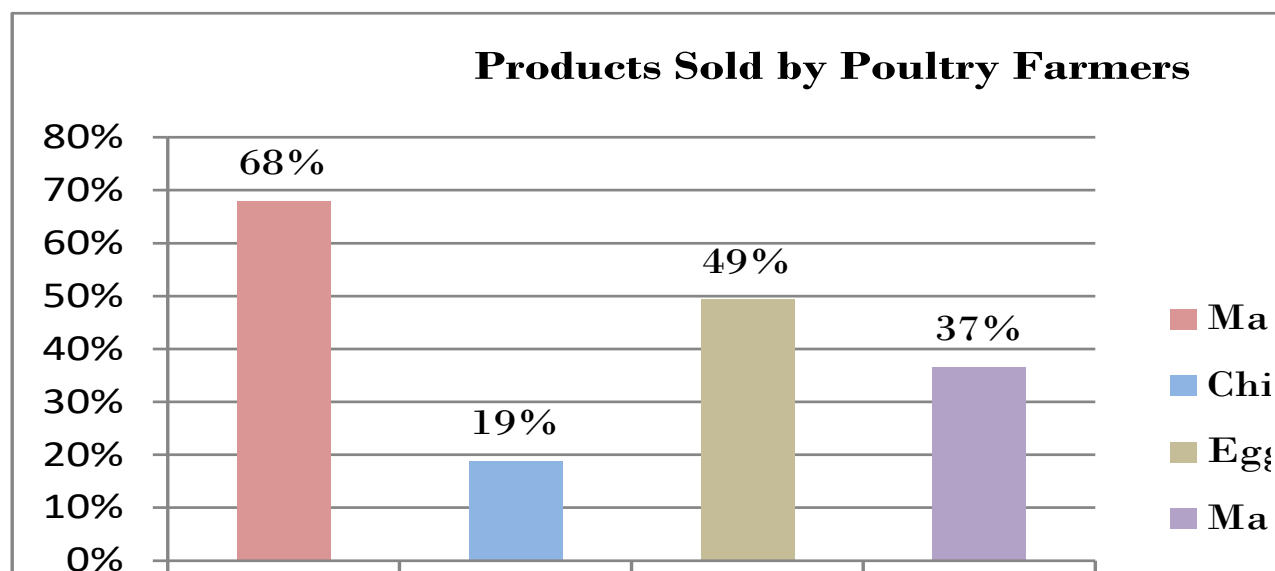


Figure 3-5: Poultry Products Sold by Sampled Poultry Farmers

Source: KASI Agriventures Baseline Survey, 2015

While majority of the respondents sold live hen and eggs, the average annual revenues were higher for those who sold chicks (13% of the respondents), with an average revenue of approximately USD11,500. On average, those who sold live hen (60% of the respondents), earned USD 9,861 annually, while those who sold live cocks (28% of the respondents) earned an average of USD 8,175 annually. Those who sold eggs (46%) earned an average of USD 6,645. Table 3-11 shows the average quantities and value of chicken products sold by poultry producers.

Table 3-11: Annual Average Revenue from Poultry Product Sales by Product Type

Type of Product	N	Minimum	Maximum	Mean
Total Revenue per year- Live bird cock	37	56	139,535	8,175
Total Revenue per year-Live bird hen	81	56	184,186	9,861
Total Revenue per year- Eggs	62	45	55,174	6,645
Total Revenue per year- Chicks	18	56	77,395	11,497
Total Revenue per year- Manure	40	4	10,047	831
Total Revenue per year- Hatching of Eggs	1	8,372	8,372	8,372

Source: KASI Agriventures Baseline Survey, 2015

Since respondents sold one or more of the poultry products, poultry producers earned an average of USD13,148 annually as shown in Table 3-12 below.

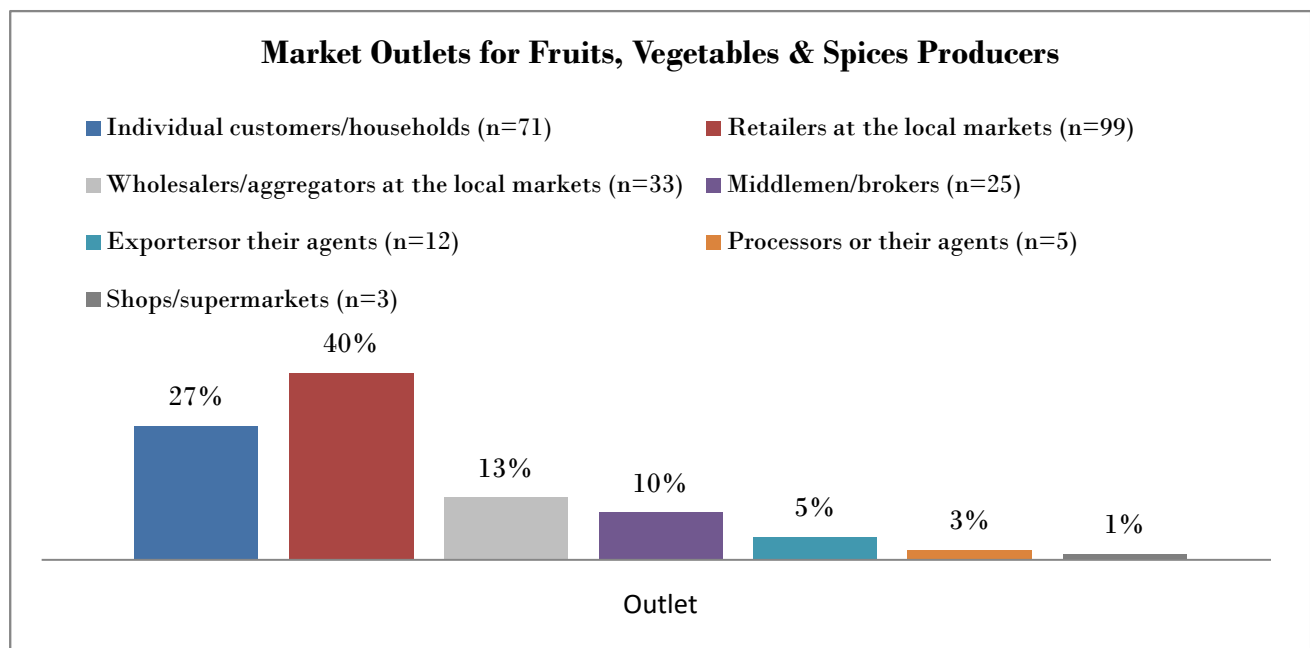
Table 3-12: Average Annual Incomes for Poultry Producers¹³

Annual Incomes	N	Minimum	Maximum	Mean
Annual Incomes - TZs	134	406,000	396,000,000	28,267,717
Annual Incomes - USD	134	189	184,186	13,148

Source: KASI Agriventures Baseline Survey, 2015

3.1.2.1 Marketing Outlets for Producers

Approximately 40% of respondents identified retailers at local markets as their primary buyers, followed by 27% of respondents who indicated individuals at the household level as their major market outlet. Approximately 13% sold to wholesalers and larger aggregators with an additional 10% selling to middlemen and brokers. The survey also found that only 8% of the sampled respondents were able to access higher-end markets such as exporters (5%) and processors (3%). This may be attributed to the fact that processors expect a certain level of uniformity and quality, which smallholder farmers may find difficult to meet.

**Figure 3-6: Market Outlets for Fruits, Vegetables and Spices Producers**

Source: KASI Agriventures Baseline Survey, 2015

The major market outlets for poultry products are as shown in Figure 3.7 below. Survey results indicate that a majority of the producers sold their products within their localities either to individual customers or retailers at the local markets. Similar to fruits, vegetables and spice producers, fewer poultry producers accessed higher-end markets including wholesalers and large off-takers as well as supermarkets and hotels.

¹³ Calculated using similar approach as Table 3-5, 3-10

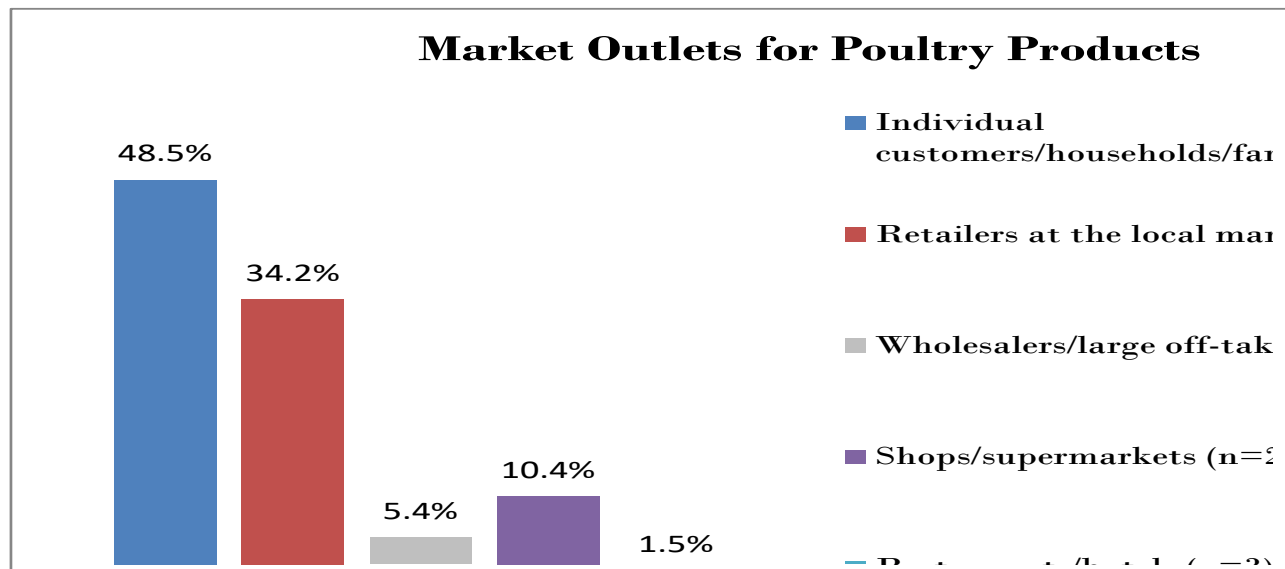


Figure 3-7: Market Outlets for Poultry Products

Source: KASI Agriventures Baseline Survey, 2015

Such a disparity may be as a result of lack of organized marketing. Majority of the poultry producers sold their products as individuals and only 15.7% were members of a producer and marketing group. Out of those who belonged to a group, only 30% noted that they benefited from group marketing. With better organized marketing, producers are more likely to access more formalized (and often more lucrative) markets.

3.1.2.2 Contractual Marketing amongst Producers

Marketing under contract was used as a proxy for stable and reliable markets. Only 7.6% of the sampled fruits, vegetables and spice producers sold their products through formal or informal contractual arrangements, with most of the arrangements being under informal (non-written) contracts¹⁴. Major buyers on contract terms were retailers and processors while major value chains purchased on contractual arrangements being vegetables.

Table 3-13: Number of Producers with Formal Or Informal Contracts by Product

Commodity	Type of contract		Buyers			
	Formal	Informal	Retailers	Middlemen	Institutions	Processors
Green pepper	0	2	1	1	0	0
Tomatoes ¹⁵	1	4	2	0	1	2
Pineapples	0	1	0	0	0	1
Onions	0	1	1	0	0	0
Total	1	8	4	1	1	3

Source: KASI Agriventures Baseline Survey, 2015

¹⁴ This mainly involved simple supply orders.

¹⁵ Again, tomatoes have been treated as vegetables here as opposed to fruits.

Within the last year, fruits, vegetables and spice producers that had contractual arrangements (7.6% of all producers surveyed) had sold a total of 17 tons of produce valued at USD 1,355 on contract basis.

Table 3-14: Volumes and Values of Fruits and Vegetables Sold on Contract

Commodity	Annual Volume sold (MT)	Annual Value of sale in USD
Green pepper	3	590
Tomatoes	1	100
Pineapples	2	200
Onions	11	465
Total	17	1,355

Source: KASI Agriventures Baseline Survey, 2015

In comparison to fruits and vegetables producers, 2.8% of poultry producers (or 33 respondents) had contractual arrangements with buyers for various products with majority of them (28 respondents) having informal contracts (Table 3-15). Eggs and live birds were the major products sold under contract.

Table 3-15: Number of Farmers with Formal or Informal Contracts Per Poultry Products

Commodity	Type of contract		Total
	Number of poultry producers with a formal contract	Number of poultry producers with informal contracts	
Eggs	3	13	16
Live birds	2	13	15
Manure	0	2	2
Total	5	28	33

Source: KASI Agriventures Baseline Survey, 2015

Within the last year, all poultry keepers surveyed with a contractual arrangement sold products worth a total of USD 32,216 on contract basis, with live birds having the largest contribution at USD 18,766 (Table 3-16).

Table 3-16: Commodities Sold on Contracts by Poultry Producers

Poultry product	Annual value of sale (USD)	N
Eggs	8,422	15
Live birds	18,766	13
Manure	5,073	2
Total	32,261	30

Source: KASI Agriventures Baseline Survey, 2015

3.1.3 Post Production Processing by SMEs

3.1.3.1 Fruits, Vegetables, and Spice Processors

Sampled fruits, vegetables and spice processors were relatively large compared to poultry feed manufacturers. Approximately 50% of the sampled processors were incorporated as sole proprietorship, 40% as limited companies and 10% as partnerships. On average, these organizations had been in operation for approximately ten and a half years (10.5 years) with the oldest being 36 years and the most recent having been established two years ago (2013). The processors employed up to 63 permanent laborers as well as an average of 11 casual employees during the normal production periods. During peak seasons, the average number of casual employees increased to 25. The majority (43.7%) of the organizations were involved in processing fruits, 31.3% were vegetable processors while 25% were involved in spice processing.

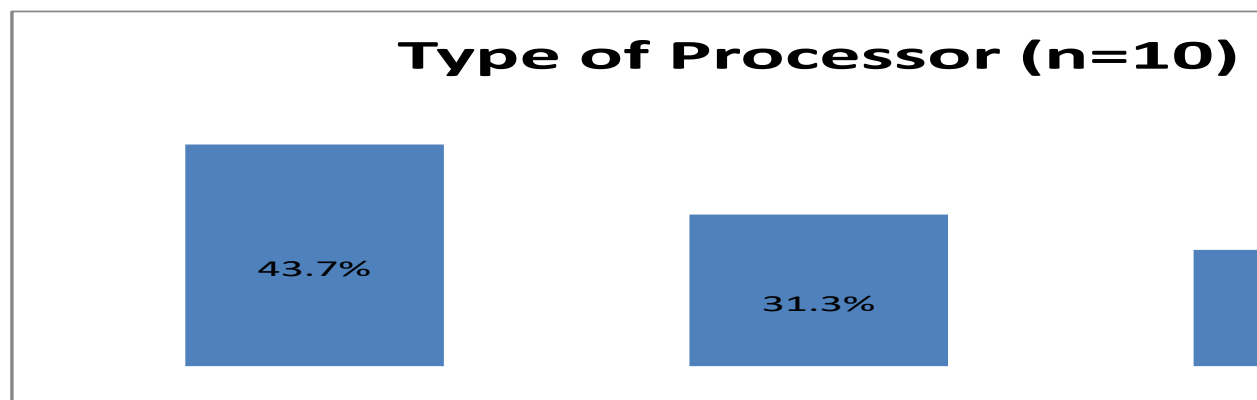


Figure 3-8: Type of Processors

Source: KASI Agriventures Baseline Survey, 2015

On average, SMEs involved in processing fruits, vegetables and spices benefited an average of 1,541 smallholder farmers. However, the relatively larger SMEs served up to an average of 3,225 smallholder farmers while the relatively smaller ones served an average of 194 smallholder farmers. According to the baseline study, The average installed capacities are: fruits- 2.5MT/day; Vegetables - 3.1MT/day; and spices -0.02 MT/day. Utilized capacities as measured by daily output is as follows: for fruits s 2.14 MT/day, for vegetables is 2.83 MT/day and for spices is 0.01MT/day. Given these values, the utilization rates are therefore, 85% for fruits, 90% for vegetables and 44% for spices. On average, each SME involved in processing of fruits purchased an average of 117 tons of various raw materials per month valued at USD 6,028. This translates to averages of 1,404 tons of raw materials per year valued at USD 72,336.

Table 3-17: Average Monthly Quantities and Value of Raw Materials Purchased by Fruits, Vegetables and Spices Processors¹⁶

	N	Minimum	Maximum	Mean
Quantity of Raw Materials (Tons)	7	0.6	370	117
Value of Raw Materials (USD)	7	24.42	19,535	6,028

Source: KASI Agriventures Baseline Survey, 2015

The average monthly quantities and values of raw materials purchased by processors are as shown in Table 3-18 below.

Table 3-18: Annual Average Quantities and Values for Raw Materials Purchased by Processors

Category	Raw Material Bought	Quantity Bought (Tons)	Weight	Weighted Quantity Bought (Tons)/SME	Average Price per Ton (USD)	Value of Raw Material (USD)
Fruits	Banana	480	20%	96	326	31,296
	Mango	276	30%	82.8	271	22,439
	Passion	504	20%	100.8	260	26,208
	Pineapple	720	30%	216	335	72,360
	Sub-total			495.6		152,303
Vegetables	Carrots	204	10%	20.4	465	9,486
	Fine Beans	96	10%	9.6	512	4,915
	Snow peas	144	10%	14.4	791	11,390
	Sugar Snaps	144	10%	14.4	837	12,053
	Tomatoes	888	30%	266.4	521	138,794
	Sub-total			325.2		176,639
Spices	Black Pepper	1.2	10%	0.12	70	8
	Cardamom	1.2	10%	0.12	140	17
	Cinnamon	0.72	20%	0.14	2,209	318
	Garlic	0.24	20%	0.05	2,326	112
	Ginger	0.36	10%	0.04	2,326	84
	Vanilla	14.04	20%	2.81	5,157	14,481
	Sub-total			3.28		15,020

The major raw materials purchased by fruits, vegetables and spices processors included pineapples, tomatoes, mangoes and cinnamon (Figure 3-9).

¹⁶ Calculated using similar approach as Table 3-5, 3-10, 312

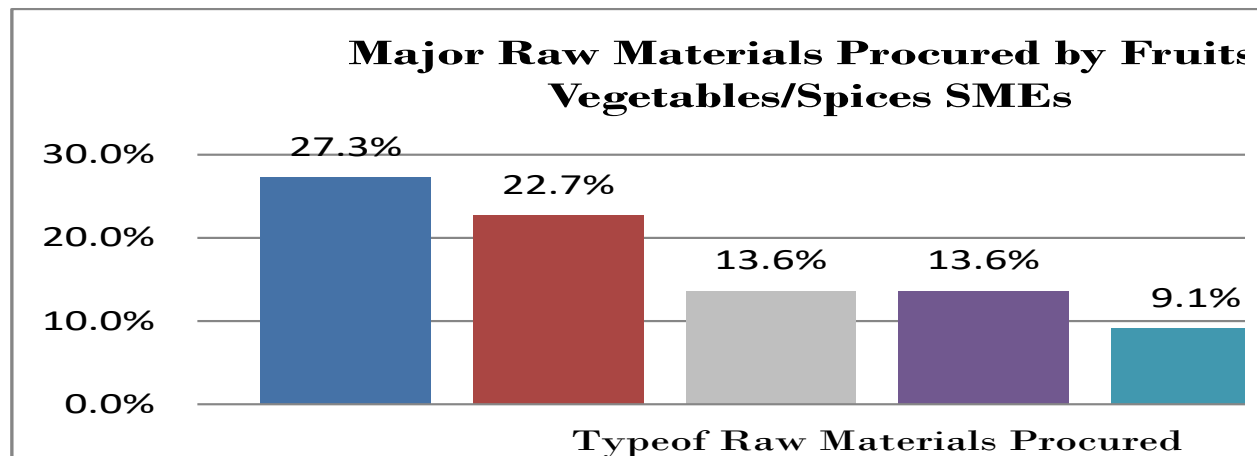


Figure 3-9: Major Raw Materials Procured by Fruits, Vegetables/Spices Processors

Source: KASI Agriventures Baseline Survey, 2015

While the source of raw material depended mostly on the type of raw material purchased, major sources include direct purchases from smallholder farmers or using a network of smallholder farmer groups as noted by 38.5% and 28.2% of the processors respectively (Figure 3-10). These findings indicate that processors preferred procuring directly from producers and therefore with better organization, producers will most likely have better access to markets.

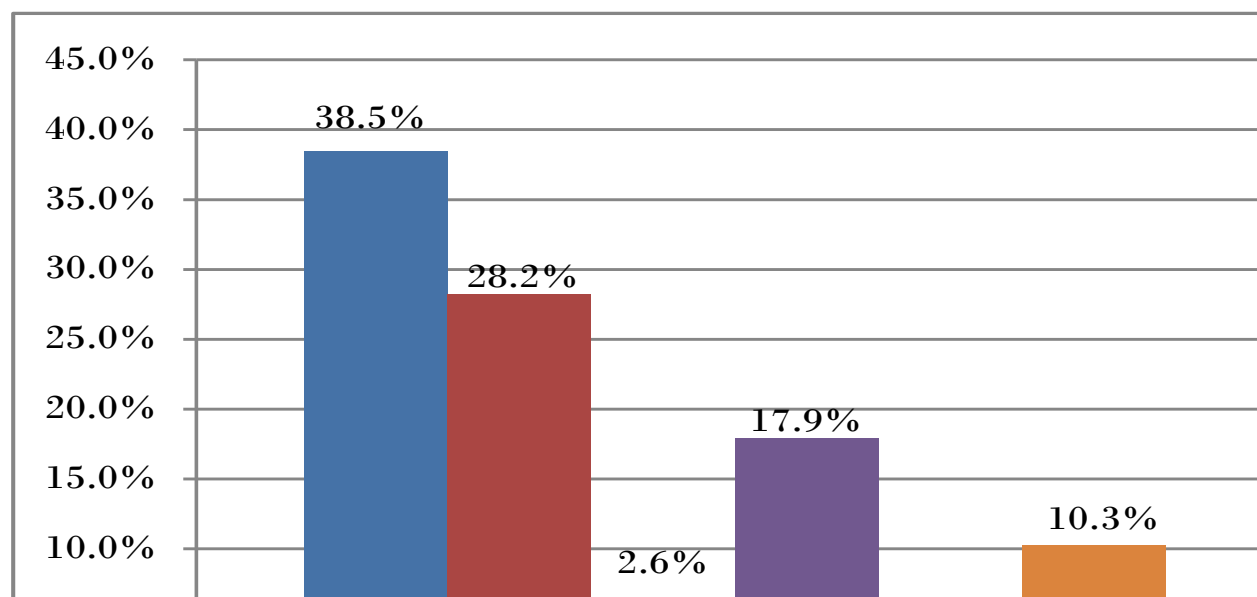


Figure 3-10: Sources of Raw Materials for Fruits, Vegetables and Spices Processors

Source: KASI Agriventures Baseline Survey, 2015

Major processed outputs varied by type of commodity processed. Fruits were mainly processed into juices and pulp while vegetables were mainly processed into dried vegetables, sauces and canned vegetables. Spices were mainly dried and ground into powders.

Table 3-19: Major Fruits, Vegetables and Spices Products Processed

Produce Category	Type of processed output	Number of firms producing
Fruits	Juices	1
	Pulp	1
Vegetables	Pastes	1
	Sauces	2
	Canned vegetables	2
	Dried vegetables	3
	Fresh vegetables	1
Spices	Ground spices/powders	3
	Liquid spices	1

Source: KASI Agriventures Baseline Survey, 2015

3.1.3.2 Poultry Feed Manufacturers

Sampled feed manufacturers were mainly sole proprietorships (96%) who had been involved in the business for an average of nine years. These businesses had an average of two branches, employed an average of 10 permanent employees (eight male and two female), and an average of 10 casual laborers (seven male and three female). The survey found that on average, feed manufacturers have an installed production capacity of 13.7MT/day with 77.5% of the capacity (8.2 MT/day) being utilized.

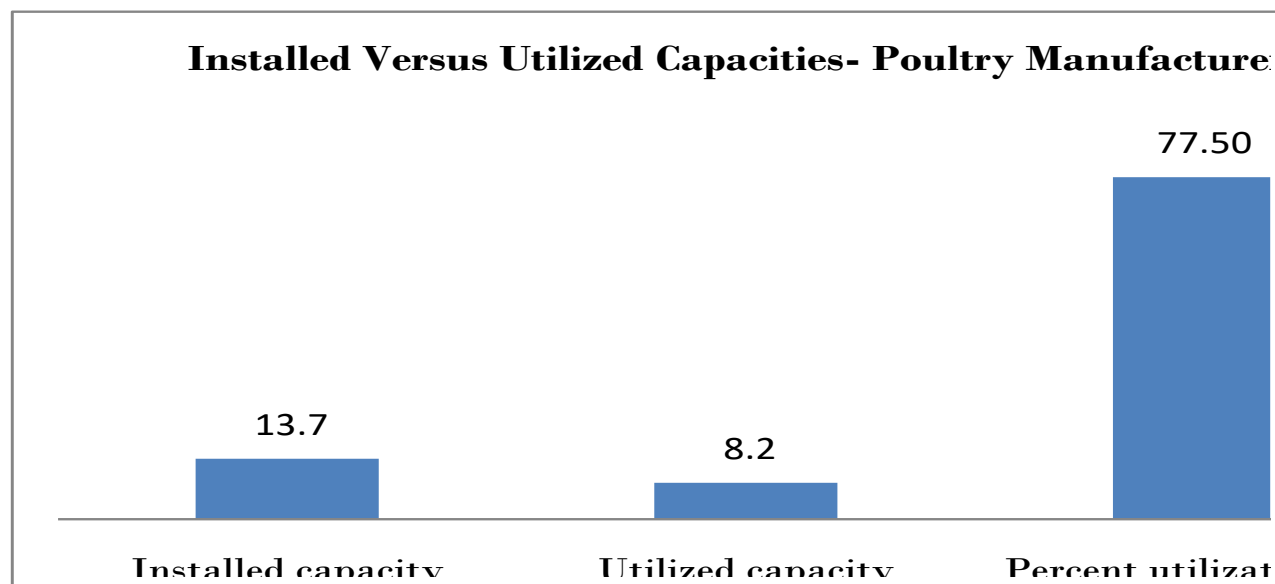


Figure 3-11: Average Daily Poultry Feed Processing Production Capacities and Capacity Utilization (MT)

Source: KASI Agriventures Baseline Survey, 2015

Poultry feed manufacturers combine various raw materials to produce poultry feeds. The volumes and values of raw materials procured by feed manufacturers are as shown in Table below 3-19. Dry maize was the major purchased raw material. Others raw materials include barley, sunflower, maize bran, wheat and rice. Major protein sources included soy beans, fish

and fish meal, cotton cake, bone meal and blood meal. Manufacturers also procured minerals such as salts, limestone and other additives.

SMEs involved in poultry feed manufacturing procured various types of raw materials. Maize, additives and minerals, soy beans/soy bean cakes as well as fish/fish meal were the most commonly purchased raw materials. On average, each SME purchased 105 tons of raw materials valued at USD 38,525 per month. This translates to an average of 1,263 tons per year valued at USD 462,300 annually.

Table 3-20: Average Monthly Quantities and Value of Raw Materials Used by Poultry Feed Manufacturers

	N	Minimum	Maximum	Mean
Quantity of Raw Materials (Tons)	26	12	480	105
Value of Raw Materials (USD)	26	4,767	169,070	38,525

Source: KASI Agriventures Baseline Survey, 2015

Monthly average quantities and value of raw materials for each of the raw materials is as shown in Table 3-20 below.

Table 3-21: Average Monthly Poultry Raw Materials Used in Poultry Feeds Manufacturing

Type of Raw material	Monthly Purchased Quantities (Tons)	Average Monthly cost USD
Soya bean	12	6,822
Feed Maize	36.9	9,135
Barley	35	1,860
Sorghum	3.8	883
Millet	6.8	1,348
Groundnuts	6.4	2,342
Sunflower	16.7	3,082
Oats	11.2	6,162
Oil cake	12.2	3,084
Rice	15.5	1,959
Fish	8.1	7,492
Cotton	11.2	2,581
Wheat	16.8	1,003
Pollard	7	845
Minerals	3.1	312
Bone meal	6.5	1,162
Maize bran	13	1,460
Blood meal	5.4	2,093
Maize swarm	8.6	1,114

Source: KASI Agriventures Baseline Survey, 2015

The major sources of raw materials for poultry feed manufacturers included traders and aggregators as well as small scale farmers (Figure 3-12).

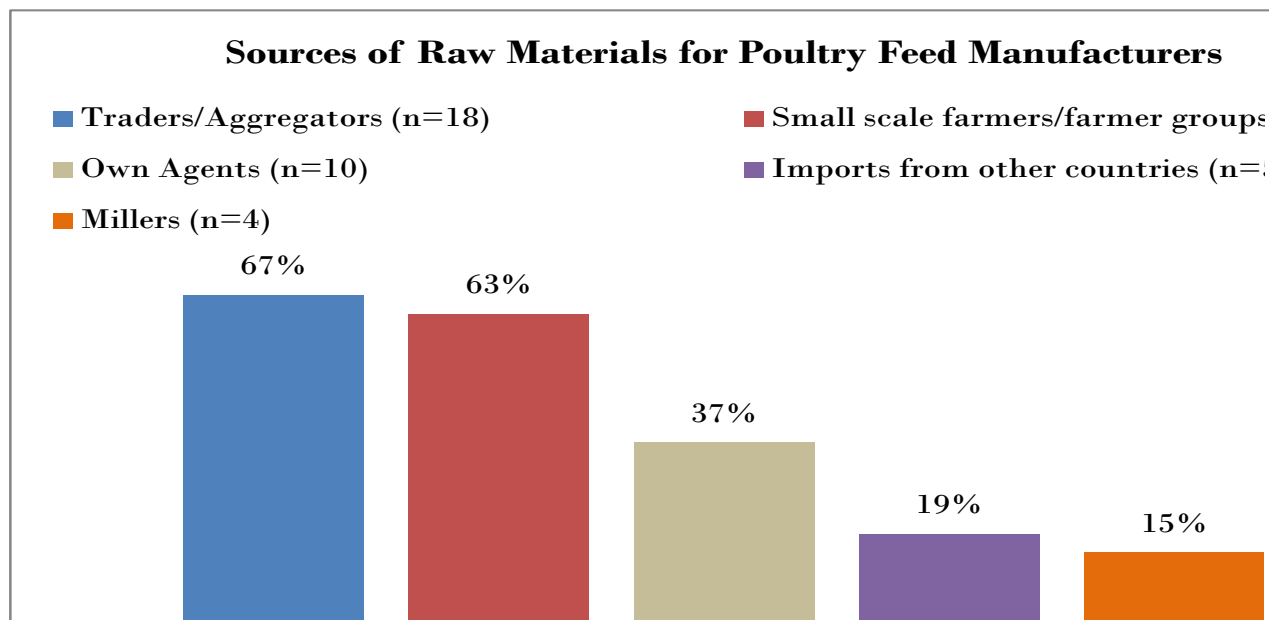


Figure 3-12: Sources of Raw Materials for Poultry Feed Manufacturers

Source: KASI Agriventures Baseline Survey, 2015

According to the survey findings, SMEs involved in poultry feed manufacturing produces a monthly average of 23.1 MT of chick mash, 24.4 tones of broilers mash, 22.2 tons of growers mash and 22.1 tones of layers mash (Table 3-22).

Table 3-22: Average Poultry Feed Production Capacities

Feed	Type of Poultry Feed	Monthly Production (Metric Tons)	Annual Production (Metric Tons)
Chicken feed	Chick Mash	23.1	277.2
	Broiler mash	24.4	292.4
	Growers mash	22.2	265.9
	Layers mash	22.1	265.2
	Pellet	3.0	36

Source: KASI Agriventures Baseline Survey, 2015

3.1.4 Marketing amongst SMEs

Daily processing capacities averaged 2.4 tones of fruits, 1.3 tones of vegetables and 0.01 tones of spices. This translated to approximately 577.4 tones of fruits(and fruit products), 321.4 tones of vegetables (vegetable products) and 1.7 tones of spices per year. Within the last year, each SME involved in fruit, vegetables and spice processing sold an average of 481 tons of fruits and fruit products valued at USD 342,594, 267.8 tons of vegetable products valued at USD 246,898 and 1.4 tons of spices valued at approximately USD 30,081 (Table 3-22).

Table 3-23: Annual Quantity and Value of Commodities Sold by SMEs Involved in Fruits, Vegetables and Spice Processing

Category	Output Sold	N	Average Quantity Sold (Tons)	Weight	Average Quantity Sold (Tons)/ SME	Average Price per Ton (USD)	Annual Value of Output sold (USD)/ SME
Fruits	Mango	2	1,080	20%	216.00	665	143,640
	Passion	1	996	10%	99.60	837	83,365
	Pineapple	1	1,656	10%	165.60	698	115,589
	Sub-total				481.2		342,594
Vegetables	Carrots	1	204	10%	20.40	698	14,239
	Fine beans	1	122.4	10%	12.24	2,621	32,081
	snow peas	1	144	10%	14.40	2,698	38,851
	Sugar Snap	1	144	10%	14.40	2,674	38,506
	Tomatoes	3	688	30%	206.40	597	123,221
	Sub-total				267.8		246,898
Spices	Black pepper	1	0.12	10%	0.01	1,628	20
	Cardamom	1	0.12	10%	0.01	2,093	25
	Cinnamon	2	0.12	20%	0.02	23,256	558
	Garlic	1	0.36	10%	0.04	2,791	100
	Ginger	1	0.54	10%	0.05	1,395	75
	Vanilla	2	6.3	20%	1.26	23,256	29,303
	Sub-total				1.4		30,081

Source: KASI Agriventures Baseline Survey, 2015

On the other hand, each poultry feed manufacturer sold an average of 84 tons of animal feeds per month earning and average value of USD 36,193¹⁷. This translates to an annual average of 1,008 tons of feed valued at USD 434, 316.

Table 3-24: Average Monthly Quantities and Value of Poultry Feeds Sold by Poultry Feed Manufacturers

	N	Minimum	Maximum	Mean
Quantity sold per Month (Tons)	26	3	385	84
Value of sales per month (USD)	26	1,381	169,256	36,139

Source: KASI Agriventures Baseline Survey, 2015

¹⁷ While this figure may insinuate that poultry feed processors are making losses (since the value of raw materials is higher than the monthly revenues), it should be noted that processors did not sell all their products in one month. . Further, some processors used the same raw materials to manufacture feeds for other types of livestock. This baseline survey was limited in determining the quantities that are used for other animal feeds apart from poultry.

Within the last year, each processor who manufactured chick mash sold an average of 292 tons valued at USD134,263 while those manufacturing pellets sold an average of 36 tons valued at USD10,884 (Table 3-24).

Table 3-25: Annual Quantities and Value of Feeds Sold by SMEs Involved in Poultry Feed Manufacturing

Output Sold	No. of SMEs selling	Quantity Sold (Tons), per SME	Average Price per Ton (USD)	Value of Output Sold (USD)
Broilers Mash (Starter & Finisher)	26	277	484	134,263
Chick Mash	22	292	471	137,776
Growers Mash	24	266	407	108,200
Layers Mash	26	265	421	111,564
Pellets	1	36	302	10,884

Source: KASI Agriventures Baseline Survey, 2015

Sampled SMEs mainly sold their products in the domestic market (100% for poultry feed manufacturers and 79% for fruits, vegetables and spice processors). This implies that 21% of fruits, vegetables and spices products were exported. Key exported products included vegetables (snow peas, sugar snaps, fine beans) and spices (vanilla) particularly to the European Union (EU) markets. Market outlets used by sampled SMEs included their own distribution networks. The survey found that 40% of the fruits, vegetables and spices processors and 36% of the poultry feed manufacturers each had an average of 2 branches. Major market outlets for fruits, vegetables and spice processors were distributors, supermarkets, wholesalers and retailers (Figure 3-13).

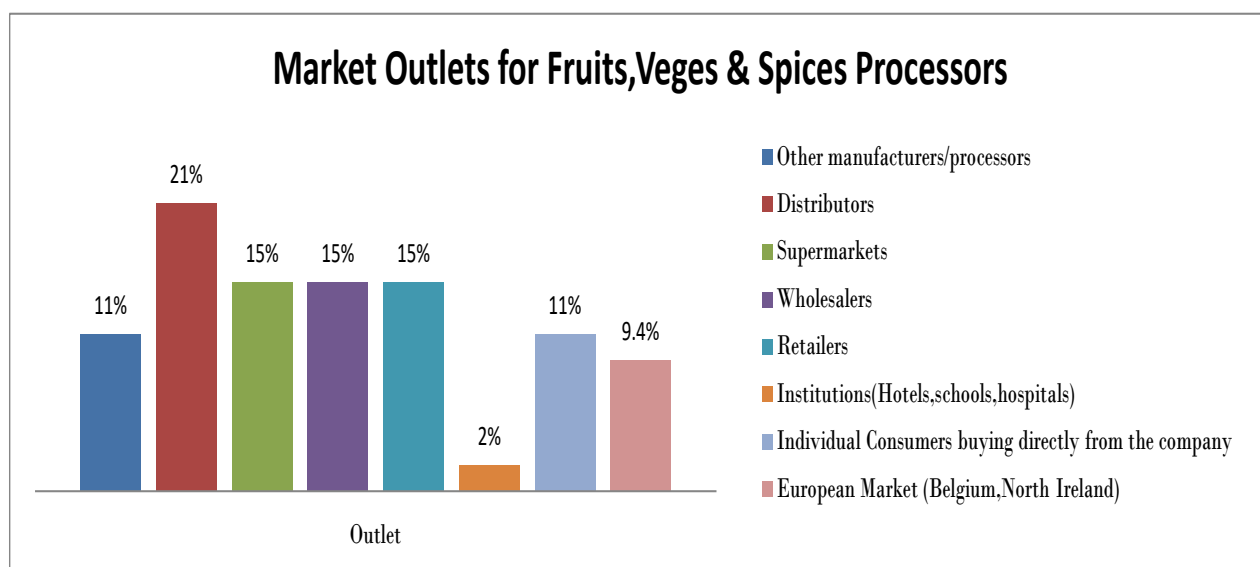


Figure 3-13: Major Market Outlets for Fruits, Vegetables and Spices Processors

Source: KASI Agriventures Baseline Survey, 2015

Although only 36% of the poultry producers had branches (an average of 2 branches), the vast majority (96%) of all those sampled had plans to set up new branches. Major market outlets for feed manufacturers included the use of distributors, selling directly to small scale producers as well as direct sales to large scale producers.

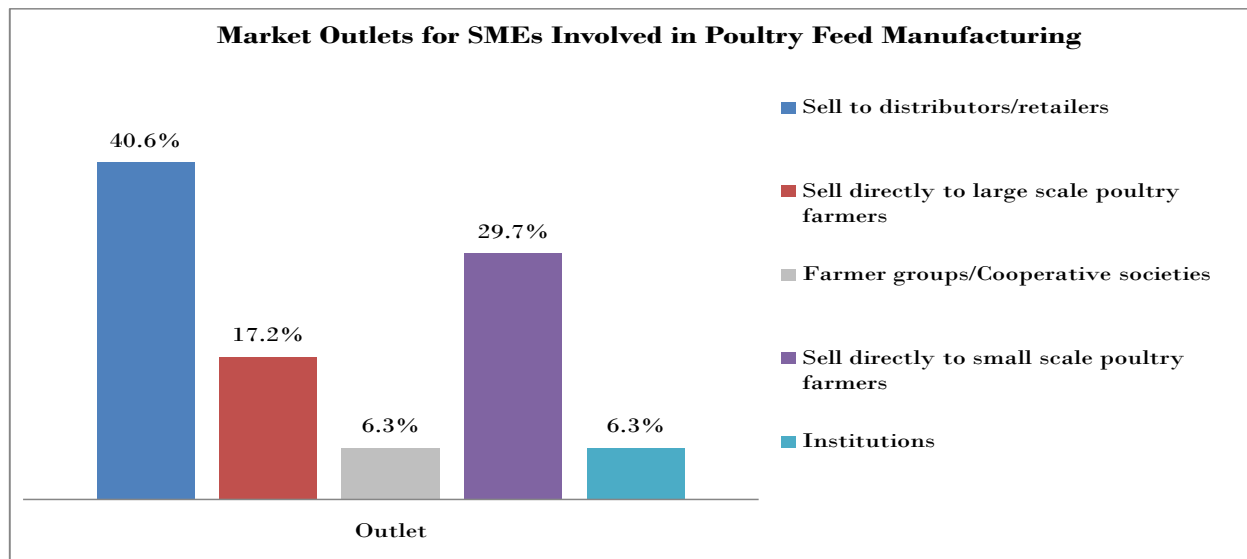


Figure 3-14: Major Market Outlets for Poultry Feed Manufactures

Source: KASI Agriventures Baseline Survey, 2015

SMEs are faced with number of challenges in marketing their products. For poultry feed manufacturers, competition with low-quality feeds is a major challenge as mentioned by 74% of the cases. Other obstacles reported were inconsistency in demand and high distribution costs. Fruits, vegetables and spice processors were mainly challenged by inconsistency of demand as mentioned by 60% of the respondents. They also faced a unique challenge associated with lack of the necessary infrastructure (air cargo flights) for export and therefore limited access to foreign markets.

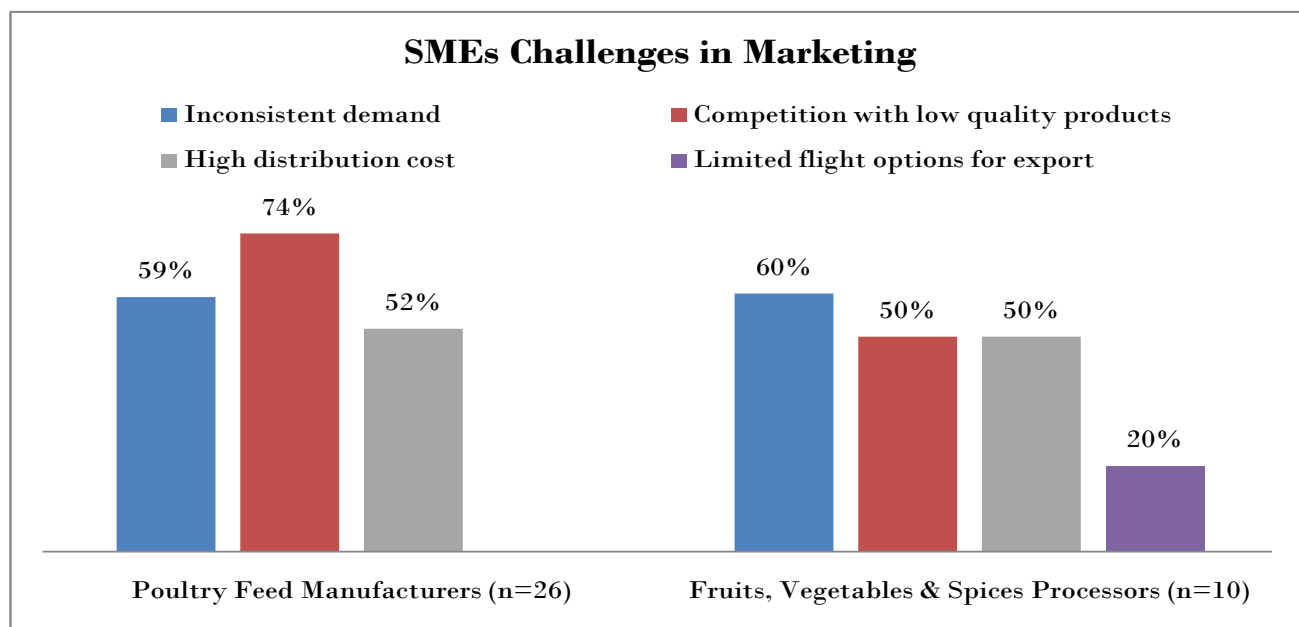


Figure 3-15: Marketing Challenges for SMEs

Source: KASI Agriventures Baseline Survey, 2015

These challenges presents key gaps that the KASI Agriventures program is designed to address, particularly the issue of competition from low quality feeds in the market.

3.2 Supply and Demand of Financial Services

3.2.1 Supply of Financial Services

A total of 12 financial institutions were sampled. Case summaries for the sampled institutions are provided under Annex 4. These included five microfinance banks, six community banks and one leasing company (Table 3-25).

Table 3-26: Category of Financial Institutions Sampled

Category	Number of institutions
Micro finance banks	5
Community banks	6
Leasing company	1
Total	12

Source: KASI Agriventures Baseline Survey, 2015

Majority of the sampled institutions (50%) offered long and short term agricultural lending products while 28% offered agricultural asset financing and 17% offered agricultural leasing products. The major financial products supplied are as shown in Figure 3-16 below.

Agricultural Financing Products Offered by Financial Institutions



Figure 3-16: Major Agricultural Financing Products

Source: KASI Agriventures Baseline Survey 2015

On average, agricultural portfolios as a percentage of the total portfolios for the sampled organizations were approximately 22.3% valued at USD 1.45 million with a minimum of USD 0.14 million (5% of total portfolio) and a maximum of USD 4.65 million (60% of total portfolio).

Table 3-27: Percentage and Value of Agricultural Portfolios

Agricultural Portfolio	N	Minimum	Maximum	Mean
Percentage of the total agricultural/agribusiness financing portfolio	11	5	60	22.25
Value of Portfolio in USD	10	139,535	4,651,163	1,449,019

Source: KASI Agriventures Baseline Survey, 2015

Generally, agricultural lending was observed to be relatively risky with a total of 16% of the agricultural portfolio (USD 231,843 on average) being past the due date. A total of 9.1% of the total agricultural loans were within 90 days past the due date. As shown in Figure 3-17 below, , portfolios at risk (PAR) was highest for loans that were within 30 days past the due date at 4% and loans that were between 181 and 360 days past the due date¹⁸ at 3.8%.

¹⁸ Implies that they could be under consideration for writing off.

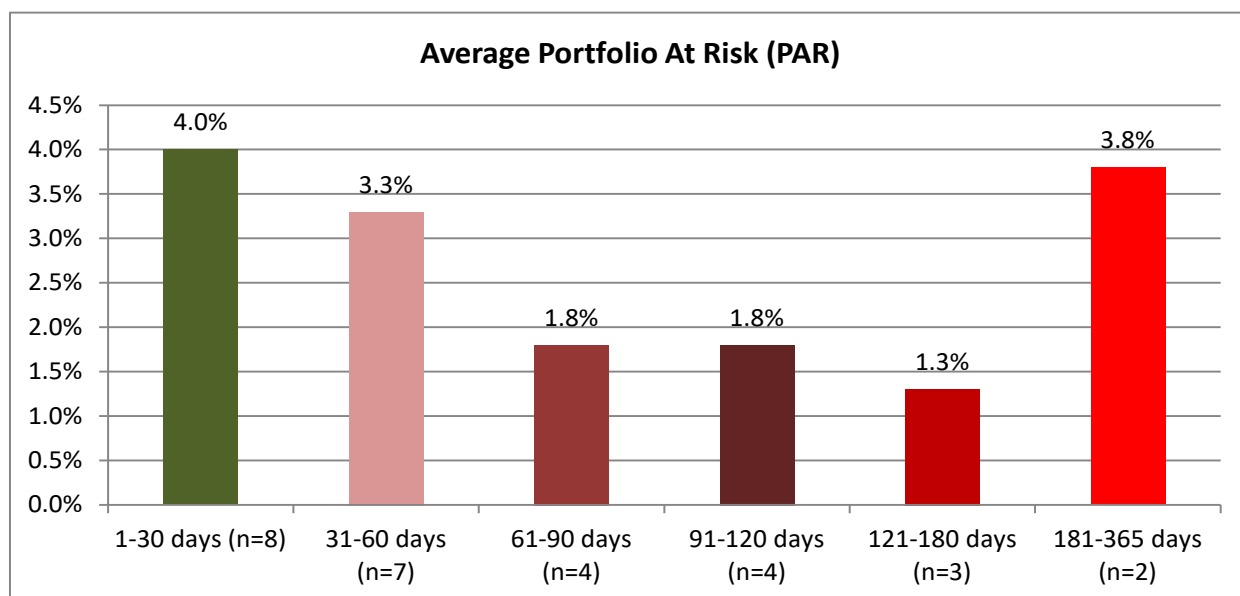


Figure 3-17: Average Agricultural Portfolio at Risk

Source: KASI Agriventures Baseline Survey 2015

On average, each of the sampled financial institutions had offered loans to 743 clients within the past year. Majority of these were either associations/co-operatives or groups. The numbers of corporate clients were the least (six on average). The high number of group based loans is consistent with the group based lending approach, which is preferred by non-bank or community-based financial institutions. While the low number of corporate clients may indicate a low preference to lend to corporate clients, it may also be indicative of the financial institution's product offerings and loan sizes, which may not meet the needs of large corporate clients.

Table 3-28: Major Agribusiness Loan Clients, Loan Products and Value of Loans in the Last One Year for Financial Institutions

Client type	Number of Loan Clients	Product	Mean Number of loans advanced	Mean Value of loans in USD
Individuals	230	Agricultural lending	259	652
		Asset financing	25	24,186
Corporate	6	Agricultural lending	10	232,558
		Asset financing	2	93,023
SMEs	19	Agricultural lending	19	114,729
Large Groups/ Cooperatives/ Associations	476	Agricultural lending	477	742,640
		Asset financing	12	66,977
SACCOs	12	Agricultural lending	6	26,745

Source: KASI Agriventures Baseline Survey, 2015

With regard to leasing, the major assets financed include plant and machinery, industrial and farm equipment as well as vehicles. On average, sampled organizations had offered 10 leases within the last year.

Table 3-29: Lease financing to Agribusiness clients

Product financed	Average Number of Leases Offered
Plants and machineries	4
Industrial farm equipment	3
Vehicles	3
Total	10

Source: KASI Agriventures Baseline Survey 2015

Within the agriculture sector, the baseline survey noted that financial institutions mostly financed cereals (67%) while vegetables came in second at 50%, followed by pulses at 42% (Figure 3.18). These results are however, expected because cereals and pulses are also the major categories of value chains that are produced by majority of Tanzanians. Fruits, vegetables and spices provide major opportunities for financing as they are considered high value commercial products.

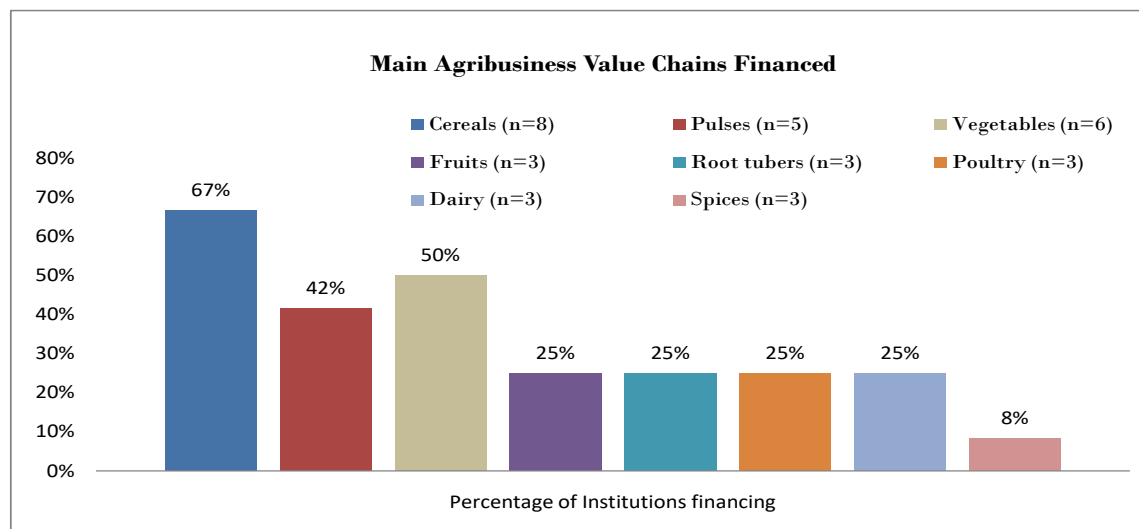


Figure 3-18: Major Agricultural Value Chains Financed by Non-bank Financial Institutions

Source: KASI Agriventures Baseline Survey 2015

Major challenges faced by sampled financial institutions while financing agribusinesses include slow repayment of loans, implying risk of default as well as high PARs as noted by 38% and 19% of the sampled institutions respectively.

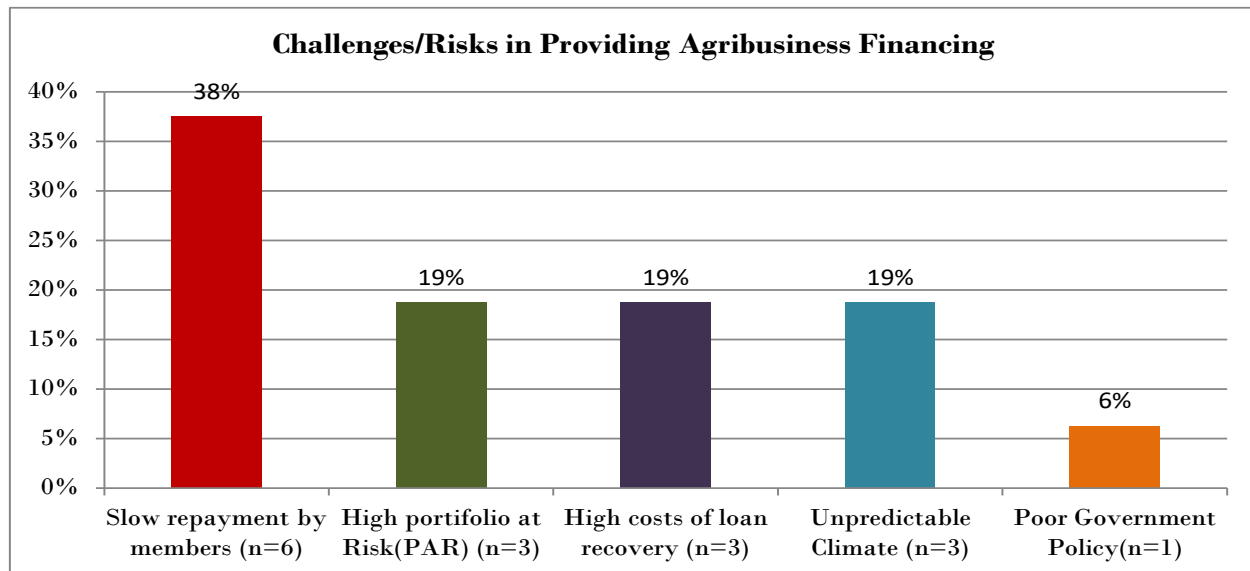


Figure 3-19: Challenges/Risks in Providing Agribusiness Financing

Source: KASI Agriventures Baseline Survey 2015

3.2.2 Demand for Financial Services amongst Producers

3.2.2.1 Sources of Start-up Capital for Producers

Sources of start-up capital for agribusiness producers dealing with fruits, vegetables and spices as well as poultry keepers were mainly from informal sources. Indeed, personal savings was the major source of start-up capital for 75% of the poultry producers and 92% of the fruits, vegetables and spice producers. Other sources were borrowings from friends and family with the only semi-formal source being borrowing from Savings and Cooperative Societies (SACCOs) for only 1% of fruits, vegetable and spice producers and 7% of the poultry producers.

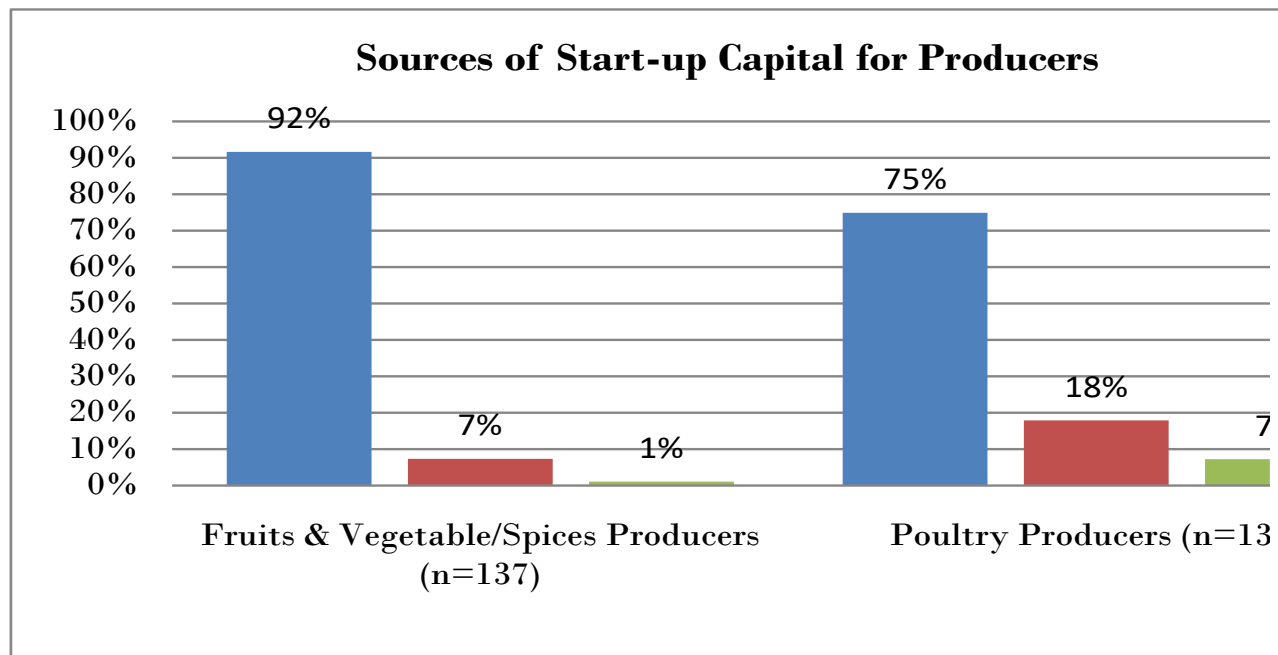


Figure 3-20: Sources of Start-up Capital for Agricultural Producers

Source: KASI Agriventures Baseline Survey, 2015

3.2.2.2 Financial Needs for Producers

Fruits, vegetables and spice producers required financing mainly to purchase inputs and production supplies such as seeds, fertilizers and agro-chemicals. Other needs included paying for farm labor as well as hiring or leasing of land (Figure 3-21.)

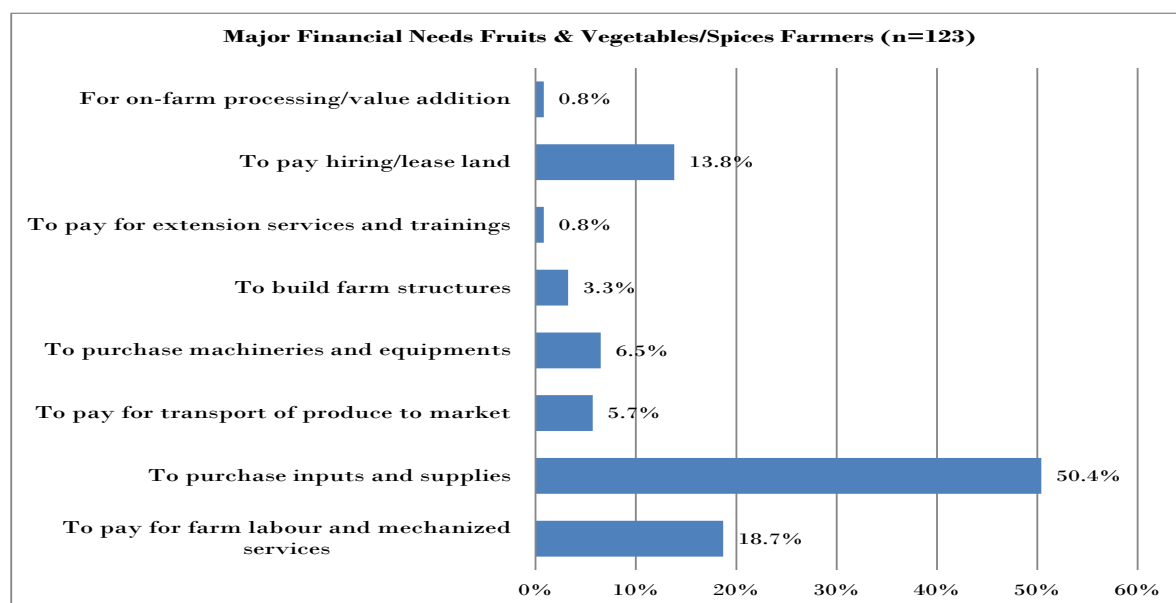


Figure 3-21: Major Financial needs for Fruits, Vegetables and Spices Producers

Source: KASI Agriventures Baseline Survey, 2015

Similar to fruits, vegetables and spice producers, the major financial need for poultry producers was for purchase of feeds, drugs and other production supplies. Other needs included construction of farm structures and payment for labor (Figure 3-22).

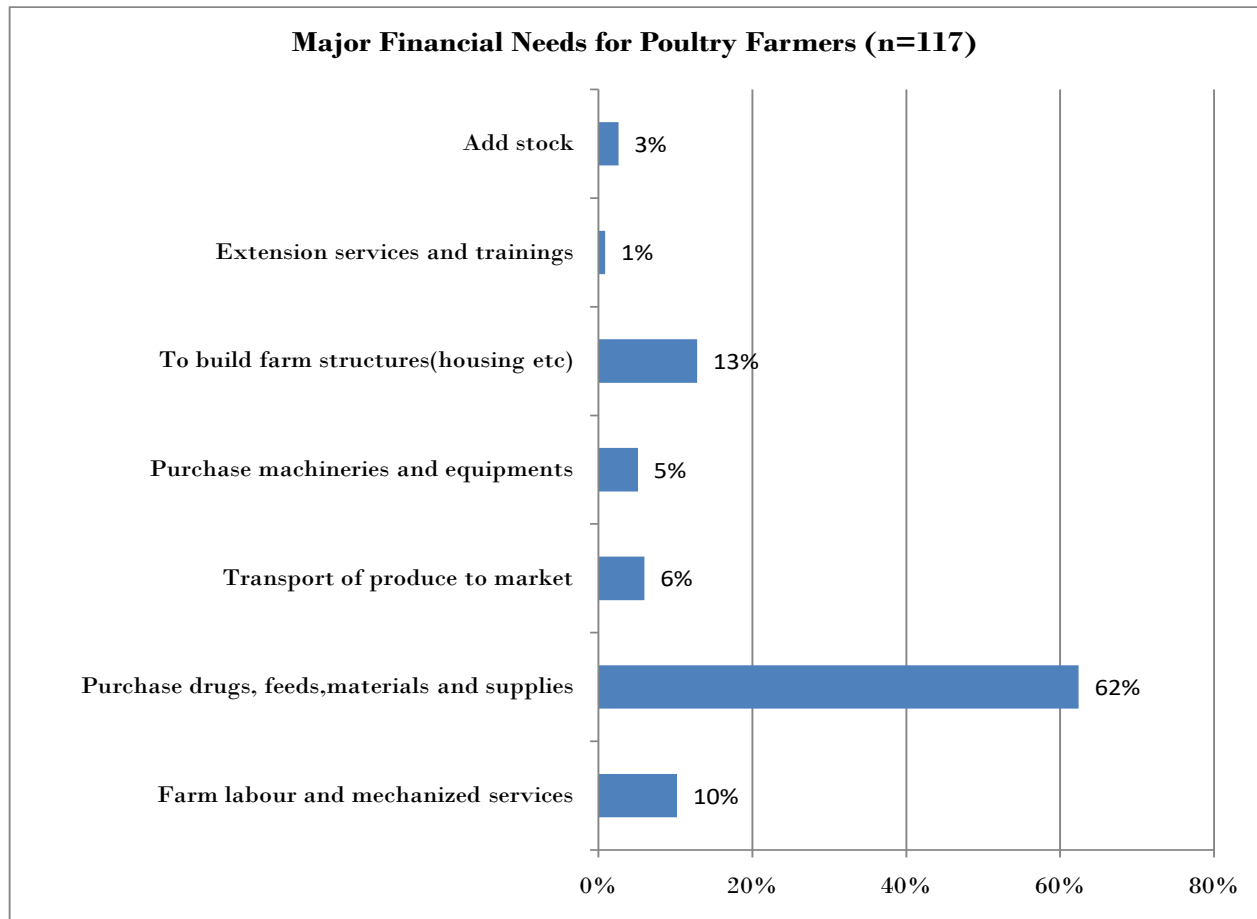


Figure 3-22: Major Financial Needs for Poultry Producers

Source: KASI Agriventures Baseline Survey, 2015

3.2.2.3 Rates of Borrowing amongst Producers

Other than borrowing for start-up capital, the rate of borrowing among producers was very low. Only 31% of the poultry keepers and 14% of the fruits, vegetables and spice producers have ever had a loan (Figure 3-23).

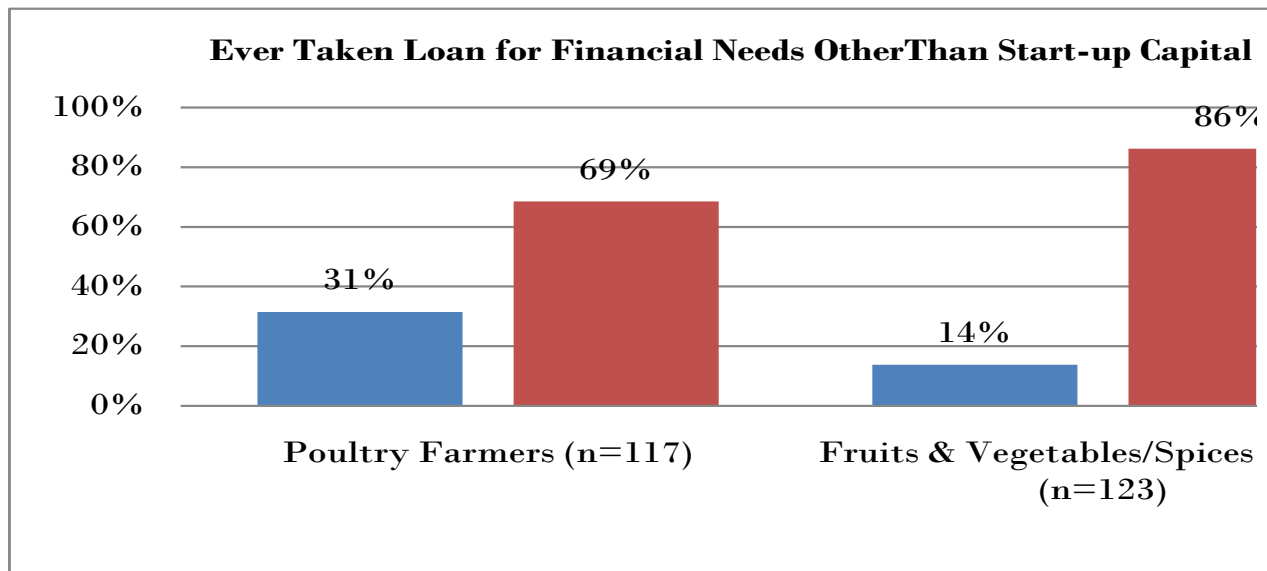


Figure 3-23: Rates of Borrowing amongst Producers

Source: KASI Agriventures Baseline Survey, 2015

Of those producers who have had a loan, the majority (45%) of the fruit, vegetables and spice producers had borrowed from commercial banks while the majority of the poultry farmers (32%) had borrowed from savings groups. Only 18% of the fruit, vegetables and spice producers and 21% of the poultry producers had borrowed from non-bank financial institutions or community banks.

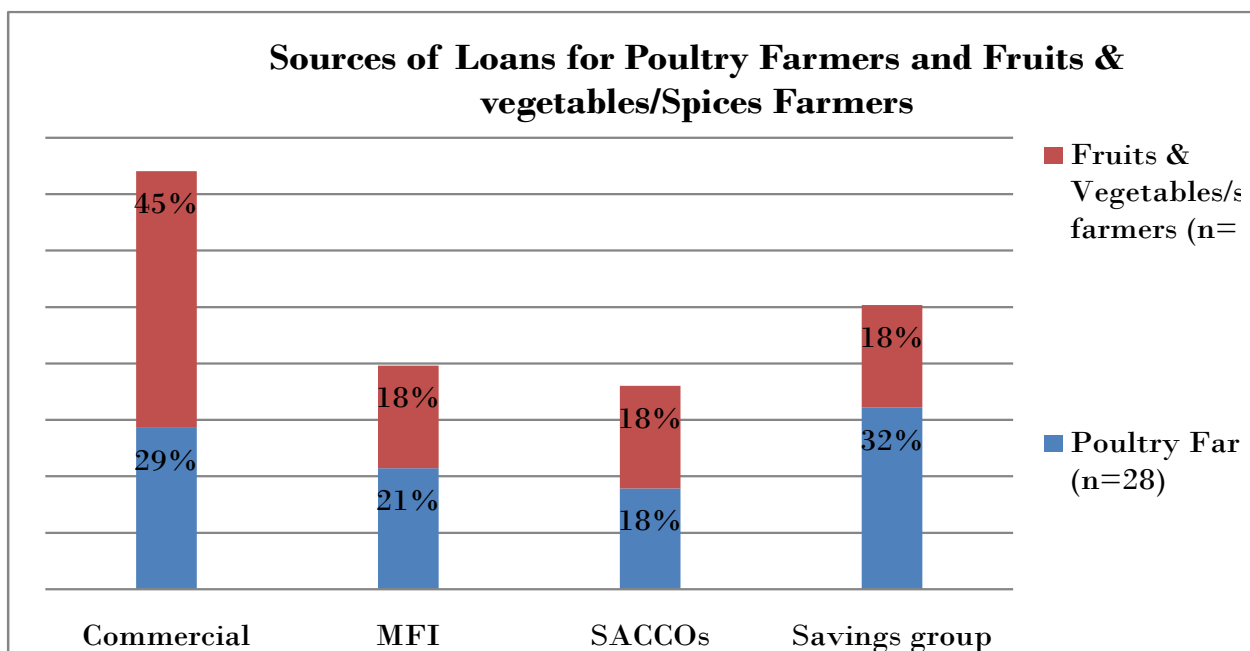


Figure 3-24: Sources of Loans for Poultry Farmers and Fruits & vegetables/Spices Farmers

Source: KASI Agriventures Baseline Survey, 2015

3.2.2.4 Loan Terms and Conditions versus Preferences

Producers generally perceived the terms and conditions of loans to be unfavorable. As expected, producers would have preferred lower interest rates ranging from 5.6% to 7.7% against the current rates, which range from 10.9% to 15.3%. Producers would also prefer longer grace periods of between 2.6 and 3.3 months as well as longer repayment periods of between 4.1 and 11.4 years. This is as opposed to the current grace periods of between 1.2 to 2.6 months and repayment periods of between 3.3 and 5.9 years. The current and the preferred loan terms for producers who had accessed loans are as summarized in Table 3-29 below.

Table 3-30: Loan terms and conditions for vegetable and fruits producers

Terms/Conditions	Range	Current		Preferred	
		Fruits, Vegetables & Spice Producers	Poultry Producers	Fruits, Vegetables & Spice Producers	Poultry Producers
Interest rate (%)	Min	14.9%	10.9%	5.6%	5.8%
	Max	15.3%	11.6%	8.3%	7.7%
Grace period (months)	Min	1.2 Months	2.6 Months	3.3 Months	2.6 Months
	Max	1.2 Months	2.5 Months	4.6 Months	5.3 Months
Repayment period (Years)	Min	3.3 Years	4.6 Years	4.1 Years	10.7 Years
	Max	5.2 Years	5.9 Years	7.7 Years	11.4 Years

Source: KASI Agriventures Baseline Survey, 2015

3.2.3 Demand for Financial Services amongst SMEs

3.2.3.1 Sources of Start-up Capital

On average, sampled fruits, vegetables and spice processors had already invested USD 134,765 on average as start-up capital while SMEs involved in manufacturing poultry feeds invested an average of USD 34,244.

Table 3-31: Value of Start-up Capital in USD

Type of SME	Amount in USD		
	Min	Max	Mean
Poultry Feed Manufacturers	465	325,581	34,244
Fruits & Vegetables/Spices	279	474,419	134,765

Source: KASI Agriventures Baseline Survey, 2015

Unlike individual producers, major sources of start-up capital for SMEs were investments by shareholders or owner's equity and borrowing from formal sources such as commercial banks, MFIs and SACCOs.

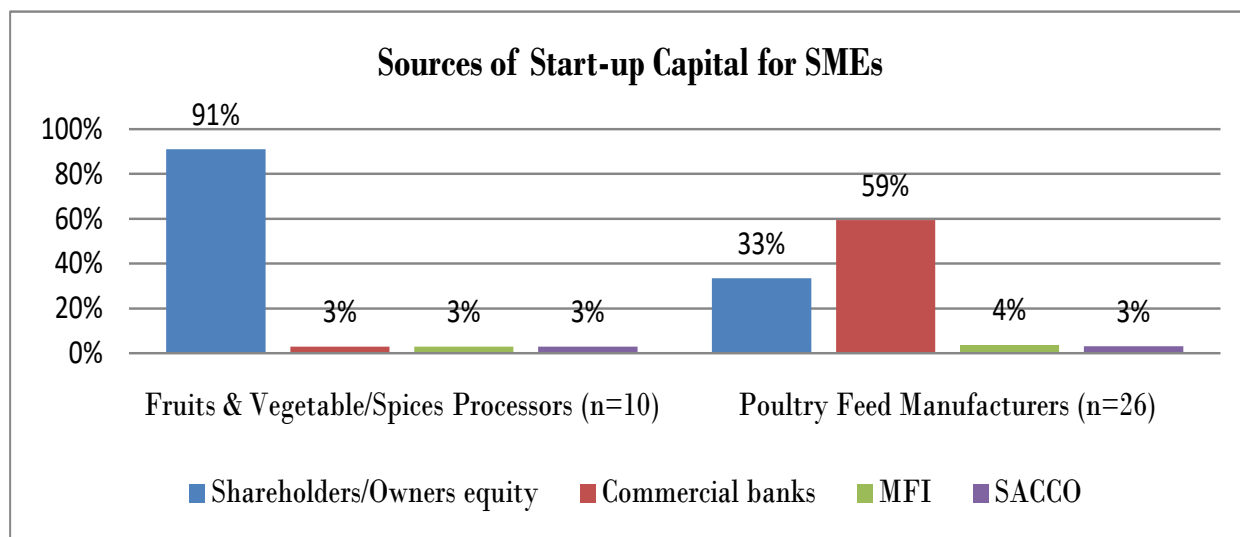


Figure 3-25: Sources of Start-up Capital amongst SMEs

Source: KASI Agriventures Baseline Survey, 2015

In addition, 3 of the sampled SMEs involved in fruits and vegetables processing and 1 of the poultry feed manufacturers had received equity funding from an external investor. SMEs received between USD 13,953 and USD 93,023 in exchange for 40% to 60% shareholding. Rates of borrowing amongst SMEs was lower for fruits, vegetables and spice processors at only 30% compared to 77% for SMEs engaged in poultry feed manufacturing.

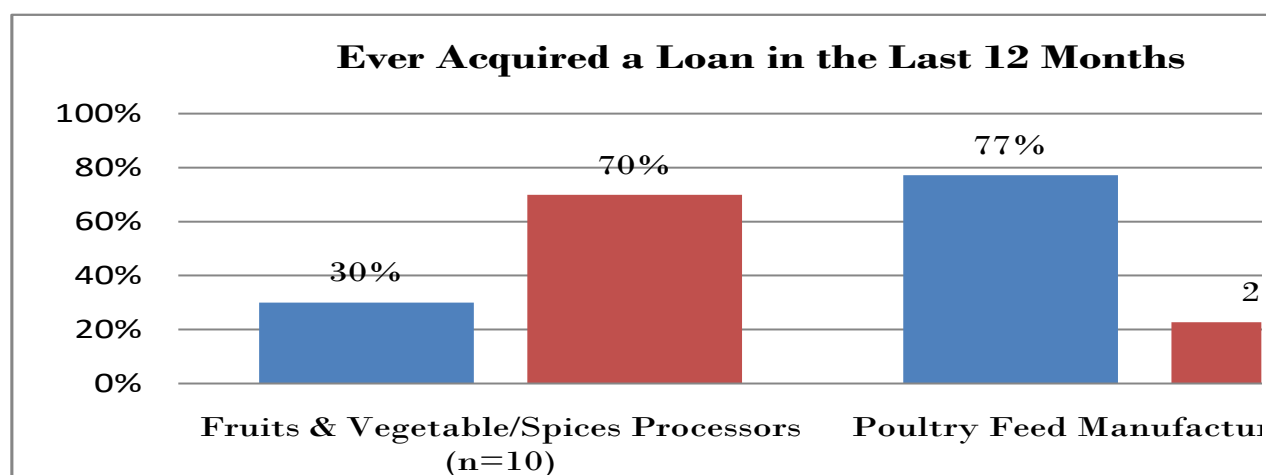


Figure 3-26: Access to Loans amongst SMEs

Source: KASI Agriventures Baseline Survey, 2015

For those who had taken out loans within the last year, the main source of loans was commercial banks. Preference by SMEs to borrow from MFIs was low at only 5% for poultry feed manufacturers and 0% for fruits, vegetables and spice processors.

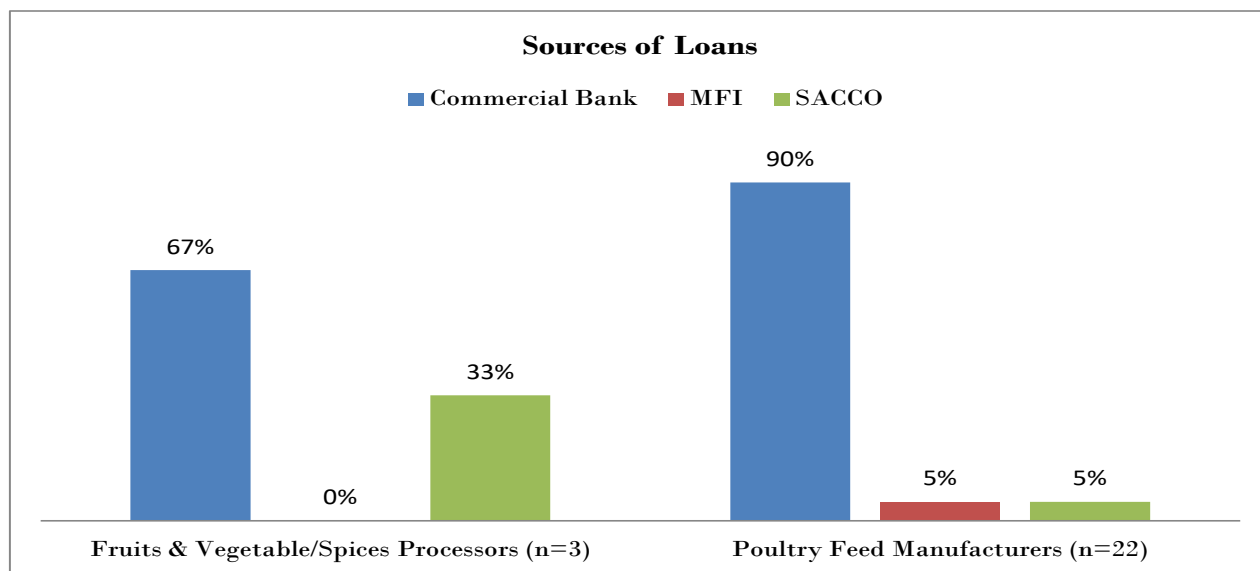


Figure 3-27: Sources of Loans for SMEs

Source: KASI Agriventures Baseline Survey, 2015

On average, SMEs involved in fruits, vegetables and spices borrowed loans valued at USD 10,230, while those involved in manufacturing of poultry feeds borrowed an average of USD 19,210.

Table 3-32: Average Loan Sizes Borrowed by SMEs

Type of SME	N	Minimum	Maximum	Mean
Fruits & Vegetables/Spices (USD)	3	465	23,256	10,233
Poultry Feed Manufacturers (USD)	22	2,326	93,023	19,209

These values are however, below the average amount of loans provided to SMEs as reported by financial institutions, which averaged USD 114,729.

For fruits, vegetables and spice processors, key financial needs were capital for investments and business expansion as well as working capital to buy raw materials and other supplies. For poultry feed manufacturers, working capital to buy raw materials and other supplies comprised the key financing need followed by working capital for labor. It was noted that fruits, vegetables and spices processors did not borrow to fund labor costs. This is despite the fact that labor requirements for the fruits, vegetables and spice processors were much higher than for poultry feed manufacturers.

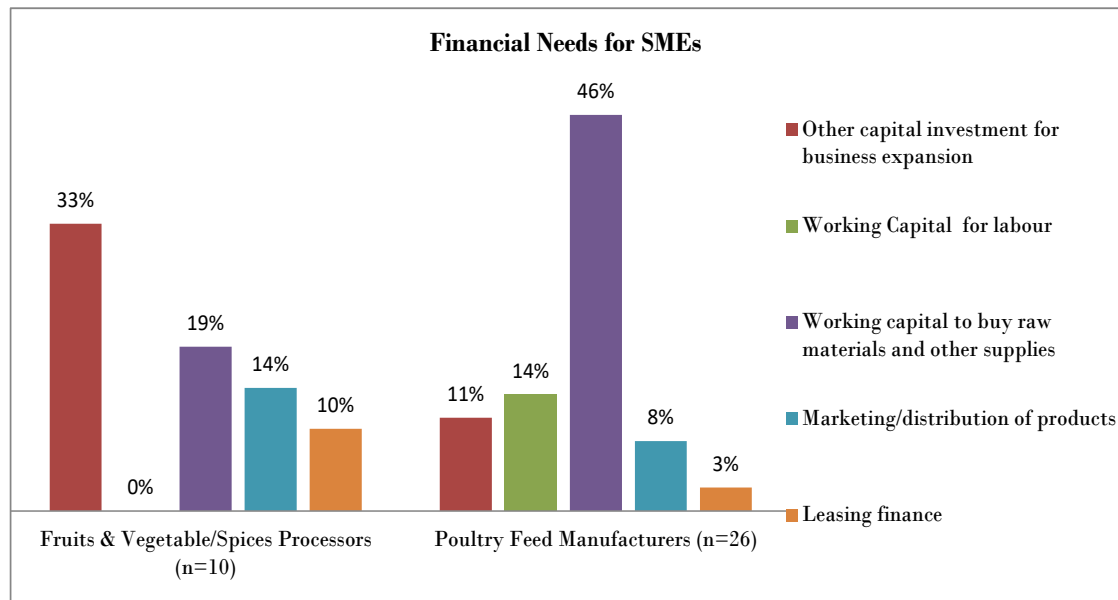


Figure 3-28: Financial Needs for SMEs

Source: KASI Agriventures Baseline Survey, 2015

Loans borrowed by fruits, vegetables and spice processors were used primarily to finance purchase of raw materials and distribution (marketing) of the processed products. For poultry feed manufacturers, borrowings were mainly used to finance purchase of raw materials, finance acquisition of equipment, machinery and other assets as well as finance other capital investments for business expansion¹⁹.

¹⁹ This included setting up of new branches, distribution points, storage and warehousing facilities.

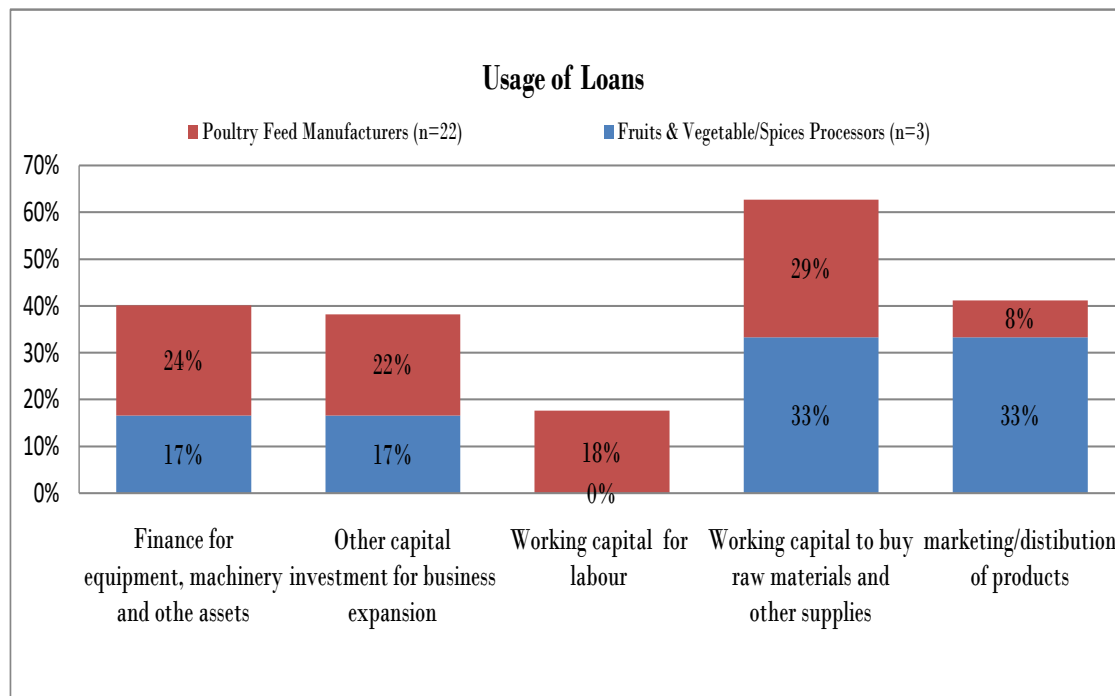


Figure 3-29: Usage of Loans/Borrowed Funds amongst SMEs

Source: KASI Agriventures Baseline Survey, 2015

Unlike the case of loans, access and use of leasing services was very low. Majority (90%) of the fruits, vegetables and spice processors and 88% of the poultry feed manufacturers had never accessed leasing services.

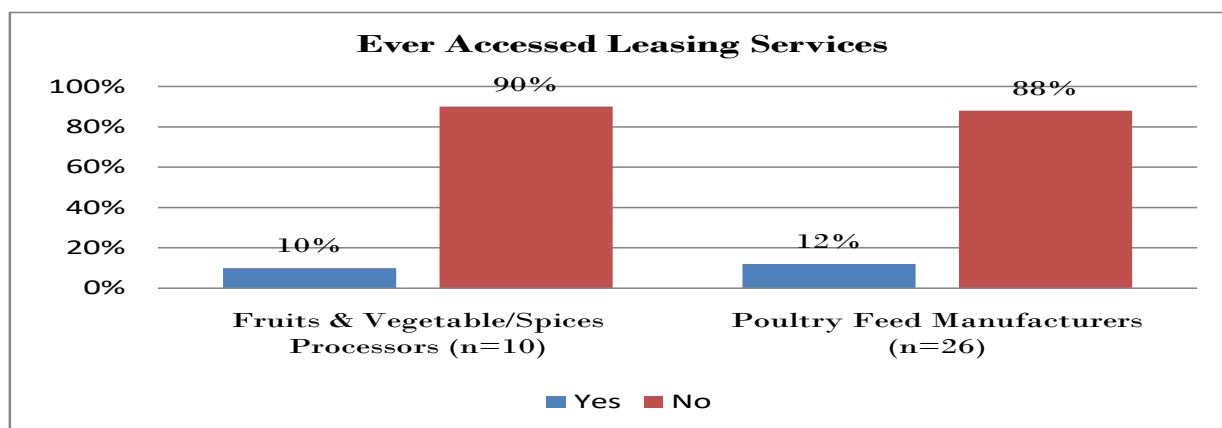


Figure 3-30: Access to Leasing Services

Source: KASI Agriventures Baseline Survey, 2015

These results corroborate findings from the financial institutions and may imply that there is both low supply but also low demand for leasing services amongst SMEs.

SMEs are also faced with similar challenges to those facing producers²⁰ with regard to accessing finance. Major challenges for fruits, vegetables and spice processors were lack of sufficient loan collateral as well as high interest rates. Poultry feed manufacturers identified similar obstacles including high interest rates and long and cumbersome loan application appraisal processes, which also slowed down loan disbursements.

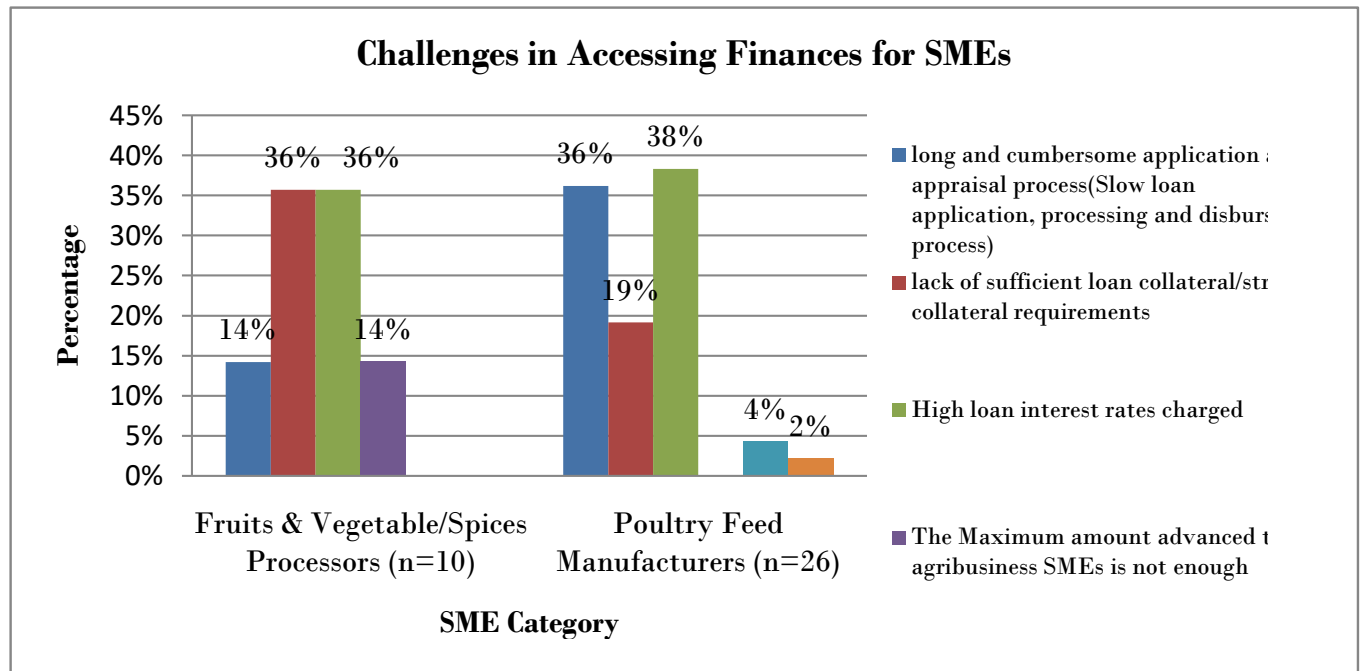


Figure 3-31: Challenges in Accessing Finances by SMEs

Source: KASI Agriventures Baseline Survey, 2015

3.3 Access to Training and Capacity Building

3.3.1 Access to Trainings amongst Producers

Through the KASI Agriventures program, SEAF will establish a Center for Entrepreneurship and Executive Development (CEED) to provide technical assistance to poultry feed producers, fruit vegetable and spice processors, and other agribusiness SMEs as well as their suppliers and/or customers. In doing so, the program will result in increased capacity and knowledge of smallholder farmers involved in agricultural production.

The baseline survey noted that access to trainings and extension services was very low. Within the last 1 year, only 27% of the fruits, vegetables and spice producers and 32% of the poultry producers had accessed to capacity building training opportunities.

²⁰ Refers to producers of fruits, vegetables and spices as well as poultry, in the context of this report.

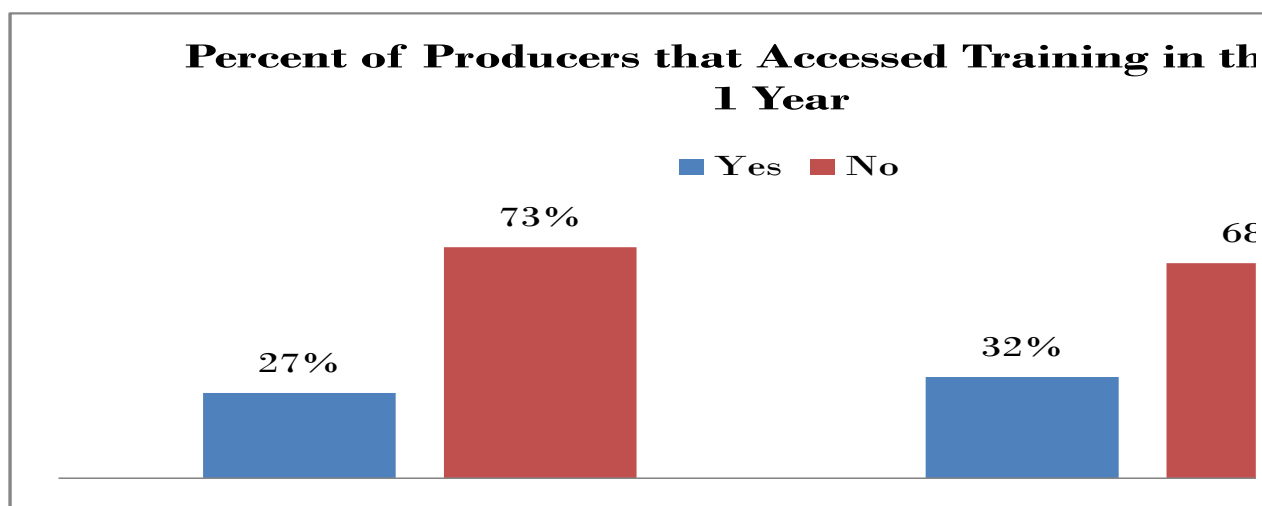


Figure 3-32: Access to Training amongst Producers

Source: KASI Agriventures Baseline Survey, 2015

A wide variance was observed between the demand for trainings and the percentage of producers who had been trained. There still existing gaps in areas such as land preparation technologies, soil fertility management and diseases and pests control for fruits, vegetables and spices. For poultry producers, gaps exist for trainings on modern farming technologies.

Table 3-33: Trainings Demanded and Offered to Producers

Category of producer	Type of training	% of producers demanding the trainings	% of producers trained	Variance
Fruits, Vegetables & Spices Producers	Accounting/ book keeping	11%	4%	7%
	Land preparation technologies	61%	18%	44%
	Soil fertility management	49%	12%	37%
	Disease and pest control	49%	17%	32%
	Post-harvest handling	24%	0%	24%
	Marketing and negotiation skills	24%	0%	24%
	Application of new technology	22%	0%	22%
Poultry Producers	Pest, diseases and their control	34%	23%	11%
	Vaccination and treatment	33%	13%	19%
	Marketing	16%	13%	3%
	Poultry feeding routine	13%	3%	10%
	Modern poultry farming technologies	40%	0%	40%

Source: KASI Agriventures Baseline Survey, 2015

The major training and extension providers to producers were government extension staff, private extension staff and NGOs²¹ (Figure 3-33).

²¹ NGOs only for fruits, vegetables and spice producers

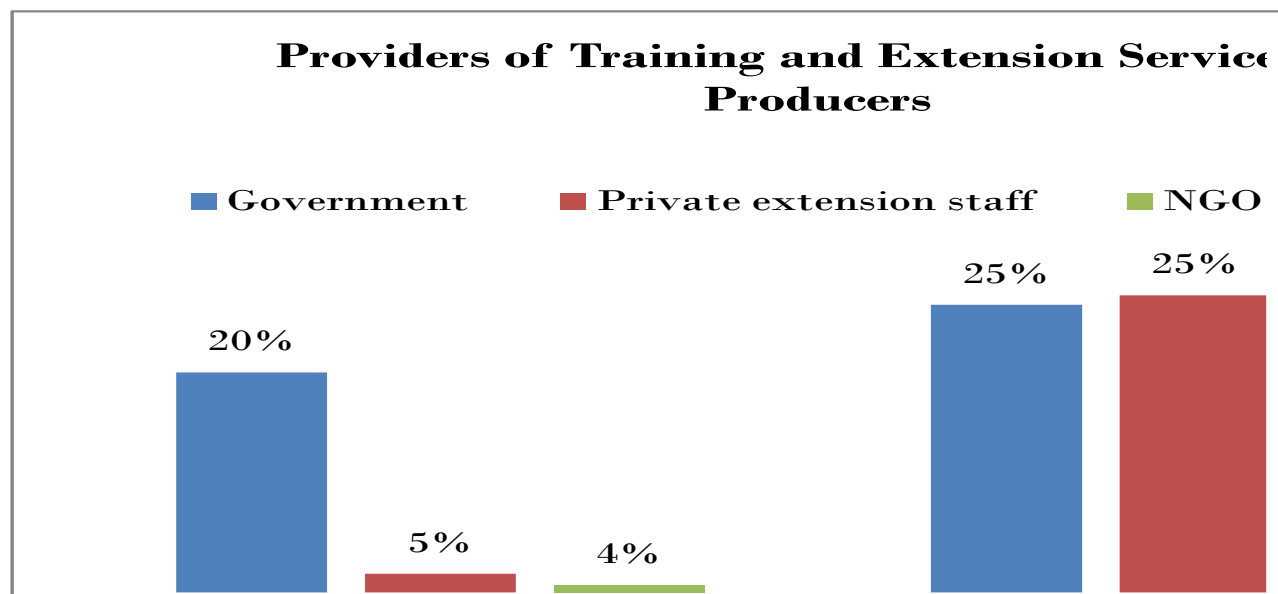


Figure 3-33: Major Providers of Training and Extension Services to Producers

Source: KASI Agriventures Baseline Survey, 2015

Contact with the trainings and extension service providers were rather infrequent with majority of the producers interacting with providers on monthly or quarterly basis.

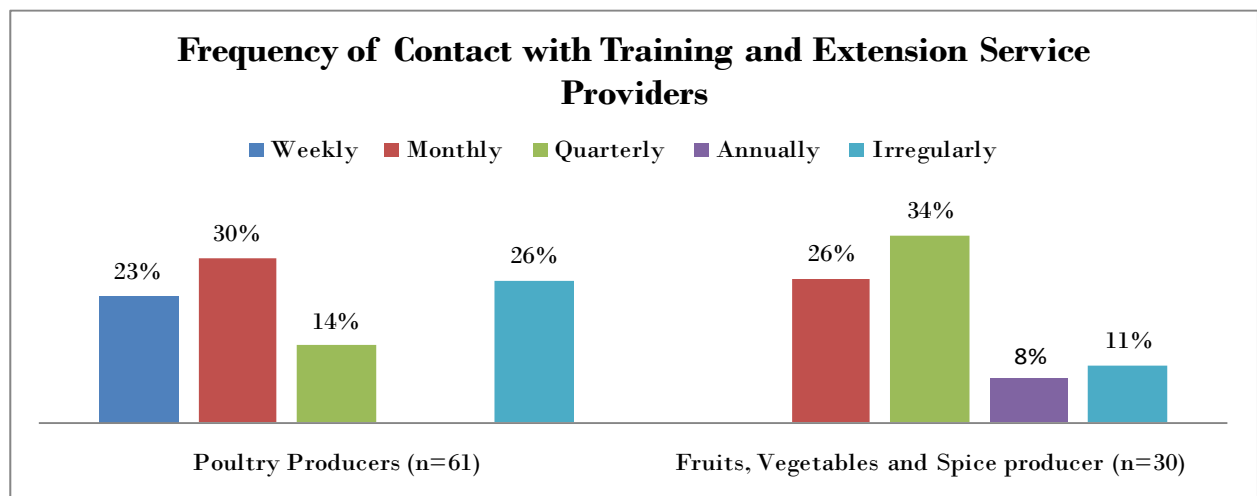


Figure 3-34: Frequency of contact with Training and Extension Service Providers Amongst Producers

Source: KASI Agriventures Baseline Survey, 2015

The key challenges limiting access to training and extension services amongst producers are summarized in Table 3-33 below.

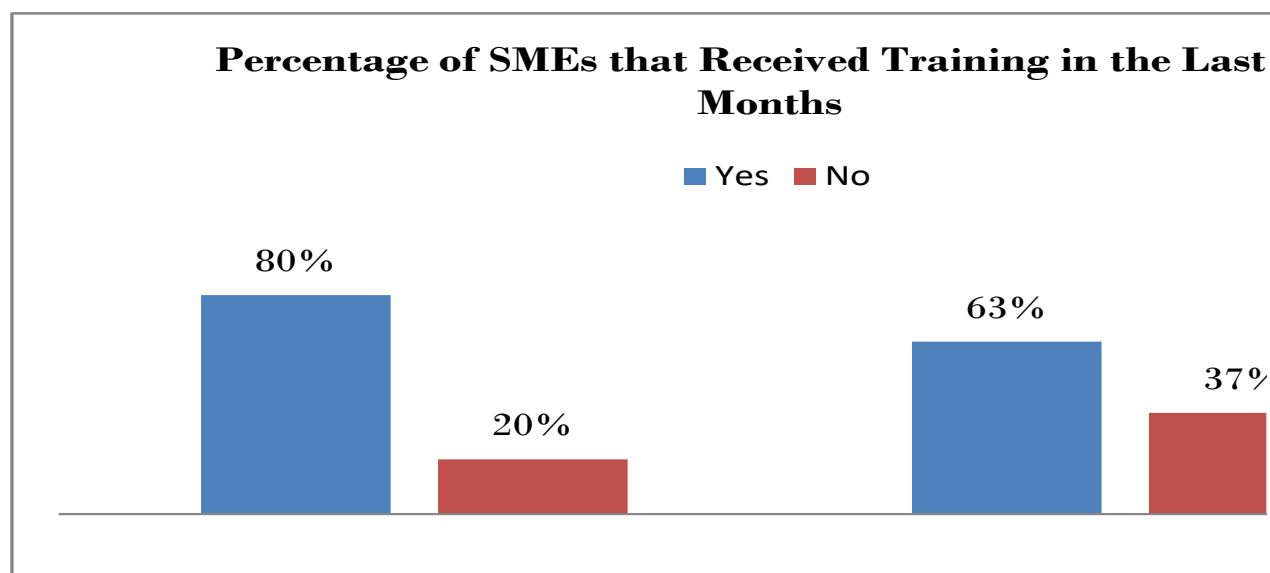
Table 3-34: Main Challenges in Accessing Training for Producers

Category of producer	Challenge	Percentage of farmers facing the challenge	N
Fruits, Vegetables & Spice Producers	Untimely trainings	23.4%	32
	Inadequate expertise	21.2%	29
	Poor choice of training language (English instead of Swahili)	17.5%	24
	High training costs	12.4%	17
Poultry Producers	Inadequate training time	19.4%	26
	Inadequate extension services providers	15.6%	21
	Poor organization amongst farmers	11.2%	15

Source: KASI Agriventures Baseline Survey, 2015

3.3.2 Access to Capacity Building amongst SMEs

The baseline survey noted that access to trainings among fruits, vegetables and spice processors and poultry feed manufacturers is relatively high at 80% and 63% respectively (Figure 3.35).

**Figure 3-35: Access to Training amongst SME Employees**

Source: KASI Agriventures Baseline Survey, 2015

Improved processing technologies, product quality standards and marketing were the main training topics offered to employees of fruits, vegetables and spice processors interviewed in the baseline survey. For poultry feed manufacturers, feed manufacturing technologies and product quality standards management were the main training modules offered to their employees (Table 3-34).

As opposed to producers, smaller variances were observed with regard to supply and demand of capacity building amongst SMEs. Major gaps are on financial management training, product quality management, business planning and record keeping as well as marketing (Table 3-34)

Table 3-35: Trainings Preferred and Offered to SMEs

Category of SME	Type of training	% of SMEs demanding the trainings	% of SMEs trained	Variance
Fruits, Vegetables & Spices Processors	Improved processing technologies	60%	50%	10%
	Product quality standards management	80%	63%	18%
	Business planning	20%	13%	8%
	Record keeping	20%	25%	-5%
	Financial management	30%	0%	30%
	Risk management	10%	13%	-3%
	Marketing	40%	50%	-10%
Poultry Feed Manufacturers	Feed manufacturing technologies	62%	88%	-27%
	Product quality standards management	65%	41%	24%
	Business planning	19%	12%	7%
	Record keeping	31%	6%	25%
	Financial management	42%	0%	42%
	Risk management	15%	0%	15%
	Marketing	35%	6%	29%

Source: KASI Agriventures Baseline Survey, 2015

The major training service providers to fruits, vegetables and spice processors and poultry feed manufacturers were private companies/individuals and NGOs/donor programs (Figure 3-36). These findings suggests that it will be important for CEED to liaise with companies, individual experts, NGOs and donor programs that are involved in providing training to fruits, vegetables and spice processors and poultry feed manufacturers in order to leverage the available expertise and experience.

The majority of the fruits, vegetables and spice processors (64.7%) and poultry feed manufacturers (68%) interviewed in the survey accessed training services quarterly or less frequently (Figure 3-37).

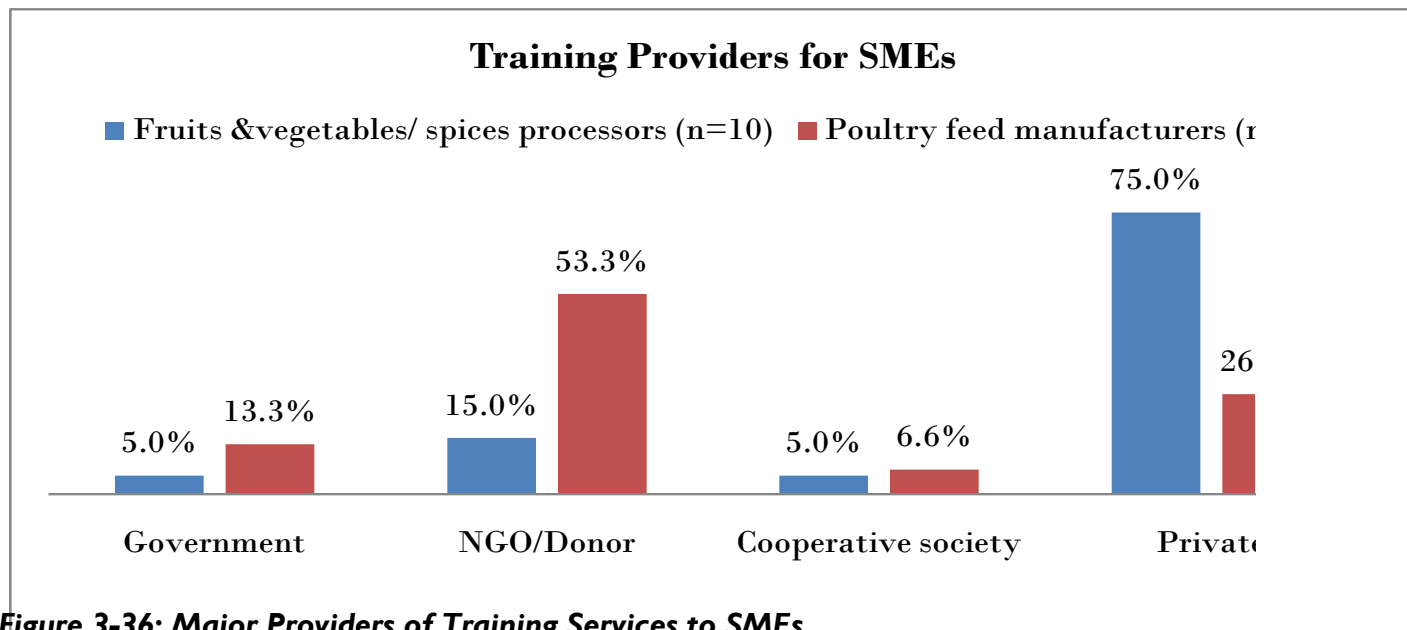


Figure 3-36: Major Providers of Training Services to SMEs

Source: KASI Agriventures Baseline Survey, 2015

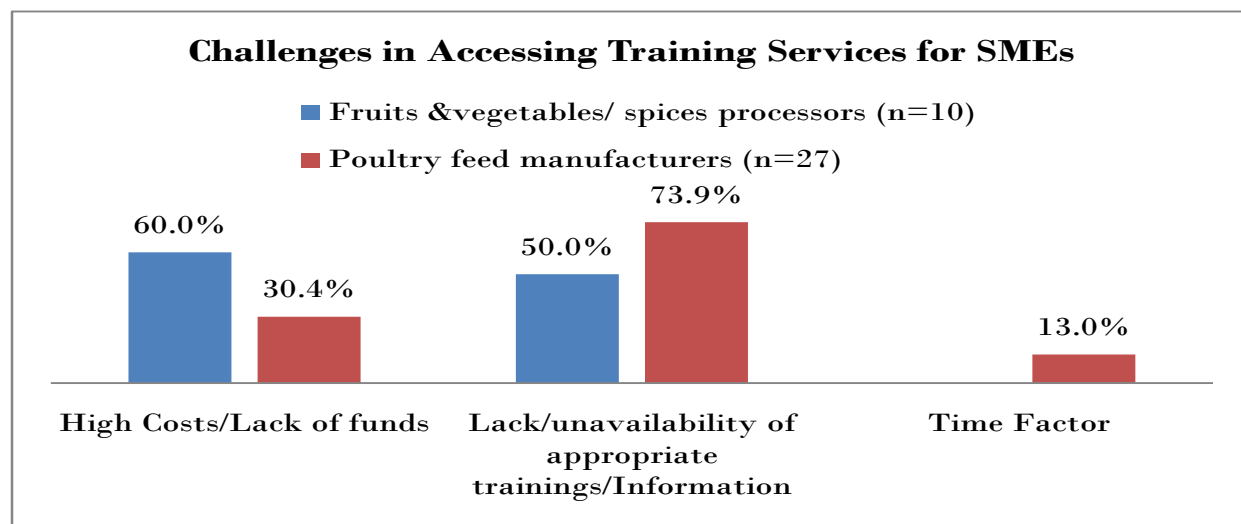


Figure 3-37: Frequency of Training amongst SMEs

Source: KASI Agriventures Baseline Survey, 2015

The main challenges for fruits, vegetables and spices processors and poultry feed manufacturers in accessing training services are lack/unavailability of appropriate trainings and lack of funds and high cost of training (Figure 3.38).

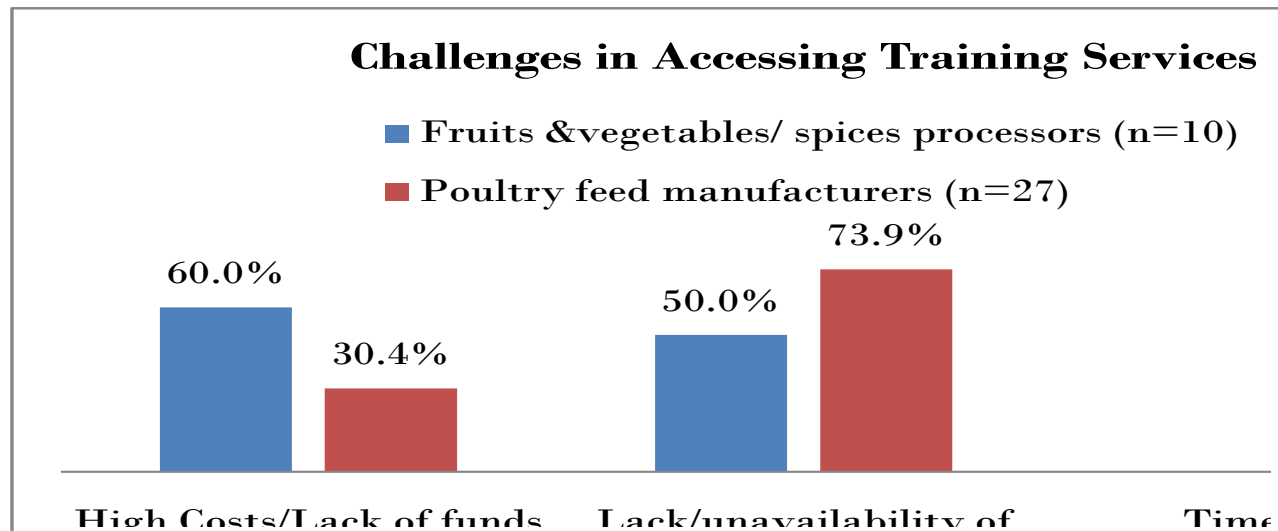


Figure 3-38: Main Challenges in Accessing Training for Fruits & Vegetables/Spices and Poultry Feed Manufacturers

Source: KASI Agriventures Baseline Survey, 2015

3.3.3 Capacity Building for Financial Institutions

One of the main activities of CEED is to provide training to the partner financial institution(s) employees on SME lease financing procedures, working capital finance and equipment leasing finance and/or operating capital leasing/lending procedures. CEED is also expected to provide training to the financial institution's customers on leasing/borrowing procedures. According to the findings of the baseline survey, only a third (4 out of 12) of the financial institutions sampled had their employees trained in the last year (Figure 3.39). The financial institutions employees were mainly trained in agricultural lending procedures, risk management in agricultural finance, credit management and finance and auditing procedures (Table 3.30).

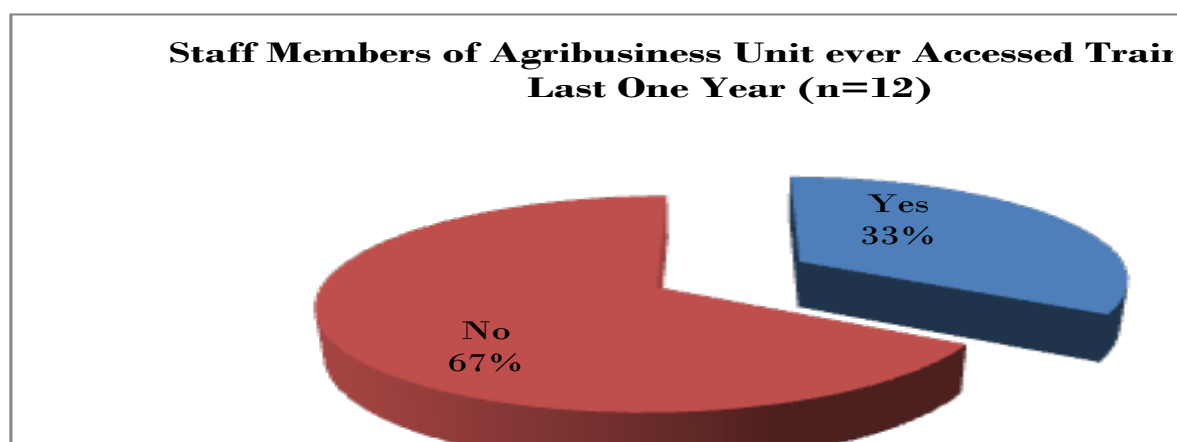


Figure 3-39: Access to Training amongst Financial Institutions Employees

Source: KASI Agriventures Baseline Survey, 2015

The financial institutions sampled also indicated a lack of training in marketing, information management, product development and client management services (Table 3-35).

Table 3-36: Current Training offered to Financial Institutions Employees and Preferred Training Needs by Financial Institutions

Training Module	Current Training	Training Needs
Agricultural lending procedures	60.0%	0.0%
Risk management	40.0%	87.5%
Marketing	0.0%	25.0%
Credit management	20.0%	62.5%
Information management	0.0%	25.0%
Finance and auditing procedures	20.0%	12.5%
Product development	0.0%	37.5%
Client management services	0.0%	50.0%

Source: KASI Agriventures Baseline Survey, 2015

3.4 Baseline Values for Program Indicators

The KASI Agriventures program has a total of 64 performance indicators which are broadly categorized into three levels: goal, outcome and output. This section summarizes the baseline values for the KASI Agriventures program indicators based on the findings of the baseline survey. It also includes a review of the program indicators and their targets. These baseline values will be used as a basis for evaluating the performance of the program during the Life of Program (LOP) as well as for reviewing program targets where necessary. Recommendations have been made where the targets were found to be either too high or too low compared to the resultant baseline values. Recommendations have also been made on the indicators that should be rephrased, merged or deleted as found necessary. The summary of the resultant baseline values as per the PMP is presented in Table 3-36 below.

Table 3-37: Baseline Values for Program Indicators

No	Indicators	Unit of Measure	Baseline Value	LOP Targets				Remarks/ recommended action on indicators
SME Lending: Equipment Leasing Finance, Working Capital, and Term Loans								
1.	Number of loans disbursed as a result of USDA assistance	Number of loans	0	Year		Number		There is a need to shift the target from 2015 to 2016 because of delay in commencement of program activities. Based on recommendation from Indicator #2, we recommend increasing number of loans to 80.
				2015		40		
				2016		0		
				2017		0		
				LOP		40		
2.	Value of loans provided as a result of USDA assistance	USD	Male=24,838 Female=24,838	Year	Male	Female	Total	From the baseline survey, the average loan size provided by nonbank financial institutions to individuals (whether male or female) is USD 24,838. Since the program targets to disburse a total of 40 loans (30 male and 10 female as per indicator No. 4), these values will translate to totals of USD 745,140 for males and USD 248,830 for females respectively. These values are approximately half of the targeted values. Based on this finding, we recommend increasing the number of loans to 80 while retaining the proportions for male and female. There is, however, a need to shift the target from 2015 to 2016 because of delay in program activities.
				2015	1,500,000	500,000	2,000,000	
				2016	0	0	0	
				2017	0	0	0	
				LOP	1,500,000	500,000	2,000,000	
			Joint=0 Not applicable=0	Year	Joint	Not applicable	Total	These targets are a combination of both Male and Female. There is a need to shift the target from 2015 to 2016 because of delay in program activities.
				2015	2,000,000	0	2,000,000	
				2016	0	0	0	
				2017	0	0	0	
				LOP	2,000,000	0	2,000,000	
3.	Value of loan repayment by	USD	Male=0	Year	Male	Female	Total	There is a need to shift the target

	agribusiness SMEs		Female=0	2015	1,500,000	500,000	2,000,000	from 2015 to 2016 and 2017 because of delay in commencement of program activities and loan repayment may spread beyond one year.					
				2016	0	0	0						
				2017	0	0	0						
				LOP	1,500,000	500,000	2,000,000						
4.	Number of individuals receiving financial services as a result of USDA assistance	Number of entrepreneur borrowers	Male=0 Female=0	Year	Male	Female	Total	There is a need to redistribute the targets for 2015 to the subsequent years because of delay in commencement of program activities.					
				2015	30	10	40						
				2016	30	10	40						
				2017	30	10	40						
				LOP	30	10	40						
5.	Number of jobs attributed to USDA assistance (male)	Loan officer at finance company	Male=0 Female=0	Year	Male	Female	Total	The target for 2015 should be changed to zero (0) because of delay in commencement of program activities.					
				2015	1	1	2						
				2016	1	1	2						
				2017	1	1	2						
				LOP	1	1	2						
6.	Number of private enterprises, producers organizations, water users associations, women's groups, trade and business associations, and community-based organizations (CBOs) that applied improved techniques and technologies as result of USDA assistance	Number of organizations	New=0 Continuing=0	Year	New	Continuing	Total	There is a need to redistribute the targets for 2015 to 2016 because of delay in commencement of program activities.					
				2015	2	0	2						
				2016	0	2	2						
				2017	0	2	2						
							LOP	0	2	2			
			Private enterprises (PE)=0 Producers organizations (PO)=0 Water users associations (WUA)=0 Women's group (WG)=0 Trade and business associations (TBA)=0 Community	Year	PE	PO	WUA	WG	TBA	CB	O	Total	KASI Agriventures targets to invest in only 2 private enterprises (PE) i.e. an equipment leasing company and a financial institution that will provide working capital loans. Targets should therefore be set at 2 for PE as well as the LOP. Targets for all other organizations should be set at zero (0).
				2015	0	0	0	0	0	0	0	0	
				2016	2	0	0	0	0	0	0	2	
				2017	0	0	0	0	0	0	0	0	
LOP	2	0		0	0	0	0	0	2				

			-based organization s (CBO)=0									
7.	Annual profit margin of equipment leasing and working capital firm(s) as a result of USDA assistance (expressed as a percentage)	Percentag e	0	Year	Percentage							There is need to move the targets for 2015 to the subsequent years because of delay in commencement of program activities. The LOP target should also be adjusted to 7% from 12%. This is necessitated by delay in commencement of program activities.
				2015	2							
				2016	5							
				2017	5							
				LOP	12							
SME Investing: Poultry Feed Producer												
8.	Amount invested in SME poultry feed producer as a result of USDA assistance	USD	0	Year	Amount							There is need to move this target to 2016.
				2015	3,000,000							
				2016	0							
				2017	0							
				LOP	3,000,000							
9.	Number of weeks in which investment officer provided direct management support to poultry feed producer	Time in weeks	0	Year	Number of Weeks							There is need to remove the targets for 2015. The LOP target should also be adjusted to 96 weeks from 144 weeks. This is necessitated by delay in commencement of program activities.
				2015	48							
				2016	48							
				2017	48							
				LOP	144							
10.	Number of feed distribution nodes established as a result of USDA assistance	Distribut ion nodes	2	Year	Number							From the baseline, each of the poultry feed manufacturer has an average of 2 distribution points, a target of 3 is therefore deemed reasonable. There is a need to redistribute the targets for 2015 to 2016 because of delay in commencement of program activities.
				2015	3							
				2016	0							
				2017	0							
				LOP	3							
11.	Volume of commodities sold by project beneficiaries	MT	Chick mash (CM)-292 Growers mash (GM)-266 Layers mash	Year	CM	GM	LM	BM	P	Total	There is a need to redistribute the targets for 2015 to the subsequent years because of delay in commencement of program activities. Since not all poultry feed manufacturers produce all 6 types of	
				2015						12,500		
				2016						25,000		
				2017						25,000		
				LOP						62,500		

			(LM)-265 Broilers mash (BM)- 277 Pellets (P)- 36								feed, it would be more accurate to set targets for each feed-type individually. Additionally, since SEAF may invest in a company that only manufactures some and not all of the feed-types, we recommend that the "total" column be removed. Suggested targets are as follows for 2016: 584 for CM, 532 for GM, 530 for LM, 554 for BM, and 72 for P. Suggested targets for 2017 are: 829 for CM, 756 for GM, 753 for LM, 787 for BM and 102 for P. New targets are based on expected/targeted increase in feed production output (See Indicators 21 and 23).
12.	Number of feed producing companies screened for investment as a result of USDA assistance	Number of companies	0	Year 2015 2016 2017 LOP	Number 5 0 0 5						This is a one-off indicator. The target is okay bearing in mind that only one company will be selected. This can however, be moved to 2016.
13.	Amount of principal and proceeds recovered from existing investment in poultry feed producer	USD	0	Year 2015 2016 2017 LOP	Amount 0 0 3,150,000 3,150,000						This target is reasonable as the amount comprises the budgeted principal amount of USD 3 Million and a 5% interest.
14.	Number of individuals who have applied new techniques or technologies as a result of USDA assistance	Individual poultry farmer	New-0 Continuing-0	Year 2015 2016 2017 LOP	New 8,000 0 0 8,000	Continuing 0 8,000 8,000 8,000	Total 8,000 8,000 8,000 8,000				The targets are unreasonable. Given that the program will work with only one feed manufacturer, it is unlikely that one manufacturer will have a customer base of 8,000. Based on the calculations in Annex 5, a single SME has a reach of up to 3,755 customers per year. The recommended targets are therefore 4,000. Additionally, targets should also be

								redistributed to reflect delay in the start of program activities.	
			Male- 0 Female-0	Year	Male	Female		Total	The targets should be reduced to a total of 4,000 per year with males being 1,700 and females 2,300. This is because from the baseline survey there were more female poultry farmers (about 57%) compared to male farmers (43%). There is also need to redistribute the targets for 2015 to the subsequent years because of delay in commencement of program activities.
				2015	6,000	2,000		8,000	
				2016	6,000	2,000		8,000	
				2017	6,000	2,000		8,000	
				LOP	6,000	8,000		8,000	
			Pest managemen t (PM)-23% Disease managemen t (DM)-13% Improved feeds (IF)- 3%	Year	PM	DM	IF	Total	Important to set annual targets for each technology. We propose distribution of targets for each technology based on the percentage of individuals trained on each technology as per the baseline values.
				2015				0	
				2016				8,000	
				2017				8,000	
				LOP				8,000	
15.	Number of individuals who have received short-term agricultural sector productivity or food security training as a result of USDA assistance	Individual poultry farmer	New- 0 Continuing- 0	Year	New	Continuing		Total	There is need to redistribute the targets for 2015 to the subsequent years because of delay in commencement of program activities. Additionally, the targets should be in line with targets to indicator 14, if those targets are to be changed. We also recommend this target be shifted to the CEED section.
				2015	8,000	0		8,000	
				2016	0	8,000		8,000	
				2017	0	8,000		8,000	
				LOP	8,000	8,000		8,000	
16.	Farmer revenue increases from improved chicken feed	USD	13,148	Year	Amount			From the baseline survey, the average revenue for the farmer is approximately USD 13,150 per year. Based on this, there is a need to readjust the targets downwards. There is also need to redistribute the targets for 2015 to the subsequent years because of delay in	
				2015	200,000				
				2016	400,000				
				2017	400,000				
				LOP	1,000,000				

											commencement of program activities.	
17.	Number of jobs attributed to USDA assistance	Feed mill employee	Male-8 Female-2	Year	Male					Female	Total	Targets are reasonable, but there is need to redistribute the targets for 2015 to the subsequent years because of delay in commencement of program activities.
				2015	9					3	12	
				2016	9					3	12	
				2017	9					3	12	
				LOP	9					3	12	
18.	Number of public-private partnerships formed as a result of USDA assistance (agricultural production)	Public-private partnership	0	Year	Number							Targets are reasonable, but there is need to redistribute the targets for 2015 to the subsequent years because of delay in commencement of program activities.
				2015	1							
				2016	0							
				2017	0							
				LOP	1							
19.	Value of sales by project beneficiaries	USD	Chick mash (CM)- 137,776 Growers mash (GM)- 108,200 Layers mash (LM)- 111,564 Broilers mash (BM)- 134,263 Pellets (P)- 10,884	Year	CM	GM	LM	BM	P	Total	There is need to redistribute the targets for 2015 to the subsequent years because of delay in commencement of program activities. Since not all poultry feed manufacturers produce all 6 types of feed, it would be more accurate to set targets for each feed-type individually. Additionally, since SEAF may invest in a company that only manufactures some and not all of the feed-types, we recommend that the “total” column be removed. Suggested targets for 2016 are as follows: USD 275,552 for CM, USD 216,400 for GM, USD 223,128 for LM, USD 268,526 for BM, and USD 21,768 for P. Suggested targets for 2017 are as follows: USD 391,317 for CM, USD 307,314 for GM, USD 316,869 for LM, USD 381,340 for BM, and USD 30,913 for P. These figures are based on expected/targeted annual production output (See indicators 21 and 23).	
				2015								6,750,000
				2016								13,500,000
				2017								13,500,000
				LOP								33,750,000

20.	Number of private enterprises, producers organizations, water users associations, women's groups, trade and business associations, and community-based organizations (CBOs) that applied improved techniques and technologies as result of USDA assistance	Number of organizations	New=0 Continuing=0	Year	New		Continuing		Total		There is need to redistribute the targets for 2015 to 2016 because of delay in commencement of program activities. KASI Agriventures targets to invest in only 1 private enterprise involved in poultry feed manufacturing. Targets for all other organizations have been set at zero (0).
				2015	2		0		2		
				2016	2		2		2		
				2017	2		2		2		
				LOP	2		4		2		
		Private enterprises (PE)=0 Producers organization s (PO)=0 Water users associations (WUA)=0 Women's group (WG)=0 Trade and business associations (TBA)=0 Community -based organization s (CBO)=0	Year	PE	PO	WU A	WG	TBA	CB O	Total	
			2015	0	0	0	0	0	0	0	
			2016	1	0	0	0	0	0	1	
			2017	0	0	0	0	0	0	0	
			LOP	1	0	0	0	0	0	1	
21.	Amount of new animal feed available to farmers as a result of USDA assistance	MT	1,008	Year	MT						There is a need to redistribute the targets for 2015 to the subsequent years because of delay in commencement of program activities. From the baseline, the average volume sold by each SME is approximately 1,008 MT per SME per year. There is therefore need to revise the targets downwards given
				2015	31,250						
				2016	62,500						
				2017	62,500						
				LOP	62,500						

						that the program targets to work with only one feed manufacturer. Suggested revised targets are 1,008 MT of new feed in 2016 (assumes manufacturer has maintained utilization capacity at 60% but doubled manufacturing capacity for a total output of approx. 2,016 MT per year); and a new target of 847 MT of new feed in 2017 (assumes manufacturer has maintained capacity but increased utilization rate to 85%) for a total production output of approx. 2,860 MT in 2017.
22.	Annual profit margin of feed mill as a result of USDA assistance	Percentage	0	Year	Percentage	There is need to readjust the targets so that 2016 becomes year 1 of implementation.
				2015	4	
				2016	8	
				2017	8	
				LOP	8	
23.	Daily output of feed producer (in MT) as a result of USDA assistance	MT	8.2	Year	MT	There is need to redistribute the targets for 2015 to the subsequent years because of delay in commencement of program activities. Additionally, from the baseline, the average installed capacity was 13.7 MT while the utilized capacity is 8.2MT. The current targets are therefore very high and will need to be readjusted. Suggested revised targets are 16.4MT in 2016 (assumes investment will allow manufacturer to double their installed capacity while maintaining utilization rate of 60%) and 23.3 MT in 2017 (assumes an increase in utilization rate to 85%, while maintaining production capacity).
				2015	4,000	
				2016	8,000	
				2017	8,000	
				LOP	8,000	
24.	Number of financially	Number		Year	Percentage	There is need to redistribute the

	sustainable feed distributors linking feed producer with target area farmers.			2015	1	targets for 2015 to the subsequent years because of delay in commencement of program activities
				2016	3	
				2017	3	
				LOP	3	
25.	Number of farmers educated on use of new type of animal feed as a result of USDA assistance	Individual farmer	0	Year	Number	These targets are quite high and need to be reduced since KASI Agriventures will likely only invest in 1 feed manufacturer. Recommended targets for 2016 are 2,000 and 4,000 for 2017 based on calculations for indicator 14 (see Annex 5). There is also need to redistribute the targets for 2015 to the subsequent years because of delay in commencement of program activities.
				2015	4,000	
				2016	8,000	
				2017	8,000	
				LOP	8,000	
SME Investing: Fruit, Vegetable, and Spices Processor						
26.	Amount invested in SME fruit, vegetable, and/or spice processor as a result of USDA assistance	USD	0	Year	Amount	This target is reasonable as it reflects the amount that the program intends to invest in an SME involved in fruit, vegetable and/or spices processing, based on the current budget. The target should, however, be moved to 2016 to reflect the delay in the start of program activities.
				2015	3,000,000	
				2016	0	
				2017	0	
				LOP	3,000,000	
27.	Number of weeks in which investment officer provided direct management support to fruit, vegetable, and/or spice processing facility	Time in weeks	0	Year	Number of Weeks	There is need to remove the targets for 2015. The LOP target should also be adjusted to 96 weeks from 144 weeks. This is necessitated by delay in commencement of program activities.
				2015	48	
				2016	48	
				2017	48	
				LOP	144	
28.	Volume of fruit, vegetables, and/or spice plants processed (in MT) as a result of USDA assistance	MT	Fruits =495.6 Vegetables =325.2 Spices=3.3	Year	Total	From the baseline survey, SMEs processed an average of 495.6 MT of fruits, 325.2 MT of vegetables and 3.3 MT of spices per year. Since SEAF intends to invest in only 1 SME involved in processing fruits, vegetable and/or spices, these
				2015	7,500	
				2016	15,000	
				2017	15,000	
				LOP	15,000	

									targets are quite high. Since most SME processors in Tanzania are not involved with all three commodity types (fruit, vegetable and spices), it would be more accurate to set targets for each commodity individually. The targeted increase in the volume processed should align with increase in targets for production in indicator 42.
29.	Number of farmers from whom the fruit, vegetable, and or/spice processor buys inputs	Fruit, vegetable, or spice company	New-0 Continuin g-1,541	Year	New	Continuing		Total	This target is unreasonable. Since only 1 processor will be selected for investment, it is unlikely that the processor will have a total of 10,000 individual farmers as suppliers of raw materials. From the baseline survey, SMEs involved in fruits, vegetables and spices processing buys inputs (raw materials) from 1,541 farmers on average. Larger SMEs on average, however, procure their raw materials from 3,225 farmers. Since SEAF will likely invest in a single relatively large processor or potentially two smaller processors, we recommend that this target be revised downwards to 5,000. Targets should also be redistributed due to the delay in the start of program activities.
				2015	10,000	0		10,000	
				2016	0	10,000		10,000	
				2017	0	10,000		10,000	
				LOP	10,000	10,000		10,000	
30.	Number of fruit, vegetable, and/or spice processing companies screened for investment as a result of USDA assistance	Fruit, vegetable, or spice company	0	Year	Number				This is a one-off indicator. The target is okay bearing in mind that only one company will be selected. Target should, however, be moved to 2016
				2015	5				
				2016	0				
				2017	0				
				LOP	5				
31.	Volume of commodities sold	MT	Fruits-	Year	Fruit	Veg	Spice	Total	The set targets are relatively high as

	by project beneficiaries		481.2 Vegetables -267.8 Spices-1.4	2015 2016 2017 LOP				2,500 5,000 5,000 12,500	they are approximately 4 times of the baseline values. Current values from the baseline are Fruits-481.2, Vegetables-267.8 and Spices-1.4. Suggested targets for 2016 are 500 MT for fruits, 280MT for vegetables and 2 MT for spices. There is need to redistribute the targets for 2015 to the subsequent years because of delay in commencement of program activities. Since most SME processors in Tanzania are not involved with all three commodity types (fruit, vegetable and spices), it would be more accurate to set targets for each commodity individually. Additionally, since SEAF may invest in a company that processes only one or two of these commodities, we recommend that the “total” column be removed.
32.	Total increase in installed storage capacity (dry or cold storage) as a result of USDA assistance	MT	Dry-0 Cold-0	Year 2015 2016 2017 LOP	Dry 10 10 0	Cold 5 5 0	Total 15 15 0 30	Targets should be moved to 2016 and 2017	
33.	Total increase in installed storage capacity (new or refurbished storage) as a result of USDA assistance	MT	New-0 Refurbished-0	Year 2015 2016 2017 LOP	New 5 0 0	Refurbished 10 15 0	Total 15 15 0 30	Targets should be moved to 2016 and 2017.	
34.	Number of jobs attributed to USDA assistance	Fruit, vegetable, or spice company employee	Male-0 Female-0	Year 2015 2016 2017 LOP	Male 8 8 8	Female 2 2 2	Total 10 10 10 10	There is also need to redistribute the targets for 2015 to the subsequent years because of delay in commencement of program activities.	
35.	Number of public-private	Public-	0	Year	Number			There is need to redistribute the	

	partnerships formed as a result of USDA assistance (agricultural post-harvest transformation)	private partnership		2015	1				targets for 2015 to 2016 because of delay in commencement of program activities.			
				2016	0							
				2017	0							
				LOP	1							
36.	Value of new public and private sector investment leveraged as a result of USDA assistance	Public-private partnership	Private-0 Public-0	Year	Private		Public	Total	There is need to redistribute targets for 2015 to 2016 because of delay in commencement of program activities.			
				2015	20,000		0	20,000				
				2016	0		0	0				
				2017	0		0	0				
				LOP	20,000		0	20,000				
37.	Value of sales by project beneficiaries	USD	Fruits-342,594 Vegetables-246,898 Spices-30,081	Year	Fruits	Veg	Spices	Total	There is need to redistribute the targets for 2015 to 2016 because of delay in commencement of program activities Additionally, since most SME processors in Tanzania are not involved with all three commodity types (fruit, vegetable and spices), it would be more accurate to set targets for each commodity individually. Suggested targets for 2016 are: 375,000 (Fruits), 280,000 (Vegetables), 35,000 (Spices); followed by a 10% increase in each of the following years.			
				2015				3,750,000				
				2016				7,500,000				
				2017				7,500,000				
				LOP				18,750,000				
38.	Number of private enterprises, producers organizations, water users associations, women's groups, trade and business associations, and community-based organizations (CBOs) that applied improved techniques and technologies as result of USDA assistance	Number of organizations	New=0 Continuing=0	Year	New		Continuing			Total	The target assumes that the program will invest in only one private enterprise (PE) and that this PE will apply improved technologies and techniques for fruit, vegetable and/or spices processing. There is however, need to move the target from 2015 to 2016.	
				2015	1		0			1		
				2016	0		1			1		
				2017	0		1			1		
				LOP	1		1			1		
			Private enterprises (PE)=0 Producers organizations	Year	PE	PO	WUA	WG	TBA	CBO	Total	The target assumes that the program will invest in only one private enterprise (PE). We thus recommend zero targets for all the other types of organizations.
				2015	1	0	0	0	0	0	1	
				2016	0	0	0	0	0	0	0	
				2017	0	0	0	0	0	0	0	
LOP	1			0	0	0	0	0	1			

			(PO)=0 Water users associations (WUA)=0 Women's group (WG)=0 Trade and business associations (TBA)=0 Community-based organizations (CBO)=0								
39.	Value of commodities purchased from fruit, vegetable, and/or spice farmers as a result of USDA assistance	USD	²² Fruits-152,303 Vegetables -176,639 Spices-15,020 ²³	Year	Fruits	Veg	Spices	Total	Since most SME processors in Tanzania are not involved with all three commodity types (fruit, vegetable and spices), it would be more accurate to set targets for each commodity individually. Suggested targets for 2016 are 155,000, 180,000 and 15,500 for fruits, vegetables and spices respectively. Targets will increase by 10% in each of the following years.		
			2015				5,500,000				
			2016				10,500,000				
			2017				10,500,000				
			LOP				26,500,000				
40.	Annual profit margin of fruit, vegetable, and/or spice processor as a result of USDA assistance (expressed	Percentage	0	Year	Percentage			The LOP target should be 8 because it is not a cumulative indicator There is also need to redistribute the targets for 2015 to 2016			
			2015	4							
			2016	8							
			2017	8							

²² Baseline values are based on value of commodities sold by farmers regardless of where sold

²³ These values are calculated based on quantities purchased by SMEs as raw materials

	as a percentage)			LOP	20	because of delay in commencement of program activities
41.	Percentage increase in processing capacity of fruit, vegetable, and/or spice processor as a result of USDA assistance	Percentage	0	Year	Percentage	According to the baseline study, the average installed capacities are as follows: fruits - 2.5MT/day, vegetables - 3.1MT/day and spices - 0.02 MT/day. Utilized capacities as measured by daily output are as follows: fruits - 2.14 MT/day, vegetables - 2.83 MT/day and spices - 0.01MT/day. Given these values, the utilization rates are therefore, 85.6% for fruits, 91.3% for vegetables and 50% for spices. It may be unlikely to substantially increase the utilization rates for fruits and vegetables further although the utilization rates for spices can be increased. These targets are therefore deemed reasonable as increased production can only be achieved through increased capacities. There is need to redistribute the targets for 2015 to 2016 because of delay in commencement of program activities.
				2015	25	
				2016	50	
				2017	50	
				LOP	50	
42.	Daily output of fruit, vegetable, or spice producer (in MT) as a result of USDA assistance	MT	Fruits = 2.14 MT/day; vegetables =2.83 MT/day; spices =0.01MT/day	Year	Output	Given that SMEs involved in fruit, vegetable or spice processing have varying daily outputs, we recommend disaggregating the targets by commodity type (i.e. Fruits, Vegetables, Spices) According to the baseline study, daily output is as follows: for fruits is 2.14 MT/day, for vegetables is 2.83 MT/day and for spices is 0.01MT/day. We suggest that targets for daily output be increased by 5%
				2015	30	
				2016	60	
				2017	60	
				LOP	60	

						in 2016 and 10% in year 2017.
43.	Percentage of fruits, vegetables, and/or spices processed that meet international food safety and packaging standards as a result of USDA assistance.	Percentage	0	Year	Percentage	Given that most (79%) of the horticultural products are currently marketed locally; (meaning that only 21% is marketed internationally) it may be unrealistic to target that 90% of all produce will be sold internationally. We recommend that the 2016 target be increased to 30% and increased to 50% at LOP.
				2015	45	
				2016	90	
				2017	90	
				LOP	90	
44.	Volume of fruit, vegetable, and/or spice products that meet international export standards as a result of USDA assistance	MT	1,059	Year	Volume	Assuming the 21% that is currently marketed internationally meet international standards, this translates to an average of 1,059 MT per SME. Since the program targets to work with 1 SME, there is a need to lower the targets. The LOP targets can be increased by up to 50% as suggested in indicator No. 43. There is also a need redistribute the targets for 2015 to 2016 because of delay in commencement of program activities.
				2015	5,625	
				2016	11,250	
				2017	11,250	
				LOP	28,125	
45.	Reduction in farmers' wastage of fruits, vegetables, and/or spices as a result of USDA assistance	Percentage	0	Year	Percentage	Rather than capture the percentage of wastage, we recommend measuring the percentage increase in the number of farmers that are selling to processors. According to the baseline survey, only 3% of smallholder farmers sold their produce directly to processors (or their agents). Recommended percentage increase at the LOP are an increase to 5% in 2016 and to 10% in 2017. There is also need to redistribute the targets for 2015 to 2016 because of delay in commencement of program activities.
				2015	45	
				2016	90	
				2017	90	
				LOP	90	

46.	Number of fruit, vegetable, and/or spice processing facilities implementing international food safety and packaging standards as a result of USDA assistance	Fruit, vegetable, or spice processor	0	Year	Number	This target is reasonable as it is based on the fact that the program will only invest in 1 SME. There is need to redistribute the targets for 2015 to 2016 because of delay in commencement of program activities.		
				2015	1			
				2016	1			
				2017	1			
				LOP	1			
47.	Number of new countries to which fruit, vegetable, and/or spice processor exports its products as a result of USDA assistance	Individual country	2	Year	Number	There is need to redistribute the targets for 2015 to 2016 because of delay in commencement of program activities. From the baseline, major export markets were only for vegetables and spices to the EU - mainly Belgium and Ireland. Given these findings, the targets of 6 and 12 countries seem very high. It should be noted that horticultural commodities meant for export are particular to specific countries (target markets). We recommend that the target for first year is set to 3, which would then increase to 5 at LOP.		
				2015	6			
				2016	12			
				2017	12			
				LOP	12			
Establish a Center for Entrepreneurship and Executive Development								
48.	Number of individuals given SME agribusiness management training	Individual entrepreneur	New-0 Continuing-0	Year	New	Continuing	Total	There is a need to redistribute the targets for 2015 to 2016 because of delay in commencement of program activities.
				2015	25	0	25	
				2016	25	20	45	
				2017	25	40	65	
				LOP	25	40	65	
49.	Number of leasing finance company employees trained in SME leasing finance procedures	Leasing finance company employee	New-0 Continuing-0	Year	New	Continuing	Total	There is need to redistribute the targets for 2015 to 2016 because of delay in commencement of program activities.
				2015	5	0	5	
				2016	0	5	5	
				2017	0	5	5	
				LOP	5	5	5	
50.	Number of working capital finance company employees trained in SME leasing finance procedures	Working capital finance company	New-0 Continuing-0	Year	New	Continuing	Total	There is need to redistribute the targets for 2015 to 2016 because of delay in commencement of program activities.
				2015	5	0	5	
				2016	0	5	5	
				2017	0	5	5	

		employee		LOP	5	5	5	
51.	Number of leasing finance company customers trained in leasing/ borrowing procedures	Leasing finance company customer	0	Year	Number			There is need to redistribute the targets for 2015 to 2016 because of delay in commencement of program activities.
				2015	20			
				2016	0			
				2017	0			
				LOP	20			
52.	Number of working capital finance company customers trained in leasing/ borrowing procedures	Working capital finance company customer	0	Year	Number			There is need to redistribute the targets for 2015 to 2016 because of delay in commencement of program activities.
				2015	20			
				2016	0			
				2017	0			
				LOP	20			
53.	Number of training sessions in business management conducted for agribusiness SMEs	Training session	0	Year	Number			The current targets suggest an average of 2 training sessions per month on average. From the baseline survey, majority of the training to agribusiness SMEs are on quarterly basis or less frequently, i.e. fruits, vegetables and spice processors (64.7%) and poultry feed manufacturers (68%). Based on these findings, we think this is too high, we recommend that the targets be reduced to at most 12 per year which would imply increasing the frequencies of trainings currently available to at least one per month. Additionally, given the delay in the start of program activities, we suggest 2016 targets are set at 6 and 2017 at 12.
				2015	24			
				2016	24			
				2017	24			
				LOP	72			
54.	Number of training sessions in lease finance conducted for local finance companies	Training session	0	Year	Number			The current targets suggest an average of 2 training sessions per month on average. From the baseline survey, majority (85.7%) of the training to financial institutions employees are held on quarterly basis or less frequently. Based on these findings, we think that the current targets are too high. We
				2015	24			
				2016	24			
				2017	24			
				LOP	72			

								recommend that the targets be reduced to at most 12 per year which would imply increasing current frequencies of trainings to an average of one session per month. Further, given the delay in the start of program activities, we suggest 2016 targets are set at 6 and 2017 at 12.
55.	Number of training sessions in leasing/borrowing procedures conducted for agribusiness SMEs and entrepreneurs	Training session	0	Year	Number			The targets suggest an average of 2 training sessions per month on average. From the baseline survey, majority of the training to agribusiness SMEs occur on a quarterly basis. Based on this, we think the target is too high recommend that the target for the first 12 months after the start of program activities be reduced to 12, which translates to an average of one training session per month. Additionally, given the delay in the start of program activities, the target should be adjusted to 6 trainings in the remainder of 2016 and 6 in 2017.
				2015	24			
				2016	0			
				2017	0			
				LOP	24			
56.	Number of financial firms trained on equipment leasing finance and/or operating capital leasing/lending procedures targeting SME agribusinesses as a result of USDA assistance	Individual financial firm	0	Year	Number			These targets seem reasonable.
				2015	0			
				2016	1			
				2017	2			
				LOP	3			
Business and Technical Mentorship: Poultry Feed and Fruit Producer, Vegetable, and Spice Processor								
57.	Number of international standards taught to managers of fruit, vegetable, and or spice processors	International standard	New-0 Continuing-0	Year	New	Continuing	Total	Rather than capture the "number of standard taught", we recommend capturing the "number of managers taught on different international standards" There is also need to redistribute
				2015	10	0	10	
				2016	0	10	10	
				2017	0	10	10	
				LOP	10	10	10	

								the targets for 2015 to 2016 because of delay in commencement of program activities.
58.	Number of in person mentoring engagements between managers of fruit, vegetable, and/or spice processor and business and/or technical advisors from multinational corporations	Corporate mentoring engagement	0	Year	Number			There is need to redistribute the targets for 2015 to 2016 because of delay in commencement of program activities.
				2015	4			
				2016	3			
				2017	2			
				LOP	9			
59.	Number of in person mentoring engagements between managers of feed producer and business and/or technical advisors from multinational corporations	Corporate mentoring engagement	0	Year	Number			There is need to redistribute the targets for 2015 to 2016 because of delay in commencement of program activities.
				2015	4			
				2016	3			
				2017	2			
				LOP	9			
60.	Number of international retail standards met as a result of USDA assistance	International standard	0	Year	Number			We recommend that this indicator be removed since retail standards vary depending on product being exported and countries/regions to which they are being exported.
				2015	10			
				2016	20			
				2017	20			
				LOP	20			
61.	Number of international companies to which fruit, vegetable, and/or spice processor sells its value-added outputs as a result of USDA assistance	Individual international company	2	Year	Number			There is need to redistribute the targets for 2015 to 2016 because of delay in commencement of program activities.
				2015	1			
				2016	2			
				2017	2			
				LOP	2			
Overall Program								
62.	Total number of individuals benefiting directly as a result of USDA assistance	Individuals	Male-0 Female-0	Year	Male	Female	Total	Targets needs to be revised downwards to reflect the likely number of SMEs, and thereby smallholder farmers, with which KASI Agriventures will work. This will be the combined number of beneficiaries for lease financing (80), poultry (4,000) and FVS (5,000) which is 9,080 There is need to redistribute the
				2015	13,530	4,510	18,040	
				2016	0	0	0	
				2017	0	0	0	
				LOP			18,040	

								targets for 2015 to 2016 because of delay in commencement of program activities.
63.	Total number of individuals benefiting directly as a result of USDA assistance	Individuals	New-0 Continuin g-0	Year	New	Continuing	Total	Targets needs to be revised downwards to reflect the likely number of SMEs, and thereby smallholder farmers, with which KASI Agriventures will work. This will be the combined number of beneficiaries for lease financing (80), poultry (4,000) and FVS (5,000) which is 9,080 There is need to redistribute the targets for 2015 to 2016 because of delay in commencement of program activities.
				2015	18,040	0	18,040	
				2016	0	18,040	18,040	
				2017	0	18,040	18,040	
				LOP			18,040	
64.	Total number of individuals benefiting indirectly as a result of USDA assistance	Individuals	0	Year	Number			This target assumes that each direct beneficiary or member of a household (as in Indicator 62 or 63) will indirectly benefit 5 household members; where the average household size in Tanzania is 7. This assumption is deemed reasonable as it assumes that 70% of the household members will benefit indirectly. The targets should therefore be 5 times the direct beneficiaries in Indicator No. 62 and 63. The recommended target is therefore be 45,400. There is need to redistribute the targets for 2015 to 2016 because of delay in commencement of program activities.
				2015	90,200			
				2016	90,200			
				2017	90,200			
				LOP	90,200			

4 CONCLUSIONS AND RECOMMENDATIONS

4.1 Conclusions

4.1.1 Conclusions on Agricultural Production and Marketing

The KASI Agriventures program targets fruits, vegetables and spices value chains. Pineapples were the most commonly produced fruits at 49% followed by mangoes at 23%, and lastly passion fruits by bananas 2.3% of respondents. Tomatoes were the most commonly produced vegetables at 50%, followed by onions (19%), green pepper (18 %) and carrots at 7.6%. Only a few respondents produced target spices with paprika being produced by 38% and vanilla by 13%. Total annual volumes of fruits, vegetables and spices sold by sampled respondents in the last one year averaged 10.3 MT for fruits, 25.6 MT for vegetables and 1.3 MT of spices.

Fruits, vegetables and spice producers marketed approximately sold approximately 3.4 tons of fruits, 8.5 tons of vegetables and 0.6 tons of spices. However, these were marketed in raw form with limited access to higher end markets (such as processors and exporters), a majority of the producers sold their products to retailers in the local²⁴ markets. Markets were also unstable as only 7.6% sold their products through contractual arrangements with most of the arrangements being under informal (non-written) contracts.

The KASI Agriventures program also aims to improve productivity of the poultry value chain by increasing access to quality feed for poultry producers. Currently, majority (76%) of producers rear improved breeds of poultry, with their poultry stocks increasing over time. Purchase of poultry feeds is frequent, with majority of producers (44%) buying feed on a weekly basis primarily from feed manufacturers and retailers. The frequency of purchase implies that there is high demand for poultry feed but may also point to the fact that producers purchase feeds in smaller quantities albeit more frequently. Within the last one year, poultry producers purchased an average of 23.3 tons of feeds valued at USD 11,486.

Poultry producers marketed various products including mature birds, eggs and chicks. In return, poultry producers earned an average of USD 13,148. Sale of hen comprised the biggest share of the marketed value while manures contributed the least. Similar to fruits, vegetables and spice producers, fewer poultry producers accessed higher-end markets such as wholesalers, large off takers, supermarkets and hotels. This may be as a result of lack of organized marketing, since the majority of the poultry producers sold individually instead of in a consortium or group.

4.1.2 Conclusions on Post-Production Processing and Marketing

The KASI Agriventures program targets to increase the quantity and the value of products produced and sold by fruits vegetables and spice processors as well as by poultry feed manufacturers. Fruits, vegetables and spice processors mainly bought raw materials directly from individual smallholder farmers which corroborates the findings that producers mainly sold

²⁴ Local market means near the producers' own villages or towns

their products as individuals instead of as a collective group. However, processors also bought from farmer groups and associations. On average, each SME involved in processing of fruits purchased an average of 1,404 tons of raw materials per year valued at USD 72,336 annually. Fruits were mainly processed into juices, pulp or canned while vegetables were mainly processed into dried vegetables, sauces and canned vegetables. Spices were mainly dried and ground into powders or sold as liquid extracts. Within the last year, each of the fruits, vegetables and spice processors sold an average of 48.2 tons of fruits and fruit products valued at USD 342,594, 267.8 tons of vegetable products valued at USD 246,900 and 1.4 tons of spices valued at approximately USD 30,080. The majority (79%) of fruits, vegetables and spice processors sold their products in the domestic market.

On average, each SME involved in poultry feed manufacturing procured 236 tons of raw materials mainly from aggregators, wholesalers and middlemen. These were used to produce an average of 85.7 tons of assorted feeds per month. Each poultry feed manufacturer sold an average of 1,008 tons of feed valued at USD 434,316. All of these animal feeds was sold in the domestic market. Findings on the major market outlets points out the importance of distributors, who are used by feed manufacturers to take their product to market.

Feed manufacturers played a major role not only in supplying feeds to producers but also other services. These included supply of drugs and vaccines, day old chicks, poultry equipment and tools, and extension services from feed manufacturers. The feed manufacturers also noted that competition from low quality but cheaper feeds was a major challenge. This particular challenge presents a gap that the KASI Agriventures program is designed to address.

4.1.3 Conclusions of Financial Services

Amongst the financial products supplied by community banks and non-bank financial institutions in Tanzania, were short-term lending products, agricultural asset financing and leasing. On average, agricultural portfolios as a percentage of the total portfolios were approximately 22.3% valued at USD 1.45 million. However, financial institutions still considered agricultural lending to be relatively risky with a total of 16% of the agricultural portfolio (USD 231,843 on average) being at risk.

Majority of the loan clients for non-bank financial institutions were either associations/co-operatives or groups with corporate clients making up the smallest portion of the clientele. The high number of group based loans is consistent with the group based lending approaches which are preferred by smaller financial institutions. While the low number of corporate clients may indicate a low preference to lend to corporate clients, it may also suggest that community banks and non-bank financial institutions are unable to service large corporate clients, who ordinarily require larger loan sizes than individuals or groups.

KASI Agriventures program targets fruits, vegetables and spices as well as poultry value chains. But as expected, the baseline survey noted that non-bank financial institutions mostly financed cereals, vegetables and pulses in that order. This is because cereals and pulses are also the major categories of value chains that are produced by majority of Tanzanians. However, fruits

and vegetables/spice as well as poultry provide major opportunities for financing as they are considered commercial products.

Demand for financial services amongst producers was low as indicated by low rates of borrowing among producers. Only 31% of the poultry keepers and 14% of the fruits, vegetables and spices producers had ever borrowed loans. Low rates of borrowing were, however, associated with unfavorable terms and conditions set by financial institutions. Demand for financial institutions amongst SMEs was higher, with the majority borrowing to fund raw materials supplies and stocks. In comparison, rates of borrowing amongst SMEs was lower for fruits, vegetables and spice processors at only 30% compared to 77% for SMEs engaging in poultry feed manufacturing. On average, SMEs involved in fruits, vegetables and spice processing borrowed loans valued at USD 10,230 while those involved in manufacturing of poultry feeds borrowed an average of USD 19,210.

However, preference for sources of borrowing varied. While most of the producers preferred using their own savings or borrowing from informal sources such as friends and family members and savings groups, SMEs preferred commercial banks. Only 18% of the fruit, vegetables and spice producers and 21% of the poultry producers had borrowed from community banks or non-bank financial institutions. Preference by SMEs to borrow from community banks or non-bank financial institutions was low at only 5% for poultry feed manufacturers and 0% for fruits, vegetables and spice processors. This may point to the need for the KASI Agriventures to consider including commercial banks in the program but may also point on the need to strengthen the target financial institutions so that they are able to offer the necessary products and increase their market share.

With regard to leasing, the major assets financed included plant and machinery, industrial and farm equipment as well as vehicles. However, supply and demand of lease financing products was very low for both producers and SMEs. This presents a gap which the KASI Agriventures program can fill in by facilitating increased access to leasing services.

4.1.4 Conclusions on Capacity Building Services

Access to training and extension services amongst producers was low. Only 27% of fruits, vegetables and spice producers and 32% of poultry producers had accessed training and extension services in the last year. This was mainly associated with inadequate supply of training providers. The major training and extension providers to producers were government extension staff, private extension staff and NGOs. However, contact with the trainings and extension service providers were rather infrequent, with majority of the producers interacting with providers on monthly basis or longer intervals.

In comparison, access to capacity building amongst SMEs was relatively high at 80% for fruits, vegetables and spices processors and 63% for poultry feed manufacturers. Improved processing technologies, product quality standards and marketing were the main training offered to staff of vegetables, fruits and spice processors. For poultry feed manufacturers, feed manufacturing technologies and product quality standards management were the main training modules offered. The primary training service providers to SMEs were private companies/individuals and

NGOs/donor programs. These findings suggests that it will be important for CEED to liaise with companies, individual experts, NGOs and donor programs that are involved in providing training to SMEs.

4.2 Recommendations

The following recommendations are made from the baseline survey:

- With regard value chains, the program may need to look at value chains that were found to be commonly produced in the target regions. This will increase the chances of the program meeting its set targets especially on volumes and values;
- With regard to marketing, the program will need to consider organizing producers into groups. This will help in accessing higher end markets as the aggregation will result in higher volumes that will appeal to buyers. This will also encourage market reliability by seeking contractual arrangements with buyers. Organized groups can also be used to coordinate capacity building activities. Since farmer organization is not a key component of the KASI Agriventures program, the program may consider working with partners such as TAHA an TAFMA to identify already organized groups;
- With regard to provision of financial services, the program may need to consider inclusion of commercial banks since they have a wider outreach and were used as preferred sources of borrowing by both producers and SMEs. In the absence of commercial banks, the KASI Agriventures program will need to increase the number of community banks and non-bank financial institutions involved in the program with special considerations for outreach within the target regions;
- With regard to program performance indicators, the baseline survey recommends that some of the program targets may need to be revised or redistributed. Recommendations for each of the indicators are contained in Table 3.31.

5 ANNEXES

ANNEX 1: TERMS OF REFERENCE



KASI-Baseline-Evaluation-RFP-FINAL.pdf

ANNEX 2: SAMPLING FRAME FOR THE BASELINE SURVEY



SEAF SAMPLING
FRAME.doc

ANNEX 3: DATA COLLECTION TOOLS



FINAL TOOLS-SEAF
BASELINE.zip

NB: DOUBLE CLICK TO OPEN

ANNEX 5: CALCULATIONS FOR REFERENCED INDICATORS

Capacity Increase Estimation:					
Current	1008	MT	per year	Yr 1 Utilization Rate	60%
Current Production	8.2	MT	per day	Yr 2 Utilization Rate	85%
Current Capacity	13.7		per day		
Current utilization rate	60%				
Daily Production Multiple	123				
Post-Investment		Indicator 23		Indicator 21	
	Capacity	Output	Feed output per year	New Feed Produced per Year	% change from previous year
End Yr. 1 (assume capacity is doubled with new machinery from investment)	27.4	16.4	2,016	1,008	100%
End Yr 2 (capacity is NOT doubled, but utilization rate is increased)	27.4	23.29	2,863	847	42%

VALUE OF SALES BY FEED MILLERS- INDICATORS 11 AND 19

Total number of SMEs surveyed 26									
Output Sold	No. of SMEs selling	% of sampled SMEs selling	Quantity Sold (Tons), per SME	Average Price per Ton (USD)	Value of Output Sold (USD)	Yr. 1 -- Indicator 19 (increase in value of sales based on increase in output capacity)	Yr. 2 -- Indicator 19 (increase in value of sales based on increase in output capacity)	Yr 1 -- Indicator 11 (increase in volume of sales based on increase in output capacity)	Yr 2 -- Indicator 11 (increase in volume of sales based on increase in output capacity)
Broilers Mash (Starter & Finisher)	26	100%	277	484	134,263	268,526.00	381,339.67	554.00	786.75
Chick Mash	22	85%	292	471	137,776	275,552.00	391,317.44	584.00	829.35
Growers Mash	24	92%	266	407	108,200	216,400.00	307,314.39	532.00	755.50
Layers Mash	26	100%	265	421	111,564	223,128.00	316,868.97	530.00	752.66
Pellets	1	4%	36	302	10,884	21,768.00	30,913.21	72.00	102.25

CALCULATION FOR NUMBER OF BENEFICIARIES- POULTRY - INDICATORS # 14,15,25**TOTAL NUMBER OF BENEFICIARIES FROM POULTRY FEED ACTIVITY**

Hardcoded inputs			
Number of farmers per region according to poultry type			
Region	Layers	Broilers	Total
Arusha	556	512	1,068
Kilimanjaro	4,200	1,096	5,296
Morogoro	966	1,394	2,360
Pwani (Coast)	894	553	1,447
Dar Es Salaam	1,742	535	2,277
Iringa	2,303	477	2,780
Mbeya	3,351	2,054	5,405
Total	14,012	6,621	20,633

Source: Tanzania National Bureau of Statistics based on 2007/2008 figures, published 2012

Average Quantity Purchased per Year (KG) by farmers

Feed type	Quantity
Chick mash	1,476
Growers mash	3,486
Layers mash	3,384
Broilers mash	3,870
Broilers pellets	1,440

Source: SEAF-KASI Baseline Study

Total Amount of Feed Demand per Region (KG)

Region	Layer Mash	Broiler Mash
Arusha	1,881,504	1,981,440
Kilimanjaro	14,212,800	4,241,520
Morogoro	3,268,944	5,394,780
Pwani (Coast)	3,025,296	2,140,110
Dar Es Salaam	5,894,928	2,070,450
Iringa	7,793,352	1,845,990
Mbeya	11,339,784	7,948,980

Source: SEAF-KASI Baseline Study

Country-wide annual production per SME Feed Manufacturer		
	Layer Mash	Broiler Mash
Annual Average Production per SME	265,200	292,400

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