7.6 Market-oriented Horticulture for DADP Planning and Implementation

TSM 06

TECHNICAL SUPPORTING MANUAL

ON

MARKET-ORIENTED HORTICULTURE FOR DADP PLANNING AND IMPLEMETATION

(Draft)

"Market survey should come first…"

December 2015

DADP Planning and Implementation
Thematic Working Group
In collaboration with
Crop Development Division of MAFC and JICA-RADAG

Technical Support Manual for Marker-Oriented Horticulture
for DADP Planning and Implementation

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1. Introduction

1.1 Background

This manual is the end product of pilot activities in Lushoto DC for horticulture value chain development under JICA Technical Corporation, “Project for Strengthening the Backstopping Capacities for the DADP Planning and Implementation under the ASDP Phase 2” (hereinafter the Project). Lushoto DC has identified horticultural crops as a priority commodity in its DADP. Through the value chain analysis, the district found that there was a room for marketing by introducing the market-oriented approach for production. Lushoto DFT, with the support of Tanga RS, DADP P&I TWG and other stakeholders, implemented a series of interventions to improve horticultural value chain with focus on marketing. Based on the experience, this manual will provide guidance and practical examples on how to realize market-oriented horticulture in other LGAs. In implementing the activities and producing the material, substantial reference was made to Smallholder Horticulture Empowerment & Promotion (SHEP) approach promoted by JICA in Kenya and elsewhere in the world.

1.2 Objective

- To provide practical examples and information on how to introduce market-oriented horticulture for any other LGAs producing horticulture.
- To show a guidance on how to plan and implement the activities for market-oriented horticulture under DADP

1.3 Intended users

This manual is primarily intended for LGA officers (DFT) in the LGAs which plan to improve horticulture value chain with DADP.

1.4 Contacts for further information and questions

Whilst this manual is designed to deliver key message ad implementation tools to readers in a concise way, there is no denying that practioners may encounter needs for further information and questions on detailed part of implementation. In such case, readers are kindly requested to contact the following:

2. Overview of Market-oriented Horticulture

Why Market-oriented Horticulture?

Horticultural crops are high value nontraditional crops. They contribute not only to food security but also to improving health status of the people due to high nutritional value. They also tend to return higher values than many other crops. One unit of the land, when used to produce horticultural crops, may bring more income as compared to the case of producing other crops. Also the same weight or volume of horticultural crops tends to have higher values than others (e.g., maize in comparison with tomatoes or onions). Moreover, farmers as well as other people can benefit from both the domestic and export markets, thus having potential for wealth and employment creation.

Nevertheless, farmers often said that market was a significant problem. “Where can I sell these tomatoes?” they might say such a thing after harvesting them. Furthermore, some tend to argue, “I am ready to produce a lot of tomato if the government or donors can assure the market!” **NO, NO, and NO!!** This kind of mindset should be eradicated or replaced with the concept of Market-oriented Horticulture.

What is Market-oriented Horticulture?

Theory of Market-oriented Horticulture

Market-oriented Horticulture is the series of production activities starting with a market survey. Through discussion with buyers, farmers come to recognize which crops they have to produce and when/where to sell. If farmers can response to such needs of the market by improving production, marketing can no longer become a problem.

The roles of DFT/DADP are to assist farmers in realizing this theory. They can provide technical assistance for the improvement of production (e.g. off-season production and new crop development) as well as for the enhancement of marketing to attract new buyers to business with farmers.

How can we introduce it ?

The flow of activities is illustrated in the figure overleaf. It can be classified into the four stages, namely i) Market Survey, ii) Production Plan, iii) Production and Marketing and iv) Performance Review.

After the market survey, farmers or farmers’ groups prepare Production Plan, which

includes improvement elements of production, addressing to the needs of the market. Based on the plan, they are engaged in production and marketing. To this stage, DFT/DADP provides technical assistances, because making improvement entails risks. Once trials get success, the support from DFT/DADP will end, making farmers independent from supports of the government and donors.

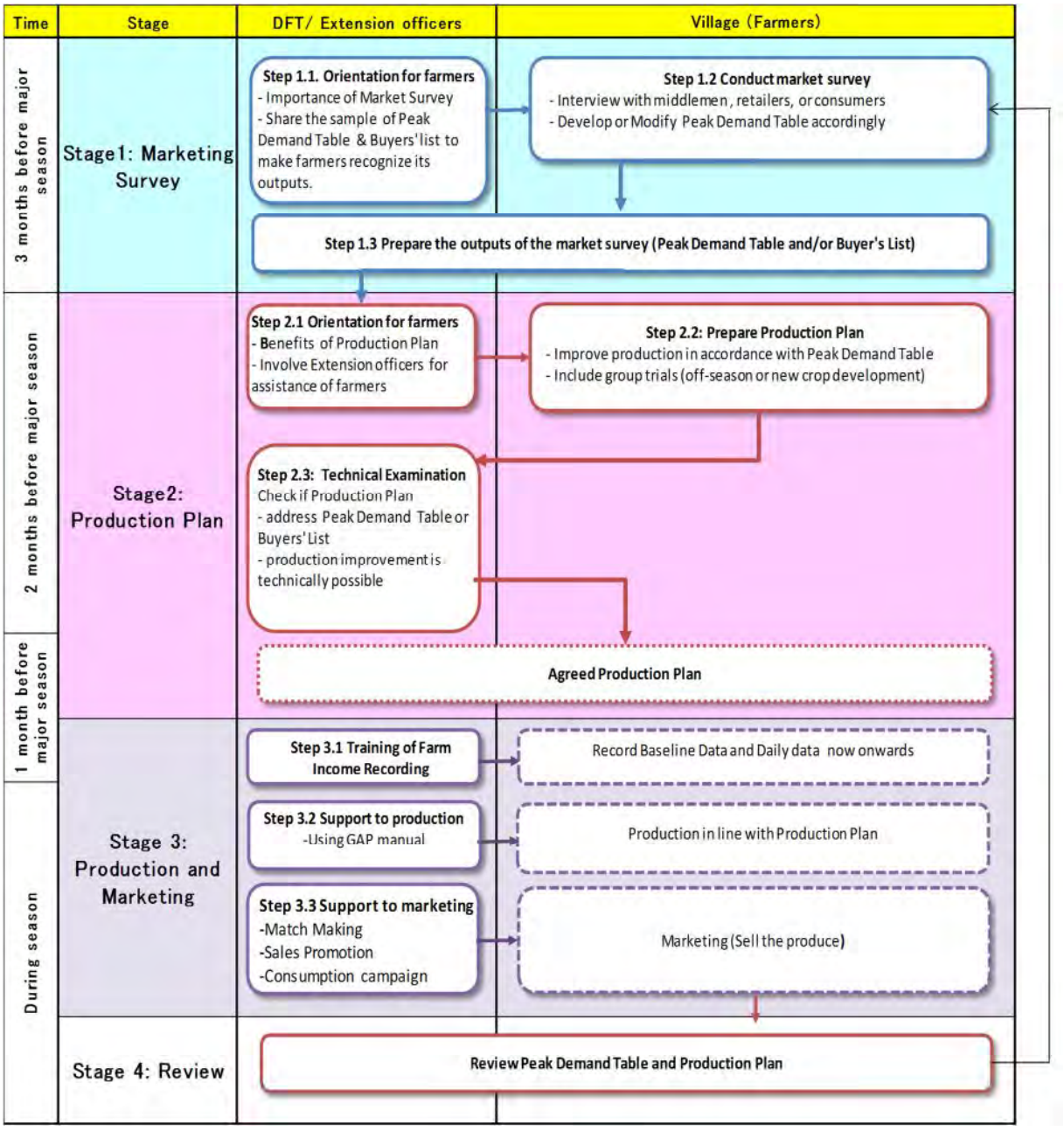


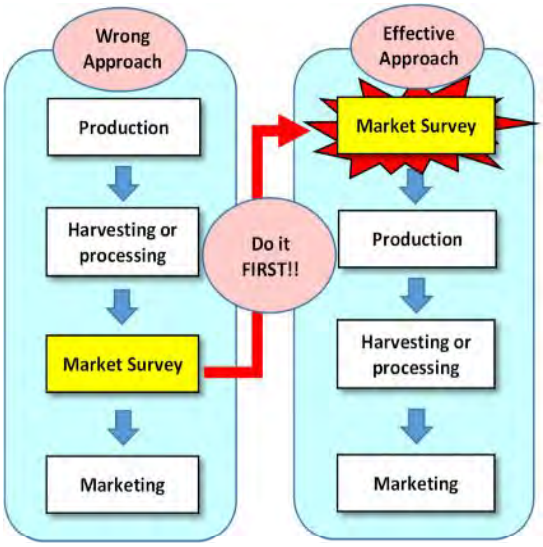
Figure: Overall Procures for Market-oriented Horticulture

The rest of this chapter indicates how to conduct activities/ steps in each stage.

Stage1. Market Survey

Why Market Survey?

When promoting agriculture along a value chain, marketing is the almost end of the process. But it does not necessarily mean that farmers can look for markets after finishing production. Rather it is crucial to know what the market needs first even prior to starting production. In other words farmers have to change their behavior from **'GROW AND SELL' to 'GROW TO SELL'.**



WHY Market Survey? Because it clarifies what the market demands including what to be produced, and how, when and where. This information should be reflected into production, processing and marketing.

<u>During the planning stage of DADPs, DFT should deliver this message to farmers, so as to include in DADP the market survey among others activities.</u>

How can we carry out?

Step 1.1: Orientation for farmers on Market Survey

DFT provides orientation to farmers as well as to extension officers. The orientation assists farmers in the following aspects:

1) Understanding the importance of market survey. It is not the government who has responsibility of assuring market for farmers. It is buyers who can tell farmers what they need and when/where. And knowing buyers' needs is the responsibly of producers (farmers);
2) Setting the clear objective of the survey. DFT can show farmers the sample output of the market survey. For example, **Peak Demand Table** or **Buyers' List** could be good outputs (See Annex 1-3 and 1-4). DFT can share the sample of these outputs with farmers at orientation, so that they have a clear picture of benefits from the market survey.
3) Determining target people to be interviewed (e.g. middlemen, processors, retailers, or consumers). This depends on business model. If the business is direct sale of vegetables, consumers can be targeted. If it is a direct delivery to retailers,

retailers could be surveyed. If it is on-farm production, middlemen or traders in the local markets could be interviewed.

4) Composing survey teams, including extension officers and DFT;
5) Developing a questionnaire addressing:

   - Types of products (e.g. fresh / processed ones, names of the varieties, etc.);
   - Price tendency (e.g. peak demand with high price, effects of import/ export);
   - Quantity required on demand and supply sides;
   - Quality requirements (e.g. size, packing, wash, varieties); and
   - Conditions for doing business with farmers (e.g. payment modes and the ways of delivering goods and services).

   See Annex 1-2 for the sample of a questionnaire

Note for Practice for the orientation of market survey:

<table>
<tr><td>Where</td><td>Village conference room or District office</td></tr>
<tr><td>Who</td><td>SMS on horticulture, trade officers or any other officers who has experience on marketing could be trainers for orientation.</td></tr>
<tr><td>To whom</td><td>Extension officers and farmers</td></tr>
<tr><td>When</td><td>2 weeks before the visit with consideration to the need for making appointments in advance</td></tr>
<tr><td>How</td><td>Using samples of the questionnaire, Peak Demand Table and Buyers' List (See Annex 1-2, 1-3 and 1-4).</td></tr>
<tr><td>Cost Implication</td><td>In case of visiting a village e.g. 50km from the town, the following cost will be needed.
<table>
<tr><th>Item</th><th>Unit cost (Tsh)</th><th>Q'ty</th><th>Sub-total (Tsh)</th></tr>
<tr><td>DSA (half)</td><td>30,000</td><td>2 DFT * 1 day</td><td>60,000</td></tr>
<tr><td>Fuel/ transportation</td><td>2,000</td><td>20 litters</td><td>40,000</td></tr>
<tr><td colspan="3">Total</td><td>100,000</td></tr>
</table>
</td></tr>
</table>

Step 1.2: Conduct market survey

In this step, it is the survey team created at Step 1.1, who undertakes the following:

1) Determining schedule for the survey.
2) Making appointment with target people.
3) Demarcate tasks among the members of the survey team with one for interviewing and one for taking notes.
4) Preparing logistics, including stationaries and printing out the questionnaire
5) Interview with them. The questionnaire could be a basis for discussion. But

Making appointment with potential buyers

flexibility should be maintained for smooth discussion.

Note for Practice for conducting market survey:

<table>
<tr><td>Where / to whom</td><td>Depends on where target farmers sell. For example,
✓ Retailers/ consumers for direct delivery / sale business
✓ Local market / Middlemen gathering place for farming</td></tr>
<tr><td>Who</td><td>Survey team composed of DFT/extension officers and farmers</td></tr>
<tr><td>When</td><td>Preferably 3 months before major season starts, depending on crop calendar</td></tr>
<tr><td>How</td><td>Using a questionnaire developed at Step 1.1</td></tr>
<tr><td>Tips</td><td>✓ Trial exercise of interviews could be useful in order to test the validity of a questionnaire
✓ In making schedule, it is very important to consider time of transportation. Avoid the delay of visiting time.
✓ See the lessons learned from Lushoto experience (See Annex 1-1).</td></tr>
<tr><td>Cost implication</td><td>The cost for the market survey depends on the location of interviewees, the number of team members and the time span of the survey
For example if the survey has two teams to visit retailers in major cities for 4 days, it may cost around Tsh 3 to 4 million, assuming that one team contain 1 DFT (or extension officers) and 2 farmers (or extension officers) (See the table below).

Table: Cost implication for market survey (to visit major city markets)
<table><tr><td>Item</td><td>Unit cost</td><td>Q'ty (1)</td><td>Q'ty (2)</td><td>Amount</td></tr><tr><td>DSA (DFT/ Extn.officers)</td><td>100,000</td><td>2 persons</td><td>3 days</td><td>600,000</td></tr><tr><td>DSA(farmers/ Extn.officers)</td><td>80,000</td><td>4 persons</td><td>3 days</td><td>960,000</td></tr><tr><td>Transport to cities</td><td>30,000</td><td>6 persons</td><td>2 ways</td><td>360,000</td></tr><tr><td>Transportation in cities</td><td>200,000</td><td>2 cars</td><td>4 days</td><td>1,600,000</td></tr><tr><td>Stationaries incl. photocopy</td><td>20,000</td><td>1 set</td><td></td><td>20,000</td></tr><tr><td colspan="4">Total</td><td>3,540,000</td></tr></table>But if the survey targets local market, the cost will be less than Tsh 1 million (See the table below).

Table: Cost implication for market survey (to visit local markets)
<table><tr><td>Item</td><td>Unit cost</td><td>Q'ty (1)</td><td>Q'ty (2)</td><td>Amount</td></tr><tr><td>DSA half (DFT/ Ex. officers)</td><td>50,000</td><td>2 persons</td><td>1 day</td><td>100,000</td></tr><tr><td>DSA half (Farmers/Ex. officers)</td><td>40,000</td><td>4 persons</td><td>1 day</td><td>160,000</td></tr><tr><td>Transportation</td><td>200,000</td><td>2 car</td><td>1 day</td><td>400,000</td></tr><tr><td>Stationaries incl. photocopy</td><td>20,000</td><td>1 set</td><td></td><td>20,000</td></tr><tr><td colspan="4">Total</td><td>680,000</td></tr></table>Where to visit depends on the business model in which target farmers are engaged.</td></tr>
</table>

Step 1.3 Prepare the output of the market survey

The survey team undertakes the following:

1) After interview, analyzing the data collected and finding potentials
2) Prepare a report including Peak Demand Table and/or Buyers List as outputs. Peak Demand Table is a table showing which month each vegetable/crop can fetch higher prices, while Buyers' list is a list showing the information of buyers e.g. names, contact numbers, their needs for vegetables in terms of season, prices and quantities (See Annex 1-3 for the sample of Peak Demand Table and 1.4 for the sample of Buyers' list).
3) Sharing the outputs with other farmers who did not participate in the survey e.g. other group members.

Note for Practice for preparing survey outputs:

Where	District offices
Who	Survey team
When	During or immediately after the market survey
How	Using the questionnaire and meeting memos taken during the interview.
Outputs	Reports including Peak Demand Table and/or Buyers' list.

Useful Materials

Annex 1-1: Lessons learnt from Lushoto DC experience
Annex 1-2: Sample of a questionnaire for market survey
Annex 1-3: Sample of survey output (Buyer's list)
Annex 1-4: Sample of survey output (Peak Demand Table)

Annex 1-1: Lessons learnt from Lushoto DC' experience

1. Background

Lushoto DC selected Irish potatoes and vegetables as priority commodities to promote value chain development. Their business model is direct delivery to retailers without involving middlemen. Yet it has been limited in selling their produce to major markets. It has been a major concern on how to expand the sales of direct delivery business.

Market Survey conducted by Lushoto DC

2. Objectives

Lushoto DC set the purpose of the Market Survey as follows

- Assessing the potentiality of regional markets i.e., Arusha, DSM, and Dodoma for direct delivery business; and
- Identifying weakness of Lushoto products
- Identifying new buyers

3. Activities undertaken

Lushoto DC has undertaken the following actions together with farmers.

Timing/2013	Activities undertaken
4th week of March.	Discussion of the purpose of the survey and target areas/ people Preparation of the survey schedule and detailed budget Preparation of the questionnaire
1st week of April	Organized the survey team with DFT, extension officers and farmers Made appointments with potential buyers
2nd week of April	Market Survey in Dodoma (Trial Survey)
3rd week of April	Reviewed findings of Dodoma
4th week of April	Market Survey done in Dar es Salaam and Arusha
May	Prepared report
June	Gave the Workshop Feedback

4. Outputs achieved

The following outputs were attained.

- **Finding on market potentiality**: it was found that Dar es Salaam was the most potential area for marketing with several buyers who are interested in doing business with farmers
- **Finding on the weakness of Lushoto products:** Retailers pointed out that the size of Irish potatoes from Lushoto tended to be smaller than those coming from other regions.
- **Buyers' list**: showed that supermarkets, restaurants and hotels, who are willing to buy vegetables directly from farmers.

5. Lessons learnt from the experience

The following are lessons learnt from the experience of the Lushoto DC

- The survey team should include an **English speaker.** This is because managers or procurement officers of supermarket, hotels, and restaurants are in many cases foreigners, e.g. South Africans and Indians.
- It is better to bring **sample vegetables**. Buyers are interested in the quality of the product. It is very important to show good samples of vegetabels in terms of freshness and size.
- It is better to have **a price list**. Or at least the survey team should put in mind price range prior to interview with buyers, so that discussion could be practical.

Showing samples of vegetables

List of Available Vegetables and Prices

Month/Year	Vegetables	Price (Tsh.)
May 2015	Broccoli	3,000 /Kg
	Carrots	2,000 /Kg
	Green paper	1,500 /Kg
	Dili (Spices)	3,000 /Kg
	Lettuce iceberg	2,000 /Kg
	Lettuce soft	2,000 /Kg
	Potatoes	1,000 /Kg
	Potatoes (medium)	800 /Kg
	Potatoes (babby)	1,200 /Kg
	Swiss chard	1,500 Kg
	Zucchini	1,500 /Kg
	Cauliflower	2,000 /Kg
	Coriander	4,000 Kg
	Red cabbage	1,500 /Kg
	cabbage white	800 /Kg
	Beatroots	1,500 /Kg
	Spring onions	4,000 /Kg
	Onion red	1,500 /Kg
	Onion white	2,000 /Kg
	Berternut	2,000 /Kg
	Basil	4,000 /Kg

Sample of Price List

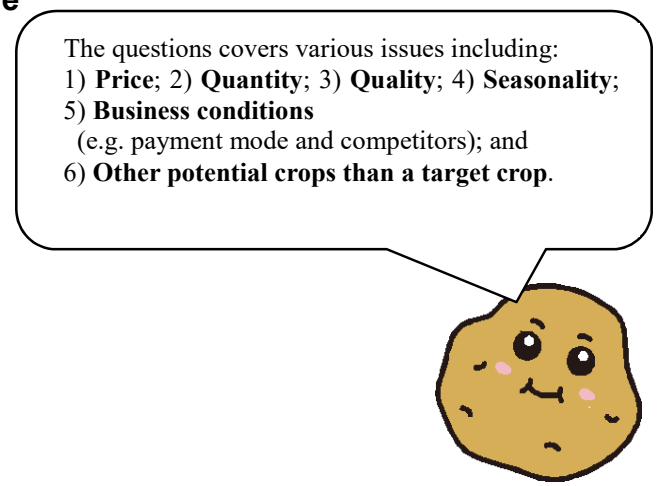
- **The market survey tells which kinds of training to be conducted for production and post-harvest handling**. Having received the comments from buyers on the size of potatoes, DFT discussed with farmers on how to improve it. It was found that farmers tend to do over-planting of seed tubers in a flat ground. DFT then conducted training to introduce appropriate plant population (proper spacing) and ridge making, which facilitates tuber expansion and hence the increase in the size of potatoes as well as in production and sales.

Before training

Training

After training
The size was made bigger, meeting market needs

Annex 1-2: Sample of Questionnaire



PART A

1.0: Name of the Buyer:

2.0: Region/Area:

3.0: Responsible Authority/person:

4.0: Communication mode: Mobile phone:
E-mail: Fax No:

5.0: List of crop products they buy (Amount (Kg) or Bags/week/month/Annual). If the unit is a bag or sack, identify how many Kgs per unit.

6.0: Quantity of products required by the buyer

7.0 Do you (the buyer) experience shortage of supply at any time (month) of a year (for the R/Potato and the other 2 vegetables)?

8.0: Quality required of the Round Potatoes and the other 2 vegetables (e.g. size, appearance, hard/soft, period possible to be stored, packing methods)

9.0: Possible buying prices for the major vegetables at the peak and off season demand period

10: Factors determine decisions on prices of the 3 products (e.g. seasonality, quality, quantity, shipping methods such as grading and packing)

11: Mode of payments for the product (Cash or check)

12: Business agreement/contract) for buying of the product

13: Ways that marketing information (Prices, demand etc) is obtained by the buyers

14: Who are the customers? ***(If at the general /central markets)***

15: Any other business/idea related to the discussion

PART B

Getting to know your business competitors is an important aspect in structuring ways of conducting your (Lushoto DC's) business:

1.0: Who are the other suppliers of the 3 products? (Ask to specify e.g. name, District) (Identify at least 1 rival for each product)

2.0: If they are more than one supplier for a product, what makes them different from each other?

3.0: How successful are they in supplying the product? (e.g. price, quality, quantity)

4.0: What are their high/low selling prices and when are high/low price seasons (i.e., seasonality)?

5.0: Do consumers think the selling prices are low, high or just right?

6.0: To what extent are they involved in advertising their products?

7.0: Do they have any special promotions? If so what type of promotion do they use?

8.0: Are their products or service known by their brand names?

9.0: How large is their sales power?

10: What are their distribution methods? (Do they use brokers, agents, wholesalers, sales people, direct marketing?)

11: What is their overall strength in the market for your opinion?

12: What are their overall weaknesses in the market for your opinion?

13: Suggestions for the district and farmers

Annex 1-3: Sample of survey output (Peak Demand Table)

JAN	FEB	MAR	APR	MAY	JUN	JULAI	AUG	SEPT	OCTO	NOV	DEC
	karoti	karoti									
	brokori	brokoi				brokori	brokori	brokori	brokori	brokori	brokori
	cowlflower	cowlflower				cowlflower	cowlflower	cowlflower	cowlflower	cowlflower	cowlflower
	Lettuce	Lettuce	Lettuce			Lettuce	Lettuce	Lettuce	Lettuce	Lettuce	Lettuce
	zukini	zukini		zukini	zukini	zukini	zukini	zukini	zukini	zukini	zukini
Viazi	Viazi	Viazi	Viazi	Viazi							Viazi
	Tomato	Tomato	Tomato	Tomato	Tomato						
Snowpeas	Snowpeas	Snowpeas	Snowpeas	Snowpeas	Snowpeas						Snowpeas
Beatroot	Beatroot	Beatroot	Beatroot	Beatroot							
			Green peppers	Green peppers	Green peppers						
		French beans	French beans				French beans	French beans			
Color peppers	Color peppers	Color peppers	Color peppers	Color peppers	Color peppers	Color peppers	Color peppers	Color peppers	Color peppers	Color peppers	Color peppers
Basil & Mint	Basil & Mint	Basil & Mint	Basil & Mint	Basil & Mint	Basil & Mint	Basil & Mint	Basil & Mint	Basil & Mint	Basil & Mint	Basil & Mint	Basil & Mint

Annex 1-4: Sample of survey output (Buyers' List): Findings based on the questionnaire

			Part A								Part B									
No.	Location	Buyers	Potential Products	Q'ty required	Shortage season	Quality required	Buying Price	Factors determine prices	Payment/ Business agreement	Remark	Rival Suppliers	Elements making difference	How Successful	Their price ranges	Consumers Feeling	Advertisement/ Promotion	How large their sale force	Distribution	Weakness/ Strengthens	Suggestion to Lushoto
1	UDOM	New Lucino Cafeteria.	Potato	1 bag (100-150kg)/ day	Oct. to Dec.	Big / high starch	55-65,000 / bag	Big / Lumbesa	Loan/ On-spot	They need promise & action.	No specific but from Njombe	-	Not so successful due to unreliability	55-65,000 / bag	Food prices determined by UDOM and Cafeterias	NA	NA	Procure from the central market	-	Ensure high quality and large volume, there should be a communication
	UDOM	New Lucino Cafeteria.	Cabbage	10 units/ day	June to Oct.	Big / Heavy	NA	Big / Lumbesa	Loan/ On-spot	They need promise & action.	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	UDOM	New Lucino Cafeteria.	Tomato	1 pyparus / day	Oct. to Dec.	Fresh/ Hard / No spot	30-40,000 / Pyparus	Hard/ Fresh	Loan/ On-spot	They need promise & action.	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2	UDOM	Chef Cafeteria Ltd.	Potato	2 bag (240-280kg)/ day	Dec to Feb	Big / Long storage / High starch/ Easy to cook (Njombe Image)	60-85,000/ bag	Big / Lumbesa	Loan/ On-spot	Suppliers not honest/ Unreliability of supply & price	No specific but from Njombe		Not so successful due to unreliability and mix with rotten ones/ Can not meet with demand	60,000 (NA) - 85,000 (Dec-Feb)	Food prices determined by UDOM and Cafeterias	-	All-year round with scarcity season from Dec to Jan.	Procure from the central market	Unstability / Lack of capital of the wholeselers and retailers	Honest. Timely action
	UDOM	Chef Cafeteria Ltd.	Cabbage	10 pieces/ day	June to Oct.	NA	NA	Big / Lumbesa	Loan/ On-spot	Suppliers not honest/ Unreliability of supply/price	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	UDOM	Chef Cafeteria Ltd.	Tomato	NA	June to Oct.	Fresh/ Hard / No spot	NA	Fresh/ Hard / No spot	Loan/ On-spot	Suppliers not honest/ Unreliability of supply/price	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3	UDOM	NALED Cafeteria and Catering Decoration Services	Potato	1-11/2bag(100-150 Kg)/day	Oct. to Dec.	Big size,Rich in starch,with no bends,using less oil,fully matured	50-70000/bag	Big / Lumbesa	Loan/ On-spot	Showed interest of the business as will hve cold room in nera future.Indicated inability of the current supliers	NA	NA	Not so successful as usually flactuates prices which affects stability of cafeteria services	50-70000/bag	Food prices determined by UDOM and Cafeterias	NA	Unable to satisfy the market. Deficit Oct. - Dec	Direct from market	Price flactuations,Lack of capital to retailers	Observe honest,stable suply,and quality
	UDOM	NALED Cafeteria and Catering Decoration Services	Cabbage	1/2 bag(30pcs)/day	June to Oct.	Big size and heavy(Not frequently used)	500-1500/pcs	Large,hard ,seasonality	Loan/ On-spot	Inneficient supply exists	NA	NA	Not so successful as usually flactuates prices which affects stability of cafeteria services	500-1500/pc	Food prices determined by UDOM and Cafeterias	NA	Unable to satisfy the market. Deficit Jun-Oct	Direct from market	Price flactuations,Lack of capital to retailers	Observe honest,stable suply,and quality
	UDOM	NALED Cafeteria and Catering Decoration Services(Informatics)	Tomato	NA	Feb to April	Fres,hard, no spots,average size (Rarely use,but tomato pastes)	30-120000/Tenga	Hard/ Fresh	Loan/ On-spot	Inneficient supply exists	NA	NA	Not so successful as usually flactuates prices which affects stability of cafeteria services	30-120000/tenga	Food prices determined by UDOM and Cafeterias	NA	Unable to satisfy the market. Deficit Feb-April+S7	Direct from market	Price flactuations,Lack of capital to retailers	Observe honest,stable suply,and quality
4	UDOM	TAJA Cafeteria	Potato	1bg(100Kg)/day	Jan-Feb	Big size,Rich in starch,,fully matured	50-130000/bag	Big size and Lumbesa	On-spot transaction	Ready to buy product at any time to the excepton of vacation time	No specific but from Njombe	Reliability of supply	Not so successful as usually flactuates prices which affects stability of cafeteria services	50-130000/bag	Food prices determined by UDOM and Cafeterias	NA	Unable to satisfy the market. Deficit Jun-Oct	Procure direct from the central market	Price flactuations,Lack of capital for wholesalers	Try to be honesty,ensure fulfillment of promises
			Cabbage	15-20pcs/day	June to Oct.	Big and heavy	500-1000/pcs	Big size and Lumbesa	On-spot transaction	Ready to buy product at any time to the excepton of vacation time	No specification	Reliability of supply	Not so successful as usually flactuates prices which affects stability of cafeteria	500-1000/pcs	Food prices determined by UDOM and Cafeterias	NA	Unable to satisfy the market. Deficit Oct-Dec	Procure direct from the central market	Price flactuations,Lack of capital for wholesalers	Try to be honesty,ensure fulfillment of promises
			Tomato	5buckets(75Kgs)/day	Oct. to Dec.	Fres,hard, no spots	30-40000/tenga	Hard/ Fresh	On-spot transaction	Ready to buy product at any time to the excepton of vacation time	No specification	Reliability of supply	Not so successful as usually flactuates prices which affects stability of cafeteria services	30-40000/tenga	Food prices determined by UDOM and Cafeterias	NA	Unable to satisfy the market. Deficit Oct-Dec	Procure direct from the central market	Price flactuations,Lack of capital for wholesalers	Try to be honesty,ensure fulfillment of promises

Stage2. Production Plan

Having identified market needs through Peak Demand Table and Buyers' List, the next step is to prepare Production Plan.

What is Production Plan?

Production Plan is a cropping calendar which shows target production and/or profits. It can be prepared at group and/or individual levels (See Annex 2-1 for group level and Annex 2-2 for individual level). The plan should entail improvement elements that can address market needs e.g. off-season production or new crop development, keeping in mind that price is always governed by supply and demand of goods or services. In accordance with this plan, DFT can make a plan for providing necessary supports e.g. technical training.

How can we make it?

Step 2.1: Orientation for farmers on Production Plan

DFT provides orientation to farmers. The orientation assists farmers in the following:

1) Understanding the importance of having Production Plan. The plan could be useful for farmers to set future target as a business entity and also for DFT and extension officers to recognize when and which crops they will support farmers. As the end of a season, they can review performance based on the plan. So the plan could be useful tool for monitoring and evaluation.
2) Understanding how Production Plan looks like. DFT can show farmers the sample of Production Plan, so that farmers have a clear picture of the Plan (See Annex 2-1 and 2-2).
3) Understanding how to make Production Plan. DFT can demonstrate it, by putting some examples. It is important to make farmers recognize the following important points:

   - Production Plan should reflect the results of the market survey e.g. by addressing Peak Demand Table and Buyers' List. This means that there must be difference what farmers are going to do with the plan and what they have done before.
   - Production Plan should have target values, preferably both in production and profit terms.
   - Production Plan should show time schedule (when and what). At least planting and harvesting times should be clearly indicated.

Note for Practice for the orientation of Production Plan:

<table>
<tr><td>Where</td><td>District or village conference room</td></tr>
<tr><td>Who</td><td>SMS on horticulture and cooperative officers</td></tr>
<tr><td>To Whom</td><td>Extension officers and farmers</td></tr>
<tr><td>When</td><td>Preferably 2 months before major season starts</td></tr>
<tr><td>How</td><td>Using samples of the Production Plan</td></tr>
<tr><td>Tips</td><td>✓ It is very important to involve extension officers, who can assist farmers in preparing Production Plan.
✓ After the orientation, extension officers and farmers can start preparation of Production Plan.</td></tr>
<tr><td>Cost implication</td><td>In case of visiting a village e.g. 50km from the town, the following cost will be needed per village.
<table>
<tr><th>Item</th><th>Unit cost (Tsh)</th><th>Q’ty</th><th>Sub-total (Tsh)</th></tr>
<tr><td>DSA (half)</td><td>30,000</td><td>2 DFT * 1 day</td><td>60,000</td></tr>
<tr><td>Fuel/ transportation</td><td>2,000</td><td>20 litters</td><td>40,000</td></tr>
<tr><td></td><td></td><td>Total</td><td>100,000</td></tr>
</table></td></tr>
</table>

Step 2.2: Prepare Production Plan

DFT and extension officers assist farmers in the following:

1) Developing cropping patterns
2) Including improvement elements (e.g. off-season production and new crop development) with consideration to Peak Demand Table and Buyers’ List.
3) Setting target values of income by conducting profitability analysis (See Annex 2-3 for sample).
4) Documenting the plan in paper and submitting it to DFT as draft
   See Annex 2-1 and 2-2.

Note for Practice for preparing Production Plan :

Where	Village conference room or farmers house
Who	Farmers with backstopping by Extension officers/ DFT
When	Preferably to be completed 1 month before major season starts
How	✓ Using samples of Production Plan (Annex 2-1), let farmers modify it. ✓ Preferably, one farmer can prepare Production Plan for major 3 crops. ✓ In the least case, one group, instead of individual farmers, can produce one Production Plan with focus on major commodities.
Cost implication	In case of visiting a village e.g. 50km from the town, the following cost will be needed for follow-up by DFT per village.

Item	Unit cost (Tsh)	Q'ty	Sub-total (Tsh)
DSA (half)	30,000	2 DFT * 2day	120,000
Fuel/ transportation	2,000	20 litters* 2 days	80,000
		Total	**200,000**

Step 2.3: Technical examination of the Production Plan

Having received draft Production Plan, DFT should examine the effectiveness of the plan in terms of:

1) Whether the plan include improvement elements e.g. off-season production, and new crop development, considering to Peak Demand Table and Buyers' List.
2) Whether such improvement elements (off-season production or new crop development) can be technically feasible with the support from DFT/ DADP. If DADP supports trial production, it will be possible to produce and return profits? This examination is very important because after the trail, farmers can be independent by using own resources for continuing improved techniques.
3) In case of supporting trial production through cost-sharing, whether the cost portion to be undertaken by DADP is appropriate or not (See Annex 2-3 for sample).

Note for Practice for technical examination:

Where	District office
Who	SMS horticulture
When	1 month before major season starts
How	✓ Examine if Improvement (e.g. off-season production and new crop development) is to be made with reference to Peak Demand Table ✓ Examine if improvement can be technically feasible with support from DFT/DADP on trial basis

Useful Materials

Annex 2-1: Sample of Production Plan (for Group trail)

Annex 2-2: Sample of Production Plan (for individual members)

Annex 2-3: Sample of Profitability Analysis for Cost-sharing

Annex 2-1: Sample of Production Plan (for Group Trial)

JINA LA KIKUNDI	Zao	Jan.	Feb.	Machi	Aprili	Mei	Juni	Julai	Agosti	Septe.	Oktoba	Nove.	Dece.
ABC Group	Kabeji				Kupanda			Kuvuna					
	Viazi						Kupanda	Kupalilia	Kuweka mbolea				Kuvuna

Zao	A) Mavuno tarajiwa	B) Mapato	C) Ghalama	Mapato Halisi =B)-C)	JUMLA
Kabegi	20 Magunia	Tsh 1,100,000	Tsh 300,000	Tsh 800,000	Tsh. 1,750,000
Viazi	20 Magunia	Tsh 1,400,000	Tsh 450,000	Tsh 950,000	

kipindi cha kuvuna lazima kikutane na kipindi cha mahitaji (Peak Demand) !!

Annex 2-2: Sample of Production Plan (for Individual members)

Ratiba ya Kilimo na Mpango wa Uzalishaji kwa Mwaka 2015

Jina la Kijiji

No	JINA	Jan.	Feb.	Machi	Aprili	Mei	Juni	Julai	Agosti	Septe.	Oktoba	Nove.	Dece.	Zao	A) Mavuno tarajiwa	B) Mapato	C) Ghalama	Mapato Halisi =B)-C)	JUMLA
1	Mr. AAA			Kuvuna	Kupanda (Planting)		Kupanda	Kubuna (Harvesting)					Kuvuna	Brocoli	500 kg	Tsh 1,250,000	Tsh 300,000	Tsh 950,000	Tsh 2,700,000
														Kabegi	20 Magunia	Tsh 1,100,000	Tsh 300,000	Tsh 800,000	
														Viazi	20 Magunia	Tsh 1,400,000	Tsh 450,000	Tsh 950,000	
2																			
3																			
4																			

kipindi cha kuvuna lazima kikutane na kipindi cha mahitaji (Peak Demand) !!

Annex 2-3: Sample of Profitability Analysis for Cost-sharing

TRIAL PRODUCTION BUDGET FOR ZUCCHINI – BOHELOI

Land size: 35x18 M2

Plant population: 2625

Spacing: 40cmx60cm

Planting to Harvest Period: December 2015 – March 2016

ACTIVITY	COST SHARE	QUALITY	COST PER UNIT	TOTAL COST
Land preparation				
• Land	Farmer	2x2days	5,000	20,000
Cultivation(labour)	Farmer	2x1day	5,000	10,000
• Making ridges				
Fertilizers				
• Yaramilar	DADP	5kgs	1,600	8,000
winner(planting)	DADP	5kgs	1,600	8,000
• Nitrabor	DADP	5kgs	1,600	8,000
• Magnesium	DADP	5kgs	1,500	7,500
• Calcinity	DADP	5kgs	1,500	7,500
• Map	Farmer	25 buckets	300	7,500
• Farm yard manure(growing)				
Seeds (hybrids)	DADP	50gm(hybrid)	30,000	30,000
Planting	Farmer	1x2days	4000	8,000
Fungicides	DADP			
-Super kinga	DADP	2Kgs	6,000	12,000
- Pesticides (Actara)/super cron)	DADP	100mls	12,000	12,000
Weeding	Farmer	2trips	5000	10,000
Watering	Farmer	7trips	2000	14,000
1. TOTAL COST				**162,500**
2. Expected yield			**500Kgs**	
3. Expected price per Kg			**TZS 800**	
4. Expected Total Sales(2x3)				**TZS 400,000**
5. Expected Profit (4 – 1)				**TZS 237,500**

Stage3. Production and Marketing

This stage deals with the implementation of activities, which include record keeping, support to production improvement and support to marketing.

Step 3.1: Training of Farm Income Recording

Based on Production Plan, farmers are to enter implementation stage. Prior to entering season, however, it is strongly recommended to make farmers recognize the importance of keeping records by themselves.

DFT undertakes the following:

1) Training extension officers on how to conduct Farm Income Recording. The format for Farm Income Recording with sample illustration is available in Annex 3-1. DFT can modify the format as required.
2) In order to fill up the format (Annex 3-1), it would be necessary to keep data on daily basis. So in addition to Annex 3-1, DFT can introduce daily record format (Annex 3-2).
3) Train farmers, through extension officers, on how to fill up the format
4) Collect data, through extension officers, after farmers fill up.

Note for Practice for training of Farm Income Recording:

<table>
<tr><td>Where</td><td>District office / Village office</td></tr>
<tr><td>Who</td><td>Cooperative officer</td></tr>
<tr><td>To Whom</td><td>Extension officers and farmers</td></tr>
<tr><td>When</td><td>Before major season starts</td></tr>
<tr><td>How</td><td>✓ Using the format and sample illustration (Annex 3-1 and 3-2)
✓ Training extension officers who can assist farmers in recoding data
✓ To measure the land size, use 10m-length string or measure by foot</td></tr>
<tr><td>Cost implication</td><td>In case of visiting a village e.g. 50km from the town, the following cost will be needed for 1 days training and 2 days of follow-up by DFT.
<table>
<tr><th>Item</th><th>Unit cost (Tsh)</th><th>Q’ty</th><th>Sub-total (Tsh)</th></tr>
<tr><td>DSA (half)</td><td>30,000</td><td>2 DFT * 3day</td><td>180,000</td></tr>
<tr><td>Fuel/ transportation</td><td>2,000</td><td>20 litters* 3 days</td><td>120,000</td></tr>
<tr><td colspan="3">Total</td><td>300,000</td></tr>
</table></td></tr>
</table>

Useful Materials

Annex 3-1: Format of Farm Income Recording with sample illustrations
Annex 3-2: Format of Daily Record Keeping

Step 3.2: Support to trial production for improvement

Farmers are engaged in production based on Production Plan, which has improvement elements such as off-season production or new crop development. Due to the fact that such improvements entail risks for farmers, it is DFT/DADP which can support the farmers, at least, at trial stage. If succeeded at trial and farmers enjoy higher profits than before, they may use their own resources from the next time onwards, gaining independence from DFT's supports.

DFT can support farmers in the following aspects

1) Development of farm budget or profitability analysis (See Annex 3-1 Farm Income Recording for farm budget and Annex 2-3 for profitability analysis)
2) Support some portions of inputs such as seeds and fertilizers
3) Technical training on improved technologies, such as tray-nursing or mulching, which can assure making improvements happen.
4) Field monitoring, through extension officers.

Note for Practice for trial production:

Where	At field / on-farm
Who	SMS on horticulture can be a trainer
Whom	Extension officers and farmers
When	According to Production Plan
How	✓ Estimate cost and profits with farm budget/profitability analysis ✓ Cost sharing with farmers based on the estimation ✓ Using the GAP manual prepared by MAFC/FAO (to select best technologies to make improvements).
Cost implication	The cost of technical support to production depends on which crops and technologies farmers will adopt. ➢ To support some of inputs for trial production, it may range from Tsh 300,000 to Tsh 500,000 per acre, involving 5 to 6 farmers. ➢ With respect to Technical Training, the cost may be similar to that of Farm Income Recording (Tsh 300,000 per village).

Useful Materials

- ✓ Good Agricultural Practice (GAP) for Horticultural Crops Production in Tanzania Extension Training Manual (MAFC/FAO)
- ✓ Mbinu Bora za Kilimo cha Mazao ya Bustani (MBOKIMBU) Mwongozo wa Wakulima (MAFC/ FAO)

To obtain the manuals above, please contact

Step 3.3: Support to marketing

Once the production is done in accordance with Production Plan, there must be no problem. This is because Production Plan has reflected the needs of the market, which were identified by the market survey. While the theory above can hold without posting risks in marketing, there are other useful techniques/ activities to support farmers' marketing. It may be worth conducting them, considering the fact that farmers face difficulties of entering business, especially with new buyers, even though they produce what the market requires. Following are some activities to support marketing as well as other aspect of operations.

1) <u>Match-making</u>

Match-making is referred to as an activity to introduce farmers to stakeholders (e.g. input dealers and buyers) with the aim of building business relation/linkage between them. It is an effective intervention to create enabling environment for farmers to look for business partners.

Remember that for agri-business, buyers tend to look for reliable producers (i.e. farmers) all the time. DFT often receives enquiries from buyers, "Where are good farmers?" In such a case match-making is quite effective. DFT can play the catalyst role for communication between buyers and farmers.

DFT can undertake the following

- Preparing the list of farmers' groups or making the group prepare a profile, so that any occasion comes, DFT can provide the list or profile to buyers.
- The list or the profile should address the name of the representative, contact number and email address if any, business, experience, cropping calendars of major commodities, price list if they have.
- Identify potential stakeholders for farmers in doing business.
- Introducing not only buyers but also other stakeholders on the value chain, which include input dealers and financial institutions (See Box below)

Box: Good Practice of match-making

In Lushoto DC, many farmers faced the little availability of quality inputs, including fertilizers. The lack of reliable inputs arguably resulted in low yields and quality of the products. On the other hand, major buyers in Dar tend to seek "cold chain" from farm fields. However the farmers' group did not have a cold truck, even capital to procure it. While the farmers requested financial assistance through DADP, DFT carried out match-making to identify collaborators.

Results of Match-making:

- **Private-Public Partnership (PPP)**: The fertilizer company, YARA, intended to sell their fertilizer in the district. Demo plots for Irish potato were established through collaboration with YARA, which provided fertilizers and technical experts for training, while DFT mobilized farmers for the training.
- **Access to Finance**: Through match-making with financial institutions, DFT recognized that there was need to support farmers in obtaining customary titled deeds and audit report in order to apply loans. The farmers' group is now applying the loan to a bank, with such efforts made by DFT.

Demo plots with a fertilizer company

Introducing Farmers group to Financial institutions

Note for Practice for match-making:

Where	Any place where stakeholders operate
Who	DFT
For whom	To build business relation between farmers and stakeholders e.g. buyers, input dealers and banks.
When	Anytime during planning and implementing DADPs/ When farmers needs partners for business
How	✓ Preparing group profile ✓ Identifying potential buyers and other stakeholders for farmers ✓ Introducing farmers to the buyers and other stakeholders
Cost implication	When visiting potential stakeholders, DSA and transportation costs will be required.

2) Sales promotion

By nature of human relationship, there is general tendency that once sellers and buyers start business, they are highly likely to maintain the relation. This means that how to become a business partner is the first and most difficult thing to tackle.

Sales promotion is a technique to attract new buyers, by offering special treatments to them, such as using special discounted price and adding quantities or products more than normal business (e.g. Buy 1 Get 1 Free).

For sales promotion, DFT/DADP can subsidize the price of products, so that farmers can offer effective prices to new buyers. Or they can buy products from farmers and distribute them to potential buyers. It is also important to capacitate farmers for applying this technique with their own resources (make them consider how much they can do this while maintain reasonable profits).

Note for Practice for sales promotion:

To whom	Buyers (e.g. middlemen and retailers)
Who	Farmers or Farmers' group with support from DFT
When	When farmers intend to obtain new buyers
How	✓ Subsiding prices or offering additional produces to buyers ✓ Making advertisement (See Annex 3-3 for sample) ✓ Making farmers understood mechanism of subsidized price
Cost implication	The cost of sales promotion can be calculated as follow. ✓ Assume that DFT/DADP supports 30% of the price of potatoes that farmers offer to retailers. If the market price of potato to retailers is Tsh 1,000 /kg and the subsidized part is Tsh 300 / kg, then a farmers' group can offer Tsh 700/ kg to potential retailers instead of Tsh1,000 /kg. ✓ If 10 new retailers are targeted with such discounted price applied up to 100 kg per retailer, the total volume for promotion is 1,000 kg. The total cost become **Tsh 300,000** (= Tsh 300 / kg x 1,000 kg). Remember that it is very important to estimate the reasonable range of the subsidy. Price should not be too high but not be too low as well, so as to make farmers do with their own resources future.

Useful Materials

Annex 3-3 Samples of advertisement for sales promotion

3) Consumption Campaign

Consumption campaign is an activity to promote consumers for more consumption of a commodity in question. It is different from sales promotion in that it directly talks with end-users or consumers rather than buyers, with expectation that the demands from consumers increase, the demand from buyers will also increase. This activity is particularly important for vegetable VC, since the consumption of vegetable by people in the nation is still low, which limits the demand for market.

Note for Practice for Consumption Campaign:

<table>
<tr><td>To whom</td><td>Consumers and buyers</td></tr>
<tr><td>Who</td><td>Farmers or Farmers' group with support from DFT</td></tr>
<tr><td>Where</td><td>Anywhere e.g. area that have potential as new market for farmers</td></tr>
<tr><td>When</td><td>Anytime e.g. at the time of exhibition or market day</td></tr>
<tr><td>How</td><td>DFT can undertake the following:
A) Prepare materials that argue the importance of consuming vegetables for health (e.g. nutrition education). See the attachment.
B) Assisting farmers in cocking new cuisines/ recipe, which attract consumers and make them recognize how they enjoy eating
C) Inviting consumers and buyers who supply to the consumers
D) Preparing the profile of farmers' groups, so that if consumers or buyers intend to buy, they can start a smooth discussion for business.
E) Preparing the venue for the campaign. If the program include cooking, it is better to use a place where cooking is possible or to support cooking materials</td></tr>
<tr><td>Cost implication</td><td>The cost implication is as follows with assumption that the campaign is held one day in a city where market potential exists.
<table>
<tr><th>Item</th><th>Unit cost</th><th>Q'ty (1)</th><th>Q'ty (1)</th><th>Amount</th></tr>
<tr><td>DSA (DFT/ Extn.officers)</td><td>100,000</td><td>2 persons</td><td>3 days</td><td>600,000</td></tr>
<tr><td>DSA(farmers/ Extn.officers)</td><td>80,000</td><td>4 persons</td><td>3 days</td><td>960,000</td></tr>
<tr><td>Transportation</td><td>30,000</td><td>6 persons</td><td>2 ways</td><td>360,000</td></tr>
<tr><td>Cooking materials</td><td>200,000</td><td>1 set</td><td></td><td>200,000</td></tr>
<tr><td>Media</td><td>100,000</td><td>1 set</td><td></td><td>100,000</td></tr>
<tr><td>Veg & fruits for cooking</td><td>300,000</td><td>1 set</td><td></td><td>300,000</td></tr>
<tr><td colspan="4">Total</td><td>2,520,000</td></tr>
</table></td></tr>
</table>

Useful Materials

Attachment: Samples of consumption campaign materials (Our hero POTE-KING!!)

Annex 3-1 Format of Farm Income Recording

Ghalama za uzalishaji na Mapato

Zao:__________________
Eneo:_____________(Ekari [ ] or M^2 [ ])
Kipindi cha Msimu:_________**hadi**________

Shughuli	Gharama
Maandalizi ya shamba	
Ununuzi wa mbegu	
Mbolea ya kupandia na gharama za uwekaji	
Kupanda/kusia/kuotesha	
Palizia-mara 2 au 3	
Kumwagilia-mara 3 au 5	
Mbolea ya kukuzia na gharama za uwekaji	
Madawa ya wadudu na magonjwa na unyunyuziaji mara 2 au 4	
Gharama za vifaa vya kuvunia	
Gharama za kuvuna	
Ghrama za ufungashaji	
Usafirishaji	

Zao:__________________
Eneo:_____________(Ekari [ ] or M^2 [ ])
Kipindi cha Msimu:_________**hadi**________

Shughuli	Gharama
Maandalizi ya shamba	
Ununuzi wa mbegu	
Mbolea ya kupandia na gharama za uwekaji	
Kupanda/kusia/kuotesha	
Palizia-mara 2 au 3	
Kumwagilia-mara 3 au 5	
Mbolea ya kukuzia na gharama za uwekaji	
Madawa ya wadudu na magonjwa na unyunyuziaji mara 2 au 4	
Gharama za vifaa vya kuvunia	
Gharama za kuvuna	
Ghrama za ufungashaji	
Usafirishaji	

Zao:__________________
Eneo:_____________(Ekari [ ] or M^2 [ ])
Kipindi cha Msimu:_________**hadi**________

Shughuli	Gharama
Maandalizi ya shamba	
Ununuzi wa mbegu	
Mbolea ya kupandia na gharama za uwekaji	
Kupanda/kusia/kuotesha	
Palizia-mara 2 au 3	
Kumwagilia-mara 3 au 5	
Mbolea ya kukuzia na gharama za uwekaji	
Madawa ya wadudu na magonjwa na unyunyuziaji mara 2 au 4	
Gharama za vifaa vya kuvunia	
Gharama za kuvuna	
Ghrama za ufungashaji	
Usafirishaji	

KWA MWAKA 201#

I. Zao	Msimu uliopanda	1) Eneo Ulilolima		2) Jumla ya Uzalishaji		3)) Kiasi kilichouzwa		4) Wastani wa Bei / kipimo	5) Mapato = (3 x 4)	8) Ghalama za uzalishaji	9) Mapato Halisi =(7 – 8)
		Kipimo	Eneo	Kipimo	Idadi.	Kipimo	Idadi	Tsh	Tsh	Tsh	Tsh
1. Viazi		Ekari [v] M^2 [ ]		Magunia	15	Magunia	15	55,000			
2.		Ekari [ ] M^2 [ ]									
3.		Ekari [ ] M^2 [ ]									
4.		Ekari [ ] M^2 [ ]									
5.		Ekari [ ] M^2 [ ]									
II Biashara nyingine											Mapato Halisi
1.											
2.											
3.											
JUMLA (= Mazao + Biashara nyingine)											

SAMPLE on how to fill up

1 Jaza Jedwali hapo chini Kulingana na mwaka jana (Januari.- Desemba. 2013)

Zao: **Kabegi**
Eneo: **0.5** (Ekari [√] or M^2 [ ])
Kipindi cha Msimu: **Oktoba 2012 hadi Machi 2013**

Shughuli	Gharama
Maandalizi ya shamba	**25,000**
Ununuz	**25,000**
Mbolea za uweka	**55,000**
Kupanda/kusia/kuotesha	**25,000**
Palizia-mara 2 au 3	**40,000**
Kumwagilia-mara 3 au 5	**10,000**
Mbolea ya kukuzia na gharama za uwekaji	**15,000**
Madawa ya wadudu na magonjwa na unyunyuziaji mara 2 au 4	**15,000**
Gharama za vifaa vya kuvunia	**10,000**
Gharama za kuvuna	**15,000**
Ghrama za ufungashaji	**15,000**
Usafirishaji	**15,000**

Write both Month and Year.

Zao: **Viazi**
Eneo: **0.5** (Ekari [√] or M^2 [ ])
Kipindi cha Msimu: **Aprili 2013 hadi Oktoba 2013**

Shughuli	Gharama
Maandalizi ya shamba	**25,000**
Ununuzi wa mbegu	**80,000**
Mbolea ya kupandia na gharama za uwekaji	**75,000**
Kupanda/kusia/kuotesha	**25,000**
Palizia-mara 2 au 3	**60,000**
Kumwagilia-mara 3 au 5	**10,000**
Mbolea ya kukuzia na gharama za uwekaji	**20,000**
Madawa ya wadudu na magonjwa na unyunyuziaji mara 2 au 4	**20,000**
Gharama za vifaa vya kuvunia	**10,000**
Gharama za kuvuna	**15,000**
Ghrama za ufungashaji	**15,000**
Usafirishaji	**20,000**

Zao: **Brocoli**
Eneo: **0.25** (Ekari [√] or M^2 [ ])
Kipindi cha Msimu: **Machi 2013 hadi Juni 2013**

Shughuli	Gharama
Maandalizi ya shamba	**20,000**
Ununuzi wa mbegu	**25,000**
Mbolea ya kupandia na gharama za uwekaji	**45,000**
Kupanda/kusia/kuotesha	**25,000**
Palizia-mara 2 au 3	**40,000**
Kumwagilia-mara 3 au 5	**10,000**
Mbolea ya kukuzia na gharama za uwekaji	**15,000**
Madawa ya wadudu na magonjwa na unyunyuziaji mara 2 au 4	**15,000**
Gharama za vifaa vya kuvunia	**10,000**
Gharama za kuvuna	**15,000**
Ghrama za ufungashaji	**20,000**
Usafirishaji	**15,000**

2 Uzalishaji na Mapato

TAARIFA ZIWE KABLA YA MAFUNZO (Januari – Decemba 2013)

I. Zao	Msimu uliopanda	1) Eneo Ulilolima		2) Jumla ya Uzalishaji		3)) Kiasi kilichouzwa		4) Wastani wa Bei / kipimo	5) Mapato = (3 x 4)	6) Ghalama za uzalishaji	7) Mapato Halisi =5) -6)
		Kipimo	Eneo	Kipimo	Idadi.	Kipimo	Idadi	Tsh	Tsh	Tsh	Tsh
2. Kabegi	Oktoba2012 Machi2013	Ekari [√] M² [ ]	0.5	Magunia	17	Magunia	17	45,000	675,000	270,000	405,000
3. Viazi	Aprili-2013 Oktoba2013	Ekari [√] M² [ ]	0.5	Magunia	15	Magunia	15	55,000	825,000	360,000	465,000
4. Brocoli	Machi2013 Juni 2013	Ekari [√] M² [ ]	0.25	Kg	400	Kg	390	2,000	780,000	270,000	510,000
5.		Ekari [ ] M² [ ]									
5.		Ekari [ ] M² [ ]									
II Biashara nyingine											Mapato Halisi
1.Mgahawa wa kahawa		Mtaji Tsh 20,000 Mauzo 50,000		Mapato = (50,000 – 20,000)= 30,000							30,000
2.											
3.											
JUMLA (= Mazao + Biashara nyingine)											1,410,000

Data must come from 1

Annex 3-2 Format for Daily Record Keeping

Kumbukumbu za kila siku kwa mwaka 2015

Kijiji: _____

Jina: _____ **Kundi:** _____

Na.	Tarehe	Maelezo	Mapato	Matumizi	Salio	zao
	Jan 02	Manunuzi ya mbegu za nyanya		10,000	-10,000	Nyanya
	Jan 05	Manunuzi ya mbegu za Kabichi		5,000	-15,000	Kabichi
	Jan 12	Manunuzi ya Mbolea		15,000	-30,000	Nyanaya na Kabichi
	Mar 10	Mauzo ya nyanya	50,000		20,000	Nyanya
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						

MFANO

Annex 3-3: Sample of advertisement for sales promotion

Potato Promotion

Enjoy a HALF price of fresh Irish potatoes!!

Tsh 1,000 / kg

NOW Tsh 500 / kg

Upon conditions that

With this discounted price, you can order up to 200 kg;

This discount can be applied when you buy other vegetables more than Tsh 50,000 from us;

Please, through this promotion, consider the possibility of doing business with us (i.e. please give us the feedback or the chance of negotiation); and

This promotion campaign will end without prior notice, if the total order reaches 1,000 kg. So don't miss it. No time to hesitate.

We are: RUVEK Group

Order or Inquiry to:

Mobile: 0123-456789 (Mr. ABC for Kiswahili) or

Email: efghi@XXX.com for English and Kiswahili

Stage4. Performance Review

Having undergone all of the process delineated above (from Stage 1 to 3), the final stage of Market-oriented Horticulture is performance review.

DFT can see the improvement of income through Farm Income Recording. As explained at the beginning of this manual, there is no shortcoming in the theory, which starts with market survey. If the performance is not improved, this means that there must be something wrong in practice. Performance review should be undertaken on the basis of this understanding.

DFT should undertake the following

1) Collect data, through extension officers, from farmers who have received Training of Farm Income Recording (Step 3.1)

2) Analyzing data and compare them with the baseline. If performance is improved, it would be OK. DFT may be able to take-off their hands from target farmers and to sift supports to other farmers.

3) If performance is not improved, identify what were reasons why farmers could not sell the commodity well. Following are some clues for further analysis.

	Case 1	Case 2
Phenomenon for failure	Buyers did not buy because they did not need it at the time of selling.	Buyers did not buy because the quality was not good or the quantity was too small.
Possible reason	Mistakes in market survey Misinterpretation of market needs in terms of season or of quantity.	Mistakes in production improvement Improved technology did not work at field. Farmers did not practice what they have learned
What to be done	Re-do the market survey	Examine: if the improved technologies are valid or if farmers practiced it and extension officers did monitoring.

4) Having identified possible reasons and things to be done, DFT provide feedback to farmers as well as extension officers.

Note for Practice for the performance review:

Where	District office or village offices
Who	Cooperative officers
When	After a major season ends or the season of target commodities end

How	✓ Using data kept by farmers (data from Farm Income Recording) ✓ Examine if performance is improved or not. And if not, identify possible reasons and actions to be undertaken. ✓ Feedback to farmers and extension officers

3. Implications for DADP Planning and Implementation

In ASDP2, DADP should be strategic in resource utilization and comprehensive in resource mobilization. In the simplest understanding, this means that DADP should focus on the value chain development of priority commodities, by mobilizing resources from various actors. As far as Market-oriented horticulture is concerned, following are implication for DADP planning and implementation.

For planning DADP

Market-oriented horticulture is an approach for value chain developement

Un-debatably, Market-oriented horticulture is in line with value chain approach. It starts with market survey and then improves production, including post-harvesting, in accordance with market needs. As such, it has true elements of value chain development. Hence where horticultural crops are selected as priority commodities, Market-oriented horticulture could be introduced.

For commodity selection

Market survey can be a strong tool for commodity selection in horticulture, which contains many crops in one category. For the LGAs who have already selected a specific crop (e.g. tomato), market survey can be done with focus on the crop in question. However, flexibility to accommodate non-target crops should be maintained in the survey. More often than not, development could happen with minor corps which many farmers have no/little experience of cultivating.

Manageable size for operation

Based on the experience of Lushoto DC, it is found that the manageable size for operation in one year could be 3 or 4 groups of 10-20 farmers. Farmers groups are **important for both to enhance bargaining power** and consistence supply. Those farmers are targets of Farm Income Recording contributing to M&E of the project. On the other hand, the finding of the market survey or improved technologies that address market needs could be disseminated more widely than to those farmers. They are also beneficiaries of Market-oriented Horticulture.

For planning activities in DADP

Include the market survey in DADP

Empirical observation on previous DADPs illuminates the fact that there have been many LGAs that planned the provision of training for extension officers and farmers on production techniques, while pointing out that marketing was still bottleneck for them.

If so, this manual suggests that DFT plan the market survey first in DADP. This may lead DFT and farmers as well to recognize which kinds of technologies should be introduced for production improvement

Consider activities for marketing and implementation for value chain development

With due consideration to value chain development, it is important to plan activities that can address connectivity between one stage and another. Production stage in the chain, where farmers are operating, must be connected with input stage as well as with processing or marketing stage. In this regard, Equal importance should be put on production and other aspects. Since hitherto DADP is much oriented on production, improvement. It is highly suggested to consider activities other than it, including **training of Farm Income Recording, match-making, sales promotion, and consumption campaign.**

For implementation of DADP activities

More focus on follow-up with extension officers

In the approach of Market-oriented Horticulture, much effort will be made at field/ village level where extension officers are operating, e.g. for Production Plan, Farm Income Recording and production improvement. Hence, involvement of extension officers is a critical element for success. Daily communication by phone, more frequent visits to fields, and appreciation to their works are things to be taken care. Resource and time allocation should be made to follow-up rather than to only one-time big event of workshop.

Our Hero POTE-KING!!

Lushoto DC
with support from
JICA-RADAG

1

Long-long time ago, there was one village called " Usambara".

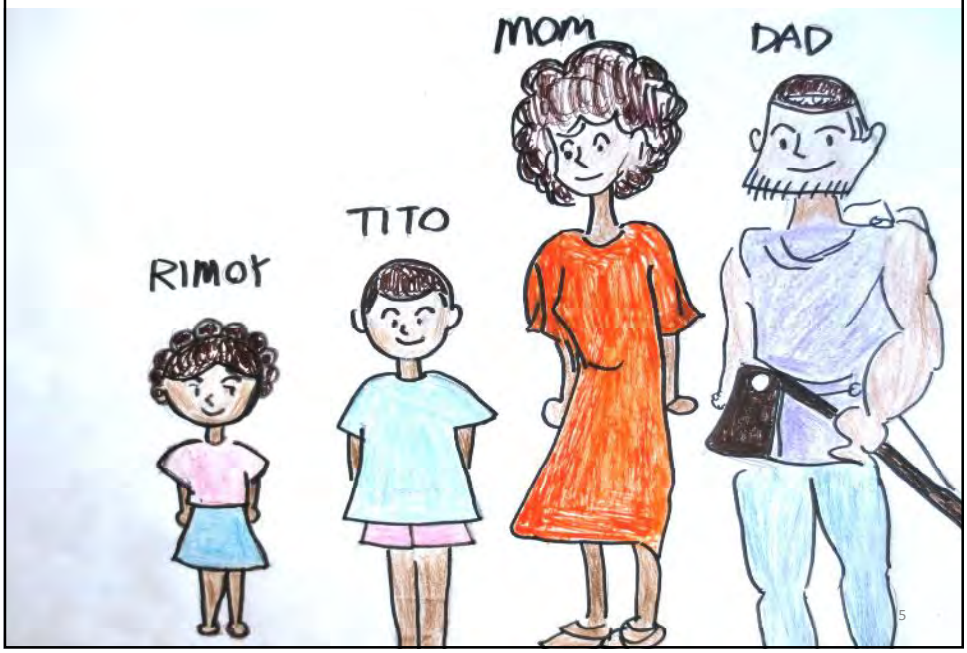
Around the village, there were many evils. They caused people to be ill and quickly aged, for example, malaria, dizziness, and cancers.

3

The Evils said. “Hehehe, village people are very weak. Attack them, make them ill, so that we can dominate the village. ”

4

In the village, there was one family, Dad, Mom, Boy and Girl..
The name of the boy is Tito. The name of the girl is Rimoy.



They are farmers. They started cultivating vegetables, including potato, carrots, cabbage, and tomato.

They tried to sell vegetables to others. But people said, “We do not like vegetables, we do not want to eat”.

To hear that, Tito and Rimoy felt very sad.. They knew that vegetable is good for health, as they ate it everyday.. Rimoy looked at vegetables and whispered “Sorry, my dear vegetables… Our people do not like you..”

One day, the Evils came to Usambara village. They blew out bad-smell breath from their mouth to the people,“Vyuu---Vyuuu-Vyuu”

Once received bad breath, they became ill or old. Some got malaria, others have stomach ache. “Help me, I feel pain in my stomach ” “Oh my god, my head almost bursts with hot fever!! ” “My body is get wrinkled.” They were just crying, crying and crying.

The Evils found Tito and Rimoy. He blew out the bad air to Tito…Tito became "Oh… something gets wrong in my body. Help me.. Rimoy!! "

11

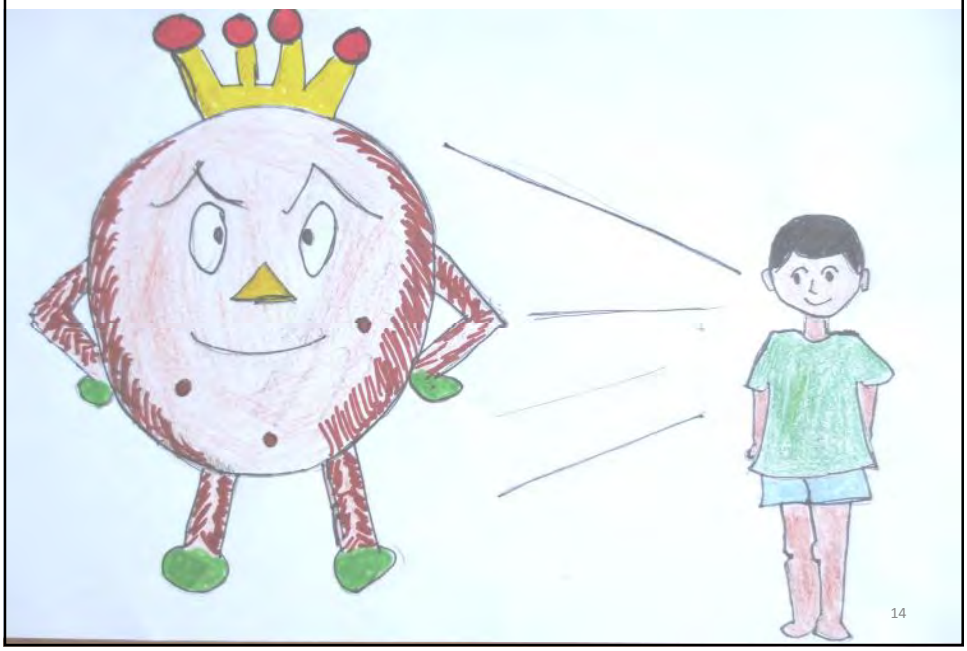
"Give me vegetables in your hand ," Tito said, "I want to eat vegetables to become strong" Rimoy put one piece of potato in Tito's mouth. Then Tito chewed it with his best power available.

12

Soon after swallowing it, one flash came into the world.

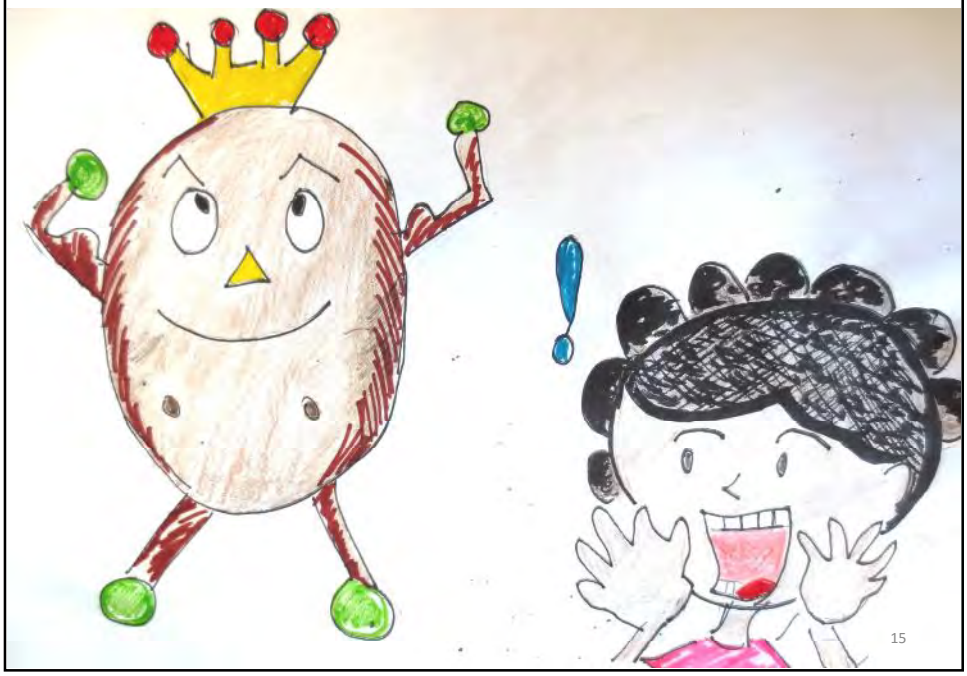
13

What happened to Tito!? He suddenly become big and powerful, changing his appearance to something new!!



14

Surprise! Rimoy said “he looks like a king, the king of potato, POTE-KING !! “



15

Tito, or now POTE-KING, was a strong man. He talked to the evils, “Hey Evils,
Stop teasing the people, Otherwise I will beat u!!”

16

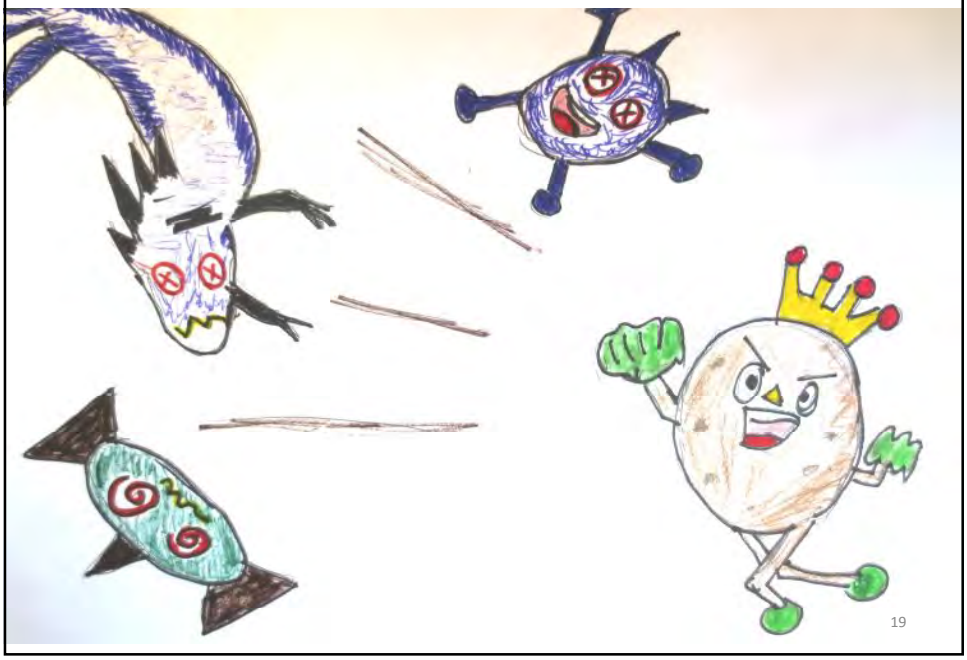
One evil said to POTE-KING, “Are you serious? You will never beat me. Enjoy my toxic breath with big fire!!.” POTE-KING got no injured . “I feel Vitamin C inside of my body. It protects me well, even against fire.”

17

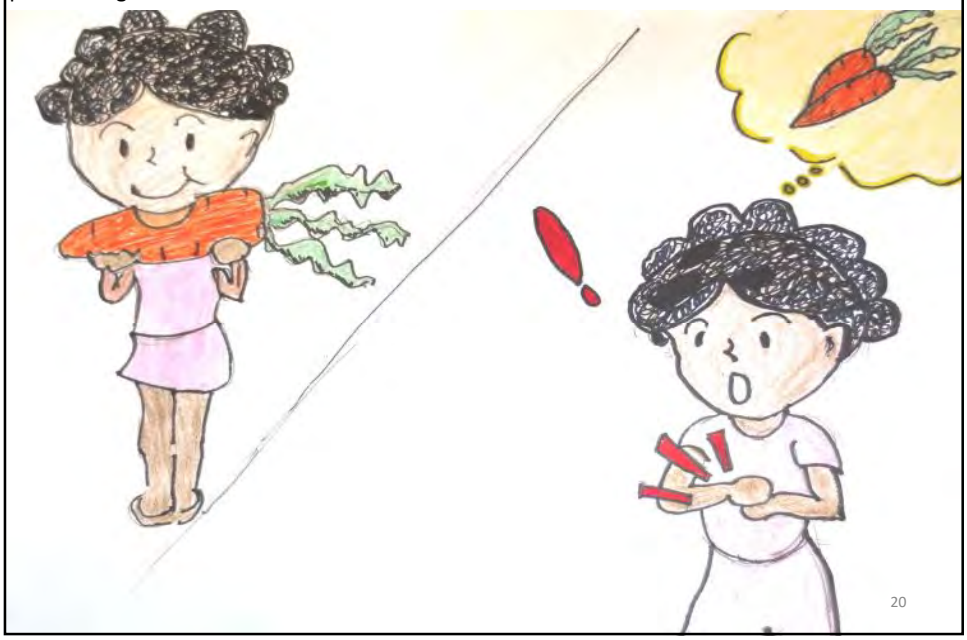
He then glared at the evil with rage, “You have bullied many friend of mine. I will never forgive you ”“POTE-KING Punch!!”

18

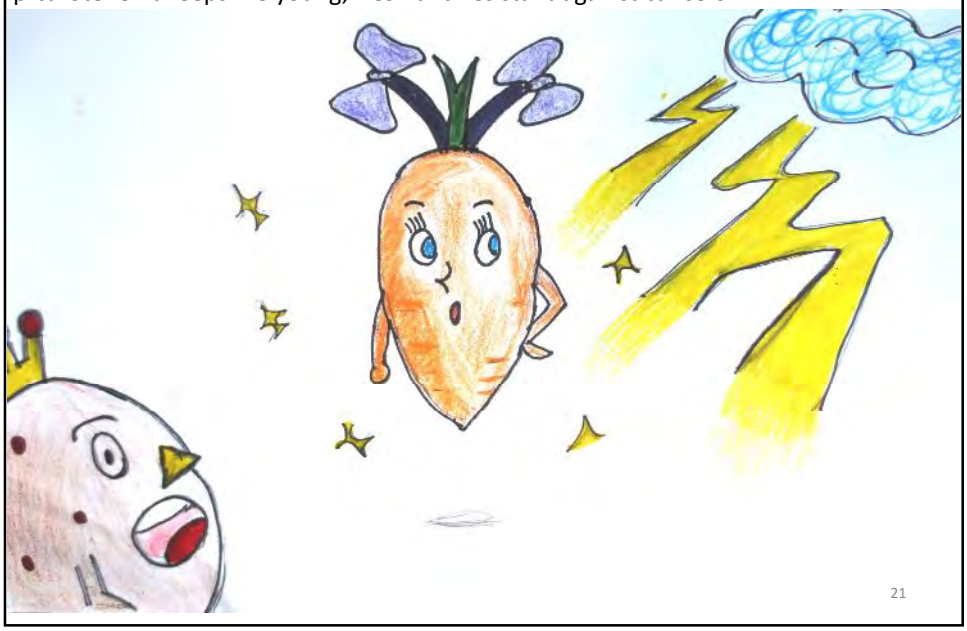
POTE-KING smashed with fist the face of the Evil. “Gyoeeee,” the evil was driven away into the sky. POTE-KING gave the same punch to other evils, too.



So powerful POTE-KING. Rimoy came up with one thought, “I remember that I like carrot. Let me bite carrot now, something may happen to me, like happened to Tito.. ” She bit the part of a big carrot.



One flash came into the world! Rimoy turned herself from a girl to a lady having graceful energy. “Oh, I have become Carrot Queen! Carrot has a lot of β-carotene. It keeps me young, fresh and resistant against cancers.”



21

Rimoy, now Carrot Queen, joined the fight against the evils. “Carotene Kiss!! ” She threw a kiss to the evils. “Gyoeeee” the evils became smaller and smaller and finally disappeared from the world.

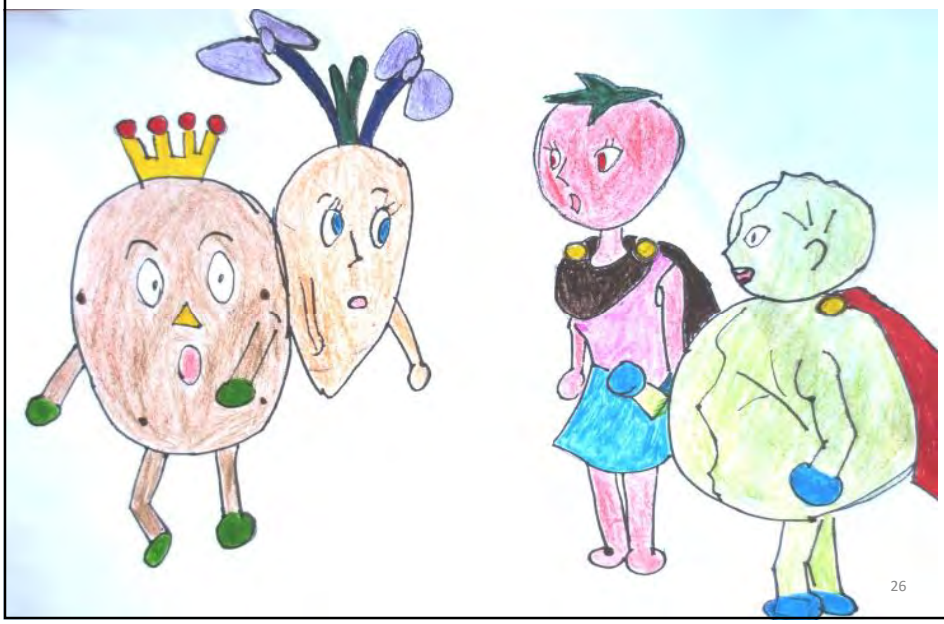
22

From somewhere in the sky, the two persons came down to the ground.

One guy has light-green color skin, and round body shape. He looked like cabbage. “My name is Cabagin. My body is enriched with Vitamin U. It makes your stomach very strong”

The second one is the lady with red-color round face, like tomato. She said “My name is LYCO. My body is full of lycopene. I can protect people against ultraviolet rays, which is one of the major attack by the Evils.”

Cabagin and LYCO talked to POTE-KING and Carrot Queen, “We are Vegetable Rangers like you. We protect green lands and people’ health! Let’s fight together against the evils!! ”



“Cabagin Kick!” Cabagin kicked away the evils.

27

“Lycopene flash” she gave off strong lights from her hands.

28

Beaten and smashed, the Evils finally gave up the fight against the Vegetable Rangers and run away from the village.”Gyoeeee, Samahani na Kwaheriiiiiii”

POTE-KING and Carrot Queen thanked the two rangers. “Thank you for your helping people from the evils. ” To him, Cabagin replied, “Don’t mention it. We are friends. But there are many other villages that suffered from the Evils, like Usambara. We have to go there to help people.” “Please join us” added by LYCO.

POTE-KING and Carrot Queen said “I want to join but….. ” Hearing that, Dad and Mon said “Don’t worry about us. This village regained the peace and health now.” Other people mentioned “Thank you very much for your protecting us. We are now aware of importance of eating vegetables. We start enjoying it from now.”

Tito and Rymoi to make up their mind. “OK. Let’s go anywhere to protect people and green land! For the people, For the land !!” POTE-KING said. Following this, “For the people, For the land!!” everyone yelled.

End of the story
Thank you

33

7.7 Coffee Quality Improvement

TECHNICAL SUPPORTING MAUAL

ON

COFFEE QUALITY IMPROVEMENT

(for LGAs)

DADP Planning and Implementation Thematic Working Group

in collaboration with

Tanzania Coffee Board, Mbozi Coffee Support Team and JICA-RADAG

November 2015

Table of Contents

1. Introduction

1.1 Background

This manual is an end product of pilot activities in Mbozi DC for coffee quality improvement under "Project for Strengthening the Backstopping Capacities for the DADP Planning and Implementation under the ASDP Phase 2" (hereinafter the Project). Mbozi DC has identified coffee as a priority commodity in its DADP. Through coffee value chain analysis, the district found that there was a room for improving coffee quality and hence increasing coffee farmer's income with higher sales price. Mbozi DFT, with the support of Mbeya RS, DADP P&I TWG, TCB, TaCRI, curing companies and other stakeholders, implemented a series of interventions to improve coffee quality in selected villages. As a result of interventions, coffee quality in target 3 AMCOSs improved as shown below.

Table 01: Change in coffee class (before/after interventions)

Ichesa AMCOS		Hamwelo AMCOS		Msia AMCOS	
2013	2015	2013	2015	2013	2015
9	5	9	6	9	6

Note: Coffee class is classified from 1 to 9 (with "1" the highest).

Based on the experience, this manual will provide guidance and practical examples on how to improve coffee quality for any coffee-producing LGA. The focus is placed on post-harvest processing, where the Project intensively provided support to the AMCOSs.

1.2 Objective

- To provide practical examples and information on how to improve coffee quality for any coffee-producing LGA
- To show a guidance on how to plan and implement the activities for coffee quality improvement under DADP

1.3 Intended users

This manual is primarily intended for LGA officers (DFT) in coffee-producing LGAs which plan to improve coffee quality within the district under DADP.

2. Coffee Quality (Grade and Class)

Coffee quality is mainly determined by grade and class. If the grade and class are high, coffee is sold at higher price either in the auction or direct sales to the buyers. "Grade" depends on shape, size and density (weight) of beans while "class" is subject to taste, aroma and appearance[1].

[1] "Appearance" matters both before and after roasting. Before roasting, it is normally important to note the way center cut looks

2.1 Mild Arabica coffee grades

2.1.1 Top grades

Table 02: Top grades

AA, AB, C	Heavy solid beans graded according to size, AA being the largest
PB (Peaberry)	A fully formed and sound, heavy bean form. A cherry which contains only one bean instead of usual two.

2.1.2 Low grades

Table 03: Low grades

E (Elephant)	A malformed bean having two parts fitted into each separate or roasting.
AF	Light beans removed by air blast from the AAs and As.
TT	Light beans removed by air blast from the Bs and Cs.
F	Light beans removed by air blast from all the above grades.
HP	Defective beans removed by hand or electronic sorters.

2.2 Coffee classification (class)

2.2.1 Factors for coffee classification

The classification of coffee is based on the following factors.

Table 04: Factors for coffee classification

The raw coffee state	How the coffee looks like (generally, drying physical properties, etc.)
Roasted coffee beans	The way the center cuts look like (color, etc.)
The cup – liquorer test	This is the most important factor in the classification process.

2.2.2 Defect counts of raw coffee

Defect counts are performed on raw coffee, which means the sum of points counted according to the scale (detailed hereunder) by strictly counting the defectives in 300 grams of processed coffee.

Table 05: All categories of defects

Defects	Points
Primary defects	
Black	1
Pod	1
Fungus damaged	1
Foreign matter (extraneous matter)	1
Stinker (full sour)	1
Badly insect damaged bean	1/5
Secondary defects	
Half black	1/3
Parchment	1/5
Abnormal pale bean	1/5
Shell	1/5
Broken bean	1/5
Immature bean	1/5
Shrivelled bean	1/5
Discoloured bean	1/5
Slightly insect damaged bean	1/10

like as well as color. After roasting, evenness of the roasted beans is checked.

Terms used in appointing the defect numbers

Black:	A bean of which more than half is black extremely.
Pod:	A whole dried coffee cherry
Stinker	A coffee coloured bean which has a sour or unpleasant smell when cut
Badly insect damaged bean:	A bean of which half or more is damaged by pests or diseases.
Half black:	A bean which is dark brown and a bean of which less than half is black extremely
Parchment:	A bean enclosed in its parchment integument.
Abnormally pale beans:	A chalky white bean.
Shell:	A hollow malformed bean in the shape of shell.
Broken bean	Less than half a bean
Immature bean	A flattened bean which contains no kernel.
Shirivelled bean:	A bean which is disccated, shirivelled and often also corrugated or ridged on the surface.
Discoloured bean:	A mottled bean variegated in colour.
Slightly insect damaged bean:	A bean which has pinhole by insects or a bean of which less than half has been damaged by pests or diseases.

2.2.3 Checking market price

The following website is useful in checking current market prices.

- Auction prices TCB HP: http://www.coffeeboard.or.tz/auctions.php

Indicative prices can also be obtained with your mobile phone through SMS:

- Enter “kahawa bei” and send it to “15550.”

3. Possible Interventions for Quality Improvement

There are various interventions which contribute to coffee quality improvement. DFT can take an initiative in implementing such interventions. The following shows the examples of activities that DFT can plan and implement under DADP. They are all targeted at coffee farmers organizations (FOs) as beneficiary.

3.1 Raising farmers’ awareness

It is often the case that coffee farmers have little information about how coffee price is determined. As a result, they might develop mistrust to other coffee stakeholders.

- Their coffee (parchments) seems to be in good quality. But buyers underestimate its quality, and the price is too low.
- Curing companies might have cheated them in coffee delivery record (shipment record), for the volume after curing is less than they expected.

Consequently, some coffee farmers mix sand, stones or rice with parchments to increase volume of coffee delivered to curing companies and those sold to private coffee buyers, which will only reduce the value of their produce and grow buyers' distrust to farmers. This is a typical case of mutual mistrust. To solve such issues, farmers need to know what other stakeholders do and how their coffee is assessed for reserve/indicative price setting. DFT can arrange learning opportunities for farmers to lay the groundwork for quality improvement. Especially, study tour and cupping training are effective to that end.

3.1.1 Study tour

A study tour is a useful means to promote coffee farmers' understanding on what other coffee stakeholders are doing in the coffee value chain. Especially, it is recommended to arrange a field visit to know how coffee price is set and what criteria are used. With that knowledge, coffee farmers will acquire the basis and motivation for improving their coffee quality. The following is an example of such study tour. To make the study tour fruitful, DFT is supposed to arrange, implement and follow up the activity.

Table 06: Summary of study tour (sample)

Activity	■ Cupping and grading (TCB) ■ Auction system (TCB Auction) ■ Modern technology for coffee cultivation (TaCRI) ■ Coffee quality control (coffee cooperatives)
How to prepare	Step 1: Preparatory visit to field sites and discuss with stakeholders what the participants can learn and make an appointment with them for the study tour Step 2: Develop a handbook for the study tour (see Annex 01) Step 3: Conduct the study Step 4: Conduct dissemination workshops in the villages of participants for information sharing

This study tour contributes to farmers' realization that low sales price is due to several reasons, and gives an incentive for quality improvement to fetch higher price.

3.1.2 Cupping Training

Cupping training is also effective in raising farmers' awareness on how coffee quality is assessed for price setting. This activity needs a support of cupper, who is qualified for assessing coffee quality. TCB and some curing companies have their own cuppers, and DFT can require their support for this activity. It can be implemented either on site (target village) or at their office/factory.

Cupping training topics
- Cupping results of participants' coffee & Detailed advice for quality improvement
- Difference between good and bad quality beans
- Trial cupping (by participants)
- Grading coffee

It is advisable to include a session for comparison between FO's coffee and good quality coffee, through which farmers understand the difference in appearance and taste. In addition, DFT needs to ask the cupper to clarify the points that makes difference, so that farmers understand specific

actions to be done to improve their coffee quality.

3.2 CPU Installation

Use of Coffee Pulpery Unit (CPU) correctly for primary processing improves the quality of coffee and leads to higher sales price for farmers. There are many LGAs that plan to procure CPU for selected FOs with DADP fund (DADG). But the purchase and provision of CPU alone does not automatically improve coffee quality. There are other elements to be considered before CPU is provided to FOs.

CPU facility

1) CPU has to be installed in a building with accompanying facilities. Since LGA normally provides CPU machine only, the FO has to construct them before its operation.
2) Once installed, CPU has to be operated and maintained properly by FO members.
3) FO incurs costs of construction and operation and management to use CPU.

3.2.1 Checklist for CPU installation

To address the first challenge, DFT can support the FO to prepare a work plan for construction. In this support, use of a checklist is practical in preparing the plan. This checklist lists all necessary activities to be completed up to the operation (see Annex 02). Also, all details for procurement should be designated in the list (such as favourable characteristics for construction site and required specifications of construction materials). In addition, DFTs can assist the FO to obtain BOQ and blueprint of CPU facility construction.

Table 07: Example of checklist for CPU facility construction

Act. No	Activity	Mar. (Wks)				Apr. (Wks)				May (Wks)			
		1	2	3	4	1	2	3	4	1	2	3	4
1	Site clearance and setting out of foundation				X								
2	Collection, hauling & Procurement of materials							X					
3	Excavation & construction of the foundation								X				
4	Concrete work for slab								X				
5	Walling and installation of frames									X			
6	Roofing and installation of shutters												
7	Finishing works												
8	Installation of CPU and water tank system											X	
9	Operation and maintenance of the CPU												

* Highlighted cells refer to planned schedule.

** X refers to actual completion.

3.2.2 CPU operation and maintenance training

After the installation, farmers need to run CPU on their own. This requires technical skills for CPU operation and maintenance (O&M). It is advisable for LGA to include O&M training in the purchase agreement with CPU dealer. Alternatively, DFT can ask another FO which has already operated the same type of CPU to conduct this training. FO needs to select trainees who will be in charge of supervising and actually operating CPU from its members. Here, it is recommended to set up a specific group which takes the responsibility of CPU operation (explained further in "3.3.1 Establishment of Quality Control Committee").

CPU O&M training topics

- How to operate CPU (with on-site practice)
- Instructions for repair, daily and weekly maintenance
- Record keeping for CPU operation (start/end time, processed volume, oil supply, repair/maintenance, etc.)
- Possible running cost items
- Setting user fee for FO members and non-members

The list above is an example of training contents and participants. It should be noted that running costs for CPU operation needs to be included in this training, so that FO can set user fee for covering these costs. For this purpose, it is advisable to invite a member of FO which has already started CPU operation to explain how much was spent as running cost.

3.2.3 Cost calculation

As described above, provision of CPU alone does not automatically lead to quality improvement, and there is a cost implication for the FO. Two major costs are 1) construction of CPU facilities, and 2) CPU running cost. DFT can support the FO to list up all necessary costs and consider how to prepare necessary budget.

CPU Running cost items (EXAMPLE)

- Fuel
- Engine oil
- Salary for security guards
- Salary for temporary CPU operators

The following is an example of cost calculation and how a FO met the cost. Such calculation enables the FO to discuss expenditure plan prior to construction and operate CPU in a sustainable way.

Table 08: How to meet CPU related costs*

Expenditure	Amount (Tsh)	Income	Amount (Tsh)
CPU facility construction**	8,500,000	CPU user fee***	600,000
Running cost (one season)	1,000,000	Contribution from FO member	500,000
		Revenue from parchment sales	16,000,000
Total	9,500,000		17,100,000

Note: * The figures are estimations based on Mbozi DC experience; ** In case of Mbozi DC, it was partly covered by loan from a coffee buyer; *** User fee is set per processed red cherry (1 kg), e.g. Tsh 150/kg.

DFT is supposed to help the FO list up all necessary costs and decide how to meet the expenditure.

3.3 FO strengthening

Since coffee is shipped for sales after primary processing, and the primary processing is collectively done by FO, FO's capacity for supervising and managing post-harvest processing is crucial for quality improvement. Therefore, DFT is advised to support strengthening of FO's capacity as an organization.

Selection criteria of QCC (Example)

- Participation in coffee training (post-harvest processing, CPU O&M, etc.)
- Basic understanding on coffee quality (grade and class)
- History as member/commitment to group work
- Literacy (write, read, calculate)
- Having coffee farm

3.3.1 Establishment of Quality Control Committee (QCC)

It is advisable to set up a group of members who are primarily responsible for post-harvest quality control. In the case of a cooperative, it can be a committee called Quality Control Committee (QCC). DFT supports the FO to set its mandate and guidelines and select QCC member. (See Annex 03 for details of selection criteria and guideline.) Once QCC is established, DFT needs to encourage its proper function through periodical monitoring.

QCC mandates/guideline (Example)

Production

- Provide training to FO members on proper insect control, pruning, input application, etc.

Processing

- Instruct FO members on cherry picking (pick onlhy ripe and red cherries)
- Receive and inspect red cherries from farmers
- Supervise weighing and recording at CPU facility
- Keep timely processing (pulping/drying) schedule
- Supervise proper use of CPU

Storage

- Supervise proper storage before shipment
- Arrangement of transportation

3.3.2 Post-harvest processing training

FO needs to know every point to improve coffee quality in primary processing. So, it is important to arrange a post-harvest processing training which covers the entire process from receiving red cherries from members to shipment. It is advisable to select a model coffee group, which has shipped quality coffee with good organizational capacity, as a trainer. DFT can support the FO to identify the model group for training within the district and develop training contents.

Post-harvest processing training topics

- Production (planting, input application, pruning)
- Cherry picking
- Selection/ collection/ recording of received red cherries
- Pulping (CPU operation)
- Washing/ fermentation/ grading
- Drying

Also, it is recommended to invite extension officers (VAEO/WAEO) to this training so that they will extend that skills and knowledge to other coffee groups within their areas of responsibility. For extension purpose, moreover, it is useful if DFT prepares a training material based on what they have learned in the training. It is better to make it simple with some pictures so that the material will be used later to extend the knowledge by participants to other members or other FOs (see Annex 04 for the pictorial material). Or it is useful to disseminate "Ten Commandments," which is promoted by TCB for coffee quality improvement.

Pictorial material

<Ten commadments>	
1. Pick only red-ripe cherries	*6. Wash the coffee thoroughly to remove skins and floaters*
*2. Pulp coffee cherries the same day it is picked (*Pulping is the primary processing at farm level)*	*7. Ferment coffee in clean tank*
3. Avoid breaking the beans in the pulper	*8. Wash coffee with good quality of water*
4. Pulp with a good supply of good quality of water	*9. Soak coffee in clean water for a further day*
5. Pick out as many cherry skins as possible	*10. Wash coffee thoroughly and dry*

3.3.3 Record keeping training

Improvement of record keeping capacity is important mainly for achieving fair distribution of benefits to its members. It also helps FO management to make decisions on group investments and disclose financial information internally (to members) and externally (to LGA or other institutions).

Record keeping training topics

- Benefits of keeping records
- Cashbook entry (exercise)
- DFT's check of group records (providing practical advice)
- Visit to model coffee group (learning how to keep records from their fellow group)

To this end, 1) cashbook, 2) receipt of red cherry volume from each member, 3) shipment volume to curing companies and sales price, 4) payment to each member should be properly recorded. However, it is often the case that FO members do not keep proper records. As such, DFT can support arranging the record keeping training for FO members. One idea of such training is to learn from model coffee group, which keeps all records well. It is also advisable to ask FO members to bring their own records and give instructions while going through them. Also, preparing some exercises (see Annex 05 will be helpful for improving their understanding.

CASH BOOK YA MWEZI APRIL,2015

MPE			TASLIMU		BENKI	
tarehe	STK/HM NO	maelezo	MPE	MTOE	MPE	MTOE
1-Apr-15		salio anzia	850,000.00		6,198,200.00	
3-Apr-15		Ushuru wa chama	5,200,000.00			5,200,000.00
4-Apr-15		usafirishaji		550,000.00		
5-Apr-15		vibarua		400,000.00		
6-Apr-15		shajara za ofisi		70,000.00		
7-Apr-15		posho vikao		200,000.00		
8-Apr-15		mshahara mlinzi		300,000.00		
9-Apr-15		Ada ya CPU	350,000.00			
		mafuta CPU		75,000.00		
		oil kwa ajili ya CPU		15,000.00		
30-Apr-15		salio ishia		4,790,000.00		998,200.00
			6,400,000.00	**6,400,000.00**	**6,198,200.00**	**6,198,200.00**

Example of cashbook

3.4 Information sharing system of quality assessment


TANZANIA COFFEE BOARD
COFFEE GRADES & CLASSIFICATION FOR SEASON 2012/2013

Coffee quality report (TCB)

As noted above, the result of quality assessment for grade and class is the most important factor to determine market price of coffee. If coffee farmers have access to quality information of their coffee, their motivation for improving coffee quality will be raised. Thus, DFT is supposed to help the farmers obtain such information. There are several sources of accessing quality assessment report.

- Tanzania Coffee Board (TCB) Moshi have all quality information of coffee sold at the auction. However, with huge volume of data and limited manpower, TCB Moshi cannot respond to individual inquiry for coffee quality at the moment.
- Curing companies normally have their own cupping laboratory and assess quality of purchased coffee beans. They are supposed to feed back the assessment results to coffee producers.
- Some public/private institutions have their own cupping laboratory. For example, TCB Mbeya have one and do cupping if coffee is brought to their laboratory from coffee producers.

Accessible sources are different from one locality to another. Therefore, DFT needs to identify them and request for information sharing, developing own information sharing system in the district.

3.5 Collaboration with other stakeholders

As DADP funds are limited, LGA needs to develop good relationship with stakeholders in the coffee industry and collaborate with them for DADP implementation.

Thus, DFT needs to lay the groundwork for developing such relationship for promoting the collaboration. First, DFT needs to identify all coffee stakeholders in their locality. Second, DFT holds a meeting, either individually or collectively, to seek the areas of collaboration within DADP. Finally, DFT connects those stakeholders with coffee FOs and follow up where necessary. Also, by promoting FO's capacity strengthening (organizational and financial), DFT supports the connection between coffee farmers and stakeholders. Several possibilities for collaboration are presented below.

Table 09: Possible collaboration with coffee stakeholders

Partner	How
TCB	■ Cupping training ■ Quality information sharing
TaCRI	■ Information sharing (introduction of new variety or cultivation method, input application, etc.)
CPU dealer	■ CPU O&M training
Coffee buyer	■ CPU rental ■ Loan (input, CPU running cost, CPU facility construction, etc.) ■ Extension service ■ Marketing

BOX 01: Collaboration with a curing company

1. Background

Mbozi DC selected coffee as one of the priority commodities for VCD (value chain development). With DADG fund, the district procured CPU for the coffee AMCOSs of three villages to improve quality of coffee. DFT provided a series of training to them, including those of cupping, quality control, and CPU operation and management. The AMCOSs, however, were yet to construct a building to install CPUs even after the harvest season started in 2014. In order to make farmers use the knowledge obtained from the training, DFT decided to look for a partner who owned CPU and could let the AMCOSs use it for the season. Eventually, DFT identified Coffee Management Services (CMS), a coffee buyer and curing company, as promising candidate for collaboration.

2. Objectives

For DFT, the original objective of this collaboration was to improve the AMCOS's capacity for CPU operation and management. As the relationship developed in the first year (2014), DFT set another purpose of obtaining inputs and a loan, so that the AMCOSs could have inputs and construct the CPU building. For CMS, a newcomer in Tanzania, the collaboration was aimed at securing enough volume of parchments (primary processed coffee produced with CPU).

3. DFT Activities

First, the DFT made VC analysis and visited several stakeholders to discuss the possibility of collaboration on the use of CPU. Among the visited, it was only CMS which agreed to let AMCOS use its CPU. Behind this was that CMS was a relatively new company in Tanzania and thus intended to assure, through PPP, the procurement of parchments from farmers.

In 2014 season, CMS and DFT provided training to the AMCOS leaders on post-harvest handling and record keeping. And the AMCOSs brought red cherries to the CPUs operated by CMS. At this stage, the roles of DFT were to monitor the performance of the AMCOSs and facilitated communication between CMS and the AMCOSs. Although CMS did not put any conditions for the AMCOSs on the sale of the parchments, all the AMCOSs sold their parchments to CMS, as CMS offered good prices to them. After the sale, DFT requested CMS to feedback the quality information to the AMCOSs in order to make them recognize the current status of their coffee in terms of quality assessment and motivate them for further improvement.

As district officers, DFT could intervene in AMCOS management with relative ease compared to CMS as a private company. With DFT presence, CMS was more comfortable about extending their supports to the target AMCOSs. Thus, they developed a win-win relationship, where DFT aimed at coffee quality improvement and resulting higher sales price and CMS at securement of enough volume of parchments.

4. DADP Planning and Implementation for Quality Improvement

4.1 Planning and budgeting

When considering coffee quality improvement activities within the framework of DADP, they should be strategic and comprehensive.

Making strategic is to focus on specific stages of coffee value chain and select activities strategically. For example, the activities covered in this manual focus on "processing of products" aimed at quality improvement (see below). DFT is required to conduct VC analysis, identify which stage of coffee VC to intervene, and plan necessary activities. If a LGA has decided to focus on processing stage as a bottleneck in coffee VC, then the activities shown in Chapter 3 will be of good reference.

Focus of This Manual

Stages of value chain						
(1) Inputs	➔	**(2) Production**	➔	**(3) Processing of products**	➔	**(4) Sales of products**
(a) Activities (examples) at stages						
• Infrastructure • Finance • Seeds • Chemicals • Animals • Feeds • Machine/Tools • Labor		• Farming technologies • Animal raising technologies • Disease control		• Storing • Drying • Milling • Packaging • Slaughtering		Bridging to • Traders • Manufacturers • Local Markets • National/International Markets • Direct to Retailers/Consumers (incl. Restaurants or Hotels)

Source: Excerpt from DADP Guidelines (for 2016/17)

Figure 01: Stages of Value Chain

Making comprehensive is to utilize any available resources by collaborating with various stakeholders. As shown in 3.5, DFT is expected to identify coffee stakeholders and seek possibilities of having DADP activities together with them. Once their supports are confirmed, DFT includes those activities within DADP.

When developing DADP activities, all necessary costs need to be calculated for budgeting. In the below, necessary cost items for budgeting are presented for each activity shown in Chapter 3. As seen in the table, most of the activities do not have large cost implications.

Table 10: Possible budget items of DADP activities

Study tour (@TCB/model group site) ✓ Transportation (participants) ✓ DSA (participants) ✓ Facilitation fee (host) ✓ Training materials	Cupping training (@ TCB/ village) ✓ Transportation (participants) ✓ DSA (participants) ✓ Facilitation fee (host)	CPU installation (@ village) ✓ CPU procurement ✓ Transportation (DFT/facilitator) ✓ DSA (DFT) * Construction costs incurred by the FO.	CPU O&M Training (@ village) ✓ Transportation (DFT/facilitator) ✓ DSA (DFT) ✓ Facilitation fee (CPU dealer/model group)
Post-harvest processing	Record keeping training	Regular monitoring	Stakeholder Meeting

training (@ village) ✓ Transportation (participants) ✓ DSA (DFT)	(@ district council) ✓ Transportation (participants) ✓ DSA (participants) ✓ Training materials	(@ village) ✓ Transportation (DFT) ✓ DSA (DFT)	(@ district council) ✓ Transportation (participants) ✓ DSA (participants)

Note: Cost items vary depending on the LGA's given circumstances.

4.2 Implementation monitoring

A part of the project monitoring, baseline data are collected for each DADP intervention to monitor the effectiveness (comparing before and after intervention). DFT is to conduct baseline survey and monitor the progress. Baseline survey is especially important because it helps DFT to plan specific interventions and approach. The following list is an example of monitoring indicators (see Annex 06 for baseline survey report).

Table 11: Monitoring indicators (example)

Background info.	Monitoring indicators (for before/after comparison)
✓ Number of coffee farmers & farmers groups ✓ Size of coffee farm (by farmer) ✓ Number of coffee trees (by famer) ✓ Training experience ✓ Knowledge and skills of quality improvement	✓ Number of group member ✓ Productivity (kg/ha) ✓ Parchment sales price (Tsh/kg) ✓ Parchment shipment volume (kg) ✓ Coffee grade and class (number) ✓ How do they process red cherries? *<Selection, Pulping, Sorting, Fermentation, Grading, Storage, etc.>*

4.3 Dissemination within district

Once effectiveness of coffee improvement activities is confirmed, LGA can set a strategy for disseminating the activities to other areas within the district. It should be noted, however, that LGA needs to consider the limitation of human and financial resources.

As for human resources, DFT cannot follow increased number of coffee FOs as dissemination stage progresses. Therefore, DFT needs to come up with how to cover larger areas, such as use of extension officers, collaboration with NGO/ curing companies, etc.

Use of VAEO/WAEO

One idea of strategic dissemination is to utilize VAEO/WAEO for extension. To do so, DFT needs to invite them to all related activities (training, monitoring, etc.). Then, they are ready to disseminate the skills and knowledge to other groups or villages within their assigned areas.

As for financial resources, it is necessary to understand the overall cost for dissemination by calculating the cost for each activity. By doing so, DFT can select most important activities to disseminate comparing to available budget. Or they could ask other stakeholders for cooperation in some areas. Refer to Table 05 for cost calculations of individual activities introduced in this manual.

It is also recommended to formulate an upscaling pattern of pilot activities as shown in the figure below. With such blueprint of dissemination, LGA can develop an upscaling model that will be applied in the mid to long-term period within the district.

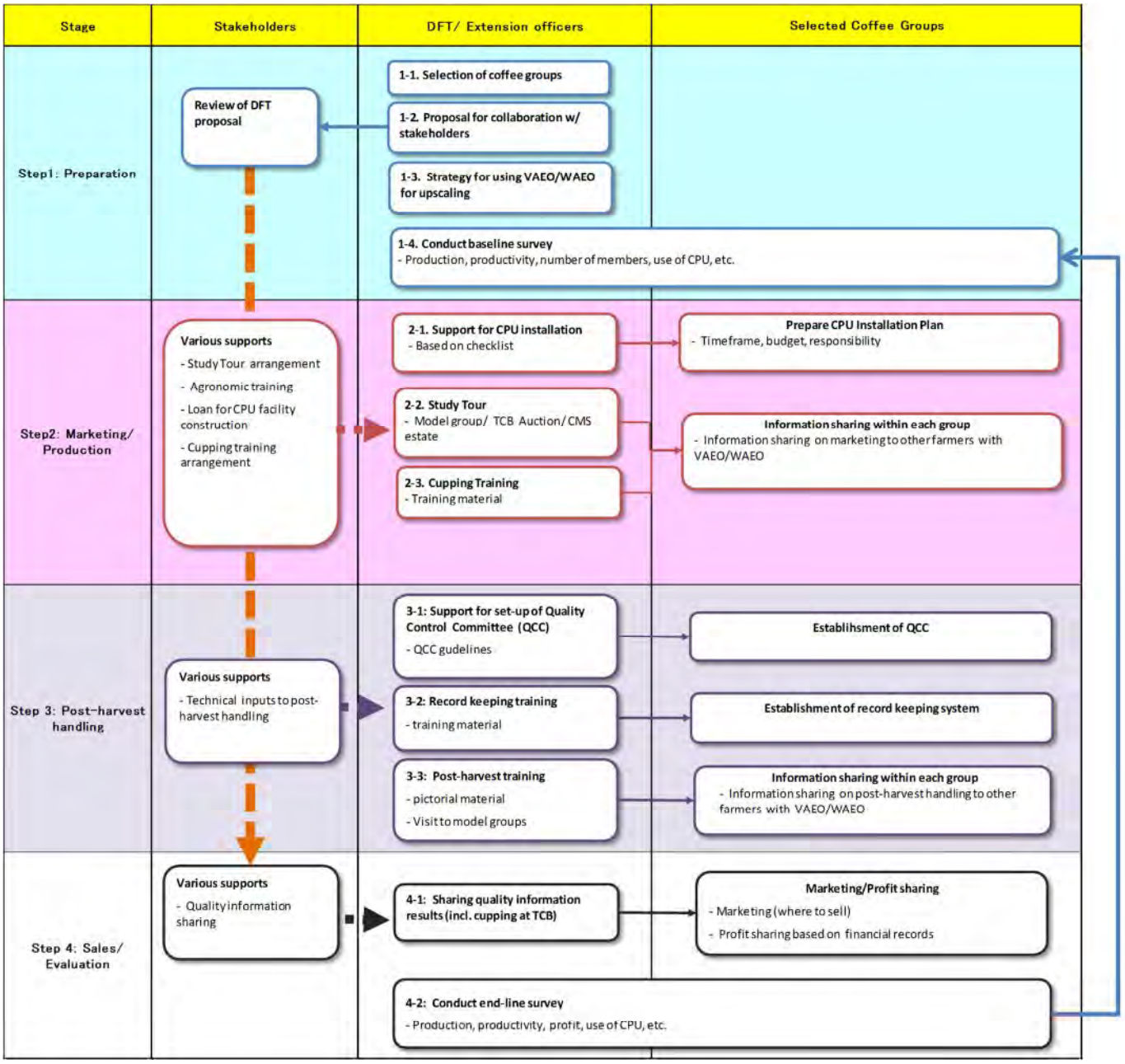


Figure 02: Upscaling pattern of coffee quality improvement activities (sample)

Annex 01

MBOZI DISTRICT COUNCIL
PO BOX 3 MBOZI

Handbook
for the Participants of Moshi Study Tour

3rd to 11th November, 2013

Mbozi DALDO Office

Technical Support by JICA

Annex 01

1) Purpose of the Field Study

1) To learn the roles of the players in the coffee industry
2) To learn the grading system and auction to understand how buyers assess your coffee and what kind of coffee is demanded in the market
3) To learn how to improve coffee quality through better practices of agronomy and processing and how to control quality
4) To learn good practices of farmers' groups in Moshi, such as group management and quality control
5) To make your own action plan based on lessons learned to improve the current situation in Mbozi

2) Personnel Involved

S/N		Number	NAMES OF PARTICIPANTS	Remarks	
1	Ward Extension Officer	6	FARLES ELIAS	Msia ward (Msia village) WAEO/VAEO	
2			DANFORD MANDARI	Myovize ward (Ichesa village)	
3			Elibariki Kijanga	Itaka ward (Hamewelo village)	
4			TEOPHIL MWAKALILE	Isansa	
5			Khalid Mchomvu	Iyula	
6			Zainab Majubwa	Igamba	
7	Mbozi District Council	4	R.SIRILI-DAICO	These are staff Officers who have responsibility to supervise all Extension Officers at village and Ward Level for that case, they have to be familiar with what they are supervising	These are staff Officers who have responsibility to supervise all Extension Officers at village and Ward Level for that case, they have to be familiar with what they are supervising
8			FRANSIS KABALE-SMS - COFFEE	To acquire knowledge so as to train/ teach other Extension Officers at villages, at ward Level in the District	
9			ASANTE NDIMBO-SMS-NUTRITION	For making reports, advice and communication with Councillor Leaders, Policy makers and stakeholders	
10			THADEY NGAMBILA-SMS-CROP	The same as mentioned above	
11	Mbeya Region	2	ENOCK NYASEBWA	ASDP coordinator	
12			WILFRED KAYOMBO	Agriculture officer, Mbeya Region Focal Person for RADAG - JICA	
13	Target Villages	3	Julius Myombe	Secretary of Msia AMCOS	
14			Samehe J. Mgala	Secretary of Hamwelo AMCOS	
15			Mashaka Mwashambwa	Member of Ichesa AMCOS	

3) Schedule

	Date		Activities	Stay at	Purposes of visit
Day 1	03-11	Sun	Move from Mbozi to Morogoro	Morogoro	
Day 2	04-11	Mon	Move from Morogoro to Moshi	Moshi	
Day 3	05-11	Tue	9:00 TaCRI	Moshi	1) Breeding (new varieties) 2) Agro forestry (including inter-cropping, home garden) 3) Soil condition (soil analysis and appropriate inputs. Observation of the soil lab) 4) Importance of post-harvest handling and processing (including the ten commandments, observation of the cupping unit) 5) Integrated Pest Management
Day 4	06-11	Wed	9:00-12:00 TCB 14:00-16:00 KNCU 16:00 Union Café	Moshi	TCB 1) Roles and responsibilities of TCB 2) Marketing (Recent trends in the coffee market, important issues for producers such as buyers prefer trade of big volume rather than small volume) 3) Approaches for Value addition (Branding and Certificate) 4) Cupping and grading (coffee report and classification prepared by TCB) 5) How the results of classification(grading) are feed backed to producers KNCU 1) Roles and responsibilities of KNCU (service provided by KNCU) 2) How to run the union in an transparent and accountable way 3) Quality control 4) Activities to generate more profit (establishment of own brand coffee, UNION coffee, run the UNION cafe, own roaster and packaging etc.)
Day 5	07-11	Thu	9:30-10:30 Briefing about the auction 10:30-11:00 Observe the auction 13:00 Visit AMCOS	Moshi	TCB Auction 1) How the auction implemented 2) Requirements and demands from buyers

Annex 01

	Date		Activities	Stay at	Purposes of visit
Day 6	08-11	Fri	8:00 Leave 9:00-11:30 AMKENI Gourmet Coffee Group 13:30-16:00 MwikamsaeKinyamvuo Rural Cooperative Society	Moshi	AMKENI Gourmet Coffee Group 1) Brief history and roles of the group 2) Success story of Top quality 3) Quality control (from red cherry to drying of parchments) 4) Relationship with RAFIKI Coffee (advanced payment with interests, assistance such as inputs and extension services) 5) O&M of CPU, User fee Mwikamsae Kinyamvuo Rural Cooperative Society 1) Brief history and roles of the cooperative society 2) Quality control by CPU and hand pulperies 3) Working relationship with KNCU 4) Strong organization and leadership (transparency and accountability) 5) Organic coffee
Day 7	09-11	Sat	Move from Moshi to Morogoro	Morogoro	
Day 8	10-11	Sun	Move from Morogoro to Mbeya	Mbeya	
Day 9	11-11	Mon	9:00-11:00 Mbeya City Coffee in Mbeya 14:00-16:00 Mbozi Coffee Curing Company	Mbozi	1) Observe how to cure parchments and grade green coffee 2) Curing losses 3) How to send samples to the auction in Moshi 4) How results from the auction (prices and grading) are feed backed to producers 5) All costs for farmers (such as curing, re-drying etc.) 6) Marketing

4) Field Note

Date: Tuesday, 5th November, 2013

From: 9:00-16:30

Place of Visits with Points for Study

TaCRI	1) Soil condition (soil analysis and appropriate i 2) Importance of post-harvest handling and pro 3) Integrated Pest Management (IPM)

Field notes were prepared for respective institutions to be visited. Each participants filled up this format every day during/ after making interview with them. *Italic parts* are example of how to fill up the format based on actual record of Mbozi's experience.

■Brain storming before visit

What you want to ask? / What you want to learn?

1) *To know the importance of soil analysis and how to do it.*
2) *To identify key techniques for coffee production*
3) *To know the importance of post-harvest handling and how to do it*

■Findings

Soil Analysis

Objective of the Soil Analysis: (i) To analyze soil so as to establish and sustain coffee needs or requirements; (ii) Advice farmers or Institutes involved in coffee production on proper use fertilizers; (iii) to identify amount and types of minerals present in the soil minerals such as Magnesium, Manganese, Iron, Phosphorus. The laboratory also does analysis for PH, nitrogen and organic carbon.

Two methods of soil analysis: (i) By using soil zones-soil opening-whereby samples are taken by an interval of one foot or layers. Samples should be taken starting from the deep layer and lastly the upper most layer.(ii) By using soil augal: This is a special instrument for collection of soil samples. It is calibrated in such a way that soil samples are collected at different layers separated by one foot each.

Samples taken should be labeled with the name of a farmer, village, and layer before taken to the laboratory. In the Laboratory: (i) Sample drying. It is preferred that samples be dried at room temperature to avoid denaturing of nutrients or minerals. If required, samples can be dried in an oven at temperature of about 1050 centigrade for an hour. (ii) Grinding sieving and packing sample for analysis, (iii) Weight of each sample is taken. Analysis for soil pH enables to determine soil acidity or alkalinity and therefore the type of fertilizer to be used. Recommended Soil pH range between 5.2-6.5; (iv) Testing for Cation Exchange Capacity (CEC). This determines the soil ability to retain nutrients, (v) Analysis for different types of minerals (elements) present in the soil and their concentration. We noted that acid soil needs alkaline fertilizers and the alkaline soil needs acidic fertilizers.

Post-harvest handling and processing:

Objective: Harvested red cherry are collected in a specific area just nearby water chamber for sorting. Sorting is done in order to remove Unripe cherry, Over ripe cherry, and Cherry damaged by insect/diseases

Grading by water: Ripe red cherry are flushed into a water tank where they are graded by weight before they are allowed into the CPU. Heavy beans sink down and light beans float. The beans are then allowed into the pulper through pipes starting with the heavy ones. Pre-washing: Before fermentation, the beans are washed to remove floaters and mucilage. Fermentation is done for 2 – 3 days depending on weather condition. Drying: The washed beans are dried in a wire mesh for 7 – 8 hours to remove water. After that it is dried in normal mesh for 7 to 14 days depending on sunlight intensity. Storage: The dry coffee beans should be stored in a clean store. A store should well ventilated. Should be kept in 60kg bags free from smell. Transporting to curing plants: Motor vehicle used should be free from dirty and covered. Disposal of coffee pulpers. These are decomposed and utilized as compost manure in the coffee farms

IPM:

Meal bug: Attack tender leaves and shoots. Control Measures: using of piece of soap dissolved in water to form a solution which is sprayed on the leaves and shoots; and using of insecticides.
White stem borer: It bores the stem of coffee. Control measures are to clean the scales on the lower part of coffee stem to prevent the white stem borer from laying eggs on the stem and using insecticides
Berry borer: it bores coffee cherry. Control Measures: Using local beer as a bet when cherry is near to ripe.
Green scale: Attack tender leaves Control Measures: Use of ash orInsecticides

Annex 01

Date: Wednesday, 6th November, 2013

From: 9:00-12:00

Place of Visits with Points for Study

TCB	1) Roles and responsibilities of TCB 2) Marketing (Recent trends in the market, important issues for producers such as trade volume) 3) Approaches for Value addition (Branding and Certificate) 4) Cupping and grading (coffee report and classification prepared by TCB) 5) How the results of classification(grading) are feed backed to producers

■Brain storming before visit

What you want to ask? / What you want to learn?

1) To obtain basic knowledge of coffee value chain
2) To understand how the coffee is assessed in terms of quality.

■Findings

Main functions of TCB
(i)Promotion: it embraces Advisory, Representation and Information dissemination
(ii) Regulatory:It embraces Supervisory, Monitoring and Co-ordination
Coffee Data Profile:
There are 13 regions that grow coffee. 7 out of them are the major producers. 90% of the coffee production in Tanzania is done by smallholder farmers. 450,000 households are involved in coffee production all over the country. Over 2.4 million people benefit directly from coffee. Average production all over the country is between 800,000 – 1,000,000 bags (each 60kg) per annum. Average revenue from coffee sales is USD 150million/annum (USD 180 million in 2012/13). 40% of the coffee produced in Tanzania is Robusta. 60% of the coffee produced in Tanzania is Arabica. Arabica coffee is produced at an altitude of 1,300 – 1,800 m.asl. Production is mainly through rain fed cultivation
Tanzania coffee marketing system
There are three marketing systems in Tanzania. Farm Gate market – Farmers sale the raw coffee, ungraded and unprocessed. (Parchment for Arabica and dry cherry for Robusta) to licensed coffee buyers and cooperatives. Auction market – this is the market where licensed exporters buy coffee for export market. Direct export market –whereby growers can sale directly to roasters outside the country.
Auctioning
Done every Thursday of the week. Coffee is sold by catalogue. The ports of exit are DSM and Tanga.

Cup tasting
Cup tasting follows several stages. 1. Green analysis/physical inspection to check for uniformity of beans, color, creaks, fermentation and dirtiness. 2. Roasting: Standard roasting temperature is about 2400 C – 1800C. After roasting the roasted coffee is cooled. 3. Grinding: coffee is grinded into fine particles. 4. Brewing The grinded coffee is mixed with water (14gm of coffee with 250cc water) and left to brew for 3 to 4 minutes. The water temperature required is 900C. 5 Cup tasting to identify Fragrance, Aroma (Acidity and bitterness) Flavour, Defforty (Fermentation, Sour, Wild, Fruit, Glass, Onion, Harsh, Bitter, Earth, Green (unripe), Potatoes, Woody). Cup tasting leads to classification.
Coffee classes: There are 17 classes: The first class is number 1 up to 7.A certain grade can have more than one class. There are qualified people for cup tasting.

Way forwards:
To train farmer groups to understand the importance of adhering to the 8 commandment for coffee production and 10 commandments for coffee quality
To make farmer groups be aware of the importance of getting feedback after cup tasting in order to understand the grade and class of their coffee before auctioning and work up their future plans to improve quality.

Annex 01

Date: Wednesday, 6th November, 2013

From: 14:00-16:00

Place of Visits with Points for Study

KNCU Union Cafe	1) Roles and responsibilities of KNCU (service provided by KNCU) 2) How to run the union in an transparent and accountable way 3) Quality control 4) Activities to generate more profit (establishment of own brand coffee, UNION coffee, run the UNION cafe, own roaster and packaging etc.)

■Brain storming before visit

What you want to ask? / What you want to learn?

1) *To learn good practice of coffee production and marketing by cooperatives in Kilimanjaro Region*
2) *To obtain basic rules and system of group management*

■Findings

KNCU provides:

- *Community healthy insurance schemes whereby each family contributes 49,000 Tanzanian shillings per farm family and gets services for a family of 4-6 family members.*
- *Establish an education fund which provides school fees to children of their primary society members.*
- *KNCU fair trade premium project provide funds to finance organic farming in ten primary societies with a total of 6,425 farmers. The farmers produce organic coffee and access high prices.*
- *Fair Tourism Project – It enables farmers to get income through accommodation of foreigners who want to learn how coffee is being produced. 70% of the fund remains in the villages to help community development projects. The rest of the money (30%) remains with KNCU and is used for price stabilization in the market.*
- *Establishment of Union coffee café – The project has enabled the union to get extra money (around 400 million per year) which can allow them to provide farmer services.*
- *KNCU also have shares in the coffee curing company at Moshi. This allows KNCU to have say/control in curing and hence better prices.*

Production of coffee seedlings
KNCU have their own nursery for production of good quality seedlings which are sold to farmers through their primary societies

Lessons learnt

- *The union is made up of 68 primary societies. Therefore the District should sensitive farmer groups to form AMCOs.*
- *KNCU provide extension services, cooperative education and working gears such as motor cycles and fuel to its members and extension staff*
- *District Council should prepare coffee teaching aids and programs to all extension workers.*
- *District Council to prepare teaching modules for group formation, group dynamics*
- *District Council and AMCOs to support establishment of coffee nurseries for production of high production and CBD and Leaf Rust tolerant seedlings*
- *KNCU provides market information on coffee prices to member primary cooperative societies. The district has to establish a system through mobile phone which can provide marketing information to Mbozi AMCOs.*
- *KNCU provides minimal production cost by providing best quality inputs. The district has to establish of pilot organic farming in some areas so as to get high profit through direct export*
- *Transparency to conduct regular meetings which will enable group members to be aware of everything that is going on in their group (Good governance)*

Way forwards
To ensure that all AMCOs members are knowledgeable of their rights, roles and responsibilities.
To conduct train to the members of AMCOs so that they become aware of their rights, roles and responsibilities

Annex 01

Date: Thursday, 7th November, 2013

From: 9:30-10:30

Place of Visits with Points for Study

TCB Auction	1) How the auction implemented 2) Requirements and demands from buyers

■Brain storming before visit

What you want to ask? / What you want to learn?

1) To observe actual auction

■Findings

In the auctioning process we learned three important things

No bid: Meaning the lot was not sold. But there is a bidder who was interested and there will be some negotiations later for the coffee

Sold: Meaning that the coffee lot was bought at the indicated price

We also learned that large lots were sold faster and at a better price than small lots, similar grades were sold at different prices (The effects of quality).

Date: Friday, 8th November, 2013

From: 9:00-11:30

Place of Visits with Points for Study

AMKENI Gourmet Coffee Group	1) Brief history and roles of the group 2) Quality control (from red cherry to drying of parchments) 3) O&M of CPU, User fee

■Brain storming before visit

What you want to ask? / What you want to learn?

1) To learn good practice of coffee production and marketing for quality control
2) To obtain basic rules and system of group management

■Findings

The group started operating after receiving training in 1999 through Techno Serve
Role/Responsibility: To collect red cherry coffee from members; To undertake post-harvest process; and To transport and sell at the auction

The responsibility of the group:
Maintain quality of coffee by following the 10 commandments and as a result they succeeded to get coffee quality award 3 times in Tanzania and 1 time in Africa.
They make sorting before and after drying
With exception of casual labor there are only two members who are paid monthly allowances (The chairman and secretary). They have a security guard who is paid salaries for the whole year
They practices organic farming
As group they find customers who are going to buy coffee directly from them.
They are provided with credits and extension services from KNCU
They buy cherry from the members in cash and after selling they pay the members for the difference. They buy cherry at 500/= per kg.
Record keeping is done always. Operation and maintenance cost are covered by group members served by their CPU.There is water recycling while processing coffee.

Annex 01

Date: Friday, 8th November, 2013

From: 13:30-16:00

Place of Visits with Points for Study

Mwikamsae Kinyamvuo Rural Cooperative Society	1) Brief history and roles of the cooperative society 2) Quality control by CPU and hand pulperies 3) Working relationship with KNCU 4) Strong organization and leadership (transparency and accountability) 5) Organic coffee

■Brain storming before visit

What you want to ask? / What you want to learn?

1) *To learn good practice of coffee production and marketing by cooperatives in Kilimanjaro Region*
2) *To obtain basic rules and system of group management*

■Findings

The society was registered in 1987 by Registration No. KAR 113.
Members: 909 active members of which 427 are female and 782 are male

Production
Production is between 80,000 kg to 100,000 kg
They don't have purlpery unit but they control coffee quality by following the Ten Commandments.
They are very close with farmers in terms of supervision.
They practice organic farming in small plots
Currently they have a pulper (CPU) secured through DADPs support and is at the final stages of instalation

Relationship with KNCU
They are member of KNCU
They are provided with extension services, farm inputs as well as advance payment by KNCU
Through KNCU they are enabled to get sponsors in academic matters by helping their children in paying school fees and other social services. (Standard one up to form six).
They contribute their fund to community development project e.g. construction of classrooms, health centre projects through the village government
The farmer members through their general assembly meetings decide what should be done with money they get from KNCU as devidents

Responsibility and Transparency
They obtain their leaders through elections done after every 3 years.
Every group member has an equal chance of being elected as a leader.
Decision making is made by every member through annual meetings.
Results from open Auction is very known to all members

Weakness/Challenges:
Most of them have old coffee trees.
Labor force is a problem because most of them are old.

Annex 01

Date: Monday, 11th November, 2013

From: 9:00-11:00

Place of Visits with Points for Study

Mbeya City Coffee And MMCO Ltd.	1) Observe how to cure parchments and grade green coffee 2) Curing losses 3) How to send samples to the auction in Moshi 4) How results from the auction are feed backed to producers 5) All costs for farmers (such as curing, re-drying etc.) 6) Marketing

■Brain storming before visit

What you want to ask? / What you want to learn?

1) *To learn the process of curing parchment (flow from parchment to curing)*
2) *To learn process of curing, including grading.*
3) *To learn how curing process is connected with market /Moshi Auction.*

■Findings

Collection of parchment coffee:

- *Weighing the parchment coffee is done immediately on receiving.*
- *Measure moisture content (should not be more than 12.5).*
- *Off-load from motor vehicle.*
- *Before processing, the parchment coffee should be weighed again*

Customers are requested by letter for permission to hull.

- *Before hulling customers are informed to be available at the factory to witness their coffee being processed*
- *Re weighing is done to crosscheck whether the coffee is at the same weight as it was received or not. Normally if it has been at the factory for a long period it can lose the original weight through loss of moisture*
- *Sorting is done to remove foreign matter*
- *After de hulling, polishing should be done to remove the fine silver skin on the coffee beans.*

Grading:
The grades obtained are as follows: AA, A, B, PB, C, F

The factory prepares sample statement which is sent to TCB

- *TCB provide catalog/auction schedule which shows when that lot is to be auctioned*
- *TCB provide order which show that coffee has been sold*
- *Storage fee is paid by the buyer*
- *Processing fees is paid by customer*

Curing loss

- *Standard curing loss is between 18-20%. Above that level it implies that there were foreign matter like stone etc in that particular lot.*

Way forwards

- *To train farmer groups/AMCOs to be aware of adulteration which lower the coffee quality.*
- *To provide moisture meters to extension officers especially those in the pilot area.*

■Wrap Up

Presentation and report of findings during the study tour	1) Sharing what you have learned and what you can do to improve current situation 2) Action Plan of Region, District, WAEO, AMCOS for future

■Memo for Discussion

The following are identified as possible measures for developing coffee VC for Mbozi DC.

Input Stage

- *In collaboration with coffee stakeholders Mbozi District Council have to facilitate soil analysis in the 6 Wards (Myovizi, Msia, Itaka, Isansa, Igamba and Iyula.*
- *In collaboration with coffee stakeholder extension worker should be facilitated with sample instruments and reagents for soil analysis because it is*
- *Establishment of teaching module that involves the u micro nutrients as they are important in the coffee taste.*
- *Establish fertilizer uses schedule. Foliar Fertilizers app issing macro- nutrients.*

At the end of the Study tour, the participants discussed what they have learned. Each participant summarized them in this note.

Production and Post^harvesting Stage

- *In collaboration with coffee stakeholder to work out ways through which farmers get h clean water for coffee processing.*
- *To advice farmer group/AMCOS to plant medicinal plants for treatment such as neem tree*
- *Facilitate farmer group/AMCOS to use shed net in order to reduce rusting of the beans.*
- *Training farmer groups/AMCOS to use intergraded pest management in case there is identification of pest*
- *To advice farmer group/AMCOS to plant medicinal plants for treatment such as neem tree.*
- *Early control of pests at the onset of the problem has an element cost and labor reduction and hence an advantage to the farmer.*
- *To train farmer groups to understand the importance of adhering to the 8 commandment for coffee production and 10 commandments for coffee quality*

Marketing Stage

- *Through JICA support and linkage we anticipate that farmers will benefit more if they are linked with direct export market to their coffee (Direct sale to roasters outside the country).*
- *To make farmer groups be aware of the importance of getting feedback after cup tasting in order to understand the grade and class of their coffee before auctioning and work up their future plans to improve quality.*

Farmers organization

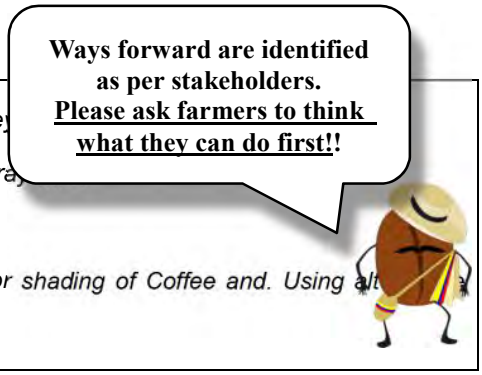
- *Training of farmer group/AMCOS to have transparency in terms of budget, income and expenditure*
- *To advice farmer group to conduct annual general meetings as stipulated in the Cooperative law and their constitutions in order to discuss their succses, challenges and air their views.*
- *To train farmer groups/AMCOs to be aware of adulteration which lower the coffee quality.*
- *To provide moisture meters to extension officers especially those in the pilot area.*

■Action Plan or Expectation for Future

(1) For Own AMCOS and Village Level. District and Region's Support.

(2) Things to do by him/herself soon after the study tour, <u>without any support from Outsider (DPs)</u>

- *a) To teach members the quality of the coffee, how they*
- *b) To complete the construction of the CPU and buy Tra*
- *c) To encourage more farmers to join AMCOS*
- *d) To introduce techniques such as Planting trees for shading of Coffee and. Using alt pesticides to kill pests*



(3) Things to do in future with other members of the AMCOS/ Farmers group, and with other AMCOS.

- *Explain on how others have succeeded to produce excellent coffee , as a group of AMKENI which held first position in Tanzania, Africa 's third coffee quality , then we will evaluate the secret of its success .*
- *Trace the benefits of being exposed to the financial statements without secrets.*
- *Trace the benefits that can be obtained by CPU machines and picking beans with defective..*
- *Trace the benefits of organic farming, keeping the bean on drying area and following procedures.*
- *Inviting other groups and AMCOS to come and learn to make friends for tours.*

(4) Possible support by Extension officer, District, and Region

- *Training session the importance of soil health measurement and procedures to follow 10 commandments of coffee in order to improve the quality of coffee.*
- *Visiting Groups / AMCOS in order to educate them on proper usage of CPUs.*
- *Prepare handouts and special programs will strip the extension teaching about soil health and its importance.*
- *Prepare handouts (module) and special programs for capacity building to extension professionals about 10 best coffee processing commandments and 8 commandments for increasing efficiency in the production of coffee.*
- *Testing of Soil Health in 3 villages (Pilot project) and provide training to extension specialists and farmers on how to take soil samples for soil testing in collaboration with TaCRI.*
- *Education crop improvement for Coffee, grades rates (classification) and relationship to the price of coffee.*
- *Education about the coffee market*
- *Develop training modules for capacity building of the organization and management of financial and other resources of the farmer groups and associations based on (AMCOS) in collaboration with cooperative sector , Community Development and Agriculture sector.*

Annex 02

MBOZI DISTRICT COUNCIL

for CPU Construction and AMCOS Activities for processing of good quality coffee

April, 2014

Mbozi Coffee Support Team

District Facilitation Team

Regional Secretariat

DADP Planning and Implementation Phase I

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LIST OF THE WORKING TEAM

Name	Position	Office
Richard Sirili	DAICO	Mbozi DC
Francis Kabale	SMS-Coffee	Mbozi DC
Jumapili Mashilini	Civil Engineer	Mbozi DC
Asante Ndimbo	Nutrition Officer	Mbozi DC
Iddi M Chamshama	Cooperative Officer	Mbozi DC
Lydia Shonyela	Crop Officer	Mbozi DC
Petro Ndundu	Crop Officer	Mbozi DC
Thadey Ngambila	Crop Officer	Mbozi DC
Wilfred Kayombo	Agronomist	RAS, Mbeya
Angela Maganga	Cooperative Officer	RAS, Mbeya
Megumi Kaneda	Monitoring and Evaluation	RADAG, DADP Project
Etsuko Akabane	Farmer Organisation Support	RADAG, DADP Project

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LIST OF ABBREVIATION

AMCOS	Agricultural Marketing Cooperative Society
CPU	Coffee Pulpery Unit
DAICO	District Agriculture, Irrigation and Cooperatives Officer
DFT	District Facilitation Team
DC	District Council
JICA	Japan International Cooperation Agency
Kg	Kilogram
Nr	Numbers
Pc	Pieces
RS	Regional Secretariat
SM	Square Meters
SMS	Subject Matter Specialist
TSh	Tanzanian Shilling
VAEO	Village Agricultural Extension Officer
WAEO	Ward Agricultural Extension Officer

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LIST OF TABLES

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INTRODUCTION

This booklet is a tool which was developed by Mbozi district facilitation team using a participatory approach; in collaboration with farmers, staff from the Mbeya Regional Secretariat, Ministry of Agriculture Food Security and Cooperatives and JICA experts. It comprises requirements necessary for sustainable development of coffee processing system in a chronological order which are presented in matrix. The tool is user friendly and available in both English and Swahili versions.

The aim of this booklet is to guide farmers and DFTs to verify activities being performed by AMCOS members or items delivered to CPU construction sites for effective development of coffee processing industry. Effective use of this tool can hasten implementation of CPU development programs in a systematic and effective way vis-à-vis existing plans.

The DFTs presume that this booklet will be used as an important working tool not only in the pilot villages in Mbozi district but also in all coffee producing villages in Mbozi district and Tanzania at large.

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1.0 Overview

Designing and implementing a good project or development program is easier said than done. Mbozi coffee industry has not escaped this. Through DADPs the district has procured three CPUs for Ichesa, Hamwelo and Msia villages. Farmers are liable to construct CPU infrastructures as well as to smoothly run and maintain them. In order to achieve this, a working team assisted farmers to develop feasible working checklists for substantiating their work plans as shown in **Appendix I**.

This booklet has congregated checklists on different aspects which were primarily developed by two sub groups (**Appendix I a & b**), presented in the DFT meeting, shared with other stakeholders at the Ministry of Agriculture Food and Cooperatives, and tested in the three villages. The booklet is an important tool which can be used to hasten efficient implementation of plans and programmes for development of the Coffee industry in Mbozi and elsewhere. The information is presented in four subtitles starting with objectives, followed by how the checklists were formulated, how developed, how it is organized and how to use it.

1.1 Objective of the checklists

To examine the extent of development of construction works for CPU infrastructure as well as to monitor the performance of the community in implementing CPU Operation and Maintenance work.

1.2 Formulation and development of the Checklists

Several formulations were prepared using group discussions whereby the formulating teams shared experiences and as well consulted various literatures. Important documents that were consulted include CPU manuals, design drawings developed by Technoserve; an international nonprofit organization that promotes business solutions to poverty in the developing world by linking people to information, capital and markets. The preparation process involved three steps first the two groups worked independently and came up with a draft. Secondly the draft was presented to the team meeting and sent to other stakeholders for comments. The team and stakeholders came up with suggestions which were incorporated in the document. The third step entailed

pre-testing the checklists to the village community (**Appendix I**) whereby the community had an opportunity to propose amendments and or suggestion which were integrated in the final document. This final version was translated to Swahili for communal consumption and utilized in Msia, Hamwelo and Ichesa villages.

1.3 How this document is organized

This document is organized into two categories with four parts. Part 1 provides a Checklist for planning and site selection of CPU infrastructure, Part 2 checklist of material preparation, Part 3 for construction schedule chart and Part 4 for AMCO functions.

1.3.1 CPU Infrastructures

Part 1: Checklist for Planning and site selection of CPU

This was initiated by DFT members who made a list of important infrastructures to be at the CPU site. These were categorized into five major components namely CPU and Hooper building, Toilet, water supply tank, washing tanks and drainage system, as well as drying system (**Appendix II).**

A team of technical personnel from the district, including the district environmental officer, cooperative officer, SMS coffee, and an Agriculture officer went to the three villages and agreed with the farmers on safe places to construct the infrastructures. This was followed by a site visit to verify the orientation of the infrastructures a phenomenon that took into account the recommended distances (60m) from the bank of the water course and the structures being free from contaminants/contamination (**Appendix Ie**). While examining the location of these infrastructures farmers developed sketches for positioning the infrastructures.

Part 2: Checklist of material preparation

The district civil engineer developed bills of quantities for construction of the infrastructures mentioned above basing on design drawings from Technoserve, with minor modifications. The associated checklist for the materials is as shown

in **Appendix III.** Verification of the material was done with reference to the CPU construction work plan showed in **Table 1** below.

Table 1: Mpango kazi wa ujenzi kwa ajili ya CPU

Na	Kipengele	Machi				Aprili				Mei			
		1	2	3	4	1	2	3	4	1	2	3	4
1	Kusafisha eneo na kupima msingi												
2	Ukusanyaji na ununuzi wa vifaa												
3	Ucchimbaji na ujenzi wa msingi												
4	Kujenga jamvi la zege												
5	Kujenga ukuta na kuweka fremu												
6	Kupiga kenchi na kuweka paa												
7	kupiga lipu na kupaka rangi												
8	Kusimika mashine (CPU) na mfumo wa maji												
9	Kuendesha na kutunza CPU												

Part 3: Checklist for implementing the construction work plan

Preparation of the work involved was participatory. Since the coffee harvest season starts in Mid May farmer's motive is to use the CPUs this harvesting season. Thus DFTS assisted farmers to narrate the construction activities against time frame, in weeks (1 – 4). The matrix in **Table 2** is used to check-in the extent of implementation of the activities.

Table 2: Checklist for Implementing the Work Plan on Collection of Materials, Construction and Installation of CPU

No	DESCRIPTION OF ACTIVITIES	MARCH				APRIL				MAY			
		1	2	3	4	1	2	3	4	1	2	3	4
1	Site clearance and setting out of												
2	Collection, hauling & Procurement of												
3	Excavation & construction of the												
4	Concrete work for slab												
5	Walling and installation of frames												
6	Roofing and installation of shutters												
7	Finishing works												
8	Installation of CPU and water tank												
9	Operation and maintenance of the CPU												

Part 4: Checklist for AMCOS function

This checklist was established with a primary intention of facilitating the AMCOS to effectively undertake Operation and Maintenance of their CPUs. In order to achieve the intended purpose the checklist includes important issues like formulation of CPU operation committee and quality control committee, rules to be followed as well as a guide on record keeping and management.

Two checklists were developed; one to be used by DFTs (**Appendix IV**) and the other to be used by AMCOS leaders (**Appendix V**).

1.4 How to use the Checklists

The checklists have been developed in a matrix format whereby the user is supposed to mark (preferably tick) in one of the cells at the intersection point of the row and column of his/her choice basing on observations made. The instructions given and purpose of each specific checklist differ therefore the following are description of using these checklists:

1.4.1 Checklist for material for CPU construction

In the cell that intersects the week and type/quantity of material to be delivered to the site/store check by writing the quantity of material that has been distributed in that particular week. Note; the weeks in the given months (March, April and May) are presented as numbers 1 – 4 indicating week one to week four respectively.

1.4.2 Checklist for implementing the construction work plan

A predetermined work plan (**Appendix IV**) should be used to correlate current implementation status of different activities. The blank cells are checked in by drawing a bar chart/line along the row to entail the execution period (week) or extent of execution of the assigned task.

1.4.3 Checklist for AMCOS functions

Maintenance and operation issues are checked by DFTs against whether done or not done. User rules are checked against whether they are in place (Yet) or not (Not Yet) while record keeping and management as well as other issues and CPU installation works are checked as whether Good, Average or Bad

(**Appendix III**). Similarly AMCOS checks the same against whether the mentioned activities are done or not done. At the end of the AMCOS checklist the document is authenticated by representatives of both AMCOS leaders and DFTS (**Appendix IV**)

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APPENDICES

Appendix I: Photos

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Appendix II: Checklist for Planning and site selection of CPU

Chapter 3: Actually Used Checklists

Part 1: Check List for the for the Planning and Site-Selection of CPU Housing Construction

The following issues need to be considered before planning and selecting the CPU housing place.

WATER

Availability of adequate clean water (The info such as how much water is needed for a CPU to be procured will help you to guide villagers). If not, the followings need to be considered.

- ☐ Filtering water using traditional ways, equipment like Sieve etc (Please collect further information for future)
- ☐ Infrastructure of water harvesting during rainfall (Please collect further information such as average costs and construction materials for future)
- ☐ Water source should not be far from C.P.U area about 60 meters (According to this and the first bullet point under No.2, CPU should be always constructed 60 meters away from the water source. But it is sometimes difficult. It is better to re-describe the two sentences.)
- ☐ Channels for passage of clean and unclean water and drainage
- ☐ Water pump for pumping water from the source to the tank

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AREA FOR CONSTRUCTION OF CPU

- ☐ CPU building should be 60 meters from water source used by human being
- ☐ Enough area for receiving coffee and drying
- ☐ C.P.U foundation should be strong with standards
- ☐ Availability of office and toilet, 60 meters from C.P.U area
- ☐ Adequate slope to allow flow of coffee berries from the hopper to CPU by influence of gravity

COFFEE RECEIVING AREA

- ☐ Large area for receiving coffee and sorting
- ☐ Equipment for receiving coffee such as good floor

EQUIPMENT FOR DRYING COFFEE

- ☐ Availability of enough vichanja with suitable size for coffee drying
- ☐ Availability of wind blocks such as fence to protect dust into coffee
- ☐ Wire mash should not get rust or fungus
- ☐ Use of traditional resources for what?

STORING PROCESSED COFFEE.

- ☐ Clean sacks/bags (how about materials of bags?)
- ☐ Chaga

- ☐ Clean area, dry with enough light. (cleanness, ventilation system, pallets etc)

UNCLEAN WATER AND PULP SYSTEM (water and waste disposal)

- ☐ Availability of stream for unclean water passage and 3 holes for kuvundikia pulps .

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Appendix III: Sketch developed by farmers for orientation of CPU infrastructures

Checklist for Material for CPUs Construction

Name of Village:……

NO	DESCRIPTION OF ITEMS	UNIT	QTY	IMPLEMENTATION STATUS (FILL IN QTYs)						
				MARCH	APRIL				MAY	
	ELEMENT NO.1 MAIN CPU BUILDING			4	1	2	3	4	1	2
1.1	**FOUNDATION WORKS**									
A	Import selected earth filling to make up levels	Item	1							
B	Allow for keeping excavations water free.	Item	1							
C	**CONCRETE WORKS**									
C.1	Cement	Bags	215							
C.2	Sand+Transport	Trip	13							
C.3	Aggregates +Transport	Trip	8							
C.4	Stones-foundation and Hard core	Trip	15							
C.5	Nails various size	Kg	7							
C.6	Timber for formwork	Sm	15							
1.2	**WALLING**									
A	150mm bed leveled and blinded	Sm	8							
B	burnt bricks	Pcs	8,515							
C	GS pipe 4''	Pcs	7							
1.3	**ROOFING**									
A	**TIMBER**									
A.1	100 X 50 mm Rafters	Pcs	26							
A.2	100 X 50 mm Treated soft wood joist	Pcs	30							
A.3	100 x 50 mm Struts	Pcs	23							
A.4	50 x 50 mm Purlins	Pcs	43							
A.5	20 x 250 mm Fascia Board	Pcs	23							
B	**CORRUGATED IRON SHEES:** Pref. 28 G.									

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B.1	Roof covering sloping less or equal to 45^0	Pcs	46							
B.2	Ridge cap	Pcs	4							
B.3	16mm bolts 200mm long with nuts & washers	Pcs	48							
1.4	**FINISHING**									
1.4.1	**Cement and sand (1:4) screeds and backings**									
A	Cement	Bags	13							
B	Sand	Trip	2							
1.4.2	Instln. water tank & accessories cap. 5000 ltrs	Item	1							
2	**ELEMENT NO.2 OFFICE AND STORE**									
A	Burnt bricks	Nr	3,500							
B	Cement	Bags	70							
C	Timber for roofing	Nr	25							
D	Nails	Kg	13							
E	Dooor frames and shutters complete	Nr	2							
F	C I Sheet gauge 28	Pcs	19							
G	Labour charge	Item	1							
H	Window frame and shutters	Nr	2							
3	**ELEMENT NO.3 PIT LATRINE**									
A	Burnt bricks	Nr	1,800							
B	Cement	Bags	60							
C	Timber for roofing	Nr	17							
D	Nails	Kg	8							
E	Dooor frames and shutters complete	Nr	2							
F	C I Sheet gauge 28	Pcs	6							
G	Labour charge	Item	1							
H	Window frame and shutters	Nr	2							

Note: No's 1 – 4 above represent weeks. Nr : Numbers. pcs: pieces.

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Appendix IV: Checklist for AMCOS Function in Three Villages; Ichesa, Masia & Hamwelo – To be used by DFTs

DATE …… /….. /2014

S/N	ACTIVITY	ICHESA AMCOS			MSIA AMCOS			HAMWELO AMCOS		
		D	ND	REMARKS	D	ND	REMARKS	D	ND	REMARKS
1.1	**Maintenance**									
	-Changing engine oil									
	-Adding fuel									
	-Clean Delva's basket									
	-Washing front guard & pulpier with clean water									
	-Greasing									
	-Routine removal of waste									
1.2	**Operation**									
	-Specific person to operate CPU									
	-Specific technician(Msumbi Techn.)									
	-Quality control committee									
1.3	**Usage Rules**	**YT**	**NY**	**REMARKS**	**YT**	**NY**	**REMARKS**	**YT**	**NY**	**REMARKS**
	-To use recommended standards									
	-AMCOS member's will decide									
1.4	**Record keeping**	**GD**	**AV**	**BAD**	**GD**	**AV**	**BAD**	**GD**	**AV**	**BAD**
	Financial Records									
	-Cash book analysis									
	-Receipt voucher book									
	-Payment voucher book									
	-Ledger book									

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	-Fixed Assets register									
	-Daily cash balances									
	-Monthly bank statements									
	-Member's ledger card									
	-Revenue and Expenditure reports									
1.5	**Management Records**	**GD**	**AV**	**BAD**	**GD**	**AV**	**BAD**	**GD**	**AV**	**BAD**
	-Minutes Board meetings									
	-Minutes of ordinary meetings									
	-Minutes of AGM									
	-Info sharing system									
	-Documents filing									
1.6	**Other Information**	**GD**	**AV**	**BAD**	**GD**	**AV**	**BAD**	**GD**	**AV**	**BAD**
	-Relationship btn AMCOS &society									
	-Collaboration leaders and members									
1.7	**Preparation of CPU installation**									
	Building Materials	**GD**	**AV**	**BAD**	**GD**	**AV**	**BAD**	**GD**	**AV**	**BAD**
	-Collection of Sand									
	- Collection of Stones									
	- Collection of Cements									
	- Collection of Timber									
	- Collection of Supporting Poles									

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	- Collection of iron sheets									
	- Collection of aggregates									
	-water pump & pipes									
	-wire mash									
	-drying tables									
	-Water tank									
	-windbreaks									
	-waste pits									
	- Collection of nails									
	-Window frame and shutters									
	- Door frames and shutters complete									
	-Selected masons									
	-Construction committee									
	-Selection of quality cont. committee									
	- Selection of O&M committee									
	-Status of the construction									
	-Manpower									

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Appendix V: Checklist for AMCOS Function in Three Villages; Ichesa, Masia & Hamwelo – To be used by AMCOS

AMCOS CHECKLIST REPORT FOR…… AMCOS AS OF ……/…../20….

S/NO	ACTIVITY	MONITORING RESULT			REMARKS
1.0	**O&M of CPU**	**DONE**	**NOT DONE**		
1.1	**Maintenance**				
	-Changing engine oil				
	-Adding fuel				
	-Clean delva's basket				
	-Washing front guard and pulper with clean water				
	-Greasing				
	-Routine removal of waste				
1.2	**Operation**	**YET**	**NOT YET**	**REMARKS**	
	-Specific person to operate CPU				
	-Specific technician(Msumbi Technician)				
	-Selection Quality control committee				
1.3	**Usage Rules**	**YET**	**NOT YET**	**REMARKS**	
	-To use recommended standards				
	-Amcos member's will decide				
1.4	**Record keeping**	**GOOD**	**ACCEPTABLE**	**BAD**	
	Financial Records				
	-Cash book analysis				
	-Receipt voucher book				
	-Payment voucher book				
	-Ledger book				
	-Fixed Assets register				
	-Daily cash balances				
	-Monthly bank statements				
	-Member's ledger card				
	-Revenue and Expenditure reports				
1.5	***Management Records***	**GOOD**	**ACCEPTABLE**	**BAD**	
	-Minutes Board meetings				
	-Minutes of ordinary meetings				

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	-Minutes of AGM				
	-Documents filing				
	-List of Participants to Activity				
1.6	***Other Information***	**GOOD**	**ACCEPTABLE**	**BAD**	
	-Relationship between AMCOS and Community				
	-Collaboration leaders and members				
	-Info sharing system				

OBSERVATION:

RECOMMENDATION:

We agreed about the information as the result of monitoring on the day as noted above.

AMCOS		**DFT**
Name		Name
Position		Position
Signature		Signature

Annex 03

Guideline for
Duties of Quality Control Committee (QCC)
Mwongozo kuhusu Majukumu ya kamati ya udhibiti wa ubora wa kahawa

A. Production Stage
Hatua ya Uzalishaji

1. Train on disease and insect control and provide proper insecticide and fungicide

   - Kufundisha namna ya kudhibiti magonjwa na wadudu na kushauri matumizi sahihi ya viuatilifu

2. Train on timely pruning

   -Kufundisha namna ya kupogolea kwa wakati

3. Ensure availability of right kinds and required amount of coffee inputs (such as seedlings, insecticide, fungicide and fertilizer) at the right time

   -kuhakikisha pembejeo sahihi zinapatikana kwa wakati kama vile viuatilifu na mbolea

B. Processing Stage
Hatua ya Uchakataji

1. Train other AMCOS members/farmers on picking only ripe red cherries

   -Kufundisha wanachama wengine/wakulima namna ya kuchuma kahawa mbivu (nyekundu) Pekee

2. Receive only ripe red cherries from members/non-members after sorting out unripe, overripe, infected and diseased cherries

   -Kupokea kahawa mbivu nyekundu pekee toka kwa wanachama na wasiowanachama baada ya kuchambua mbichi,ilioiva sana na ilioathilika na magonjwa

3. Supervise proper weighing and recording at the time of reception of red cherries

   -Kusimamia upimaji na kunukuu wakati wa mapokezi ya kahawa mbivu nyekundu

4. Facilitate timely pulping schedule (whining 8 hours of picking) after receiving red cherries from AMCOS members/farmers

   -Kuhakikisha ukoboaji unafanyika kwa wakati (masaa 8 ya kuchuma) baada ya kupokea kahawa mbivu toka kwa wanachama wa AMCOS na wakulima

5. Ensure proper use of coffee processing machines such as setting calibration to avoid bean brakeage

   -Kuhakikisha matumizi sahihi ya machine ili kuepuka uvunjaji wa punji

6. Facilitate removing of the left pulps

-Kuhakikisha maganda yanatolewa

7. Ensure availability of clean and enough water for pulping, fermentation and washing.

   -Kuhakikisha upatikanaji wa maji safi ya kutosha kwa ajili ya ukoboaji,uvundikaji na uoshaji

8. Facilitate removal of coffee floaters

   -Kuhakikisha maelea yanatolewa

9. Facilitate washing of CPU after use

   -Kuhakikisha CPU inaoshwa baada ya matumizi

10. Facilitate proper and timely fermentation (first soak in a fermentation tank for 24 hours, wash, and then ferment again. Check whether cherries are fermented properly by touching.)

    -Kuhakikisha uvundikaji unafanyika vizuri weka kwenye matenki siku 2, osha na uache kwenye maji siku moja zaidi. Unaweza kugusa ili kujiridhisha kama kahawa imevunda vizuri

11. Supervise proper washing of fermented cherries

    -Usimamizi wa uoshaji baada ya kuvunda

12. Facilitate proper drying (i.e. use dry tables with wire mesh, turn them regularly, cover beans when the sun is too strong or it rains, and check moisture level of beans)

    -Kuhakikisha kahawa inaanikwa vizuri(tumia vichanja vyenye chekeche, geuza kahawa, funika wakati wa jua kali au mvua, angalia unyevunyevu wa kahawa)

13. Facilitate sorting during drying process (removing waste and colored beans)

    -Kuhakikisha masalia na kahawa yenye rangi vinatolewa wakati wa kuanika

C. Storage Stage
Hatua ya utunzaji

1. Facilitate storage of parchments in a clean and ventilated store

   -Kuhakikisha kahawa iliyokauka inatunzwa kwenye ghala safi na lenye hewa ya kutosha

2. Facilitate use of new sisal bags

   -Kuhakikisha unatumia magunia mapya ya katani

3. Use pullets to avoid direct contact to the ground

   -Usiwe chini kahawa unashauriwa kutumia parets

4. Arrange and use means of transportation in a good condition (clean with no smell) to transport parchments to a curing company

-Tumia usafiri mzuri, (gari safi isiyo na harufu yoyote) unapopeleka kahawa kiwanda cha kukoboa kahawa

D. General

1. Obtain quality information (grade and class) from a curing company or TCB and share it with AMCOS members/farmers.

   -Pata taarifa kuhusu ubora (Madaraja) kutoka kampuni ya ukoboaji au bodi ya kahawa na washirikishe wanachama wa AMCOS na wakulima

Annex 03

…… AMCOS L.T.D,P.O.Box ……. MBOZI REG.MBR …….

Minimum qualifications of a member of quality control committee

(Sehemu ya sifa anazotakiwa kuwa nazo mjumbe wa kamati ya ubora)

1. He/she should know how to write, read, and count .

-Lazima ajue kusoma,kuandika na kuhesabu

2.He/she should have experience of attending at least a short course of training about a quality control in crops specifically in coffee

-Lazima awe amewahi kuhudhuria mafunzo ya ubora wa mazao hususani kwenye zao la kahawa

3. He/she should be observant and very good at paying attention to details.

-Lazima awe na uwezo mzuri wa kuchunguza na kuhakikisha taratibu zote zinafuatwa

4. He/she should have the ability to use technical equipments like CPU.

-Ikibidi awe na uwezo kuendesha mtambo wa kumenyea kahawa (CPU)

5. He /she should have good communication skills to motivate other members/farmers to improve quality of their coffee

-Awe na uwezo wa kufanya mawasiliano mazuri ili kuwatia hamasa wanachama/wakulima kuboresha kahawa yao.

6. He /she should be capable of writing reports for the committee.

-Awe na uwezo wa kuandaa taarifa za kamati yao ya ubora

7. He/she should have an ability to use all of his/her sense organs i.e nose,eyes,tongue,ears,skin

-Awe na uwezo wa kutumia vizuri viungo vyake vyote vya milango ya fahamu kama vile pua,macho,ulimi,maskio,na ngozi

8. He/she should be able to commit to his/her duties throughout the coffee season

-Aweze kushiriki kutimiza majukumu yake kwenye kamati kwa msimu mzima bila kukosa

9. He/she should be capable of working for a long time

-Awe na uwezo wa kufanya kazi kwa muda mrefu

10. He/she should be a quick learner when participating in coffee training or any other training

- Awe mwepesi kujifunza na kuelewa haraka mafunzo ya ubora wa kahawa au mafunzo ya mengine

Annex 03

11. He/she should be trusted by others in AMCOS

-Aaminike na wanachama wengine kwenye AMCOS

12. He/she should be an active member of AMCOS

-Awe mwanachama hai

13. He/she should collaborate with other members

-Awe tayari kushirikiana na wanachama wenzake

14. He/she should share information regarding quality like grades, classes, etc with other farmers

- Awe tayari kuwahabarisha wenzake kuhusu gredi, madaraja ya kahawa n.k

15. He/she should be a committed member and good coffee producer

-Lazima awe mwanachama anayejituma na mkulima bora wa kahawa

HALMASHAURI YA WILAYA YA MBOZI

MWONGOZO KWA WAKULIMA KUHUSU UBORA WA KAHAWA

MWONGOZO HUU UMEANDALIWA KWA NJIA YA PICHA NA WATAALAMU WA KILIMO PAMOJA NA WAKULIMA WA WILAYA YA MBOZI

1.Andaa Kitalu cha miche/mbegu bora

MICHE BORA YA ARABIKA

2a.Andaa shamba

2b.Chimba mashimo

Upana 60cm, urefu 60cm na kina 60cm

3.Pandikiza Mche bora wa kahawa na umwagiliaji

4. Weka matandazo, kivuli bada ya kupanikiza.

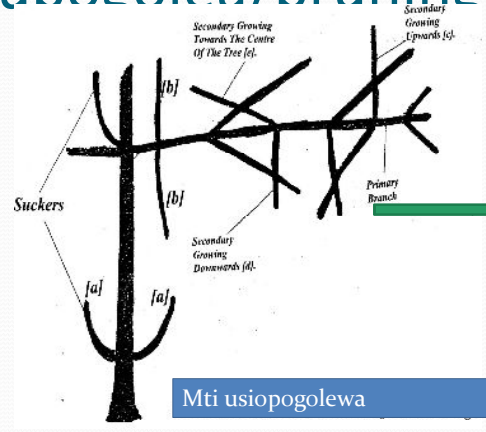
5.Pogelea kulingana na hali ya Kahawa zako kwa:

a) Mkato mkuu au; b) kupogolea na kutoa maotea

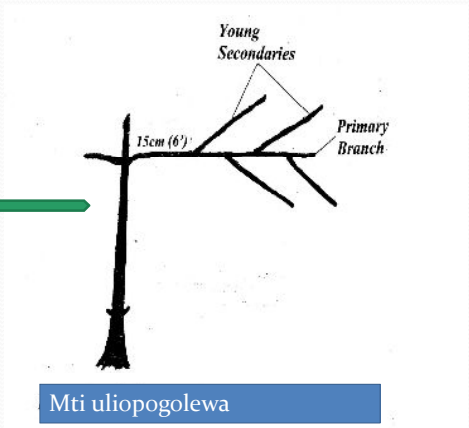
Mkato mkuu

Kupogolea

Kupogolea/pruning



Mti usiopogolewa



Mti uliopogolewa

6. Tumia dawa ya kuuwa wadudu inapobidi kulingana na hali ya wadudu na magonjwa kwenye kahawa

- Kiambata cha sumu
- Kiambata cha sumu
- Kiamabata cha sumu

- Tumia dawa kulingana na tatizo lililopo (ugonjwa, wadudu)
- Fuata maelekezo yaliyoko kwenye kibandiko,
- Fuata ushauri wa mtaalam wa kilimo
- ONYO: Tafadhari usichanganye dawa kwenye kopo moja, kila dawa piga/nyunyizia peke yake na kwa mda wake kulingana na

7.Uchumaji.

Hakikisha unachuma kahawa nyekundu, iliyoiva (Red cherry)

Hatua za uchumaji wa kahawa

a. Chuma Kahawa iliyoiva vizuri (Nyekundu) b. Husichume kahawa pamoja na kikonyo

Uchumaji……..

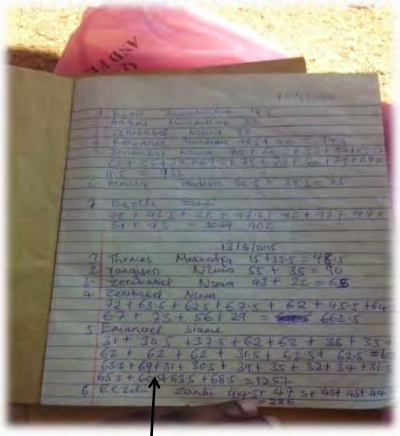
c. Husichume kahawa yenye ugonjwa/ kijani/kavu/nyeusi/njano

8. HATUA ZA UCHAKATAJI.

a. Chambua kahawa zisizofaa kabla ya kupima

8b.Pima kahawa kwa usahihi, tumia mzani uliokaguliwa

9c.Chukua stakabadhi



Daftari la kumbukkumbu ya mapokezi ya kahawa nyekundu

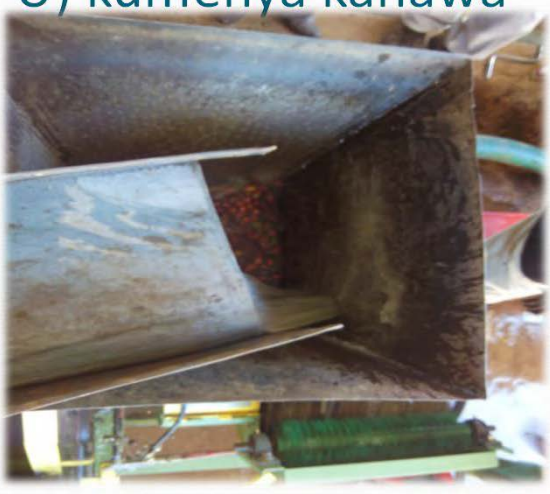
Kitabu cha risiti cha mapokezi ya kahawa nyekundu

10d.Tunza kumbukumbu kwa siku na kwa mwezi

Tunza kumbukumbu ya kila mkulima kulingana na kilo zake alizomenya kwa siku, kwa mwezi na kwa mwaka. (Zingatia, MALI BIRA DAFTARI HUPOTEA BILA TAARIFA.)

11a.Menya kahawa kwa kutumia CPU siku hiyo hiyo.

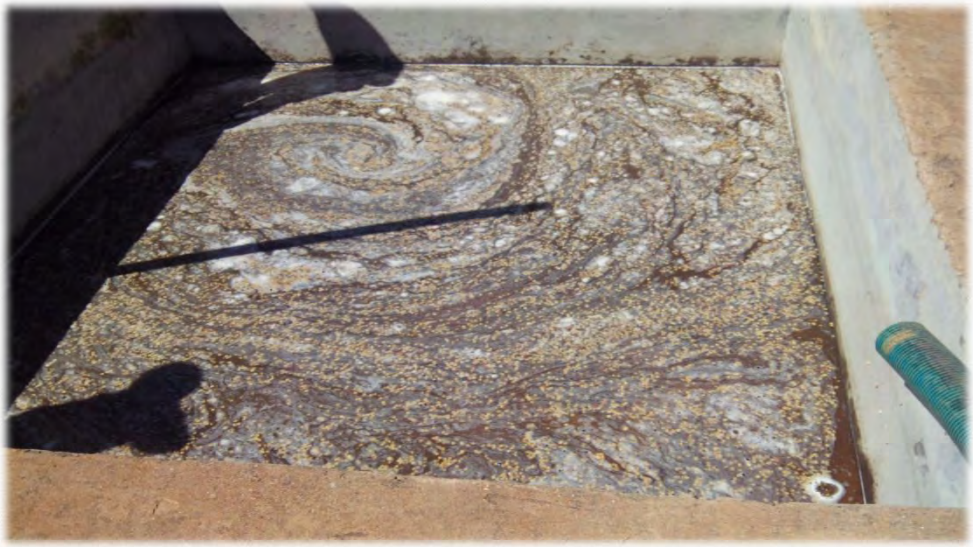
12b.tumia mashine (CPU) kumenya kahawa



kumenya.....

Mashine ya kumenyea kahawa

13. Loweka kahawa kwa siku moja.



14.Panga madaraja ya kahawa kilingana na ukubwa na uzito.

Kahawa nzito na bora

kahawa nyepesi na daraja la chini

15.Vundika kahawa kwa siku tatu huku ukiigeuza kila siku

16.Osha kahawa mara mbili, kasha weka maji safi yalale na kahawa kwa siku moja

17. Anika kahawa kivulini kisha juani (tumia vichanja), acha kahawa ikauke kwa siku 7 kutegemeana na hali ya hewa itakavyoruhusu.

Hakikisha unaandika tarehe ya siku ya kuanika

Annex 05

Training Material for Book Keeping (Sample)

EXAMPLE 1

MSIA AMCOS conducts coffee collection activities and sale. On March, 2015 MSIA AMCOS had the following transactions records;

On 01/03/2015 there was a cash balance of Shs 200,000/= and 198,200/= shillings in bank

On 02.03.2015 MSIA AMCOS received 10 new members each paid admission of Tshs 5,000 /=. The total was 50,000 shillings/=

On 03/03/2015 new members gave total shares of 600,000 shillings/ =

On 04/03/2015 there was coffee auction sales of 60,000,000/=

On 06/03/2015 AMCOS draw 54 million from the bank for payment of farmers

On 07/03/2015 the following payments were made to the following farmers; Japhet Mwamlima 10,200,000/=, 08.03.2015 Mwashambwa 15,000,000/=; and Mwalise 28,800,000/=

Function: Enter the same transactions in the primary books and cash book

EXAMPLE 2

For the month of April, 2015 MSIA AMCOS activities continued for the following transactions

On 03/04/2015 took shilling 5,200,000/= money from the bank as association tariff in order to fund various activities of AMCOS as follows: on 04.04.2015 transport of 550,000 shillings/=, on 05/04/2015 paid labor 400,000 shillings, on 06/04/2015 stationeries for 70,000/=, sitting allowances 200,000/=, on 04.08.2015 paid security guard 300,000/=, on 09/04/2015 75,000 for CPU fuel /=, and CPU oil 15,000/=

09/04/2015 association received 350,000 shillings from customers as a fee to use the CPU

Function: Enter the same transactions in the primary books and cash book

ACTIVITY 1

On 2014/2015 season Hamwelo AMCOS had recorded financial transactions as follows:

On 01.05.2015 cash balance of 102,000 shillings/= and shillings 160,000/= in bank

On 07.05.2015 received shillings 3,200,000/= loan from the CMS via a bank for buying CPU construction equipment, a loan of 2.1 million shillings for fertilizer, and shillings 1,000,000/= loan for coffee harvesting

Annex 05

On 09.05.2015 procured from the building materials shop belong to Mwashiuya, a water pump, cost 500,000 / =, water tank 600,000 / =, water pipes 450,000 / =, iron sheet 1,650,000/ =

On 16/05/2015 received new members who provided a total of 70,000 shillings as entrance fee

On 19/5/2015 secretary draw 1,000,000/= from bank for paying coffee growers money for harvesting, Mwashambwa sh.200,000 / =, Mgallah sh.600,000 / = and Nzowa sh.200,000 =

Function: Enter the same transactions in the books of the previous books and cash books (cash book)

ACTIVITY 2

June activity on AMCOS continued as follows

Date 03/06/2015 coffee auction sales of 84 million

On 8/6/2015 repaid loan to CMS Total 6,300,000/= by check number 00002345

Date 11/6/2015 tariff payments shillings 7,000,000

Date 16/6/2015, 2,155,000 shillings charge of transportation, board allowance 900,000/=, stationeries 120,000/=, welcome 400,000 visitors/=

On 17/06/2015 secretary gave bank check of 00,002,346 with a total of 55,900,000/= for the payment of farmers.

On 18/06/2015 secretary paid for Mgulla sh.35,000,000/=, Lyanda sh.17,000,000/=, and Sinienga sh.3,900,000/=

Function: Enter the same transactions in the primary books and cash book

CASH BOOK YA MWEZI APRIL,2015						
MPE			TASLIMU		BENKI	
tarehe	STK/HM NO	maelezo	MPE	MTOE	MPE	MTOE
1-Apr-15		salio anzia	850,000.00		6,198,200.00	
3-Apr-15		Ushuru wa chama	5,200,000.00			5,200,000.00
4-Apr-15		usafirishaji		550,000.00		
5-Apr-15		vibarua		400,000.00		
6-Apr-15		shajara za ofisi		70,000.00		
7-Apr-15		posho vikao		200,000.00		
8-Apr-15		mshahara mlinzi		300,000.00		
9-Apr-15		Ada ya CPU	350,000.00			
		mafuta CPU		75,000.00		
		oil kwa ajili ya CPU		15,000.00		
30-Apr-15		salio ishia		4,790,000.00		998,200.00
			6,400,000.00	**6,400,000.00**	**6,198,200.00**	**6,198,200.00**

Annex 06

MBOZI DISTRICT COUNCIL

Baseline Survey Report:

Coffee Post-Harvest Treatment and Processing Practices In Three Target Villages; Ichesa, Msia and Hamwelo.

April, 2014

Mbozi Coffee Support Team;

District Facilitation Team,

Regional Secretariate Office

DADP Planning and Implementation Phase II Project

Annex 06

Annex 06

Contents

Annex 06

List of Survey Conductors and Authors of the Report

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Lydia Shonyela	Crop Officer	Mbozi DC
Petro Ndundu	Crop Officer	Mbozi DC
Thadey Ngambila	Crop Officer	Mbozi DC
Wilfred Kayombo	Agronomist	RAS, Mbeya
Megumi Kaneda	Monitoring and Evaluation	RADAG, DADP Project
Etsuko Akabane	Farmer Organisation Support	RADAG, DADP Project

List of Abbreviations

AMCOS	Agricultural Marketing Cooperative Society
CPU	Coffee Pulpery Unit
DAICO	District Agriculture, Irrigation and Cooperatives Officer
DC	District Council
Kg	Kilogram
KNCU	Kilimanjaro Native Cooperative Union
RS	Regional Secretariat
SMS	Subject Matter Specialist
TaCRI	Tanzania Coffee Research Institute
TCB	Tanzania Coffee Board
TSh	Tanzanian Shilling
VAEO	Village Agricultural Extension Officer
WAEO	Ward Agricultural Extension Officer

Annex 06

Acknowledgement

It is of great importance to get this chance and thank the following personnel and institutions; DED-Mbozi for assisting us with transport and permission ,WAEOs and VAEOs for their good cooperation and time spend during the project and selection of the interviewees and registration of the interviewees ,all AMCOS members of the three villages for accepting the project to be implemented on their villages .Our greatest gratitude goes to the interviewees for sparing their time when they were very busy working on their farms.

Annex 06

Chapter 1: Introduction

Mbozi District Council is one among the three pilot Districts in the country supported by JICA in the improvement of value chain for its commodities. Mbozi DC selected coffee as its pilot crop for value chain development.

And in Mbozi DC, three pilot villages were selected among 99 villages which grow coffee. These villages are Ichesa, Msia and Hamwelo.

In this project JICA intervene at the processing stage where they provide technical assistance by capacity building to farmers, AMCOS leaders, DFT and Extension workers.

Therefore before starting measuring the results of the project it was planned to have a baseline survey to all three pilot villages as a mode of collecting information from the farmers to know their experience in the post-harvest treatment and processing practices of their coffee before the project so that at the end through baseline survey results we might be able to make comparisons before and after the project.

The objective of the survey was to prepare the base line data for post harvest treatment and processing practice in the pilot villages before starting technical training and the uses of CPU in the pilot villages.

Chapter 2: Plan and Methodologies of Baseline Survey

In this chapter, the ways of planning and conducting of the baseline survey are depicted.

2.1. Planning of the survey.

The DFT members met to discuss on how the survey was going to be conducted.

- The time frame work of the base line survey started on 24th March 2014 to 25th March 2014.
- DFT decided to undertake pre-visit all the 3 villages, for the provision of the name list and introduction of the survey objectives to the village /ward extension workers and AMCOS leaders.
- Discussed on interviewers and interviewees where they agreed that five (5) interviewers (4 from DFTs and one extension officer) to conduct interview in the villages.
- In each village 20 interviewees were interviewed which makes a total 60 interviewees in the 3 pilot villages.
- Methodology used is individual interview with questionnaire.
- Time to be spent at the village was 2 hours.
- Selection of interviewees was decided to use name list against size of the farm. The word/village agricultural extension officers were responsible for making the name list.
- How to enter data and preparation of the report were discussed.

2.2. Modification of questionnaire and making data sheet.

- The basic questionnaire made from textbooks was modified to be simple with multiple choices. There are 3 choices starting with recommended or good practice, to the not recommended or bad practice , i.e. A, B and C. However, the interviewers can modify the order when they ask interviewees the choices, preventing that the order implies the value or goodness of practices.
- The base line survey data sheets were made, two types were discussed and come with one type of drop down list. Then the option D was proposed for the answer that cannot match with the 3 options given in questionnaire.
- After discussion, DFTs added more questions in the questionnaire. These questions were about age of interviewee, to find interviewees understanding about grades given after coffee curing/hulling companies and those given in TCB before auction, after testing.
- The first draft of English version questionnaire was then printed and used for mock interview in Kiswahili.
- The testing was to find how it sounds in English and Kiswahili. Then the Swahili version were made and tested.

2.3. Implementation of baseline survey in the three target villages

- The field work of collecting data started at Hamwelo (29th March,2014),Msia (31st March,2014) and Ichesa village (01st April,2014) .Where the number of 20 farmers from each village interviewed, Totally 60 farmers interviewed and each interviewer was supposed to interview only 5 interviewees.
- After conducted this activity at the field level, the work is continuing in the office where the team is still working hard, tireless in order to make sure that we can accomplish this task successfully on time. So members of the team have been shared tasks like data input, designing graphs, the ways of making analysis, chapters to be included in the report, etc.

2.4. Data Analysis

- The exercise of Data input had been done by all DFT members surveyed the pilot villages,this activity was started from Monday to Wednesday this week.
- Also at the same time DFT have been doing Data clearance input ,to cross check the reliability of the data collected, farmers participated. This was done by checking the name list filled by WAEO/VAEO against the interviewed data sheet in order to know who was interviewed and who was not, but also to be sure of the data accuracy entered in the data sheet for each interviewee for all questions and villages.
- On top of that DFT discussed over the ways of analysis, and making of graphs, we realized that our data will be analysed into three categories which were post-harvest treatment and processing practices, marketing, and general condition of farmers (questionnaire number 1-13,16-18,and 14,15,19 respectively) where the team proposed that we will use bar chart and pie chart depending on the nature of the questionnaire. For questionnaire number 1-13 bar charts will be used ,and for questionnaire number 14-19 pie charts ware proposed. Successfully all charts were produced and handed to members of the team to read the charts, understand, and write what the charts implies about.

Chapter 3. Basic Information about Interviewees

This analyse the basic information from the interviewees in order to get a general knowledge about which age is dealing with coffee, the number of coffee they have and the size of their farms.

3.1. Age Group of the Interviewees

This enabled us to understand from each village the age of farmers dealing with coffee industry and charts shows the majority is 31 to 60 of age dealing with coffee ,little from the age of up to 30 and no above the age of 61. See the table and the chart below.

Table 1:Age group of Interviewees

	ICHESA	MSIA	HAMWELO	TOTAL
A	3	1	3	7
B	17	15	14	46
C	0	4	3	7
D	0	0	0	0

Note: From Question19. A. up to 30, B. 31 to 60, and C. 61 and above

Pie chart depicts age categories of farmers engaged in coffee production. From the Pie chart, it shows that majority 77% farmers in 3 villages Ichesa,Msia and Hamwelo are aged between 31 and 60 years,11% between 61year and above and 12% are aged between one year and 30 years.

This implies that, all villages having enough labour power.

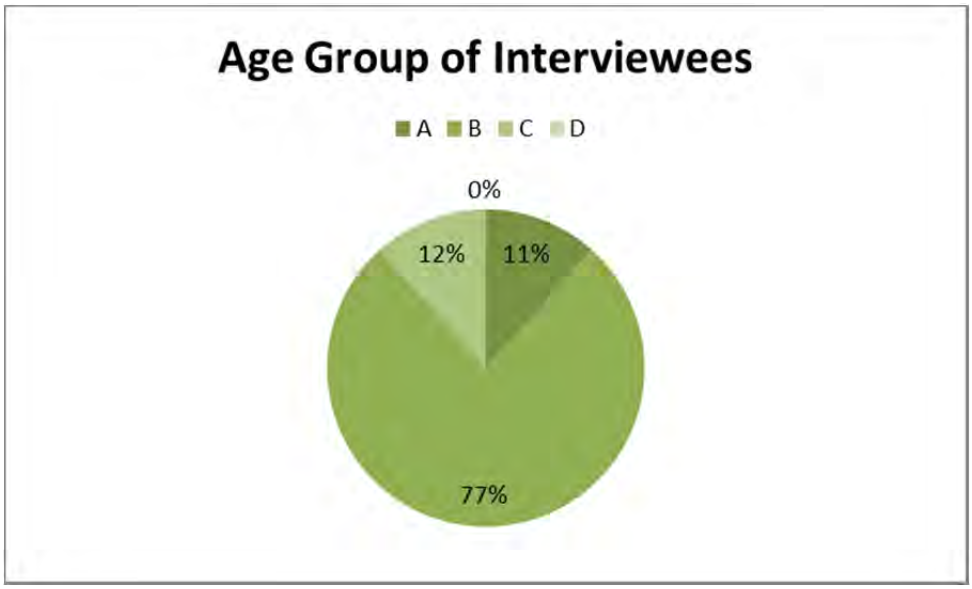

Figure 1:Age group of Interviewees

3.2. Size of Coffee Farm possessed by the Interviewees

The aim of this question was to know the number of acres they are cultivating coffee ,and the analysis showed us the most farmers have less than 5 acres ,it is about the 95% of all interviewees while only 5% of farmers possessed between 6 and 10 acres .This shows that farmers are categorized at small scale target village .See the table and the chart below.

Table 2: Size of Coffee Farm possessed by the Interviewees

	ICHESA	MSIA	HAMWELO	TOTAL
A	20	19	18	57
B	0	1	2	3
C	0	0	0	0
D	0	0	0	0

Note: From Question 14. A. up to 5acres, B. 6 to 10, and C. 11 and above

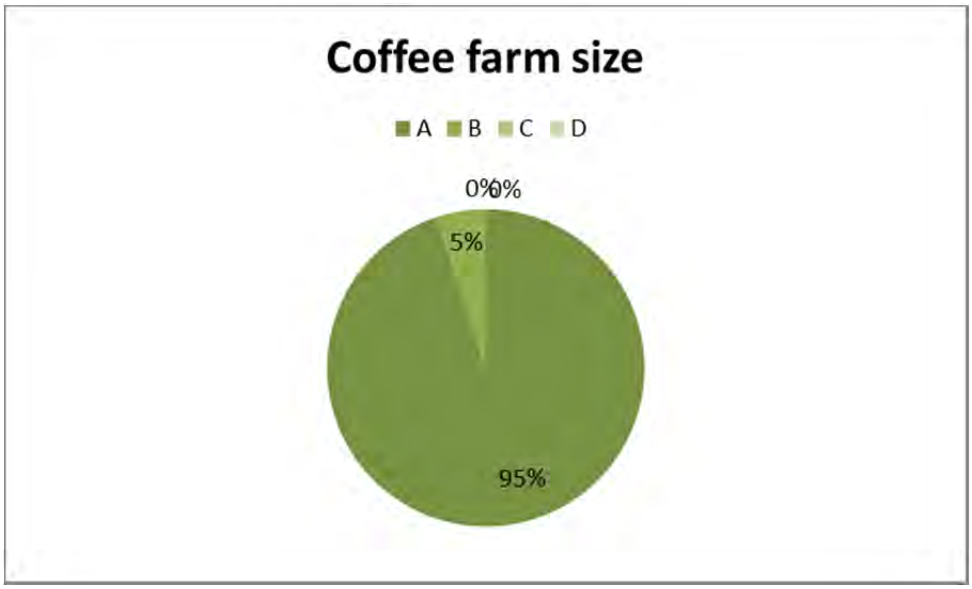

Figure 2: Size of Coffee Farm possessed by the Interviewees

3 .3 Number of Coffee Trees possessed by the Interviewees

Under this analysis it was designed to understand the number of coffee trees the farmers are possessing so that later we can determine the expected productivity from these trees .According to the analysis below majority of the farmers possessing more than 501 trees as you can see the chart and table below.

Table 3: Number of Coffee Trees possessed by the Interviewees

	ICHESA	MSIA	HAMWELO	TOTAL
A	1	1	2	4
B	11	2	7	20
C	8	17	11	36
D	0	0	0	0

Note: From Question 14. A. up to 5acres, B. 6 to 10, and C. 11 and above

The data from the pie charts portray that the majority posses up to 1000 trees of coffee .

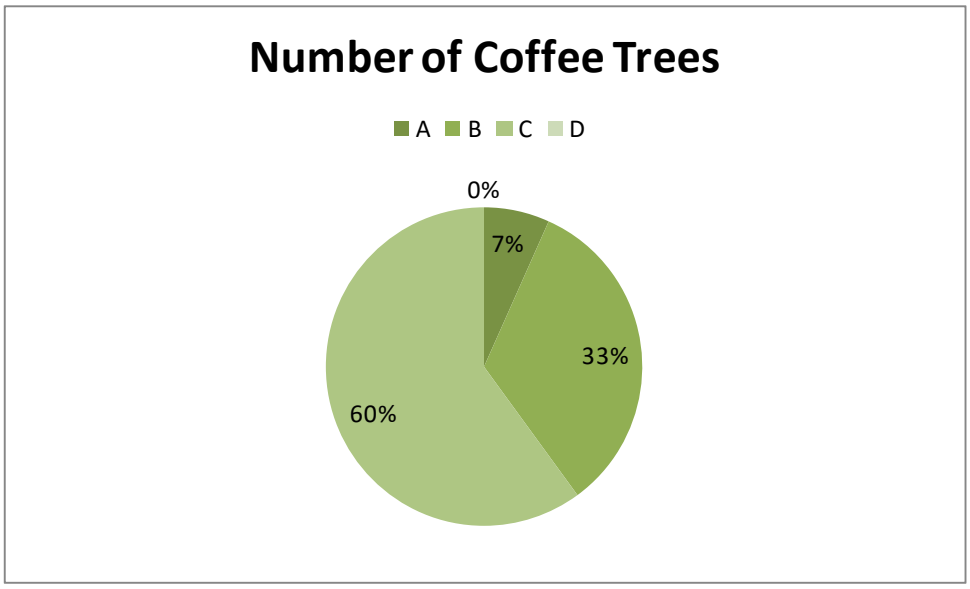

Figure 3: Number of Coffee Trees possessed by the Interviewees

3.4. Training for processing coffee

Pie chart below shows that 36 % of farmers attended training on coffee processing, 12% of farmers were informed by attendants and 52% were not informed by attendants. This indicates that a large number of farmers did not received any information on coffee processing.

Table 4. Training for processing coffee

	ICHESA	MSIA	HAMWELO	TOTAL
A	7	5	10	22
B	1	4	2	7
C	12	11	8	31
D	0	0	0	0

Note: From Question 16: A. Yes, I attended to training courses. B. Yes, I was informed by attendants. C. No, I was not informed.

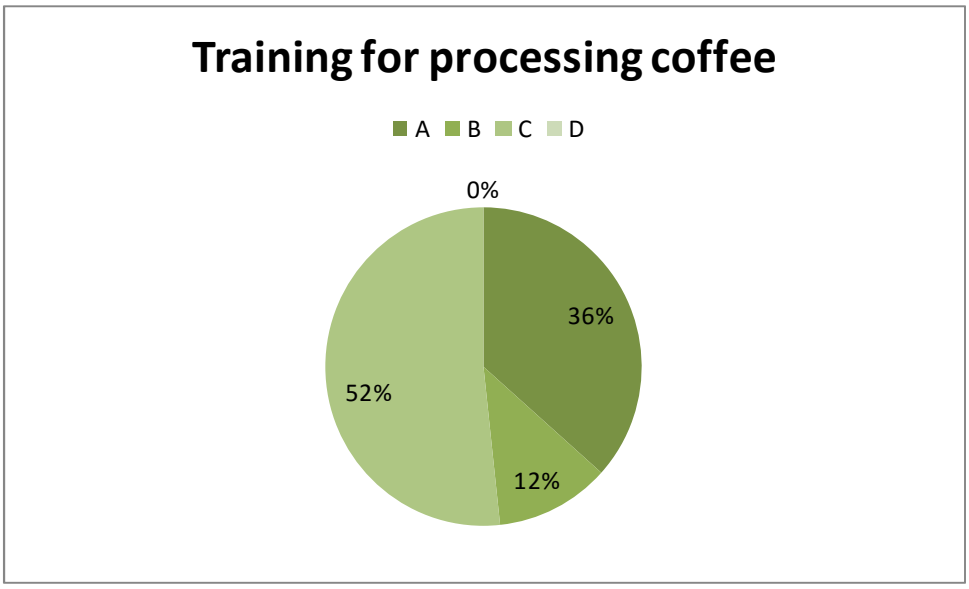

Figure 4. Training for processing coffee

Chapter 4.Result and Analysis

4.1 Post-harvest treatment and processing practices

4.1.1 Overview

We are going to do overview analysis to grasp the situation of post-harvest treatment and processing practices done by interviewees.

Generally speaking, farmers in the 3 villages perform well on the following activities; picking of cherries (Question 1, hereinafter, Q 1), Cleanness of pulping tools (Q 5), Quality and Quantity of Water for processing (Q 6 and 7), and Sorting during drying (Q 11).

On the other hand, for the following practices the farmers are not performing well; Sorting of red cherries (Question 2, hereinafter, Q 2), Pulping tool and quality of tool (Q 4), Fermentation (Q 8), Grading (Q 10), and Bags for storage (Q 13).

Table 5:Post-harvest treatment and processing practices

	1	2	3	4	5	6	7	8	9	10	11	12	13
A	50	2	27	1	54	45	37	11	29	14	47	29	6
B	8	53	10	59	6	11	12	10	29	10	9	14	34
C	2	5	23	0	0	4	11	37	0	36	4	17	20
D	0	0	0	0	0	0	0	2	2	0	0	0	0
TOTAL	60	60	60	60	60	60	60	60	60	60	60	60	60

Note: From Question 1-13:See Attachment 2

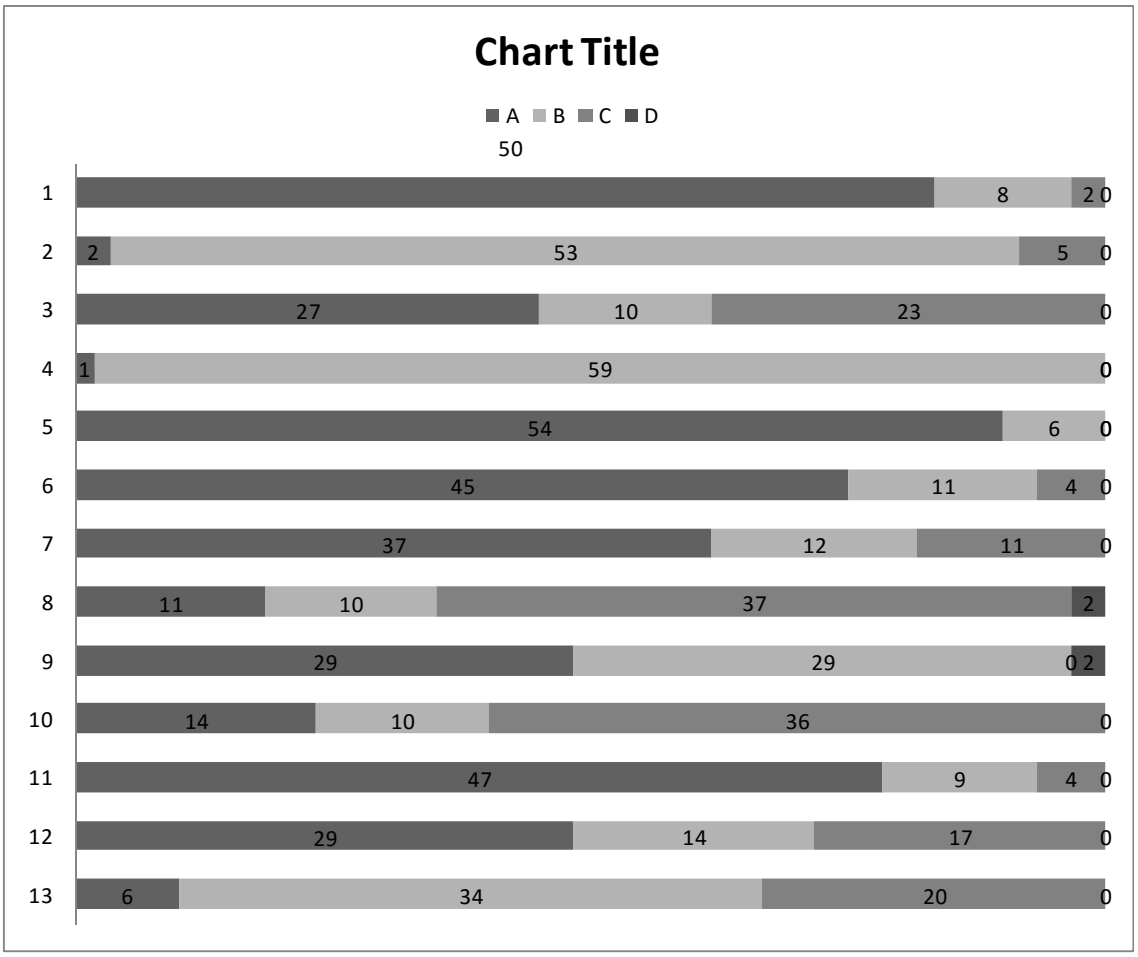

Figure 5:Post-harvest treatment and processing practices

4.1.2 Detailed Analysis

(1) Well done activities

In this part, the analysis is depicted below the table of the theme/ topic, question and answer choices.

	Theme/ Topic	Question	Answers
1	Picking of cherries	What types of cherries do you pick up?	A. Only properly ripe red cherries B. Sometimes including non-ripe or over-ripe but not diseased C. Sometimes including diseased, dried cherries, or sand

It seems most farmers understand the importance of picking red ripe cherries. On the question of the type of coffee which is picked scored high (50 out of 60 in total). Only 8 people agreed to have picked non-ripe and over-ripe cherries and diseased also.

	Theme/ Topic	Question	Answers
5	Cleanness of pulping machine (hand pulper and CPU)	How often do you wash pulping tools?	A. Pulping machines/tools are washed every time B. Pulping machine/tools are sometimes washed. C. Pulping machine/tools are hardly washed.

Majority of the farmers (54) wash their pulping tools every time after use. Only 6 interviewees said pulping tools are sometimes washed.

	Theme/ Topic	Question	Answers
6	Water for processing- Quality	What is the condition of the water that you use for processing?	A. Water is clean (transparent and not smelly) B. Water is not clean sometimes C. Water is not clean every time.
7	Water for processing - Quantity	Do you always have enough water for processing?	A. We always have enough. B. I sometimes have enough. C. I do not have enough water every time.

Water for processing quality coffee is clean and enough for most farmers. Majority, 45 farmers suggested that they use clean water for processing coffee. Only 11 said that sometimes water they use for processing is not clean. On the quantity of water for processing 37 interviewees said they always have enough water.

	Theme/ Topic	Question	Answers
11	Sorting during drying	Do you always do sorting during drying of the coffee parchments?	A. Yes, always. B. Sometimes. C. No, not at all.

Sorting during drying is well done by majority of farmers. Out of 60 farmers interviewed in the 3 villages, 47 farmers suggested that they always do sorting during drying of coffee parchments. And 9 of the 60 said that they do sorting only sometimes, 4 people said not at all.

(2) Not well done activities

	Theme/ Topic	Question	Answers
2	Sorting of red cherries	Who sort red cherries?	A. AMCOS or Group B. Individuals C. Sorting is not done at all.

It seems that AMCOS or Groups have not intervened much for sorting of red cherries. Out of the 60 farmers interviewed, 53 farmers insisted that sorting is done individually. Only 2 interviewees said they do sorting through AMCOS or Groups. Worst, 5 interviewees said that sorting is not done at all.

	Theme/ Topic	Question	Answers
4	Pulping tool and quality of tool	Which pulping tool do you normally use for pulping?	A. CPU B. Hand pulper C. No tool. Because I sell red cherries to a middle man / curing company

Almost all interviewees answered that they use hand pulper. Only one interviewee said he uses CPU for pulping while 59 interviewees use hand pulper.

	Theme/ Topic	Question	Answers
8	Fermentation	What do you use for fermentation?	A. A fermentation tank or pool. B. Buckets or *Sufuria* (cooking pots) C. Polythene bags

Fermentation is not properly done because most farmers perform worse by using polythene bags. More than half, 37 interviewees said they use polythene bags and only 11 interviewee use fermentation tanks or pool.10 interviewee use buckets or *sufuria* (cooking pots).

	Theme/ Topic	Question	Answers
9	Drying parchments	Where do you dry parchment?	A. On a drying table B. On a cloth or sheet on the ground or drying floor C. Directly on the ground

On drying parchments its seems rather, an equal number of farmers use both drying tables (29) and cloth or a sheet on the ground or drying floor (29).This gives a total of 58 farmers.

	Theme/ Topic	Question	Answers
10	Grading	Who does grading of parchment?	A. AMCOS or a group B. Individuals C. Grading is not done.

It also seems there is little knowledge on grading. Majority (36) of the farmers in the 3 villages said that grading is not done at all and only 14 interviewees said that grading is done by AMCOS or Group. Only 10 interviewees do grading by themselves.

	Theme/ Topic	Question	Answers
13	Bags for Storage	What type of bags do you use to store parchments?	A. Sisal bags renewed every year B. Sisal bags used plural years C. Chemical-fibre made bags

In the 3 villages, out of the 60 farmers interviewed, 34 farmers said they use sisal bags that are continuously used plural years .Only 6 said using sisal bags which were renewed every year .But 20 farmers use chemical-fibre made bags.

4.2.Knowledge about coffee quality in relation to market

4.3 Coffee grades

From the following table and figure, we have learnt that most farmers know little about coffee grades. This can be because this information sharing about the coffee grades is done in the coffee curing company, and the number of farmers who attend the coffee curing company is small.

The analysis shows that the understanding of coffee grades between one village and another it differs While 50% for Hamwelo AMCOS members know the coffee grades,Msia only 25% of members exactly know the grades.

Table 6:Coffee grading

	ICHESA	MSIA	HAMWELO	TOTAL
A	7	5	10	22
B	1	4	2	7
C	12	11	8	31
D	0	0	0	0

Note: From Question 17: A. Yes, I know. B. I somehow / a little bit know C. No, I do not know..

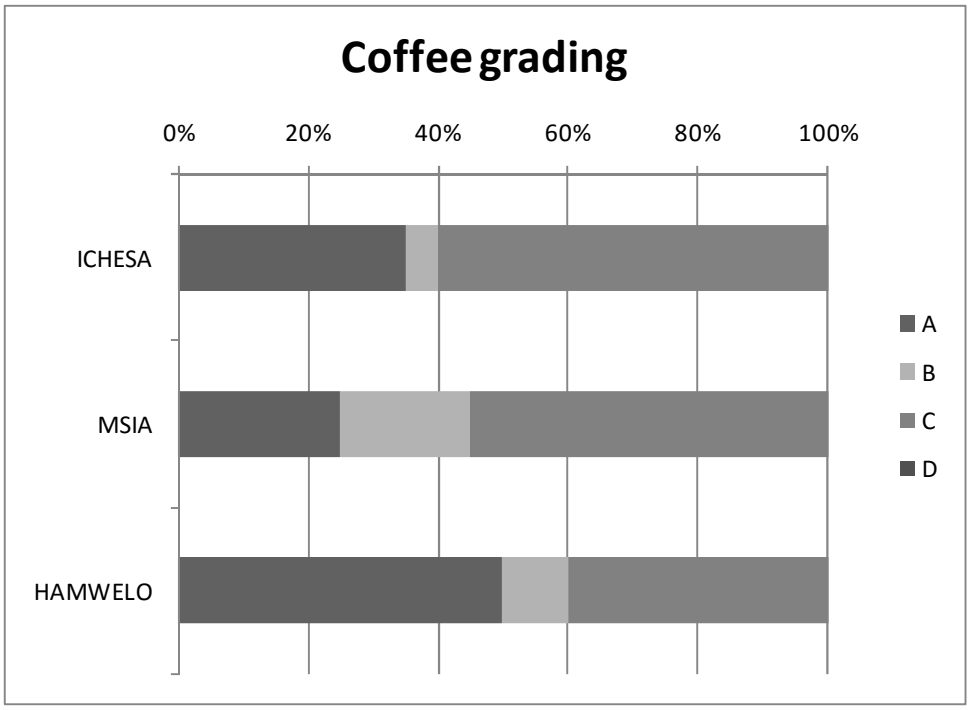

Figure 6:Coffee grading

4.4 Coffee classes

Answers to the question show us that the number of farmers receiving classes information is very small. This is because they don't get feedback from curing company and T.C.B who are responsible to return back an information to farmers; after cupping their coffee beans.

Table 7:Coffee classes

	ICHESA	MSIA	HAMWELO	TOTAL
A	1	4	5	10
B	2	1	1	4
C	17	15	14	46
D	0	0	0	0

Note: From Question 18: A. Yes, I know. B. I somehow / a little bit know. C. No, I do not know.

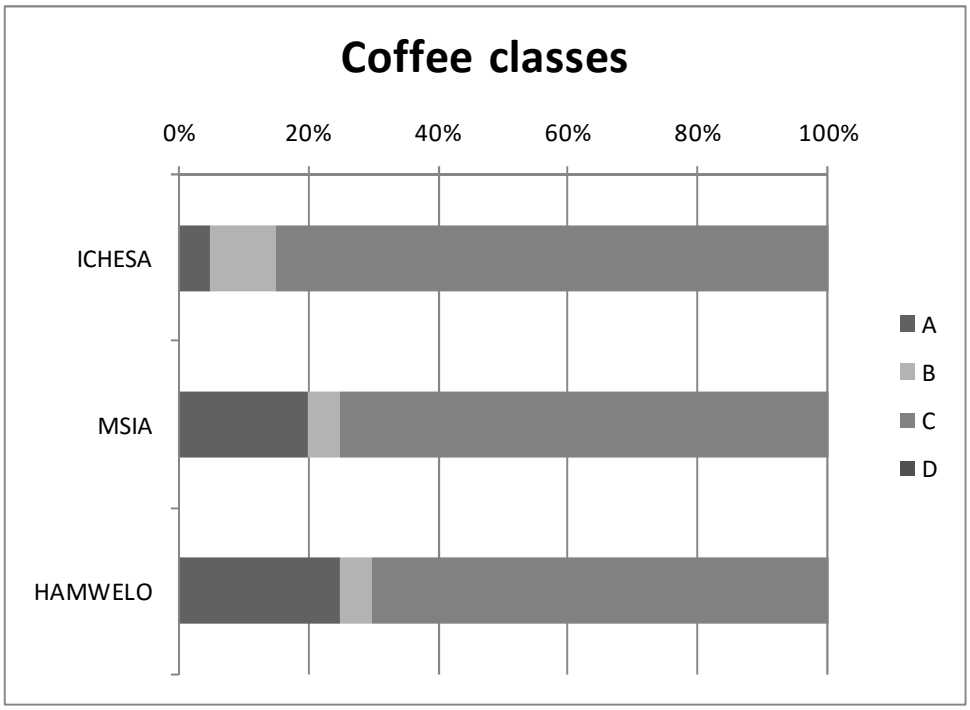

Figure 7:Coffee classes

Chapter 5: Conclusion and Recommendation

5.1 Conclusion

Our baseline survey objective was achieved. According to the analysis some topics or themes that farmers need improvement.

The result is to be used to establish benchmarks for further assistance activities for post harvest treatment and processing practices for improvement of coffee sector in the three target villages.

We would like to appreciate to the farmers on the themes which performed well ,and urge them to increase more efforts in the themes which they did not perform better.

We would like to request all coffee stakeholders to backup the coffee sector.

.

5.2 Further actions to be taken by DFT

To make sure that the training materials prepared should reflect to the themes that appeared not well performed on the baseline survey.

To make follow up to TCB people for the information on grades and classes.

To conduct impact survey assessment to compare with the baseline survey results.

5.3 Recommendation

5.3.1 Recommendation to farmers

CPU when installed will increase the efficiency of farmers to pulping their coffee.

The AMCOS leaders should emphasize their farmers to collect their red-cherries to the AMCOS for sorting.

Fermentation should be done using fermentation tanks instead of the polythene bags which tend to accumulate cause fungus on coffee parchments.

From the above observations, it is ideally recommended that, Grading should be done by the AMCOS and inform or teach the farmers on coffee grades.

Bags for storage should be sisal bags renewed every year to avoid contamination of any foreign materials to the coffee parchments.

5.3.2 Recommendation to TCB

The questionnaire shows us that the number of farmers who get information on coffee classes from TCB is very small, therefore we would like to request TCB to modify the application form for selling coffee by adding information as; number of kg. the AMCOS is going to sell ,coffee grades, coffee classes and prices.

Appendix 8

Reports and Materials of Pilot Activities in Kilombero DC

8.1 Pilot Activity Implementation Reports

THE UNITED REPUBLIC OF TANZANIA

PRIME MINISTER'S OFFICE

REGIONAL ADMINISTRATION AND LOCAL GOVERNMENT AUTHORITY

KILOMBERO DISTRICT COUNCIL

PILOT IMPLEMENTATION REPORT

FOR STUDY VISIT ON RICE MARKET VALUE CHAIN THROUGH WAREHOUSE RECEIPT SYSTEM MANAGEMENT AND PROCESSING FOR EIGHT FARMERS AT MBARALI DISTRICT IN MBEYA REGION

SUBMITED TO:

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA TECHNICAL COOPERATION PROJECT)

SUBMITED BY:

MABUBA MALIKI

Co-operative Officer I/DFP - DADPs

KILOMBERO DISTRICT COUNCIL

AGRICULTURE, LIVESTOCK AND CO-OPERATIVE DEPARTMENT, KILOMBERO

05 June, 2013

CC.

- **KILOMBERO DISTRICT EXECUTIVE DIRECTOR**
- **DISTRICT AGRICULTURE/LIVESTOCK AND CO-OPERATIVE**

TABLE OF CONTENTS

ABREVIATION AND ACRONYMS

AMSDP	- Agriculture and Marketing Systems Development Program
AMCOS	- Agriculture and Marketing Cooperative Society
DADPs	- District Agriculture Development Program
DAICO	- District Agriculture, Irrigation and Cooperative Officer
DED	- District Executive Director
IFAD	- International Fund for Agriculture Development
JICA	- Japan International Cooperation Agency
Kg	- Kilogram
MAMCOS	- Madibira Agriculture and Marketing Cooperative Society
M-SACCOS	- Madibira Savings and Credit Cooperative Society
SACCOS	- Savings and Credit Cooperative Society
SARE	- Southern Agriculture Renovation Enterprise
RUDI	- Rural Urban Development Initiatives
WRS	- Warehouse Receipt System

1. BACKGROUND INFORMATION

Japan International Cooperation Agency (JICA) is implementing a pilot project on farmers capacity building on rice marketing through warehouse receipt system, and rice value chain in Kilombero District Council in backstopping the District Agriculture Development Program (DADPS)

The study visit involved two farmers representatives of warehouse committee members from three Villages in the district which are implementing the warehouse construction projects under DADPs, these villages include;

- Mkangawalo and Ikule at Mngeta Ward
- Msalise at Mang'ula Ward

The study visit also include two, Mang'ula and Vijana Mbasa association groups representatives as for them have started operating the warehouse receipt system in Kilombero District for the support from Rural Urban Development Initiatives (RUDI), aiming to make them learn and share experiences from Mbarali farmers in order to make them compare their system and what have leant and make some modifications of their system where necessary and not effective

The study visit is focusing on creating awareness and building a common understanding among themselves and villagers in general and be prepared on the planned training for the coming next financial year on rice market value chain through the warehouse receipt system and rice value chain in Kilombero District.

Before the study visit, the visit preparation was conducted by two staff from Kilombero District Executive Office in Agriculture, Livestock and Cooperative department from 22nd – 25th April 2013 to identify the areas of importance for effective rice market through the warehouse receipt system for farmers visit. The areas identified were;

- Chimala SACCOS at Chimala for warehouse receipt system
- Ubaruku for paddy/rice processors
- Madibira SACCOS and AMCOS at Madibira for warehouse receipt system and paddy/rice processors

The study visit was taken place on 06th – 09th May 2013, with eight farmers' representatives from their respective villages and two staff from Kilombero District Executive Director's Office in Agriculture, Livestock and Co-operative. During the visit Mbarali Executive Director attached a host staff to lead us at identified areas for the study.

1.1. PARTICIPANTS COMPOSION

Table 1: Staff from Kilombero District Executive Director's Office

No.	Name	Title
1	Mabuba Maliki	Co-operative Officer I
2	Florian Masero	Agro. Engineer

Table 2: Farmers and their Villages

No.	Name	Title	Village
1	Hansbert Kangambili	Chairman-Warehouse Construction Committee	Ikule
2	Nemes Kalinga	Warehouse Storekeeper	Ikule
3	Amanda Lihanjala	Chairperson-Warehouse Construction Committee	Mkangawalo
4	Lawrence Msigwa	Secretary- Warehouse Construction Committee	Mkangawalo
5	Japhary Luhondo	Chairman-Warehouse Construction Committee	Msalise
6	Pulkeria Chitita	Secretary- Warehouse Construction Committee	Msalise
7	Plaxeda John	Chairperson Mang'ula association group	Mang'ula
8	Sadique Ujuma	Chairperson Vijana Mbasa group association	Mbasa

1.2. SCHEDULE OF ACTIVITIES

04/05/2013	**Time**	**Activities**	**Event**
	4.00 – 6.00 pm	Farmers reporting at Ifakara from their home villages	
05/05/2013	9.00 – 10.30 am	Conducting meeting with farmers at DALDO's Office at Ifakara	Awareness creation on rice Market value chain through the warehouse receipt system
	11.30 – 2.00 pm	Conducting of meeting at DALDO's Office cont....	Awareness creation cont.....
06/05/2013	8.00 – 9.00 am	Departure and reporting at Rujewa Mbarali	On transit
07/05/2013	9.00 – 10.30 am	Reporting on Mbarali DAICO/District Executive Director's Office	Introduction, Purpose of the visit and receiving of brief history on rice market through the warehouse receipt system and its importance to Mbarali farmers from DAICO
	10:30 –2:30 pm	Conducting discussion at Chimala SACCOS Office	1. On how and why the warehouse receipt system was introduced 2. On how the warehouse receipt system is operated 3. Importance of SACCOS on running the warehouse receipt system 4. On how the warehouse receipt system helped farmers to market their paddy/rice 5. The parties involved in running the warehouse receipt system on paddy/rice (Farmers, Stock/Collateral Manager and Financial Facilitator) 6. Source of capital on facilitating the warehouse receipt system 7. The issue of grading and quality 8. Paddy arrangement in the warehouse regarding on varieties 9. Challenges and its mitigation
	4:00 –6.30 pm	Visit at Ubaruku Processors – Southern Agriculture Renovation Enterprise	1. Paddy processing and Packaging 2. Available markets for processed paddy/rice 3. Availability of good processing machine at affordable price 4. Grading in obtaining quality rice 5. Challenges and its mitigation
08/05/2013	8:30 – 10.30 am	Visit to Madibira from Rujewa	On transit

	10:30am –2:30 pm	Conducting discussion at Madibira SACCOS (M-SACCOS LTD) and Madibira Agriculture and Marketing Co-operative Society LTD (MAMCOS)	1. On how and why the warehouse receipt system was introduced 2. On how the warehouse receipt system is operated 3. Importance of SACCOS on running the warehouse receipt system 4. On how the warehouse receipt system helped farmers to market their paddy/rice 5. The parties involved in running the warehouse receipt system on paddy/rice (Farmers, Stock/Collateral Manager and Financial Facilitator) 6. Source of capital on facilitating the warehouse receipt system 7. The issue of grading and quality 8. Paddy arrangement in the warehouse regarding on varieties 9. Challenges and its mitigation
		Madibira AMCOS	1. Paddy/rice business management 2. Source of capital on rice business management 3. Stakeholders in the warehouse receipt system management
	3.30 – 4.30	Visiting the Madibira AMCOS Irrigation scheme farm of 3,000 Hectors	Observation on paddy/rice production systems and management
09/05/2013	8:00 – 9.00 am	Reporting at DED's office	To thank and say goodbye
	9.30 - 10:00	Depature from Mbarali to Ifakara	On Transit

2. PURPOSE OF THE STUDY VISIT

Aims of the study visit was to make farmers be prepared for the planned training on rice market value chain through the warehouse receipt system for villages that are implementing DADPs warehouse construction projects in Kilombero district. The visit has made farmers from their respective villages to be familiar on the best practice use of warehouse receipt management system as well as marketing of rice through the warehouse, including the understanding of paddy/rice standard measurements, quality, grading, actual costs, the knowledge that will be shared with their fellow farmers in their groups, before conducting the planned training for the coming financial year

The study visit has tried greatly to stimulate and create a common understanding of participants on the following:

- Learning on rice value chain
- Learning on rice marketing through warehouse receipt system
- Learning on processing

3. FINDINGS FROM THE STUDY VISITY

3.1. CHIMALA SAVINGS AND CREDIT CO-OPERATIVE SOCIETY LTD.

Chimala SACCOS has established in 2002 with 23 members and capital of 441,000/= being shares, Savings and entrances of members, Currently has 708 members and a capital of TShs. 800,000,000/= the purpose of establishment of the SACCOS was to mobilize fund and raise capital from their members and provide credits for agriculture activities and small businesses with less conditions.

Currently the SACCOS provide loans to its members and every loan is charged an interest rate of 2% per month, These loans includes;

- Agriculture loans
- Business loans
- Agro-inputs loans
- Agriculture equipments and implements
- Emergency loan

3.2. OPERATION OF WAREHOUSE RECEIPT SYSTEM

The warehouse receipt system was launched and managed by Agriculture and Marketing Systems Development Program (AMSDP) through the Prime Ministers' Office funding by International Fund for Development (IFAD) in June, 2005, relatively with Chimala SACCOS, after one year of warehouse receipt system awareness creation and training support to farmers in 2004, as a result of high paddy production which are sold at low price in Mbarali District. The SACCOS used its capital to finance the warehouse receipt system by lending money to its members where farmers were paid 50% of the value of the paddy warehoused

AMSDP with the SACCOS appointed Baltonic Cargo Superintendence Ltd (BCSL) to manage the warehouse, the Chimala SACCOS being the lending scheme, in 2006 the SACCOS was facilitated by CRDB which lent the money to chimala SACCOS, and the SACCOS lent the money to farmers

3.3. HOW THE WRS WORKS

Currently farmers warehoused their paddy at harvest time where the prices are very low, immediately when housed their paddy gets a loan equivalent to 65% of the value of the warehoused paddy (estimated at the current price) from Chimala SACCOS. The paddy

warehoused are used as Collateral for the loan. When the price of paddy are favorable, farmers sell their paddy and pay off the loan plus interest and keep the profit

3.4. STAKEHOLDERS INVOLVED IN WRS

In Mbarari, there are three pillars of stakeholders involved in WRS; farmers, SACCOS, and Collateral Manager.

3.5. Farmers

- They warehoused their paddy in the warehouse, they received agriculture loans from the SACCOS for paddy production
- They are charged 1,400/= per every paddy/rice bag of 100Kg warehoused in the warehouse
- They are paid an interest rate of 2% per month for 8 months period
- They can request loans at the time have deficit from cultivation to harvesting purposes, even on transporting paddy to the warehouse
- Presents the receipt of the value warehoused paddy from collateral Manager and handle it to the SACCOS requesting a loan of 65%

3.6. SACCOS

- In 2005 they warehoused 459 Tons worth of 173,502,000/=
- Providing a loan to farmers of 65% of value of the warehoused paddy after handling the receipt (with 2% loan interest rate for 8 months)
- Currently has entered a contract with ILOPA Co. as their Collateral manager after higher charge/cost from BALTONIC, The SACCOS contracted with ILOPA at TShs. 650 per 100Kg bag
- Paid Insurance premium, in 2012 they paid 6,700,000/= per annum
- Covered all costs on bags arrangement in the warehouse paying casual labors
- Has hired a warehouse at 4 Million per annum in 2012 season
- In 2012 the SACCOS received a loan of TShs. 300,000,000/= from CRDB Bank for warehouse activities and has already recovered

- Paddy warehoused in 2012 were 2,100 Tons worth 1,260,000,000/=
- Charged farmers TShs. 1,400/= per 100Kg bag warehoused
- Available warehouse facilities, e.g. Fire extinguisher, weigh bridge, Pallets and moisture meter
- Supplying of empty SACCOS labeled bags to farmers and paid back when they received their money

3.7. Collateral Manager

- Knowledgeable about paddy varieties, quality, grading, measurements, paddy arrangement in the warehouse and testing of paddy moisture
- Paid insurance premium to cover any sudden danger for the warehouse
- Licensed to run the warehouse businesses by Tanzania warehouse Licensing Board at a fee
- Charged the SACCOS TShs. 650/= per 100Kg bag
- Signed the contract with the SACOOS to run the warehouse

3.8. PADDY MARKETING INFORMATION SYSTEM

- Farmers gets Marketing information from individual farmers, buyers, sometimes from the collateral manager when buyers visited the warehouse and tell the collateral manage their buying price

3.9. PADDY/RICE MARKETING

- Farmers sells their paddy when the price goes up, it is for individual farmers who find and negotiate with buyers
- SACCOS advised farmers to sell or not to sell when the price is favorable or when the price is unfavorable
- Big buyers of farmers paddy are traders, from Mbarali, and Dar es Salaam
- Farmers sells their paddy at TSh. 140,000-150,000/= at high price and 120,000/= - 130,000/= at low price

3.10. IMPORTANCE OF THE WRS

- Improvement of farmers life through selling their paddy at good price
- Reduces cheating on quality, weight and provides a room to farmers grade their paddy and putting paddy in bags according to varieties
- Reduction of Middlemen for farm gate sales (at very low prices)
- Provide space for farmers who have not enough space for their paddy storage

3.11. CHALLENGES

- There is no collective Marketing, there are no decision making on the time to sell their paddy collectively, and no price sated collectively
- High cost of hiring the warehouse 4 Million annually
- Loose link between the WRS stakeholders on paddy marketing and marketing information system – Farmers – SACCOS – Collateral Manager
- Absence of institute or organ which are concerned with paddy marketing information system and paddy marketing

3.12. PROCESSING ACTIVITIES AT UBARUKU

Southern Agriculture Renovation Enterprise (SARE), is a privately owned entity by Mr. Elias Mdindile, who is Managing Director. Also owned a farm of 300 acre of paddy, four tractors and two caterpillars for agriculture activities, where he provided agriculture service to farmers since 1993, farmers are paid cash in receiving agriculture services from Mr. Mdindile, and sometimes few farmers received that services in a form of loan and paid later.

- In 1998 he installed a milling machine, to fill farmers need for processing of their paddy in receiving a good price to sell rice rather than paddy, he continued to change and installed milling machines that seemed to perform better than the previous one till 2008, where he installed an appropriate one, which grades rice and separate it from dust and sand
- In 2006 he started to build the first warehouse after farmers increased the level of paddy production and raised the demand for storage places
- In 2012 has managed to warehouse 27,000 bags of paddy, in which every bag weighed 120Kg
- Farmers are paid TSh. 3000/= to every bag warehoused

- Farmers warehoused their paddy during harvest when the price is low and sells when the price goes high
- Most of farmers process their paddy and sell rice the time the price of paddy is high
- This season 2013 has warehouses able to store 40,000 bags of paddy weighed 120Kg, which cannot meet the demand for storage facilities for farmers due to production increase from one season to another

3.13. MARKET AND MARKET INFORMATION

- According to the Manager Director, their source of information for rice market is Tandale in Dar es Salaam, using mobile phone including short Messages (SMS)
- Buyers of paddy and rice from Ubaruku comes mainly from Dar es Salaam
- Paddy are bought at TSh. 130,000/= - 150,000/= at high price and TSh.100,000/= - 90,000/= at low price
- In 2012 farmers who warehoused their paddy were paid TSh. 3000/= per bag of 120Kg
- Famers are enjoying a cost of TSh.40/= per Kg as paddy processing services

3.14. EMPLOYMENT OPPORTUNITIES

- Every season provides employment for 200 youth and women for eight months consecutively, also women warehoused their paddy in a great number

3.15. CHALLENGES

- Unavailability of reliable market for paddy/rice as the price is unstable and fluctuates most of the time
- Inadequate capital for warehouse construction and unavailable loans from the Government and Financial Institutions for warehouse construction, especially for small entrepreneurs
- High cost of agro-inputs for paddy/rice production contributes to raise production cost
- Provision of subsides for Agro-inputs for few farmers prevents competition of paddy/rice in the market since farmers who receive subsidized agro-inputs produced at low cost compared to other farmers

3.16. ADVICE FROM SARE MANAGING DIRECTOR

- The funds budgeted for agro inputs subsides to be used for buying farmers produce especially paddy and other cereal crops for enhancing National food Security in the Country

4. MADIBIRA AGRICULTURE AND MARKETING CO-OPERATIVE SOCIETY (MAMCOS LTD) AND MADIBIRA SAVING AND CREDIT CO-OPERATIVE SOCIETY (M-SACCOS LTD)

4.1. MAMCOS

Madibira Agriculture and Marketing Co-operative Society Ltd was established and registered since 17/04/1997, purposely for paddy production supervision, management and paddy/rice marketing for Madibira Irrigation scheme of 3,000/= Hectors as the Government had invested a total of TSh. 24 billion for irrigation infrastructure since 1997 and average production in 2010 is 8.0Tons/Ha

MAMCOS has 99 year of title deed and has 3,000 Members, where every member has one (1) Hector (2.5 acres), and for an irrigation infrastructure maintenance every farmer contributes to MAMCOS 30,000/= annually

- Farmers learn from a 30 Ha. As a pilot block which is used as a demo plot for farmers production improvement
- Production per acre is 40 bags for TXD 306 or SARO in Swahili and 18 -20 bags of paddy indigenous seed, paddy bags are weighed at 100Kg

The Government support includes;

- Paddy/Rice Processing machine of capacity of 3.5 tons per hour
- 3 warehouses
- Revolving fund amounted to 600,000,000/= as solution to solve farmers capital problem for agriculture activities in their farm

4.2. M-SACCOS LTD.

- M-SACCOS was established and registered in 2000, with 19 members, where 17 were Male and 2 were Female, the purpose for its establishment was to salve financial problems to run their economic and social activities and including agriculture, small businesses and others

as the funds that was provided by the Government was not enough for them to solve their financial requirements

- Currently has 2570 members, 1,569 are Male, 946 are Female and 55 intitutions. M-SACCOS has capital of TSh. 2.3 billion, and every member received 1,000,000/= as loan for cultivation and management of 2.5 acres (1 Hector)
- The loan received were paid back with an interest of 10% per annum, so farmers paid back 1,100,000/= with interest

4.3. LOAN PROVISIONS

The following different type of loans are provided to members with their respective interest rates

- Agriculture loan, charged an interest of 15% for 1 year
- Business loan, with interest rate of 20% for 1 year
- Agriculture equipments and implements with interest rate 20% for 2 years
- Housing loan with interest rate 20% for 2 years
- Education loan with interest rate of 20% for 2 years
- Emergency loan with interest of 5% for 3 Months
- Youth loans with interest rate of 20% for 9 Months
- Staff loans with interest loan of 5% for 3 Months
- Entrepreneurship loan with interest of 10% for 3 Months
- Any loan default farmers are charged a fine of 10%

4.4. MANAGEMENT OF MADIBIRA IRRIGATION SCHEME

Madibira Irrigation Scheme is managed by three parties, these are;

- Government Staff who supervises irrigation policy and provide advice to farmers
- MAMCOS supervises paddy production and paddy/rice marketing
- M-SACCOS – Keeping in safe custodian of members savings and give loans to its members

4.5. THE WRS OPERATION

The warehouse operation is the same as chimala SACCOS, but they differ in costs, in 2011 farmers ware paid 2000/= per bag of 100Kg warehoused, costs for collateral manager and annual insurance premium

The warehouse receipt system was launched, financed and managed by Agriculture and Marketing Systems Development Program (AMSDP) through the Prime Ministers' Office funding by International Fund for Development (IFAD) in June, 2008, after one year of warehouse receipt system awareness creation and training support to farmers in 2007, as a result of high paddy production which are sold at low price in Mbarali District. In 2008/2009 season AMSDP met 100% of the warehousing costs, the following two seasons 2009/2010 and 2010/2012 the M-SACCOS met 100% of the warehouse costs. They were stopped the WRS operation in 2011/2012, the reason to stop operating was the collateral manager (BALTONIC) who caused the loss (theft) for two consecutive years from 2009/2010 – 2010/2011, and the loss was not recovered, Collateral Manager rejected to compensate the loss as the signed contract was not enforceable enough to the collateral manager to compensate

They will start to operate the WRS when they get a good collateral Manager with good legal arrangements especially in agreement for contract for warehouse receipt system operation

4.6. PADDY/RICE PROCESSING

MAMCOS started to buy paddy directly from farmers, processing and selling rice in 2006 -2010

Farmers were paid the price after the MAMCOS researching prices at different markets, especially in Dar es salaam.

They stopped to operate due to high machine running costs by the use of diesels. They have no electricity hence processing cost was very high which reached to 350/= per Kilo compared to 40/= per kilo to areas of electricity

5. Conclusion

5.1. Benefits

The introduction of the rice market value chain and rice value chain in Kilombero District will enhance high production of paddy to farmers, winning and enjoying better prices for their produce and will reduce the involvement of middlemen who buys farmers paddy at their farm gate at low price and sell it at high price being paddy or rice

- WRS as a marketing tool will provide reliable data (statistics) on food availability in a specific area, in the village, the District and at National level for food security purposes

- District revenue collection will easy and less cost as bags of paddy available in warehouses are recorded, and at time of selling buyers will be supposed to pay at the warehouse-gate
- Finished goods are priced high when compared to unfinished goods (Compare 1Kg of Paddy and 1Kg of rice)
- Rice marketing value chain and rice value chain will accelerate investments as farmers income will go high and be able to invest, introduction and the use of new technology, will include;
    - The use of quality declared seeds
    - Invasion of good milling and grading machines
    - Agriculture equipments and implements
    - Slashing machines and combine harvest machines

Image of Before/After VC – Kilombero DC

Stage	Before WRS	
	VC	Value (Tsh/ kg)
Input	From Mkangawalo dealers From KPL inform of loan for inputs (KPL obtain loan of 400,000Tshs to each farmer from YOSEFO on their behalf)	Seeds 36,000/debe Fertilizer 50,000/bag Weeder 70,000/=
Production	Farmers Without fertilizer: SARO; 15-20 bags/acre Local seed; 8-10 bags/acre With fertilizer: SARO; 25-30 bags/acre Local seed; 15-20 bags/acre	**Farm gate Price:** Local seed; 5000/debe SARO **4000/debe** I bag=10 debe
Marketing	Middle men in Itongoha	

Stage	After WRS	
	VC	Value (Tsh/ kg)
Input	From Mkangawaro dealers Collective purchase of inputs by AMCOS	Less than the current prices of Seeds 36,000/debe Fertilizer 50,000/bag
Production	With fertilizer: SARO; 25-30 bags/acre Local seed; 15-20 bags/acre Without fertilizer: SARO; 15-20 bags/acre Local seed; 8-10 bags/acre AMCOS	
Storage	Warehouse use	Increased costs for warehouse use 2,400Tsh
(Processing)	(Processing rice done members/AMCOS	
Marketing	Collective selling by the AMCOS Middlemen in Itongoha/other buyers	**15000Tsh/debe**

Action Plan for 2013/2014 prepared in the Village-level Workshop in Kilombero DC

Name	Period	Detail of Activity	Target/Responsibility	Supporting Agencies
Training on organizing AMCOS	June - August,	• Support to establish AMCOS: member registration, selection of board members, preparation of rules and legislative registration of the group • Training on basic skills of organization management: business plan, accounting, recording business	• Farmers • Extension Officers • DFT • AKIRIGO	RUDI (NGO) AKIRIGO (Farmers' Organization) WO (Private

Name	Period	Detail of Activity	Target/Responsibility	Supporting Agencies
		transaction, etc.		Company)
Training on Management of WRS and Marketing through a warehouse	September - November, 2013	• Knowhow on management of WRS: instruction in packing paddy/rice by type and how to manage borrowing. • Knowhow on collective handling, negotiating skills and earning management •	• Farmers • Extension Officers • RUDI • DFT	
Selection of WO and a financial institution	December, 2013 - February, 2013	• Selection of /contract with WO • Negotiation/contract with a financial institution •	• Farmers • Extension Officers • RUDI • AKIRIGO • WO • DFT	
Procurement of equipment in a warehouse	March, 2013	• Procurement of a scale, a grading machine and a fire distinguisher	• Farmers	
Constructing a warehouse	2013/14	• Completion of construction of a warehouse	• Farmers (20%) • DFT	

Good practices identified through the 1st year pilot activity (study tour)

Place	Mbarali District, Mbeya Region
Implementer/Major Player	Chimala SACCOS/Warehouse Operator
Commodity of Value Chain	Rice
Summary	Chimala SACCOS was established in 2002 with the purpose to mobilize fund and raise capital from members and provide credits under eased conditions for agriculture activities and small businesses. The WRS are jointly operated by three parties, that is, Chimala SACCOS, a specialized Warehouse Operator (WO) dispatched from the private sector and farmers. Having a warehouse can reduce transportation costs for both farmers and buyers, since the warehouse functions as a collection centre. The functions of WO are to issue receipts, to manage the warehouse, to classify rice brought by farmers into different varieties and store them by variety in the warehouse. WO makes fair trading possible by setting and following criteria such as weight per bag. The paddy kept in the warehouse is used as collateral for loan. When the price of paddy is favourable to farmers, they sell their paddy and pay off the loan with interest to make a profit. ***WRS requires the operator to borrow money at the start of a year to give loans to farmers as advanced payment. One of characteristics of Chimala SACCOS is the healthy and sound management. They borrows money from banks or financial institutions according to their borrowing plan which is made based on calculation of revenue from the expected yield in the next year in the cultivated areas of the members and necessary money for loans to the members.*** ***WO of Chimala supports to meet buyers' need of buying certain variety of paddy by sorting and storing paddy by variety in the warehouse.*** WO also gives advice for negotiation between farmers and buyers. So far, collective shipment has not been done and farmers make a final decision on sales price and timing to sell by themselves individually. ***Farmers should bear additional costs for WRS such as the usage fee of the warehouse including the labour cost of WO (1,400Tsh/100kg/ bag), interest rate for 8 months storage (2%/month), and shipment cost to the warehouse from the fields.*** 2,100 ton of rice was collected this year but 700 ton has not been sold yet and still stored in the warehouse. This is partly because the import of cheap rice from Vietnam and Thailand and the export ban of grains to the neighbouring countries.
Good Practice	**(1) <u>Introduction of WRS</u>** If paddy is demanded in the markets, introduction of WRS brings some merits such as easy access to finance for farmers, minimization of post-harvest loss and strengthening bargaining power. **(2) <u>To meet buyers' needs</u>** Not only storing paddy but also classifying them into varieties can add value when you sell.

	(3) <u>Sound Operation of WRS</u> It is essential to operate WRS in a health and sound way. For instance, decent borrowing plan to avoid default is required. And you should conduct break even analysis for expected sales prices and additional costs incurred by introducing WRS such as hiring WO, interest on borrowing, insurance fee for a warehouse.

KILOMBERO DISTRICT COUNCIL

Annual Progress Report on Pilot Activities.

1.0 .Pilot Activities Planned

No	Component	Activities
1	Proper Warehouse Management	1-1 Study tour to good practice (Mbalali DC)
		1-2. Warehouse management and management and marketing training (Including rule making exercise and trial storing exercise)
2	Improved Access to Finance	2-1 Training on improved access to finance
		2-2 Information dissemination to bridge information gap between financial Institutions (YOSEFO,FINCAL etc) and villages
3	Coordination & Project Management	3-1 Programmer Coordination Meeting (Incl. Sharing experience on VSLA
		3-2 Baseline/Data Filling/Monitoring

1-2 .Objectives of each activity

1.0. Proper Warehouse Management`

1-1. Study tour to good practice (Mbalali DC)

The objective of study tour was to get the experience with other farmers (groups), what was done and what we should be done so that to have proper Warehouse management after finishing Warehouse construction.

1-2. Warehouse management and marketing training (Including rule making exercise and trial storing exercise)

The objective of training of warehouse management and marketing was to get the knowledge on how t o manage warehouse because from two villages the construction of warehouse was on going.

2.0. Improved Access to Finance

2-1. Training on improved access to finance.

The farmers to obtain the knowledge on cost benefit analysis, how and what time should be need loans as well as identification of financial Institute.

2-2**. Information dissemination to bridge information gap between financial Institutions (YOSEFO, FINCAL etc) and villages**

To get the information on how financial Institute provides loan to farmers and Interest rate as well as payback period.

3.0 Coordination & Project Management

3-1 Programmer Coordination Meeting (Incl. Sharing experience on VSLA)

The objective was to share the experience from different stokeholds and indentified each stakeholder what is done from two villages so to remove repetition of work on the same villages.

3-2. Baseline/Data Filling/Monitoring

To make sure project were implemented as planned so as to achieve the objectives.

II. Progress during the Period from September 2013 to June 2014

1.0. Proper Warehouse Management`

1-1.Study tour of good practice (Mbalali DC)

16 Farmer(groups) from two Villages Mkangawalo and Msalise visited at Mabalali District to study the good practice done by groups from Mbalali so that to identifies the challenges facing them on Warehouse management and warehouse receipt system. Through study tour they learned more on warehouse management and shared the experience with other farmers what is done and what we should so that to have proper Warehouse management after finishing Warehouse construction.

1-2 Warehouse management and marketing training (Including rule making exercise and trial storing exercise)

16 farmer groups trained on warehouse management and marketing so that to get the knowledge on how to manage warehouse because from two villages the construction of warehouse was on going , Therefore after finishing Construction they will able to manage Warehouse themselves, through knowledge obtained on how they can search their market. Training on Warehouse conducted Year 1 and Marketing Year 2.

2.0 Improved Access to Finance.

2.1. Training on improved access to finance.

Through questionnaire conducted at Msalise and Mkangawalo we noted that Mkangawalo have many financial Institute and all groups already received the training though SRI under KPL but Msalise have no any Financial Institute therefore we conducted training on Year 2 for 8 farmers selected from two groups MAMCOS and NAFAKA so that to get the knowledge on how to get the loan and their condition of the loan for each Institute.

2.2. Information dissemination to bridge information gap between financial Institutions (YOSEFO, FINCAL etc) and villages.

DFTs from Kilombero and representative from JICA visited to financial Institute on Year I so that to get the information about their institute and get the information about their Institutions on loan and Interest rate and repay back period.

3.0 Coordination & Project Management

3-1 Programme Coordination Meeting (Incl. Sharing experience on VSLA

The Coordination conducted on Year 2 involving some stakeholder working in Kilombero so that to share the experience from different stokeholds and indentified each stakeholder what is done from two villages so to remove repetition of work on the same village. Each stakeholder agreed to contribute on preparation of meeting therefore don't depends on JICA ONLY.

3-2. Baseline/Data Filling/Monitoring

After training on Year the follow as base line / data filling done on year by providing the file for fill the information and Monitoring was on going.

III. Outputs at Component Level

1. **Proper Warehouse Management**

1) Two groups from two villages already finalize the warehouse management rule
2) Two groups from two villages already hiring the house for storing paddy as practices before completion of Warehouse
3) ` Two groups from two villages already selected the marketing manager
4) Two groups trained on warehouse management practices

2. **Improved Access to Finance.**

1) Next season farmers starts to access loan
2) Farmer get awareness on financial Institutions
3) Farmers knows what time should be able to get the loan

3.0 Coordination & Project Management

1) District identified each stakeholder what was done so that reduces repetition of the activities on the same area.

2) Sharing experience so that to increase the knowledge.

3) One coordination meeting conducted and the minute of the meeting.

4) Baseline/data filling and monitoring report established.

Annual Progress Report on Pilot Activities

August 2014 – August 2015

Kilombero District

1. Pilot Activities Planned

It is under Agricultural Sector Development Programme (ASDP) that Ministry of Agriculture, Food Security and Cooperatives (MAFC) Japan International Corporation Agency (JICA) have been Implementing Technical Corporation Project for Strengthening the Backstopping Capacities for District Agriculture Development Program me (DADP) Planning and Implementation.

The project has been undertaking the pilot activities for commodity value chain (CVC) development, including warehouse management and marketing manager system at Kilombero DC. These pilots have been generating good practices on marketing, strengthening of farmers' organizations and collaboration with private/ public institutions.

2. Progress during the Period from August 2014 to August 2015

2-1 Warehouse Management (Trial Storing Exercises)

- Knowledge and experience to store paddy, to manage warehouse and to sell paddy were shared to Msalise and Mkanagawalo.
- DFT conducted study on the actual storing practice in a warehouse of Mangula A and found farmers store paddy in the mixed way of short term storing for home consumption/ retail sales and long term storing for individual or collective sales in the offseason
- As a result, DFT drafted a practical rules and tools of warehouse management and marketing based on the finding of the study. Farmers started a trial storing exercise using them. It is expected to make closer follow up on the practice

(1) Objective

- To make the proper operation of warehouse in place

(2) Results & Outputs

- Farmers obtained knowledge about how to store paddy bags in a warehouse including how to check quality of paddy.
- Farmers learnt how to manage a warehouse as a farmers group. This enables supported farmers to supply paddy/ rice to market in bulk.
  - Rule of Warehouse Management/ Marketing
  - Increased knowledge on Warehouse management for trained farmers.

- Increased quality of paddy storage

(3) Challenges & Lessons Learnt

- Incompletion of warehouse construction make warehouse system management difficult

2-2. Marketing Manager System

(1) Objective

- To learn proper marketing technique

(2) Activities done

DFT conducted study on the marketing manger system to Msalise and Mkangawalo villages where by proper marketing techniques were taught. and farmers found that they are selling paddy bags individually to middlemen and fetch low price offseason

(3) Results & Outputs

- Sales price of paddy was increased. (Annex 2)
- Participants learnt how to manage marketing activities, and how to find and discuss with buyers for collective sales.
- Participants found buyers by themselves and sold their produce by bulk.
- Marketing manager and Marketing Committee
- Increased marketing channel information
- Marketing manager system guideline document

(4) Challenges & Lessons Learnt (incl. proposal for improvement if any)

Market manager require enough time and fund so that she/he can travel and communication with good buyers

2-3. Consumption Campaign

(1) Objective

- To promote Kilombero rice through directly presenting on end users and their suppliers of rice value chain
- To improve the quality of rice/paddy through understanding consumers preference

(2) Activities done

DFT conducted consumption campaign at Edema hotel in Morogoro town participants from Junior seminary, Kilakala Secondary School, Nashera hotel, Hirux hotel, Morogoro hotel, Milling machine were invited and joined the campaign. Also farmers from Msalise, Kikwawila, Mkasu and

Katurukila involved and prepared and presented different food dishes from rice product to consumers.

(3) Results & Outputs

- Consumers increased their understanding of Kilombero rice, varieties, and how to enjoy their characteristics（Feed back sheets for participated consumer）
- Farmers in Kilombero district were able to get the contact of potential buyers（Feed back sheets for farmers）
- Farmers were able to understand consumer's preference and clarify how to enhance the value of kilomberos rice

(4) Challenges & Lessons Learnt

- Few consumers were invited suggesting that next time many consumers should be invited for the Kilombero rice consumption campaign.
- Farmers should carry some amount of quality rice for sale for those interested to buy during the campaign.
- Kilombero rice has no identity and has poor quality

2-4. Improve Financial Management Capacity and Access to Financial (Providing information to farmers and microfinance institution)

(1) Activities done

DFT also conducted a study on situation of financial access in Msalise and Mkangawalo and found that Mkangawalo has rather better access to finance and Msalise has lack of access to finance and knowledge on that too. Based on the result of the study, DFT decided to conduct business planning training for Msalise.

It is also recognized the importance to fill the information gap between microfinance intuitions and farmers. It is expected to collect and share information of support to the microfinance and to do the same on information on eligibility of loan and how to apply it for farmers.

As well, it is also expected to share VSL. Experience by programmers' supporting Kilombero. This was planned to be done in the second programme coordination meeting in July, however, it hasn't been held yet.

(2) Objective

- To improve financial situation of farmers by training the way to access to microfinance

(3) Results & Outputs

- List of information by financial institutions

(4) Challenges & Lessons Learnt (incl. proposal for improvement if any)

- More trainings to farmers are required to equip farmers with knowledge of access to financial institutions and conditions required

2-5. Programme coordination meeting

First programme coordination meeting was held and agreed to continue the meeting quarterly.
Filing system has started but this system needs to be enhanced.

(1) Objective

- To share experience among development activities so that synergy is enhanced.

(2) Activities done

DFT conducted coordination meeting at Kilombero district council hall where by different agriculture stakeholders were invited to the meeting. Stakeholders activities and budget were presented and agreed to continue to support the coordination meeting and should be done quarterly.

(3) Results & Outputs

- The report of coordination meeting produced
- List of stakeholder obtained

AKIRIGO	ARI-KATRIN	CARITAS	KIVEDO	JICA (DADP Project)
JICA (TANRICE2)	NAFAKA	RUDI	CRDB	FINCA
NMB	Yosefo	UWAPEKI	YARA	Vestfarm

(4) Challenges & Lessons Learnt

- Some of development partners did not presented their budget to the coordination meeting

Annexes

01: Work Plan for 2014/15

02: Review Report of Warehouse Management and Marketing Manager System

Annex01: Kilombero Pilot Activities Work Plan for 2014/15

1. Review of Achievements and Challenges in 2013/14

I. Warehouse Management and marketing

- ✓ Knowledge and experience to store paddy, to manage warehouse and to sell paddy were shared to Msalise and Mkangawalo.
- ✓ DFT conducted a study on the actual storing practice in a warehouse of Mangu'la A and found farmers store paddy in the mixed way of short term storing for home consumption/ retail sales and long term storing for individual or collective sales in the off season.
- ✓ As a result, DFT drafted a practical rules and tools of warehouse management and marketing based on the findings of the study. Farmers started a trial storing exercise using them. It is expected to make closer follow-up on the practice.

II. Improved Financial management capacity and access to finance

- ✓ DFT also conducted a study on situation of financial access in Msalise and Mkangawalo and found that Mkangawalo has rather better access to finance and Msalise has lack of access to finance and knowledge on that too. Based on the result of the study, DFT decided to conduct business planning training for Msalise.
- ✓ It is also recognized the importance to fill the information gap between microfinance institutions and farmers. It is expected to collect and share information of support to villages for the microfinance institutions and to do the same on information on eligibility of loan and how to apply it for farmers.
- ✓ As well, it is also expected to share VSLA experience by programmes supporting Kilombero. This was planned to be done in the second Programme Coordination Meeting in July. However, the meeting hasn't been held yet.

III. Others

- ✓ First Programme Coordination Meeting was held and agreed to continue the meeting quarterly.
- ✓ Filing system has started but this system needs to be more enhanced.

VC Stage	Results of VC Analysis Review			Selection of Prioritized Challenges to be Overcome by Pilot Activities		
	VC (Before)	VC (After)	Challenges	Existing programmes	Selection	Reasons of Selection (From Strategic and Comprehensive Viewpoints)
Input	Agricultural Input Dealers		Insufficient supply of improved seeds	DADP (DADG), KPL, TOSCI etc.	No.	Other programees have been assisting. (Therefore, the project will not intervene from the comprehensiveness viewpoint)
			Insufficient supply of fertilizer agricultural chemicals	KPL, Yosefo	No.	Other programees have been assisting. (Therefore, the project will not intervene from the comprehensiveness viewpoint)
	Farmers	AMCOS / Collective Purchase of Inputs	Weak capacity to manage finance and lack of access to finance	KPL、Yosefo	Yes.	This is required to be addressed for offseason sales through a warehouse. (Therefore, the project will address the challenge from the strategic and comprehensiveness viewpoint)
Production			Insufficient extention of appropriate production skills	KPL、NAFAKA	No.	Other programees have been assisting. (Therefore, the project will not intervene from the comprehensiveness viewpoint)
			Insufficient iffication facility	None	No.	Targets of Irrigatino Scheme were selected and BRN is going to support them. Moreover, it costs a lot. (Therefore, the project will not intervene from the comprehensiveness viewpoint)
			Insufficient mechanisation	None	No.	This is not necessarily required to be addressed for offseason sales of paddy. (Therefore, the project will not intervene from the strategic viewpoint)
			Weak farmers organisation	DADP (DADG), NAFAKA	No.	The other programmes support organising farmers. Farmers organisations are still weak. However, the project address this challenge through addressing the other challenge of warehouse management
Transportation	Middlemen		Insufficient road network	None	No.	It costs a lot and consume much time. (Therefore, the project will not intervene from the strategic viewpoint)
Storage		Warehouse	Lack of warehouse and weak warehouse mangement capacity	DADP (DADG), NAFAKA	Yes.	**The project will encourage targeted farmers' group to manage paddy storage with the trial warehouse, keeping a record and monitoring storage practices. So, it is expected that warehouse management can be smoothly practiced once warehouse is constructed.**
Processing		Milling (If possible in the future)	Lack of milling machine and capacity to mill paddy	None	No.	For offseason sales of paddy, warehouse and its management should come first before milling it. (This challenge is less priority compared to the warehouse management. Therefore, the project will not intervene from the strategic viewpoint)
Marketing		Middlemen/ Wholesaler	Weak business skills and collective sales practice	NAFAKA	Yes.	**Warehouse construction is financed by DADG. However, Capacity to sell paddy through a warehouse was still weak. To tackle the challenge, this project employs marketing manger system and trained the nominated marketing managers. This year, the marketing mangers will initiate to find buyers and negotiate with them, supported by the project.**

Figure: Value Chain of Rice in Kilombero and its progress

2. Target of This Year Pilot Activities

2.1 Objective of This Year

: Increase farmer's sales price of paddy/rice through off-season sale

To achieve the objective, three components will be conducted; namely,

Component-1: Warehouse management in order to store paddy in a proper condition and sell it at a higher price during off-season

Component-2: Marketing manager system in order to

(a) Establish networks with buyers,

(b) Collect and share price information and suggest members an appropriate timing for sale,

(c) Inform quality and condition required by targeted markets to members and encourage them to improve their paddy/rice and way to sell

Component-3: Improving financial accessibility in order to open up opportunities for further investment on upgrading their paddy/rice

2.2. The Targeted Sales Price of Paddy bag

	Msalise	Mkangawalo
Baseline: average sales price last season	62667.72Tsh/bag	52281.14 Tsh/bag
Target (Dec-Jan 2014/2015)	35% higher than sales in June, 2014	50% higher than sales in June, 2014

3. Planned Activities

No	Component	Activity	Outline	O	N	D	J	F	M	A	M	Jn	Jl	A	Remark
1	0.Preparation-Baseline Survey	Conducting baseline Survey	To conducting Survey both in Msalise and Mkagawalo	V											
2		Analysis of the result and reporting	To analyze the data and set up the targeted prices to sale, and write a report		V										The result is used to evaluate coming off-season achievement
3	I. Warehouse Management	Trial storing exercises (close follow-up and advise farmers)	To settle knowledge and skills on warehouse management	V	V	V	V	V							
4		Completion of Localizing draft Constitution	To agree and revise draft constitutions according to the experience of	V			V	V							
5	II. Marketing Manger System	Making Action plan and budget plan	To make an activity plan (weekly) and budget plan for MM's activities	V											
6		Collecting Price Information	To track prices of paddy/rice in local market and broader markets	V	V	V									
7		Collecting buyers' information	To collect buyers' requirements	V	V	V									
8		SWOT Analysis and formulating marketing	To understand the weakness and strengthens in selling		V										

No	Component	Activity	Outline	O	N	D	J	F	M	A	M	Jn	Jl	A	Remark
		plan	paddy in each village and make a strategy based on activity 7 and 8												
9		Market research	Surveying marketing spots to advice marketing mangers			V	V	V							
10		Establishing networks with potential buyers	To negotiate how to transact with potential buyers		V	V									
11		Conducting off-season selling	To sell stored paddy at advantageous prices			V	V								
12	3. Financial Management	Sharing Experience of VSLA						V	V						
13		Providing information to farmers and microfinance institution	Msalise farmers wants to borrow loan to purchase milling machine and tractor. Focusing on milling machine and considering viable management of warehouse, DFT look for best loan facility for farmers.					V	V						
14	4. Exit of This Year	Evaluation of the results of off-season sales					V	V							
15		Reflection of approach in this activity	Sharing experience of pilot activities and reflect					V	V	V	V	V	V	V	

No	Component	Activity	Outline	O	N	D	J	F	M	A	M	Jn	Jl	A	Remark
			approaches to warehouse management/ marketing support												
16	5. Others	Programme Coordination Meeting													Need to confirm the distributed survey of donors
17		Reporting /Filing system		V	V	V	V	V	V	V	V	V	V	V	
18		Construction of Warehouses in Msalise and Mkangawalo	Msalise contractor resumed construction	V	V	V	V	V	V	V	V	V	V	V	

4. Upcoming Schedule for the details (Oct.-Nov. 2014)

Activity	Actions to be taken	Responsibility	Oct. 2014					Nov. 2014				Dec. 2014				Jan. 2015			
			1	2	3	4	5	1	2	3	4	1	2	3	4	1	2	3	4
1.Conduciting Baseline Survey	Prepare questionnaire and requests comments	Nakase	V																
	Conduct preparatory survey	Nakase and DFT		V															
	Conduct Survey	All				V													
2. Analyzing the Survey Results	Input the result to Data sheet (excel)	TA, DFT					V	V	V	V									
	Analyzing Input Data	TA, DFT, Akiyama							V	V									
	Reporting	TA, DFT, NFT Akiyama								V	V								

Activity	Actions to be taken	Responsibility	Oct. 2014					Nov. 2014				Dec. 2014				Jan. 2015			
			1	2	3	4	5	1	2	3	4	1	2	3	4	1	2	3	4
3. Trial storing exercises (close follow-up and advise farmers)	Visit Msalise and Mkangawalo and Keep monitoring their warehouse management	Nakase, Akiyama, DFT		V	V	V	V	V	V	V	V	V	V	V					
	Close follow-up and advise farmers	All	V	V	V	V	V	V	V	V	V								
4. Completion of localizing draft rules	Check Draft rules and give villages advises	Mlokozi, Magembe and Haule	V																
	Reflect experiences in warehouse management and marketing and revise rules	Mlokozi, Magembe and Haule		V															
5. Making action and budget plan for MM	Discussing the ideas and decide the direction of activities	All		V	V	V													
	Discussion the direction and decide detailed activities of MM and how to support them financially	All				V	V												
6. Collecting price information	Collecting price information by visiting buyers and using mobile	MM and TA			V	V	V	V	V	V	V								
	Data inputting and sharing it	TA			V	V	V	V	V	V	V								
7. Collecting buyers' information	Visiting buyers and collecting buyers' information	MM and TA							V	V	V								
	Data inputting and sharing it	TA								V	V								
8. Analysis of current market situation and formulating marketing plan	Sharing information of 7 and 8 with all members	TA, Mlokozi and Magembe							V										
	Analyzing weakness and strengths of each village	Mlokozi and Magembe		V					V										

Activity	Actions to be taken	Responsibility	Oct. 2014					Nov. 2014				Dec. 2014				Jan. 2015			
			1	2	3	4	5	1	2	3	4	1	2	3	4	1	2	3	4
	Formulating marketing plan	Mlokozi, Magembe and Akiyama				V			V										
9. Market research	Surveying marketing spots in Kilombero or near districts to advice marketing managers	DFT, TA									V	V							
10. Establishing networks with potential buyers	Visiting marketing spots and negotiate with buyers as many as possible	DFT, TA, Akiyama								V	V								
11. Conducting off-season selling	Selling paddy/rice	DFT, TA									V	V	V	V					
14. Evaluation of the results of off-season sales	Collecting results of sales and summarize achievements and challenges	DFT, TA, Nakase																V	V
16. Programme Coordination Meeting		Mlokozi																	
17. Reporting/filing system			V	V	V	V	V	V	V	V	V	V	V	V					
18. Construction of warehouse in Msalise/Mkangawalo			V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V

ANNEX 02

A REVIEW REPORT ON THE PILOT ACTIVITIES FOR WAREHOUSE MANAGEMENT AND A MARKETING MANEGER

MAFC, Mrogoro Region, Kilombero District and JICA

February 2015

1. Purpose of the report

Kilombero DFT and JICA has been supporting Msalise and Mkangawalo under the objective of 'increase sales price through off-season sales by warehouse management and marketing manager. The first sales was successfully finished between November and December, 2014. In January, the Marketing Manager gave feedback to members of his farmers group about sales result was done in January. It was important moment that farmers consider improvement of their activities according to buyers' requests. This was also important opportunity for DFT that the team review what we have supported to farmers group and think what the team can improve. This report consists of two parts; Fist, a review on results of support and what farmers have done in operating warehouse and marketing manager. Second, the challenges faced in both villages and point of consideration for improving support to warehouse management and marketing manager.

2. Actual operation of warehouse and marketing manager

2-1. MSALISE VILLAGE

2-1-1. Warehouse Management

The farmers' group in Msalise received the theoretical and practical trainings on warehouse management. Through training they got knowledge on how to operate warehouse properly. The followings are actual operation of what they learned.

(1) Steps to receive paddy bags
The steps which has been taken to receive paddy bags was as follows:-

- Open a paddy bag and pour paddy onto clean plastic sheet
- Measure the moisture content of the produce from individual bag
- Check the degree of impurity.
- Pack paddy into a bag again and scale it. It is very important to make sure that weight per bag be standardized.
- Check the variety of the paddy.
- Receive storing fee
- Record information in the format and ask signature of owner on it and provide receipt to the owner.

The group have received paddy bags taking all steps trained. However, farmers have done some arrangement different from the recommendation at three points.

The first was weight per a bag. Farmers set 135kg/ a bag instead of 105kg/ a bag as trained. This is because that they recognized that buyers always requested the volume of 135 kg per a bag according to the individual sales experienced by members. Therefore, DFT emphasized importance to standardize weight per bag instead of forcing them to change the weight. The second was range of the moisture content of stored paddy bag. It was maintained in lower ranges between 9%-13% instead of 12%-15% which was recommended, since some of paddy bags had to be stored in the open place between rooms while they were waiting for completing construction of warehouse rent.
The third was the number and composition of people in charge of receiving paddy bags. The number was five instead of two recommended. The composition of the people was also different from our

recommendation in the draft rule. In stead of secretary and treasurer which are primarily responsible for receiving the paddy, the marketing manager and other four ordinary members operated procedure to receive paddy bags. It seems that the farmers group tend to rely on the marketing manager in the other operation than the marketing.

(2) Stacking Paddy Bags and recording

Farmers could stack paddy bags as trained after some advises made during storing exercise. Though they could stack paddy bags properly in one pallet, they should have been advised how to organize pallets to maintain proper ventilation. In addition, after sales they recognized that they should have stack the bags separately according to variety to quickly react to request from buyers.

The DFT distributed a format to record in/out (sales) of paddy bags before the trial storing exercise started. The leaders of the farmers group used the distributed format. Moreover, they improved the format by creating new way of using it. They used it to check payments of turnover to farmers. This made payment procedure more effective. As well, the leaders recorded income and expenditure and submitted a financial report to group members. The financial report included revenue from storing fee, expenditure and the balance, but didn't cover revenue from sales and payment to each members. These information should have been recorded in a book as well though they were recorded in the improved format explained above.

(3) Meetings to manage a warehouse

DFT recommended to establishing three types of meeting in the draft rule of warehouse management; Annual General Meeting for planning, budgeting, financial reporting, election of leaders; Regular General Meeting for managing the group meeting monthly; Emergency General Meeting for emergency purposes.

Farmers group in Msalise meets more frequently on every Tuesday. This meeting is primarily for VICOBA. But after the agenda on VICOBA, they have discussed several agenda on Warehouse management as well as report and consultation by the Marketing Manager. The agenda of the weekly meeting seems to satisfy the above three meeting. However, if the attendance of the weekly meeting is not good enough, they should have Annual General meeting instead of having weekly meeting only.

2-1-2. Marketing Manager

Baseline (average sales price last season) and target this season for both villages of Msaliseis shown in the table below.

Table 2-1-1. Baseline and target sales price in Msalise

	Msalise
Baseline: average sales price last season	Tsh 62667.72/ bag
Target (Dec-Jan 2014/2015)	Tsh 82,350/ bag 35% higher than sales in June, 2014

(1) Process of collecting price information and finding a buyer by Marketing Manager

The Marketing Manager (MM) in Msalise collected market price information of paddy by communicating the other MM in Mang'ula "A" by phone. As well, the Msalise MM went to Ruaha and Mang'ula towns to search for buyers three times. He met two buyers during the visits. One buyer requested good quality paddy and proposed price of Tsh 80,000 per a bag[1] in November and the second buyer proposed Tsh 85,000 per a bag (farmers sold 26 bags and remaining for these buyers respectively). Both two buyers preferred paddy instead rice, local varieties in general without any specification of variety and high quality one.

[1] The sales price was slightly below target. The reason why they sold paddy was that some members needed to get cash soon. However, the sales decision was made after the Msalise MM analysed price trend and price in the month.

For his activities explained above, the MM was equipped with the buyers information sheet and the price tracking sheet. As well, DFT facilitated the group to prepare a marketing plan based on the information collected for some weeks. The plan includes frequency of visit to search buyers and information collection of market price as well as target sales price that was calculated based on the production cost farmers remembered. This enabled the MM to work effectively within budget of the group and to judge the timing of sales easily. One of issues in preparing the plan was how to raise fund for the MM's activity. Since farmers didn't have money for the MM then, the activity was financed by the MM himself at first. Therefore, the number of places where the MM visited and frequency of the visits were limited very much.

In negotiations with two buyers, the MM started his negotiations by introducing total number of bags his group had, place of the village and quality that was assured by good warehouse management skills trained by JICA/Kilombero DFT.
At least, two points among them came from benefit of warehouse and the MM. First of all, warehouse and the MM give farmers opportunity to sell paddy collectively. In addition to the benefit of warehouse that farmers can store paddy in long term, recording the information of stored paddy bags in the warehouse enabled the MM to obtain information about the total number of paddy bags stored for negotiation. The MM could also have confidence that they were managing warehouse properly so that they used the fact as a promotion strategy.

The above activities of the MM had been implemented in a frequent and transparent manner. As explained in the previous section, MM reported price information about buyers to members every week which is good practice because members becomes aware about the trend of the price from the buyer so that to be easy to make decision before selling. This also generated trust from members to the MM.

After the sales DFT facilitated the MM to explain requests from buyers and to put question whether farmers group could satisfy the buyers. By putting such question, the MM activity could give farmers group opportunity to consider what are to be improved according to market demand (requests from buyers). For example, two buyers the MM met needed Grade 1 called "Super" which buyers preferred the most. Out of 137 bags only 18 bags are judged as "Super" and the remaining was "Medium Super" that is average quality. Eventually, even "Super" was sold at the price of "Medium Super". Through this process farmers recognized the importance of post-harvest handling including drying paddy properly.

(2) Results of Sales

The farmer group sold 26 paddy bags at first time @ Tsh 80,000 per a bag equal to Tsh 2,080,000 in total. Second time 82 bags @ 85,000.00 equal to Tshs 6,970,000. One bag weighed 135 kg.

2-1-3. Income and Expenditure of the farmers' group after sales of paddy

Summary of income and expenditure is shown in the table below. The total income from two sales was Tsh 9,050,000. Farmer group deducted storing fee from the sales income (Tsh 8,639,000). The operation costs including rent, watchman and MM activity cost were financed by the storing fee. The remained amount of storing fee was saved in the bank account of farmers group for future use such as registration of the group etc. The remaining amount of income from sales was divided according to the number of bags each member stored.

Table 2-1-2. Income & Expenditure for the warehouse management and paddy sales

Expenditure	Income	Note (usage etc)
	8,639,000	Turnout from sales of paddy (total sales-storing fee) to two buyers.
	411,000	Storing fees
100,000		Watchman
137,000		Rent fees
40,000		Market manager
9,000		Stationary
8,639,000		Payment to farmers
125,000		Balance (saved in the bank account)

According to the farmers group, the saved money will be used for the management of the group. Therefore, it is still important to secure money for the MM's operation before the sales of paddy. DFT proposed to save Tsh 500 per member every month.

2-2. MKANGAWALO VILLAGE:

2-2-1. Warehouse Management

The target group in Mkangawalo received the theoretical and practical trainings on warehouse management. Through training they got knowledge on how to operate warehouse properly. After trainings, farmers started trial storing exercise in the warehouse rent since construction of the DADP warehouse hadn't been completed. The two farmers groups, Mkangawalo Farmers Association and Viki Faraja (a women's group) formulated a union to manage warehouse under our assistance. The storing exercise was implemented in the warehouse of Mkangawalo Farmers Association. Since Mkangawalo Farmers Association had experience of offseason sales of paddy, DFT specified increasing sales price of Viki Faraja's 65 paddy bags as the target in Mkangawalo.

The followings are actual operation of what they learned.

(1) Steps to receive paddy bags

Farmers group had already stored paddy bags in the warehouse rent when the group introduced the warehouse for trial storing exercise. Since the warehouse was full of the paddy bags, DFT decided to put more emphasis on record keeping in the format provided and the way of storing paddy bags particularly about ventilation.

(2) Stacking paddy bags and recording

As explained, DFT advised to improve the way to keep ventilation in the warehouse by having windows. After advises, the farmers group made some holes to keep ventilation in the warehouse. The incentive to improve the way of storing paddy bags was increased by the following experience: Since buyers evaluated quality of their paddy average and purchased paddy at such price for average quality paddy, farmers understood that price seemed to be increased if quality of paddy had been better.

The group recorded information in the distributed format of paddy bags stored. The weakness here was that there were missing information in the format since the group stored paddy bags before advises from DFT. There is risk that the group do not have standardized weight so that they may have difficulty to distribute turnover to members. However, after advises from DFT, the group recognized importance to negotiate sales price having idea of price per kg, scaled and recorded weight of each stored bags when they sold paddy and used the information to distribute turnover. In addition, they generated a new format on how to calculate the amount of payment from price per kg because the weight is different from one member to another member. Through this additional process, they also recognized the importance to have standardized weight per a bag.

The group didn't prepare and submit a financial report for members while it captured whole expenditure for all activities of warehouse management and marketing manager though further advises were required. DFT provided technical advises and instructed a village extension officer of Mkangawalo to make follow-up to strengthen record keeping and report making.

(3) Meetings to manage a warehouse

The group members meet monthly for reporting issues concerned with the collected information by the MM such as market price information as well as buyers information. Also, emergency meeting was held when the MM needed consultation with members about decision of the sale to buyers.

Awareness on responsibility in two villages are weak in a sense that the group tend to rely on the MM more than that in Msalise. The MM in Mkangawalo have done many things including recording paddy bags and leading payment of turnover to farmers. It is required for the farmers group to raise other leaders/members awareness of responsibility by establishing warehouse management committee and marketing committee.

2-2-2. Marketing Manager

Baseline (average sales price last season) and target this season for both villages of Mkangawalo is shown in the table below.

Table 2-1-1. Baseline and target sales price in Mkangawalo

	Mkangawalo
Baseline: average sales price last season	Tsh 52,281.14 /bag
Target (Dec-Jan 2014/2015)	Tsh 79,500 (50% higher than sales in June, 2014)

(1) Process of collecting market price information and finding a buyer by Marketing Manager

The MM went to Mchombe town to search for buyers and negotiate the paddy price and visited four times. He met two buyers. One buyer needed more than 10 tonnes of paddy with good quality ("Super") at the price of Tsh 80,000 per bag with 150kgs. Another buyers need less than 10 tonnes at the price of Tsh 80,000 per bag with 150kgs. When MM visited Mchombe Town. The two buyers prefers rice instead of paddy. Unlike buyers the Msalise MM met, those the Mkangawalo MM met preferred specific local varieties eg "Mbawawa Mbili", "Kalimata" and "Zambia".

Mkangawalo have done the same preparation. The MM was equipped with the buyers information sheet and the price tracking sheet. DFT facilitated the group to prepare a marketing plan based on the information collected for some weeks. The plan includes frequency of visit to search buyers and

information collection of market price as well as target sales price that was calculated based on the production cost farmers remembered. This enabled the MM to work effectively within budget of the group and to judge the timing of sales easily. One of issues in preparing the plan was how to raise fund for the MM's activity. Since farmers didn't have money for the MM then, the activity was financed by the MM himself. Therefore, the number of places where the MM visited and frequency of the visits were limited very much.

(2) Results of Sales

The Farmers' group sold 65 paddy bags to a buyer at Tsh 750 per kg.

2-2-3. Income and Expenditure of the farmers' group after sales of paddy

Summary of the income and expenditure is as follows. The total sales amount was Tsh. 7,312, 500 for total amount of 9,750kg. After deducted the operation cost (rent of warehouse), the remained amount divided according to the weight each member stored. Since the marketing manager sometimes visit Mchombe for his own purpose, cost of the Marketing Manager's activity was paid by himself voluntarily.

Table 2-2-1. Income and Expenditure for the warehouse management and paddy sales

Expenditure	Income	Note (usage etc)
	7,182,500	Turnout from sales of paddy (total sales-storing fee)
	130,000	Storing fee
130,000		Rent of warehouse
7,182,500		Payment to farmers
0		Balance

Since the farmers did not save any money, the DFT emphasized importance to save money for the MM activity next season and proposed to save Tsh 500 per member every month.

3. Challenges to improve warehouse management and marketing manager

3-1. Challenges found in Msalise

Challenges found in Msalise are as follow.

(1) Management of Warehouse and Marketing Manager

- The way of storing paddy such as stacking paddy separately according to variety in a pallet.
- To strenghnining proper record keeping
- Marketing committee and warehouse management committees

- Financial contribution by group member is required to finance MM's activity before starting storing paddy.

(2) The other

- To have better price to the next season, frequency of visit to search buyers and place of visit need to be discussed when farmers prepare their marketing plan next season.

3-2. Challenges found in Mkangawalo

Challenges found in Mkanwagalo are as follow.

(1) Management of Warehouse and Marketing Manager

- To strenghnining proper record keeping marketing committee and warehouse management committees
- Further improvement of the way of storing paddy required, such as stacking paddy bags separately according the varieties in one pallet.
- In order to maintain the quality of paddy they should control the number of bags stored so as to manage ventilation properly.

(2) Others

- To have better price to the next season famers should think frequency and place of visit to find buyers.
- DFT need to think how the team can increase the capacity of farmers about production and post-harvest handling using existing resources. Such capacity can be strengthened effectively in both villages now since farmers recognized its importance to increase sales price through experience of sales.

3-3. The way forward: Issues to be considered for further improvement of the pilot activities

Followings need to be considered based on this review to improve the supporting approach implemented in the pilot activities and to upscale supports to warehouse management and marketing manager in sustainable manner.

(1) for improvement of approach

- Preparation of simplified warehouse management manual for farmers.
- Consideration to revise a draft rule according to findings thorough this review.
- Preparation of two guidance of warehouse management and marketing manager

(2) for sustainable up-scaling

- The cost of supporting warehouse management and marketing manager.

  This support doesn't cost much even though district itself does implement this. It should be calculated with consideration of following.

- Demarcation and collaboration between DFT and VAEO

  Cost of supports should be at sustainable level. To make this activity more sustainable, collaboration with VAEO is crucial so that district can make closer supervision for farmer and it can help to reduce costs of follow up and supervision.

- Budgeting necessary cost in government budget.

8.2 Baseline Survey Report

BASELINE SURVEY REPORT

KILOMBERO DC

CONTENT

Chapter 1. Introduction

1.1. Objective of the Survey

This survey is implemented under the JICA Technical Cooperation Project entitled, "*Strengthening the Backstopping Capacities for the DADP Planning and Implementation under the Agricultural Sector Development Programme in the United Republic of Tanzania (Phase II)*" (herein referred to as "the Project"). The survey was conducted from October 23 to November 3, 2014. It aims to identify major challenges in rice/paddy marketing in the pilot areas, particularly in the villages of Msalise and Mkangawalo, Kilombero District, Morogoro Region, and assess how the Project's interventions can effectively contribute to ensuring that these challenges are addressed.

The objectives of this survey are:

(1) To collect baseline data on off-season sales of rice/paddy under the pilot project in two villages, Msalise and Mkangawalo;
(2) To identify major challenges in rice/paddy marketing in the two pilot project sites;
(3) To assess how the Marketing Manager System, with the storage practice of paddy, can contribute to tackling the identified challenges.

1.2. Background of Msalise and Mkangawalo

The Project has been conducting pilot activities on rice/paddy marketing in two sites: (1) Msalise Village and (2) Mkangawalo Village. Both sites/villages are within the Kilombero district in Morogoro region.

(1) Msalise Village

Msalise is located 70km away from Ifakara, where the main district office of Kilombero is seated. The road condition from the district center, Ifakara to the village, is poor and it takes 1.5 hours by a 4-Wheel Drive vehicle to travel from Ifakara to Msalise and 2 hours by public bus. However, especially during raining season, it is difficult for most large vehicles to carry rice/paddy bags in that route.

The village has no common warehouse to store paddy. Some farmers use warehouses in nearby villages outside Msalise. There is also no milling facility in the area.

The Msalise Agriculture Marketing Co-operative Society (MAMCOS), the beneficiary of the Project's pilot activities, currently has 50 members. It was founded in 2012 with the purpose

to store paddy bags and collectively sell the paddy at a higher price through a marketing manager.

(2) Mkangawalo Village

Mkangawalo village is located 90 km from the district center Ifakara. While it is further than Msalise, the road condition from Ifakara to Mkangawalo is good. The village has one privately owned milling facility, but no common warehouse. Initially, farmers in Mkangawalo have not used common warehouses; farmers simply store rice/paddy bags at home.

Mkangawalo Farmers' Association and Viki Faraja, a women's group, are the beneficiaries on this Project. Just as Msalise, Mkangawalo farmers formed the association to build a common warehouse in the village and collectively sell rice/paddy at a better price through a marketing manager.

Chapter 2. Methodology of the Survey and its Limitation

2.1. Methodology of the Survey

The survey employed a structured interview, using a questionnaire in Swahili (Appendix 1). The total number of answers is 61; 26 in Msalise and 35 in Mkangawalo. The detailed conduct of the survey is described below:

(1) Interview in Msalise on 23rd October, 2014

District Facilitation Team (DFT) and Technical Assistant (TA) interviewed 19 farmers in MAMCOS with the assistance of a Japanese expert. During the survey it was found that some households allocated harvested paddy to each family member and each member independently manages the transaction of the paddy. To capture the information properly, the team added a question, "*Out of the harvested paddy bags, how many are self-owned?*"

(2) Interview in Mkangawalo on 24th October, 2014

The survey team moved to Mkangwalo and conducted 23 interviews with the revised questionnaire.

(3) Supplement Interview in Msalise on 29th October, 2014

A supplement interview was conducted in Msalise by TA since the number of answers in both villages could not cover the target, 60. Seven answers were added through the supplement

interview.

(4) Supplement Interview in Mkangawalo on 3rd November, 2014

In the same manner, TA also conducted a supplement interview in Mkangawalo. In the village, additional 12 answers were collected.

2.1. Limitation of the Survey

The data collected from this survey was analyzed with utmost diligence given the constraints presented to the team. The duration of the survey was constrained to 2-weeks. Noting that the pilot project sites are far from Dar es Salaam, hindering frequent visits by the team, data collection was limited to a small sample size. Moreover, availability of data was also a major constraint. Farmers in both sites keep neither physical records of business transactions nor personal records of harvests or expenses incurred. The survey relied heavily on farmer interview and validated information through District Officers and the Central Office. For these reasons, the data of this survey can show only a relative tendency rather than statistical information.

Chapter 3. Basic information of Interviewees

Among 61 informants, 27 are male and 34 are female as Table 3.1 shows.

Table 3.1. Gender of Interviewees

	Msalise	Mkangawalo	Total
Male	16	11	27
Female	10	24	34
Total	26	35	61

Paddy/rice is the major income source of most farmers both in Msalise and Mkangawalo (Table 3.2). Secondary income sources vary from vegetables to chickens, although the proportion in the total income is not more than the supplemental level, according to the most informants in the supplement interview (Table 3.3, Figure 3.1).

Table 3.2. Major Income Source

	Msalise	Mkangawalo
Paddy/Rice	26	33
Vegetables	0	1
Cows	0	1
Total	26	35

Table 3.3. Secondary Income Sources

(multiple answers)

	Msalise	Mkangawalo	Total
Vegetables	4	8	12
Chickens	15	24	39
Cows	1	2	3
Others	9*	3**	12
No answer	1	0	1

*maize, goats, mobile charging, brick making

**maize, pigs

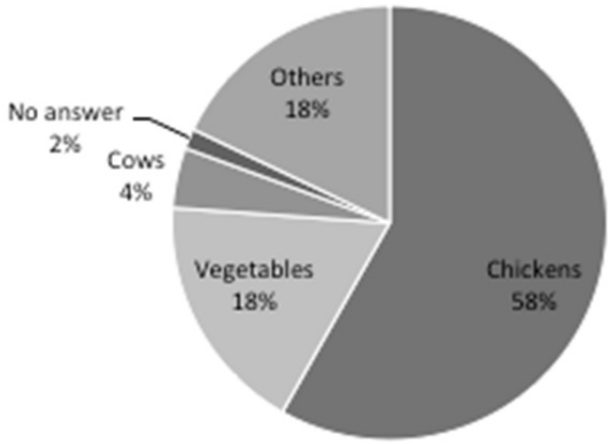

Figure 3.1. Secondary Income Sources in both Msalise and Mkangawalo (%)

Most of the farmers in both villages sell their harvests as paddy although a few sell them as milled rice as Table 3.4 and Figure 3.2 show. Informants in Msalise insisted that they prefer selling milled rice to paddy since its profitability is higher, despite the absence of a milling machine in Msalise. In Mkanwagalo, there is a privately owned miller but the milling charge[1] prevents more farmers from milling paddy to rice.

Table. 3.4. Ways of Selling Paddy (multiple answers)

	Msalise	Mkangawalo	Total
Sell paddy by small portions	3	3	6
Sell paddy by bags	19	22	41
Mill paddy and sell rice	2	5	7
Mill paddy, steam and sell them	0	1	1
Mill paddy, cook and sell	0	3	3
Others	1	0	1
No answer	1	1	2

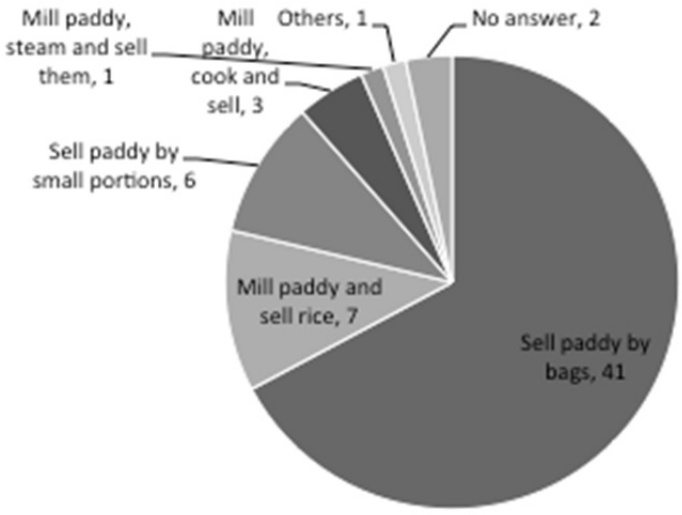

Figure 3.2. Ways of Selling Paddy in both Msalise and Mkangawalo (%)

[1] Milling charge is 50Tsh/kg and the loading charge is 1000Tsh/bag in Mkangawalo.

Chapter 4. Results of the Survey

4.1. Harvest in 2013 and 2014

In both pilot villages, most farmers are small-scale. Table 4.1 indicates the size of rice-cultivated land in both areas. While some farmers have relatively larger land, 6 acres in Msalise and 15 acres in Mkangawalo in 2014, majority have less than 3 acres for rice cultivation that are slightly larger than the average size, 1.5-2 acre(s) in Kilombero District.

Table. 4.1 The Size of Rice Cultivated Land in Msalise and Mkangawalo in 2014 and 2013

Size of Land	Msalise		Mkangawalo	
	2014	2013	2014	2013
<1ac	0	0	0	0
1ac≤ - <2ac	8	9	14	11
2ac≤ - <3ac	11	11	14	15
3ac≤ - <4ac	0	1	1	2
4ac≤ - <5ac	3	3	3	3
above 5 ac	3	2	3	3
No answer	1	0	0	1
Total	26	26	35	35

*ac=acre

Table 4.2 and 4.3 show the production of paddy in Msalise and Mkangawalo. According to the Department of Agriculture, Irrigation and Cooperatives of Kilombero District, the average yield of paddy in Kilombero district is approximately 3 ton /ha for non-irrigated land, and 4-6 ton for irrigated lands. However for Msalise, the yield is around 2.4 ton per ha in 2014; for Mkangawalo, it is 2.3 ton per ha in non-irrigated land. The informants of both villages claim that the low yield is mainly attributed to the use of less fertilizers and cultivation of local varieties, which inhibits high yield.[2]

[2] The informants also claimed that the flood seriously affected on the low yield in the season of 2013.

Table. 4.2 Yield of Surveyed Respondents in 2014 and 2013 in Msalise

	2014			2013		
	Volume(bag)	Volume (kg)	Yeild(kg/ha)	Volume(bag)	Volume (kg)	Yeild(kg/ha)
Max	53	7,155	5,400	48	6,480	4,219
Min	1	135	338	1	135	506
Average	17	2,284	2,869	16	2,164	2,420

*Round off to the closest whole number. One paddy bag is 135kg.

Table. 4.3 Yield of Surveyed Respondents in 2014 and 2013 in Mkangawalo

Year	2014			2013		
	Volume(bag)	Volume (kg)	Yeild(kg/ha)	Volume(bag)	Volume (kg)	Yeild(kg/ha)
Max	120	16,200	5,400	270	36,450	4,388
Min	2	270	450	1	135	337.5
Average	18	2,364	2,282	27	3,706	2,354

*Round off to the closest whole number. One paddy bag is 135kg.

4.2. Storage Practice

Figure 4.1 and 4.2 show the flow of paddy bags after harvesting in 2013/2014. To understand the annual tendency, particular focus is given to the 2013 data.[3] Approximately 75% of paddy is brought to their houses and 9.1 % to warehouses outside of the village in Msalise. In addition, 43.4 % of the paddy bags stored in the household are partially and gradually sold and 36% are for family consumption[4].

[3] The data of 2014 is incomplete since it is only by the end of October when survey was conducted.

[4] To confirm the data, the study team asked the average number of bags consumed per family in Msalise. The result was 5 bags for 5 family members, 7 bags for 6 family members. Since the average production in Msalise in 2013 was 16.9 bags per household, the consumption rate of paddies stored at house is 12.6bags (computed as 16.9X75%), which indicates 39%-55.5.%(5-7bags) is consumed while the rest of bags stored in the house would be sold.

Table.4.4 Storage Practice in Msalise

	2014		2013	
	No. of Farmers	No. of Bags	No. of Farmers	No. of Bags
Harvest	26	424	26	417
Sold at Farm	9	41	16	89
Stored at House	25	304	25	313
Stored at Other Warehouses	2	7	12	38
Stored at Trial Warehouse	20	48	NA	NA
Sold at House	17	87	17	136
Sold at Warehouse	0	0	10	38
Self-Consumption*	25	74	23	114

*See also footnote 4

Figure. 4.1 The Flows of Paddy Bags in Msalise (2013) [5]

In Mkangawalo, 18.8 % of harvested paddies are sold at farms and the remaining paddies, around 80%, are stored at home. Approximately 39 % of the paddy bags stored at home are sold and 38.5% for family consumption[6].

In short, farmers tend to sell around 20% of paddy at farm, immediately after their harvesting. Then the remaining 75-80 % of paddy is carried to each house, which is eventually sold and consumed.

[5] The data of bags sold at house and self-consumption was unaccounted for, due to the lack of farmer's record. The same missing is seen in Mkangawalo as well.

[6] In Mkangawalo, the data was validated by asking the average number of paddy bags consumed by a family, which garnered the same answer as that of Msalise; 5-7 bags per year. As such, the average production in Mkangawalo in 2013 was 17.5 bags (2364kg) per household. The consumption rate of paddies stored at house is 14.1bags (computed as 17.5X80.7%) which indicates 35.4%-49.6%(5-7bags) are consumed and the rest of bags stored at home are sold.

Table. 4.5 Storage Practice in Mkangawalo

	2014		2013	
	No. of Farmers	No.of Bags	No. of Farmers	No. of Bags
Harvest	35	613	33	906
Sold at Farm	16	52	25	171
Stored at House	35	248	34	732
Stored at Other Warehouses	2	40	0	0
Stored at Trial Warehouse	15	32	NA	NA
Sold at House	15	73	26	288
Sold at Warehouse	0	0	0	0
Self-Consumption*	32	107	33	282

*See also footnote 6

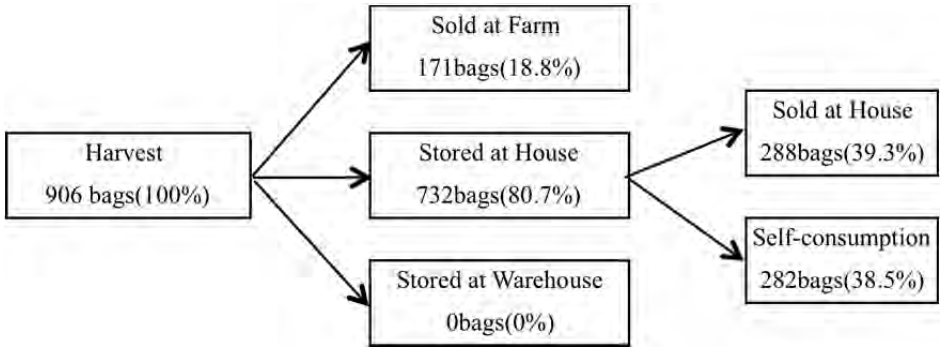

Figure. 4.2 The Flows of Paddy Bags in Mkangawalo (2013)

4.3. Sales; At Farm, House and Warehouse

Table 4.6 indicates the selling practice at 3 different locations: (1) at the farm, (2) at home, and (3) at the common warehouse in Msalise, from April 2013 to Mar 2014. The highlighted columns of the Table show that the sale prices in the 3 locations are not much different nor indicate any increasing or decreasing trend. For instance, the average sale price at farm in July, 2013 is higher than the sale price at warehouse in December, 2013 and January, 2014. Noting that sales in January 2014 show a substantially low figure considering that this is off-season. Although there are external and internal factors causing the lower price sales, the data seem to indicate that farmers could not take advantage of either off-season prices or the locational difference of selling. An external cause, among others, is the Mkula irrigation scheme located near Msalise village had its second harvest season in January. The irrigation scheme has a good

reputation to produce a great amount of paddy with higher quality, so the value of paddy in Msalise lost attractiveness to buyers[7]. As an internal factor, farmers in Msalise are compelled to sell their paddies for urgent necessities such as cash payment for land-preparation, school fee and so on. Most farmers claim that due to the urgent situation, they have no room to bargain with buyers during the season of land-preparation. Similar situation happens in the period of harvesting when they are obligated to sell paddies at their farms to pay transportation cost to bring their harvest from farm to house, and wage cost for harvesting and post-harvesting.

Table 4.7 shows the gap in sale prices in the highlighted period. In the case of sale at warehouse in January 2014, the price gap between maximum and minimum is 30,000 Tsh/bag, 1.6 times difference between the highest and lowest. The gap indicates individual bargaining power significantly determines sale prices.

In Mkangawalo famers could not maximize the advantage of price-fluctuation either although no farmer used the warehouse in 2013 (See Table 4.8). For instance, the average price at farm in August 2013 is higher than those sold from the house in December 2013. In addition, Table 4.9 supports that the sale prices rely on individual bargaining power and networks with buyers rather than the time or location as seen in the case of Msalise.

[7] In addition to the local factor, the domestic price of rice between August in 2013 and May 2014 has stagnated, coupling with its international price. In this way, the price of rice/paddy is intertwined with several causes.

Table.4.6 Sales of Paddy in Msalise (April 2013-March 2014)

Place	Farm			House			Warehouse		
	No of Farmers	Bags	Average Price	No of Farmers	Bags	Average Price	No. of Farmers	Bags	Average Price
Apri, 2013	1	10	55,000	0	0	0	0	0	0
May, 2013	3	11	57,500	0	0	0	0	0	0
Jun, 2013	3	11	75,000	0	0	0	0	0	0
Jul, 2013	8	29	65,000	2	11	60,000	2	17	60,000
Aug, 2013	2	2	60,000	3	6	56,667	0	0	0
Sep, 2013	3	15	66,667	6	28	64,167	0	0	0
Oct, 2013	3	8	57,333	5	12	57,500	2	5	75,000
Nov, 2013	1	3	70,000	0	0	0	0	0	0
Dec, 2013	2	2	67,500	1	2	65,000	1	1	50,000
Jan, 2014	1	1	60,000	0	0	0	7	15	57,857
Feb, 2014	0	0	0	2	60	80,000	0	0	0
Mar, 2014	0	0	0	0	0	0	0	0	0
Sub-Total	27	92	63,400	19	119	63,889	12	38	60,714
Total					Bags Sold	249		Average Price	62,668

Table.4.7 Price Gaps in Msalise (2013)

Place to Sell	Time	Average	Max	Min
Farm	Jul, 2013	65,000	80,000	50,000
House	Sep, 2013	64,167	75,000	40,000
	Oct, 2013	57,500	70,000	50,000
Warehouse	Jan, 2014	57,857	80,000	50,000

Table 4.8 Sales of Paddy in Mkangawalo (April 2013-March 2014)

Place	Farm			House			Warehouse		
	No. of Farmers	No. of Bags	Average Price	No of Farmers	No. of Bags	Average Price	No. of Farmers	No. of Bags	Average Price
Apr, 2013	0	0	0	0	0	0	0	0	0
May, 2013	0	0	0	0	0	0	0	0	0
Jun, 2013	3	4	55,000	0	0	0	0	0	0
Jul, 2013	11	36	49,231	6	22	52,000	0	0	0
Aug, 2013	5	58	55,000	7	19	56,667	0	0	0
Sep, 2013	0	0	0	6	17	51,667	0	0	0
Oct, 2013	2	7	50,000	4	18	46,667	0	0	0
Nov, 2013	3	19	50,000	3	19	46,667	0	0	0
Dec, 2013	0	0	0	6	100	50,833	0	0	0
Jan, 2014	0	0	0	2	85	55,000	0	0	0
Feb, 2014	2	14	60,000	0	0	0	0	0	0
Mar, 2014	0	0	0	0	0	0	0	0	0
Sub-Total	26	138	53205	34	280	51357	0	0	0
Total					Bags Sold	418		Average Price	52,281

Table.4.9 Price Gaps in Mkangawalo

Place to sell	Time	Average	Max	Min
Farm	Jul, 2013	49,231	60,000	40,000
	Aug, 2013	55,000	70,000	40,000
House	Jul, 2013	52,000	60,000	50,000
	Aug, 2013	56,667	70,000	50,000
	Sep, 2013	51,667	70,000	40,000
	Dec, 2013	50,833	55,000	50,000

From the above result, farmers in the both villages could not take advantage of either off-season prices or the locational difference of selling, caused by (1) urgent financial necessities in the land-preparation and harvesting season, (2) reliance on individual marketing ability, without adequate skills and information. In the following chapter, the Marketing Manager System is discussed and how such system is able to address the challenges.

Chapter 5. Conclusion

Summary: Challenges in Paddy/Rice Marketing

(1) Escaping the vicious cycle of day-to-day subsistence

Farmers in the both villages are seemingly trapped by the vicious cycle of selling rice based on the urgent need for cash to make instant payment for farming and personal expenses. To make ends meet, farmers sell rice on a day-to-day needs basis, with total disregard for proper timing to sell at a better price.

Based on the survey, farmers typically need money to pay for direct expenses twice a year: first, at the beginning of rice-farming (January-February) and second, during the harvesting season (May-August). This is because they need cash to pay for the direct farming expenses (such as input and labor costs) in land preparation and harvesting/post-harvesting. Due to the urgent need for instant cash to pay direct costs, the remaining paddies at the beginning of farming and the harvested paddies are sold at a very low price.

The pilot project introduced the Marketing Manager System, combined with warehouse management and marketing consultancy, to take advantage of the off-season sales. The Marketing Manager assigned by the farmers group will establish networks that will enable farmers to have access to fair market price, thereby maximizing their profits. Through the project activities, the system is able to encourage farmers to escape the day-to-day subsistence.

To have a clear picture of the Marketing Manager System, a typical case in Msalise is described here:

A typical farmer's household with 6 family members has 2 acres of farmland for paddy, which harvests approximately 17 bags. 3 bags are immediately sold after harvest for direct expenses (i.e. harvesting and post-harvesting expenses). The remaining 14 bags are stored at home for consumption and will be sold as the need arises. Typically, the household consumes 7 bags and 7 bags are sold gradually. Unless the production of paddy is increased, this typical allocation

will not dramatically change.

With the Marketing Manager System implemented in pilot areas, farmers store 2 bags in the warehouse, out of the 17 harvested bags. The 2 bags stored at the warehouse will be sold at off-season. If the off-season price is approximately 50% higher than the price sold during harvesting time at farm, the sale of 2 bags on off-season would be nearly equal to or higher than 3 bags sold at farm[8]. Based on this calculation, the expense in harvest season can be paid by the gains from the off-season sale if the gains of off-season sales are deposited for the next harvest season.[9]

The gradual reduction of bags sold at farm and the subsequent increase in bags sold at off-season (higher price), will augment profit to cover direct expenses during land preparation and harvesting and ease the day-to-day subsistence.

(2) From individual marketing to collective marketing

Collective marketing is an ideal marketing approach for small-scale farmers. Not only does collective marketing increase bargaining power, it also provides stable support to farmers. As the survey data indicated, both villages rely on individual marketing, with farmers' limited ability, resulting in a substantial gap in sales.

The Marketing Manager System with warehouse management is essentially designed to promote collective marketing. Working as a group, participants learn how to store paddy bags properly; this includes packaging, quality control and bookkeeping. Concurrently, a nominated marketing manager collects price information and establishes linkage with potential buyers. During the off-season, the group sells their well-stored bags to buyers at higher prices, thereby maximizing the gains from appropriate marketing.

(3) Improvement of individual marketing power

In addition to the collective marketing, the Marketing Manager System can enhance individual marketing. Even after the introduction of collective marketing activities, individual marketing would be practiced during non-"off-season" time. Still however, a marketing manager can tell

[8] Note that the farmer, upon sale, must consider the cost of storage and marketing manager's activities. It is important that farmers are provided information/training on how to compute costs and profit.

[9] To utilize gains from off-season sale, farmers need to understand their cash flow and acquire skills on proper financial management. Farmers should be encouraged to use skills and tools learned in the financial management training at Msalise.

farmers proper ways of selling such as how to find a better buyer, and how to negotiate with them[10].

(4) Anticipating new challenges: Financial Management

Collective marketing through the Marketing Manager System, once implemented in full swing will face new challenges. For instance, warehouse management requires storage and maintenance cost; the association's cost for the marketing manager, such as transportation allowance, and security cost, necessitates proper financial management. To ensure that the money flow efficiently and effectively within the association and its individual members is crucial in addressing the main challenge of day-to-day subsistence.

Proper financial management can empower associations to further increase the benefits from sales and support its members. An example is for the association to provide micro credit to its members so that farmers can utilize a part of the sales for harvesting time.

The Marketing Manager system is a comprehensive approach to marketing. Taking on warehouse management, marketing managers, and financial management in synergy, the Marketing Manager System has a tremendous potential to improve the financial situation of small-scale farmers and, in the long-term, permanently improve their lives.

[10] In the case of Mang'ula "A" Farmers Association, where the Marketing Manager System was introduced earlier, it was reported that individual bargaining power is significantly improved.

8.3 End-line Survey Report on Kilombero Pilot Activity on Warehouse Management

End-line Survey Report on Kilombero Pilot Activity on Warehouse Management

June 2016

Kilombero District Council, Morogoro Region, NFTs and JICA RADAG

CONTENT

Chapter 1. Introduction

1.1. Objective of the Survey

This survey is implemented under the JICA Technical Cooperation Project entitled, "*Strengthening the Backstopping Capacities for the DADP Planning and Implementation under the Agricultural Sector Development Programme in the United Republic of Tanzania (Phase II)*" (herein referred to as "the Project"). The survey was conducted from 3 May to 18 May, 2016. It aims to assess how the support of Warehouse Management and Marketing Manager System in rice/paddy marketing contributed to the pilot villages of Msalise and Mkangawalo in Kilombero District of Morogoro Region.

The objectives of this survey are:

(1) To assess how supports on Warehouse Management and Marketing Manager System, with the storage practice of paddy, have contributed to tackling the identified challenges.

(2) To identify remaining challenges and lessons learnt in rice/paddy marketing in the two pilot project sites;

1.2. Background

The Project has been conducting pilot activities on rice/paddy marketing in two sites: (1) Msalise Village and (2) Mkangawalo Village. Both sites/villages are within the Kilombero district in Morogoro region.

1.2.1. Background of Msalise and Mkangawalo

(1) Msalise Village

Msalise is located 70km away from Ifakara, where the main district office of Kilombero is seated. The road condition from the district center, Ifakara to the village, is poor and it takes 1.5 hours by a 4-Wheel Drive vehicle to travel from Ifakara to Msalise and 2 hours by public bus. However, especially during raining season, it is difficult for most large vehicles to carry rice/paddy bags in that route.

The village has no common warehouse to store paddy. Some farmers use warehouses in nearby villages outside Msalise. There is also no milling facility in the area.

The Msalise Agriculture Marketing Co-operative Society (MAMCOS), the beneficiary of the Project's pilot activities, currently has 50 members. It was founded in 2012 with the purpose to store paddy bags and collectively sell the paddy at a higher price through a marketing manager.

(2) Mkangawalo Village

Mkangawalo village is located 90 km from the district center Ifakara. While it is further than Msalise, the road condition from Ifakara to Mkangawalo is good. The village has one privately owned milling facility, but no common warehouse. Initially, farmers in Mkangawalo have not used common warehouses; farmers simply store rice/paddy bags at home.

Mkangawalo Farmers' Association and Viki Faraja, a women's group, are the beneficiaries on this Project. The number of their members are 80 and 30 respectively. Just as Msalise, Mkangawalo farmers formed the association to build a common warehouse in the village and collectively sell rice/paddy at a better price through a marketing manager.

1.2.2. Objective of Support and Activities implemented.

The project supported following activities under the goal, "To increase farmer's income by sales through the warehouse."

- Warehouse Management
- The Marketing Manager System
- Improved Access to Finance

Among these activities, first of all, DFT trained farmers for basic knowledge on warehouse management and marketing as well as on how to do financial management. After these trainings, farmers actually store paddy bags (trial storing exercise) and sold paddy actually through marketing activities of a marketing manager[1]. In the exercise and sales activities, DFT and VAEOs visited warehouses of the pilot villages and give them advises based on the warehouse management manual prepared for the activities.

[1]It was called "marketing manager" in Kilombero so that the draft of technical supporting manual used the same title. However, the position is currently called sales leader in the technical supporting manual on warehouse management after consultation with stakeholders.

Chapter 2. Methodology of the Survey and its Limitation

2.1. Methodology of the Survey

The baseline survey employed a structured interview, using a questionnaire in Swahili. The end-line survey also applies the same methodology (see the questionnaire in Appendix 1). The total number of interviewees is 65; 34 in Msalise and 31in Mkangawalo.

The detailed conduct of the survey is described below:

(1) Interview and supplement interview in Msalise on 3rdand 5th May, 2016. District Facilitation Team (DFT) interviewed 25 farmers in MAMCOS with the assistance of a Japanese expert. In addition, the DFT conducted supplement interview for additional 9 people in the same village. The total number of interviewees was 31.

(2) Interview and supplemental interviews in Mkangawalo on9th, 10th and 18th May, 2016.The DFT conducted the same interview in Mkangawalo for 30 people by 10th May. However, the team found 9 people were not a member of the target group in the village. Therefore, the team conducted supplement interviews for 10 more interviews on 18th May. Total number of the interviewees was 31.

2.1. Limitation of the Survey

The data collected from this survey was analyzed with utmost diligence given the constraints presented to the team. Compared with situation in the baseline survey, farmers of the pilot villages had started recording paddy bags stored in the warehouse used for a trial storing exercise. That made accurate information of the sales through the warehouse of pilot villages.

However, the other information about the number of bags stored in their house, total harvest and sales at their farm and houses were not recorded in document. The survey relied heavily on farmer interview and validated information through District Officers and the Central Office. In that sense, there remains limitation on availability of data.

The end-line survey could collect 31 and 34 interviewees in Msalise and Mkangawalo respectively. However, the number of interviewees joined both baseline and end-line survey was limited. Msalise and Mkangawalo have 18 and 10 interviewees respectively who joined both in the baseline and end-line surveys. For these reasons, the data of this survey can show only a relative tendency rather than statistical information.

Chapter 3. Basic information of Interviewees

3.1 Basic Information of Interviewees

Compared with baseline, the proportion of interviewees of women increased in Msalise while that in Mkangawalo were decreased.

Table 3.1. Gender of Interviewees (Baseline and End-line)

	Baseline Survey			End-line Survey		
	Msalise	Mkangawalo	Total	Msalise	Mkangawalo	Total
Male	16 (61.5%)	11 (31.4%)	27	18 (52.9%)	17 (54.8%)	35
Female	10 (38.5%)	24 (68.6%)	34	16 (47.1%)	14 (45.2%)	30
Total	26	35	61	34	31	65

Paddy/rice has been the major income source of most farmers both in Msalise and Mkangawalo even in the end-line survey (Table 3.2). Secondary income sources vary from vegetables to chickens. “Others” include maize, beans, bees, goats and so on (Figure 3.1 and 3.2).

Table 3.2 Source of Agricultural Income in Msalise and Mkangawalo

	Msalise		Mkangawalo	
	2015/16	2013/2014	2015/16	2013/2014
1. Paddy/Rice	35	26	31	33
2. Vegetables	4	4	3	8
3.Chiken	22	15	13	24
4. Cow	0	1	2	2
5. Others	11	9	8	3

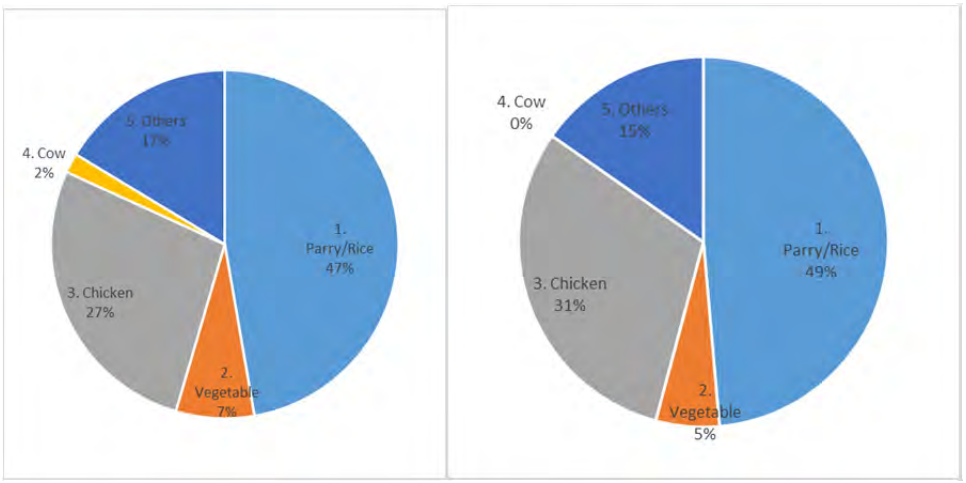

Figure 3.1 Source of Income (Msalise in 2013/14(left)and 2015/16 (right))

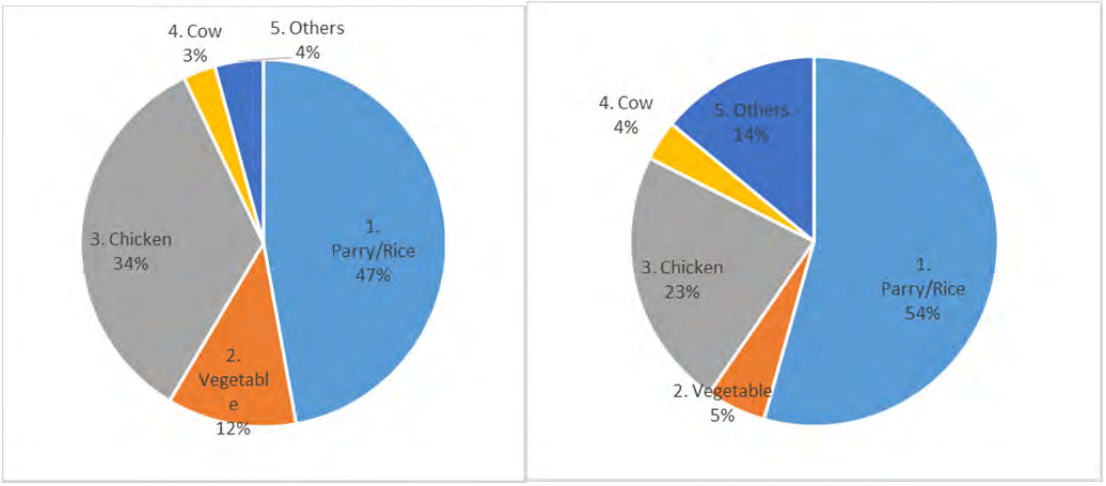

Figure 3.2 Source of Income (Mkangawalo in 2013/14(left) and 2015/16 (right))

In average, farmers in Msalise earns Tsh 1.6 million in 2015/16 season while those in Mkangawalo earned Tsh 1.4 million in the same season. It was also found that there were income gap in both villages. Some farmers earns some million shillings from paddy, while the minimum amount of earnings was Tsh 250,000 in Msalise and Tsh 170,000 in Mkangawalo.

Table 3.3 Total Agricultural Income and Proportion of Paddy

	Msalise		Mkangawalo	
	Total Agricultural Income in 2015/2016	% of Paddy in Total Agric. Income in 2015/16	Total Agricultural Income in 2015/2016	% of Paddy in Total Agric. Income in 2015/16

MAX	Tsh 7,800,000	100.0%	Tsh 6,080,000	100.0%
MIN	Tsh 250,000	20.0%	Tsh 170,000	31.6%
Average	Tsh 1,605,824	83.4%	Tsh 1,415,242	88.7%

Most of the farmers in both villages sell their harvests as paddy although a few sell them as milled rice as Figure 3.2 and Table 3.4. The difference from baseline survey is increase of the farmers selling paddy by bag. This was made by Msalise Farmers' change of behavior mainly. Farmers in the village shifted their behavior from selling paddy in small portion to selling paddy by bag. Farmers recognized the benefit from sales by bag through warehouse.

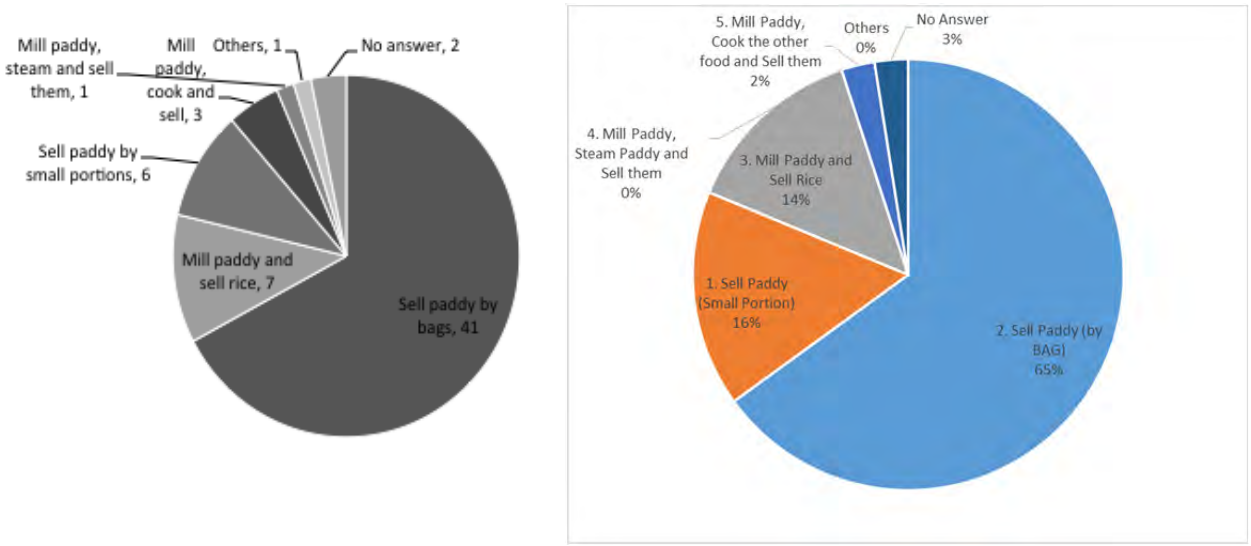

Figure 3.3. Ways of Selling Paddy in Msalise/ Mkangawalo in 2013/14 (left) and 2015/16 (right) (%)

Table 3.4 Ways of Selling Paddy (multiple answers)

	Msalise		Mkangawalo	
	2015	2014	2015	2014
2. Sell Paddy (by BAG)	29	3	23	22
1. Sell Paddy (Small Portion)	10	19	3	3
3. Mill Paddy and Sell Rice	4	2	7	5
4. Mill Paddy, Steam Paddy and Sell them	0	0	0	1
5. Mill Paddy, Cook the other food and Sell them	1	0	1	3
Others	0	1	0	0
No Answer	0	1	2	2

3.2 The Other New Basic Information Obtained from the End-line Survey

In order to deeper analysis and to identify challenges to be tackled in the future after pilot activities based on it, the DFT collected three of new data from the end-line survey. They are methods of cultivation, ownership of cultivated lands and post-harvest practice.

It was observed that farmers tend to produce paddy by broadcasting mainly in both villages (56.5% and 85.7% respectively in Msalise and Mkangawalo). However, Msalise tried the other method of production, planting (37%).

Table 3.7 Methods of Cultivation

	Msalise		Mkangawalo	
	Count	% in total interviewees	Count	% in total interviewees
1. Planting	17	37.0%	2	5.7%
2. Broadcasting	26	56.5%	30	85.7%
3. Transplanting	3	6.5%	3	8.6%

In terms of ownership, most of farmers answered they own their plots in Msalise and Mkangawalo (66.7% and 91.7% respectively).

Table 3.8 Ownership of cultivated lands

	Msalise		Mkangawalo	
	Count	% in whole plots	Count	% in whole plots
Own	38	66.7%	44	91.7%
Rent	19	33.3%	4	8.3%

Post harvesting practice would be the challenge in the future. Farmers in Msalise and Mkangawalo tend to spend more than two weeks before drying after harvest. This period of time would be too long to keep quality of paddy in terms of moisture contents of paddy. It would be worth checking the reason why farmers take such long time and address issues to be found.

Table 3.9 Post Harvesting Practice

	Msalise	Mkangawalo
Days from cutting to "before drying" (average)	15	17
Days for drying (average)	8	4
Dry at Farm	24%	35%
Dry at House	76%	35%
Dry at Warehouse		18%
Dry at the other place		3%

Chapter 4: Results of the Survey

4.1. Harvest in 2015/16

In both pilot villages, most farmers have been small-scale. However, it is observed that farmers seem to have started cultivating more lands after our pilot activities. Table 4.1 indicates the size of rice-cultivated land in both areas. In Msalise, the number of farmers cultivating 2-5 acres increased by 27.6%, while those cultivating 1-2 acres decreased by 31.7%. In the number of Mkangawalo, those cultivating 3-4 acres and above 5 acres increased by 24.4%, while those cultivating 1-3 acres decreased by 22.7%.

Table. 4.1The Size of Cultivated Land in Msalise and Mkangawalo from 2013-2015.

	Msalise						Mkangawalo					
	2015		2014		2013		2015		2014		2013	
	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%
<1acre	0	0	0	0	0	0.0	1	3.23	0	0.0	0	0.0
1ac≤ - <2ac	1	2.94	8	30.8	9	34.6	5	16.1	14	40.0	11	31.4
2ac≤ - <3ac	18	52.9	11	42.3	11	42.3	10	32.3	14	40.0	15	42.9
3ac≤ - <4ac	10	29.4	0	0	1	3.8	5	16.1	1	2.9	2	5.7
4ac≤ - <5ac	1	2.94	3	11.5	3	11.5	3	9.68	3	8.6	3	8.6
above 5	4	11.8	3	11.5	2	7.7	7	22.6	3	8.6	3	8.6
No answer	0	0	1	3.85	0	0.0	0	0	0	0.0	1	2.9
Total	34		26		26		31		35		35	

*ac=acre

Table 4.2 and 4.3 shows the production of paddy in Msalise and Mkangawalo. According to the Department of Agriculture, Irrigation and Cooperatives of Kilombero District in the baseline survey, the average yield of paddy in Kilombero district is approximately 3 ton /ha for non-irrigated land, and 4-6 ton for irrigated lands. However, Msalise and Mkangawalo still produce less than these averages.

Table 4.2 Yield of Surveyed Respondents in 2014 and 2013 in Msalise

	Msalise								
	2015			2014			2013		
	Volume(bag)	Volume (kg)	Yield(kg/ha)	Volume(bag)	Volume (kg)	Yield(kg/ha)	Volume(bag)	Volume (kg)	Yield(kg/ha)
Max	160	21,600	5,700	53	7,155	5,400	48	6,480	4,219
Min	5	675	844	1	135	338	1	135	506
Average	23	3,152	2,318	17	2,284	2,869	16	2,164	2,420

* One paddy bag is 135kg.

Table 4.3 Yield of Surveyed Respondents from 2013-2015 in Mkangawalo

	Mkangawalo								
	2015			2014			2013		
	Volume(bag)	Volume (kg)	Yeild(kg/ha)	Volume(bag)	Volume (kg)	Yeild(kg/ha)	Volume(bag)	Volume (kg)	Yeild(kg/ha)
Max	75	11,250	5,679	120	16,200	5,400	270	36,450	4,388
Min	3	0	0	2	270	450	1	135	338
Average	25	3,362	2,374	18	2,364	2,282	27	3,706	2,354

*One paddy bag is about 150kg

4.2 Result of the sales of paddy in Pilot Villages

DFT's supports resulted in the increase of the unit sale price through offseason sales as their objective indicated (Table 4.4, Figure 4.1 and 4.2).

Table 4.4 Result of Off-season Sales in FY 2015/16

Village Name	Msalise	Mkangawalo
1. Amount Stored for Offseason Sales	81 bags (10,935kg)	325 bags (48,490 kg)
2. Average Amount Stored per Person	3 bags	9 bags
3. Production Cost	Tsh 74,800/bag	Tsh 51,500/ bag ~ Tsh 112,000/ bag
4. Price right after the harvest (July 2015)	Tsh 70,000/ bag ~ Tsh 80,000/ bag	Tsh 64,800/ bag* (sold by rice)
5. Actual Sales Price (Nov - Dec 2015)	Tsh 125,000/ bag	Tsh 105,300/ bag* (sold by rice)
6. Unit Sales Price Increase by Offseason Sales (=4-5)	Tsh 45,000/ bag ~ Tsh 55,000/ bag	Tsh 40,500/ bag
7. % Increase by Offseason Sales (= (5– 4) / 4)	56%~78%	63%
8) Increase of Income from Offseason Sales (= 6x 2)	Tsh 135,000~ Tsh 165,000	Tsh 364,500

* The price per bag was estimation from following prices of rice per kg. The price right after the harvest was Tsh 800/kg (rice) and actual Sales price was Tsh 1,300/kg (rice). For calculation, it was assumed that weight of paddy was reduced by 60% after milling.

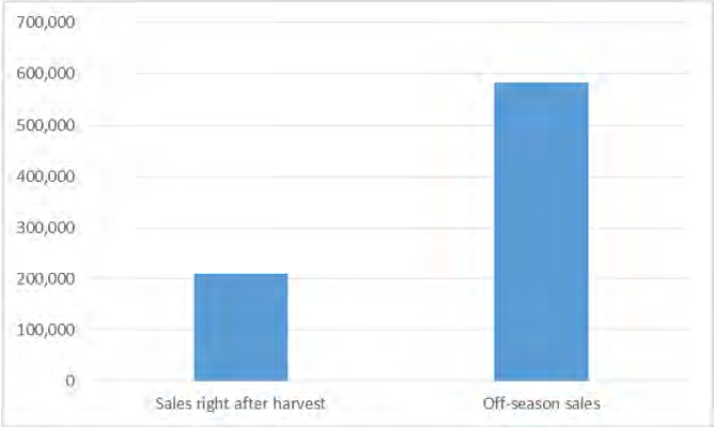

Figure 4.1Impact to individual farmers after off-season sales in FY 2015/16 (Msalise)

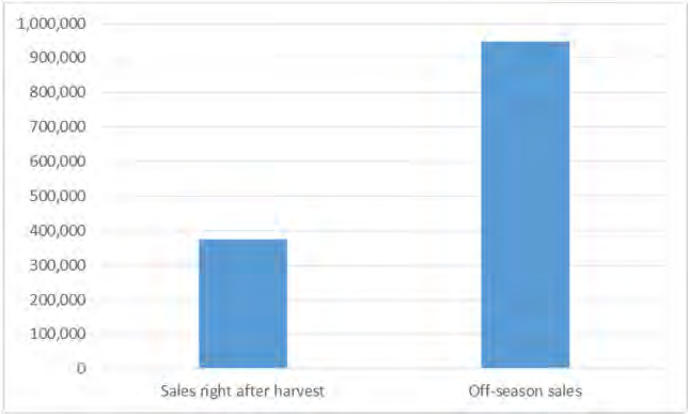

Figure 4.2Impact to individual farmers after off-season sales in FY 2015/16 (Mkangawalo)

In Msalise, the average number of stored bags were three according to the end-line survey result. This means that an average Msalise farmer earnt Tsh 583,200 and increased their income from Tsh 135,000 to 165,000 in comparison with the case of sales right after harvest. In Mkangawalo, the average number of stored paddy bags was 9 in the survey. This means that an average Mkangawalo farmer earns Tsh 947,700 and that their income increases was Tsh 364,500.

These results at a glance would give readers impression that Mkangawalo achieved more successful result. But the impression would be changed if they see increase of unit sales price. The table above says that Msalise earned more than Mkangawalo in terms of the unit sales price though Mkangawalo soled rice after they milled paddy. The results might imply that farmers may earn more without milling. This would be important implication for farmers who tend to think that they can earn more if they sell milled paddy (rice).

However, it should be noted that it is too early to make that judgment. Actually, there is possibility that Mkangawalo could earn more by organizing themselves better. In the trial storing exercises, the farmers group didn't adjust the weight per bag when the group received paddy bags from farmers. The group calculated weight of all bags in selling bags and negotiated unit sale price. This resulted in ineffective negotiation without having proper information on actual amount stored in the warehouse. In terms of production costs, some farmers in Mkangawalo spent money for production more than the amount they could earn from the sales.

4.3. Storage Practice

Figure 4.3 shows the flow of paddy bags in Msalise after harvesting in 2013/14 and 2015/16. This comparison shows that Msalise farmers stored larger volume of paddy at warehouse, increasing from 9% to 19% of all harvest. At the same time, they reduced volume of sales right after harvest at the field from 21.3% to 2.9% in the same period.

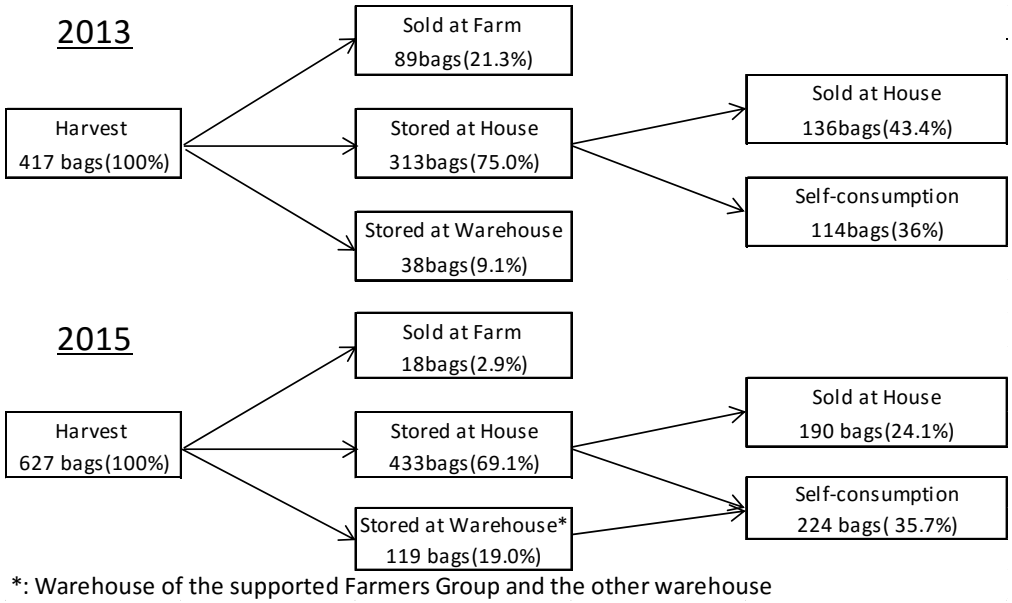

Figure. 4.3 The Flows of Paddy Bags in Msalise in 2013 and 2015

Figure 4.4 shows the case of Mkangawalo. Mkangawalo also experienced similar change of behavior like Msalise. Farmers in the village reduced sales volume right after harvest in comparison between 2013 and 2015, while they increased storage at warehouse from 0% to 43.7% instead.

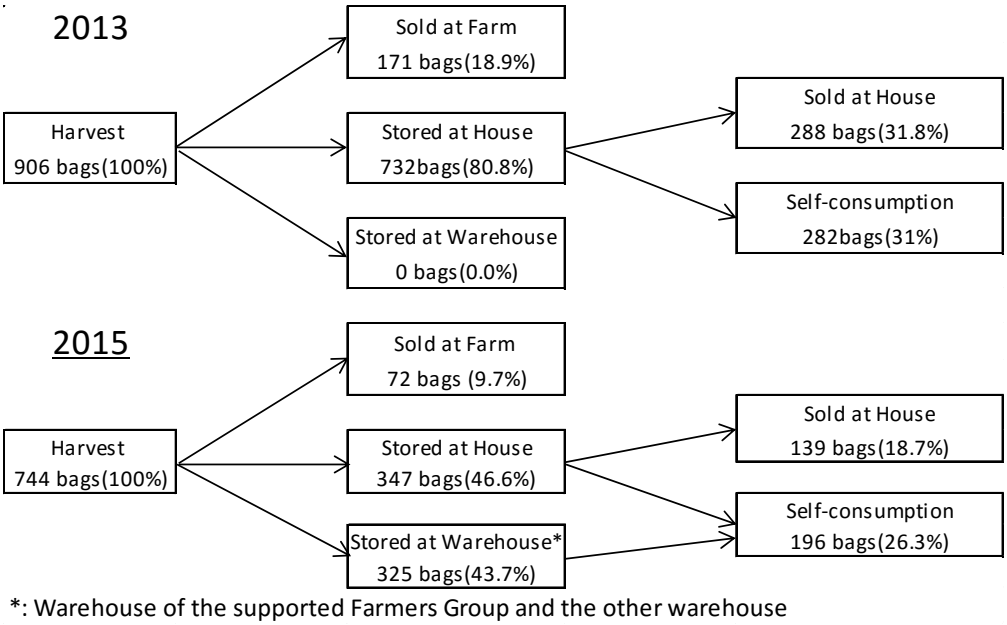

Figure. 4.4 The Flows of Paddy Bags in Mkangawalo in 2013 and 2015

These results indicate that farmers recognized benefit of off-season sales through a warehouse and changed their behavior.

Chapter 5. Conclusion

The base survey presented four challenges of Msalise and Mkangawalo villages namely: (1) Escaping the vicious cycle of day-to-day subsistence (early sales of paddy at low price for daily subsistence), (2) From individual marketing to collective marketing, (3) Improvement of individual marketing power and (4) Small capacity of Financial Management.

Kilombero district has tackled these challenges through the pilot activity in Msalise and Mkangawalo. As shown in the chapter 4, the pilot project achieved increase of unit sale price through supports of the trial storing exercise of warehouse, marketing manager system and financial management. This result was followed by behavior change of farmers about storage and sales of paddy particularly.

In Kilombero district, there are some challenges after pilot activities. Firstly, planned construction of DADP warehouses should be completed in Msalise and Mkangawalo as soon as possible. The change of behavior could be recognized as an increasing demand to a warehouse with more storage capacity. A storage room used for a trial storing exercise will be too small for farmers' activities.

Secondly, it is expected that the district continue upscaling activities. After pilot activities of Msalise and Mkangawalo, Kilombero district have supported the other villages for upscaling. The villages are Katurukira, Kikwawila and Mkasu. Among these three Katurukira and Mkasu have experienced offseason sales and realized the benefit of the activity. Such efforts should be continued.

Thirdly, Kilombero needs to support farmers who had behavior change after pilot activities. For example, as chapter 4 explained, farmers increased behavior by increasing area of cultivated land. However, it would be better if Kilombero district could facilitate maximization of production per acre rather than increasing area of land in the sense that farmers may harvest paddy more effectively.

In order to address these issues, Kilombero has already been stepping into another stage to continue upscaling. Through pilot activities, the district learnt importance to utilize existing resources available in the district working with the other stakeholders in Kilombero. Based on such experience, the district proposed other programme for construction of a warehouse to use the district technical supporting manual to facilitate target farmers' organizations that will use the warehouse. Such efforts will maximize benefit from interventions of the other stakeholders and enable the district to keep using obtained experience and know-how about supports of the warehouse management and collective sales. It is expected that Kilombero district will continue efforts and give the other LGAs advises for the better activities as a model.

8.4 Presentation Material for the Wrap-up Meeting

Kilombero's Support to Warehouse and Collective Sales

KILOMBERO DISTRICT COUNCIL IN COLLABORATION WITH JICA, MINISTRY OF AGRICULTURE LIVESTOCK AND FISHERIES, AND MOROGORO REGION SECRETARIAT.

2

- Brief History of Brief history of DADP Project of JICA in Kilombero DC
- Background: Situation Analysis
- Our approach and how you can do
- Achievement
- Messages

3

1. Brief history of DADP Project of JICA in Kilombero DC

- JICA DADP Project: "Project for Strengthening the Backstopping Capacities for the DADP Planning and Implementation under the ASDP Phase 2".
- Started working in Kilombero from 2013.
- We started from value chain analysis and its review
- Also did study visits to good practice district (Mbarali) and villages in Kilombero(Mang'ula "A" and Mbingu).
- Started a trial trial storing exercise and collective sales through a marketing manager
- Consumption Campaign
- Programme Coordination Meeting

4

2-1. Situation Analysis

- **Potential of Paddy/Rice in their VC**

Due to the storability of paddy, it is possible for farmers to sell their products in the off-season when the price increases, which will also satisfy needs of the market

- **Challenges**

- Weak capacity for warehouse management

- Weak business skills for sales of paddy/rice

- Limited access to finance and low capacity to manage finance

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2-2. Situation Analysis (Cont.)

- The VC analysis revealed that productivity of rice was very low because of limited utilization of improved seeds and fertilizer, inappropriate production techniques
- In addition, due to lack of warehouses in the villages, farmers had almost no experience in managing a warehouse and even in storing paddy in warehouses
- In fact, most of them do not see the sale of paddy as business activity

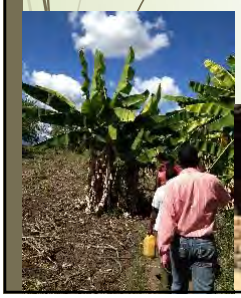
[Msalise in 2013]

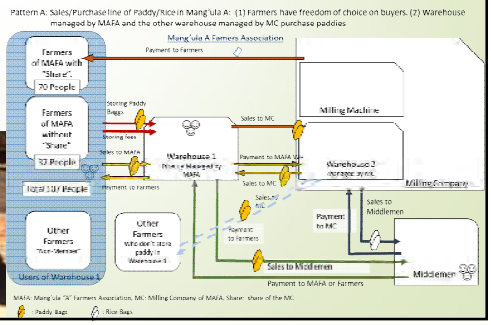
- Self-consumption: 27 %
- Sold at farm: 21%
- Sold at house: 33 %

6

2-3. Situation Analysis on Warehouse Management

- Preparation for trainings on Warehouse Management and Marketing in collaboration with RUDI.
- Several Visits to Good Practice Villages of RUDI, Mang'ula "A" and Mbingu
- We learnt how farmers actually utilize the warehouse.
- And We started checking Situation in Pilot Villages (Msalise/ Mkangawalo).





7

3-1. Basic Approach of supporting Farmers

Objective

- **Increase in producers' price through off-season sale, using warehouses**

Target Villages

- Msalise and Mkangawalo
- Katrukira, Mkasu and Kikuwawila

DADP interventions

- Warehouse Construction at the above villages
- Pilot Activities to support DADP interventions
  - (1) Warehouse Management
  - (2) Marketing Manager
  - (3) Improved Access to Finance
  - (4) Consumption Campaign

8

3-2. Why is the Warehouse Management Important?

Objective: To increase farmer's income by sales through the warehouse.

- Farmers tend to sell produce just after harvest at low price.
- A warehouse enables farmers to wait until the sales price get higher, if the produce is STORABLE like maize, paddy, sunflower seeds etc.
- Strengthening farmers' capacity to manage warehouse is important to maximize such opportunity well.

(How to receive produce bags, how to stack bags and to store them properly, how to record produce bags, how to manage warehouse as a group.)

WRS: the advanced system of warehouse management
WM: The WM is a kind of preparation for WRS.
There are difficulty for ordinary farmers to start the WRS from the first time.

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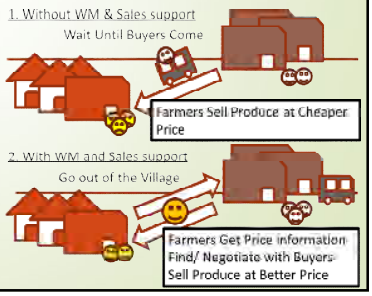
3-3. Why Sales through the warehouse important?

- Farmers tend to wait until middlemen come to their village. That's why their sale price remains low though they have a warehouse .
- To maximize benefit of a warehouse,

(1) farmers should go out of their village to collect market information for better sale opportunity and decision to sell.

(2) Organize farmers to sell in bulk.



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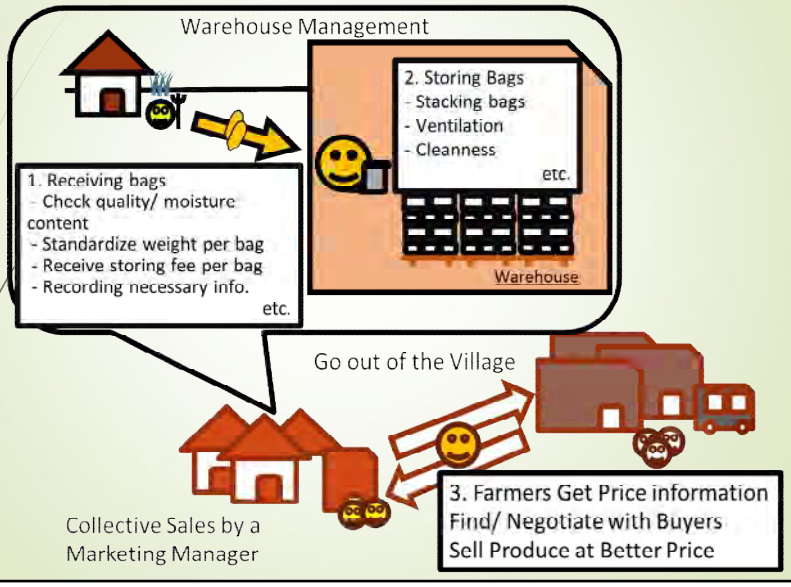
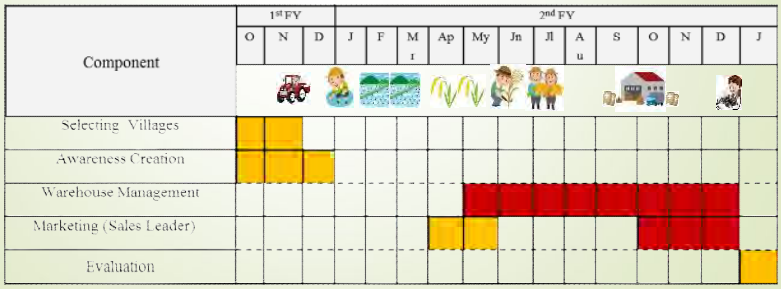
In summary...

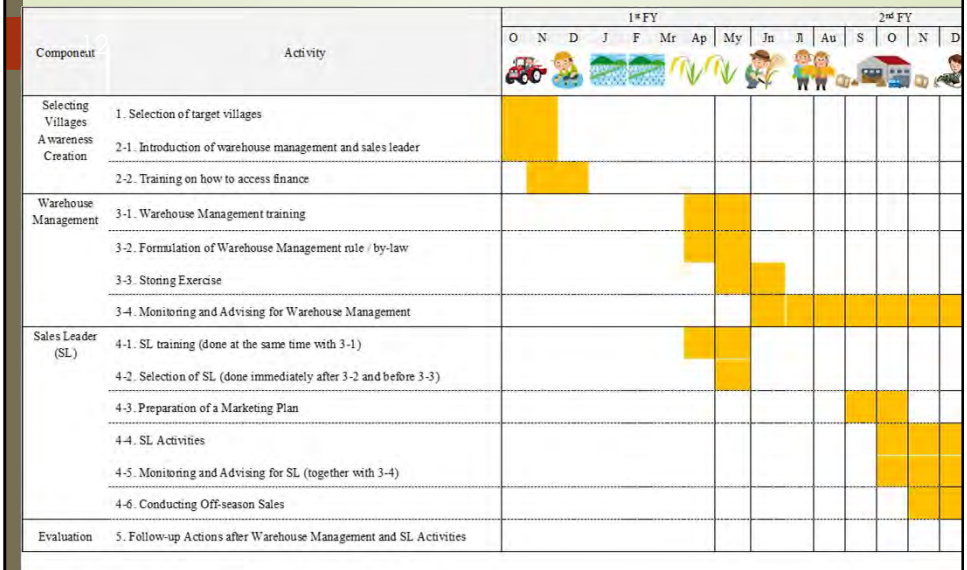


11

3-4. What to do?

Major Things to Do:
(1) Selecting Villages and Creating Awareness
(2) Providing trainings on Warehouse Management and Sales through Warehouse and making by-law.
(3) Let farmers do Warehouse Management and Sales through Warehouse by FO's own cost (Storing Exercise and Marketing (Sales Leader: Marketing Manager)).





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4-1. Outputs achieved

The following results were achieved by MM activities.

- MM introduced collective off-season sales of paddy utilizing their storage spaces
- MM, equipped with the knowledge of market price and trend, negotiated with buyers, which resulted in the sale of paddy at better prices.
- MM effectively guided farmers to identify what farming and marketing activities to be improved, understanding the request of buyers

VILLAGE 14	YEAR	PRODUCTION COSTS	TARGET PRICE	PRICE IN HARVEST SEASON	ACTUAL SELLS PRICE (OFF SEASON)	INCREASE (%)
MSALISE	2014/15	73,000/Bg	82,350/Bg	61,000/Bg	85,000/Bg	39.3
	2015/16	74,350/Bg	100,000/Bg	80000/Bg	125,000/Bg	56 - 78
MKANGAWALO	2014/15	65,000/Bg	79,500/Bg	53,000/Bg	80,000/Bg	50.9
	2015/16	81,750/Bg	1,000/kg	800/kg (Mchele)	1,300/kg (Mchele)	62.5%

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In the other words…

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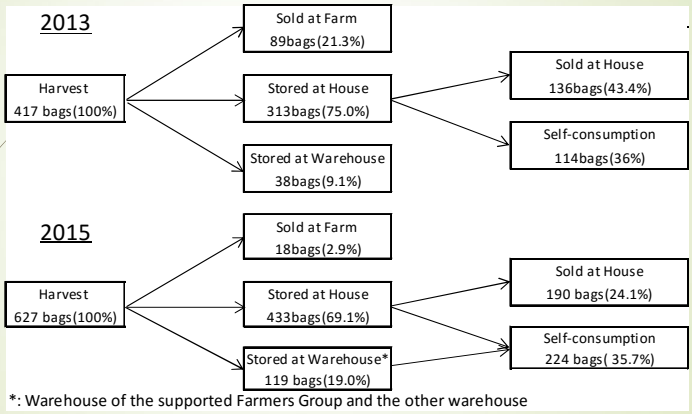
4-2. The other impact by the pilot project: Msalise



- Sold at Farm: 21.3% to 2.9%
- Stored at Warehouse 9.1% to 19%

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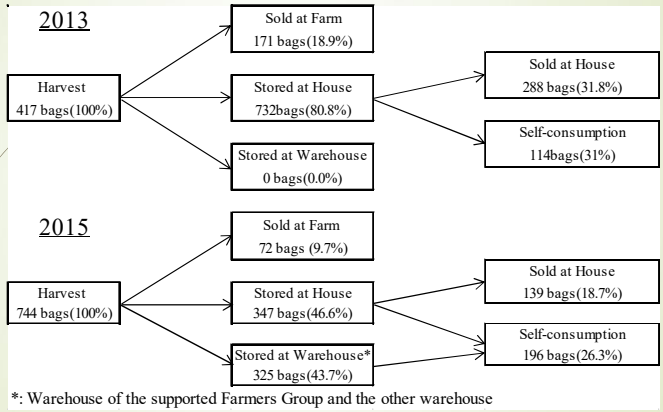
4-3. The other impact by the pilot project: Mkangawalo



- Sold at Farm: 18.9 % to 2.9%
- Stored at Warehouse 0 % to 43.7%

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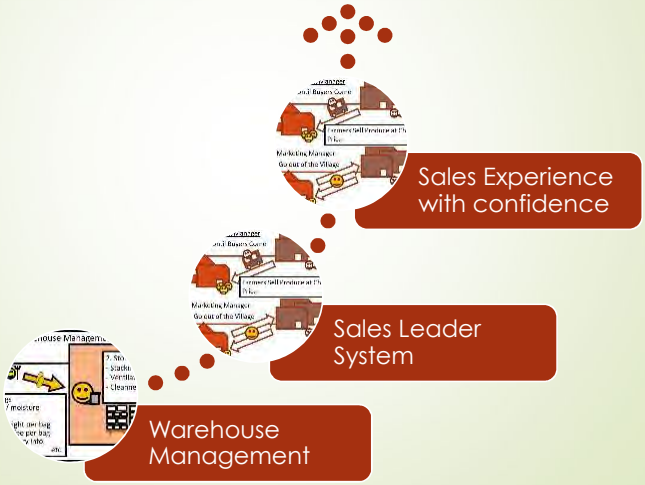
Sequence for success



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5. Key Messages from Kilombero's Pilot

1.If organized and trained well, farmers' groups are able to manage warehouses and sell as a group.

- Storing exercise can start with a small volumes (e.g. 2-3 bags / household), so that the risk can be mitigated and management capacity can be gradually built
- For sale, the target price should be set and agreed among the members in advance.
- This enables MM to look for appropriate buyers and the members to make a smooth decision on the timing of selling.
- Reviewing activities after sales is important to improve. Famers will be aware of production and post-harvesting issues according to their experience.

2. District can take initiative of stakeholder coordination.

- The District is a sole entity to have role to coordinate all stakeholders
- Through the PCM, it can share district priorities , recognize what others are doing, and create mainstream for development with them

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6-1. WHO DOES WHAT?

1. DFT
   a. Select Villages and Awareness Creation
   b. Trainings on Warehouse Management and Marketing
   c. Exercise of WM (a trial Storing Exercise) and Marketing
   d. Visit farmers group (monthly or more frequently (particularly after harvest) and give the group and VAEO/WAEO advises
2. VAEO/WAEO (in absence of VAEO)
   a. Working with DFT from activities from (a) to (c) above.
   b. Day to Day Follow-up to activities of the trained FO and give them advise according to what DFT advises.

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6-2. Useful Tools/ Manuals/ Formats

For warehouse management support, the following materials are developed.

Attachment 2: Contact List of Equipment Sellers

Attachment 5: Warehouse Management Manual

Attachment 6: Template of By-Law

Attachment 7: Recording Format of Stored Paddy Bags

Attachment 8: Format of Accounting Book

Attachment 9: Example of Income and Expenditure for warehouse management

Attachment 10: Monitoring Format for VAEO

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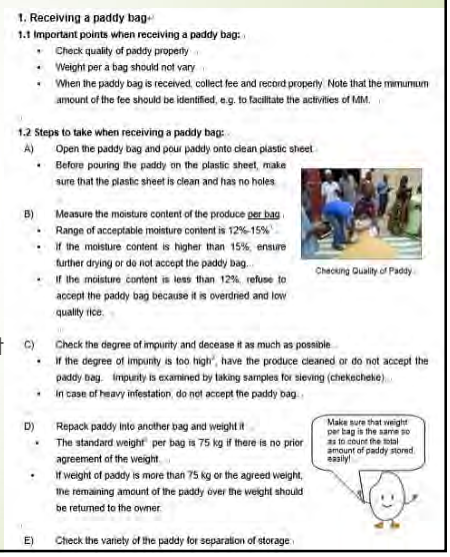
6-3. Important Points

- Farmers, DFT and VAEO can use the simplified manual as a quick guide.
- Periodical (Monthly) visits can improve farmers' s capacity.
- Some points (WM):
  - ✓ Standardizing weight per bag
  - ✓ Moisture content
  - ✓ Way of Stacking bags



1. Receiving a paddy bag

1.1 Important points when receiving a paddy bag:

- Check quality of paddy properly
- Weight per a bag should not vary
- When the paddy bag is received, collect fee and record properly. Note that the mimumum amount of the fee should be identified, e.g. to facilitate the activities of MM.

1.2 Steps to take when receiving a paddy bag:

A) Open the paddy bag and pour paddy onto clean plastic sheet

- Before pouring the paddy on the plastic sheet, make sure that the plastic sheet is clean and has no holes.

B) Measure the moisture content of the produce per bag

- Range of acceptable moisture content is 12%-15%
- If the moisture content is higher than 15%, ensure further drying or do not accept the paddy bag.
- If the moisture content is less than 12%, refuse to accept the paddy bag because it is overdried and low quality rice.

Checking Quality of Paddy

C) Check the degree of impurity and decease it as much as possible

- If the degree of impurity is too high, have the produce cleaned or do not accept the paddy bag. Impurity is examined by taking samples for sieving (chekechele).
- In case of heavy infestation, do not accept the paddy bag.

D) Repack paddy into another bag and weight it

- The standard weight per bag is 75 kg if there is no prior agreement of the weight.
- If weight of paddy is more than 75 kg or the agreed weight, the remaining amount of the paddy over the weight should be returned to the owner.

Make sure that weight per bag is the same so as to count the total amount of paddy stored easily!

E) Check the variety of the paddy for separation of storage

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Monitoring Format for VAEO

	Name of Village: Name of VAEO:			Contact No.:		Reporting month:
	DATE of Report (DD/MM/YYYY)					
1. Warehouse Management	1-1. Moisture Content (Once in a two weeks) (Sampling would be done several locations within a warehouse)	Max.				
		Min.				
	1-2. No. of Stored Bags Check the reason if No. changed.					
	1-3. Whether farmers properly RECEIVED paddy bags					
	1-4. Whether farmers properly STACK paddy bags					
	1-5. Whether farmers properly RECORDED in and out of paddy bags using our format					
	1-6. Any other follow-up issue					
2. Sales Leader	2-1. Whether MM visit places and collect information about market price and buyers according to the agreed marketing plan?					
	2-2. Does the MM report these information to the group?					
	2-3. Any other follow-up issue					

Note: A VAEO should check 1-2, 1-3 and 1-4 by visiting the warehouse in his targeted village.

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Budget?

(1) Procurement of the Equipment					2,960,000
Item	Unit Price (Tsh)		Qty		Sub-total (Tsh)
Weighing scale	1,450,000		1		1,450,000
Moisture meter	1,440,000		1		1,440,000
Fire extinguisher	70000		1		70,000
(2) Training (4 times)					1,402,000
Item					Sub-total (Tsh)
Orientation meeting					150,000
Financial training					518,000
Warehouse management training					369,000
Marketing manager training					365,000
(3) Monitoring and Evaluation					1,536,000
Item	Unit Price (Tsh)	Qty		No. of Month	Sub-total (Tsh)
DSA (Non Residential Duty Travel)	30,000	3 officers		12	1,080,000
Transportation (Fuel)	2,000	19 L		12	456,000
Grand Total Cost per a village (Tsh)					**5,898,000**
Total Cost Excluding Equipment (Tsh)					**2,938,000**

If you select target villages strategically, the cost per village will be reduced.

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Asante ni Sana!

Appendix 9

Reports and Materials of Pilot Activities in Lushoto DC

9.1 Pilot Activity Implementation Reports

List of Buyers and their needs for potatoes and other vegetables

			Part A								Part B									
No.	Location	Buyers	Potential Products	Q'ty required	Shortage season	Quality required	Buying Price	Factors determine prices	Payment/ Business agreement	Remark	Rival Suppliers	Elements making difference	How Successful	Their price ranges	Consumers Feeling	Advertisement/ Promotion	How large their sale force	Distribution	Weakness/ Strengthens	Suggestion to Lushoto
1	UDOM	####	Potato	1 bag (100-150kg)/ day	Oct. to Dec.	Big / high starch	55-65,000 / bag	Big / Lumbesa	Loan/ On-spot	They need promise & action.	No specific but from Njombe	-	Not so successful due to unreliability	55-65,000 / bag	Food prices determined by UDOM and Cafeterias	NA	NA	Procure from the central market	-	Ensure high quality and large volume, there should be a communication
	UDOM	####	Cabbage	10 units/ day	June to Oct.	Big / Heavy	NA	Big / Lumbesa	Loan/ On-spot	They need promise & action.	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	UDOM	####	Tomato	1 pyparus / day	Oct. to Dec.	Fresh/ Hard / No spot	30-40,000 / Pyparus	Hard/ Fresh	Loan/ On-spot	They need promise & action.	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2	UDOM	####	Potato	2 bag (240-280kg)/ day	Dec to Feb	Big / Long storage / High starch/ Easy to cook (Njombe Image)	60-85,000/ bag	Big / Lumbesa	Loan/ On-spot	Suppliers not honest/ Unreliability of supply & price	No specific but from Njombe		Not so successful due to unreliability and mix with rotten ones/ Can not meet with demand	60,000 (NA) - 85,000 (Dec-Feb)	Food prices determined by UDOM and Cafeterias	-	All-year round with scarcity season from Dec to Jan.	Procure from the central market	Unstability / Lack of capital of the wholeselers and retailers	Honest. Timely action
	UDOM	####	Cabbage	10 pieces/ day	June to Oct.	NA	NA	Big / Lumbesa	Loan/ On-spot	Suppliers not honest/ Unreliability of supply/price	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	UDOM	####	Tomato	NA	June to Oct.	Fresh/ Hard / No spot	NA	Fresh/ Hard / No spot	Loan/ On-spot	Suppliers not honest/ Unreliability of supply/price	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3	UDOM	####	Potato	1-11/2bag(100-150 Kg)/day	Oct. to Dec.	Big size,Rich in starch,with no bends,using less oil,fully matured	50-70000/bag	Big / Lumbesa	Loan/ On-spot	Showed interest of the business as will hve cold room in nera future.Indicated inability of the current supliers	NA	NA	Not so successful as usually flactuates prices which affects stability of cafeteria services	50-70000/bag	Food prices determined by UDOM and Cafeterias	NA	Unable to satisfy the market. Deficit Oct. - Dec	Direct from market	Price flactuations,Lack of capital to retailers	Observe honest,stable suply,and quality
	UDOM	####	Cabbage	1/2 bag(30pcs)/day	June to Oct.	Big size and heavy(Not frequently used)	500-1500/pcs	Large,hard ,seasonality	Loan/ On-spot	Inneficient supply exists	NA	NA	Not so successful as usually flactuates prices which affects stability of cafeteria services	500-1500/pc	Food prices determined by UDOM and Cafeterias	NA	Unable to satisfy the market. Deficit Jun-Oct	Direct from market	Price flactuations,Lack of capital to retailers	Observe honest,stable suply,and quality
	UDOM	####	Tomato	NA	Feb to April	Fres,hard, no spots,average size (Rarely use,but tomato pastes)	30-120000/Tenga	Hard/ Fresh	Loan/ On-spot	Inneficient supply exists	NA	NA	Not so successful as usually flactuates prices which affects stability of cafeteria services	30-120000/tenga	Food prices determined by UDOM and Cafeterias	NA	Unable to satisfy the market. Deficit Feb-April+S7	Direct from market	Price flactuations,Lack of capital to retailers	Observe honest,stable suply,and quality
4	UDOM	####	Potato	1bg(100Kg)/day	Jan-Feb	Big size,Rich in starch,,fully matured	50-130000/bag	Big size and Lumbesa	On-spot transaction	Ready to buy product at any time to the exception of vacation time	No specific but from Njombe	Reliability of supply	Not so successful as usually flactuates prices which affects stability of cafeteria services	50-130000/bag	Food prices determined by UDOM and Cafeterias	NA	Unable to satisfy the market. Deficit Jun-Oct	Procure direct from the central market	Price flactuations,Lack of capital for wholesalers	Try to be honesty,ensure fulfillment of promises
			Cabbage	15-20pcs/day	June to Oct.	Big and heavy	500-1000/pcs	Big size and Lumbesa	On-spot transaction	Ready to buy product at any time to the exception of vacation time	No specification	Reliability of supply	Not so successful as usually flactuates prices which affects stability of cafeteria services	500-1000/pcs	Food prices determined by UDOM and Cafeterias	NA	Unable to satisfy the market. Deficit Oct- Dec	Procure direct from the central market	Price flactuations,Lack of capital for wholesalers	Try to be honesty,ensure fulfillment of promises
			Tomato	5buckets(75Kgs)/day	Oct. to Dec.	Fres,hard, no spots	30-40000/tenga	Hard/ Fresh	On-spot transaction	Ready to buy product at any time to the exception of vacation time	No specification	Reliability of supply	Not so successful as usually flactuates prices which affects stability of cafeteria services	30-40000/tenga	Food prices determined by UDOM and Cafeterias	NA	Unable to satisfy the market. Deficit Oct- Dec	Procure direct from the central market	Price flactuations,Lack of capital for wholesalers	Try to be honesty,ensure fulfillment of promises
5	UDOM	####	Potato	15 buckets (100Kg)day	Feb to April	Big size,Rich in starch,with no bends,using less oil,fully matured	65-75000/bag	Big size and Lumbesa	Loan/ On-spot	Needs promise ans action	No specification. All is from the central market	NA	Not so successful as usually flactuates prices which affects stability of cafeteria services	65-75000/bag	Food prices determined by UDOM and Cafeterias	NA	Unable to satisfy the market. Deficit Feb-April	Procure direct from the central market	Price flactuations,Lack of capital for wholesalers	Be honesty,ensure fulfillment of promises
			Cabbage	3pcs/day	June to Oct.	Big and heavy	500-1500/pc	quality and seasonality	Cash on market	Needs promise ans action	No specification. All is from the central market	NA	Not so successful as usually flactuates prices which affects stability of cafeteria services	500-1500/pc	Food prices determined by UDOM and Cafeterias	NA	Unable to satisfy the market. Deficit Jun - Oct	Procure direct from the central market	Price flactuations,Lack of capital for retailers	Be honesty,ensure fulfillment of promises

List of Buyers and their needs for potatoes and other vegetables

			Part A								Part B									
No.	Location	Buyers	Potential Products	Q'ty required	Shortage season	Quality required	Buying Price	Factors determine prices	Payment/ Business agreement	Remark	Rival Suppliers	Elements making difference	How Successful	Their price ranges	Consumers Feeling	Advertisement/ Promotion	How large their sale force	Distribution	Weakness/ Strengthens	Suggestion to Lushoto
			Tomato	5 buckets(75Kg)/day	Feb to April	Fresh,hard, no spots,average size	30-110000/tenga	Fresh/ Hard / No spot	Cash on market	Needs promise and action	No specification. All is from the central market	NA	Not so successful as usually flactuates prices which affects stability of cafeteria services	30-110000/tenga	Food prices determined by UDOM and Cafeterias	NA	Unable to satisfy the market. Deficit Feb - April	Procure direct from the central market	Price flactuations,Lack of capital for retailers	Be honesty,ensure fulfillment of promises
6	UDOM	####	Potato	11/2 bag/day	Jan-March	Big size,use low oil,long stored,matured,good taste	50-70000/bag	Big size,graded, Lumbesa	Loan (Payment after 1 week)	Owns other hotel in DSM	Most products are from: Njombe(more starch,use less oil,chips stays long),Moshi+Mbulu(graded,large,lumbesa),	Price,size,quality,quantity/lumbesa	Gets direct from the central market	50-70000/bag	Food prices determined by UDOM and Cafeterias	NA	retailers,	Wholesalers sells to customers -reailers,other buyers outside the central market)	Strength:Good networkingfrom production area,middlemen to wholesalers and to consumers. Weaknesses: Lack of honest,Price flactuation	
			Cabbage	15 pcs	Jun-Dec	Hard		Big size, Lumbesa	Loan (Payment after 1 week)		No specification	NA	Gets direct from the central market	20-70000/bag		NA		Wholesalers sells to customers -reailers,other buyers outside the central market)	Strength:Good networkingfrom production area,middlemen to wholesalers and to consumers. Weaknesses: Lack of honest,Price flactuation	
			Tomato	7 buckets	Jan-March	Hard and good appearance	20-70000	Hard/ Fresh	Loan (Payment after 1 week)		No specification	NA	Gets direct from the central market			NA		Wholesalers sells to customers -reailers,other buyers outside the central market)	Strength:Good networkingfrom production area,middlemen to wholesalers and to consumers. Weaknesses: Lack of honest,Price flactuation.Weaknesses:Lack of honest,Price flactuation	

List of Buyers and their needs for potatoes and other vegetables

No.	Location	Buyers	Part A								Part B									Suggestion to Lushoto
			Potential Products	Q'ty required	Shortage season	Quality required	Buying Price	Factors determine prices	Payment/ Business agreement	Remark	Rival Suppliers	Elements making difference	How Successful	Their price ranges	Consumers Feeling	Advertisement/ Promotion	How large their sale force	Distribution	Weakness/ Strengthens	
7	St JOHN UNIVERSITY	####	Potato	Ibag(100Kg)/day	Dec to Feb	Big size,rich in starch	55-65000/bag	Big size and Lumbesa	Loan/ On-spot payment	Try having cold room here,promise to become ambassador to other consumers	Njombe.Moshi/ Mbulu and Kenya	Patience/harrassment in demanding payments,quality,capital ability,reliability in supply	Not so successful as usually flactuates prices,quality and quantity. Which it normally affects stability of cafeteria services	55-80000/bag	Food prices determined by the univesity and Cafeterias	NA	Unable to satisfy the market. Deficit Oct- Dec	Direct from market	Price flactuations,Lack of capital for wholesalers	Harvest your products while matured to win the markets
			Cabbage	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Harvest your products while matured to win the markets
			Tomato	2-3 buckets(40-60Kg)/day	Jan --Feb,Jun-Dec	Fresh,hard, no spots,average size ,lasts longer in storage	30-40000/tenga	Fresh and Hard	Loan/ On-spot payment	,promise to become ambassador to other consumers	No specification. All is from the central market	Patience/harrassment in demanding payments,quality,capital ability,reliability in supply	Not so successful as usually flactuates prices,quality and quantity. Which it normally affects stability of cafeteria services	30-40000/tenga	Food prices determined by the univesity and Cafeterias	NA	Jan-Feb,Jun-Dec	Direct from market	Price flactuations,Lack of capital for wholesalers	Harvest your products while matured to win the markets
8	Dodoma Municipality	####	Potato	600 bags/week	July-Sept	Big size,Rich in starch,with no bends,using less oil,fully matured	30-70000/bag	Big size and Lumbasa	Loan	Improve size(avoid chenga) to fetch the market	Most products are from: Njombe(more starch,use less oil,chips stays long),Moshi+Mbulu(graded,large,lumbesa),	Price,size,quality,quantity/lumbesa	Usually prices at fields flactuates according ,quality and quantity. Which it normally affects stability of wholesale price at the maket	30-70000/bag	Availability and market price controls the selling price to customers	Moving around the customers such as retailers	Able to supply during scarcity and plenty time	Brokers/middlemen buys from farmers	Price flactuations,Lack of capital for wholesalers	Improve size,check soils differences between areas wining the markets such as Njombe and asks why?
			Cabbage	10 tons/week	Jun-Dec	Big and heavy	40-60000/bag	Big size and Lumbasa	Loan	Maintain quality	No secification	Price,size,quality,quantity/lumbesa	Usually prices at fields flactuates according ,quality and quantity. Which it normally affects stability of wholesale price at the maket	40-60000/bag	Availability and market price controls the selling price to customers	Moving around the customers such as retailers	Able to supply during scarcity and plenty time	Brokers/middlemen buys from farmers	Price flactuations,Lack of capital for wholesalers	Maintain quality
			Tomato	1500 tenga(90Kg)/week	Nov-Jan	Fresh,hard, no spots,average size	20-100000/tenga	Fresh and Hard	Loan	Maintain quality	No specification	Price,size,qulity,quantity/lumbesa	Usually prices at fields flactuates according ,quality and quantity. Which it normally affects stability of wholesale price at the maket	20-100000/tenga	Availability and market price controls the selling price to customers	Moving around the customers such as retailers	Able to supply during scarcity and plenty time	Brokers/middlemen buys from farmers	Price flactuations,Lack of capital for wholesalers	Maintain quality
			Tomato	1501 tenga(90Kg)/week	Nov-Jan	Fresh,hard, no spots,average size	20-100000/tenga	Fresh and Hard	Loan	Maintain quality	No specification	Price,size,qulity,quantity/lumbesa	Usually prices at fields flactuates according ,quality and quantity. Which it normally affects stability of wholesale price at the maket	20-100000/tenga	Availability and market price controls the selling price to customers	Moving around the customers such as retailers	Able to supply during scarcity and plenty time	Brokers/middlemen buys from farmers	Price flactuations,Lack of capital for wholesalers	Maintain quality
			Tomato	1502 tenga(90Kg)/week	Nov-Jan	Fresh,hard, no spots,average size	20-100000/tenga	Fresh and Hard	Loan	Maintain quality	No specification	Price,size,qulity,quantity/lumbesa	Usually prices at fields flactuates according ,quality and quantity. Which it normally affects stability of wholesale price at the maket	20-100000/tenga	Availability and market price controls the selling price to customers	Moving around the customers such as retailers	Able to supply during scarcity and plenty time	Brokers/middlemen buys from farmers	Price flactuations,Lack of capital for wholesalers	Maintain quality
			Tomato	1503 tenga(90Kg)/week	Nov-Jan	Fresh,hard, no spots,average size	20-100000/tenga	Fresh and Hard	Loan	Maintain quality	No specification	Price,size,qulity,quantity/lumbesa	Usually prices at fields flactuates according ,quality and quantity. Which it normally affects stability of wholesale price at the maket	20-100000/tenga	Availability and market price controls the selling price to customers	Moving around the customers such as retailers	Able to supply during scarcity and plenty time	Brokers/middlemen buys from farmers	Price flactuations,Lack of capital for wholesalers	Maintain quality

List of Buyers and their needs for potatoes and other vegetables

			Part A								Part B									
No.	Location	Buyers	Potential Products	Q'ty required	Shortage season	Quality required	Buying Price	Factors determine prices	Payment/ Business agreement	Remark	Rival Suppliers	Elements making difference	How Successful	Their price ranges	Consumers Feeling	Advertisement/ Promotion	How large their sale force	Distribution	Weakness/ Strengthens	Suggestion to Lushoto
1	Arusha	####	Potato	3 bags(100Kg)/day	March-July, Oct-Dec	Big / high starch,reddish & white colour	Market price	Availabilty,Buying price,Quality,type	Cash	Improve quality,increase vol.Grading	Nairobi,W.Knjaro,Arusha,Njombe,Mbulu,Lushoto	colour,volume,size	Vol. is sustisfied	High:March-July,Oct-Dec,Low:Jan-Feb,Aug-Sept	Average price	NA	Able to satsfy the market	Retail	NA	supply big size,graded, large volume (Lumbesa)
2	Arusha	####	Potato	60 bags(6000Kg)/day	March-July,Oct-Dec	Big size,reddish & white colour	Market price	Season,quality,colour,volume,packing	Cash	Ensure large size,packing(10 plastics),grading,small size potato high demand Mar-May	Nairobi,W.Knjaro,Arusha,Njombe,Mbulu	Type	Demand is sastisfied	High:March-July,Oct-Dec,Low:Jan-Feb,Aug-Sept	Average price	NA	Depend on season	Buys direct from farmers	NA	supply big size,graded, large volume (Lumbesa)
3	Arusha	####	Potato	5-6 bags(500-600Kg)/day	Dec-May	Average size	45,000-75000	Season	Loan-receive product & pay at agreed days/wks	Packing (8 bags),Grading	Nairobi,W.Knjaro,Arusha,Njombe,Mbulu	colour,volume,size	NA	see part A.High:Dec-May,Low:Jul-sept	NA	NA	NA	Through brokers	NA	NA
4	Arusha	####	Potato	3-4 bags(300-400Kg)/day	Jan-April	Big size,reddish colour	75,000-100,000	Wholesale price,others price at the market	Loan-receive product & pay at agreed days/wks	Reddish colour doesn't come enough	Nairobi,W.Knjaro,Arusha,Njombe,Mbulu	Colour (Red,white)	NA	High:Jan-April	NA	NA	NA	Farmeer-middleman-wholesale-retailer-consumer	NA	Avaiability at market,grading
5	Arusha	####	Tomato	2-3 pyparus{day/market day(Wesd & Saturd)	Dec-May	Roma,Tanya type,graded(2 Payparus),Ungraded (1Payparus)	Plenty:15000-20000,Scarcity:50000-60000/payparus	Quality,season,type	Plenty:Loan,Scarcity:Cash	Lushoto tomatoes never seen	Karangai,Ngarenanyuki	Type	NA	15000-60000/payparus	Depends on buying price	NA	NA	NA	NA	Roma & tanya types are more prefered
6	Arusha	####	Potato	60 bags(6000Kg)/market day	March-July,Oct-Dec	Big size,red/White,10 buckets/bags volume	Market price	Market price,Volume,Season,colour,type	Loan-receive product & pay at agreed days/wks	Grading,mature potatoes,without bruises	Nairobi,W.Knjaro,Njombe,Mbulu	season,colour,volume,size	Fullfil demand	High:March-July,Oct-Dec,Low:Jan-Feb,Aug-Sept	Accepts market price	NA	Able to satsfy the market	Farmeer-middleman-wholesale-retailer-consumer	NA	Grading,mature potatoes,without bruises
7	Arusha	####	Potato	1 bag/day	Oct-Dec	Big size,Red & white colour	85000-90000(Nairobi-Jan-April), 60000-Mbeya,Niombe	Market price	Loan-receive product & pay at agreed days/wks, Cash	Lushoto doesn't grade,very small,	Nairobi	season,colour,volume,size		High:Oct-Dec	NA	NA	NA	NA	NA	Improve volume, Do grading
			Onion	1/bag/day	April-July		85000-100000	NA	NA	NA	Mangola	NA	NA	NA	NA	NA	NA	NA	NA	NA
			Carrot	Mfuko 1/siku	NA	NA	NA	NA	NA	NA	W.Knjaro,Oldonyosambu	NA	NA	NA	NA	NA	NA	NA	NA	NA
			Tomato	1 payparus/day	March- may	NA	NA	NA	NA	NA		NA	NA	NA	NA	NA	NA	NA	NA	NA
8	Arusha	####	Potato	2-3 bags/day	NA	Colour(white or red),big size	85000-120000	Depend on Buying price	Loan, Cash	Nairobi product fulltime available,Lushoto product highly preffered	Nairobi,W.Knjaro,Njombe,Mbulu	NA	NA	NA	NA	NA	NA	NA	NA	NA
9	Arusha	####	Potato	1 bag/day	April-June	Big size,Colour(white,red)	95000-100000 (Nairobi)	Depending on market price,Volume(10 tins)	Loan(Plenty),cash (scarce)	NA	W.Knjaro,Njombe,Mbulu,Mbeya,Arusha	Big size,Colour(white,red)	NA	95000-100000	NA	NA	Obtain from Kilombero anytime	Wholesaler-retailer-consumer	NA	Lushoto product takes time & consumes more oil in cooking
			Onion	1 bag/day	NA	NA	120000-130000	NA	Cash	NA	NA	NA	NA	50000-130000	NA	NA	NA	NA	NA	NA
			Carrot	NA	NA	NA	Kg 100=60000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
			S/Paper	NA	NA	NA	Kg 100=100000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10	Arusha	####	Potato	4-5 tins(17Kg)/day	April	Big size,Colour (white,red)	10000-14000/tin	Depending on market price	Yes,agreement: Payment monthly	NA	Nairobi,W.Knjaro,Arusha,Njombe,Mbulu	NA	NA	10000-14000/tin	Normal price	NA	NA	NA	NA	When at the market will buy from you
11	Arusha	####	Potato	30Kg/day	Supplier looks for it all the time	Baby potato-white(Dry season),Irish potato-red(rain season)	1500/Kg	NA	payment by cheque end of month	Should have a store at Arusha,capacity to supply throughout the year	NA	Price & Type	NA	1500/Kg	NA	NA	NA	NA	NA	Need price list,samples,current supplier contract should have expired
			Cauliflower	4Kg	Supplier looks for it all the time	NA	NA	NA	payment by cheque end of month	Should have a store at Arusha,capacity to supply throughout the year	NA	Price & Type	NA	NA	NA	NA	NA	NA	NA	Need price list,samples,current supplier contract should have expired
			Brocoli	4Kg	Supplier looks for it all the time	NA	NA	NA	payment by cheque end of month	Should have a store at Arusha,capacity to supply throughout the year	NA	Price & Type	NA	NA	NA	NA	NA	NA	NA	Need price list,samples,current supplier contract should have expired
			Carrot	10Kg	Supplier looks for it all the time	NA	NA	NA	payment by cheque end of month	Should have a store at Arusha,capacity to supply throughout the year	NA	Price & Type	NA	NA	NA	NA	NA	NA	NA	Need price list,samples,current supplier contract should have expired
			F/beans	5Kg	Supplier looks for it all the time	NA	NA	NA	payment by cheque end of month	Should have a store at Arusha,capacity to supply throughout the year	NA	Price & Type	NA	NA	NA	NA	NA	NA	NA	Need price list,samples,current supplier contract should have expired,Open a shop here for our products
12	Arusha	####	Potato	200Kg/week	NA	White colour,medium size,Round shape	constant price-1000-1200/Kg	Depends on agreement	payment by cheque	Farmers should avoid conceding with high production seasons	NA	Size,white colour,	Fullfil demand	100-1200/Kg	Prices are high(low class),average prices(high classes)	NA	Able to satsfy the market	NA	NA	Should have a store at Arusha,capacity to supply throughout the year

Annual Progress Report on Pilot Activities

September 2013 – June 2014

Lushoto District

1. Introduction

1.1 Situation in Lushoto DC (LDC)

LDC is situated in the Northern part of Tanga region. It covers an area of 3,500 sq km2 and accounts for about 12.8% of Tanga Region. The Western Usambara Mountains dominate the landscape which lies between 300 – 2100 meters above sea level. The main physical features are highlands covering about 75% (2625 km2) of the total District area, with altitude of 1000 – 2100m above sea level..

1.2 Agricultural Potentials

LDC is the main supplier of potatoes, fruits and vegetables to Dsm, Tanga, Arusha, Kilimanjaro and Morogoro. Both food and cash crops are produced on small scale and few on plantations- tea and sisal. Some products especially fruits and vegetables are facing storage, packing, transportation and marketing problems

1.3 DADP along with VCs for Potatoes and Vegetables

JICA-RADG are supporting the production of Potatoes and Vegetables and Marketing under DADP planning. Pilot area/villagers are Maringo, Boheloi and Kwesine

In 2013/14, LDC has conducted the following activities with JICA-RADAG.

No.	Components【VC Stage】	Pilot Activities		2013				2014					
				9	10	11	12	1	2	3	4	5	6
1	With the Private Sector, Improvement of input availability and production【Inputs/ Production Stage】	1-1	Demonstration with YARA Company (Fertilizers)										
2	Collection and group sale【Post-harvest stage】	2-1	Post-harvesting training										
		2-2	Business skill training										
3	Expansion of market【Marketing Stage】	3-1	Market Survey										
		3-2	Sales promotion (including making negotiation kits)										
4	Coordination & Management	4-1	Project Coordination Meeting										
		4-2	Project profile/database preparation										

2. Demonstration with YARA

2.1 Objectives

Objectives of this activities are as follows.

(i) To test the YARA fertilizers how they respond to potatoes production (Winner, Nitrabor, Tracel BZ)

(ii) To check the quality of potato will be produced

(iii) To check the grows margin of YARA fertilizers Visa DAP which is commonly usable for potato production

1.3 Progress

1st Demonstration was conducted in Kwesine. The 2nd is now taking in place in the three villages, including

(i) On-farm Training by YARA

(ii) Planting by using YARA winner fertilizer

(iii) Top dressing by YARA winner fertilizer

(iv) Weeding

(v) Spraying of fungicides and insecticides

(vi) Spraying foliar feed Tracel BZ

(vii) Spraying of fungicide

(viii) Earthling up of potatoes

Progress is monitored in the monitoring format. This will be shared after harvesting in July, 2014

2.3 Achievements

Following achievements are made in this activity.

(i) Planting of potatoes in ridges

(ii) Spacing: plant to 20 cm , row to row 1 metre, so more plants per unit area.

(iii) The use of YARA Mila Winner has increased for example in Maringo 1000kgs has been bought and being used for potato production.

2.4 Challenges and measures taken

The bacterial wilt has stared affecting the potato trials in Boheloi and Kwesine

All the affected plant were uprooted and buried.

- Clean seed MUST be used so as to get the good results of the use of YARA fertilizers.
- Also chemicals should be supplied to the farmers who are dealing with the demonstration plots.

3. Production and Post harvesting Training

3.1 Objectives

The objectives are as follows

- To make farmers to understand properly the best way of handling their crops after harvesting
- To make farmers understand the importance of sorting, grading and packaging.
- To make farmers understand the importance of producing competitive quantity & high quality products to meet local and international markets demands.

3.2. Progress

- On 17 – 22 March 2014 LDC in collaboration with JICA, conducted training on post – harvesting and production to 4 groups that is ULT management team, Kwesine group, Boheloi and Maringo group and the participant was 22. This training was conducted for 6 days, 4 days theory and 2 days for field.
- Follow-ups started on Supervision, Monitoring and evaluation for 3 Villages
- LDC and JICA supported the group quality Vegetable declared seeds, 12 trays for seed sowing, 22 crates with contribution of 20% from farmers, and 2 weight scales with agreement of paying back to LDC. This mechanism agreed by farmers themselves to pay Tsh 200 pert 0 – 50kgs for every farmer when measures the farms produce.
- LDC started to support construction of collection centres at Kwesine, Boheloi and Maringo.

3.3. Achievements

Farmers started to cultivate by using proper technology e.g. making ridges and proper plant population. ULT Sub-groups also started direct sale business to DSM using crates.

3.4 Challenges and Measures taken

Although improvement was made, improper use of marketing techniques are still observed. Hence farmers was strongly advised to apply proper techniques of sorting, grading and packaging.

4. Business Skill Training (Orientation to ULT Sub-groups and SIDO training)

4.1 Objectives

ULT orientation to new subgroups has the following objectives.

i. To understand the rules and regulation in joining Usambara Lishe Trust (ULT)
ii. To understand the procedure for packaging, selection and marketing.
iii. To facilitate farmers and prepare themselves on joining the business of ULT and ensure co-operation to ULT members

SIDO training has the following objectives.

i. To create awareness of farmers in record keeping for their daily farm activities
ii. To encourage farmers to apply cost analysis techniques (Action plan & Cash flow) for their agricultural activities
iii. To make farmers differentiate between their business and their family needs.
iv. To encourage farmers to be more entrepreneurs for any opportunity occurs within their agricultural businesses.
v. To make farmers change their mind- set to see their (production and sales) as business entity rather than day - to - day subsistence farming.
vi. Make farmers build confidence and acquire basic skills necessary for business and marketing (sales pitch, how to earn trust from clients, effective and timely supply system).
vii. To empower farmers on understanding how to enter official and other simple contracts with larger and other middle clients.
viii. To make district officers acquire knowledge and skills so that they can guide, supervise and monitor famers in their respective area by themselves.

4.2 Progress

Progress are made as following

- Training of the groups and create awareness of the business with ULT (November)
- Samples of different vegetables and fruits were shown to the participants
- The 3 sub groups agreed to join ULT
- SIDO conducted training for ULT and subgroups (May 2014). The number of participants are around 30, including ULT and subgroups, DFT and RS.
- They learned how to make a business plan such as profit analysis and cash flow and do record keeping

4.3 Achievements

The following achievements are made

- 30 farmers in total (Maringo, Boheloi and Kwesine) joined U.L.T: most of them are active except for Boheloi where a few members active.
- ULT Subgroup started marketing. Most of them started direct delivery business to DSM, and they are gaining sales on direct delivery about 6 million within 4 months.
- Farmers within their groups managed to write their business plans through SIDO training.

4.4. Challenges and Measures taken

The sub group from Boheloi started the business for few days and stopped. And they started again in June. Some farmers in Kwesine were buying vegetable and sale to ULT because their products were finished.

Measures taken:
More education on the importance of sustaining the market by growing vegetables continuously by practicing production planning for their group.

Presence of **informal** operation of daily Agriculture activities due to such situation business training insisted farmers to operate in **a formal** way. This means farmers should put in writing all the agriculture business by using real books of account such as receipt book, payment voucher, cash book analysis, ledger and etc.
In business training it was observed that most of farmers are not using measurement when selling their crops hence they were insisted to measure their produce.

5.Sales Promotion

5.1 Objectives

The objectives are as follows:

- To increase the volume of sale through promotion of selling half price of potatoes per kilogram (500/= instead of 1,00/=)
- To increase sales volume and more customers

5.2 Progress

Progress were made as follows.

- Sales promotion was conducted from October to March.
- New buyers in DSM were contacted and tested for business such as Coral ridge spur, Village Supper Market,ASK Fisher Monger, Shop rite & etc.

5.3 Achievements

Sells of potatoes during the campaign of Tshs 500 per Kg increase sales volumes around 3 to 4 millions.

Coral ridge Spur continues buying vegetables from October to January 2014.

5.4 Challenges and measures taken

New buyers like AKS wanted to continue to be supplied with the price of Tshs 500/= which made the ULT to stop selling vegetable to ASK. Coral ridge wanted machine receipt where by ULT didn't have hence this reason cause ULT to stop business to them. LDC will discuss with ULT how to deal with this issue.

6.Program Coordination Meeting

6.1 Objectives

The meetings were held with the following objectives.

- It makes simple to identify other stake holders / partners who involved in agriculture projects .
- It enables us to allocate /utilize limited resources properly
- It helps to identify weaknesses and opportunities within the project implementation

6.2 Progress

- The meetings were held three times so far, on a quarterly basis as agreed.
- We have managed to share the outcome of other partners in our pilot villages namely Boheloi, Kwesine and Maringo
- We managed to collaborate with private partners in increasing production i.e. establishment of Irish potatoes demonstration plots with YARA Company.

6.3 Achievements

i. It helps to identify other stake holders who engaged in potatoes and vegetable projects i.e. CCAFS whom they are based in the village of Boheloi Kwesine and Maringo.

ii. Also it helps to Identify CIAT Researchers on soil and water conservation and they will be operating their activity in Maringo village in such circumstances we agreed to work with them.

iii. It assisted us to identify the available market for snow peas producers through Homeveg

iv. It enabled us to create a task force for having a collection center in DSM for produce comes from Lushoto and Korogwe It facilitate us to identify LBTIC/ Farm Africa in implementing their activities i.e. construction of 12 Green houses in Bombo Village, Malwati village Boheloi village and Mgwashi ward where the completed to build a collection centre for snow peas.

6.4 Challenges and Measures taken

- Farmers adoption rate still low
- Government fund for supporting these projects delay to reach for farmers

Measures taken:-

- LDC is emphasizing more other beneficiaries on contributing the fully as planed so as to accomplish their planned projects.
- More efforts has directed on educating farmers on understanding the advantage of ongoing projects so that they can run even if government and other donors no supervise them

7. Project Management (Filiing System)

7.1 Objectives

Filling system was introduced:

(i) To ensure proper management of projects.
(ii) To enable the District Council to report timely and adequately to decision makers and other stakeholders
(iii) To enable the District Council to perform adequate and effective analysis of project progress and outputs/outcomes
(iv) To make comparison between planned and actual results

7.2 Progress

- Files were made for each Project, both community and group.
- Initial data/ information have been collected
- Filling of information/ data in order has been done

7.3 Achievement

- Information/ data have been compiled/ registered / filed in a good arrangement
- Clear categorization/labeling of information/ data

7.4 Challenges
- Some initial data/ information differ from current data
- Late disbursement of fund
- Price fluctuation of goods and services
- Spirit of farmers to contribute to the investment project is still low.

Measures taken
- Data/ information have been updated
- The council is putting more effort to convince the beneficiaries to contribute much more to be able to accomplish the planned activities.
- The council is continuing to educate farmers on the importance of farmer's contribution to development projects.

9. Lessons learned from the Pilot Activities

- Many farmers they operate their activities without recording their costs they incur in agriculture activities. Cost recording should be emphasised and its implication for activities should be examined carefully.

- Response and behaviour of villages are different from one to another. Like Boheoi, they need strong supervision in implementing the projects.

Annual Progress Report on Pilot Activities

Lushoto District

1. Work Plan for Year 3

Work Plan for Year 3 (from October 2014 to August 2015) has been developed as per Annex 01.

Major activities are

I. Market Survey/ Sales Promotion
II. Business Plan (ULT) / Production Plan (ULT Sub-groups)
III. Demonstration with YARA (PPP)
IV. Financial Institution Survey (including bank list and title deeds)
V. Farm Income Record Survey

2. Market Survey / Sales Promotion

Market Survey and sale promotion have been undetaken through a year (See Annex 02 for one of the reports). Through this activity, the following buyers are newly obtained.

- Uchumi Super Market
- St. Joseph Church
- Zuane - Trattoria & Pizzeria
- Tukthai restaurant
- Steers restaurant
- Tegeta women group (door to door deliverly)
- Vitu vya khadija (mwanamboka)
- Bnn restaurant
- Apart from that the order from Sky cheefs has doubled

The total sales volume from these new buyers is more than Tsh 15,000,000. Yet still some challenges remain as follows.

- Delay of payment from the customers (buyers)
- Partial delivery
- Delay of order from customer (buyers)
- Inadequacy of ULT capital
- Delay in delivery to the customer (buyers)
- Insufficient delivery of orded product
- Delay of delivery not for payment preparation

2. Business Plan / Production Plan

Lushoto DFT has been facilitating ULT and its sub-groups in preparing business plan and production plan.

2.1. Business Plan (ULT) (See Annex 03)

DFT in Collaboration with NFT has assisted ULT to prepare a business plan for ULT to get a loan from financial institution namely NMB (National Microfinance Bank). Up to now ULT submited a business plan to NMB as an attachment for thd loan application. The current situation is that ULT business plan has been already accepted by NMB as a full document in assisting loan process. After submiting such document, however, the Bank requested an audited report for the period ended 2014, and management report from January up to June 2015. Now we are working on those reports and will be completed and handled to NMB by 31 August 2015.

2.2. Production Plan (ULT Subgroups) (See Annex 04 for Peak Demand Table and Annex 05 for sample of Production Plans)

The production Plan has been developed by DFT in collaboration with ULT subgroups together with other individual business farmers or other direct deliverly players like Besha family. The present situation is that Maringo Business group and Production group are caltivating according to the production plan, Boheloi and Kwesine do follow the production plan and Hambalawei groups also are caltivating according to the peak demand.

3. Demonstration with YARA

Demonstration with YARA has been completed (See Annex 06 for the report).

Through this activity, it was found that the technical combination of ridge-making, propoer plant pupulation and fertlizer application was most effective to increase quantity and quality of potato.

At present around 150 farmers are adopting this improved technologies in four pilot villages. But for the whole district we have more than 300 farmers who have adopted this improved tecknics .

4. Financial Institution Survey

In order to support ULT for loan application, Lushoto DFT conducted Financial Institution Survey (See Annex 07 for the report). Based on the findings of the survey, DFT extended its support to ULT in organizing data for audit and obtaining

customary title deeds (See Annex 08 for the Custoamry Title Deed Format).

At present DFT is still communicating with NMB to fullfil their requrement so that ULT can obtain the appllied loan.

5. Farm Income Recording

With the aim of developing capacities of farmers for record keeping, DFT has introduced farm income recording (See Annex 09 for the report). This method is following advantages compared to the baseline survey conducted by external consultants.

- In the case of record keeping, 80% of farmers are doing farm record keeping for all farm activities. Hence they managed to realize their cost they incured and the benefit they get from farming.
- For the next financial year, more farmers will be involved in addition to the pilot areas to realize the importance of record keeping (business farming).

We are going to undertake the end-line survey by using this methods. Some challenges are as follows.

- Questinnares was too long (It is better to be simplified)
- In adequate education on record keeping
- Pretraining is required
- Motivation should be applied during data survey

6. Conculusion and way forwards

For the next financial year, most activities should continue covering more areas. Instead of working with ULT we should involve more farmers' groups as well as individual farmers who are willing to do business farming. Also more village extention staff should be involved.

Annexes

01: Work Plan for October 2014 to August 2015

02: Market Survey Report

03: Business Plan (ULT)

04: Peak Demand Table

05: Production Plan (Sample: Hambarawei Sub-group)

06: Report for Demonstration with YARA

07: Report of Financial Institutions

08: Letter Format for Customary Title Deed

09: Farm Income Record Survey

Annex 01: Lushoto Pilot Activities Work Plan for 2014/15

1. Review of Achievements and Challenges in 2013/14

I. [Input/Production] Improved production techniques (e.g. ridging, plant population, YARA fertilizers, grading and sorting) were well adopted in Malingo, but not so much in Kwesine and Boheloi.

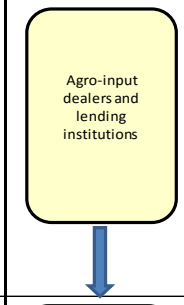
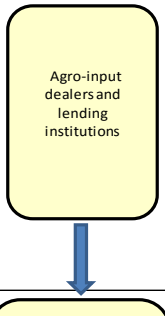
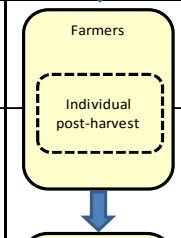
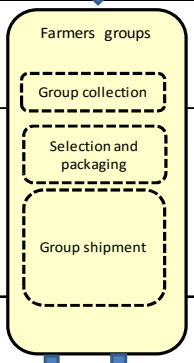
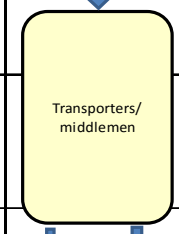
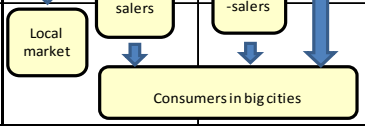
II. [Post-harvesting] Group selling is well done in Malingo but not so much in Kwesine and Boheloi.

III. [Transportation] Procurement of a cool truck and normal one is critical to reduce transportation costs and meet the requirements of a major buyer in DSM (i.e. the International Airport).

IV. [Marketing] Sales of Direct-delivery (DD) business have increased but yet to be sustainable or expanded more.

V. Information shared among stakeholders but action is needed for realizing the "All-Luhoto" brand.

VI. Date record keeping and filing system has started but to be more enhanced, incorporating date kept by JICA-RADAG.

VC Stage	VC Review Results			Selection of Priority Issues to be tackled in Pilot Activities		
	VC (Before)	VC (After)	Issues	Existing Programs	Selection	Reasons for selection (from strategic and comprehensive points of view)
Inputs			Improved varieties (including storing techniques)	CIP	No	Supported by other programs (Not select for comprehensiveness)
			Use of fertilizers and chemicals (expensive or fake)	(None)	Yes	Activities in Year 2 showed the good results of potato production in Malingo with adoption of ridges and proper plant population. This year, efforts must be made for other villages to folllow.
			Soil degradation	DADP (DADG)/CIAT	No	Supported by DADG funds (Not select for comprehensiveness)
			Loans and insurance	(None)	No	Most farmers in the district are producing Irish potato and vegetables. There will be no significant change in their cash flow in realizing VC (After). (Not select for strategicness)
Production			Irrigation facilities	DADP (DADG)	No	Supported by DADG funds (Not select for comprehensiveness)
			Improved techniques /technologies	DADP (DADG) USAID	No	Supported by DADG funds (Not select for comprehensiveness)
Post-harvest			Collection centers	DADP (DADG)	No	Supported by DADG funds (Not select for comprehensiveness)
			Organization of farmers (group collection, selection, and sale)	(None)	Yes	Activities in Year 2 shows the effectiveness of using the existing groups. This year may apply the same approach to other direct sale business players in addition to Lushoto（Select for strategicness）
Trans port			Farm-to-market roads	District Road Project	No	Supported by other programs. It would require huge cost and time. (Not select for comprehensiveness and strategicness)
			High transporation cost	(None)	Yes	This issue is increasingly critical during the operation of business in Year 2 to reduce the costs of transport and meet the requirements of buyers.
Storage			Warehouses	(None)	No	Not a critical issue in achieving VC (After). It should also be solved in the medium to long term. (Not select for strategicness)
Marketing			Access to markets	(None)	Yes	Activities in Year 2 expanded the market but need to be more done to involve more farmers.（Select for strategicness）

2. Target of This Year Pilot Activities

2.1 [Production] No. of farmers who adopt improved technologies

Timeline	Malingo	Kwesine	Boheloi	Hambalawei	Total
Baseline: June 2013	0	0	0	-	0
As of Sept. 2014	20	0	3	0	19
Target (Aug 2015)	50	10	10	10	80
Remark					

2.2 [Post-harvesting] No. of farmers to be involved in Direct Delivery Business

Timeline	Maringo	Kwesine	Boheloi	Hambalawei	Total
Baseline: June 2013	0	0	0	-	0
As of Sept. 2014	10	6	3	0	19

Target (Aug 2015)	50	10	10	10	80
Remark					

*Solving the transportation issue is condition for ULT to expand the market and thus also to involve more farmers.

2.3 [Marketing] Incremental sale increase of DD business through ULT and other players

Timeline	ULT	Others	Total
Baseline: June 2013	0	-	
As of Sept. 2014	+ 4 million	-	
Target (Aug 2015)	+ 10 million	+ 5 million	+ 15 million
Remark			

* Solving the transportation issue is condition for ULT to expand the market.

3. Planned Activities

Component	Activity	Outline	O	N	D	J	F	M	A	M	Jn	Jl.	A	Budget Lushoto	Budget JICA	Remark
[1] Production Enhancement	[1-1] Inter-village study tour	For Boheloi and others to visit Malingo													1,000,000	
	[1-2] Study Tour/ potential crop development	The detail to be decided after MS													2,000,000	Including transportation companies Color peppers New varieties
[2] Post-harvesting More involvement of farmers in DD	[2-1] Orientation by existing business players														1,000,000	
	[2-2] Business Plan	For ULT and its sub-group													1,000,000	
[3] Market Expansion	[3-1] Transportation improvement	For ULT to procure trucks													1,000,000	
	[3-2] Market Survey Promotion	Tanga, DSM													5,000,000	DSM Tanga
	[3-3]														5,000,000	Coordination

	Brand creation (logo mark)														meeting to decide a logo
	[3-4]Consumption/ Nutrition Campaign (incl. the leaflets)													3,000,000	
[4] Project Management	[4-1] Farmers record keeping													1,000,000	
	[4-2] Reporting /data filing													0	

4. Upcoming Schedule for the details

Activities	Sub-activities	Oct. 2014					Nov. 2014			
		1	2 (Ip)	3	4 (Ip)	5	1	2	3 (Ip)	4
[3-1] Transportation Improvement	Financial Institution Survey in Dar									
	Financial Institution Survey in Tanga									
	Report by DFT									
	Preparation of Customary deeds/ Audit report									
[3-2] Market Survey	Preparation including coordination									
	Market Survey / Promotion @ DSM & Tanga				Tanga	DSM				
	Report by DFT									
[4-1] Farmers record keeping	Baseline survey (@Malingo)									

	Baseline survey (@Kwesine)									
	Baseline survey (@Boheloi)									
	Report by DFT									
[3-4] Campaign	Leaflets									

[ANNEX 02]

MARKET SURVEY REPORT ON FRUITS AND VEGETABLE PRODUCES

This activity was conducted at Dar-es-salaam for five days, i.e. from 18/05/2015 up to 22/05/2015. The participant who involved in this activity were as follows:- one farmer representative from ULT management team, one farmer from Beshas' Family, three staff from Lushoto District Council particularly from Department of Agriculture, Irrigation and Cooperatives and two staff from JICA. Generally this activity was financed by JICA, for five days as stated above. Actually this activity started by visiting the purchasing at LGS Sky Chefs (In flight Catering). After arriving to this office we succeeded to meet with the Purchasing Manager Mr. Emmanuel Mkorokoti whereby we informed him the purpose of visiting his office that Usambara Lishe Trust (ULT) is requesting one year coontract of doing business with LGS Sky Chefs whereby by getting such contract it can assist them to get loan from NMB Bank as one of condition given by this financial institution. In this discussion we informed even the purpose of the ULT loan is to rise internal capital so as to fulfill the increased orders to their customers and to invest in sustainable projects. After this discussion he responds by saying that it is possible for his company to produce such contract but he promised us to visit his office on Wednesday because the financial manager who deals with these cases she was so busy to prepare such document on that day. After such directives we agreed with advices then we went direct to steers Hotel and unfortunately we found it was closed due to its rehabilitation of its building, while we were told that they shifted to Mikochen area. Immediately after getting such information we went back direct to the Ministry of Agriculture, food Security and Cooperatives. In this office we met with JICA's Lushoto Coordinator Mr. Ippei Itakura whereby we discussed with him the time table for the next day also he managed to provide DSA to the participants of the activity, after that meeting participants departed to their hotels ready for tomorrow activity.

SECOND DAY VISITS ON 19/05/2015

On Tuesday we started our survey route to Steers Hotel (MAGIC KINGDOM) around Kijitonyama where they are operating nowadays. After arriving there we discussed with the manager and after passing through ULT price list he satisfied with the type of Veggies ULT supplying then on the sport he ordered 200Kgs of carrots, lettuce 5 Kg, spring onions 3 Kgs, White onion 4 Kgs and Green paper 5 Kgs hence he insisted that all these produces should be delivered on the coming week starting on Tuesday 26/may 2015 and he concluded by saying that payments will be done after two weeks. After these agreement with Steers Manager we went to Kariakoo to pick Mr. Moses Besha a farmer representing Besha Family who sell their produces direct to the market then we traveled together up to Mliman City to KFC Kuku food Hotel whereby we found Mr. Frank Cudjoe a purchasing manager and we informed him the purpose of visiting his hotel, then after passing through Beshas price list and observing Beshas veggies sample then he promised that he will discuss with his management team then he will contact us because he appreciated our samples. There after we visited *UCHUMI* building whereby we entered to BNN Restaurant and we found a responsible person Miss Jemima is out of her office and the representative told us to come back after three hours, also we visited *SUBWAY* Restaurant then manager promised us they will communicate with us letter. But at Uchumi restaurant we meet with the Purchasing Manager Miss Judith whereby we gave her the copy of ULT Business license and Tin number because it was the suggested condition given to ULT from previous days. After fulfilling such condition Judith requested us to come back on Friday with samples then once she will be satisfied with ULT produces she said she will give us the contract document for signing so as to start business with them. Apart from that we went to *TUKTUK* Restaurant whereby we found the owner of the hotel Mrs. Rama so at this restaurant we introduced Mr. Besha whom he will start business with *TUKTUK* because ULT failed to maintain such market. Therefore after long discussion in observing Beshas Sample she promised that she will order by the coming week, but before we quit out immediately mama Mjema the young sister of our former Lushoto District Commissioner also she ordered some of Beshas

Veggies by agreeing that she will be receiving her order from *TUKTUK* Restaurant. Also in the same building we visited *black tomato* restaurant whereby there agreed with our samples and they promised that they will that they will order later after discussing with other black tomato Branch hence they will start ordering Besha Produces. In the third room we continued to visit KFC Restaurant also here we managed to talk with the restaurant purchasing manager even him he promised us that he will communicate with us later. Farther more we went again to FOOD LOVERS Supermarket also here our team managed to meet with the purchasing manager whereby after observing our samples and all the price list of Besha and ULT he asked us if we can deliver our produces on cold truck then our team leader answered him that ULT up to now is delivering their produces through cold truck because they have their own. According to such explanation he appreciated our products and on the sport he ordered almost 26 types of ULT Veggies that it should be delivered on Friday earl in the morning.

Third day on 20/05/2015 a special visit for Secondary and Primary Schools at Tabata.

In this day we started to visit different schools with the idea of making Fruit and Vegetable consumption Campaign, whereby we started with African nursery, Primary and Secondary School in this school we managed to discuss with the school owner hence he agreed with our idea and he allowed us to conduct such exercise on the parent day of 31/05, 27/06 and 04/07/2015. Apart from that also we visited TUSIIME Secondary School in this school we found the second master then in our discussion we informed him our idea of conducting consumption of vegetable and fruits promotion campaign then hi accepted our idea while he suggested that in his school it is better to conduct our promotion campaign at least for two days for the opening week of the student that is from 08:00 AM to 16:00PM on Saturday 04/07 where form II,IV and VI will be coming back and on 07/072015 form I, III and V opening the school. There after we went to Genius Kings' Junior School, actually the headmaster of this school also agreed with our idea but he said we can arrange on early Sept at the day of

Standard VII Graduation whereby parents can participate with their child to eat such veggies, not only that but also he agreed on December whereby many parents come for the closing day but he insisted us to start communicating with him by the end of August.

Furthermore we visited Christ the King Primary and Secondary School whereby we meet with sister Safari who is a new head mistress at this school then we asked her on how he continue with ULT services then she respond by saying that order of cabbage is still going on while Chinese cabbage has stopped because ULT complained that such type of vegetable now is not easily available and on one day the delivered and requested to sell at Tsh 500 per bunch while our agreed price was Tsh 300 per bunch, then due to such circumstances she stopped to buy Chinese. But also the sister continued by complaining that ULT should stop spraying pesticide around harvesting days because several time they are delivering cabbages and Chinese while still smelling chemicals which is harmful to human being. Then after discussion with the headmistress then she said the Idea is so good but she promised that she will communicate with us later after arranging the students parent day. Also within the same campus we managed to talk with father Matera Moshi the headmaster of secondary school whereby he accepted our idea and he said on October 2015 there will be a graduation for form Four so he suggested that it is better to start communication by September so as to arrange the activity.

So far we went to BALTON Tanzania a Company sells Agriculture inputs and constructing Greenhouses, in this offices we asked the cost of constructing Green Houses whereby we were given deferent specification with various prices depending on its largeness of the green house for instance one set of 6 to 12 Meter = 3300,000/ , 1 to 15Metre = 6,000,000/-, also they said 9 to 15 Meter = 9,000,000/- and 20 to 24 Meter = 18,000,000 with a whole package. After this description we visited another office dealing with selling of farm chemicals whereby we meet with Mr. John Charles whom we asked a strong chemical

which can fight against Tuta absoluta then immediately he respond by mentioning three types of chemicals such as:-

i. Buffalo 250Mls Sold at 12,000/-,
ii. Levo 500Mls Sold at 20,000/-
iii. Prove 1 Lt Sold at 4000/-

Apart from that also he explained to us concentration of treatment as follows:-

i. Buffalo 20mls/16L from 250-500mls
ii. Levo 10mls/16L for 500mls
iii. Prove 10mls/10L from 100 mls-500mls

After getting such directives we went to BY TRADE Company where we met with the head of department of chemicals also here we asked again a strong chemical which it can do better than other to fight against Tuta absoluta then without delay he respond to our question by saying that in there company they have four types of chemicals which can do better on fighting against Tuta absoluta that are:-

1) Delta trap –he explained that this is a trap which used to control one acre while all male pest insecticides are captured due to the fact that it attached with female homes, and he insisted that homes should be changed after four weeks, this is done through Intergraded Pest Management (IPM).
2) Biolrine – Also he said this chemical it capable to kill Tuta abusoluta direct
3) Antaric – this chemical it contains abermectine and fungus which facilitate to kill this insect easily.
4) Recharge – This chemical treats the land and when these insect drops on the land then it kills direct so as to protect its generation.

FOURTH DAY VISITS ON 21/05/2015

On this day we started our activity at LGS Sky cheefs Company for the purpose of getting contract document specifically for supporting document of ULT Loan. After arriving there we found that he was in the meeting, in this circumstance we talk with him by phones whereby he respond to us by requesting us to visit him on Friday (the coming day). After that we visited UCHUMI QUALITY CENTER whereby we managed to talk with miss Judith (purchasing manager) on the issue of signing delivery contract. In this case she suggested that it is better to deliver some samples to her office whereby after observing and satisfy with she will be ready to proved the document for two parts to sign.

Furthermore we went to Sapphier Hotel whereby the hotel manager was so busy hence his representative asked us to left our contact so that he will call us later. Then after such respond we turned back to the Ministry of Agriculture, Food security and Cooperatives for the fourth day winding up to JICAs' office and after arriving there we informed all the activities we did and JICAs' Expertise appreciated our performance and he insisted to complete all appointment as we were promised to pass trough for the coming day.

FIFTH DAY VISIT ON 22 MAY 2015

By this day we started our journey from Kariakoo where we received various samples of veggies from cold truck brought by ULT. After picking such samples we went direct to UCHUMI supermarket whereby we found the Purchasing manager whereby she passed through our samples as a result she was attracted and appreciated the ULT Veggies.

In this situation miss Judith she was satisfied with ULT samples hence gave us the contract business document whereby Mr. Rajabu Mgonja signed the contract meaning that ULT must deliver veggies according to UCHUMI Supermarket orders and repayment will be done after 30 days, moreover Judith insisted much on ULT to maintain the quality of Veggies as observed in the samples. In

addition after these agreement with UCHUMI we divided our groups into two group one delivered some samples of ULT to FOOD LOVER after arriving we managed to meet with the purchasing Manager Mr. Maumn whereby he appreciated our samples hence he promised us he will communicate with us later because we left our contacts on ULT and Beshas' price list,

and the other group went to Airport while from Mwalimu Julius K. Nyerere International Airport (LGS Sky Chefs) the team managed to meet with the Financial Controller Miss Helen Ngowo and the Purchasing manager Mr. Emmanuel Mkorokoti whereby we discussed a lot together with ULT Chairman explaining the purpose and importance of getting one year contract from (LGS Sky Chefs) and finally they gave us two copy of one year contract doing business with this company. Finally after such success our team leader (lushoto JICA coordinator) closed the activity around 17: 05 pm by thanking all participants in making good cooperation during the whole activity also he wished all participants to go back to their hotels ready for going back to Lushoto by Saturday safely.

[ANNEX 03]

USAMBARA LISHE TRUST business plan

July 2015

Table of Contents

SECTION A: DESCRIPTION OF ULT

1. General Introduction of the Group

<table>
<tr><td>Business Name</td><td colspan="2">Direct Delivery of Fresh Vegetables and Fruits to Dar es Salaam</td></tr>
<tr><td>Group name (Place)</td><td colspan="2">USAMBARA LISHE TRUST (ULT) Lushoto DC (HQ)</td></tr>
<tr><td>Ownership of the farm/Business</td><td colspan="2">1. Each farmer own his/her own land customary,
2. Business is owned by group of farmers and controlled by Board Members</td></tr>
<tr><td rowspan="3">Group responsibilities</td><td>Chairperson</td><td>Mr. Rajabu Mgonja (0683508745)</td></tr>
<tr><td>Secretary/Accountant</td><td>Miss. Fuda Saria (0786516896)</td></tr>
<tr><td>Marketing Manager</td><td>Mr. John Stephane (0784675304)</td></tr>
<tr><td>Group size</td><td colspan="2">ULT consists of around <u>250 farmers</u>, covering four wards in Lushoto DC, i.e.Lushoto (50), Malindi (50), Boga (50), Soni (50), and Lukozi (50). Each member has 1 – 2 acres for producing vegetables while planting maize partially in some seasons. The total acreage in utilization = 250 acres
The maximum distance between farm groups within a village is 50-100Meter.
ULT has 14 workers including 1 Chairman, 1 Secretary/Accountant, 1 Shopkeeper, 1 Driver, 5 Security guards and 1 marketing Manager. 4 Collector/distributors</td></tr>
<tr><td>Business experience</td><td colspan="2">ULT has been engaged in this business <u>since 1996</u>.</td></tr>
<tr><td>Business size (e.g. turnover or profit)</td><td colspan="2">ULT Business Turnover was <u>Tsh. 16Million in 2012 and 23 million in 2013. The turnover for 2014 will be informed after Auditing report being out; however, it estimated to be more than 23 million.</u></td></tr>
<tr><td>Business systems and skills</td><td colspan="2">On every Monday and Thursday, each member brings his/her vegetables and fruits to the ULT collection centres. Then collects the produce and transport, by cold truck, to Dar es Salaam through the night. In Tuesday and Friday morning, after arriving at Dar, the distributor team goes around to their customers to supply their products directly to retailers.

Orders from customers are obtained in advance either through telephone, emails or direct meeting when supplying the fruits and vegetables.

The Table below presents current production quantity from the ULT area under rain fed and irrigation cultivation
<table>
<tr><th>S/N</th><th>Items</th><th>Quantity (kg/trip)</th><th>Trips per week</th><th>Trips per Month</th><th>Trips per 6 Month</th><th>Quantity (kg/6 month)</th><th>Quantity (kg/year)</th></tr>
</table></td></tr>
</table>

1	Banana	20	2	*8*	*48*	*960*	1,920
2	Beet Roots	20	2	*8*	*48*	*960*	1,920
3	Apple Green	2	2	*8*	*48*	*96*	192
4	Apple Red	2	2	*8*	*48*	*96*	192
5	Banana Green	23	2	*8*	*48*	*1,104*	2,208
6	Broccol	50	2	*8*	*48*	*2,400*	4,800
7	Butternut	50	2	*8*	*48*	*2,400*	4,800
8	Carrots	200	2	*8*	*48*	*9,600*	19,200
9	Color Pepper	100	2	8	48	*4,800*	9,600
10	Corienda	2	2	*8*	*48*	*96*	192
11	Coulflower	100	2	8	48	*4,800*	9,600
12	Cucumber	40	2	8	48	*1,920*	3,840
13	Egg plant	20	2	*8*	*48*	*960*	1,920
14	Egg plant	30	2	*8*	*48*	*1,440*	2,880
15	French Beans	80	2	8	48	*3,840*	7,680
16	Graps	5	2	*8*	*48*	*240*	480
17	Green pepper	200	2	8	48	*9,600*	19,200
18	Leeks	50	2	8	48	*2,400*	4,800
19	Lemon	10	2	*8*	*48*	*480*	960
20	Lemon impoted	1	2	*8*	*48*	*48*	96
21	Lettuce Cos	200	2	8	48	*9,600*	19,200
22	Lettuce Soft	50	2	8	48	*2,400*	4,800
23	Mango	5	2	*8*	*48*	*240*	480
24	Onion Red	100	2	*8*	*48*	*4,800*	9,600
25	Onion Spring	2	2	*8*	*48*	*96*	192
26	Orange	4	2	*8*	*48*	*192*	384
27	Avocado	10	2	*8*	*48*	*480*	960
28	Pineapple	216	2	*8*	*48*	*10,368*	20,736
29	Pamagranet	3	2	*8*	*48*	*144*	288
30	Pumpkin	23	2	*8*	*48*	*1,104*	2,208
31	Papaya	120	2	*8*	*48*	*5,760*	11,520
32	Parsley	30	2	8	48	*1,440*	2,880
33	Passion	50	2	*8*	*48*	*2,400*	4,800
34	Potatoes	300	2	*8*	*48*	*14,400*	28,800
35	Red Cabbage	100	2	8	48	*4,800*	9,600
36	Rosemary	10	2	8	48	*480*	960
37	Snow-peas	20	2	8	48	*960*	1,920

	38	Tomatoes Italy	100	2	8	48	*4,800*	9,600
	39	Water Melon	100	2	*8*	*48*	*4,800*	9,600
	40	White Cabbage	100	2	8	48	*4,800*	9,600
	41	Zucchini	50	2	*8*	*48*	*2,400*	4,800

Purpose of preparing this BP	*To construct 6 Green Houses through a loan from a bank.*

Crop Harvest Record

s/n	*Year*	*Production(Tons/Acre)*
1	*2012*	*9,750*
2	*2013*	*10,500*
3	*2014*	*11,250*

2. Marketing

Products to sell	*Fresh vegetable and Fruits(over 40 different types)*
Geographical Area of production	*Malindi, Lukozi, Lushoto, Boga and Soni in Lushoto DC*
Where we sell	*Dar es Salaam*
Customers (Show specific names)	*Steers Restaurant, In flight catering Services (Airport), UCHUMI SUPERMARKET, Savarios Hotel, Namanga Green Groceries, Shekigenda and Dar-es-Salaam Corido Group*
Means of delivery	*Direct delivery by Cold truck two times per week*
Competitors	*Mbezi Fresh, GFF, Serengeti Fresh, and smallholder farmers of Lushoto DC*
Strengthens of your products compared to others	*Our vegetables and fruits are fresher than others.* *There is a lot of variety of the vegetables (60-70 types) and fruits (20 to 30).*
Results of the market survey	*1. Dar es Salaam is the most potential market as compared to Arusha and Dodoma.* *2. Several restaurants and supermarkets were interested in buying the products from formalized groups (ULT is a formalized Group).*
Proportion of your products in the market (much or less?)	*It is still little as we are not well known to consumers.*
What is the most profitable product?	*Lettuces, Tomatoes, Potatoes for large-quantity order* *Color peppers, Avocado, Apple, Plums, and spices for high value, despite less quantities for order*
Price setting. Is it different by customer?	*Yes. While having the standard price list, actual prices will be determined through individual negotiations.*
Challenges and way forward	*1. Training producer for Quality improvement* *2. Widening network to fulfill the requirements of customers in terms of variety of goods.* *3. Low production during dry season and heavy rain fall*

3. Technical aspects

Location for investment (In case of infrastructure or land development)	*Lushoto (Malindi -2 Green houses,Lushoto town- 2 Green Houses, Boga- 1 Green House, and 1 Green House at Soni*
Size of the site for investment (In case of infrastructure or land development)	1. *Two Green Houses at Malindi with (16x30M) and (8x15M)* 4. *Two Green Houses at Lushoto with (16x30M) and (8x15M)* 5. *One Green House at Boga with (8x21M)* 6. *One Green House at Soni with (8x21M)*
Amount for investment (Indicate both the total amount and loan amount)	*Tsh 70 million is required through loan from a bank for green houses*
Timing of investment	*August 2015. No phase required in this investment.*
Existing of facilities, equipment/ machine, and furniture used for business	1. *Facility: office building and collection canters* 2. *Equipment/ machines: Cold Truck, Motor cycle computers and weight scales* 3. *Furniture: meeting table and chairs*
Operation & Maintenance (O&M)	*O&M are undertaken by ULT management team.* *Usually around Tsh 1,200,000 is allocated for cold truck.*
Procurement of inputs/materials for business	*Inputs/materials which are not available in Lushoto DC are procured from Dar es Salaam . For construction of greenhouses so far two agencies have been identified as reliable constructors, namely IRRICO International (T) Limited and BALTON Company Ltd.*

4. Social and Environmental aspects

Social Aspects Any positive impacts? (e.g. employment contribution, foreign exchange earnings, new technical innovation) Any negative impacts? If so, any mitigation measures?	*The business of ULT is direct-delivery of fresh vegetables and fruits without middlemen. It contributes to increase the income of farmers, most of them are poor, and while enhancing customer's satisfactions, as they can consume fresh vegetables and fruits. Construction of Green Houses will help constant supply of fresh vegetable and fruits. In many developed countries; farmers enjoy constant cold-supply chain or direct sale to consumers. Our business could be the first step to realize such agri-businesses in the country.*
Environmental Aspects Any positive impacts? Any negative impacts? If so, any mitigation measures?	*There are no positive/negative impacts on environmental aspect during implementation of ULT projects.*

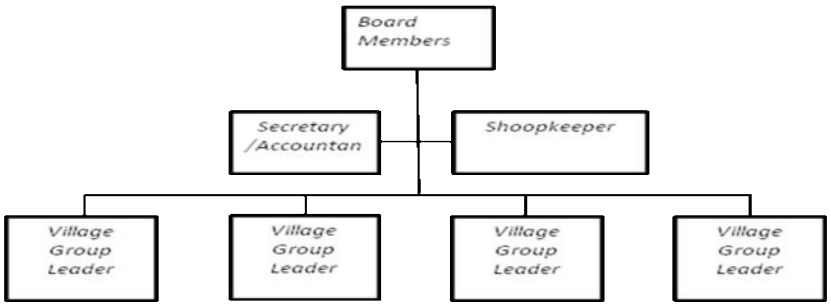
5. Management and Administration

Management and administration are key issues in the ULT as it demonstrates the administration

arrangements, roles and capacities to conduct business.

ULT is registered under Ministry of Home Affairs and business has commenced since 1996 with having business license and registered with Tanzania Revenue Authority (Figure 1 below). The area under production in terms of land have obtained customary title deeds and audit reports for 3 consecutively years have been done. ULT also conducting regular meeting systems.

Figure 1: Management and Administration

Organizational Structure	
Registration status	*Association under Ministry of Home Affairs* *Registration No.*
Business licences	*Licence No.B 1202833 issued in 03 December 2014*
Tax information	*TIN:106-681-295*
Title deeds obtained	*Customary title deeds were obtained for collection centres*
Audit report available	*Audit reports are available for FY 2011,2012 and 2013*
Bank account used	*NMB (Lushoto branch) : Account No. 4162300289*
Management System (e.g. meeting system, labour conflict resolution)	*ULT has the following management system* - *Annual general meeting including board and farmer members to select management leaders* - *Weekly meeting to distribute order and payments* *There has been no serious labour conflict in the past.*

6 Risk and its mitigation measures

Any business has risks to gain profits. The ULT cannot overlook this feature of business. Table 2 below indicates the possible risks for investment and/or business as whole and possible measures.

Table 2: Risks and Mitigation Measures

Risks	Mitigation measures
Weather and crop disease affecting production	*Diversification of production including new crops such as snow peas, asparagus and English Cucumber without depending on few crops* *Utilizing 6 green houses with drip irrigations will be*

	constructed within this year.
Poor handling of various vegetable and fruits	*Reserving some part of our profit for buying pest sides for treating common pest and diseases like tuta absoluta, bacterial wilt and fusarium wilt about (Tsh 1,500,000 per year) and soil sterilizing*

SECTION B: FINANCIAL ANALYSIS

Costs of the ULT Business

7. Direct costs

Items	Quantity (kg/trip)	Unit price* (Tsh/kg)	Amount per Trip(Tsh)	Amount per Week(Tsh)	Amount per Month (Tsh)	Amount per Year (Tsh)
BANANA	20	2,500	*50,000*	*100,000*	*400,000*	4,800,000
BEET ROOTS	20	2,000	*40,000*	*80,000*	*320,000*	3,840,000
APPLE GREEN	2	7,500	*15,000*	*30,000*	*120,000*	1,440,000
APPLE RED	2	7,500	*15,000*	*30,000*	*120,000*	1,440,000
BANANA GREEN	23	2,000	*46,000*	*92,000*	*368,000*	4,416,000
BROCCOL	50	2,000	*100,000*	*200,000*	*800,000*	9,600,000
BUTTERNUT	50	1200	60000	120000	480000	5760000
CARROTS	200	2,000	*400,000*	*800,000*	*3,200,000*	38,400,000
COLOR PEPPER	100	5000	500000	1000000	4000000	48000000
CORIENDA	2	7,000	*14,000*	*28,000*	*112,000*	1,344,000
COULFLOWER	100	1500	150000	300000	1200000	14400000
CUCUMBER	40	700	28000	56000	224000	2688000
EGG PLANT	20	1,300	*26,000*	*52,000*	*208,000*	2,496,000
EGG PLANT	30	1,300	*39,000*	*78,000*	*312,000*	3,744,000
FRENCH BEANS	80	1500	120000	240000	960000	11520000
GRAPES	5	1,500	*7,500*	*15,000*	*60,000*	720,000
GREEN PEPPER	200	700	140000	280000	1120000	13440000
LEEKS	50	1000	50000	100000	400000	4800000
LEMON	10	1,800	*18,000*	*36,000*	*144,000*	1,728,000
LETTUCE COS	200	1000	200000	400000	1600000	19200000
LETTUCE SOFT	50	1000	50000	100000	400000	4800000
MANGO	5	3,000	*15,000*	*30,000*	*120,000*	1,440,000
ONION RED	100	1,500	*150,000*	*300,000*	*1,200,000*	14,400,000
ONION SPRING	2	3,500	*7,000*	*14,000*	*56,000*	672,000

Items	Quantity (kg/trip)	Unit price* (Tsh/kg)	Amount per Trip(Tsh)	Amount per Week(Tsh)	Amount per Month (Tsh)	Amount per Year (Tsh)
OVACADO	10	3,000	*30,000*	*60,000*	*240,000*	2,880,000
PAINAPLE	216	2,000	*432,000*	*864,000*	*3,456,000*	41,472,000
PAMAGRANET	3	8,000	*24,000*	*48,000*	*192,000*	2,304,000
PAMKING	23	1,500	*34,500*	*69,000*	*276,000*	3,312,000
PAPAYA	120	2,000	*240,000*	*480,000*	*1,920,000*	23,040,000
PARSLEY	30	2000	60000	120000	480000	5760000
PASSION	50	1,500	*75,000*	*150,000*	*600,000*	7,200,000
POTATOES	300	900	*270,000*	*540,000*	*2,160,000*	25,920,000
RED CABBAGE	100	1000	100000	200000	800000	9600000
ROSEMARY	10	200	2000	4000	16000	192000
SNOW PEAS	20	5000	100000	200000	800000	9600000
TOMATOES ITALY	100	1000	100000	200000	800000	9600000
WATER MELON	100	1,500	*150,000*	*300,000*	*1,200,000*	14,400,000
WHITE CABBAGE	100	1000	100000	200000	800000	9600000
ZUCCHIN	50	2,000	*100,000*	*200,000*	*800,000*	9,600,000
TOTAL			**4,058,000**	***8,116,000***	***32,464,000***	**389,568,000**

8. Indirect costs

8.1: Investment costs: Procurement of the materials and Construction of 6 Green Houses

Item	Quantity	Unit Costs (Tsh)	Total (Tsh)	Remark
Green Houses 1(16X30M)	*2*	*16,950,000*	*33,900,000*	
Green Houses 2(8x21M)	*2*	*8,470,000*	*16,940,000*	
Green Houses 3(8X15M)	*2*	*6,380,000*	*12,760,000*	
Labour Charges	*3*	*150,000*	*450,000*	
Technician costs (Meals 30days)	*1*	*255,000*	*255,000*	
Technician costs (Accomodation 30days)	*1*	*450,000*	*450,000*	
Cements	*20*	*15,000*	*300,000*	*Bags*
Sand	*4*	*137,500*	*550,000*	
Concrette	*4*	*137,500*	*550,000*	*trip*
Tanks(Kiboko 2000ltrs)	*2*	*350,000*	*700,000*	
Tanks (Kiboko 1000ltrs)	*4*	*160,000*	*640,000*	
Tanks(Kiboko 500ltrs)	6	*95,000*	*570,000*	
Transportation costs from Arusha to Lushoto (Materials)	1	*700,000*	*700,000*	*trip*

Item	Quantity	Unit Costs (Tsh)	Total (Tsh)	Remark
Transportation costs from Lushoto to Malindi (Materials)	1	*150,000*	*150,000*	*trip*
Transportation costs from Lushoto to Lushoto (Materials)	1	*50,000*	*50,000*	*trip*
Transportation costs from Lushoto to Boga (Materials)	1	*100,000*	*100,000*	*trip*
Transportation cost from Lushoto to Soni (Materials)	1	*100,000*	*100,000*	*trip*
Malching papers	1	*835,000*	*835,000*	*Bandle*
GRAND TOTAL			***70,000,000***	

8.2. Running costs

8.2.1. Salaries / Allowances to employee

Category	Number	Per day or unit (Tsh)	Amount per month	Amount per season (12 months)	Remark
Chairperson	*1*		*80,000*	*960,000*	
Secretary	*1*		*80,000*	*960,000*	
Shopkeeper	*1*		*120,000*	*1,440,000*	
Security Guard	*5*		*150,000*	*1,800,000*	
Allowance for stay in Dar	*1*	*40,000*	*320,000*	*3,840,000*	*8 times/ month*
Driver allowance	*1*	*50,000*	*400,000*	*4,800,000*	
Driver Salary	*1*		*100,000*	*1,200,000*	
Total			***1,250,000***	***15,000,000***	

8.2.2: Energy and Communication

Category	Quantity	Per day or unit (Tsh)	Amount per month	Amount per production cycle (12 months)	Remark
Electricity bills	*12*		*15,000*	*180,000*	*For office*
Water	*5*		*6,000*	*360,000*	*Centers &Shop*
Oil/ Charcoal					
Fuel(Lites)	*1600*	*1700*	*2,720,000*	*32,640,000*	*200 litters/ time*
Telephone/ Fax			*30,000*	*180,000*	
Total			***2,771,000***	***33,360,000***	

8.3. Miscellaneous costs

Category	Quantity	Per day (Tsh)	Amount per month	Amount per year (12 months)	Remark
License - shop	*1*		*60,000*	*60,000*	
License - Vehicle	*1*			*424,000*	
Advertisement	*1*			*4,000*	
Maintenance	*2*		*300,000*	*1,200,000*	*For the truck 4 times a year*
Insurance Vehicle				*1,475,000*	
Motorcycle insurance				*50,000*	
Board Meeting(7members)	*4*	*140,000*		*560,000*	
General Meeting	*250*	*10,000*		*2,500,000*	
Rent – shop	*1*		*50,000*	*600,000*	
Produce ces	*1*	*15,000*	*120,000*	*1,440,000*	
Tax (TRA)	*1*			*425,000*	
Tools (Crates)	*200*	*11,000*		*2,200,000*	
Tools (others e.g. box)			*10,000*	*120,000*	
Total			***540,000***	***11,058,000***	

8.4. Depreciation costs

Category	Q'ty	Original Unit cost	Original cost Total	Life time (years)	Depreciation Cost		
					Per year	Per month	Per Cycle (6 month)
Building							
The office building	*1*	*120,000,000*	*120,000,000*	*50*	*2,400,000*	*200,000*	*1,200,000*
Collection center(USAD)	*4*	*25,000,000*	*100,000,000*	*50*	*2,000,000*	*166,667*	*1,000,000*
Collection center(SECAP)	*1*	*5,000,000*	*5,000,000*	*50*	*100,000*	*8,333*	*50,000*
Subtotal					***4,500,000***	***375,000***	***2,250,000***
Machine/ equipment							
Computers	*2*	*3,000,000*	*6,000,000*	*5*	*1,200,000*	*100,000*	*600,000*
Weight scale (large)	*4*	*1,500,000*	*6,000,000*	*3*	*2,000,000*	*166,667*	*1,000,000*
Motor cycke	*1*	*4,000,000*	*4,000,000*	*3*	*1,333,333*	*111,111*	*666,667*
Truck	*1*	*34,000,000*	*34,000,000*	*10*	*3,400,000*	*283,333*	*1,700,000*
Subtotal					***7,933,333***	***661,111***	***3,966,667***
Furniture							
Meeting Table	*3*	*100,000*	*300,000*	*5*	*60,000*	*5,000*	*30,000*

Chairs	*18*	*18,000*	*324,000*	*3*	*108,000*	*9,000*	*54,000*
Subtotal					***168,000***	***14,000***	***84,000***
Total					***12,601,333***	***1,050,111***	***6,300,667***

9. Total Cost

Cost category	Cost Item	Initial	Cost per year	Reference
Direct Costs	*Raw material*		*389,568,000*	
Indirect Costs				
Investment Costs	*Green house*	*70,000,000*	*70,000,000*	
Running Costs	*Salaries & Allowance*		*15,000,000*	
	Energy & Commination		*33,360,000*	
	Miscellaneous		*11,058,000*	
Depreciation Costs	*Building*		*4,500,000*	
	Machine/ Equipment		*7,933,333*	
	Furniture		*168,000*	
Total		*70,000,000*	*531,587,333*	

10: Source of Capital and Loan Repayment Schedule

10.1. Source of Capital

Cost category	Cost Item	Initial	Cost per cycle (Harvesting)	Source of Capital
Direct Costs	*Raw material*		*389,568,000*	*Own sources*
Indirect Costs				
Investment Costs	*Green houses*	*70,000,000*		*Loan 70,000,000* *Own 0*
Running Costs	*Salaries & Allowance*		*15,000,000*	*Own sources*
	Energy & Commination		*33,360,000*	*Own sources*
	Miscellaneous		*11,058,000*	*Own sources*
Depreciation Costs	*Building*		*4,500,000*	*Own sources*
	Machine/ Equipment		*7,933,333*	*Own sources*

Cost category	Cost Item	Initial	Cost per cycle (Harvesting)	Source of Capital
	Furniture		*168,000*	*Own sources*
Total		*70,000,000*	*531,587,333*	

10.2. Loan repayment

Item			
Loan duration (years)	3		
Interest	18%		
Item per year	**Year 1**	**Year 2**	**Year 3**
1) Opening balance	70,000,000	46,666,667	23,333,333
2) Principal to return	23,333,333.33	23,333,333.33	23,333,333
3) Closing balance= 1)-2)	46,666,667	23,333,333	-
4) Interest = 1)*18%	12,600,000.00	8,400,000	4,200,000
5) Loan repayment= 2)+4)	35,933,333	31,733,333	27,533,333

11: **Revenue of business-Harvest Season (Jan - Dec)**

Items	Quantity (kg/trip)	Unit price* (Tsh/kg)	Amount per Trip(Tsh)	Amount per Week(Tsh)	Amount per Month (Tsh)	Amount per Year (Tsh)
BANANA YELLOW	20	3,000	*60,000*	*120,000*	*480,000*	5,760,000
BEET ROOTS	20	2,500	*50,000*	*100,000*	*400,000*	4,800,000
APPLE GREEN	2	8,000	*16,000*	*32,000*	*128,000*	1,536,000
APPLE RED	2	8,000	*16,000*	*32,000*	*128,000*	1,536,000
BANANA GREEN	23	2,500	*57,500*	*115,000*	*460,000*	5,520,000
BROCCOL	50	3,000	*150,000*	*300,000*	*1,200,000*	14,400,000
BUTTERNUT	50	2000	*100,000*	200000	800000	9600000
CARROTS	200	2,500	*500,000*	*1,000,000*	*4,000,000*	48,000,000
COLOR PEPPER	100	8000	*800,000*	1600000	6400000	76800000
CORIENDA	2	8,000	*16,000*	*32,000*	*128,000*	1,536,000
COULFLOWER	100	2000	*200,000*	400000	1600000	19200000
CUCUMBER	40	800	*32,000*	64000	256000	3072000
EGG PLANT (LONG)	20	1,500	*30,000*	*60,000*	*240,000*	2,880,000
EGG PLANT (BRACK)	30	1,800	*54,000*	*108,000*	*432,000*	5,184,000
FRENCH BEANS	80	2500	*200,000*	400000	1600000	19200000
GRAPES	5	2,000	*10,000*	*20,000*	*80,000*	960,000
GREEN PEPPER	200	1000	*200,000*	400000	1600000	19200000
LEEKS	50	1500	*75,000*	150000	600000	7200000
LEMON	10	2,500	*25,000*	*50,000*	*200,000*	2,400,000
LETTUCE COS	200	2000	*400,000*	800000	3200000	38400000

Items	Quantity (kg/trip)	Unit price* (Tsh/kg)	Amount per Trip(Tsh)	Amount per Week(Tsh)	Amount per Month (Tsh)	Amount per Year (Tsh)
LETTUCE SOFT	50	2000	*100,000*	200000	800000	9600000
MANGO	5	3,500	*17,500*	*35,000*	*140,000*	1,680,000
ONION RED	100	2,500	*250,000*	*500,000*	*2,000,000*	24,000,000
ONION SPRING	2	4,000	*8,000*	*16,000*	*64,000*	768,000
OVACADO	10	3,500	*35,000*	*70,000*	*280,000*	3,360,000
PAINAPLE	216	3,000	*648,000*	*1,296,000*	*5,184,000*	62,208,000
PAMAGRANET	3	9,000	*27,000*	*54,000*	*216,000*	2,592,000
PAMKING	23	2,000	*46,000*	*92,000*	*368,000*	4,416,000
PAPAYA	120	3,000	*360,000*	*720,000*	*2,880,000*	34,560,000
PARSLEY	30	2500	*75,000*	150000	600000	7200000
PASSION	50	3,000	*150,000*	*300,000*	*1,200,000*	14,400,000
POTATOES	300	1500	*450,000*	*900,000*	*3,600,000*	43,200,000
RED CABBAGE	100	2000	*200,000*	400000	1600000	19200000
ROSEMARY	10	300	*3,000*	6000	24000	288000
SNOW PEAS	20	8000	*160,000*	320000	1280000	15360000
TOMATOES ITALY	100	2000	*200,000*	400000	1600000	19200000
WATER MELON	100	2,000	*200,000*	*400,000*	*1,600,000*	19,200,000
CABBAGE WHITE	100	1500	*150,000*	300000	1200000	14400000
ZUCCHIN	50	3,000	*150,000*	*300,000*	*1,200,000*	14,400,000
TOTAL			**6,221,000**	***12,442,000***	***49,768,000***	**597,216,000**

11:1: Profit Examination

Having identified the total cost and revenues per year, the profit of the ULT business will be estimated as follows.

Item	Reference	PER YEAR (Harvesting season)
1) Revenue	Example A-6	597,216,000
2) Total Cost	Example A-4 (6)	531,587,333
3)Profit=1)-2)		65,628,667

11.2: The cash flow is projected as follows:

Item	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
Cash Inflow						
1) Loan from NMB bank	*70,000,000*					
2) Withdraw from saving						
3) Profit		*65,628,667*	*65,628,667*	*65,628,667*	*65,628,667*	*65,628,667*
4) Total= 1)+2)+3)	***70,000,000***	***65,628,667***	***65,628,667***	***65,628,667***	***65,628,667***	***65,628,667***

Item	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
Cash Outflow						
5) Investment (Green houses)	70,000,000					
6) Loan repayment		*35,933,333*	*31,733,333*	*27,533,333*		
7)Total=5)+6)	***70,000,000***	***35,933,333***	***31,733,333***	***27,533,333***		
Net Cash flow=4)-7)	***0***	***29,695,333***	***33,895,333***	***38,095,333***	***65,628,667***	***65,628,667***
Net Cash flow Cumulative		***29,695,333***	***63,590,667***	***101,686,000***	***167,314,667***	***232,943,333***

12. NPV and IRR

Item	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
Cash Inflow						
1) Loan from NMB bank	*0*					
2) Withdraw from saving						
3) Profit		*65,628,667*	*65,628,667*	*65,628,667*	*65,628,667*	*65,628,667*
4) Total= 1)+2)+3)	***0***	***65,628,667***	***65,628,667***	***65,628,667***	***65,628,667***	***65,628,667***
Cash Outflow						
5) Investment (Green houses)	70,000,000					
6) Loan repayment						
7)Total=5)+6)	***70,000,000***	***0***	***0***	***0***		
Net Cash flow=4)-7)	***(70,000,000)***	***65,628,667***	***65,628,667***	***65,628,667***	***65,628,667***	***65,628,667***
Net Cash flow Cumulative		***65,628,667***	***131,257,333***	***196,886,000***	***262,514,667***	***328,143,333***
	NPV	114,603,445				
	IRR	90%				

13. CONCLUSION

Financial Analysis (part B) indicates a positive NPV and IRR which justify the worth of the project. In this regard, the ULT is requesting the loan of TZS 70, 0000/-to pursue the planned activities which expected to start by August 2015.

ANNEX 04: Peak Demand Table

Harvest time/ Peak Demand

JAN	FEB	MAR	APR	MAY	JUN	JULAI	AUG	SEPTEM	OCTO	NOV	DEC
	karoti	karoti									
	brokori	brokoi				brokori	brokori	brokori	brokori	brokori	brokori
	cowlflower	cowlflower				cowlflower	cowlflower	cowlflower	cowlflower	cowlflowe	cowlflower
	zukini	zukini		zukini	zukini	zukini	zukini	zukini	zukini	zukini	zukini
	Lettuce	Lettuce	Lettuce			Lettuce	Lettuce	Lettuce	Lettuce	Lettuce	Lettuce
Viazi	Viazi	Viazi	Viazi	Viazi							Viazi
	Tomato	Tomato	Tomato	Tomato	Tomato						
Snowpeas	Snowpeas	Snowpeas	Snowpeas	Snowpeas	Snowpeas						Snowpeas
Beatroot	Beatroot	Beatroot	Beatroot	Beatroot							
			Green peppers	Green peppers	Green peppers						
Color peppers	Color peppers	Color peppers	Color peppers	Color peppers	Color peppers	Color peppers	Color peppers	Color peppers	Color peppers	Color peppers	Color peppers
Basil & Mint	Basil & Mint	Basil & Mint	Basil & Mint	Basil & Mint	Basil & Mint	Basil & Mint	Basil & Mint	Basil & Mint	Basil & Mint	Basil & Mint	Basil & Mint
		French beans	French beans				French beans	French beans			

FARMERS SELLING PRICE TO ULT

CROP	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC
Potatoes	500	600	600	600	600	600	600	600	600	600	600	600
Snowpeas	–	–					–					
Beetroot	1000	1000	1000	700	700	800	700	700	600	700	700	700
Color pepper	–	–						–	–	5000	–	–
Basil & Mint	–	–			2000			–	2000	–	–	–
Carrots	800	1000	1000	1000	1000	1000	1000	700	700	700	1000	800
Broccoli	1500	2000	2000	2000	2500	3000	3000	2000	2000	1500	800	800
Cowlflower	1500	1500	2000	2000	2000	2000	1000	1000	800	800	1000	800
Lettuce	1000	1200	1200	1200	1500	1000	1000	1000	1000	1000	800	800
Tomatoes	1000	1000	1000	1000	1000	1000	1500	100	1000	800	800	800
Zucchini	1000	1000	1000	1000	700	1500	1500	1500	1000	1000	1000	1000
French Beans	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Green pepper	700	700	700	1000	1000	1000	1000	800	700	700	600	600

ULT SELLING PRICE TO LSG(AIR PORT)

CROP	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC
Potatoes	2500	2000	1000	1000	1000	1000	2000	1000	1000	1000	1000	2000
Snowpeas			8000					6000		8000	8000	8000
Beetroot	4000	4000	4000	4000	3000	2000	2000	2000	2000	2000	3000	2000
Color pepper	9000	9000	9000	13000	13000	9000	9000	13000	13000	13000	13000	9000
Basil & Mint	8000	8000	8000	8000	8000	8000	8000	8000	8000	8000	8000	8000
Carrots	3000	3000	3000	2000	2500	3000	3000	2000	2000	3000	2000	2500
Broccoli	3500	3500	4000	4000	3500	3500	3500	3500	3500	3500	3500	3500
Cowlflower	2500	3000	3000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Lettuce	3000	3000	2000	2000	2000	2000	2000	2000	2000	2500	3000	2000
Tomatoes	2000	2500	2000	4000	4000	2000	2000	2000	2000	2000	2000	3000
Zucchini	2500	3000	2200	2200	2200	2200	2000	2200	3000	3000	2000	2000
French Beans	3500	3500	3000	2500	3000	2500	2500	2500	2500	2500	2500	2500
Green pepper	3000	3000	3000	3000	3000	2000	2000	2000	2000	2000	2000	2000

					ULT SELLING PRICE TO OTHER RETAILERS							
CROP	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC
Potatoes	650	700	700	700	700	600	700	700	650	650	700	700
Snowpeas												
Beetroot	1100	1100	1100	1100	1000	1000	1000	1000	1000	1000	1000	1000
Color pepper												
Basil & Mint	1500 bch					2000 bch	1500 bch					
Carrots	1500	1500	1500	1500	1500	1500	1000	700	700	600	600	1000
Broccoli	2000	3000	3000	2500	3000	3000	3000	3000	2500	2500	2500	2000
Cowlflower	1500	2000	2500	2500	2500	2500	2000	1000	1500	2000	2000	2000
Lettuce	2000	2000	2500	2000	2000	1500	1000	1500	1500	1000	1000	1500
Tomatoes	1000	1000	1200	1200	1200	1500	1500	1200	1200	1000	1000	1000
Zucchini	1000	1500	1500	1500	1000	1000	1500	1000	1500	15000	1000	1000
French Beans	2000	1500	2000	1500	1500	1500	2000	2000	2000	2000	1500	1500
Green pepper	1300	1300	1500	1500	2000	2000	1300	1000	1000	1000	1000	1000

ANNEX 05: Production Plan (Sample: Hambarawei Sub-group)

Ratiba ya Kilimo na Mpango wa Uzalishaji kwa Mwaka 2015

Jina la Kijiji HAMBALEWI

No	JINA	Jan.	Feb.	Machi	April	Mei	Juni	Julai	Agosti	Septe.	Oktoba	Nove.	Dece.	Zao	A) Mavuno tarajiwa	B) Mapato	C) Gharama	Mapato Halisi =B)-C)	JUMLA
1	SHABAN RAMADHANI			HARVESTING			PLANTING			PLANTING HARVESTING		PLANTING	HARVESTING	POTATOES	7bags	Tsh 700,000	Tsh 100,000	Tsh 600,000	Tsh 2,030,000
														BROCCOLI	800kg	Tsh 1,600,000	Tsh 500,000	Tsh 1,100,000	
														CARROTS	20bags	Tsh 400,000	Tsh 70,000	Tsh 330,000	
2	HAMZA KAMBA			HARVESTING			PLANTING			PLANTING HARVESTING		PLANTING	HARVESTING	POTATOES	10bags	Tsh 800,000	Tsh 350,000	Tsh 450,000	Tsh 1,000,000
														COWLFLOWER	300kgs	Tsh 600,000	Tsh 300,000	Tsh 300,000	
														CARROTS	15bags	Tsh 450,000	Tsh 200,000	Tsh 250,000	
3	GELARD JOSEPH		HARVESTING				PLANTING			PLANTING HARVESTING	PLANTING		HARVESTING	POTATOES	3bags	Tsh 210,000	Tsh 70,000	Tsh 140,000	Tsh 430,000
														ZUCCHINI	100kg	Tsh 150,000	Tsh 50,000	Tsh 100,000	
														CARROTS	8bags	Tsh 240,000	Tsh 50,000	Tsh 190,000	
4	RAMADHAN HASSAN		HARVESTING HARVESTING							PLANTING		PLANTING PLANTING	HARVESTING	POTATOES	9bags	Tsh 720,000	Tsh 300,000	Tsh 420,000	Tsh 820,000
														CARROTS	11bags	Tsh 440,000	Tsh 200,000	Tsh 240,000	
														CABBAGE	12bags	Tsh 360,000	Tsh 200,000	Tsh 160,000	
5	DAUDI RASHIDI		HARVESTING				PLANTING			PLANTING HARVESTING		PLANTING	HARVESTING	POTATOES	15bags	Tsh 1,200,000	Tsh 360,000	Tsh 840,000	Tsh 1,990,000
														BROCCOLI	200kgs	Tsh 300,000	Tsh 100,000	Tsh 200,000	
														CARROTS	20bags	Tsh 1,200,000	Tsh 250,000	Tsh 950,000	
6	JUMA AMIRI		HARVESTING					PLANTING		PLANTING	HARVESTING PLANTING	PLANTING	HARVESTING	POTATOES	16bags	Tsh 1,280,000	Tsh 350,000	Tsh 930,000	Tsh 1,730,000
														BROCCOLI	400kgs	Tsh 800,000	Tsh 200,000	Tsh 600,000	
														G.PEPPER	200kgs	Tsh 300,000	Tsh 100,000	Tsh 200,000	
7	TWAHA								PLANTING PLANTING	PLANTING		HARVESTING HARVESTING	HARVESTING	POTATOES	7gunia	Tsh 490,000	Tsh 250,000	Tsh 240,000	Tsh 915,000
														COWLFLOWER	300kgs	Tsh 600,000	Tsh 200,000	Tsh 400,000	
														CELERY	250kgs	Tsh 375,000	Tsh 100,000	Tsh 275,000	
8	AMIRI DAUNGO		PLANTING	PLANTING	PLANTING	HARVESTING	HARVESTING	HARVESTING						CARROTS	10bags	Tsh 500,000	Tsh 150,000	Tsh 350,000	Tsh 730,000
														COWLFLOWER	150kgs	Tsh 300,000	Tsh 150,000	Tsh 150,000	
														POTATOES	8bags	Tsh 480,000	Tsh 250,000	Tsh 230,000	
9	SHABAN MAKASI		HARVESTING		PLANTING			HARVESTING		PLANTING		PLANTING	HARVESTING	CABBAGE	25bags	Tsh 1,000,000	Tsh 350,000	Tsh 650,000	Tsh 1,890,000
														POTATOES	15bags	Tsh 1,200,000	Tsh 300,000	Tsh 900,000	
														CABBAGE	12bags	Tsh 600,000	Tsh 260,000	Tsh 340,000	
10	ABDALAH OMARI						PLANTING	PLANTING		PLANTING HARVESTING	HARVESTING		HARVESTING	POTATOES	10bags	Tsh 700,000	Tsh 200,000	Tsh 500,000	Tsh 650,000
														CABBAGE	3bags	Tsh 120,000	Tsh 70,000	Tsh 50,000	
														CARROTS	10bags	Tsh 200,000	Tsh 100,000	Tsh 100,000	

ANNEX 06: Report for Demonstration with YARA

Report on Demonstration with YARA

1 Objectives

Objectives of this activities are as follows.

(i) To test the YARA fertilizers how they respond to potatoes production (Winner, Nitrabor, Tracel BZ)
(ii) To check the quality of potato will be produced
(iii) To check the grows margin of YARA fertilizers Visa DAP which is commonly usable for potato production

2 Processes and Results

1st Demonstration was conducted in Kwesine. The 2nd was attempted in the three villages, including

(i) On-farm Training by YARA
(ii) Planting by using YARA winner fertilizer
(iii) Top dressing by YARA winner fertilizer
(iv) Weeding
(v) Spraying of fungicides and insecticides
(vi) Spraying foliar feed Tracel BZ
(vii) Spraying of fungicide
(viii) Earthling up of potatoes

Processes are monitored and results summarized in the monitoring format (See Attachment 01).

3 Achievements and recommendations

Following achievements are made in this activity.

(i) Planting of potatoes in ridges
(ii) Spacing: plant to 20 cm , row to row 1 metre, so more plants per unit area.
(iii) The use of YARA Mila Winner has increased for example in Maringo 1000kgs has been bought and being used for potato production.
(iv) The use of YARA fertilizers with the improved techniques is most recommendable for farmers.

4 Challenges and measures taken

The bacterial wilt has affected the potato trials in Boheloi and Kwesine. All the affected plant were uprooted and buried.

- Clean seed MUST be used so as to get the good results of the use of YARA fertilizers.
- Also chemicals should be supplied to the farmers who are dealing with the demonstration plots.

M&E Format for Potato Demonstration 2014

1.0	**Village**	Kwesine (Farmer: Shenzigwa)			Boheloi (Farmer: Angelina)			Malingo (Farmer: Hon. Lucas Shemndolwa)			Malingo (Farmer: Chalers Mbaga)		
2.0	**Suporters**	JICA & YARA CO. LTD			JICA & YARA CO. LTD			JICA/YARA CO. LTD			JICA/YARA CO. LTD		
3.0	**Acre**	228		m2	230		m2	870.8		m2	246		m2
4.0	**Variety planted**	Kidinya			Kidinya			Kidinya			Kidinya		
5.0	**Techniques applied**	1. Spacing plant to plant 20cm 2. New fertilizers (Winner, Nitrabor, Tracel BZ)			1. Spacing plant to plant 20cm 2. New fertilizers (Winner, Nitrabor, Tracel BZ) 3. More application of fertilizers			1. Ridges 2. Yara Fertilizers (Winner, Nitrabor, Tracel BZ) 3. Spacing plant to plant 20cm			1. Ridges 3. Spacing plant to plant 20cm 2. Yara Mila Fertilizers		
6.0	**Production Costs**	Quantity	Cost (Tsh)	Remark	Quantity	Cost (Tsh)	Remark	Quantity	Cost (Tsh)	Remark	Quantity	Cost (Tsh)	Remark
6.1	**Land Clearing**		6,000			10,000		1 person	14,000			9,000	
6.2	**Ploughing**	3 people@5,000	15,000					1 person	10,000				
6.3	**Making ridges**								10,000			6,000	
6.4	**Potato seeds**	3 Tins@6000	18,000		3Tins@10,000	30,000		12 tins @ Tshs 7,000	84,000		3 tins@Tsh 7,000	21,000	
6.5	**Fertilizers**		16,480			16,480		1. Winner - 80kg (Tsh 87,000) 2. Nitrabor - 8kg (Tsh 8,000) 3.Tracel BZ - 125G (Tsh 1,500)	96,500		40kg Winner 4kg Nitrabor	45,000	
6.6	**Planting**	2 people@ 5,000	10,000		3people@5,000	15,000		5 person @ 5,000 for 2days	50,000		3 person @ 5,000 for 2days	15,000	
6.7	**Fungicides**	Ivory 72 (1kg)	8,000		Linkomil 0.5 litre	7,000		Purchase Tsh 36,000	36,000			10,000	
6.8	**Pesticides**	Selecron (300mm)	6,000		Selecron	4,500		Purchase	48,000			6,000	
6,9	**Foliar spray (vigimax)**											3,000	
6.1	**Spraying**	4times@5,000	20,000		4 times@Tsh 3,000	12,000	Casual Labour		60,000	Casual Labour		9,000	
6.1	**Aquawet**							5pc @Tsh 3,500	17,500	Sticker			
6.1	**Weeding**	2 people@ 5,000	10,000		2people@5,000	10,000		4 persons @ Tsh 5,000	20,000			9,000	Incl. Topdressing
6.1	**Irrigation**											10,000	
6.1	**Earthing up**	2pe0ple@5,000	10,000			5,000		5 persons @ Tsh 5,000	25,000			6,000	
6.2	**Harvesting**	3people@5,000	15,000		4people@5,000	20,000		5 persons@ Tsh 5,000	25,000		5 persons@ Tsh 5,000	25,000	
	Total		**134,480**			**129,980**			**496,000**			**174,000**	
7.0	**Process & Monitoring**	1. Planted date: 23/03/2014 2.Topdressing (Winner): 25/04/2014 3. Spraying fungicides & insecticide: 24/04/2014 4. Weeding : 25/04/2014 5. Eathing up: 9/05/2014 6. Uprooting of Bacterial wilt plants:9/05/2014 7. Topdressing (Nitrabor): 21/05/2014 8. Spraying fungicide & Aquawet: 21/05/2014 Low yield due to: 1. Diseaes (Bacterial wilt) 2. Continous heavy rains 3. Poor quality seeds 4. Potatoes was not planted in the plot before			1. Planted date: 29/03/2014 2. Topdressing: 25/04/2014 3. Spraying fungicide: 25/04/2014 4. Weeding:11/05/2014 5. Uprootingof bacterial wilt plants: 11/05/2014 6. Spray of insecticide: 11/05/2014 7. Spray of fungicide plus sticker: 19/05/2014 8. Eathing up: 19/05/2014 9. Topdressing of Nitrabor ,Tracel BZ:26/05/2014 10. Spraying of fungicde: 02/06/2014 Low yield due to: 1. Diseaes (Bacterial wilt) 2. Continous heavy rains 3. Poor quality seeds 4. Potatoes was not planted in the plot before			1. Planted date (winner) : 03/04/2014 2. Topdressing (winner): 05/ 05/ 2014 3. Topdressing (Nitrabor & Tracel BZ) and Eathing 12/05/2014 4. Spraying fungicide 20 times 5. Spraying insecticide 2times			1. Planted date: 27/03/2014 2. Weeding date: 26/04/2014 3.Topdressing,spraying,pesticide and spraying fungicide: 05/ 05/ 2014 4. Foliar spraying (Tracel BZ) : 26/04/2014 5. Topdressing (Nitrabor): 20/05/2014 6. Spraying fungicide, insecticide: 20/05/2014 7. Watering once every week		
8.0	**Production**			**216 Kg**			**314Kg**			**2,750Kg**			**630Kg**
9.0	**Price**	Sales 54kg@ Tsh 335 = 18,090 Sales 54kg@Tsh 280 = 15,120 Sales 54kg@ Tsh 195 = 10530 Rotten 54kg		Tsh/kg	Sales 122kg@Tsh 335 = 40,870 Seeds 68kg@ Tsh 390 = 26,520 Rotten 134 kg Home consuption 10kg					55,000 Tsh/bag	400kg@Tsh 600 = 240,000 1bag@ Tsh 55,000=55,000 80kg @Ths3889= 31,120		Tsh/bag
10.0	**Revenue**			**Tsh 43, 750**			**Tsh 67,390**			**Tsh 1,375,000**			**Tsh 326,120**
11.0	**Profit/Loss**			**Tsh (90,740)**			**Tsh (62,590)**			**Tsh 879,000**			**Tsh 152,120**

ANNEX 07: SURVEY OF APPROPLIATE FINANCIAL INSTITUTION TO BE USED BY FARMERS GROUP TO BORROW MONEY THEIR PROJECT DEVELOPMENT

The survey was conducted in Dar-salaam city on 30th Sept. 2014 to 02nd October 2, 2014.

The survey involved 2 staff from MAFC- Including JICA-RADAG staffs, 2 Staff from LCD and 1 farmer from ULT-group.

Main purpose of the survey was to identify an appropriate financial institution(FI) to be used by farmers to acquire loan for difference activities, several financial institutions include TIB, CRDB-MFSCL, MFUKO WA PEMBEJEO,SELF, FINCA, DCB and PRIDE were visited.

Major findings from the survey are as follows:-

- **Title Deed** for land and buildings for the borrower is required in most FI. Traditional/Customary Title deed approved by Primary court is temporary accepted by FI
- **Audited reports** of 2-3 years of their business activities is required
- **Preparation of Business plan** is also highly recommended.
- SACCOS and AMCOs are more recommended/preferably by most FI

Due to those observations the following are some of recommendations/ action to be taken:-

- DAICO office should facilitate farmers group especially ULT to acquire the Title Deed for land and buildings or temporary one approved by Primary court to be used as **collateral for loans.**
- DAICO office to facilitate DCOs to do auditing of all AMCOs, SACCOs, and Famers group especially ULT
- ULT should be ready to submit the required information's/data for auditing
- AMCOs and SACCOs in the District should be recommended instead of farmers group and the existing ones should be strengthened
- All AMCOs, SACCOs and Farmers group should be trained on business planning and record keeping to facilitate auditing.

ANNEX 08: Letter Format for Customary Title Deed

HALMASHAURI YA WILAYA YA LUSHOTO

Ofisi ya Mtendaji wa Kijiji/Kata

Kijiji cha……. Kata ya…….

S.L.P……

LUSHOTO

Tarehe…….
Kwa:……
……
……..

YAH: UTAMBULISHO WA MALI KWA MADHUMUNI YA DHAMANA YA MKOPO

Mada tajwa hapo juu yahusika.

Kwa barua hii, tunathibitisha kwamba kikundi cha……amabacho kinatambuliwa kisheria kwa usajili **Namba**……..kinamiliki mali aina ya……na…….chenye/yenye eneo la ……m^2 na thamani isiyopungua Tsh……hapa kijijini……

Mali hii/hizi ni huru kwenye Taasisi za Mikopo, yaani haijawahi/hazijawahi kufanywa dhamana/siyo dhamana kwenye Taasisi yeyote ya Mikopo au mtu yeyote. Kama inavyothibitishwa hapa chini :-

Katibu wa Kikundi: Nathibitisha kwamba yote yaliyoandikwa hapo juu ni ya kweli tupu.

Jina:……..
saini……..Tarehe……

Mtendaji Kijiji/Kata.

Nathibitisha kwamba yaliyoelezwa kwenye barua hii ni ya kweli tupu.

Jina:…….Saini:……Tarehe:…….....

Afisa Ardhi Mteule.

Nathibitisha kwamba yaliyoelezwa kwenye barua hii ni ya kweli tupu.

Jina:……Saini:……Tarehe:……

Mbele ya Kamishna wa viapo (Hakimu/Wakili)

Jina:……**Saini:**……

Wadhifa:……**Tarehe:**……

ANNEX 09: FARMERS' SITUATION AND INCOME RECORDS FOR FY2013
(Malingo, Kwesine and Boheloi)

January 2015
LUSHOTO DC

1. Introduction

1.1 Background

Lushoto DC and JICA-RADAG are supporting VC of potatoes and vegetables from production, grading, parking and marketing under DADP planning in the three pilot villages, namely Malingo, Kwesine and Boheloi.

One of the key issues in supporting the farmers is to capacitate them for keeping records of production and income, so that they can do agriculture as business. To this end, Lushoto DC and JICA-RADAG conducted a farmer-participatory survey to collect baseline data. The survey was carried out from September to October 2014 for 51 households at the three villages.

1.2 Objectives of the survey and this report

The purposes of the survey are:

- To make farmers recognize how much they spend for and gain from horticultural production; and
- To provide Lushoto DC with information that will assist them in monitoring and evaluation of DADP projects.

The purpose of this report complies with the second objective of the servey.

1.3 Methodology and its Limitation

The survey adopted the following methodologies:

- Individual Household Method to measure indicators per household that can later be used to assess impact while also capturing aspects that may influence outcomes.
- Focus on key aspects of the farmers life, which include farm family annual income measured through "gross receipts" from sales of targeted crops (potatoes and vegetables) and others relating to wealth or family wellbeing, gender equality, marketing and credit financing. The questionnaire used for the survey is available in Annex 01.
- Participatory record keeping: unlike other baseline survey conducted by external consultants, the survey has a unique characteristics in that farmers measures their land and record their production and income by themselves under the facilitation of extension officers.
- Establishment of the database: using the excel file. Extension officers with the assistance of JICA-RADAG entered data collected from the survey.

- Pivot table analysis: using the excel function. After receiving the training by JICA-RADAG, the extension officers made analysis.

On the other hand there are some limitations of this methodologies as follows.

- Unreliability of data: the survey was conducted in September and October 2014 to review the performance of 2013. Hence the memories of farmers, when asked to review the last year, might not be not reliable in terms of accuracy. Also most of them were not conversant with calculating production, cost and benefits. Even extension officers did not have enough capacities to check the validity of data when collecting from them. Through the OJT with JICA-RADAG, some data, after found it was not realistic, were revised by conforming with farmers. It must be admitted, however, that there are still questions on the reliability of information.
- Time consuming due to lack of man powers: data entry requires a lot of man powers. For this survey major parts of data entry have been done by JICA-RADAG. For the future it is important for district officers to undertake this hard task.

2 Findings

2.1 No. of farmers recorded

The questionnaires were taken from the 51 households in three village with two different group type, i.e. Business for those engaged direct delivery business and Production for those who has not yet joined the direct-delivery business but participates in various training provided by Lushoto DC and JICA-RADAG

Village/Group type	Female	Male	Total
Boheloi	**1**	**9**	**10**
Business	1	2	3
Production		7	7
Kwesine	**2**	**17**	**19**
Business	2	5	7
Production		12	12
Malingo	**9**	**13**	**22**
Business	3	6	9
Production	6	7	13
Total	**12**	**39**	**51**

2.2 General situation

(1) No of family members

The table below shows that average family member from the three village 6.4 and maximum family members is 18 and Minimum family members is 2.

Village	Average of No. of family members	Max.	Min.
Boheloi	6.4	14	2
Kwesine	7.7	18	3
Malingo	5.3	10	3
Total	**6.4**	**18**	**2**

(2) House Type

The table below shows that out of 51 households recorded, 23 households built houses by burnt bricks, 26 households built by wood and 2 households built by mud bricks.

House Type	Burnt brick Kuchoma	Wood Miti	Mud brick Tope	Total
Boheloi	1	9		10
Kwesine	4	15		19
Malingo	18	2	2	22
Grand Total	**23**	**26**	**2**	**51**

(3) Roof Type

Out of 51 households, 43 have iron sheet roofing and other 8 have tin materials roofing.

Roof Type	Iron type Bati	Tin type Debe	Total
Boheloi	10		10
Kwesine	12	7	19
Malingo	21	1	22
Grand Total	**43**	**8**	**51**

(4) Assets owned (Availability of Facilities)

The table below shows the lists and number of the assets owned by the households.

Village	Boheloi	Kwesine	Malingo	Total	Remark
1.Electrificated house	5	1	5	11	
2. Radio	13	19	20	52	8 has two while 7 has none.
3. TV	4	5	4	13	
4. Bicycle	0	8	13	21	
5. Motorcycle	3	6	8	17	
6. Car	0	0	2	2	2 big business men in Malingo.
7. Refrigerator	1	0	0	1	
8. Electric fan)	2	0	0	2	
9. Cooking Energy	10	19	22	51	Everyone has one
10. Sewing machine	2	4	1	7	
11. Toilet	10	19	22	51	Everyone has one.
12. Crop storage facility	1	1	20	22	This is a local storage used in preserving maize in Malingo while others uses top of the roof.

(5) Average land size (M^2)

The table below shows the average land size by square meter. This indicate that more or less they own around 1 acre for farming (Note: 1 acre = 4047 M^2). And most of the land used for agriculture is owned by farmers themselves.

Land size	1) Own & Use	2) Own but lend to others	3) Borrow from others	= 4) Total 1) + 2) +3)
Boheloi	3,422	-	1,074	4,496
Kwesine	6,240	-	217	6,457
Malingo	3,303	42	50	3,370
Total	**4,421**	**18**	**313**	**4,741**

2.3 Gender Equity

(1) Farming practice

The table below shows the responsibility of farming practice by gender. In many cases, spraying/ Application of fertilizers and packing are undertaken by husbands. Husbands also controls farm incomes.

Tasks		Responsibility		
		Wife only	Husband only	Both
1	Land Preparation *	3	5	43
2	Sowing / Planting/Transplanting	3	3	45
3	Weeding	7	1	43
4	Watering	3	6	42
5	Spraying/ Application of Fertilizers	0	38	13
6	Harvesting	3	0	48
7	Packing	2	22	27
8	Selling	2	14	35
9	Who know/control family income/expenditure?	3	25	23

(2) Ownership of Land

The table below indicates the sense of ownership of land by gender. As regards ownership and decision making, around half of the households states that the power is concentrated mainly on husbands.

Ownership	Wife Only	Husband Only	Both	Children
Who owns?	1	20	30	0
Who makes decisions?	1	27	23	0
Who uses it?	1	0	50	0
Who benefits more	0	0	51	0
Who inherits it	3	10	28	10

(3) Ownership of House

The table below indicates the sense of ownership of houses by gender. Similar observation can be made to the case of land. For half of the households recorded, the ownership and decision making are of husbands.

Ownership	Wife Only	Husband Only	Both	Children
Who owns?	1	19	31	0
Who makes decisions?	1	25	25	0
Who uses it?	1	1	49	0
Who benefits more	1	1	49	0
Who inherits it	4	10	29	8

(4) Ownership of Storage

As indicated in 2.2.(4), most of the households do not have storage facilities except for small

one for maize. There is no strong finding on this question.

2.4 Income Analysis

（1） Average Yield per major crop (kg/ha)

The following table shows the average yield of major horticultural crops (kg/ha).

The low yield per hectare of beans (mg) from Kwesine and Boheloi was due to mix cropping of maize and beans. The data for snow peas and zucchini are in question in terms of accuracy. However, if the farmers are proud of themselves producing these crops, s/he could be a key farmer in the village so others they required to learn from him especially in this crop.

Crop (code)	No.of producers	Boheloi	Kwesine	Malingo	Ave. Yield (kg/ha)
Broccoli (br)	1			9,906	9,906
Beetroot (bt)	2	11,182			11,182
Cauliflower (cf)	8	19,386		5,407	7,154
Carrot (cr)	7		5,437	22,223	17,427
Cucumber (cu)	1	9,257			9,257
Green beans (gn)	1	5,010			5,010
Green paper (hh)	21	13,710	14,016	17,768	15,595
Cabbage (kb)	16	24,561	19,944	18,941	21,174
Lettuce (lt)	4	8,849		9,375	8,980
Beans (mg)	7	333	776		713
Maize (mh)	11	4,924	1,574	3,707	3,596
Salad (sl)	10			14,172	14,172
Snow peas (sp)	1	17,699*			17,699
Tomatoes (tm)	18	14,926	17,501	17,508	16,359
Irish potato(vz)	39	9,130	8,769	12,684	10,704
Zucchini (zc)	2	32,468*		2,472	17,470

Note: * The data are questionable in terms of accuracy.

(2) Average Net income per M^2

The table below shows the average net income per M2 and major crop. Again, data regarding snow peas and zucchini may not be accurate. The negative average net income from Kwesine show that at that time the price of Carrot (cr) it was very low. While the negative average income of Beans (mg) of Boheloi show that some amount of beans uses for food. (Questionnaire exclude value for home consumption)

Crop	No.	Boheloi	Kwesine	Malingo	Ave. Net Income
Broccoli (br)	1			451	451
Beetroot (bt)	2	912			912
Cauliflower (cf)	8	145		395	364
Carrot (cr)	7		(6)	449	319
Cucumber (cu)	1	109			109
Green beans (gn)	1	394			394
Green paper (hh)	21	330	121	362	244
Cabbage (kb)	16	554	391	366	440
Lettuce (lt)	4	473		202	405
Beans (mg)	7	(11)	2		0
Maize (mh)	11	51	11	86	39
Salad (sl)	10			336	336
Snow peas (sp)	1	2,313*			2,313
Tomatoes (tm)	18	246	167	510	336
Irish potato(vz)	39	108	105	302	201
Zucchini (zc)	2	2,674*		94	1,384

Note: * The data are questionable in terms of accuracy.

(3) Average Household Net Income

The table below shows the average household income per target village. The average income per household is around 2 million including non-agricultural income such as livestock, shops, renting motor cycles. Some question should be posed to data of Kwesine in which 2 households recorded the negative balance of their home economy, even though we checked them for confirmation.

Income/Crop	Boheloi	Kwesine	Malingo	Ave.Income (Total / 51)
Others (Non- Agri)	178,039	83,824	169,412	431,275
Average Income (Agri + Non-Agri)	2,176,718	666,433	2,257,986	1,678,733

2.4 Loan

Out of 51 households from the three villages only 8 applied for the Loan (7 borrows from VICOBA and 1 from another source). And all comes from Kwesine, where VICOBA operation is active as compared to other two. The loan amount varies from Tsh 100,000 to Tsh 1 million. Major purposes of borrowing are for agriculture and small business operation with, in many cases, interest rate of 10% per year.

Did you apply for the Loan?	Sample No.
(No.) h	43
(Yes) n	8
Grand Total	**51**

2.5 Marketing

(1) Major Marketing Place recognized

Most of the farmers recognized that their major markets were within Lushoto area through middle man. There are some farmers who expressed that their market were Dar es Salaam and Tanga especially in Boheloi: some of them originally were the members of ULU and ULT.

Village	Boheloi	Dar	Korogwe	kwesine	Lukozi	Malingo	Sijui	Soni	Tanga	Total
Boheloi	2	4					3		1	10
Kwesine		1		2				14	2	19
Malingo		1	1		16	3			1	22
Total	**1**	**6**	**1**	**2**	**17**	**3**	**3**	**14**	**4**	**51**

(2) Group or Individual

All of them sold their vegetables and Potatoes by individuals.

(3) To whom they sell

Most of the farmers from the three villages sold their vegetables and potatoes to middle man (wl). Few of them sold to Retailers (wr) around Lushoto District.

Village	Middleman (wl)	Retailers (wr)	Total
Boheloi	8	2	10
Kwesine	14	5	19
Malingo	18	4	22
Total	**40**	**11**	**51**

HOUSEHOLD INTERVIEW SURVEY Sample No.:

Data should be BEFORE TRAINING (January – September 2013)

Date:____/ /____ Village: _____ Ward_____

Name: _____Sex (M/F): _____

Mob:- No. _____

Section 1: General Information

1.1 The number of household members living together: _____

Section 2: Living Condition

2.1Type of House:- Wooden [ ], Mud brinks [ ], Burnt brinks [ ], Concrete blocks [ ]

Others…… State type of roofing materials……

2.2 Availability of Facilities in your house

Available Facilities	No. of unit	Condition
1.Electrification of the house	Yes/No	Working [ ] Not working [ ]
2. Radio	Unit	Working [ ] Not working [ ]
3. TV	Unit	Working [ ] Not working [ ]
4. Bicycle	Unit	Working [ ] Not working [ ]
5. Motorcycle	Unit	Working [ ] Not working [ ]
6. Car	Unit	Working [ ] Not working [ ]
7. Refrigerator	Unit	Working [ ] Not working [ ]
8. Electric fan	Unit	Working [ ] Not working [ ]
9. Sewing machine	unit	Working [ ] Not working [ ]
10.Cooking Energy Source……..	unit	Working [ ] Not working [ ]
11. Toilet	unit	Working [ ] Not working [ ]
12. Crop storage facility if any	unit	Working [ ] Not working [ ]

2.3 Farms Size:

Type of Land	Size	Unit (Acres or M^2)
1) Own & Use		
2) Own but lend to others		
3) Borrow from others (incl. without fee)		
4) Total = 1) + 2) +3)		

2.4 Gender Equality in farming activities (Please check with √)

	Tasks	Responsibility		
		Wife only	Husband only	Both
1	Land Preparation *			
2	Sowing / Planting/Transplanting			
3	Weeding			
4	Watering			
5	Spraying/ Application of Fertilizers			
6	Harvesting			
7	Packing			
8	Selling			
9	Who know/control family income/expenditure?			

2.5 Ownership of Land

Ownership	Husband Only	Wife Only	Both	None
Who owns?				
Who makes decisions?				
Who uses it?				
Who benefits more				
Who inherits it				

2.6 Ownership of House

Ownership	Husband Only	Wife Only	Both	None
Who owns?				
Who makes decisions?				
Who uses it?				
Who benefits more				
Who inherits it				

2.7 Ownership of Storage Facility

Ownership	Husband Only	Wife Only	Both	None
Who owns?				
Who makes decisions?				
Who uses it?				
Who benefits more				
Who inherits it				

HOUSEHOLD INTERVIEW SURVEY

Sample No.:

Section 3: Production Costs and Income

3.1 Fill up the table below based on the last year (January- September. 2013)

Crop:___________________
Area:___________________(Acres [ ] or M^2 [ ])
Grown Period:__________ **to** __________

Item/Activity	Cost
Land Preparation	
Seed buying/preparation	
Basic Fertilizer and Fertilization cost	
Sowing / Planting/ Transplanting	
Weeding two to three times	
Watering three to five times	
Second Fertilizer and Fertilization cost	
Insect side, Chemicals and Spraying cost 2 to 4 times	
Harvesting materials cost (bags, trays etc)	
Harvesting	
Packing	
Transportation	
Selling	
Total	

Crop:___________________
Area:___________________(Acres [ ] or M^2 [ ])
Grown Period:__________ **to** __________

Item/Activity	Cost
Land Preparation	
Seed buying/preparation	
Basic Fertilizer and Fertilization cost	
Sowing / Planting/ Transplanting	
Weeding two to three times	
Watering three to five times	
Second Fertilizer and Fertilization cost	
Insect side, Chemicals and Spraying cost 2 to 4 times	
Harvesting materials cost (bags, trays etc)	
Harvesting	
Packing	
Transportation	
Selling	
Total	

Crop:___________________
Area:___________________(Acres [ ] or M^2 [ ])
Grown Period:__________ **to** __________

Item/Activity	Cost
Land Preparation	
Seed buying/preparation	
Basic Fertilizer and Fertilization cost	
Sowing / Planting/ Transplanting	
Weeding two to three times	
Watering three to five times	
Second Fertilizer and Fertilization cost	
Insect side, Chemicals and Spraying cost 2 to 4 times	
Harvesting materials cost (bags, trays etc)	
Harvesting	
Packing	
Transportation	
Selling	
Total	

HOUSEHOLD INTERVIEW SURVEY Sample No.:

Data should be BEFORE TRAINING (January – September 2013)

I. Crop	Grown season	1) Area cultivated		2) Total Production		3)Volume sold		4) Average Price / Unit	5) Income = (3 x 4)	8) Production Cost	9) Net Income =(7 – 8)
		Unit	Area	Unit	No.	Unit	No.	Tsh	Tsh	Tsh	Tsh
1. Potato		Acre [v] M^2 [ ]		bags	15	bags	15	55,000			
2.		Acre [ ] M^2 [ ]									
3.		Acre [ ] M^2 [ ]									
4.		Acre [ ] M^2 [ ]									
5.		Acre [ ] M^2 [ ]									
II Other business											Net incomes
1.											
2.											
3.											
TOTAL (= Crop + Other businesses)											

Section 4: Utilization of Credit/Loan

4.1 Did you acquire any credit/loan in 2013 _____(Yes/No)

4.2 If yes, which institution offers/ed you the credit/loan?

1. SACCOS [ ] 2. NGOs [ ] 3. VICOBA [ ] 4 .Others [ ] Specify _____

4.3 If yes, what are the purposes of applying the credit/loan?

Code for Purpose of loan

1. Crop production (seeds, laborers, etc.) [ ]
2. Rent for Land [ ]
3. Private business operation [ ]
4. Education [ ]
5. Medical treatment [ ]
6. Rent for House [ ]
7. Purchase of assets (audio, transportation facilities, etc.)[ ]
8. Others [ ] (Specify)……..

4.4 How much did you borrow the loan? How long? Tsh……. From ……. To …….

4.5 How much was the interest rate of the loan…….%

4.6 Was the loan enough to satisfy your needs? YES/NO

4.7 If NO why?.....

4.8 Which kind of collateral/conditions were required by your financial Institution to get the loan

……
……
……

Section 5: Marketing

5.1 Where are the most of your vegetables and Potatoes consumed?

Dar es Salaam [ ] Others (Specify) […… ……] Do not know [ ]

5.2 Did you sell in groups or individually?

5.3 Did you Sell your Products through:- Middle man [ ], direct to Retailer [ ] or Consumer [ ] **Tick by "V"**

ARUSHA STUDY TOUR REPORT

1.0 INTRODUCTION

The study tour was conducted for three days which was from 16th up to18th March 2016. The visit involved two regions that is Arusha and Kilimanjaro. The participants involved in this activity were 11 as explained in the table below:-

S/N	Name of the Participant	Name of his/her Organization	Title of the Participant
1	Merius Nzalawehe	Ministry of Agriculture, Livestock and Fisheries- AGRICULTURE	PAFO I
2	Geturude Sombe	Ministry of Agriculture, Livestock and Fisheries- AGRICULTURE	Economist
3	Issa Khatibu	Agricultural Officer from Tanga Regional Administrative Secretariate	RAS
4	Dr. Hussein B. Shelukindo	Lushoto District Council	DAICO
5	Ippei Itakula	JICA - RADAG	Deputy Chief Advisor
6	Noah T. Pallangyo	Lushoto District Council	PAFO I
7	Tito D. Kayugumya	Lushoto District Council	DCO
8	Samson Mwasongwe	JICA - RADAG	JICA- Technical Assistant
9	Rajabu Mgonja	Usambara Lishe Trust (ULT)	Chair Person & Farmer of ULT
10	Japhari Shemkai	Usambara Lishe Trust	Farmer of ULT
11	Romana Ernest	Usambara Lishe Trust	Farmer of ULT

2.0 THE PURPOSE OF CONDUCTING THIS ACTIVITY

The activity was financed by JICA – RADAG in collaboration with Lushoto District Council under Lushoto Value Chain Project. The main purpose of conducting this activity was to generate and exchange of experience and good practices between Arusha and Kilimanjaro farmers/staff, Lushoto farmers/staff and few staff from the Ministry of Agriculture, Livestock and Fisheries- Agriculture who are working with JICA –RADAG. The study motivated participated farmers and staff from the experience

they got from learning good practices on horticulture value chain activities done by group of farmers, private and government institutions in Arusha and Kilimanjaro Regions.

3.0 APPROACHES USED TO ACOMPLISH THE ACTIVITY

During this visit different institutions and organizations were visited by the participant of this activity as mentioned in the table below:-

S/N	NAME OF THE ORGANIZATION/INSTITUTION VISITED
1	Horti Tengeru- Horticultural Research and Training Institute Tengeru
2	AVRDC – Asian Vegetable Research and Development Center
3	ACHO – East Africa Impact Center (A global Christian Organization)
4	Kilimanjaro Natural Food Cooperative Society (Horticulture AMCOS)
5	TAHA – Tanzania Horticulture Association
6	MUVIKIHO- Muungano wa Vikundi vya Kilimo cha Horticulture
7	RIJKZWAAN AFRISEM- An organization manufacturing veggies and train farmers

During the first day participants visited Horti-Tengeru whereby the principal of the Institution Second Master and the Head of researcher unit were met. In the principal's office we managed to discuss few issues concerning institution curriculum for the purpose of knowing whether marketing concepts are incorporated in their syllabus. The answer was yes that marketing concepts are in their teaching syllabus since 2009. He said this concept was introduced after detecting that there is a continuity high demand of vegetables and fruits which are perishable with market challenges. After this short discussion the team went to the institution farms whereby they saw nice carrots, Cabbages, Banana, Green houses with color pepper inside. The team members discussed within Tengeru experts on various aspects which can improve quality and quantity production of horticultural value chain.

The team continued to visit ECHO which is a global Christian organization that equips people with agricultural resources and skills to reduce hunger and improve the lives of the poor. In this organization the team succeeded to see many tree nurseries which provide over 200,000 tree seedlings per year to the surroundings villages. Participants of the study tour managed to know the most nutritious plants and medicinal plants grown in that area. There were a lot of things to be learnt from ECHO.

In the afternoon, the team went to AVRDC head office whereby they meet the regional director of the Institute. Immediately after the team arrived at this office the director explained to the visitor the background of AVRDC that is an NGO dealing with Vegetable research since 1992 and other

activities in Eastern and Southern Africa. Also the Institution is dealing with production of vegetable seeds which are used by farmers in these countries where they are operating.

In the second day the team visited Agricultural Inputs exhibition whereby farmers observed different Agriculture inputs and among them are not available in Lushoto, hence it motivated other farmers to buy such inputs. In the afternoon the team traveled to Moshi whereby we met the management team of Kilimanjaro Natural food cooperative Society (AMCOS). In the discussion with this AMCOS, the manager explained that the society was registered since 1991 with the main purpose of buying dried vegetables and fruits from its members and sell to big supermarkets. They continued to explain that always they buy almost seven (7) dried variety of fruits and vegetables from its members and sell them out. The group conducts general meeting for all its members every year whereby they discus income and expenses of the year and approve the proposed budget for the society. In order to strengthen its member's agricultural activities SACCO's activities were also initiated. This supports members to borrow some money and be able to conduct their activities in a commercial basis.

In the third day the team visited TAHA assistant director and the marketing manager and before we proceed with discussion the Manager was thankful with our visit to his office. In this association we managed to discuss various issues concerning improving horticulture activities. Moreover the director explained to us that in the real sense vegetables and fruits have many challenges. In such situation the association came with long term strategies by making sure that horticulture farmers are benefitting from their farms. One of the efforts is to connect farmers with local and external markets by ensuring that farmers get market information timely. A question and answer session went on for some time and of the question were critical challenges facing horticultural products. Without delay the director responded that nowadays there are many critical challenges but few to mention is the incidences of pests like *tuta absoluta* but in order to combat this problem TAHA prepared a special manual for farmers to deal with the challenge.

Regarding the challenges of spreading of fake fertilizers, he replied that TAHA communicated with responsible authorities likeTanzania Fertilizers Regulators Authority (TFRA) so as to overcome such problem.

After TAHA, the team traveled to USA river whereby we met the Secretary and Chairman of Group of farmers association of Horticulture that is (Muungano wa Vikundi vya Kilimo cha Horticulture – MUVIKIHO). In this association the secretary explained to us in detail that their association comprises of ten groups whom they deal with production of vegetables and fruits.

The secretary continued to explain that in their association they do contract farming and the main buyers of their products are HomeVeg, Free Gocan, Marice and Finelay. Also they do produce vegetable seeds in collaboration with Kibo Seed Company and Afrisem. So far the tour visitors asked various question to the chairman and secretary but question were clearly answered.

In the afternoon the team was taken to Afrisem, a private company whom they collaborate with MUVIKIHO what? in horticulture activities. At our arrival at this company we introduced one another, thereafter the assistant director straight explained to us that the main activity of this company is to manufacture vegetable seeds and sell such seeds direct to farmers. He also said that

the company train farmers freely on how to conduct good agriculture practices. Instantly the assistant director took our team to practical farms whereby we managed to observe various vegetables within the green house and outside. In this field various questions were raised by participants but all questions were well answered and finally assistant director and the managing director they agreed with Lushoto team member's request on conducting demonstration plots in Lushoto, hence they said they are ready at any time when we will invite them.

4.0 FINDINGS/OBSERVATION

In a summary the team learnt quite a lot of good practices and saw many good agriculture practices on horticultural value chain activities. To mention a few: cultivation of horticulture crops through ridges, good farming practices in Green house, Advanced drip Irrigation farming, proper use of agriculture inputs like fertilizers, hybrid seeds and by so doing a farmer can harvest more even if he/she has a small shamba. (all these few lesson mentioned were learnt at Tengeru, AVRDC and Afrisem) At this point farmers were highly motivated hence they decided to buy hybrid seeds at Afrisem Company after visiting their farms. Apart from that also the participants learnt the importance of financial transparency, faithfulness in management, adding value for vegetables and fruits for diversified and increased income.(Lesson learnt at Kilimanjaro Natural Food Cooperative Society) Farmers also learnt on how to get market information by sending the word TAHA to number 15670 then send number *149*159# to any communication net work.

5.0 WAYFORWAD/RECOMMENDATIONS

In conclusive speaking all participants managed to discuss in a wrap – up meeting at Afrisem training room and come up with the following recommendation:-

- Lushoto Farmers (ULT) promised to strengthen their association by improving management systems particularly transparency, financial management and increasing quality and quantity of fruits and vegetables.
- Also DAICO recommended that there is a need of getting more farm field school (mashamba darasa) so that many farmers can see and learnt/ adopt new technologies.
- There is a need to strengthening collaboration of stakeholders who deal with vegetables and fruits so as to increase production and income or farmers.
- The need to explore and receive market information so that farmers can reduce losses due to lack of markets for their produce.
- It is important to maintain quantity and quality of vegetables and fruits so as to meet the standard of local and international markets.
- Apart from that also RAS office recommended that ULT group should recognize that they are doing big business compared to other farmers groups visited, but unfortunately they don’t know their position.

- Lastly the representative from the ministry of Agriculture, Livestock and Fisheries suggested that farmers group must voluntarily work hand in hand with other stakeholders so as to cope with some new technologies in vegetables production as well as fighting against with critical challenges of horticulture activities.
- It was advised that due to inadequate of resources, all farmers should mobilize difference resources for the implementation of their agricultural activities.
- The team agreed to share the knowledge they got to other stakeholders.

6.0 Action-oriented Way forwards

The table underneath it shows different activity and responsible person/organization to accomplish it.

s/n	**Activity to be done**	**Responsible Person/Organization to accomplish the activity within three months (April - June 2016)**					
		NFT	DAICO/ DFT	JICA-RADAG	ULT Group	Besha Group	RAS
1	Dissemination of TAHA Mobile Market information	√	√	√	√	√	√
2	Farmers group Strengthen and improving management systems particularly transparency, financial management and increasing quality and quantity of fruits and vegetables.		√	√	√	√	
3	Introduction of more farm field school (mashamba darasa) so that many farmers can see and learn/ adopt new technologies		√				√
4	Strengthening collaboration of stakeholders who deal with vegetables and fruits so as to increase production and income or farmers	√	√	√			√
5	Maintain quantity and quality of vegetables and fruits so as to meet the standard of local and international markets.	√	√	√	√	√	√
6	Due to inadequate of resources farmers should mobilize deference resources for the implementation of				√	√	

	their agricultural activities						
7	Team share knowledge acquired from other stakeholders	√	√	√	√	√	√

7.0 CONCLUSION.

We thank you JICA- RADAC for funding and logistics. It was a wonderful study trip. It is our obligation to ensure that we take our farmers some steps ahead. It can be done, let everybody play his/her part.

MARKET SURVEY, POTENTIAL CROP DEVELOPMENT AND CONSUMPTION CAMPAIGN REPORT ON FRUITS AND VEGETABLE PRODUCES FROM LUSHOTO FARMERS

This activity was conducted in Dar-es-salaam for two days, i.e. from 30/10/2015 up to 31/10/2015. In performing this activity there were eleven participants who involved in this event namely: - four farmers representative from ULT, four staff from Lushoto District Council particularly from Department of Agriculture, Irrigation and Cooperatives and three staff from JICA-RADAG. Generally this activity was financed by JICA, for two days as stated above. This activity started at Tanzania Agricultural Development Bank and we managed to meet with Mr. Samuel A. Mshote (Credit Appraisal Manager) and Geofrey Mtawa (Bussines Development Manager). Actually after a whole team arriving to this Bank DAICO and Mr. Kimicho started to explain in detail the purpose of visiting the Bank, and then these two Managers as mentioned above started to describe to us the main purpose of the Government to initiate TADB. First of all they said it is to make sure that there is food security within Tanzania community, Second transform farmers from subsistence Agriculture to commercial Agriculture and finally to assist farmers who are in groups to access finance services (loans) that would help farmers carry out their farming activities more sustainably. Apart from that they explained, there are several conditions which are required by this bank (See the paper collected from the bank).

Hence at last we agreed with them that for the case of ULT to get loan from this bank first of all we must prepare a business plan and submit to this bank on 16 Nov 2015. In this plan it will show actual demand of loan and capability of every farmer to repay such loan. So far our team continued to Mzimuni basin (Segerea) whereby in this area we find Mr. Paulo Joseph, who is a farm manager, actually this guy he was so young but he managed to answer all questions we asked him. But he failed to mention actual seeds of mushroom where could be available. So far Mr. Pallangyo suggested that during introduction of this crop in Lushoto we can get such seeds at SUA.

Actually after observing these farms Lushoto DFT together with DAICO appreciated this type of Agriculture and we agreed to introduce this new system of production in Lushoto district.

Hence the DFT coordinator postponed the activity on that day by 16:45 Pm and everybody turned back to his hotel waiting tomorrow's activity.

SECOND DAY ON MARKETING ACTIVITY AND CONSUMPTION CAMPAIGN BY 31/10/2015 (Sartuday)

Early in the morning according to the agreed time, DFT and ULT Farmer representative all we meet around Rombo Hotel and we started our journey to Oyster bay Hotel, where there was Farmer's Open market. After few minutes we arrived at this hotel and one of the staff shows us

three tables where he said we can put Lushoto farm produces for exhibition and sales. Immediately after getting such space we started to arrange our table, and for a minutes Tegeta Women Group (Door to door Farm Fresh) arrived whom ULT Group contracted with them to supply their products. Generally after the arrival of Tegeta group we proceed to work in a team work by arranging Lushoto Vegetable brought by these women and three successfully farmers from ULT namely Juma Said Kambaga, Japhari Shemkai and Mama Rimoy represented by John Stephan in this arrangement we also managed to put rebels and prices for each products. Before finishing this arrangement many customers started to buy some of Lushoto products. Apart from that because we was conducting Vegetable Consumption Campaign one of our participant he cooked various veggies and after such food being ready, many customers they was interested to test by eating some of Lushoto Veggies hence our chef put those food in the plate and he allowed all customer to test the food.

Immediately after customers test Lushoto Veggies many customers bought various vegetables as follows:-

S/N	ITEMS	QUANTITY & PRICE	AMOUNT
1	Baby potato	1 Kg@ 2000	2,000
2	Round potato	10 kg @ 1000	10,000
3	Zucchini	20 pcs @ 1000	20,000
4	Beetroot	7 Pcs @ 1500	10,500
5	Red pepper	10 Pcs @ 1500	15,000
6	Yellow Pepper	10 Pcs @ 1500	15,000
7	Broccoli	15 Pcs 1500	22,500
8	Cauliflower	20 Kg@ 2000	40,000
9	Leeks	10 Pcs 1500	10,500
10	French beans	8 Packet @ 2000	16,000
11	Snow peas	8 Packet@ 2000	16,000
12	Lettuce	6 Batch @ 2000	12,000
13	White Cabbage	3 Pcs@ 1500	4,500
14	Red Cabbage	10 Pcs @ 1500	10,500
15	Celery	6 Batch @ 1000	6,000

16	Parsley	8 Pcs @ 2000	16,000
17	Carrot	10 Pcs @ 500	5,000
18	Fennel	2 Batch @ 1000	2,000
19	Okra /Bamia	4 Batch@ 2000	8,000
20	Dill	3 Batch @ 100	3,000
21	Cucumber	15 Pcs @ 2000	30,000
22	Spinach Chinese	8 Batch@1000	8,000
23	Spinach Swiss chard	10 Batch@ 1000	10,000
24	Tomato	5 Kg @ 1500	7,500
25	Kale	20 Batch @ 1000	20,000
	Total sales		**320,000/=**

Actually after customers finish testing those Veggies many of them they decided to buy such products for their home uses, in such circumstances Tegeta Women Group in collaboration with DFT and ULT farmers managed to sale many veggies in that day hence sales reaches up to 320,000/ which is so big compared to normal days they used to deliver to their customers that is say few veggies but high sales. Furthermore other customers bought these products and promised to continue ordering from Tegeta Women group so as to continue consuming Lushoto products because it has delicious test compared to other Veggies.

Apart from that many customers they appreciated Lushoto veggies due to its delicious, hence many of them promised to start ordering these vegetables from Tegeta Women Groups from reflects contacts and direct to farmers as they were given mobile phones by ULT farmers. Therefore during 17: 35 our DFT coordinator informed all participants to postpone sales Lushotos products hence he thanks' all participants for their good cooperation for the whole exercise. But he concluded by insisting farmers and Tegeta Women Group that for the coming Market all participant they must use their own fund to conduct the activity because now they know the market needs.

9.2 Farmers' Situation and Income Records for FY2013

FARMERS' SITUATION AND INCOME RECORDS FOR FY2013
(Malingo, Kwesine and Boheloi)

January 2015

LUSHOTO DC

1. Introduction

1.1 Background

Lushoto DC and JICA-RADAG are supporting VC of potatoes and vegetables from production, grading, parking and marketing under DADP planning in the three pilot villages, namely Malingo, Kwesine and Boheloi.

One of the key issues in supporting the farmers is to capacitate them for keeping records of production and income, so that they can do agriculture as business. To this end, Lushoto DC and JICA-RADAG conducted a farmer-participatory survey to collect baseline data. The survey was carried out from September to October 2014 for 51 households at the three villages.

1.2 Objectives of the survey and this report

The purposes of the survey are:

- To make farmers recognize how much they spend for and gain from horticultural production; and
- To provide Lushoto DC with information that will assist them in monitoring and evaluation of DADP projects.

The purpose of this report complies with the second objective of the servey.

1.3 Methodology and its Limitation

The survey adopted the following methodologies:

- Individual Household Method to measure indicators per household that can later be used to assess impact while also capturing aspects that may influence outcomes.
- Focus on key aspects of the farmers life, which include farm family annual income measured through "gross receipts" from sales of targeted crops (potatoes and vegetables) and others relating to wealth or family wellbeing, gender equality, marketing and credit financing. The questionnaire used for the survey is available in Annex 01.
- Participatory record keeping: unlike other baseline survey conducted by external consultants, the survey has a unique characteristics in that farmers measures their land and record their production and income by themselves under the facilitation of extension officers.
- Establishment of the database: using the excel file. Extension officers with the assistance of JICA-RADAG entered data collected from the survey.

- Pivot table analysis: using the excel function. After receiving the training by JICA-RADAG, the extension officers made analysis.

On the other hand there are some limitations of this methodologies as follows.

- Unreliability of data: the survey was conducted in September and October 2014 to review the performance of 2013. Hence the memories of farmers, when asked to review the last year, might not be not reliable in terms of accuracy. Also most of them were not conversant with calculating production, cost and benefits. Even extension officers did not have enough capacities to check the validity of data when collecting from them. Through the OJT with JICA-RADAG, some data, after found it was not realistic, were revised by conforming with farmers. It must be admitted, however, that there are still questions on the reliability of information.
- Time consuming due to lack of man powers: data entry requires a lot of man powers. For this survey major parts of data entry have been done by JICA-RADAG. For the future it is important for district officers to undertake this hard task.

2 Findings

2.1 No. of farmers recorded

The questionnaires were taken from the 51 households in three village with two different group type, i.e. Business for those engaged direct delivery business and Production for those who has not yet joined the direct-delivery business but participates in various training provided by Lushoto DC and JICA-RADAG

Village/Group type	Female	Male	Total
Boheloi	**1**	**9**	**10**
Business	1	2	3
Production		7	7
Kwesine	**2**	**17**	**19**
Business	2	5	7
Production		12	12
Malingo	**9**	**13**	**22**
Business	3	6	9
Production	6	7	13
Total	**12**	**39**	**51**

2.2 General situation

(1) No of family members

The table below shows that average family member from the three village 6.4 and maximum family members is 18 and Minimum family members is 2.

Village	Average of No. of family members	Max.	Min.
Boheloi	6.4	14	2
Kwesine	7.7	18	3
Malingo	5.3	10	3
Total	**6.4**	**18**	**2**

(2) House Type

The table below shows that out of 51 households recorded, 23 households built houses by burnt bricks, 26 households built by wood and 2 households built by mud bricks.

House Type	Burnt brick Kuchoma	Wood Miti	Mud brick Tope	Total
Boheloi	1	9		10
Kwesine	4	15		19
Malingo	18	2	2	22
Grand Total	**23**	**26**	**2**	**51**

(3) Roof Type

Out of 51 households, 43 have iron sheet roofing and other 8 have tin materials roofing.

Roof Type	Iron type Bati	Tin type Debe	Total
Boheloi	10		10
Kwesine	12	7	19
Malingo	21	1	22
Grand Total	**43**	**8**	**51**

(4) Assets owned (Availability of Facilities)

The table below shows the lists and number of the assets owned by the households.

Village	Boheloi	Kwesine	Malingo	Total	Remark
1.Electrificated house	5	1	5	11	
2. Radio	13	19	20	52	8 has two while 7 has none.
3. TV	4	5	4	13	
4. Bicycle	0	8	13	21	
5. Motorcycle	3	6	8	17	
6. Car	0	0	2	2	2 big business men in Malingo.
7. Refrigerator	1	0	0	1	
8. Electric fan)	2	0	0	2	
9. Cooking Energy	10	19	22	51	Everyone has one
10. Sewing machine	2	4	1	7	
11. Toilet	10	19	22	51	Everyone has one.
12. Crop storage facility	1	1	20	22	This is a local storage used in preserving maize in Malingo while others uses top of the roof.

(5) Average land size (M^2)

The table below shows the average land size by square meter. This indicate that more or less they own around 1 acre for farming (Note: 1 acre = 4047 M^2). And most of the land used for agriculture is owned by farmers themselves.

Land size	1) Own & Use	2) Own but lend to others	3) Borrow from others	= 4) Total 1) + 2) +3)
Boheloi	3,422	-	1,074	4,496
Kwesine	6,240	-	217	6,457
Malingo	3,303	42	50	3,370
Total	**4,421**	**18**	**313**	**4,741**

2.3 Gender Equity

(1) Farming practice

The table below shows the responsibility of farming practice by gender. In many cases, spraying/ Application of fertilizers and packing are undertaken by husbands. Husbands also controls farm incomes.

Tasks		Responsibility		
		Wife only	Husband only	Both
1	Land Preparation *	3	5	43
2	Sowing / Planting/Transplanting	3	3	45
3	Weeding	7	1	43
4	Watering	3	6	42
5	Spraying/ Application of Fertilizers	0	38	13
6	Harvesting	3	0	48
7	Packing	2	22	27
8	Selling	2	14	35
9	Who know/control family income/expenditure?	3	25	23

(2) Ownership of Land

The table below indicates the sense of ownership of land by gender. As regards ownership and decision making, around half of the households states that the power is concentrated mainly on husbands.

Ownership	Wife Only	Husband Only	Both	Children
Who owns?	1	20	30	0
Who makes decisions?	1	27	23	0
Who uses it?	1	0	50	0
Who benefits more	0	0	51	0
Who inherits it	3	10	28	10

(3) Ownership of House

The table below indicates the sense of ownership of houses by gender. Similar observation can be made to the case of land. For half of the households recorded, the ownership and decision making are of husbands.

Ownership	Wife Only	Husband Only	Both	Children
Who owns?	1	19	31	0
Who makes decisions?	1	25	25	0
Who uses it?	1	1	49	0
Who benefits more	1	1	49	0
Who inherits it	4	10	29	8

(4) Ownership of Storage

As indicated in 2.2.(4), most of the households do not have storage facilities except for small

one for maize. There is no strong finding on this question.

2.4 Income Analysis

（1） Average Yield per major crop (kg/ha)

The following table shows the average yield of major horticultural crops (kg/ha).

The low yield per hectare of beans (mg) from Kwesine and Boheloi was due to mix cropping of maize and beans. The data for snow peas and zucchini are in question in terms of accuracy. However, if the farmers are proud of themselves producing these crops, s/he could be a key farmer in the village so others they required to learn from him especially in this crop.

Crop (code)	No.of producers	Boheloi	Kwesine	Malingo	Ave. Yield (kg/ha)
Broccoli (br)	1			9,906	9,906
Beetroot (bt)	2	11,182			11,182
Cauliflower (cf)	8	19,386		5,407	7,154
Carrot (cr)	7		5,437	22,223	17,427
Cucumber (cu)	1	9,257			9,257
Green beans (gn)	1	5,010			5,010
Green paper (hh)	21	13,710	12,474	13,332	12,960
Cabbage (kb)	16	24,561	19,944	18,941	21,174
Lettuce (lt)	4	8,849		9,375	8,980
Beans (mg)	7	333	776		713
Maize (mh)	11	4,924	1,574	3,707	3,596
Salad (sl)	10			14,172	14,172
Snow peas (sp)	1	17,699*			17,699
Tomatoes (tm)	18	14,926	15,852	13,684	14,597
Irish potato(vz)	39	4,903	5,395	5,435	5,377
Zucchini (zc)	2	2,966		2,472	2,719

Note: * The data are questionable in terms of accuracy.

(2) Average Net income per M²

The table below shows the average net income per M2 and major crop. Again, data regarding snow peas and zucchini may not be accurate. The negative average net income from Kwesine show that at that time the price of Carrot (cr) it was very low. While the negative average income of Beans (mg) of Boheloi show that some amount of beans uses for food. (Questionnaire exclude value for home consumption)

Crop	No.	Boheloi	Kwesine	Malingo	Ave. Net Income
Broccoli (br)	1			451	451
Beetroot (bt)	2	912			912
Cauliflower (cf)	8	145		395	364
Carrot (cr)	7		(6)	449	319
Cucumber (cu)	1	109			109
Green beans (gn)	1	394			394
Green paper (hh)	21	330	121	362	244
Cabbage (kb)	16	554	391	366	440
Lettuce (lt)	4	473		202	405
Beans (mg)	7	(11)	2		0
Maize (mh)	11	51	11	86	39
Salad (sl)	10			336	336
Snow peas (sp)	1	2,313*			2,313
Tomatoes (tm)	18	246	180	457	317
Irish potato(vz)	39	39	51	132	89
Zucchini (zc)	2	814		94	454

Note: * The data are questionable in terms of accuracy.

(3) Average Household Net Income

The table below shows the average household income per target village. The average income per household is around 2 million including non-agricultural income such as livestock, shops, renting motor cycles. Some question should be posed to data of Kwesine in which 2 households recorded the negative balance of their home economy, even though we checked them for confirmation.

Income/Crop	Boheloi	Kwesine	Malingo	Ave.Income (Total / 51)
Agri. Income	1,587,023	433,042	1,865,259	1,263,733
Average Income (Agri + Non-Agri)	2,176,718	666,433	2,257,986	1,678,733

2.4 Loan

Out of 51 households from the three villages only 8 applied for the Loan (7 borrows from VICOBA and 1 from another source). And all comes from Kwesine, where VICOBA operation is active as compared to other two. The loan amount varies from Tsh 100,000 to Tsh 1 million. Major purposes of borrowing are for agriculture and small business operation with, in many cases, interest rate of 10% per year.

Did you apply for the Loan?	Sample No.
(No.) h	43
(Yes) n	8
Grand Total	**51**

2.5 Marketing

(1) Major Marketing Place recognized

Most of the farmers recognized that their major markets were within Lushoto area through middle man. There are some farmers who expressed that their market were Dar es Salaam and Tanga especially in Boheloi: some of them originally were the members of ULU and ULT.

Village	Boheloi	Dar	Korogwe	kwesine	Lukozi	Malingo	Sijui	Soni	Tanga	Total
Boheloi	2	4					3		1	10
Kwesine		1		2				14	2	19
Malingo		1	1		16	3			1	22
Total	**1**	**6**	**1**	**2**	**17**	**3**	**3**	**14**	**4**	**51**

(2) Group or Individual

All of them sold their vegetables and Potatoes by individuals.

(3) To whom they sell

Most of the farmers from the three villages sold their vegetables and potatoes to middle man (wl). Few of them sold to Retailers (wr) around Lushoto District.

Village	Middleman (wl)	Retailers (wr)	Total
Boheloi	8	2	10
Kwesine	14	5	19
Malingo	18	4	22
Total	**40**	**11**	**51**

9.3 Farmers' Situation and Income Records for FY2015

FARMERS' SITUATION AND INCOME RECORDS FOR FY 2015
(Malingo, Kwesine and Boheloi)

June 2016
LUSHOTO DC

1. Introduction

1.1 Background

Lushoto DC and JICA-RADAG are supporting VC of potatoes and vegetables from production, grading, parking and marketing under DADP planning in the three pilot villages, namely Malingo, Kwesine and Boheloi.

One of the key issues in supporting the farmers is to capacitate them for keeping records of production and income, so that they can do agriculture as business. To this end, Lushoto DC and JICA-RADAG conducted a farmer-participatory survey to collect end line survey data. The survey was carried out from April to May 2016 for 51 households at the three villages.

1.2 Objectives of the survey and this report

The purposes of the survey are:

- To make farmers recognize how much they spend for and gain from horticultural production; and
- To provide Lushoto DC with information that will assist them in monitoring and evaluation of DADP projects.
- To compare these data with the baseline data and to identify the achievements through DADPs intervention under the support of JICA-RADAG.
-

The purpose of this report complies with the second and third objectives of the survey.

1.3 Methodology and its Limitation

The survey adopted the following methodologies:

- Individual Household Method to measure indicators per household that can later be used to assess impact while also capturing aspects that may influence outcomes.
- Data were collected by using the same questionnaire employed for the baseline survey.
- Focus on key aspects of the farmers life, which include farm family annual income measured through "gross receipts" from sales of targeted crops (potatoes and vegetables) and others relating to wealth or family wellbeing, gender equality, marketing and credit financing. The questionnaire used for the survey is available in Annex 01.
- Respondents under 18 years of age were not included as they would not have been able to provide answers to all questions.
- Participatory record keeping: unlike other end line survey conducted by external consultants, the survey has unique characteristics in that farmers measure their land and record their production and income by themselves under the facilitation of extension officers.
- Establishment of the database: using the excel file. Extension officers with the assistance of JICA-RADAG entered data collected from the survey.
- Pivot table analysis: using the excel function. After receiving the training by JICA-RADAG, the extension officers made analysis.

On the other hand there are some limitations of these methodologies as follows:

- Reliability of data: the survey was conducted in April and May 2016 to review the performance of 2015.The farmers filled questionnaires are the one who fill end line questionnaires. The memories during end line survey were so clear because most of

them once they filled questionnaires they referred to their note books where they used to record various activities as were taught by JICA – RADAG and DFT, that they must to keep record of every activity they do on their farms.

- Time consuming due to lack of man powers: data entry requires a lot of man powers. The same to baseline survey, also in end line survey major parts of data entry have been done by JICA-RADAG. For the future it is important for district officers to undertake this hard task. On the other hand the data collection was late due to farmer's circumstances (It iswas rainy season).

2 Findings

2.1 No. of farmers recorded

The same to base line data the questionnaires were taken from the 51 households in three villages with two different group types, i.e. Business and Production. Business group are the one engaged in direct delivery as a group sales. Before intervention base line data indicates that all production group members sold their vegetables to middleman currently after intervention end line data shows some farmer's sale their crops as individual to retailer's i.e BESHA and ULT. Production group also participates in various training provided by Lushoto DC and JICA-RADAG

Here under is a table showing number of farmers interviewed in three pilot villages by compare ring, that is to say during Baseline survey and end line survey. Hence you can see there is no changes because the farmers interviewed during baseline survey were the one who interviewed in the end line survey purposefully to compare if there is any changes.

	Year 2013			Year 2015		
Village/Group name	**female**	**male**	**Total**	**Female**	**male**	**Total**
Boheloi	**1**	**9**	**10**	**3**	**11**	**14**
Business	1	2	3	1	2	3
Production		7	7	2	9	11
Kwesine	**2**	**17**	**19**	**3**	**11**	**14**
Business	2	5	7	3	3	6
Production		12	12		8	8
Maringo	**9**	**13**	**22**	**6**	**17**	**23**
Business	3	6	9	3	6	9
Production	6	7	13	3	11	14
Total	**12**	**39**	**51**	**12**	**39**	**51**

2.2 General situation

(1) No of family members

The table below shows that average family member is simiral for baseline and End line which is 6.4 and maximum number of family members reduced from 18 to 13 while minimum remains the same which is 2.

	Year 2013			Year 2015		
Village Name	**Average**	**Max.**	**Min.**	**Average**	**Max**	**Min**
Boheloi	6.4	14	2	6.7	13	3
Kwesine	7.7	18	3	6.5	13	2

Maringo	5.3	10	3	6.1	10	3
Total	**6.4**	**18**	**2**	**6.41**	**13**	**2**

(2) House Type

The table below shows that households built houses by burnt bricks increase from 23 to 28, by wood reduces from 26 to 18 and built by mud bricks increase from 2 to 5. Construction of these modern houses increases due to increase farmers' income from agriculture.

	Year 2013				Year 2015			
House type	**Burnt Brick**	**Wood**	**Mud Brick**	**Total**	**Burnt Brick**	**Wood**	**Mud Brick**	**Total**
Boheloi	1	9		10	7	7		14
Kwesine	4	15		19	3	9	2	14
Maringo	18	2	2	22	18	2	3	23
Total	**23**	**26**	**2**	**51**	**28**	**18**	**5**	**51**

(3) Roof Type

Out of 51 households, 48 have iron sheet roofing and other 3 have tin materials roofing. By comparing baseline data and end line data it shows that household's uses iron sheet materilas increase by 10%.

	Year 2013			Year 2015		
Roof type	**Iron type**	**Tin type**	**Grand Total**	**Iron type**	**Tin type**	**Total**
Boheloi	10		10	14		14
Kwesine	12	7	19	12	2	14
Maringo	21	1	22	22	1	23
Grand Total	**43**	**8**	**51**	**48**	**3**	**51**

(4) Assets owned (Availability of Facilities)

The table below shows the lists and number of the assets owned by the households. By Comparing baseline and end line data shows that ownership of Motorcycle increase by 12%, Sewing machine increase by 71%, Refrigerator increase by 200% and TV increase by 7.7%. This shows that assets purchasing power increases due to increase farmer's income from agricultural products.

	Year 2013				Year 2015			
Village	**Boheloi**	**Kwesine**	**Malingo**	**Total**	**Boheloi**	**Kwesine**	**Malingo**	**Total**
1.Electrificated house	5	1	5	11	6	1	1	8
2. Radio	13	19	20	52	12	15	22	49
3. TV	4	5	4	13	5	4	5	14
4. Bicycle	0	8	13	21	1	7	13	21
5. Motorcycle	3	6	8	17	5	6	8	19
6. Car	0	0	2	2	1	0	0	1
7. Refrigerator	1	0	0	1	2	1	0	3
8. Electric fan)	2	0	0	2	2	0	0	2
9. Cooking Energy	10	19	22	51	14	14	23	12

10. Sewing machine	2	4	1	7	2	3	7	12
11. Toilet	10	19	22	51	14	14	23	51
12. Crop storage facility	1	1	20	22	0	13	14	27

Remarks: 1. For both baseline and End line data for 51 farmers each has 1 toilet, for Cooking energy each farmer has one.

2. For baseline 2 two big businessman own a car while end line data shows 1 Farmer from Boheloi village owns a car.

3. Crop storage facility: This is a local storage used in preserving maize

(5) Average land size (in square meters, M^2)

For the end-line survey, the land size was not measured.

2.3 Gender Equity

(1) Farming practice

The table below shows the responsibility of farming practice by gender. In year 2015 data indicates that women/wife gained little awareness on collaborating with their husbands in the activities of spraying/ Application of fertilizers and packing.

	Tasks	Year 2013			Year 2015		
		Responsibility			Responsibility		
		Wife only	Husband only	Both	Wife only	Husband only	Both
1	Land Preparation *	3	5	43	2	2	57
2	Sowing / Planting/Transplanting	3	3	45	1	5	45
3	Weeding	7	1	43	1	0	50
4	Watering	3	6	42	1	2	48
5	Spraying/ Application of Fertilizers	0	38	13	1	28	22
6	Harvesting	3	0	48	1	0	50
7	Packing	2	22	27	3	14	34
8	Selling	2	14	35	2	12	37
9	Who know/control family income/expenditure?	3	25	23	4	21	26

(2) Ownership of Land

The table below indicates the sense of ownership of land by gender. As regards ownership and decision making, around half of the households state that the power is concentrated mainly on husbands **while** the data/baseline collected previous before VC chain project shows similar thing. This similarity due to Cultural factors which gives husband power in Land ownership and decision making.

Ownership	Year 2013				Year 2015			
	Wife Only	Husband Only	Both	Children	Wife Only	Husband Only	Both	Children
Who owns?	1	20	30	0	1	21	29	0
Who makes decisions?	1	27	23	0	1	21	29	0

Who uses it?	1	0	50	0	1	0	50	0
Who benefits more	0	0	51	0	1	0	50	0
Who inherits it	3	10	28	10	8	10	21	12

(3) Ownership of House

The table below indicates the sense of ownership of houses by gender. Similar observation can be made to the case of land. Gender inequality, more power in ownership and decision making of the house is given to husband. Also the data before DADP intervention in VC project shows similar thing. Again this Similarity is due to Cultural factors of Lushoto communities.

	Year 2013				Year 2015			
Ownership	**Wife Only**	**Husband Only**	**Both**	**Children**	**Wife Only**	**Husband Only**	**Both**	**Children**
Who owns?	1	19	31	0	1	14	36	0
Who makes decisions?	1	25	25	0	1	20	30	0
Who uses it?	1	1	49	0	1	2	48	0
Who benefits more	1	1	49	0	1	1	49	0
Who inherits it	4	10	29	8	8	11	11	21

(4) Ownership of Storage

As indicated in 2.2.(4), most of the households do not have storage facilities except for small one for maize, most of this storage available in Malingo and Kwesine villages.

2.4 Income Analysis & Production

（1） The table below shows productivity (kg/ha) for each crop in three pilot villages whereby farmers harvested more in year 2015 to some crops like color pepper, zucchini and Irish potato. This is due to intervention initiated on training farmers by conducting good farming practices like ridge making, plant population, as well as uses of proper seeds and fertilizer. On the other hand productivity of crops like Broccoli, tomato and green pepper decreased due to floods, drought and diseases.

	2013					2015				
Crop (code)	**No. of producers**	**Boheloi**	**Kwesine**	**Malingo**	**Ave. Yield (kg/ha)**	**No. of producers**	**Boheloi**	**Kwesine**	**Malingo**	**Ave. Yield (kg/ha)**
Brocol (br)	1			9906	9906	8		643	3591	2854
Beetroot (bt)	2	11182			11182	6	6303		5685	6097
Cauliflower(cf)	8	19386		5407	7154	10	10010		4103	5284
Chinise (ch)	0					2	4449			4449
Color pepper(cp)	0					2	3375			3375
Carrot (cr)	7		5437	22223	17427	4		3223	2966	3030
Cucumber (cu)	1	9257			9257	7	9145	4245		7045
Green Beans (gn)	1	5010			5010	10	5668			5668
Green Pepper (hh)	21	13710	12474	13332	12960	9	6278	8115		7094
Cabbage (kb)	16	24561	19944	18941	21174	13	11278	7580	989	9633
Letuce (lt)	4	8849		9375	8980	0				
Beans (mg)	7	333	776		713	7		1166		1166
Maize (mh)	11	4924	1574	3707	3596	7		1264		1264
Red cabbage (Rc)	0					3	9886		4130	6049
Salad (sl)	10			14172	14172	15	6920		3787	3996
Snow Peas (sp)	1	17699*			17699	1			989	989
Tomato ™	18	14926	15852	13684	14597	15	19649	4993	13494	14002
Irish Potato (vz)	39	4903	5395	5435	5377	35	6510	4750	9116	7446
Zuchini (zc)	2	2966		2472	2719	6	4995		4744	4852

Note: * The data are questionable in terms of accuracy.

(2) Average Net income per M^2

In the table below shows that in year 2015 there is a big change on average net income per meter square to some crops like Irish potato, Color pepper and Tomato due to reliability of market of these crops and high prices of quality product produced by farmers through adopting new farming technics as well as following peak demand table and market need.

	2013					**2015**				
Crop	**No. of producers**	**Boheloi**	**Kwesine**	**Malingo**	**Ave.Net income/M2**	**No. of producers**	**Boheloi**	**Kwesine**	**Malingo**	**Ave.Net income/M2**
Brocol (br)	1			451	451	8		65	678	525
Beetroot (bt)	2	912			912	6	510		477	499
Cauliflower(cf)	8	145		395	364	10	380		245	272
Chinise (ch)	0					2	276			276
Color pepper(cp)	0					2	769			769
Carrot (cr)	7		-6	449	319	4		86	928	717
Cucumber (cu)	1	109			109	7	212	64		149
Green Beans (gn)	1	394			394	10	333			333
Green Pepper (hh)	21	330	102	294	206	9	198	103		156
Cabbage (kb)	16	554	391	366	440	13	376	322	-17	333
Letuce (lt)	4	473		202	405	0				
Beans (mg)	7	-11	2		0	7	148	80		90
Maize (mh)	11	51	11	86	39	7		26		26
Red cabbage (Rc)	0					3	601		376	451
Salad (sl)	10			336	336	15	198		319	311
Snow Peas (sp)	1	2313			2313	1			-38	-38
Tomato ™	18	246	180	457	317	15	401	176	479	418
Irish Potato (vz)	39	39	51	132	89	35	326	158	332	276
Zuchini (zc)	2	814		94	454	6	205		338	281

Note: * The data are questionable in terms of accuracy.

(3) Average Household Net Income

The table below shows average household income per target village. For the year 2013 and the average income per household was around 1.6 million including non-agricultural income such as livestock, shops, renting motor cycles. While in year 2015 the total average income per house hold increased to 2.6 million. This occurred due to high price of agricultural product, reliable market and farmers managed to deliver directly to customer after JICA- RADAG facilitate them on Market survey.

Year	Income Type	Boheloi	Kwesine	Maringo	Total	% Up
2013	Farm Income	1,587,023	433,042	1,865,259	1,263,733	
	Total Income	2,343,690	658,042	2,257,986	1,678,733	
2015	Farm Income	2,610,500	758,861	2,940,883	2,251,203	78%
	Total Income	3,432,464	1,323,861	2,955,230	2,638,409	57%

(4) Average production per Farmer

The table shows average production per Farmer in Kilograms. For the year 2013 the average production per farmer was 1,834 KG while the data of 2015 shows average production per farmer was 1,844.This slightly increment caused by floods, drought and pesticide sides like Tuta absoluta happened in pilot villages.

Year	Average production Kg/farmer	% Up
2013	**1,834**	
2015	**1,844**	**0.6%**

2.5 Loan

Out of 51 households from the three villages only 8 farmers applied loan in year 2013 most of them applied from Village Community Bank (VICOBA) while in year 2015 number of farmers applied the loan increase by 125% and most of them applied from Tanzania Agricultural Development Bank (TADB). This greatly change caused by low interest rate of 8% per year, reasonable requirements, high production required to fulfill market volume. This bank Identified during financial Institution Survey. In fact, the pilot activities supported by JICA-RADAG/ DADP P&I TWG facilitated farmers in obtaining CCRO and Audit Reports, which are among the most important requirements for loan application.

	Year 2013	Year 2015
Did you apply for the Loan?	**Sample No.**	**Sample No.**
(No.) h	43	33
(Yes) n	8	18
Grand Total	**51**	**51**

2.6 Marketing

(1) Major Marketing Place recognized

The table below shows that in year 2013 most of the farmers about (12%) recognized that their major markets were in Lushoto through middleman. But for the year 2015 the data shows that 98% of farmers identified Dar es salaam as a reliable market through retailers and middleman. Moreover this increase caused by market survey and sales promotion conducted by farmers in collaboration with DFT and JICA- RADAG in Da-es-Salaam.

	Village	Boheloi	Dar	Lukozi	Malingo	Mtwara	Soni	Tanga	Total
Year 2013	Boheloi	2	4					1	10
	Kwesine		1				14	2	19
	Malingo		1	16	3			1	22
	Total	**1**	**6**	**17**	**3**		**14**	**4**	**51**
Year 2015	Boheloi		14						
	Kwesine		14						
	Malingo		22			1			
	Total		**50**			**1**			**51**

(2) Group or Individual

For the year 2013 most of the farmers sold their vegetables and Irish potatoes individually while in year 2015 shows that 40% of the farmers from both groups (Business, Production) sold vegetables and Irish potatoes in group. This is due to the fact that they want to reduce transportation costs and maintain bargaining power in the competitive market.

(3) To whom they sell

In the year 2013before intervention data shows that most of the farmers were selling their vegetables to middleman. While in year 2015 More than half of the farmers from the total of two groups (Production, Business) in three village's sales their vegetables and potatoes to Retailers (wr), this changes from middle to retailers caused by market survey and sales promotion.

	Year 2013			Year 2015		
Village	**Middleman (wl)**	**Retailers (wr)**	**Total**	**Middleman (wl)**	**Retailers (wr)**	**Total**
Boheloi	8	2	10	**6**	**8**	**14**
Kwesine	14	5	19	8	6	14
Malingo	18	4	22	9	14	23
Total	**40**	**11**	**51**	23	28	51

ANNEX……..01

DODOSO LA UTEKELEZAAJI WA SHUGHULI ZA KILIMO KIJINSIA KATIKA KAYA

TAARIFA ZIWE KABLA YA MAFUNZO (Januari – Desemba 2015)

Tarehe: _____/_____/_____ Kijiji: _____ Kata……..

Jina: _____Jinsia (ME/KE): _____

Namba ya Simu:

Sehemu 1: Maelezo ya Jumla

1.1 Idadi ya wanakaya wanaoishi pamoja: _____

Sehemu 2: Hali ya Maisha

2.1 Aina ya nyumba :- Miti [ ], Tope/Tofali [ ], Tofali za kuchoma [ ], Tofali za zege [ ]

Aina nyinginezo zitaje…….Taja aina ya vifaa vilivyotumika kuezekea

(Nyasi, bati, vigae, mabati ya madebe nk)……..……..

2.2 Upatikanaji wa baadhi ya Vifaa muhimu katika <u>nyumba yako</u>

Vifaa ulivyonavyo	Idadi (Kama vipo)	Hali
1.Je nyumba yako ina umeme	Ndiyo/Hapana	Unafanyakazi [ ]Haufanyikazi [ ]
2. Redio		Inafanya kazi [ ] Haifanyi kazi [ ]
3. TV		Inafanya kazi [ ] Haifanyi kazi [ ]
4. Baiskeli		Inafanya kazi [ ] Haifanyi kazi [ ]
5. Pikipiki		Inafanya kazi [ ] Haifanyi kazi [ ]
6. Gari		Inafanya kazi [ ] Haifanyi kazi [ ]
7. Friji		Inafanya kazi [ ] Haifanyi kazi [ ]
8. Feni ya Umeme		Inafanya kazi [ ] Haifanyi kazi [ ]
9. Cherehani		Inafanya kazi [ ] Haifanyi kazi [ ]
10. Aina ya jiko unalotumia……..		Inafanya kazi [ ] Haifanyi kazi [ ]
11. Je una choo	Ndiyo/Hapana	Kinafanya kazi[ ] Hakifanyi kazi [ ]
12.Je una ghala/vihenge vya kuhifadhia mazao		Linafanya kazi [ ]Halifanyi kazi [ ]

2.3 Ukubwa wa Shamba:

Aina ya Ardhi	Ukubwa	Kipimo (Ekari or M^2)
1) Unamiliki na Unaitumia		
2) Unamiliki lakini Umekodishia wengine		
3) Umeazima kutoka kwa wengine (inajumuisha Bila malipo)		
4) Jumla = 1) + 2) +3)		

2.4 Utekelezaji wa Shughuli za Kilimo kijinsia katika kaya (Tafadhali weka alama ya "√")

Kazi/Shughuli		Mhuska/Wajibu		
		Mume tu	Mke tu	Wote
1	Maandalizi ya Shamba			
2	Kupanda / Kusia/Kuotesha			
3	Kupalilia			
4	Kumwagilia			
	Kufanya utaratibu wa kupata mkopo kama unahitajika			
	Kununua pembejeo			
5	Kunyunyizia madawa			
5	Kuweka Mbolea			
6	Kuvuna			
7	Ufungashaji			
8	Kuuza			
9	Nani anatunza mapato / matumizi ya familia?			

2.5 Umiliki wa Ardhi

Mali	Mume tu	Mke tu	Wote	Hakuna
Nani anamiliki?				
Nani anatoa maamuzi?				
Nani anaitumia?				
Nani ananufaika Zaidi ?				
Nani mrithi ?				

2.6 Umiliki wa Nyumba

Mali	Mume tu	Mke tu	Wote	Hakuna
Nani anamiliki?				
Nani anatoa maamuzi?				
Nani anaitumia?				
Nani ananufaika Zaidi ?				
Nani mrithi ?				

2.7 Umiliki wa Ghala

Mali	Mume tu	Mke tu	Wote	Hakuna
Nani anamiliki?				
Nani anatoa maamuzi?				
Nani anaitumia?				
Nani ananufaika Zaidi ?				
Nani mrithi ?				

Sehemu 3: Ghalama za uzalishaji na Mapato

3.1 Ghalama za uzalishaji: Jaza Jedwali hapo chini Kulingana na mwaka jana (Januari. - Decemba.2015)

Zao:________________
Eneo:___________(Ekari [ ] or M^2 [ ])
Kipindi cha Msimu:________**hadi**_______

Shughuli	Gharama
Maandalizi ya shamba	
Ununuzi wa mbegu	
Mbolea ya kupandia na gharama za uwekaji	
Kupanda/kusia/kuotesha	
Palizia-mara 2 au 3	
Kumwagilia-mara 3 au 5	
Mbolea ya kukuzia na gharama za uwekaji	
Madawa ya wadudu na magonjwa na unyunyuziaji mara 2 au 4	
Gharama za vifaa vya kuvunia	
Gharama za kuvuna	
Ghrama za ufungashaji	
Usafirishaji	
Mauzo	
Jumla	

Zao:________________
Eneo:___________(Ekari [ ] or M^2 [ ])
Kipindi cha Msimu:________**hadi**_______

Shughuli	Gharama
Maandalizi ya shamba	
Ununuzi wa mbegu	
Mbolea ya kupandia na gharama za uwekaji	
Kupanda/kusia/kuotesha	
Palizia-mara 2 au 3	
Kumwagilia-mara 3 au 5	
Mbolea ya kukuzia na gharama za uwekaji	
Madawa ya wadudu na magonjwa na unyunyuziaji mara 2 au 4	
Gharama za vifaa vya kuvunia	
Gharama za kuvuna	
Ghrama za ufungashaji	
Usafirishaji	
Mauzo	
Jumla	

Zao:________________
Eneo:___________(Ekari [ ] or M^2 [ ])
Kipindi cha Msimu:________**hadi**_______

Shughuli	Gharama
Maandalizi ya shamba	
Ununuzi wa mbegu	
Mbolea ya kupandia na gharama za uwekaji	
Kupanda/kusia/kuotesha	
Palizia-mara 2 au 3	
Kumwagilia-mara 3 au 5	
Mbolea ya kukuzia na gharama za uwekaji	
Madawa ya wadudu na magonjwa na unyunyuziaji mara 2 au 4	
Gharama za vifaa vya kuvunia	
Gharama za kuvuna	
Ghrama za ufungashaji	
Usafirishaji	
Mauzo	
Jumla	

Zao:_______________
Eneo:___________(Ekari [ ] or M^2 [ ])
Kipindi cha Msimu:________hadi_______

Shughuli	Gharama
Maandalizi ya shamba	
Ununuzi wa mbegu	
Mbolea ya kupandia na gharama za uwekaji	
Kupanda/kusia/kuotesha	
Palizia-mara 2 au 3	
Kumwagilia-mara 3 au 5	
Mbolea ya kukuzia na gharama za uwekaji	
Madawa ya wadudu na magonjwa na unyunyuziaji mara 2 au 4	
Gharama za vifaa vya kuvunia	
Gharama za kuvuna	
Ghrama za ufungashaji	
Usafirishaji	
Mauzo	
Jumla	

Zao:_______________
Eneo:___________(Ekari [ ] or M^2 [ ])
Kipindi cha Msimu:________hadi_______

Shughuli	Gharama
Maandalizi ya shamba	
Ununuzi wa mbegu	
Mbolea ya kupandia na gharama za uwekaji	
Kupanda/kusia/kuotesha	
Palizia-mara 2 au 3	
Kumwagilia-mara 3 au 5	
Mbolea ya kukuzia na gharama za uwekaji	
Madawa ya wadudu na magonjwa na unyunyuziaji mara 2 au 4	
Gharama za vifaa vya kuvunia	
Gharama za kuvuna	
Ghrama za ufungashaji	
Usafirishaji	
Mauzo	
Jumla	

Zao:_______________
Eneo:___________(Ekari [ ] or M^2 [ ])
Kipindi cha Msimu:________hadi_______

Shughuli	Gharama
Maandalizi ya shamba	
Ununuzi wa mbegu	
Mbolea ya kupandia na gharama za uwekaji	
Kupanda/kusia/kuotesha	
Palizia-mara 2 au 3	
Kumwagilia-mara 3 au 5	
Mbolea ya kukuzia na gharama za uwekaji	
Madawa ya wadudu na magonjwa na unyunyuziaji mara 2 au 4	
Gharama za vifaa vya kuvunia	
Gharama za kuvuna	
Ghrama za ufungashaji	
Usafirishaji	
Mauzo	
Jumla	

3.2Uzalishaji na Mapato

TAARIFA ZIWE KABLA YA MAFUNZO (Januari – Decemba 2015)

I. Zao	Msimu uliopanda	1) Eneo Ulilolima		2) Jumla ya Uzalishaji		3)) Kiasi kilichouzwa		4) Wastani wa Bei / kipimo	5) Mapato = (3 x 4)	6) Ghalama za uzalishaji	9) Mapato Halisi = 6) – 5)
		Kipimo	Eneo	Kipimo	Idadi.	Kipimo	Idadi	Tsh	Tsh	Tsh	Tsh
1.		Ekari [v] M^2 [ ]				D					
						M					
2.		Ekari [ ] M^2 [ ]				D					
						M					
3.		Ekari [ ] M^2 [ ]				D					
						M					
4.		Ekari [ ] M^2 [ ]				D					
						M					
5.		Ekari [ ] M^2 [ ]				D					
						M					
II Biashara nyingine											Mapato Halisi
1.											
2.											
3.											
JUMLA (= Mazao + Biashara nyingine)											

Sehemu 4: Matumizi ya Mkopo

4.1 Je, ulitumia mkopo wowote mwaka 2015 _____(Ndio/Hapana)

4.2 Kama ndio; Taasisi gani inatoa mkopo /ilitoa mkopo kwako?

1. SACCOS [ ] 2. NGOs [ ] 3. VICOBA [ ] 4. Nyingine [ ] (Zitaje) _____

4.3 Kama ndio, ni nini madhumuni ya kuomba mkopo ?

Chagua jibu madhumuni sahihi kati ya haya yaliyotajwa hapa :-

1. Uzalishaji wa mazao (mbegu, vibarua, nk.) [ ]
2. Kodi ya Ardhi [ ]
3. Uendeshaji wa biashara binafsi [ ]
4. Elimu [ ]
5. Matibabu [ ]
6. Kodi ya Nyumba [ ]
7. Ununuzi wa mali (Re dio, vifaa vya usafiri, nk) [ ]
8. Nyingine [ ] (Zitaje)……..

4.4 Je ulikopa kiasi gani cha mkopo? Kwa muda gani ? Tsh……kutoka …….hadi……..

4.5 Je mkopo uliokopa uliurejesha kwa Riba ya asilimia ngapi?.....%

4.6 Je mkopo uliochukua ulitosheleza mahitaji ya shughuli zako NDIYO/HAPANA

4.7 Kama jibu ni hapana kwa nini……
……
……

4.8 Ni dhamana/vigezo gani vilihitajika na Taasisi uliyokopa wakati wa kuomba mkopo
……
…….

Sehemu 5: Masoko

5.1 Ni wapi zaidi mboga zako na Viazi vinatumiwa? (jibu zaidiya moja sawa)

Dar es Salaam [ ] Kwengineko [ ] (Eleza) […… ……] Sijui [ ]

5.2 Je unauza kama kikundi au mmoja mmoja ? ……..

5.3 Je unauza mazao yako kwa:-

- Walanguzi [ ],

- wauuzaji rejareja [ ] (Taja kwa majina) au
- Watumiaji [**] Tick by "V"**

9.4 Presentation Material for the Wrap-up Meeting

MARKET- ORIENTED HORTICULTURE

In collaboration with
DADP P&I TWG/JICA-RADAG.

Start with Market survey

First !!

Lushoto District Council

Presentation outline

- Background
- Why Market Oriented Horticulture
- Improvement of Production and Marketing
- Achievements
- Challenges
- Recommendations

2

BACKGROUND

- Location: North Eastern Part of TZ in Tanga Region (4^0 25′ – 4^0 55′ Latitude and 30^0 10′ – 38^0 35′ Longitude).
- Size: 230,000 Ha
- Population: 332,436 (M: 153,847, F: 178,589), Growth 1.4
- Division: 5 (Lushoto, Mlalo, Mlola, Mtae, Umba)
- Wards: 33
- Villages: 125
- Political Constituency: 2 (Lushoto, Mlalo)
- Arable land: (160,000 Ha)
- Utilized land: (128,000 Ha)

BACKGROUND

- 85% of Lushoto population (265,948) is engaged in agriculture for their livelihoods especially horticultural crops (Vegetables and fruits).
- Lushoto District is potential in producing Vegetables and fruits (Tomatoes, Cabbage, Carrot, Onion, Snow peas, round potatoes, pepper, beet root, lettuce, celery etc, peas, apple, plums, avocado, peaches).
- Favourable climate (Temp., 11- 22°C with Rainfall = 500- 2000 mm).
- Altitude masl (300 to 2200).
- The District is also potential for Irrigation.

BACKGROUND CONT.

- Vegetable production is estimated at 74,838 - 115,136 tones /yr, Fruits (55,010 – 87,749 tons/yr) depending on seasons, pests and diseases.
- 10% of vegetable produced is consumed at home, 60-70% is marketed and 20- 30% is wasted.
- Major markets are in Dar, Tanga, Zanzibar, Arusha, Mombasa and within the District.
- Little Vegetable and fruits are processed (Ubiri woman group, Montessori sisters, Wema group).
- Development partners (JICA, OXFARM, TAPP, HOMEVEG, MIVARF, INPUT STOCKISTS (YARA, SUBA), RESEARCH INSTITUTIONS (SUA, SARI, TACRI,), FINANCIAL INSTITUTIONS (CRDB, NMB, TADB).

Why market- oriented Horticulture

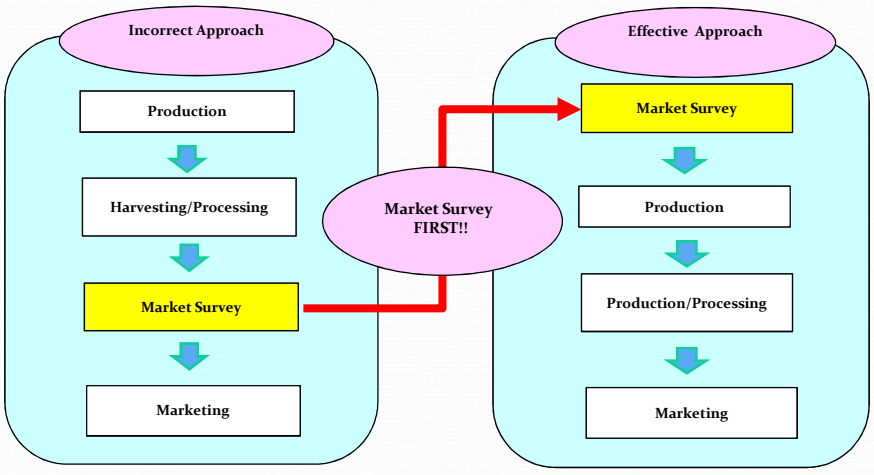
- Many research findings show that most of vegetables and fruits get destroyed before reaching the consumers. This is because these crops are perishable, not stored in warehouses and farmers produce before securing reliable market.

- Further, inadequate knowledge and inadequate market demand information make farmers produce crops which are not demanded by the market.

Why market- oriented Horticulture conts….

- Also, research have shown that majority of farmers sell their products at very low prices compared to the costs of production.

Effective Approach



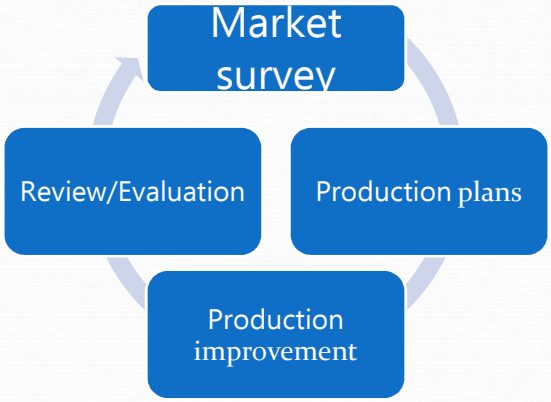
WHAT IS MARKET ORIENTED HORTICULTURAL.

- This is the process where farmers/Farmer groups identify market for their produce before engaging in production. This includes local and International markets.
- Important steps in ensuring that production is based on market demand;

Important steps to be considered in Market oriented horticulture

- ***Market survey***
- ***Production plan***
- ***Improvement of production and marketing***
- ***Reveiew/Evaluation.***

The figure below shows important steps involved in market oriented Horticulture



Market survey

- This is involves gathering/ collection and analyzing market information data such as consumer preferences, trends in market prices, quality/quantity of products needed, and presence of competing products.

Importance of market survey

- Educates the farmer to produce based on market demand.
- Enables the farmer to acquire high prices and realize profits.
- Reduce crop post harvest losses.
- Helps the farmer to know which crops are required in the market at what time and at what quantities/quality.
- Helps the farmer to deal with competitors and decide whether to enter into the market or not.

How to conduct market survey

- Identify potential buyers and markets for visits
- Prepare checklist of markets to be visited
- Prepare price list and *samples* of your crops.
- Visit several buyers/markets. Ask what they need, when they need, what quantity and what prices could be offered.
- Negotiate prices with buyers (And enter into agreement)

Sample of peak demand Table.

JAN	FEB	MAR	APR	MAY	JUN	JULAI	AUG	SEPT	OCTO	NOV	DEC
	karoti	karoti									
	brokori	brokoi				brokori	brokori	brokori	brokori	brokori	brokori
	cowlflower	cowlflower				cowlflower	cowlflower	cowlflower	cowlflower	cowlflower	cowlflower
	Lettuce	Lettuce	Lettuce			Lettuce	Lettuce	Lettuce	Lettuce	Lettuce	Lettuce
	zukini	zukini		zukini	zukini	zukini	zukini	zukini	zukini	zukini	zukini
Viazi	Viazi	Viazi	Viazi	Viazi							Viazi
	Tomato	Tomato	Tomato	Tomato	Tomato						
Snowpeas	Snowpeas	Snowpeas	Snowpeas	Snowpeas	Snowpeas						Snowpeas
Beatroot	Beatroot	Beatroot	Beatroot	Beatroot							
			Green peppers	Green peppers	Green peppers						
		French beans	French beans				French beans	French beans			
Color peppers	Color peppers	Color peppers	Color peppers	Color peppers	Color peppers	Color peppers	Color peppers	Color peppers	Color peppers	Color peppers	Color peppers
Basil & Mint	Basil & Mint	Basil & Mint	Basil & Mint	Basil & Mint	Basil & Mint	Basil & Mint	Basil & Mint	Basil & Mint	Basil & Mint	Basil & Mint	Basil & Mint

Production plan

- This is the plan which shows resources which the farmer will use in producing horticulture crops. This includes human and financial resources in order to get profits in producing intended crops.

Steps in preparing production plan

In order to capture the market, production should be according to market demand.

- Determine which crops to be grown based on peak t demand table.
- Compute costs of production versus profits based on price (Simple profitability analysis).

N.B Advice should be provided by SMS horticulturalists.

Sample of Production plan table

JINA LA KIKUNDI	Zao	Jan.	Feb.	Machi	Aprili	Mei	Juni	Julai	Agosti	Septe.	Oktoba	Nove.	Dece.
ABC Group	Kabeji				Kupanda			Kuvuna					
	Viazi						Kupanda	Kupalilia	Kuweka mbolea			Kuvuna	

Zao	A) Mavuno tarajiwa	B) Mapato	C) Ghalama	Mapato Halisi =B)-C)	JUMLA
Kabegi	20 Magunia	Tsh 1,100,000	Tsh 300,000	Tsh 800,000	Tsh. 1,750,000
Viazi	20 Magunia	Tsh 1,400,000	Tsh 450,000	Tsh 950,000	

Improvement of Production and marketing

In order to improve production and access market information, the following strategies can be used;

- ***Trial production.***
- ***Match Making (Linking farmers with various institutions.)***
- ***Conduct vegetable consumption campaigns. This included participation in farmers open market in Dar es salaam.***
- ***Strengthening farmers groups which are present so that they can produce based on market (Example HLT and Rocha)***

Trial production.

- This is the production where a farmer/ farmer groups produce crops on trial basis based on peak demand table in order to meet the market demand.
- Trial production could be conducted even in off season when such product will be demanded in the market.

Trial production conts…

- Further, trial production could also be done for a newly introduced crop if there is market demand.

This trial can be done even at open space if the farmer does not own *greenhouse.* (*Example Color pepper)*

Example: Production of color pepper at an open area

Match making with private company

This is the process which can be done by extension officers

or an individual in linking farmers/farmer group with

Institutions/organizations implementing related activities which can benefit farmers.

Example: Financial Institutions, Input service providers,

Research Institutions.

Match making with private company

- Collaboration can be on running demonstration plots, farmer field school by cost sharing. Example YARA fertilizer company, SYNGENTA and TAHA.
- Assist the farmers in processes of applying and accessing loans (Example:- Acquiring customary title deeds (right of occupancy) and business plan)

Review/Evaluation

- This is the assessment of everything which was done in order to evaluate achievements and shortcomings in producing vegetables and fruits.
- Among the good ways of doing evaluation includes:

Evaluation conts....

i. Compare initial research findings before production (baseline survey) with final findings (End line survey). This will help in knowing which crops give higher returns as estimated in production plan

ii. Refer on farm records which were kept by the farmer/farmer group. This includes production figures, daily records of income derived from the sale of crops, (Farm income and

Income recording table

I. Zao	Msimu uliopanda	1) Eneo Ulilolima		2) Jumla ya Uzalishaji		3)) Kiasi kilichouzwa		4) Wastani wa Bei / kipimo	5) Mapato =(3 x 4)	6) Gharama za uzalishaji	7) Mapato Halisi =5) -6)
		Kipimo	Eneo	Kipimo	Idadi.	Kipimo	Idadi	Tsh	Tsh	Tsh	Tsh
1. Kabeji	Oktoba2012 Machi2013	Ekari [v] M² [ ]	0.5	Magunia	17	Magunia	17	45,000	675,000	270,000	405,000
2. Vitunguu	Aprili-2013 Oktoba2013	Ekari [v] M² [ ]	0.5	Magunia	15	Magunia	15	55,000	825,000	360,000	465,000
3. Broccoli	Machi2013 Juni 2013	Ekari [v] M² [ ]	0.25	Kg	400	Kg	390	2,000	780,000	270,000	510,000
4.		Ekari [ ] M² [ ]									
5.		Ekari [ ] M² [ ]									
II Biashara nyingine											Mapato Halisi
1.Mgahawa wa kahawa		Maji Tsh 20,000 Mapato = (50,000 – 20,000)= 30,000 Mauzo 50,000									30,000
2.											
3.											
JUMLA (=Mazao + Biashara nyingine)											1,410,000

Achievements and lessons learnt

- **Increase of Annual Sales Volume**

  - For ULT, from Tsh 5-6 million per month (2012/13) to Tsh.
    25-30 million per month (2014/15)

  - For Besha, from Tsh 2-4 milion per month (2012/13) to Tsh.
    10 milion per month (2014/15)

- **Increase of Farmers income**

Surveys showed that the income of a farmers from pilot villages in Lushoto District has increased by 78 percent and overall household income has increased by 54 percent

Sample Table showing Increase of Farmers income

Year	Income Type	Boheloi	Kwesine	Maringo	Total	% Up
2013	Farm Income	1,587,023	433,042	1,865,259	1,263,733	
	Total Income	2,343,690	658,042	2,257,986	1,678,733	
2015	Farm Income	2,610,500	758,861	2,940,883	2,251,203	78%
	Total Income	3,432,464	1,323,861	2,821,535	2,578,115	54%

* Data are still tentative as of 1 June 2016.

Achievements and lessons learnt

- ***Increased in the number of farmers who adopted new production and marketing technologies.*** 383 farmers have adopted new farming techniques including the use of terraces and use of fertilizers (155), the use of peak demand table (177) and 51 farmers market.

	MARINGO	BOHELOI	KWESINE	HAMBALAWEI	MWANGOI	TOTAL
Direct sale	14	4	6	7	20	51
Peak demand	67	45	37	18	28	177
Ridges making	50	30	25	20	30	155

Recommendations from Lushoto Dc

- Market survey and some basic training to farmers should be done before starting production.
- Farm record keeping is very important in order for a farmer to assess his/her production.
- It is important for farmers to produce crops based on market demand.

Recommendations from Lushoto Dc

- Peak market demand table could be put/pasted at the village office so as to enable farmers to study it and start producing from their own initiatives.
- Trial production should not discourage farmers as some trials could do better while others could perform poorly.
- Farmers should do business by signing contracts with buyers/customers in accordance with initial agreement.
- Farmers should work in groups as this will make them strong and compete in the market.

CHALLENGES FACING PRODUCTION OF VEGETABLES AND FRUITS BASED ON MARKET DEMAND.

- Some customers close their business without informing the farmers.
- Inadequate agricultural inputs for farmers in producing high value crops like color pepper.
- Presence of low quality inputs (Seeds and fertilizers).
- Low investment capital to majority of farmers in modernizing agriculture
- Incidences of diseases and pests for horticulture crops (*e.g.Tuta absoluta*)

HOW TO SOLVE THE CHALLENGES OF PRODUCTION OF VEGETABLES AND FRUITS BASED ON MARKET DEMAND.

- Private input service providers should extend scope of operation by selling their products up to the village level.
- The government should regulate, control and ensure that farmers get quality inputs.
- In order to ensure security of farmers in doing business, they should enter into contracts with their customers.
- Linking the farmers with financial institutions (To access loans).
- In order for farmers to operate at a profit

Thank you for listening

Appendix 10

Reports and Materials of Pilot Activities in Mbozi DC

10.1 Pilot Activity Implementation Reports

MBOZI DC PILOT ACTIVITY IMPLEMENTATION REPORT

1. INTRODUCTION:

Mbozi district is one of 4 districts which cultivate coffee in Mbeya Region. Through a program to develop the agricultural sector (DADPs), the District has chosen coffee as their main target for development in the value chain . Coffee provide earnings in Mbozi District as its local revenue due to taxes imposed in this crop. Coffee accounts for about 75 percent of revenue within the district.

2. SPONSORS:

Due to the nature of coffee production here in the District and especially the increased production as farmers continue to expand their fields, irrigation and use improved seedlings with resistance against disease ***chulebuni*** (CBD) and Leaf Rust, Japan International Cooperation Agency (JICA) in collaboration with the Government of Tanzania has seen a necessity to help the coffee farmers by linking through their groups (AMCOs) and offer short courses for extension officers in villages. This training includes professionals from different wards depending on how they produce coffee. This program was temporary and experimental (pilot project). It is expected that the success of the initial work undertaken will enable further expansion of these activities especially in setting a good example of the value chain of coffee in Mbozi district.

WORK DONE UNDER THIS PROGRAM ARE AS FOLLOWS:

1. Study tour training which included leaders Mbinga District 9 out of 9 AMCOs

Coffee cultivation Professional

Cooperative officer

The purpose of this trip was to provide an opportunity for farmers to learn different skills associated with coffee cultivation from Mbinga counterparts who have made a further step in this farming. This was a request of farmers who have previously visited by a team from the ministry in Hasamba, Iyula and Ichesa villages. The training visit took place between the dates of 23.04.2013 and 26.04.2013

OUTCOME OF STUDY TOUR

KIMULI AMCOS:

i. Unity of farmers in this AMCOS has widened and they have mutual understanding, also they have been able to cooperate since 1993 to date. Therefore other AMCOS should learn from this.
ii. Record keeping is very organized, safe and professional
iii. Coffee markets within and outside the country; this AMCOS is much ahead as they have been able to sell their coffee to inside and outside markets such as Swiss coffee company. They do not depend on internal market only.

UTIRI CPU

i. Operations and conserving CPU and its equipment is sustainable. Owners are more developed and have been able to get better prices of coffee.
ii. Sustainability of coffee development activities after introduction of DADPs is good because members have been able to add another machine and develop further.

FARM MANAGEMENT.

i. Management of farm and usage of tree for reducing wind flow and provide shades are very effective for improve quality of coffee. This lessorn has to be adopted by other coffee growers.
ii. Improved seeds grown in the farm are of three types;
    - Traditional seeds
    - Stems
    - Modern (compact)

iii. Coffee irrigation by using pipes is good as it flow enough water for the farm.

OUTCOMES OF STUDY TOUR

i. STUDY TOUR AT MBINGA COFFEE CURING COMPANY:

I. Tasting and grading of coffee.

We have learnt and see how coffee is graded into different classes in the processing machines. We have also seen/witnessed how it is tasted.

II. Coffee processing.

We have seen/witnessed processing of coffee powder of two types which are;

a) Instant coffee
b) Roasted coffee

ii. STUDY TOUR AT LUWAITA AMCOS

I. Collecting coffee from various AMCOS.

- Various sources established in order to increase income for AMCOS operations such as grossary, crops trading etc.
- Luwaita AMCOS efficiently collects coffee from 27 primary cooperatives .
- Also we have learnt that through cooperation between AMCOS and SACCOS which is within the AMCOS farmers can easly access loans d farm inputs.
- We have learnt that debts collection is done under maximum cooperation.

WORK PLAN

After having this study tour, we are planning to go back into our own AMCOS and do the following;

i. To conduct our AMCOS operations in more openness ways.
ii. To provide education to members and leaders on how to build trust in the AMCOS.
iii. To have increase productivity of coffee.

iv. To put some efforts in ensuring that water is available and accessible in order to improve coffee production and value.

2. Training of extension officers

This training took place from 06.05.2013 until 09.05.2013 and involved a total of 15 villages extension officers.

The purpose of this training is to build the capacity of extension staff about the cultivation of coffee from farm to the market and more focused on the extension of new professionals who have little experience in the production of coffee

3. Evaluation:

After the training of extension staff and AMCOs leaders study tour in Mbinga, the team of professionals from Mbeya Region, Mbozi District with project supervisor from the JICA performed evaluation of all work undertaken. The assessment was done in Insani, SIA and Ichesa villages were AMCOs farmers and extension officers were trained.
Purposes of the assessment were to measure the feedback of visits of farmers and extension staff training.

- Get multiple challenges faced by coffee growers and extension specialists
- collective Plan to include various approaches to tackle these challenges
- Develop a joint plan of action

I have enclosed the results of the evaluation and interpretation for more information.

N0	TIME	ACTIVITY	RESPONSIBLE
1	August 2013	To improve savings and credit (SACCOs).	• Farmers • Financial institutions • DC • Sponsors
2	All times	To improve extension services for professional officers by providing them with motorcycles.	• Farmers • Government • DC • Sponsors
1	February – March 2014	**PROCESSING AREA OF AMCOs IN INSANI.** ➢ Loan for construction equipment (building) ➢ To procure coffee drying equipment (wire mash).	• Farmers • Government • Sponsors
2	April – July 2014	➢ Water and road infrastructure – to build and rehabilitation.	• Farmers • Sponsors
3	June - -August 2014	To hire transport for coffee transportation	• Farmer
N0	**TIME**	**ACTIVITY**	**RESPONSIBLE**
1	July	➢ Appointing representatives of farmers to monitor and manage transportation and processing of coffee.	• Farmers • Agricultural officers
	All times	➢ To increase coffee production quality	• Farmers
	All times	➢ To expand the domestic market by encouraging drinking coffee.	• Farmers

PROBLEMS/CHALLENGES OF MSIA AMCOS 22/05/2013.

No	Area	Challenge
1	**Production:**	limited capital
		Input are fake
		Lack of tools
		Knowledge of production quality
		Cooperation poor / limited among farmers
2	**processing**	Lack of facilities like coffee wire mesh trays Coffee-processing Equipment
		Undercapitalization
		lack of Infrastructure especially water, roads
		Transport for coffee
3	**Market**	Change of grade
		Low prices and instability in the market price

SOLUTION TO THE CHALLENGES OF MSIA AMCOs. 2/05/2013.

N0	TIME	ACTIVITY	RESPONSIBLE
1	July – August 2013	Providing knowledge about management and record keeping, cooperative, operation and maintenance of the CPU, entrepreneurship, money management, cross-cutting issues.	➢ District Council, farmers. ➢ Techno Serve, farmers.
2	May – June	Strengthening AMCOs to contribute for capital and other financial institutions to offer low-interest loans to farmers	➢ AMCOs ➢ Financial Institutions
3	July – Agust 2013 – 2015	to enable the completion of the construction of Msia dam. Knowledge of water harvesting should be given to farmers	➢ Government, district council, farmers and donors ➢ The DC and farmers
4	June – July,2013	To ensure that AMCOS inspections are conducted every year	➢ AMCOs, COASCO, DC.
5	July – October, 2013	Coffee processing industry should not be involved with purchase of coffee AMCOS should collect coffee from farmers and buy improved coffee .	➢ MCCCO industry Ltd, City Coffee and CMS Ltd/LIMA.
6	June – July,2013	Lobbying and advocacy for policy change that shall keep the interests of farmers	➢ DC and farmer

EXISTING CHALLENGESIN ICHESA - 23/05/2013.

No	Area	Challenge
1	**Production**	limited capital to buy inputs for instruments and CPU
		Drought
		Knowledge of production quality
2	**Processing**	Lack of knowledge of processing, operation and maintenance of the CPU -coffee processing equipment
3	**Market**	Education to establish and operate a cooperative
		Low prices and instability in the market price

SOLUTION FOR THE CHALLENGES OF ICHESA 23/05/2013:

NO	TIME	ACTIVITY	RESPONSIBLE
1	September–October 2013	Educating farmers about better production, processing and CPU	District councils, farmers, professionals and local administration.
2	July – October 2013	Enhanced and enabled to build tanks and wells	District councils, farmers and village government.
3	2013 – 2014	Promote the program to construct Ichesa dam.	District Council, donors, village government and farmers
3	March – April	➢ Loan to Farmers / groups for coffee inputs ➢ Enabled Groups to get CPU	Financial institutions, Bank of CRDB, NMB, SACCOs, farmers, National input fund, TIB

KNOW THE EIGHT LAWS OF INCREASING THE PRODUCTIVITY OF EIGHT OF COFFEE.

1. To CUT BRANCHES WELL

2. To CONTROL DISEASE AND PESTS

3. To APPLY FERTILIZER USING THE RIGHT STANDARDS

4. To WEED YOUR GARDEN WELL (PREVENT WEEDS)

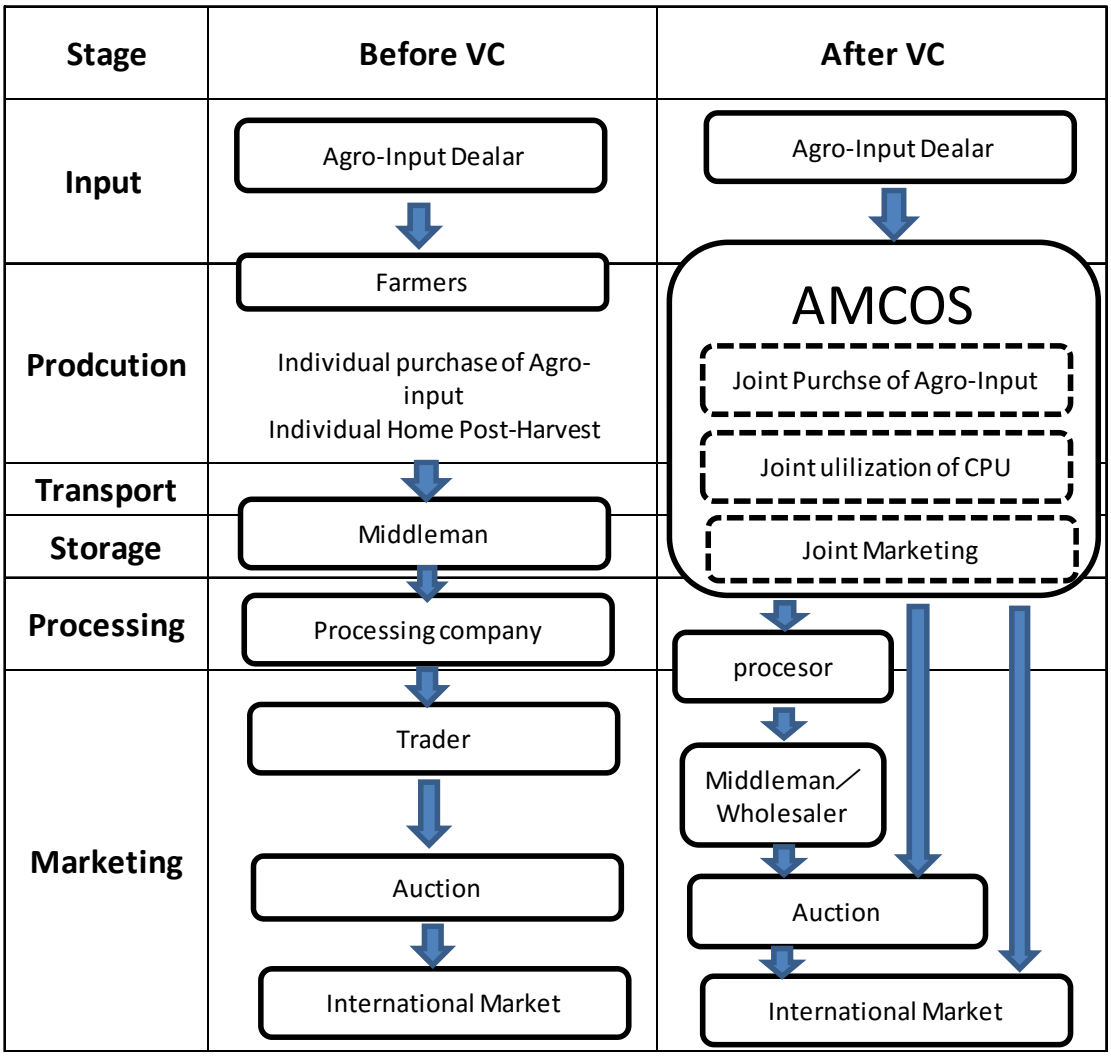
5. To REMOVE ALL SHOOTS WHEN ARISE

6. To MULCH THE FIELD

7. To IRRIGATE WHERE NECESSARY ESPECIALLY DURING THE DRY SEASON

8. To ALIGN SHADOW USING PROFESSIONAL ADVICE

VC image before and After the DADP Project and Pilot Activity



Action Plan for 2013/14 in Mbozi DC

Activities	Period	Summary of Activities	Target	Support Request Affiliate
Productivity enhancement training	Sep-Oct, 2013	• Cultivation technology training through extension workers • Follow-up training of production facilities after the installation	• Coffee farmers • AMCOS • VAEO, WAR • TaCRI/Private Sector/NGO （Techno Serve, etc.）	TaCRI Techno Serve Warehouse management providers Coffee processing company
Farmer organization strengthening training	2013-2014	• Functional enhancement of AMCOS and SACCOS • Capacity development related savings of farmers, transparency of organizational accounting • Preparation of agricultural input joint purchase • Record keeping for production and sales • Creation of the discipline for joint use of CPU	• Coffee farmers • AMCOS • VAEO, WAEO	
Marketing Strengthen Training	July-Oct, 2013	• Study Tour to Moshi (Moshi Auction, AMCOS, Farmers) • Establishment of cooperative shipping / marketing system • Provide feedback opportunities for producers from dealers, retailers • Negotiations with transporter	• Coffee farmers • AMCOS • Private Sector/NGO （Technno Serve /Warehouse management provider/Coffee processing company）	
Construction of CPU/Water Harvesting Dam	2013-2014	• Completion of the CPU/ Water Harvesting Dam Construction	• DFT • Coffee farmers	

ANNUAL PROGRESS REPORT ON PILOT ACTIVITIES

August 2013-June 2014

Mbozi District

1.**Provision of knowledge and information on the market and quality assessment of coffee**

1.2 .Study tour to Moshi to learn how quality is assessed and observe the auctions

- A total number of 17 people participated in Moshi tour .It was a one week tour from 3rd to 11th of November. On Sunday November 03, 2013 Agriculture officers from Regional Secretariet, District Agriculture Officers, Ward Agriculture officers and farmers participated in a study visit to Moshi. The study visit duration was 9 days.

The study visit goals were;

-To provide participants with skills that will enable them to improve coffee quality through better Agronomy practices, processing and quality.control.

-To provide participants with knowledge on grading systems, coffee auctioning procedures, how buyers access coffee from farmers and market requirements for coffee.

-To provide participants knowledge on the coffee stakeholders and the roles played by each the promotion of coffee industry so as to improve the situation in Mbozi District.

DAY ONE (Tuesday November 2013

The team visited TaCRI –Moshi, it was the first day of our study tour. We were met by Mr. John Mabagala who introduced the team to different departments according to our objectives as follows

a) Soil Laboratory

We were met by the laboratory technician Mr. Epafra Mosi

After introductions were accomplished Mr.Epafra Mosi started to give us explanations about different sections of the soil laboratory and activities that are done at each section

Objective of the Soil Analysis were as follows:

i. To Analyse soil so as to establish and sustain coffee needs or requirements.

ii. Advice farmers or Institutes involved in coffee production on proper use fertilizers.

iii. TaCRI analyses amount and types of minerals present in the soil minerals such as Magnesium, Manganese, Iron, Phosphorus, Sodium, Copper, Calcium and Zinc. The laboratory also does analysis for Ph, nitrogen and organic carbon

The concept we obtained during our study tour were as follows:

Procedures for soil sample collection in the field. There are two methods

(i) By using soil zones-soil opening-whereby samples are taken by following an interval of one foot or layers. A sample taken from one layer should be separated from a sample taken from another layer. Samples should be taken starting from the deep layer and lastly the upper most layer.

(ii) Second method is using soil augal.

This is a special instrument for collection of soil samples. It is calibrated in such a way that soil samples are collected at different layers separated by one foot each

Sample labeling:

- Samples taken should be labeled with the name of the farmer, village, and layer before being taken to the laboratory.

In the Laboratory:

- There is sample registration and marking (including field labeling)
- Sample drying. It is preferred that samples be dried at room temperature to avoid denaturing of nutrients or minerals.
- If necessity arises samples can be dried in an oven at temperature of about 105^0 centigrade for an hour.
- Grinding sieving and packing sample for analysis
- Weight of each sample is taken
- Analysis for soil pH because it enables to determine soil acidity or alkalinity and therefore the type of fertilizer to be used. Recommended Soil pH for coffee range between 5.2-6.5
- Testing for Cation Exchange Capacity (CEC). This determines the soil ability to retain nutrients
- Analysis for different types of minerals (elements) present in the soil and their concentration (amount)
- We noted that acid soil needs alkaline fertilizers and the alkaline soil needs acidic fertilizers.

Then we asked some questions about soil analysis.

THE WAY FORWARD:

- In collaboration with coffee stakeholders Mbozi District Council have to facilitate soil analysis in the 6 Wards (Myovizi, Msia, Itaka, Isansa, Igamba and Iyula.
- Establish fertilizer uses schedule.
- In collaboration with coffee stakeholder extension worker should be facilitated with sample instruments and reagents for soil analysis because it is important to be done every year.
- Establishment of teaching module that involves the use of fertilizers with both macro and micro nutrients as they are important in the coffee taste (Cupping).
- Foliar Fertilizers application is very important to add the missing macro- nutrients
- For accurate location of areas where soil samples are taken and estimation of area under coffee production it is recommended to provide GPS and train extension staff how they can be used.

Post harvesting handling and processing

The same day we went to another area to learn about post harvesting handling and processing

We were met by Mr. Peshazi (Farm Manager) who also deals with post harvest handling and processing

There Mr. Peshazi as Farm Manager started giving us explanations about post harvest handling and processing. Our main objective was to know the importance of post harvest handling and processing and important stages in the process.

Post harvest handling and processing:

Harvested red cherry are collected in a specific area just nearby water chamber for sorting

Physical sorting/manual sorting is done in order to remove the following:

- Unripe cherry
- Over ripe cherry
- Cherry damaged by insect/diseases

Grading by water

Ripe red cherry are flushed into a water tank where they are graded by weight before they are allowed into the CPU. Heavy beans sink down and light beans float. The beans are then allowed into the pulper through pipes starting with the heavy ones. This are graded as class one at this stage. After the heavy cherry are processed, the other cherry are allowed into the pulper. This is the first stage of grading and the beans are collected in different chambers.

Before pulping the machine has to be adjusted so as to avoid bean breaking

Pre-washing:

Before fermentation, the beans are washed to remove floaters and mucilage. Fermentation is done for 2 – 3 days depending on weather condition. After that the coffee beans are washed thoroughly before drying

Drying

- The washed beans are dried in a wire mesh for 7 – 8 hours to remove water. After that it is dried in normal mesh for 7 to 14 days depending on sunlight intensity.
- The drying frame should be 1metre above the ground level.
- Use of shed net for drying is recommended to avoid rusting.
- The beans should be turned upside down after every 2 hours for consistent drying.
- While drying manual sorting should be done to remove unwanted materials or coffee beans.
- Acceptable moisture content for complete drying is between 9-12%

Storage:

- The dry coffee beans should be stored in a clean store

- The store should well ventilated
- Manual sorting
- Should be kept in 60kg bags free from smell

Transporting of parchment coffee to curing plants:

- Motor vehicle used should be free from dirty
- Motor vehicle used should be covered while transporting the bags to avoid dust.

Disposal of coffee pulpers

These are decomposed and utilized as compost manure in the coffee farms

The way forward

- Facilitate farmer group/AMCOS to use shed net in order to reduce rusting of the beans.
- In collaboration with coffee stakeholder to work out ways through which farmers can get enough clean water for coffee processing.

Lastly we went to the plant pathology laboratory where Mr Mabagala gave us explanation about Integrated Pest Management where he specifically discussed the following pests

- Meal bug
- White stem borer
- Green scale
- Berry Borer

Meal bug

Attack tender leaves and shoots

Effects:

- Reduce coffee production
- Increase production cost
- Reduce coffee quality

Control Measures

Using of piece of soap dissolved in water to form a solution which is sprayed on the leaves and shoots

Using of insecticides but consideration should be taken into account as follows:

- Correct preparation of the insecticides
- Correct dose
- Correct application

White stem borer:

It bores the stem of coffee

Effects:

- Reduce coffee production
- Increase production cost
- Reduce coffee quality

Control Measures

- To clean the scales on the lower part of coffee stem to prevent the white stem borer from laying eggs on the stem
- Using of insecticides

Berry borer:

It bores coffee cherry

Effects:

- Reduce coffee production
- Increase production cost
- Reduce coffee quality

Control Measures:

Using local beer as a bet when cherry is near to ripe

Using insecticides

Green scale

Attack tender leaves

Effects:

- Reduce coffee production
- Increase production cost
- Reduce coffee quality

Control Measures:

- Use of ash
- Use of Insecticides

We learnt to use intergraded pest management rather than using insecticides.

The way forward:

- Training farmer groups/AMCOS to use intergraded pest management in case there is identification of pest
- To advice farmer group/AMCOS to plant medicinal plants for treatment such as neem tree.
- Early control of pests at the onset of the problem has an element cost and labor reduction and hence an advantage to the farmer

DAY TWO (Wednesday, November 6th, 2013)

We visited Tanzania Coffee Board where we were met by Mr. Kimario. After introductions, Mr. Kimario gave us a brief background of the Tanzania Coffee Board that it is a government institution established in 2001 by Act of the Parliament Number 23 and amended in 2009. Some of the information he gave us are as indicated below:

Vision

- The Board envisions to become a leading regulatory Board in the provision of services in the Tanzanian and African coffee Sector.

Mission

- To facilitate an enabling business environment for a sustainable coffee sector.

Main functions of TCB

(i)Promotion: In Promotion it embraces Advisory, Representation and Information dissemination

(ii) Regulatory: In Regulatory it embraces Supervisory, Monitoring and Co-ordination

Coffee Data Profile

- There are 13 regions that grow coffee. 7 out of them are the major producers
- 90% of the coffee production in Tanzania is done by smallholder farmers
- 450,000 households are involved in coffee production all over the country
- Over 2.4 million people benefit directly from coffee
- Average production all over the country is between 800,000 – 1,000,000 bags (each 60kg) per annum
- Average revenue from coffee sales is USD 150million/annum (USD 180 million in 2012/13)
- 40% of the coffee produced in Tanzania is Robusta
- 60% of the coffee produced in Tanzania is Arabica
- Arabica coffee is produced at an altitude of 1,300 – 1,800 m.asl
- Production is mainly through rain fed cultivation

Tanzania coffee marketing system

- There are three marketing systems in Tanzania
- ***Farm Gate market*** – Farmers sale the raw coffee, ungraded and unprocessed. (Parchment for Arabica and dry cherry for Robusta) to licensed coffee buyers and cooperatives.
- ***Auction market*** **–** this is the market where licensed exporters buy coffee for export market.
- ***Direct export market*** –whereby growers can sale directly to roasters outside the country.

COFFEE AUCTIONING

- Done every Thursday of the week
- Coffee is sold by catalogue
- Transparent and efficient
- The ports of exit are Dar es Salaam and Tanga.

We learnt that buyers are free to get information about all activities before the auction starts.

Coffee exports by destination 2012/13

	COUNTRY	KILO	PERCENTAGE	REVENUE
1	**Italy**	**16,577,683**	**26.18%**	**31,619,278**
2	**Japan**	**12,525,798**	**19.78%**	**41,151,039**
3	**Belgium**	**6,272,758**	**9.91%**	**16,388,475**
4	**Germany**	**7,987,004**	**12.61%**	**28,402,196**
5	**USA**	**5,973,983**	**9.44%**	**18,750,660**
6	**Others**	**13,979,557**	**22.08%**	**44,001,278**
	TOTAL	**63,316,783**	**100.0%**	**180,312,926**

Then we asked some questions about TCB.

THE WAY FORWARD

Through JICA support and linkage we anticipate that farmers will benefit more if they are linked with direct export market to their coffee (Direct sale to roasters outside the country).

Cup Tasting

Cup tasting follows several stages as indicated bellow:

1. Green analysis/physical inspection

Here you check for

- Uniformity of beans
- Color
- Creaks
- Fermentation
- Dirtiness

2. Roasting:

- Standard roasting temperature is about 240^0 C – 180^0C
- After roasting the roasted coffee is cooled

3. Grinding:

The coffee is grinded into fine particles

4. Brewing

The grinded coffee is mixed with water (14gm of coffee with 250cc water) and left to brew for 3 to 4 minutes. The water temperature required is 90^0C

5. Cup tasting

At this stage we are looking for:

Fragrance

Aroma (Acidity and bitterness)

Flavour

Defforty

- Fermentation
- Sour
- Wild
- Fruit
- Glass
- Onion
- Harsh
- Bitter
- Earth
- Green (unripe)
- Potatoes
- Woody

Cup tasting leads to classification.

Coffee classes

There are 17 classes:

The first class is number 1 up 7

A certain grade can have more than one class.

There are qualified people for cup tasting.

THE WAY FORWARD

- To train farmer groups to understand the importance of adhering to the 8 commandment for coffee production and 10 commandments for coffee quality
- To make farmer groups be aware of the importance of getting feedback after cup tasting in order to understand the grade and class of their coffee before auctioning and work up their future plans to improve quality.

On the same day we went to KNCU to where we learned about the roles and responsibilities of the Cooperative Union.

We were met by Mr. Gerald Msilanga who coordinates all extension service activities. After introductions we continued with our discussions on the roles and responsibilities of KNCU.

Roles of KNCU

1. Provides community related activities/services to their members such as:

- Community healthy insurance schemes whereby each family contributes 49,000 Tanzanian shillings per farm family and gets services for a family of 4-6 family members.
- Establish an education fund which provides school fees to 447 children of their primary society members.
- KNCU fair trade premium project provide funds to finance organic farming in ten primary societies with a total of 6,425 farmers. These farmers produce organic coffee and access high prices hence high income.
- Fair Tourism Project – This project enable coffee farmers to get income through accommodation of foreigners who want to learn how coffee is being produced. 70% of the fund remains in the villages to help community development projects. The rest of the money (30%) remains with KNCU and is used for price stabilization in the market.
- Establishment of Union coffee café – The project has enabled the union to get extra money (around 400 million per year) which can allow them to provide farmer services.
- KNCU also have shares in the coffee curing company at Moshi. This allows KNCU to have say/control in curing and hence better prices.

2. Production of coffee seedlings

KNCU have their own nursery for production of good quality seedlings which are sold to farmers through their primary societies

Lessons learnt

i. The union is made up of 68 primary societies.
Therefore the District should sensitive farmer groups to form AMCOs.

ii. KNCU provide extension services, cooperative education and working gears such as motor cycles and fuel to its members and extension staff
   - District Council should prepare coffee teaching aids and programs to all extension workers.
   - District Council to prepare teaching modules for group formation, group dynamics
   - District Council and AMCOs to support establishment of coffee nurseries for production of high production and CBD and Leaf Rust tolerant seedlings

iii. KNCU provide market information on coffee prices to member primary cooperative societies.
   - The district has to establish a system through mobile phone which can provide marketing information to Mbozi AMCOs.

iv. KNCU provide minimal production cost by providing best quality inputs

- District to establish of pilot organic farming in some areas so as to get high profit through direct export

v. Transparency
- To conduct regular meetings which will enable group members to be aware of everything that is going on in their group (Good governance)

Lastly we got a chance to ask questions concerning KNCU.

THE WAY FORWARD

To ensure that all AMCOs members are knowledgeable of their rights, roles and responsibilities.

To conduct train to the members of AMCOs so that they become aware of their rights, roles and responsibilities

DAY 3 (Thursday 7 November 2013)

On Thursday 7 November 2013 we attended coffee auction at TCB

We had an opportunity to see how coffee is auctioned. Fortunately Mbozi coffee was among the coffee auctioned.

In the auctioning process we learned three important things

No bid: Meaning the lot was not sold and it will come again for auction

Noted: Meaning that the lot was not sold but there is a bidder who was interested and there will be some negotiations later for the coffee

Sold;. Meaning that the coffee lot was bought at the indicated price

We also learned that large lots were sold faster and at a better price than small lots, similar grades were sold at different prices (The effects of quality)

WAY FORWARD

Farmers have to be capacitated to increase production and adhere to quality requirements to get high income

DAY 4(Friday 8 November 2013)

On Friday, November 08, 2013 we visited AMKENI Gourmet Coffee Group at Mwika and were met by the chairman of the group Mr. Dauson Lyimo.

After introductions Mr Lyimo gave us a brief history of his groups.

The concept obtained:

The group started operating after receiving training in 1999 through Techno Serve

Role/Responsibility

- To collect red cherry coffee from members
- To undertake post harvest process
- To transport and sell at the auction

AMKENI GROUP:

- Maintain quality of coffee by following the 10 commandments and as a result they succeeded to get coffee quality award 3 times in Tanzania and 1 time in Africa.
- They make sorting before and after drying
- With exception of casual labor there are only two members who are paid monthly allowances (The chairman and secretary). They have a security guard who is paid salaries for the whole year
- They practices organic farming
- As group they find customers who are going to buy coffee directly from them.
- They are provided with credits and extension services from KNCU
- They buy cherry from the members in cash and after selling they pay the members for the difference. They buy cherry at 500/= per kg
- Record keeping is done always
- Operation and maintenance cost are covered by group members served by their CPU.
- There is water recycling while processing coffee.

MWIKAMSAE KINYAMVUO RURAL COOPERATIVE SOCIETY

On the same day we went Mwikamsae Kinyamvuo Rural Cooperative Society. We were met by the chairman and other members of the society. The chairman gave us a brief history of the cooperative society as follows:

The society was registered in 1987 by Registration No. KAR 113.

Members

The society has 909 active members of which 427 are female and 782 are male

Production

- Production is between 80,000 kg to 100,000 kg
- They don't have purlpery unit but they control coffee quality by following the Ten Commandments.
- They are very close with farmers in terms of supervision.
- They practice organic farming in small plots
- Currently they have a pulper (CPU) secured through DADPs support and is at the final stages of instalation

Relationship with KNCU

- They are member of KNCU
- They are provided with extension services, farm inputs as well as advance payment by KNCU
- Through KNCU they are enabled to get sponsors in academic matters by helping their children in paying school fees and other social services. (Standard one up to form six).
- They contribute their fund to community development project e.g. construction of classrooms, health centre projects through the village government
- The farmer members through their general assembly meetings decide what should be done with money they get from KNCU as devidents

Responsibility and Transparency

- They obtain their leaders through elections done after every 3 years.
- Every group member has an equal chance of being elected as a leader.
- Decision making is made by every member through annual meetings.
- Results from open Auction is very known to all members

Weakness/Challenges:

- Most of them have old coffee trees.
- Labor force is a problem because most of them are old.

Lastly we sat together for discussions and DAICO winded up by giving thanks for their time.

THEY WAY FORWARD

- Training of farmer group/AMCOS to have transparency in terms of budget, income and expenditure
- To advice farmer group to conduct annual general meetings as stipulated in the Cooperative law and their constitutions in order to discuss their succses, challenges and air their views.

DAY 5 AND 6 (9 November and 10 November 2013)

These two days were used to travel from Moshi to Mbeya

DAY 7 (Monday 11 November 2013)

On Monday, November 11 we visited Mbeya City Coffee Company and Mbozi Coffee Curing Company Ltd

At Mbeya City Coffee we were met by Mr. Luvanda, the Factory Manager while at Mbozi Coffee Curing we were met by Mr Oscar B Mvanda the Company Engineer.

After introductions they showed us through their factories while giving explanations on what is done at each section.

The concept obtained

MBEYA CITY COFFEE AND MCCCO Ltd

Collection of parchment coffee

- Weighing the parchment coffee is done immediately on receiving.
- Measure moisture content (should not be more than 12.5)
- Off-load from motor vehicle
- Before processing, the parchment coffee should be weighed again

Customers are requested by letter for permission to hull.

- Before hulling customers are informed to be available at the factory to witness their coffee being processed
- Re weighing is done to crosscheck whether the coffee is at the same weight as it was received or not. Normally if it has been at the factory for a long period it can lose the original weight through loss of moisture
- Sorting is done to remove foreign matter
- After de hulling, polishing should be done to remove the fine silver skin on the coffee beans.

Grading:

Grading is done by size and weight. The grades obtained are as follows:

AA, A, B, PB, C, F

The factory prepares sample statement which is sent to TCB

- TCB provide catalog/auction schedule which shows when that lot is to be auctioned
- TCB provide order which show that coffee has been sold
- Storage fee is paid by the buyer
- Processing fees is paid by customer

Curing loss

- Standard curing loss is between 18-20%. Above that level it implies that there were foreign matter like stone etc in that particular lot.

THE WAY FORWARD

To train farmer groups/AMCOs to be aware of adulteration which lower the coffee quality.

To provide moisture meters to extension officers especially those in the pilot area.

Conclusion

The significant training we received during the study visit enhanced our knowledge as Agricultural officers and farmers and will enable us to improve the quality and production of coffee in Mbozi District.

REPORT FROM STUDY TOUR - MOSHI

WORK PLAN IN THE VILLAGE 2013/2014

MONTH	ACTIVITY	RESPONSIBLE
DECEMBER	➢ Advising farmers group AMCOS to spray pestcides in the coffee trees to control pest ➢ Advice farmers to use F.Y.M	- AMCOS members - Groups
JANUARY	➢ Control of leaf miner in coffee tree. ➢ Weeding ➢ Planting of coffee seedlings ➢ Fertilizer application.	- AMCOS members
FEBRUARY	➢ Planting of coffee seedling ➢ Weeding	- All AMCOS members and groups
MARCH	➢ Weeding in coffee tree ➢ Light pruning ➢ Spraying against antestia bugs	- All AMCOS members and groups

1.2 Cupping training by TCB

During the -During the training 70 participants were trained.
This training was conducted on the 3 pilot areas.

1.3 Baseline Survey

1) Planning of the survey. Plan and Methodologies of Baseline Survey

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The DFT members met to discuss on how the survey was going to be conducted.

- The time frame work of the base line survey started on 24th March 2014 to 25th March 2014.
- DFT decided to undertake pre-visit all the 3 villages, for the provision of the name list and introduction of the survey objectives to the village /ward extension workers and AMCOS leaders.
- Discussed on interviewers and interviewees where they agreed that five (5) interviewers (4 from DFTs and one extension officer) to conduct interview in the villages.
- In each village 20 interviewees were interviewed which makes a total 60 interviewees in the 3 pilot villages.
- Methodology used is individual interview with questionnaire.
- Time to be spent at the village was 2 hours.
- Selection of interviewees was decided to use name list against size of the farm. The word/village agricultural extension officers were responsible for making the name list.
- How to enter data and preparation of the report were discussed.

2) Modification of questionnaire and making data sheet.

- The basic questionnaire made from textbooks was modified to be simple with multiple choices. There are 3 choices starting with recommended or good practice, to the not recommended or bad practice , i.e. A, B and C. However, the interviewers can modify the order when they ask interviewees the choices, preventing that the order implies the value or goodness of practices.
- The base line survey data sheets were made, two types were discussed and come with one type of drop down list. Then the option D was proposed for the answer that cannot match with the 3 options given in questionnaire.
- After discussion, DFTs added more questions in the questionnaire. These questions were about age of interviewee, to find interviewees understanding about grades given after coffee curing/hulling companies and those given in TCB before auction, after testing.
- The first draft of English version questionnaire was then printed and used for mock interview in Kiswahili.
- The testing was to find how it sounds in English and Kiswahili. Then the Swahili version were made and tested.

3) Implementation of baseline survey in the three target villages

- The field work of collecting data started at Hamwelo (29th March,2014),Msia (31st March,2014) and Ichesa village (01st April,2014) .Where the number of 20 farmers from each village interviewed, Totally 60 farmers interviewed and each interviewer was supposed to interview only 5 interviewees.
- After conducted this activity at the field level, the work is continuing in the office where the team is still working hard, tireless in order to make sure that we can accomplish this task successfully on time. So members of the team have been shared tasks like data input, designing graphs, the ways of making analysis, chapters to be included in the report, etc.

4) Data Analysis

- The exercise of Data input had been done by all DFT members surveyed the pilot villages,this activity was started from Monday to Wednesday this week.
- Also at the same time DFT have been doing Data clearance input ,to cross check the reliability of the data collected, farmers participated. This was done by checking the name list filled by WAEO/VAEO against the interviewed data sheet in order to know who was interviewed and who was not, but also to be sure of the data accuracy entered in the data sheet for each interviewee for all questions and villages.
- On top of that DFT discussed over the ways of analysis, and making of graphs, we realized that our data will be analysed into three categories which were post-harvest treatment and processing practices, marketing, and general condition of farmers (questionnaire number 1-13,16-18,and 14,15,19 respectively) where the team proposed that we will use bar chart and pie chart depending on the nature of the questionnaire. For questionnaire number 1-13 bar charts will be used ,and for questionnaire number 14-19 pie charts ware proposed. Successfully all charts were produced and handed to members of the team to read the charts, understand, and write what the charts implies about.

5) Basic Information about Interviewees

This analyzed the basic information from the interviewees in order to get a general knowledge about which age is dealing with coffee, the number of coffee they have and the size of their farms.

Age Group of the Interviewees

This enabled us to understand from each village the age of farmers dealing with coffee industry and charts shows the majority is 31 to 60 of age dealing with coffee ,little from the age of up to 30 and no above the age of 61. See the table and the chart below.

Table 1:Age group of Interviewees

	ICHESA	MSIA	HAMWELO	TOTAL
A	3	1	3	7
B	17	15	14	46
C	0	4	3	7
D	0	0	0	0

Note: From Question19. A. up to 30, B. 31 to 60, and C. 61 and above

Pie chart depicts age categories of farmers engaged in coffee production. From the Pie chart, it shows that majority 77% farmers in 3 villages Ichesa,Msia and Hamwelo are aged between 31 and 60 years,11% between 61year and above and 12% are aged between one year and 30 years.

This implies that, all villages having enough labour power.

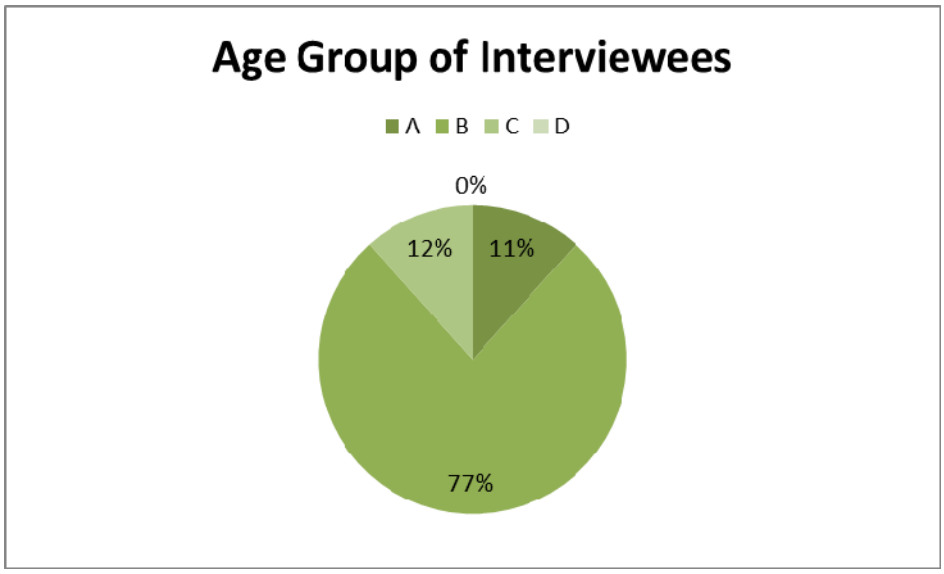

Figure 1:Age group of Interviewees

Size of Coffee Farm possessed by the Interviewees

The aim of this question was to know the number of acres they are cultivating coffee ,and the analysis showed us the most farmers have less than 5 acres ,it is about the 95% of all interviewees while only 5% of farmers possessed between 6 and 10 acres .This shows that farmers are categorized at small scale target village .See the table and the chart below.

Table 2: Size of Coffee Farm possessed by the Interviewees

	ICHESA	MSIA	HAMWELO	TOTAL
A	20	19	18	57
B	0	1	2	3
C	0	0	0	0
D	0	0	0	0

Note: From Question 14. A. up to 5acres, B. 6 to 10, and C. 11 and above

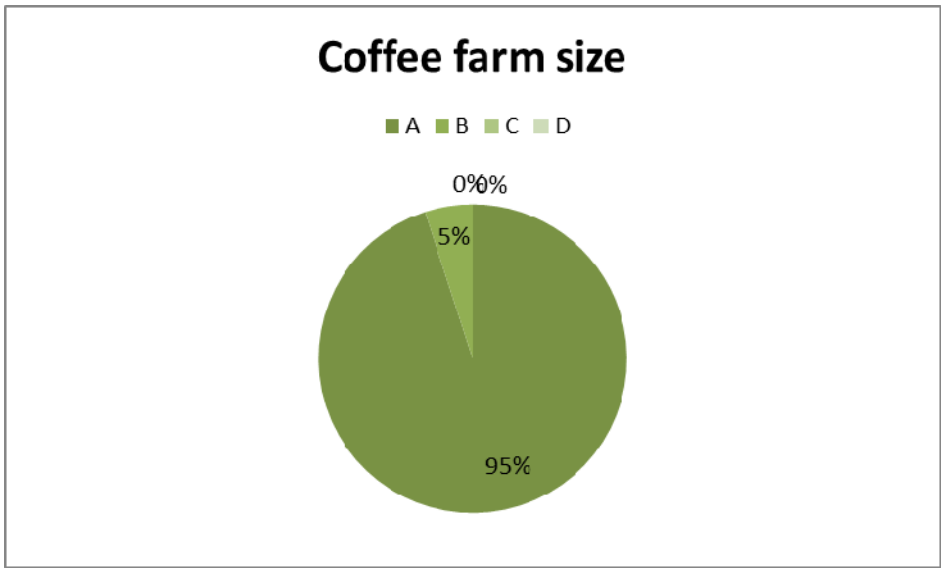

Figure 2: Size of Coffee Farm possessed by the Interviewees

Number of Coffee Trees possessed by the Interviewees

Under this analysis it was designed to understand the number of coffee trees the farmers are possessing so that later we can determine the expected productivity from these trees. According to the analysis below majority of the farmers possessing more than 501 trees as you can see the chart and table below.

Table 3: Number of Coffee Trees possessed by the Interviewees

	ICHESA	MSIA	HAMWELO	TOTAL
A	1	1	2	4
B	11	2	7	20
C	8	17	11	36
D	0	0	0	0

Note: From Question 14. A. up to 5acres, B. 6 to 10, and C. 11 and above

The data from the pie charts portray that the majority posses up to 1000 trees of coffee .

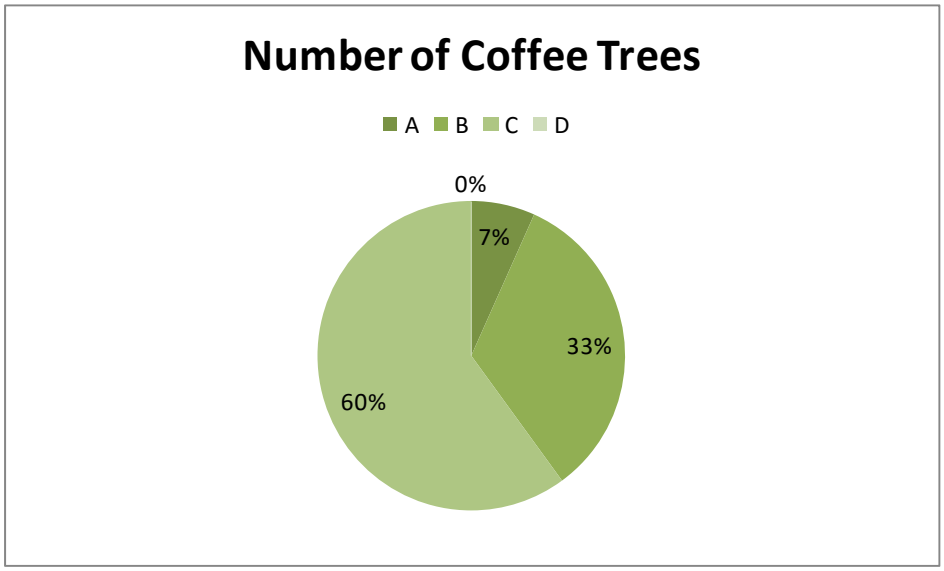

Figure 3: Number of Coffee Trees possessed by the Interviewees

Training for processing coffee

Pie chart below shows that 36 % of farmers attended training on coffee processing, 12% of farmers were informed by attendants and 52% were not informed by attendants. This indicates that a large number of farmers did not received any information on coffee processing.

Table 4. Training for processing coffee

	ICHESA	MSIA	HAMWELO	TOTAL
A	7	5	10	22
B	1	4	2	7
C	12	11	8	31
D	0	0	0	0

Note: From Question 16: A. Yes, I attended to training courses. B. Yes, I was informed by attendants. C. No, I was not informed.

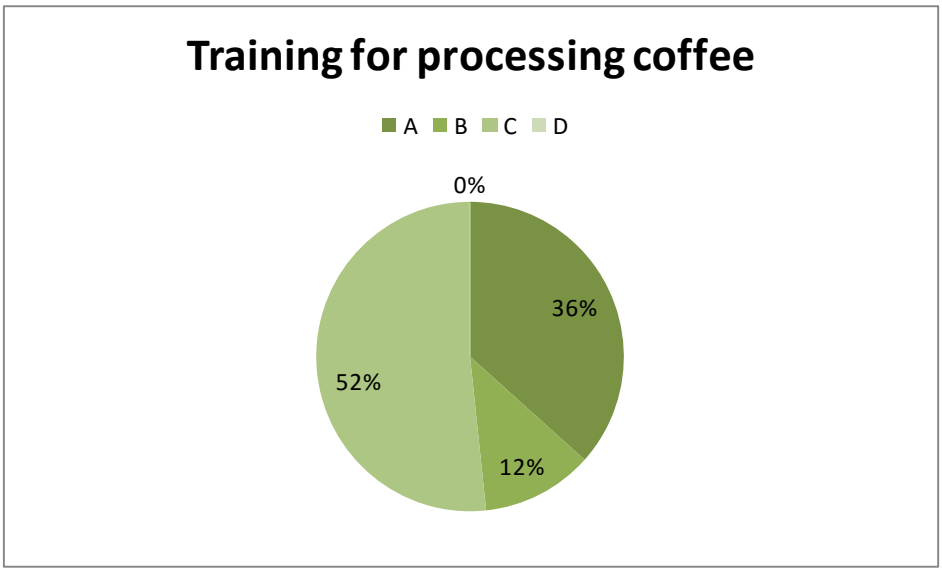

Figure 4. Training for processing coffee

6) Result and Analysis

Post-harvest treatment and processing practices

(1) Overview

We are going to do overview analysis to grasp the situation of post-harvest treatment and processing practices done by interviewees.

Generally speaking, farmers in the 3 villages perform well on the following activities; picking of cherries (Question 1, hereinafter, Q 1), Cleanness of pulping tools (Q 5), Quality and Quantity of Water for processing (Q 6 and 7), and Sorting during drying (Q 11).

On the other hand, for the following practices the farmers are not performing well; Sorting of red cherries (Question 2, hereinafter, Q 2), Pulping tool and quality of tool (Q 4), Fermentation (Q 8), Grading (Q 10), and Bags for storage (Q 13).

Table 5:Post-harvest treatment and processing practices

	1	2	3	4	5	6	7	8	9	10	11	12	13
A	50	2	27	1	54	45	37	11	29	14	47	29	6
B	8	53	10	59	6	11	12	10	29	10	9	14	34
C	2	5	23	0	0	4	11	37	0	36	4	17	20
D	0	0	0	0	0	0	0	2	2	0	0	0	0
TOTAL	60	60	60	60	60	60	60	60	60	60	60	60	60

Note: From Question 1-13:See Attachment 2

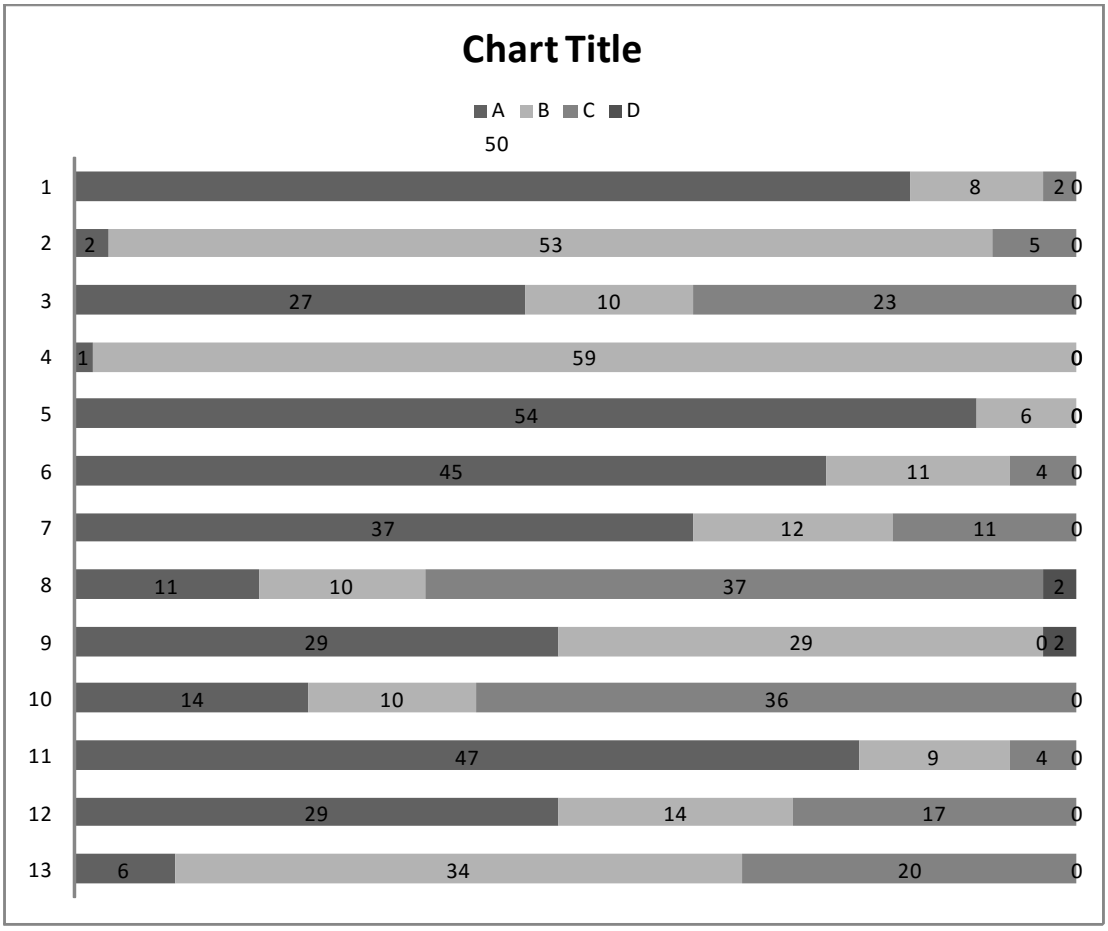

Figure 5:Post-harvest treatment and processing practices

(2) Detailed Analysis

Well done activities

In this part, the analysis is depicted below the table of the theme/ topic, question and answer choices.

	Theme/ Topic	Question	Answers
1	Picking of cherries	What types of cherries do you pick up?	A. Only properly ripe red cherries B. Sometimes including non-ripe or over-ripe but not diseased C. Sometimes including diseased, dried cherries, or sand

It seems most farmers understand the importance of picking red ripe cherries. On the question of the type of coffee which is picked scored high (50 out of 60 in total). Only 8 people agreed to have picked non-ripe and over-ripe cherries and diseased also.

	Theme/ Topic	Question	Answers
5	Cleanness of pulping machine (hand pulper and CPU)	How often do you wash pulping tools?	A. Pulping machines/tools are washed every time B. Pulping machine/tools are sometimes washed. C. Pulping machine/tools are hardly washed.

Majority of the farmers (54) wash their pulping tools every time after use. Only 6 interviewees said pulping tools are sometimes washed.

	Theme/ Topic	Question	Answers
6	Water for processing-Quality	What is the condition of the water that you use for processing?	A. Water is clean (transparent and not smelly) B. Water is not clean sometimes C. Water is not clean every time.
7	Water for processing - Quantity	Do you always have enough water for processing?	A. We always have enough. B. I sometimes have enough. C. I do not have enough water every time.

Water for processing quality coffee is clean and enough for most farmers. Majority, 45 farmers suggested that they use clean water for processing coffee. Only 11 said that sometimes water they use for processing is not clean. On the quantity of water for processing 37 interviewees said they always have enough water.

	Theme/ Topic	Question	Answers
11	Sorting during drying	Do you always do sorting during drying of the coffee parchments?	A. Yes, always. B. Sometimes. C. No, not at all.

Sorting during drying is well done by majority of farmers. Out of 60 farmers interviewed in the 3 villages, 47 farmers suggested that they always do sorting during drying of coffee parchments. And 9 of the 60 said that they do sorting only sometimes, 4 people said not at all.

Not well done activities

	Theme/ Topic	Question	Answers
2	Sorting of red cherries	Who sort red cherries?	A. AMCOS or Group B. Individuals C. Sorting is not done at all.

It seems that AMCOS or Groups have not intervened much for sorting of red cherries. Out of the 60 farmers interviewed, 53 farmers insisted that sorting is done individually. Only 2 interviewees said they do sorting through AMCOS or Groups. Worst, 5 interviewees said that sorting is not done at all.

	Theme/ Topic	Question	Answers
4	Pulping tool and quality of tool	Which pulping tool do you normally use for pulping?	A. CPU B. Hand pulper C. No tool. Because I sell red cherries to a middle man / curing company

Almost all interviewees answered that they use hand pulper. Only one interviewee said he uses CPU for pulping while 59 interviewees use hand pulper.

	Theme/ Topic	Question	Answers
8	Fermentation	What do you use for fermentation?	A. A fermentation tank or pool. B. Buckets or *Sufuria* (cooking pots) C. Polythene bags

Fermentation is not properly done because most farmers perform worse by using polythene bags. More than half, 37 interviewees said they use polythene bags and only 11 interviewee use fermentation tanks or pool.10 interviewee use buckets or *sufuria* (cooking pots).

	Theme/ Topic	Question	Answers
9	Drying parchments	Where do you dry parchment?	A. On a drying table B. On a cloth or sheet on the ground or drying floor C. Directly on the ground

On drying parchments its seems rather, an equal number of farmers use both drying tables (29) and cloth or a sheet on the ground or drying floor (29).This gives a total of 58 farmers.

	Theme/ Topic	Question	Answers
10	Grading	Who does grading of parchment?	A. AMCOS or a group B. Individuals C. Grading is not done.

It also seems there is little knowledge on grading. Majority (36) of the farmers in the 3 villages said that grading is not done at all and only 14 interviewees said that grading is done by AMCOS or Group. Only 10 interviewees do grading by themselves.

	Theme/ Topic	Question	Answers
13	Bags for Storage	What type of bags do you use to store parchments?	A. Sisal bags renewed every year B. Sisal bags used plural years C. Chemical-fibre made bags

In the 3 villages, out of the 60 farmers interviewed, 34 farmers said they use sisal bags that are continuously used plural years .Only 6 said using sisal bags which were renewed every year .But 20 farmers use chemical-fibre made bags.

(3) Knowledge about coffee quality in relation to market

Coffee grades

From the following table and figure, we have learnt that most farmers know little about coffee grades. This can be because this information sharing about the coffee grades is done in the coffee curing company, and the number of farmers who attend the coffee curing company is small.

The analysis shows that the understanding of coffee grades between one village and another it differs While 50% for Hamwelo AMCOS members know the coffee grades,Msia only 25% of members exactly know the grades.

Table 6:Coffee grading

	ICHESA	MSIA	HAMWELO		TOTAL
A	7	5	10	A	22
B	1	4	2	B	7
C	12	11	8	C	31
D	0	0	0	D	0

Note: From Question 17: A. Yes, I know. B. I somehow / a little bit know C. No, I do not know..

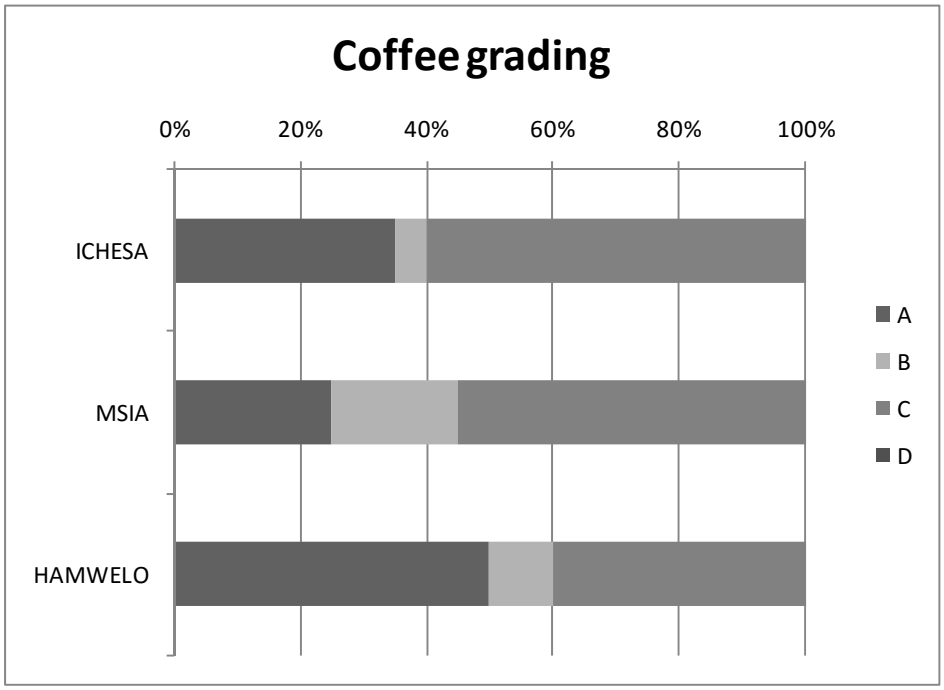

Figure 6:Coffee grading

Coffee classes

Answers to the question show us that the number of farmers receiving classes information is very small. This is because they don't get feedback from curing company and T.C.B who are responsible to return back an information to farmers; after cupping their coffee beans.

Table 7:Coffee classes

	ICHESA	MSIA	HAMWELO		TOTAL
A	1	4	5	A	10
B	2	1	1	B	4
C	17	15	14	C	46
D	0	0	0	D	0

Note: From Question 18: A. Yes, I know. B. I somehow / a little bit know. C. No, I do not know.

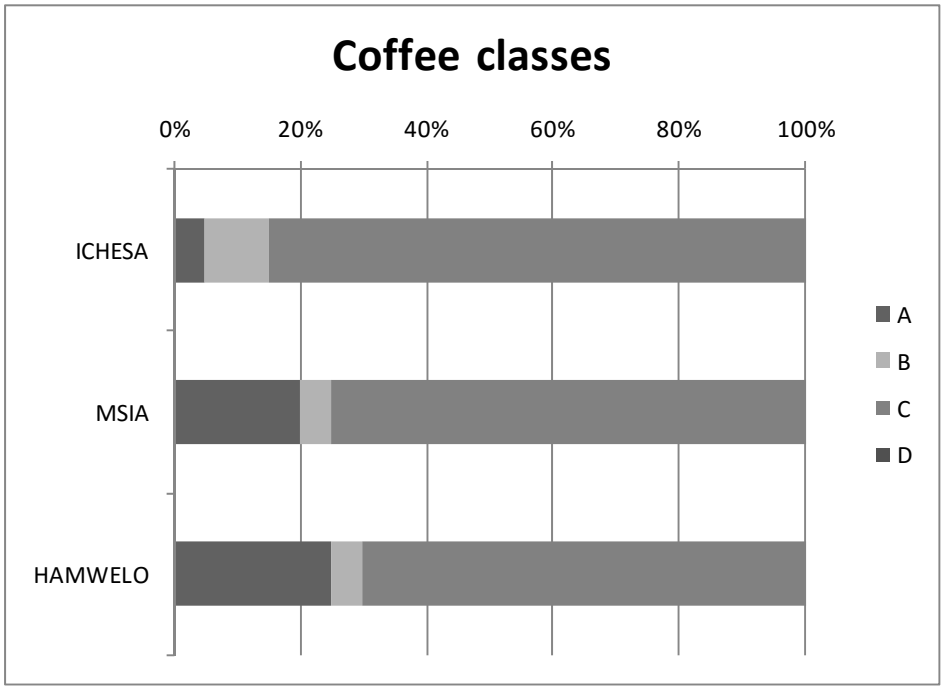

Figure 7:Coffee classes

1.4 OUTPUTS AT COMPONENT LEVEL

1) Short report concerning discussion with DFTs members,RS and RADAG staff

objective	Monitoring report of the pilot activities
Date	07/03/2014
Venue	DAICO office
participants	-Mr. kabale –SMS Coffee -Mr.Ndundu -agriculture officer -Ms. Shonyela- agriculture officer -Mr.Sirili –DAICO -Ms.Maganga-RS Mbeya region -Mr.Kayombo RS Mbeya region

	-Ms.Akabane-RADAG

Record of a minutes of what we discussed together as a team
The objective of discussion was to look on last assignment provided to DFT member.
Activities to bo be implemented
Activity 1.1: to conduct a study tour to Moshi to learn how quality is assessed and observed auction we appreciate this activity is already done and completed.
Activity 1.2: Visiting 3 companies to know how patchment are graded and sorted -already done.
We skipped to activity 3 ;
Activity 1.3: To conduct cupping training by TCB.Already TCB staff is informed and responded that the can accommodate not mere than 20 partcipant at a time,so its our task to organize transport to our respective farmers to TCB laboratory for cupping training exercise .(Mbeya branch)
Activity 1.4: DAICO were assigned to write a letter to TCB concerning soil sampling technician, letter written to TCB and response made that to fetch information from mbeya TCB.
Activity 1.5: To establish the system of information sharing about grade and class with the District because farmer should know how grades and classes are observed/comes and its important .This grades should interpreted by TCB and sent to farmers .

2. IMPROVEMENT OF PROCESSING PROCEDURES AND TECHNIQUES

Activity 2.1: To develop a training material concerning Coffee processing;before machine and after machine. Training material is prepared under DAICO office and some of it will be supported by TEMBO Coffee and they are ready to support in training sessions. The trainer for processing training to be informed after the topics are prepared. Another activity were ;To check the progress of CPU procurement and construction of necessary facilities of CPU- already Msumbi farm is informed and responded that next week tentatively on 14th March 2014. We discussed and reached consensus that the supplier should responsible to train on how to operate the machines.

Activity 3. Capacity development of AMCOS,s

Activity 3.1: To develop training material for training on AMCOS managrment training –already completed

Activity 3.2: To conduct training on AMCOS management –already completed

Activity 3.3: To make follow up of AMCOS activities after the training conducted in December to monitor wheather they have trained other AMCOS members,current record keeping format and performance and report what to be done to support them.After RICHRICH meeting what is done to the AMCOS ,the team said that they did follow up but they failed to reach at Hamwelo due bad weather.
During follow up the team discovered that;
-Msia had only general meeting .
-Ichesa trained other AMCOS members and developed an action plan so we must make follow up to look if are they following the action plan they made.

4.preparation for CPU installation

Activity 4.1: To develop a check list for CPU installation and use .Necessary topics for checklist is already prepared and we path through it together and reapeated portions deleted and some collections are made. To consult water engineer so that to design a tank by preparing a bill of quantities,but cost of construction will differ from one AMCOS to another .Quantity and cost of material should be provided to farmers so as they can discuss on it.for the case of Msia source of water is not fur but it is necessary to have water pump because water is found at asteep slope.to prepare a checklist is important so as to know if something is applicable .

Activity 4.2: To facilitate AMCOS to construct necessary facilities of CPU lay out and design of CPU.foundation and buildings information from the engineer for CPU is prepared and we noted that some of material can be managed by farmer themselves for example bricks making so we discussed that the BOQ should be sent to farmers so that they can discuss and mention things which they can manage on there own capacity and the one which they need District council support . Check the progress of the construction and it is better if one staff will be assigned to stay in the village during construction because supervision in construction is very crucial .what is needed to CPU is when constructin will start and when will end.Construction work can be done simulteniously cause just after foundation drainage can start.we decided that construction work can be done within short period as ;one week for foundation ,Two weeks for walling ,two days roofing ,four days door and window and the two days for painting.

Red Cherry Coffee collection

Red Cherry Coffee collection for Processing for Ichesa Amcos and Hamwelo Amcos.

Ichesa AMCOs

The activity stated on 23rd June 2014 for Ichesa AMCOs who collected 515. 5 kgs of red cherry for processing and that quantity was processed on the same day. That quantity was collected from 3 farmers

On 24th June 2014 Ichesa Amcos collected 886.5Kgs red cherry coffee for processing number of farmers who sent this was 2 only. Therefore Ichesa AMCOS for two days already collected total of 1402 Kgs. The activities of collecting red cherry coffee is continuously every day.

1. Hamwelo Amcos starts collecting red cherry coffee on 24th June 2014 and the total Kgs collected was 1063 Kgs number of farmers who sent this red cherry was 7. The activities also is daily.
2. Msia Amcos not yet started the activity of collecting red cherry coffee.

3. Capacity development of AMCOS,s

Activity 3.1: Preparation of training materials for the purpose of training AMCOS leaders.This was done on 11th-13th December.

Activity 3.2: Training was conducted on AMCOS management. This training was offered to 30 AMCOS leaders and 6 extension officers. After the training AMCOS leaders were able to train other AMCOS leaders and farmers on good record keeping and good report writing, decision-making procedures within AMCOS and collaboration also. This training was conducted on 17th-18th for the WAEOS December 2013 and 19th-20th December 2013.

Activity 3.3: Checklist was prepared for follow-up. After DFT team made follow up, it was observed that the participants of the training were able to train their fellow AMCOS members.

4. Post-harvest and processing training

5. Cupping training

This was done between 6th,7th and 8th May 2014. The training involved AMCOs members as follows: Hamwelo 54 AMCOS members, Msia AMCOs (35 members), Ichesa AMCOs (48 members). The training was conducted by staff from TCB

Challenges

1) Failure to meeting deadlines for CPU installation due to financial constraints, collaboration with other stakeholders like CMS company to provide for pulping services.
2) Poor Management of some the AMCOS of which trainings on management were offered.

Lessons learned

1) Price of coffee in auction will be determined by quality of coffee from the farmer.
2) Most farmers do not know the coffee classes
3) Good leadership lead to strong AMCOS
4) Majority of AMCOS members are men.
5) In collaboration other coffee stake holders like CMS may lead to get strong AMCOS

MBOZI DISTRICT COUNCIL IN COOPERATION WITH JICA IN THE PROJECT OF TECHNICAL COOPERATION FOR STRENGTHENING THE BACKSTOPPING CAPACITIES FOR THE DADP PLANNING AND IMPLEMENTATION UNDER THE AGRICULTURAL SECTOR DEVELOPMENT PROGRAMME (ASDP), PHASE II ALONG VALUE CHAIN.

ANNUAL PROGRESS REPORT OF PILOT ACTIVITIES FOR THE PERIOD OF JULY 2014 TO JUNE 2015

PREPARED BY: DFTs MBOZI

AUGUST, 2015

1.0 INTRODUCTION

This annual progress report is prepared annually to show in details the success, challenges, ongoing activities and the way forward for our pilot activities in the District. It is the report which contains activities done from July 1st, 2014 to June 30th, 2015.

2.0 BACKGROUND OF THE PROJECT

The Government of Tanzania (GoT), in close coordination with Development Partners (DPs), has been implementing Agricultural Sector Development (ASDP).Under ASDP, each Local Government Authority (LGA) formulates District Agricultural Development Plans (DADPs), through which they have achieved various kinds of development, especially for investments at the production stage of Value Chains (VCs).

GoT is now preparing and expecting to embark to ASDP Phase II. Where the future DADPs are to make the best use of the success of Phase I and be more strategic in resources allocation and comprehensiveness in resources mobilization by collaborating with other actors in the value chains. With that nature, DADPs enables farmers to formulate interventions beyond production stage of VC towards market.

Responding to this need, GoT and Government of Japan (GoJ) through Japan International Cooperation Agency (JICA) have been undertaking this Technical Cooperation with the aim of enhancing LGAs in making DADPs more strategic and comprehensive. Therefore, DADP Planning and Implementation Thematic Working Group (DADP P&I TWG) and Japanese experts' team (RADAG) are working on providing good guidance for DADP planning and implementation at national level and conducting pilot activities at District level, and Mbozi District Council is one of them with three pilot villages i.e Msia, Hamwelo and Ichesa where coffee is the target commodity.

For the case of Mbozi District, one major challenge along the coffee VC is low market prices due to improper post-harvest treatments. This has led to farmers obtaining highest coffee grades with poor classes (8-9) almost 51% of annual total production, which is determined in coffee laboratories by cupping.

In tackling this, several interventions have been formulated for improvement of coffee quality through value chain analysis, improvement of post harvest treatment; building the capacity of farmer's and extension officers, establishing CPU as a facility for common use and securing water for the CPUs use. During this intervention, several development efforts have been done which include review of Coffee Sub-Sector Map and Dynamics as well as Constraints and Opportunities analysis, study tour visits to

Mbinga, Moshi as well training extension officers and AMCOs leaders (of pilot villages and neighboring villages) on post harvest handling technologies, leadership and record keeping and development of improved CPU infrastructures. This has been done in collaboration with Public and Private sector namely Coffee Management Services (CMS), Tanzania Coffee Board (TCB), Tembo Coffee, Msumbi, MCCCo, City Coffee and TaCRI.

In addition to these efforts, opportunities for learning other country's experience have been provided for which four officers; two from the Mbeya Regional Secretariat and two from Mbozi District Council, participated in two-week training in Japan for 2014 and 2015.

3.0 COMPONENTS OF THE ACTIVITIES DONE DURING THIS PERIOD BASED ON INTERVENTIONS

To achieve the objectives of the project, DFT and JICA experts examined and formulated the following activities which were implemented in different time this year in our pilot villages.

3.1 KNOWLEDGE AND INFORMATION ON THE MARKET AND QUALITY ASSESSMENT OF THE COFFEE

Target farmers had insufficient knowledge for coffee quality, which is very important. To tackle this problem, DFT worked with several coffee stakeholders such as TCB and conducted cupping training at TCB Zonal Offices in Mbeya. In addition, DFT set a plan for sharing and providing information of coffee quality not only to our target villages but also for all villages growing coffee in the District. In other words, the Project increased awareness for farmers towards international market by providing several sessions of training. Under this component, we conducted the following activities.

3.1.1 CUPPING TRAINING

(1) SUMMARY

This was done on October 31st, 2014. The aim was to capacitate the target farmers to recognize the quality of their coffee as it play a big role in price determination in the coffee auction. This helped farmers be aware that international buyers are willing to pay more for a cup with better aroma, acidity, body and flavor, i.e "different cup, different taste and different price".

(2) ACHIEVEMENTS

Through this activity, DFT created win-win relation with TCB; TCB can improve quality of coffee in Mbozi, which eventually contributes to gaining more shares in the international market. The Project, on other hand, helped farmers, through quality improvement, gained higher prices than before.

To farmers, they learned that coffee quality improves if red cherries with the same degree of maturity are processed. They recognized the importance of grading cherries according to maturity when harvesting. They also understood the grading methods, e.g. how buyers assess coffee and how price differs by class. Through the lectures, they also learned how to dry and keep coffee.

(3) CHALLENGES

The dissemination of information's about quality to the whole villagers, AMCOS trainees have not extended their lessons very much to others. So this implies that other farmers still continues with bad practices which will lead to poor coffee quality.

Also the volume of coffee marketed still very low so somehow it is difficult to fetch high better price even if we have quality coffee.

3.1.2 INFORMATION SHARING ABOUT QUALITY ASSESSMENT AND MARKET

(1) SUMMARY

Mbozi District Facilitation Team (DFT) realized the importance of information about coffee grades and classes and prices. DFT has been developing information sharing agreement with TCB, Curing Companies, District and Farmers on quality classes, grades and prices. However it had not been regularly distributed to farmers. Against this situation, the Project requested TCB HQ to share information on the quality of the coffee in the target villages. Also, DFT has obtained quality information from a curing company (MCCCo), delivered the information to farmers and sent a message that high quality coffee would get high price in the market.

(2) ACHIEVEMENTS

The district has wrote a letter to TCB Headquarter and Zonal office to request the results of coffee cupping (grades and classes) and implementation has started, now we can share the information.

It was confirmed that TCB Mbeya provided the information of grades and classe for the coffee sold last season and particularly the coffee from farmers groups in Mbozi.

Regular price and quality information has been directly delivered to three pilot villages by TCB request form.

(3) CHALLENGES

The challenges still remain for coffee farmers themselves to translate the results of cupping report. Most of the farmers groups have no habit to make a follow-up on this report by themselves.

3.2 POST-HARVEST TREATMENTS AND PROCESSING

The aim of this component in the project was to capacitate farmers on the necessary techniques related to post-harvest treatments and processing. DFT conducted training concerning quality control at Mpogolo Coffee Group's site, for which target village as well as neighboring village participated. Besides, CPU O&M training by Msumbi was conducted at each of our target villages. Also, DFT supported timely installation and use of CPU to our target villages.

3.2.1 QUALITY CONTROL TRAINING

(1) SUMMARY

The key objective of the training was to equip AMCOS with practical knowledge in coffee quality control from production, processing, record keeping, storage and coffee transportation to the factory.

The CPU processing and quality control training was arranged and conducted by advanced coffee group here in Mbozi known as Mpogolo Coffee Group, which had already installed a CPU by using District Agricultural Development Grants (DADG) and performed well after installation. The participants experienced picking training, in which only fully-matured red cherries were picked and learned, practical CPU processing methods, maintenance procedures and record keeping methods.

(2) ACHIEVEMENTS

The participants got the opportunity to understand good practices of handling coffee from production stage to processing stage as well as record keeping methods.

Participants learned harvest techniques through the actual harvest training and recognized the importance of cherry sorting. Participants also understood the responsibilities of the machinery operator, the importance of quality control by CPU and necessity of accurate record keeping for transparency of AMCOS.

DFT developed and distributed a guideline of quality control to each target AMCOS which will remind farmers' procedures to observe to get quality coffee.

DFT developed and distributed pictorial training materials for coffee quality control, this document will guide and remind farmers about the good practices to be applied from

picking of red ripe cherries up to the transportation of parchments to the curing companies.

(3) CHALLENGES

Most participants from each village are male only. However it is very important to encourage woman's participation in the training since many women are engaged in coffee processing activities. The results of coffee cupping are not yet out so as to compare the quality with previous season where Msia, Hamwelo and Ichesa managed to get class 6, 7 and 6 respectively.

3.2.2 CPU OPERATION AND MAINTENANCE (O&M) TRAINING

(1) SUMMARY

This training was conducted by Msumbi Company (The District's CPUs Supplier) in each of our target village with the objective of enhancing AMCOS members especially CPU operators, quality control members, board members and also ten active women from each target AMCOS in older to improve the Coffee quality through proper CPU uses and other management practices done before and after harvesting, recording collected cherry and parchments ,running cost and budgeting for CPU operational cost and user fee for both members and non members.

The trainer covered all important elements for operating and managing CPU starting from introducing the machine, installation, cleaning, maintenance, e.t.c.

(2) ACHIEVEMENTS

Participants understood the responsibilities of the machinery operator, the importance of quality control by common use of CPU and necessity of accurate record keeping for transparency of AMCOS management.

Developments of checklist for CPU facility construction and O&M manual will guide target AMCOS for the successful use of CPU this season.

Each of our target village managed to use their own CPU compare to last season when only Ichesa managed to do that. After a lot of sensitization to farmers to make sure they complete the CPU buildings and its infrastructures, so far Msia and Hamwelo have

managed to complete their buildings, only Ichesa is still far behind at wall stage, but they vow to finish it after coffee sales this season.

(3) CHALLENGES

During the training, there were common challenges where the trainees were not well organized. Especially, the leaders invited also non-members of the AMCOS, and this lead to low performance of training. Also, the women who participated were few and not so much active.

They delayed to start using CPU this season due to some inconveniences. For example, late CPU building completion led to some AMCOS members to process coffee at home and sold their part of their coffee to other coffee groups hence AMCOS remain with low volume.

3.3 CAPACITY DEVELOPMENT OF AMCOS

The aim is to strengthen the capacity level of farmers' organizations in management for elementary record keeping, planning, financial and budgetary issues through training. Also the training courses take the strategy that DFTs trained VAEOs from our target villages. This structure will allow the capacity enhancement of DFT, VAEO and AMCOS leaders and led to sustainability for farmers support.

3.3.1 RECORD KEEPING TRAINING

(1) SUMMARY

During this last year, DFT conducted the record keeping training with the emphasis on recording Cash Book and Daily Cash Book Balances which is the main problem discovered during our pilot monitoring. Our expectation is AMCOS to operate in a transparent manner.

(2) ACHIEVEMENTS

AMCOS board members, secretaries, treasurers and VAEOs learned their roles and responsibilities as well as the important books needed to be kept by AMCOS in order to help produce accurate report for the basis of making decisions. On top of that, they learned planning, transparency and accountability, and basic knowledge of AMCOS management.

At least now target AMCOS can keep records such financial records, cherry and

parchments, list of members and non-members.

DFT has developed the guidelines which would be used by this AMCOS when they want to admit new members. This helps AMCOS leaders to have a set of questions to ask when a farmer wants to join the AMCOS.

(3) CHALLENGES

Still target villages struggle to maintain proper record keeping such as posting of transaction into the cash book because these AMCOS are not mature enough and the knowledge is new to them. So, DFT expects that they will improve as they get experienced.

Leadership and management problem still remains. Despite of several sessions of training, the leaders of our target AMCOS are not confident enough to lead the group.

4.0 MONITORING OF TARGET VILLAGES

(1) SUMMARY

To ensure we are achieving the objectives of the project, DFT, JICA experts and RS-Mbeya have been conducting monitoring to all of our target villages in order to find out the progress of CPU construction and installation as well as the challenges they are facing in implementing their daily activities in the villages. Monitoring is also conducted to make follow up on the promises AMCOS leaders made during our previous visits to them, and to see the implementation of what they had learned in the training given to them and sharing to other members. During our monitoring we discovered some achievements and challenges which were needed to solve.

(2) ACHIEVEMENTS

Through monitoring we sensitized target village to complete the CPUs buildings and some other facilities, but also to discover the challenges AMCOS facing like leadership, record keeping which could be difficult to know if there were no monitoring.

Development of monitoring sheets and availability of up to date information's about what is going on in the village which we have been exchanging through emails.

Improvements of AMCOS management, record keeping, transparency.

(3) CHALLENGES

- DFT is not so sure if all Mbozi coffee support team are reading and filing these monitoring sheets.
- Sometimes, it is difficult to conduct monitoring activities as we planned due to lacking of resources transport, fuels, time.
- Sometimes, DFT would go to the field and might not get information or achievements it expected.

4.1 Changes of basic information of the target AMCOS as per June 2015

No	Details	Hamwelo			Ichesa			Msia		
		2013	2014	2015	2013	2014	2015	2013	2014	2015
1	Number of members	25	50	66	132	48	54	27	34	63
2	Production volume (parchments)	5,000	2,101	3,652	4,000	5,737	8,000	8,000	2,700	11,000
3	Price of parchments (per kg)	2,700	4,500	*	3,000	4,500	*	2,450	4,500	*
4	Coffee classe	9	7	*	9	6	*	9	6	*

*The data was unknown up the time of preparing this report (August 2015).

5.0 COLLABORATION WITH CMS Co. (COFFEE MANAGEMENT SERVICES)

(1) SUMMARY

In promoting Public Private Partnership (PPP), the district is well aware that it cannot do everything alone. So, DFT made an arrangement to work together with other coffee stakeholder. Among them is CMS which is private company dealing with coffee business in the district. Our target villages had a problem of insufficient fund to complete their CPU building as well as agricultural inputs to increase production. Through this collaboration the Project enjoyed some achievements and challenges as explain below.

(2) ACHIEVEMENTS

All three of target villages were financed an amount of loan to buy building materials to complete the work of CPUs constructions. And to some extent this fund used as planned. The total loan issued to target villages is about Tshs.9,700,000/= (Hamwelo Tshs 3,500,000/=;Msia tshs.3,200,000 and Ichesa Tshs.3,000,000).

Furthermore, each target village was given bags of agricultural inputs in order to

increase production.

According to our meeting with CMS, they are ready to work with AMCOS and the district to establish or create a model which will help to improve the performance of AMCOS including changing the mindset of leaders, members of these AMCOS or farmers groups to be business-oriented rather than using CMS as the only channel of selling coffee and DFT will take a lead on this by providing a training and discussion with coffee producers.

And whenever CMS has a meeting with AMCOS. CMS will communicate with DFT in order to share together what we can do to move forward in this coffee sector and DFT also will share monitoring results with CMS.

5.1 Confirmed Loans Finances from CMS to our target villages as per June 30th, 2015

No	Details	HAMWELO	ICHESA	MSIA
1	Inputs Loans (Tshs.)	6,530,000	6,530,000	6,530,000
2	CPU construction loan (Tshs.	3,500,000	3,000,000	3,200,000
3	Total Loans	**10,030,000**	**9,530,000**	**9,730,000**

6.0 WAY FORWARD

The DFTs in collaboration with other stakeholders will perform the following activities by component next year.

The DFT, TCB, and Curing Companies will arrange a plan of disseminating information about coffee grades and classes to the coffee farmers in the village soon after the season and before the season is at high peak.

The DFT will strengthen support for capacity development of target AMCOS and other AMCOS in order to develop mutual trust among AMCOS members and non members through regular training (record keeping and reporting, management, planning and marketing) and monitoring, annual general meeting, inspections etc.

To prepare a memorandum of understanding (MoU) with all key stakeholders of coffee in Mbozi such as CMS, TCB, TaCRI, Curing Companies, Farmers Organizations, Coffee

Estates. To analyze together which stakeholder is going to do what, where, with whom and at the end to evaluate results.

The DFT will prepare the reporting format and instruct VAEOs from our target village to work closely to support the farmers in record keeping and AMCOS management and to report to DFTs monthly because the DFTs cannot visit them frequently due to shortage of resources i.e. fuels, man power, time, etc.

The DFTs and AMCOS will plan a modality of encouraging and involving women to participate in post harvest treatment and processing training and activities as are the ones who engaged so much in these activities. It is important to consider gender balance in the training since most participants were male only.

It is important to disseminate the knowledge we gained from the pilot village to other villages growing coffee in Mbozi so that later in the future all farmers groups producing high quality coffee for better market, which will increase their income and district revenues at large. The strategy is to use the annual general meeting of each AMCOS which is done annually; this experience will be added in the agenda of the meeting.

By next season all target village should have to complete remaining construction of their CPU facility as per BOQ. DFT will keep monitoring the process.

DFT will conduct an end-line survey to measure the results of the project intervention between last season and this season.

DFTs will map the information of all extensions officers who in one way or another received any form and kind of training through this project, so that it could be easy to make substute in case the extension officers of target village shift from the village but also to know what they did after the training in their villages.

Next season CPU operation should starts early so that the farmers will not sell their coffee outside the AMCOS. It will results in large volume processing, reducing operation cost and producing high earning to farmers. DFT/extension officers will monitor their progress.

DFT, cooperating with other stakeholders, will produce a guideline on the areas of cooperation between AMCOS Leaders and WAEOs and VAEOs to District.

DFT will plan a strategy of linking AMCOS which produce quality coffee but with low volume to ship together their produce for having bigger volume and fetching high price and profit.

The district will make a plan how to disseminate good practices of AMCOS record keeping, and summarize common mistakes made by AMCOS and farmers groups for the next season.

DFT will make a plan on how to disseminate good practices of quality improvement (such as quality control committee, the training by using the pictorial material). Also, DFT needs to consider how to use WAEOs/VAEOs.

DFT will encourage target AMCOS and other AMCOS to do study tour visits within the district to learn good practices like record keeping, management, quality control, etc to the other AMCOS which are doing well like Hasambo AMCOS.

DFT will arrange a meeting of all stakeholders in coffee industry at least twice a year few days before the season and after the season in order to plan what to be done and by who and at the end to evaluate achievements and challenges and means to keep and develop from achievements.

7.0 CONCLUSION

The Mbozi District Council, Pilot AMCOS appreciate the efforts, financial, technical support from JICA and we are eager to continue cooperating and working hard so as to reach goals and objectives of this project. On top of that also we records our thanks to every stakeholder who contribute in one way or another for the achievements of last season and we should work together to overcome all challenges we are facing in implementing this project.

CUPPING TRAINING FOR UPSCALLED AMCOS (Mlangali AMCOS, Ibembwa AMCOS, Iyenga AMCOS, Itumpi AMCOS and Nkana AMCOS) 30march-1st April 2016.

INTRODUCTION.

The Cupping Training were conducted to upscalled five AMCOS by visiting them to their AMCOS. Participants were DFTs , TCB (Mr. Jimmy cupping facilitator), Mr. Zany (TCB Zonal manager) who volunteered to participate on the Training, JICA and selected 5 AMCOS (Coffee farmers). The Training takes 3days, where the 1st day we visited Mlangali and Ibembwa AMCOS, 2nd day Iyenga and Itumpi AMCOS, and 3rd day Nkana AMCOS. Attendance for both AMCOS was good where they desired to know on how quality coffee is assessed, so many farmers were attended.

Activity 1

Creating awareness about the project, Cooperative officers (Idd and Katoto) in cooperating with JICA Tech. Assistant explained the aim of JICA to Upscalled AMCOS and why JICA is facilitating the training to coffee farmers, also we explained our best practices to our pilots (Ichesa, Msia and HamweloAMCOS) and how they had achieved on production of quality coffee through the training which are providing by JICA.

Feedback about the baseline survey, Agricultural Officer (Azizi Mtambo) explained the feedback of the survey we did in December and how those AMCOS were qualified to be Upscalled by JICA.

Guideline for quality control committee and checklist for CPU, Coffee SMS (Mr. Kabale) clarified important of having QCC for each AMCOS in production of quality coffee and their roles. He explained quality coffee is being assessed from production, post-harvesting, processing, storage and Transportation. He insisted QCC to be selected immediately before the season so that they can make sure the all procedures of producing quality coffee are maintained in cooperating with AMCOS management. Also he insisted how checklist are important to CPU Operators, so he wanted CPU operator to use the checklist which were given by co-operative officers.

Activity 2

Cupping Training, Facilitator (Mr. Jimmy) explained important of coffee cupping to farmers, how quality coffee is assessed and how they set coffee price in the Auction starting from the quality coffee to poor coffee after coffee cupping. Facilitator explained problemS facing Mbozi coffee farmer in production of quality coffee.

1. ***Poor cherry picking.*** where farmers mixed green, black and yellow cherry during coffee picking which result to the taste of glasses hence to poor quality coffee.
2. ***Coffee processing***. Facilitator explained most of Coffee farmers they don't maintained the rules of producing quality coffee like during fermentation, coffee drying, storage and transportation.
   He explained that, fermentation is a big problem to most of coffee farmers where they ferment coffee by using unqualified water (dirty and insufficient), while others use fertilizer bags for fermenting .

3. ***Washing and drying***. Like over drying which result to light coffee. Also drying coffee in a dirty areas and insufficient water for coffee washing.
4. ***Coffee transportation,*** most of farmers transport coffee in dirty car and they don't cover their coffee. which result to earth taste during coffee cupping

Cupping facilitator (Mr. Jimmy) insisted coffee farmers to make sure they follow all rules set in producing quality coffee which will help them to get the quality coffee for a better price.

Activity 3.

Cupping facilitator prepared a cups with coffee of different samples from five selected AMCOS and he wanted the coffee farmers to taste those cups and to set price for each cup starting from quality coffee cup to poor coffee cup. Farmers wondered why other cup of coffee had bad flavor and acidity, farmers appreciated the training by explaining to facilitator on how they were ignorant on how quality coffee is assessed, so they promised to be carefully in producing quality coffee by following all rules of quality coffee production.

Farmers after coffee cupping declared that, other coffee cups had no quality to be sold in the Auction because even themselves they can't buy and if they buy, it's better to pay a low price ranging from (1000-500/=per Kg). facilitators explained to farmers to be careful in producing quality coffee because one mistake can result to poor coffee, He insisted them to make sure they follow the guideline given by co-operative officers for selecting QCC so that they can get active people who will take their responsibilities effectively.

TRAINING ACHIEVEMENT

All AMCOS appreciated JICA for the support which are providing to coffee farmers on creating awareness on production of quality coffee, they requested JICA to keep on supporting them and declared to be cooperative and to apply all knowledge they are given in order to produce quality coffee

AMCOS leaders declared to be strict from this season 2016/2017 by assessing all cherry that will be brought to CPU by making sure all are red cherries received , they promised to choice QCC who will make sure all rules for quality coffee are maintained.

In Concluding

Mr. Zany (Zonal Manager) and Mr. Jimmy (Cupping facilitator) requested JICA if will be possible to prepare another cupping training which will be conducted at TCB Mbeya special for selected QCC and Operators because they are hoping that if this people will be trained particularly they will be able to bring a big changes hence to better class of coffee. I explained to them that it was planned before but due to JICA deficit budget were post ponded.

Furthermore, even myself due to my observation during the Training, I think it's real important to have special cupping training to QCC and CPU Operators for more achievement and I hope due to their serious they showed after discovering how quality coffee is assessed they will be able to supervise effectively during coffee processing.

But I know how JICA deficit budget is, but if will be possible farmers can be paid Transport (bus fare) DSA for only 2 DFTs who will participate (coffee SMS & Cooperative Offers) and TCB as facilitators.

NOTE; I didn't attach the cupping Training pictures, this is only briefly report, for detailed report are preparing by DFTs who participated the Training (Idd, Katoto, Azizi and Mr. Kabale). Many questions were asked by each AMCOS during the Training so DFTs will explained on it starting from the 1st AMCOS we visited questions raised up to the last one

They will share with us the report early on Friday(next week 8th April). So we are looking forward for their response.

10.2 Baseline Survey Report: Coffee Post-Harvesting Treatment and Processing Practices in three target villages: Ichesa, Msia and Hamwelo

MBOZI DISTRICT COUNCIL

Baseline Survey Report:

Coffee Post-Harvest Treatment and Processing Practices In Three Target Villages; Ichesa, Msia and Hamwelo.

April, 2014

Mbozi Coffee Support Team;

District Facilitation Team,

Regional Secretariate Office

DADP Planning and Implementation Phase II Project

Contents

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List of Abbreviations

AMCOS	Agricultural Marketing Cooperative Society
CPU	Coffee Pulpery Unit
DAICO	District Agriculture, Irrigation and Cooperatives Officer
DC	District Council
Kg	Kilogram
KNCU	Kilimanjaro Native Cooperative Union
RS	Regional Secretariat
SMS	Subject Matter Specialist
TaCRI	Tanzania Coffee Research Institute
TCB	Tanzania Coffee Board
TSh	Tanzanian Shilling
VAEO	Village Agricultural Extension Officer
WAEO	Ward Agricultural Extension Officer

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It is of great importance to get this chance and thank the following personnel and institutions; DED-Mbozi for assisting us with transport and permission ,WAEOs and VAEOs for their good cooperation and time spend during the project and selection of the interviewees and registration of the interviewees ,all AMCOS members of the three villages for accepting the project to be implemented on their villages .Our greatest gratitude goes to the interviewees for sparing their time when they were very busy working on their farms.

Chapter 1: Introduction

Mbozi District Council is one among the three pilot Districts in the country supported by JICA in the improvement of value chain for its commodities. Mbozi DC selected coffee as its pilot crop for value chain development.

And in Mbozi DC, three pilot villages were selected among 99 villages which grow coffee. These villages are Ichesa, Msia and Hamwelo.

In this project JICA intervene at the processing stage where they provide technical assistance by capacity building to farmers, AMCOS leaders, DFT and Extension workers.

Therefore before starting measuring the results of the project it was planned to have a baseline survey to all three pilot villages as a mode of collecting information from the farmers to know their experience in the post-harvest treatment and processing practices of their coffee before the project so that at the end through baseline survey results we might be able to make comparisons before and after the project.

The objective of the survey was to prepare the base line data for post harvest treatment and processing practice in the pilot villages before starting technical training and the uses of CPU in the pilot villages.

Chapter 2: Plan and Methodologies of Baseline Survey

In this chapter, the ways of planning and conducting of the baseline survey are depicted.

2.1. Planning of the survey.

The DFT members met to discuss on how the survey was going to be conducted.

- The time frame work of the base line survey started on 24th March 2014 to 25th March 2014.
- DFT decided to undertake pre-visit all the 3 villages, for the provision of the name list and introduction of the survey objectives to the village /ward extension workers and AMCOS leaders.
- Discussed on interviewers and interviewees where they agreed that five (5) interviewers (4 from DFTs and one extension officer) to conduct interview in the villages.
- In each village 20 interviewees were interviewed which makes a total 60 interviewees in the 3 pilot villages.
- Methodology used is individual interview with questionnaire.
- Time to be spent at the village was 2 hours.
- Selection of interviewees was decided to use name list against size of the farm. The word/village agricultural extension officers were responsible for making the name list.
- How to enter data and preparation of the report were discussed.

2.2. Modification of questionnaire and making data sheet.

- The basic questionnaire made from textbooks was modified to be simple with multiple choices. There are 3 choices starting with recommended or good practice, to the not recommended or bad practice , i.e. A, B and C. However, the interviewers can modify the order when they ask interviewees the choices, preventing that the order implies the value or goodness of practices.
- The base line survey data sheets were made, two types were discussed and come with one type of drop down list. Then the option D was proposed for the answer that cannot match with the 3 options given in questionnaire.
- After discussion, DFTs added more questions in the questionnaire. These questions were about age of interviewee, to find interviewees understanding about grades given after coffee curing/hulling companies and those given in TCB before auction, after testing.
- The first draft of English version questionnaire was then printed and used for mock interview in Kiswahili.
- The testing was to find how it sounds in English and Kiswahili. Then the Swahili version were made and tested.

2.3. Implementation of baseline survey in the three target villages

- The field work of collecting data started at Hamwelo (29th March,2014),Msia (31st March,2014) and Ichesa village (01st April,2014) .Where the number of 20 farmers from each village interviewed, Totally 60 farmers interviewed and each interviewer was supposed to interview only 5 interviewees.
- After conducted this activity at the field level, the work is continuing in the office where the team is still working hard, tireless in order to make sure that we can accomplish this task successfully on time. So members of the team have been

shared tasks like data input, designing graphs, the ways of making analysis, chapters to be included in the report, etc.

2.4. Data Analysis

- The exercise of Data input had been done by all DFT members surveyed the pilot villages,this activity was started from Monday to Wednesday this week.
- Also at the same time DFT have been doing Data clearance input ,to cross check the reliability of the data collected, farmers participated. This was done by checking the name list filled by WAEO/VAEO against the interviewed data sheet in order to know who was interviewed and who was not, but also to be sure of the data accuracy entered in the data sheet for each interviewee for all questions and villages.
- On top of that DFT discussed over the ways of analysis, and making of graphs, we realized that our data will be analysed into three categories which were post-harvest treatment and processing practices, marketing, and general condition of farmers (questionnaire number 1-13,16-18,and 14,15,19 respectively) where the team proposed that we will use bar chart and pie chart depending on the nature of the questionnaire. For questionnaire number 1-13 bar charts will be used ,and for questionnaire number 14-19 pie charts ware proposed. Successfully all charts were produced and handed to members of the team to read the charts, understand, and write what the charts implies about.

Chapter 3. Basic Information about Interviewees

This analyse the basic information from the interviewees in order to get a general knowledge about which age is dealing with coffee, the number of coffee they have and the size of their farms.

3.1. Age Group of the Interviewees

This enabled us to understand from each village the age of farmers dealing with coffee industry and charts shows the majority is 31 to 60 of age dealing with coffee ,little from the age of up to 30 and no above the age of 61. See the table and the chart below.

Table 1:Age group of Interviewees

	ICHESA	MSIA	HAMWELO	TOTAL
A	3	1	3	7
B	17	15	14	46
C	0	4	3	7
D	0	0	0	0

Note: From Question19. A. up to 30, B. 31 to 60, and C. 61 and above

Pie chart depicts age categories of farmers engaged in coffee production. From the Pie chart, it shows that majority 77% farmers in 3 villages Ichesa,Msia and Hamwelo are aged between 31 and 60 years,11% between 61year and above and 12% are aged between one year and 30 years.

This implies that, all villages having enough labour power.

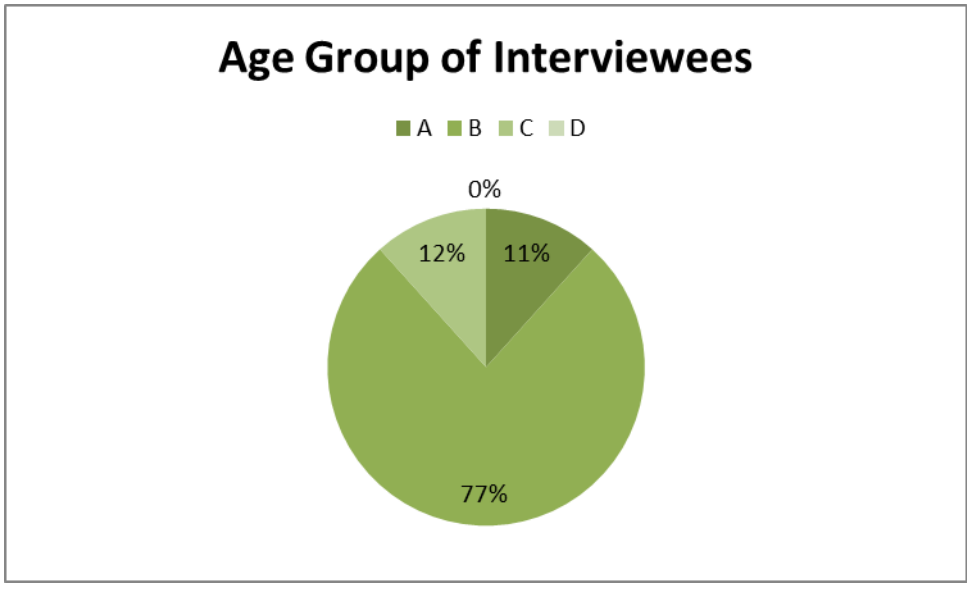

Figure 1:Age group of Interviewees

3.2. Size of Coffee Farm possessed by the Interviewees

The aim of this question was to know the number of acres they are cultivating coffee ,and the analysis showed us the most farmers have less than 5 acres ,it is about the 95% of all interviewees while only 5% of farmers possessed between 6 and 10 acres .This shows that farmers are categorized at small scale target village .See the table and the chart below.

Table 2: Size of Coffee Farm possessed by the Interviewees

	ICHESA	MSIA	HAMWELO	TOTAL
A	20	19	18	57
B	0	1	2	3
C	0	0	0	0
D	0	0	0	0

Note: From Question 14. A. up to 5acres, B. 6 to 10, and C. 11 and above

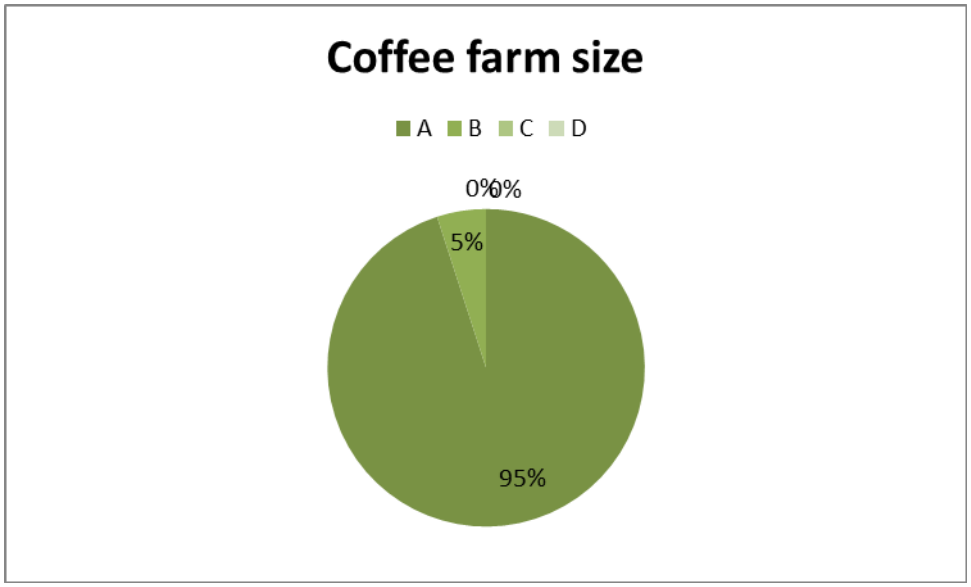

Figure 2: Size of Coffee Farm possessed by the Interviewees

3 .3 Number of Coffee Trees possessed by the Interviewees

Under this analysis it was designed to understand the number of coffee trees the farmers are possessing so that later we can determine the expected productivity from these trees .According to the analysis below majority of the farmers possessing more than 501 trees as you can see the chart and table below.

Table 3: Number of Coffee Trees possessed by the Interviewees

	ICHESA	MSIA	HAMWELO	TOTAL
A	1	1	2	4
B	11	2	7	20
C	8	17	11	36
D	0	0	0	0

Note: From Question 14. A. up to 5acres, B. 6 to 10, and C. 11 and above

The data from the pie charts portray that the majority posses up to 1000 trees of coffee .

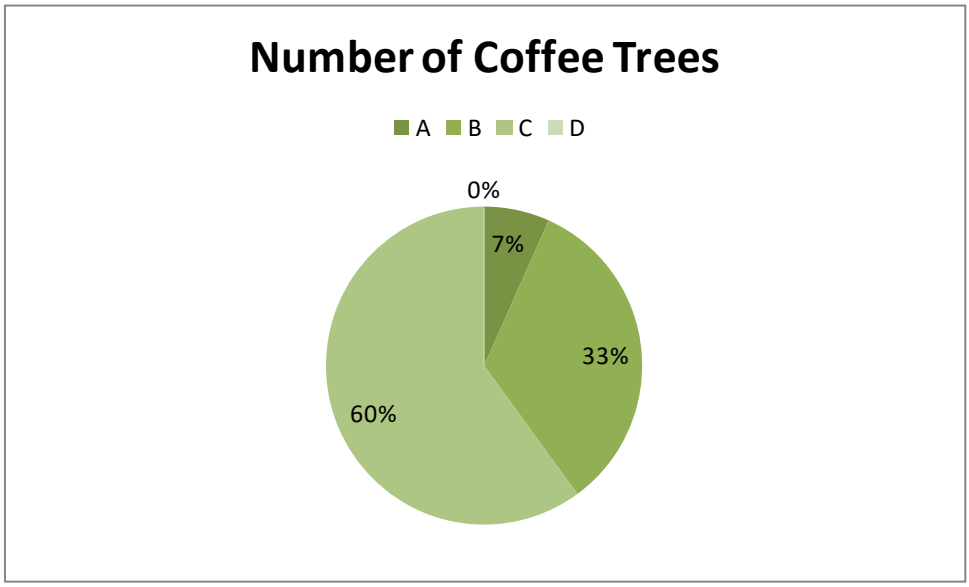

Figure 3: Number of Coffee Trees possessed by the Interviewees

3.4. Training for processing coffee

Pie chart below shows that 36 % of farmers attended training on coffee processing, 12% of farmers were informed by attendants and 52% were not informed by attendants. This indicates that a large number of farmers did not received any information on coffee processing.

Table 4. Training for processing coffee

	ICHESA	MSIA	HAMWELO	TOTAL
A	7	5	10	22
B	1	4	2	7
C	12	11	8	31
D	0	0	0	0

Note: From Question 16: A. Yes, I attended to training courses. B. Yes, I was informed by attendants. C. No, I was not informed.

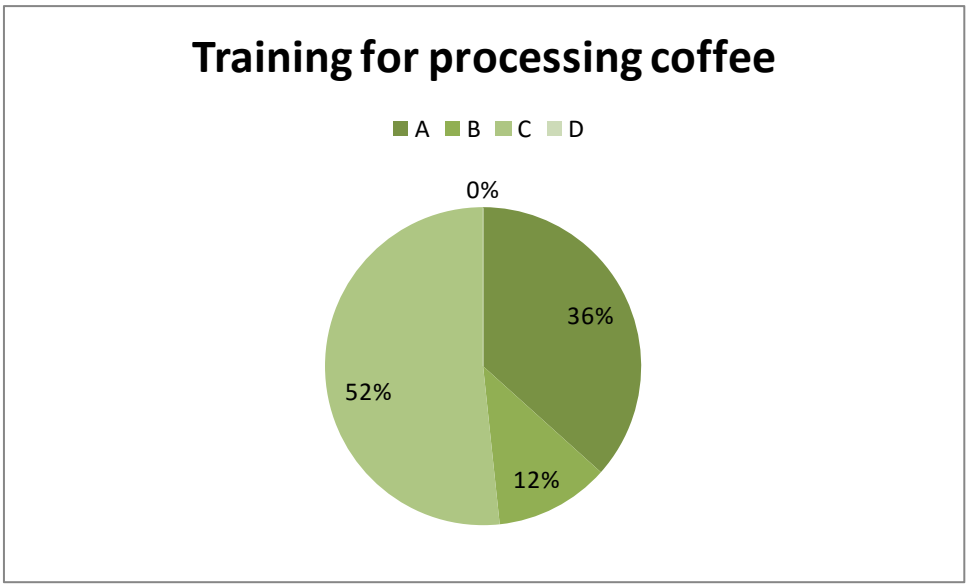

Figure 4. Training for processing coffee

Chapter 4.Result and Analysis

4.1 Post-harvest treatment and processing practices

4.1.1 Overview

We are going to do overview analysis to grasp the situation of post-harvest treatment and processing practices done by interviewees.

Generally speaking, farmers in the 3 villages perform well on the following activities; picking of cherries (Question 1, hereinafter, Q 1), Cleanness of pulping tools (Q 5), Quality and Quantity of Water for processing (Q 6 and 7), and Sorting during drying (Q 11).

On the other hand, for the following practices the farmers are not performing well; Sorting of red cherries (Question 2, hereinafter, Q 2), Pulping tool and quality of tool (Q 4), Fermentation (Q 8), Grading (Q 10), and Bags for storage (Q 13).

Table 5:Post-harvest treatment and processing practices

	1	2	3	4	5	6	7	8	9	10	11	12	13
A	50	2	27	1	54	45	37	11	29	14	47	29	6
B	8	53	10	59	6	11	12	10	29	10	9	14	34
C	2	5	23	0	0	4	11	37	0	36	4	17	20
D	0	0	0	0	0	0	0	2	2	0	0	0	0
TOTAL	60	60	60	60	60	60	60	60	60	60	60	60	60

Note: From Question 1-13:See Attachment 2

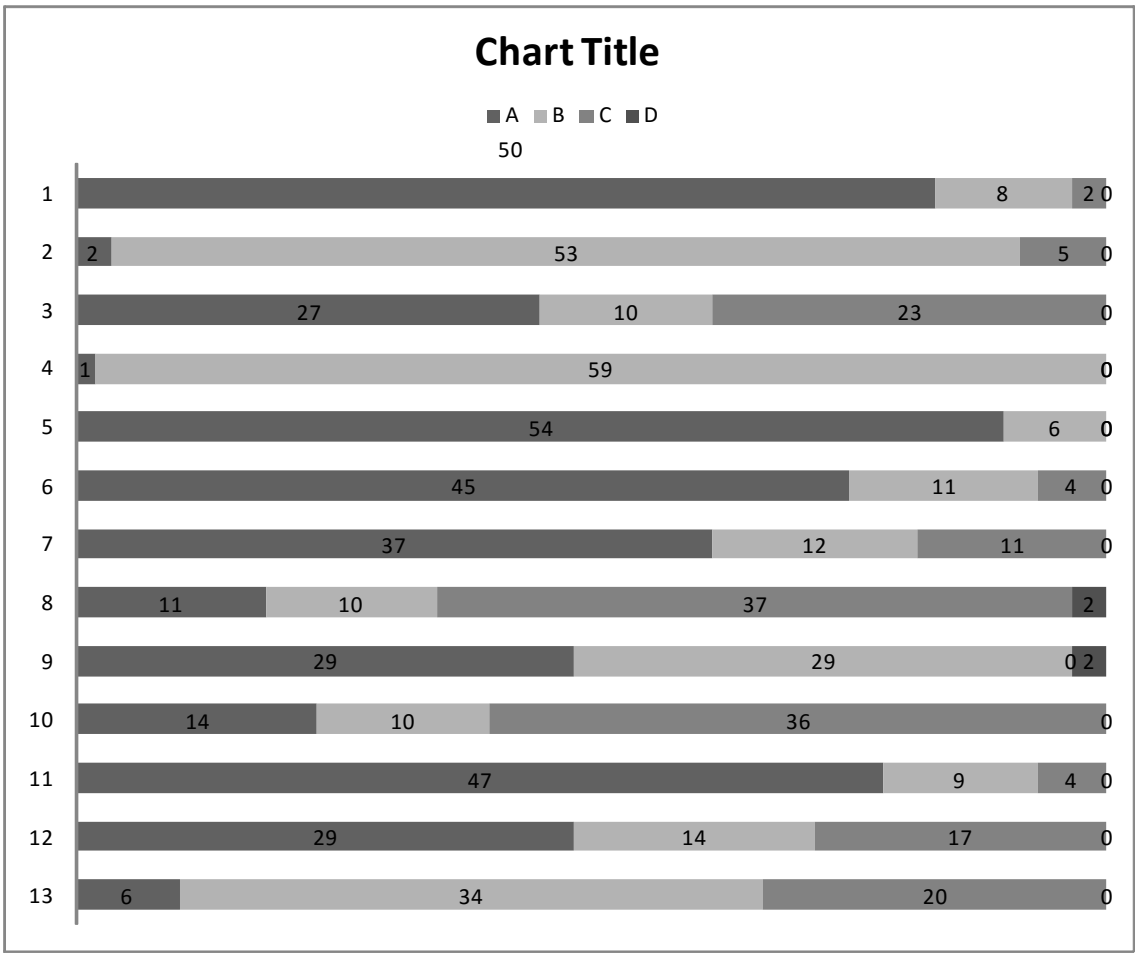

Figure 5:Post-harvest treatment and processing practices

4.1.2 Detailed Analysis

(1) Well done activities

In this part, the analysis is depicted below the table of the theme/ topic, question and answer choices.

	Theme/ Topic	Question	Answers
1	Picking of cherries	What types of cherries do you pick up?	A. Only properly ripe red cherries B. Sometimes including non-ripe or over-ripe but not diseased C. Sometimes including diseased, dried cherries, or sand

It seems most farmers understand the importance of picking red ripe cherries. On the question of the type of coffee which is picked scored high (50 out of 60 in total). Only 8 people agreed to have picked non-ripe and over-ripe cherries and diseased also.

	Theme/ Topic	Question	Answers
5	Cleanness of pulping machine (hand pulper and CPU)	How often do you wash pulping tools?	A. Pulping machines/tools are washed every time B. Pulping machine/tools are sometimes washed. C. Pulping machine/tools are hardly washed.

Majority of the farmers (54) wash their pulping tools every time after use. Only 6 interviewees said pulping tools are sometimes washed.

	Theme/ Topic	Question	Answers
6	Water for processing-Quality	What is the condition of the water that you use for processing?	A. Water is clean (transparent and not smelly) B. Water is not clean sometimes C. Water is not clean every time.
7	Water for processing - Quantity	Do you always have enough water for processing?	A. We always have enough. B. I sometimes have enough. C. I do not have enough water every time.

Water for processing quality coffee is clean and enough for most farmers. Majority, 45 farmers suggested that they use clean water for processing coffee. Only 11 said that sometimes water they use for processing is not clean. On the quantity of water for processing 37 interviewees said they always have enough water.

	Theme/ Topic	Question	Answers
11	Sorting during drying	Do you always do sorting during drying of the coffee parchments?	A. Yes, always. B. Sometimes. C. No, not at all.

Sorting during drying is well done by majority of farmers. Out of 60 farmers interviewed in the 3 villages, 47 farmers suggested that they always do sorting during drying of coffee parchments. And 9 of the 60 said that they do sorting only sometimes, 4 people said not at all.

(2) Not well done activities

	Theme/ Topic	Question	Answers
2	Sorting of red cherries	Who sort red cherries?	A. AMCOS or Group B. Individuals C. Sorting is not done at all.

It seems that AMCOS or Groups have not intervened much for sorting of red cherries. Out of the 60 farmers interviewed, 53 farmers insisted that sorting is done individually. Only 2 interviewees said they do sorting through AMCOS or Groups. Worst, 5 interviewees said that sorting is not done at all.

	Theme/ Topic	Question	Answers
4	Pulping tool and quality of tool	Which pulping tool do you normally use for pulping?	A. CPU B. Hand pulper C. No tool. Because I sell red cherries to a middle man / curing company

Almost all interviewees answered that they use hand pulper. Only one interviewee said he uses CPU for pulping while 59 interviewees use hand pulper.

	Theme/ Topic	Question	Answers
8	Fermentation	What do you use for fermentation?	A. A fermentation tank or pool. B. Buckets or *Sufuria* (cooking pots) C. Polythene bags

Fermentation is not properly done because most farmers perform worse by using polythene bags. More than half, 37 interviewees said they use polythene bags and only 11 interviewee use fermentation tanks or pool.10 interviewee use buckets or *sufuria* (cooking pots).

	Theme/ Topic	Question	Answers
9	Drying parchments	Where do you dry parchment?	A. On a drying table B. On a cloth or sheet on the ground or drying floor C. Directly on the ground

On drying parchments its seems rather, an equal number of farmers use both drying tables (29) and cloth or a sheet on the ground or drying floor (29).This gives a total of 58 farmers.

	Theme/ Topic	Question	Answers
10	Grading	Who does grading of parchment?	A. AMCOS or a group B. Individuals C. Grading is not done.

It also seems there is little knowledge on grading. Majority (36) of the farmers in the 3 villages said that grading is not done at all and only 14 interviewees said that grading is done by AMCOS or Group. Only 10 interviewees do grading by themselves.

	Theme/ Topic	Question	Answers
13	Bags for Storage	What type of bags do you use to store parchments?	A. Sisal bags renewed every year B. Sisal bags used plural years C. Chemical-fibre made bags

In the 3 villages, out of the 60 farmers interviewed, 34 farmers said they use sisal bags that are continuously used plural years .Only 6 said using sisal bags which were renewed every year .But 20 farmers use chemical-fibre made bags.

4.2.Knowledge about coffee quality in relation to market

4.3 Coffee grades

From the following table and figure, we have learnt that most farmers know little about coffee grades. This can be because this information sharing about the coffee grades is done in the coffee curing company, and the number of farmers who attend the coffee curing company is small.

The analysis shows that the understanding of coffee grades between one village and another it differs While 50% for Hamwelo AMCOS members know the coffee grades,Msia only 25% of members exactly know the grades.

Table 6:Coffee grading

	ICHESA	MSIA	HAMWELO	TOTAL
A	7	5	10	22
B	1	4	2	7
C	12	11	8	31
D	0	0	0	0

Note: From Question 17: A. Yes, I know. B. I somehow / a little bit know C. No, I do not know..

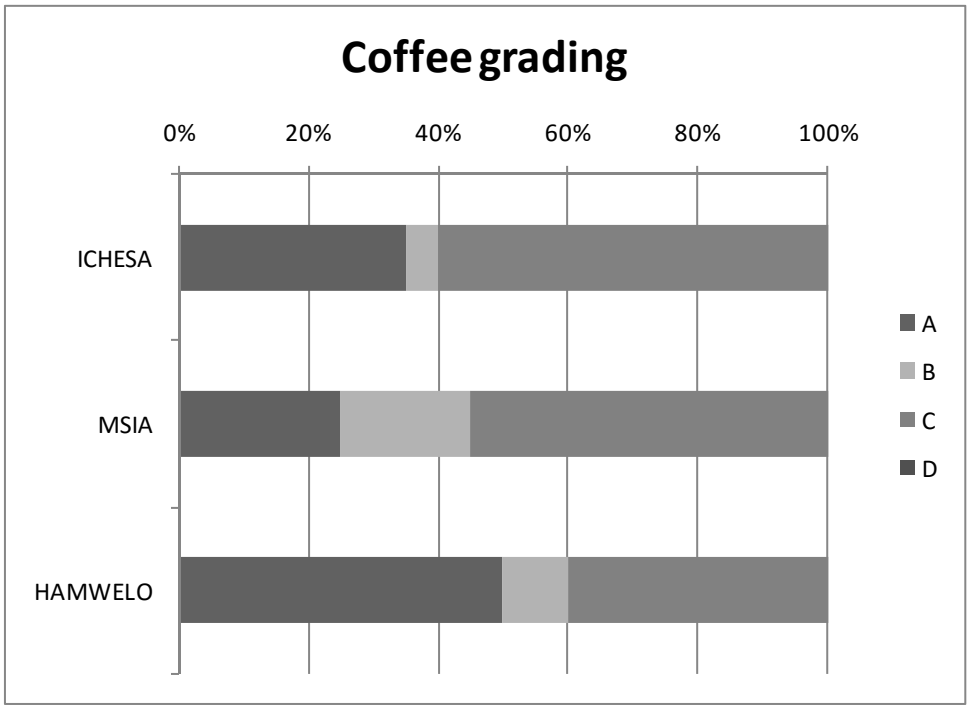

Figure 6:Coffee grading

4.4 Coffee classes

Answers to the question show us that the number of farmers receiving classes information is very small. This is because they don't get feedback from curing company and T.C.B who are responsible to return back an information to farmers; after cupping their coffee beans.

Table 7:Coffee classes

	ICHESA	MSIA	HAMWELO	TOTAL
A	1	4	5	10
B	2	1	1	4
C	17	15	14	46
D	0	0	0	0

Note: From Question 18: A. Yes, I know. B. I somehow / a little bit know. C. No, I do not know.

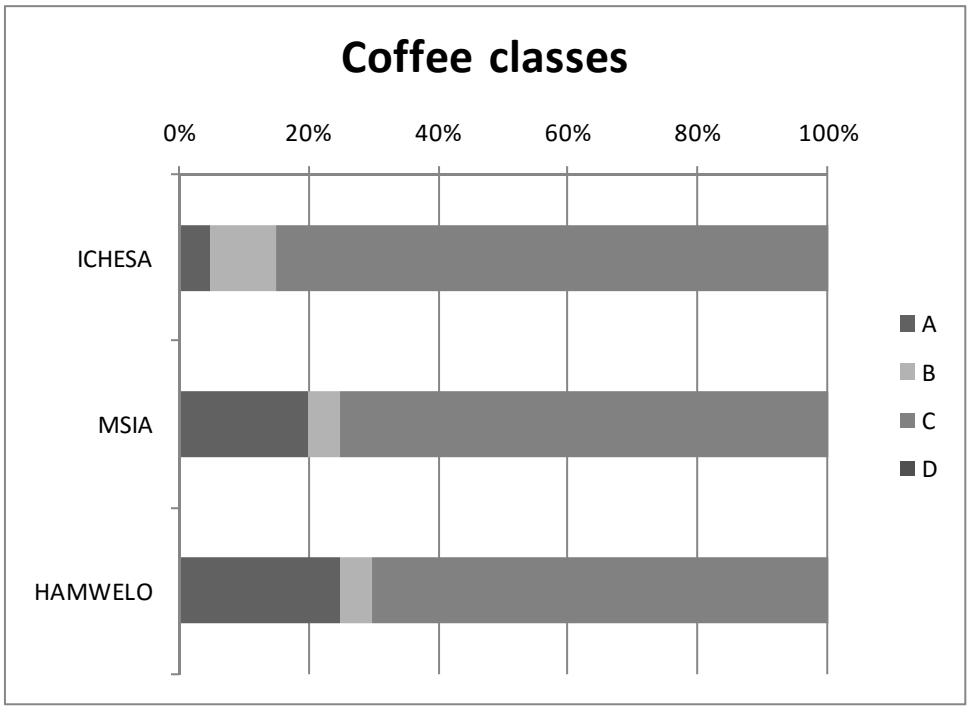

Figure 7:Coffee classes

Chapter 5: Conclusion and Recommendation

5.1 Conclusion

Our baseline survey objective was achieved. According to the analysis some topics or themes that farmers need improvement.

The result is to be used to establish benchmarks for further assistance activities for post harvest treatment and processing practices for improvement of coffee sector in the three target villages.

We would like to appreciate to the farmers on the themes which performed well ,and urge them to increase more efforts in the themes which they did not perform better.

We would like to request all coffee stakeholders to backup the coffee sector.

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5.2 Further actions to be taken by DFT

To make sure that the training materials prepared should reflect to the themes that appeared not well performed on the baseline survey.

To make follow up to TCB people for the information on grades and classes.

To conduct impact survey assessment to compare with the baseline survey results.

5.3 Recommendation

5.3.1 Recommendation to farmers

CPU when installed will increase the efficiency of farmers to pulping their coffee.

The AMCOS leaders should emphasize their farmers to collect their red-cherries to the AMCOS for sorting.

Fermentation should be done using fermentation tanks instead of the polythene bags which tend to accumulate cause fungus on coffee parchments.

From the above observations, it is ideally recommended that, Grading should be done by the AMCOS and inform or teach the farmers on coffee grades.

Bags for storage should be sisal bags renewed every year to avoid contamination of any foreign materials to the coffee parchments.

5.3.2 Recommendation to TCB

The questionnaire shows us that the number of farmers who get information on coffee classes from TCB is very small, therefore we would like to request TCB to modify the application form for

selling coffee by adding information as; number of kg. the AMCOS is going to sell ,coffee grades, coffee classes and prices.

10.3 End-line Survey Report on Household Income and Production Cost for Coffee: A Case Study of Mbozi District Council -Tanzania in Three Pilot Villages

THE END-LINE SURVEY ON HOUSEHOLD INCOME AND PRODUCTION COST FOR COFFEE A CASE STUDY OF MBOZI DISTRICT COUNCIL-TANZANIA IN THREE PILOT VILLAGES

DRAFT

REPORT

Prepared By:
Mbozi DFTs
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ASDP-National Facilitators
JICA-RADAG

JUNE 2016

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List of Abbreviations

AMCOS	Agricultural Marketing Cooperative Society
ASDP	Agricultural Sector Development Programme
CMS	Coffee Management Service
CPU	Coffee Pulpery Unit
DADP	District Agricultural Development Plan
DAICO	District Agricultural, Irrigation and Cooperatives Officer
DC	District Council
DFT	District Facilitation Team
GAP	Good Agricultural Practices
HP	Home/Hand processing
JICA	Japan International Cooperation Agency

NFT	National Facilitation Team
Kg	Kilogram
M&E	Monitoring and Evaluation
RADAG	Rural and Agricultural Development Advisory Group
SMS	Subject Matter Specialist
TCB	Tanzania Coffee Board
Tsh	Tanzania Shilling

Acknowledgement

The Authors (DFTs and NFTs) of this report would like to thank the village and AMCOS leaders and members in three villages/ AMCOS for their cooperation and accepting to be interviewed for household end-line survey. Our sincerely thanks also go to DAICO, JICA, WAEOs and VAEOs for their all kind of support all the time.

1.0 INTRODUCTION

Mbozi District Council is one among the three pilot districts in the country supported by JICA for the improvement of value chain of prioritized commodities. Others are Kilombero and Lushoto districts.

Mbozi District selected coffee as its priority crop for value chain developments. In 2013 the pilot project under JICA initiatives in collaboration with the district, region and Ministry of Agriculture, Livestock and Fisheries were applied and tested good practices for coffee quality improvement in 3 pilot villages out of 99 which grow coffee in Mbozi district.

JICA-RADAG project has intervened and focused on the processing stage where they provide technical assistance by capacity building to farmers, AMCOS leaders, DFTs and extension workers and also to link farmers and district with private sector for coffee development along the value chain.

Therefore in 2013 we conducted baseline survey to these three pilot villages so that to understand and lay-down the status of coffee quality and to know the farmers experience in the post-harvest treatment and processing practices and in 2016 we conducted a household end-line survey in order to know how coffee has improved the standard of living of farmer in the village before the project is ended in June 2016.

1.1 THE OBJECTIVE OF END-LINE SURVEY

The objective of this end-line survey was to know how the individual farmer has improved his life through coffee value chain since we have started to support them technically.

Also to understand areas which still have weakness so that to plan for its strategy to overcome it in the future.

2.0 METHODOLOGY OF SURVEY

This shows ways we used to conduct the end-line survey for household in the pilot villages.

2.1 DATA COLLECTION

- Individual interview with a constructed questionnaire as a data collection instrument for this survey (Annex 3)

- The questionnaire comprised of close and open ended questions in order to seek both qualitative and quantitative information (Annex 3)

2.2 DATA ANALYSIS

- The exercise of Data input had been done by all DFT members surveyed the pilot villages, this activity was done by using simple excel sheet designed by surveyors.

- The comparison of baseline and end-line data was conducted. Due to the changing nature of the project, end-line survey included additional questions. To make the comparison, therefore, DFT members referred to other sources of data apart from baseline survey, such as the result of preliminary baseline survey (conducted in September 2013) and monitoring data on coffee class and shipment volume.

3.0 THE SURVEY FINDINGS

3.1 General Information

3.1.1 Age of respondents

According to the data entry analysis, an average of age of respondents of AMCOS members were 50.6. Msia is one which have higher average age than Hamwelo and Ichesa. This means that most of people of Msia were under age of production (Annex 1).This observation of age respondents is the same as of what observed during the baseline survey in 2013 which is 50 years of age, this indicates that the group of coffee producers are old farmers and youths are not fully engaged in coffee production.

3.1.2 AMCOS membership

About 3.32 were the average years of AMCOS membership of both three AMCOS that is Ichesa, Hamwelo and Msia but in Msia the average age of membership is higher than Ichesa and Hamwelo it is about 4.62 averages. And Hamwelo and Ichesa the average year of membership is almost the same. This indicates that mostly of AMCOS members they joined three years ago (Annex 1).

Table 1: AMCOS members by gender (before and after)

Details	Msia		Ichesa		Hamwelo	
	2011	2015	2013	2015	2011	2015
Total Members	81	62	57	61	50	65
Males	70	57	54	54	27	60
Females	11	5	3	7	23	5

3.1.3 Household size

The results of the survey shows the average household size in both AMCOS is about 7.96 in three visited AMCOS. Hamwelo is leading which is 9.38.(Annex 1).

3.1.4 Size of coffee farm

The size of coffee farm cultivated is still the same as during the baseline and end-line where coffee farmers are still producing coffee under the size of less than 5 acres.

Table 2: Size of coffee farmland (ha. per farmer)

	Size of farmland	Size of coffee farmland
Ichesa	2.7	1.1
Hamwelo	2.7	1.0
Msia	4.6	0.9

Source: End-line survey 2016

3.1.5 Land ownership

Most of members interviewed the status of land ownership is owned by themselves and only few they hire, no changes of status of land ownership during the baseline and end-line survey in three pilot AMCOS (Annex 1).

3.1.6 Number of coffee trees

The analysis shows that majority of the farmers possessing more than 501 coffee trees. And this is the same during the baseline survey (Annex 1).

3.1.7 Age of coffee trees

The analysis shows that the most interviews they are using traditional coffee trees instead of improved varieties. The observed age of coffee trees in the visited area is around 18.9 during the baseline and end-line survey (Annex 1).

3.1.8 The trend of coffee collection

The below table shows the trend of coffee collection (parchments) between 2013 and 2015 seasons.

Table 3: Collection of Coffee parchment (kg)

	2013	2015
Ichesa	N/A*	8,613
Hamwelo	5,000	3,651
Msia	8,000	11,362

* No data for 2013, for 8 groups operated separately in 2013. They were united in 2014. And the production volume was 5,737 kg.
Source: DFT monitoring reports, supplementary baseline survey and end-line survey.

Msia AMCOS increased the shipment volume dramatically. On the other hand, the volume dropped for Hamwelo AMCOS mainly due to late start of coffee cherry collection at its CPU facility[1]. For Ichesa AMCOS, there is no data for 2013 because the AMCOS started its operation only in 2014. Compared to 2014 data, however, Ichesa AMCOS increased shipment volume from 5,737 kg to 8,613 kg in 2015.

3.1.9 Main agriculture crop

This question was planned to test the farmers to list their main agriculture crops and the analysis show that all three village they are cultivating more than one crop which is 91.7% of all of interviewees and the rest which 14.5% which comprise 8 interviewees from Msia they are not cultivating maize but all three villages are cultivating coffee, beans, maize, groundnuts, rice, roundpotato, sunflower, sweet potato and other crops (Annex 1).

3.1.10 Type of house

The analysis shows that 46.7% and 26.7% of the respondents are living in the burnt bricks house and block house respectively, and nobody is living in the wooden house this means that majority of the farmers can afford to construct a house of burnt bricks than blocked house (Annex 1).

3.1.11 Roofing type

The analysis shows that 100% of all interview who own house they have roofed their house by iron sheet this means that coffee business and other crops make them able to purchase those iron sheet which is quite expensive but they understand that they should live in a better house (Annex 1).

[1] Completion of CPU facility construction was delayed.

3.1.12 Property possession

The data analysis shows that the majority of the farmers interviewed in the village do own basic property like radio, mobile phone, toilet and warehouse and no one own television or fridge due to the shortage of power (Annex 1).

3.2 Household income

3.2.1 Income (overall and coffee)

The following tables show the changes in overall and coffee income per farmer. Significant part of income is from coffee production for all AMCOS. Coffee income has increased for all AMCOS presumably because of rise in sales price. The proportion of coffee income decreased for Hamwelo AMCOS due to increase in other sources of income and the delay of CPU operation as mentioned above. Other sources of income include farming other than coffee, temporary labor in farmland, livestock keeping and petty business.

Table 4: Overall income per household (Tsh)

	2013	2015
Ichesa	2,000,000	4,069,000
Hamwelo	1,160,000	3,598,000
Msia	N/A*	1,981,000

* No reliable data could not be obtained from the interviews.
Source: Supplementary baseline survey and end-line survey.

Table 5: Coffee income per household (Tsh)

	2013	2015
Ichesa	1,050,000	2,699,000
Hamwelo	810,000	1,131,000
Msia	800,000	1,005,000

Source: Supplementary baseline survey and end-line survey.

Table 6: Proportion of coffee income against overall income

	2013	2015
Ichesa	52.5%	66.3%
Hamwelo	69.8%	31.4%
Msia	N/A*	50.7%

* No reliable data could not be obtained from the interviews.
Source: Supplementary baseline survey and end-line survey.

3.3 Coffee production cost and profit

The following shows the production cost and profit for each coffee farmer. The cost items included agricultural inputs (seedlings, fertilizer, pesticide, herbicide, etc.), labor (if employed seasonal workers), and AMCOS's charge (for CPU use, transportation and storage).

Table 7: Production cost and profit for 2013 season (Tsh.)

AMCOS	A: Sales	B: Cost*	C: Profit (A-B)	D: Profit Rate (C/A)
Ichesa	1,050,000	721,000	329,000	31.3%
Hamwelo	810,000	366,000	444,000	54.8%
Msia	800,000	366,000	434,000	54.3%

*"Cost" is estimated from end-line survey.
Source: Supplementary baseline survey and end-line survey.

Table 8: Production cost and profit for 2015 season (Tsh.)

AMCOS	A: Sales	B: Cost	C: Profit (A-B)	D: Profit Rate (C/A)
Ichesa	2,699,000	920,000	1,779,000	65.9%
Hamwelo	1,131,000	447,000	684,000	60.5%
Msia	1,005,000	626,000	379,000	37.7%

Source: Supplementary baseline survey and end-line survey.

The production cost increased in 2015 due to the addition of CPU user fee and other AMCOS charges necessary for post-harvest handling. Profitability increased for Ichesa and Hamwelo while that of Msia decreased in 2015. It is assumed that the Msia's low profitability is due to higher labor cost (for cherry picking) and the group's higher handling charge for post-harvest processing. It should also be noted that the Year 2015's production cost for all AMCOS does not include the contribution for CPU facility construction from group members. This is initial investment cost and will not occur in the following years.

3.4 Coffee quality

This project focused on the post-harvest processing stage of coffee VC and set a target of fetching higher sales prices by improving post-harvest handling for coffee quality improvement. As a result of post-harvest processing training, set-up of Quality Control Committee and CPU installation, all 3 AMCOS have improved coffee quality (class) and achieved higher selling prices as shown below.

Table 9: Coffee class (one to nine, one the highest)

	2013	2015
Ichesa	9	5
Hamwelo	9	6
Msia	9	6

Note: the assessment was made by TCB in 2013 and by CMS (coffee buyer/curing company) in 2015.
Source:.Data from TCB and CMS.

Table 10: Farm-gate price (parchment, Tsh./kg)

	2013	2015
Ichesa	3,000	4,700
Hamwelo	2,500	4,600
Msia	2,700	4,400

Note: the assessment was made by TCB in 2013 and by CMS (coffee buyer/curing company) in 2015.
Source: Data from TCB and CMS.

3.5 Analysis of post-harvest treatment and processing practices

3.5.1 Picking of cherry

During the baseline and end-line surveys, it seems most farmers pick red ripe cherries. This means that farmers understand a type cherry to pick up. The table 11 below indicates the status of red-cherries picked by farmers. In the baseline survey, 83 % of farmers picked red ripe cherries.

Table 11: Type of red cherries picked

What types of cherries do you pick up?	Only properly ripe red cherries	Others	Total
Hamwelo	38.2%	0%	38.2%
Ichesa	38.2%	0%	38.2%
Msia	23.6%	0%	23.6%
Total	100.0%	0%	100.0%

Source: End-line-survey (2016)

3.5.2 Sorting of red cherry

The analysis for end-line survey showed a major improvement of sorting at a farm level where by 50.9% of the cherries were sorted at AMCOS level and only 40% of the cherries sorted at individual level. During the baseline survey it noted that sorting was done individually 88.3% and sorting by AMCOS was 3%. This improvement of red cherries sorting could be one of the project interventions in the pilot areas.

Table 12: Sorting status of red cherries.

Village	Who is sorting red-cherries			
	AMCOS or Group	Individuals	AMCOS,Group and Individual	Total
Hamwelo	12.7%	20.0%	5.5%	38.2%
Ichesa	27.3%	9.1%	1.8%	38.2%
Msia	10.9%	10.9%	1.8%	23.6%
Total	50.9%	40.0%	9.1%	100.0%

Source: End-line-survey (2016)

3.5.3 Pulping tool

The results from baseline survey indicates that almost all interviewees answered that they use hand pulper (98%). Only one interviewee said he uses CPU for pulping while 59 interviewees use hand pulper, however the results from the end-line survey indicates that the majority which is 83.6% use CPU facilities while 7.3% still use hand pulper, the rest 9.1% use both tools.

Table 13: Pulping tools used by farmers.

Village	Which pulping tool do you normally use for pulping?			Total
	CPU	HP	CPU&HP	
Hamwelo	29.1%	7.3%	1.8%	38.2%

Ichesa	38.2%	.0%	.0%	38.2%
Msia	16.4%	.0%	7.3%	23.6%
Total	83.6%	7.3%	9.1%	100.0%

Source: End-line-survey (2016)

3.5.4 Cleaning of pulping machine

The results during the baseline survey indicates that majority (90%) of the farmers wash their pulping tools every time after use. Only 10% of interviewees said pulping tools are sometimes washed. The end-line survey indicates that 98.2% are washing their pulping every time after use and 1.8% wash sometimes after use.

Table 14: Washing pulping tools

Village	How often do you wash pulping tools?		Total
	Pulping machines/tools are washed every time	Pulping machine/tools are sometimes washed	
Hamwelo	36.4%	1.8%	38.2%
Ichesa	38.2%	.0%	38.2%
Msia	23.6%	.0%	23.6%
Total	98.2%	1.8%	100.0%

Source: End-line-survey (2016)

3.5.5 Condition and availability of water for processing

The results of end-line indicates that all interviews use clean water and 96.4% of the processing units have enough water for processing. The situation improved from the baseline survey while many farmers answered that water for processing quality coffee was clean (75%) and enough (62%).

Table 15 : Status of water used for processing

Village	What is the condition of the water that you use for processing?		
	Water is clean (transparent and not smelly)	Water not clean	Total
Hamwelo	38.2%	0%	38.2%
Ichesa	38.2%	0%	38.2%
Msia	23.6%	0%	23.6%
Total	100.0%	0%	100.0%

Source: End-line-survey (2016)

3.5.6 Fermentation

The results during the baseline survey indicates that fermentation is not properly done because most farmers perform worse by using polythene bags. More than half, 61.6% interviewees said they use polythene bags and only 18.3% they use fermentation tanks or pool. 10 % of interviewee they use buckets or sufuria (cooking pots). The performance of fermentation observed to be improved as during the end-line survey it observed that 87.3% of farmers they use fermentation tank or pool and only 3.6% and 9.1% use buckets and polythenes bags respectively.

Table 16: Status of the use of fermentation tools

Village	What do you use for fermentation?			
	A fermentation tank or pool.	Buckets or Sufuria (cooking pots)	Polythene bags	Total
Hamwelo	30.9%	3.6%	3.6%	38.2%
Ichesa	38.2%	.0%	.0%	38.2%
Msia	18.2%	.0%	5.5%	23.6%
Total	87.3%	3.6%	9.1%	100.0%

Source: End-line-survey (2016)

3.5.7 Parchment drying

The results during the baseline survey indicates that an equal number of farmers use both drying tables (29 farmers, 48%) and cloth or a sheet on the ground or drying floor (29 farmers, 48%). During the end-line survey 96.4% of interviewees do use drying table and only 3.6% use cloth or sheet on the ground or drying floor.

Table 17: The drying methods

Where do you dry parchment?			
Village	On a drying table	On a cloth or sheet on the ground or drying floor	Total
Hamwelo	38.2%	.0%	38.2%
Ichesa	38.2%	.0%	38.2%
Msia	20.0%	3.6%	23.6%
Total	96.4%	3.6%	100.0%

Source: End-line-survey (2016)

3.5.8 Sorting of parchment during drying

The results during the baseline survey indicates that sorting during drying is well done by majority of farmers. Out of 60 farmers interviewed in the 3 villages, 78.3% farmers suggested that they always do sorting during drying of coffee parchments. And 15% said that they do sorting only sometimes, 6.7% people said not at all. The baseline and end-line results are almost the same as the end-line result indicates that 89.1% do sorting always on drying while 7.3% not doing sorting at all.

Table 18: The status of sorting in the pilot area.

Who sort Parchment during Drying					
Village	AMCOS or Group	Individual	Sorting is not done at all	AMCOS,Group and Individual	Total
Hamwelo	27.3%	10.9%	.0%	.0%	38.2%
Ichesa	34.5%	.0%	.0%	3.6%	38.2%
Msia	18.2%	1.8%	1.8%	1.8%	23.6%
Total	80.0%	12.7%	1.8%	5.5%	100.0%

Source: End-line-survey (2016)

3.5.9 Storage facilities

New sisal bags are recommended for parchments storage. Our end-line survey shows that about 63.6% of the farmers they use sisal bags which are new while 32.7% and 3.6% of the farmers they use the old and used sisal bags and polythenes bags respectively. The results during the baseline survey indicates that in the 3 villages, out of the 60 farmers interviewed, 56.7% farmers said they use used sisal bags for many years. Only 10% said using new sisal bags which and 33.3% farmers use polythenes bags.

Table 19: Type of bags used for storage of parchments

What type of bags do you use to store parchments?				
Village	Sisal bags renewed every year	Old Sisal bags	Chemical-fibre(polythene) made bags	Total
Hamwelo	23.6%	14.5%	.0%	38.2%
Ichesa	29.1%	7.3%	1.8%	38.2%
Msia	10.9%	10.9%	1.8%	23.6%
Total	63.6%	32.7%	3.6%	100.0%

Source: End-line-survey (2016)

4.0 CONCLUSION AND RECOMMENDATION

4.1 Conclusion

Results from the end-line survey conclude that the class of coffee in the pilot villages have improved. This could be due to the application of good practices. The challenge however, is how to up-scale the archived good practices to other villages which grow coffee inside and outside the district.

4.2 Recommendation

The following are recommendations of the end-line survey;

i. In order to sustain the achieved good practices, extension officers should visit farmers and AMCOS regularly and provide extension service to farmers.
ii. AMCOS should be encouraged at local level as an instrument for price bargaining and for less cost of inputs.
iii. The farmers should keep proper record of production cost in order to determine exactly profit after sales.

The farmers and other stakeholders should invest heavily in coffee sector because the crop which contribute more income to the households and government.

iv. The district through DFTs should encourage youth to participate in coffee production.

v. The district should formulate a good monitoring and evaluation system to sustain the good practices for future in other villages.

vi. In order to increase coffee yield, farmers should have a plan to replace old coffee trees with new improved varieties and expand the size of coffee farms.

ANNEXES

Annex 1: General Informations

				Ichesa	Hamwelo	Msia	All
1	Average age or respondents			50.28571429	50.0952381	51.54545455	50.64213564
2	Average years of AMCOS membership			2.666666667	2.666666667	4.619047619	3.317460317
3	Average household size			8.80952381	9.380952381	5.692307692	7.960927961
4	Average size of farm			2.6	2.619047619	2.619047619	2.612698413
5	Average size of coffee farm			1.142857143	0.99047619	0.923076923	1.018803419
6	Land ownership	A	Number	21	18	11	50
			Percentage	105.0%	90.0%	55.0%	83.3%
		B	Number	0	3	2	5
			Percentage	0.0%	15.0%	10.0%	8.3%
		C	Number	0	0	0	0
			Percentage	0.0%	0.0%	0.0%	0.0%
7	Average number of coffee trees	Traditional		2890.47619	2858.380952	1930.769231	2559.875458
		New varieties		14.28571429	23.80952381	307.6923077	115.2625153
		Total Number		2904.761905	2882.190476	2238.461538	2675.137973
8	Average age of coffee trees	Traditional		27	129	17	58
		New varieties		0	0	0	0
9	Average coffee yield in 2015 (red cherries)			3,137	769	1,731	1,879
10	Average coffee yield in 2015 (parchments)			647	173	331	384
11	Main agriculture crops	Bean	Number	21	21	13	55
			Percentage	105.0%	105.0%	65.0%	91.7%
		Coffee	Number	21	21	13	55
			Percentage	105.0%	105.0%	65.0%	91.7%
		Ground nuts	Number	21	21	13	55
			Percentage	105.0%	105.0%	65.0%	91.7%
		Maize	Number	21	13	13	47
			Percentage	105.0%	65.0%	65.0%	78.3%
		Rice	Number	21	21	13	55

			Percentage	105.0%	105.0%	65.0%	91.7%
		Round potato	Number	21	21	13	55
			Percentage	105.0%	105.0%	65.0%	91.7%
		Sunflower	Number	21	21	13	55
			Percentage	105.0%	105.0%	65.0%	91.7%
		Sweet potato	Number	21	21	13	55
			Percentage	105.0%	105.0%	65.0%	91.7%
		Others	Number	21	21	13	55
			Percentage	105.0%	105.0%	65.0%	91.7%
12	Type of house	A	Number	9	0	7	16
			Percentage	45.0%	0.0%	35.0%	26.7%
		B	Number	0	0	0	0
			Percentage	0.0%	0.0%	0.0%	0.0%
		C	Number	8	17	3	28
			Percentage	40.0%	85.0%	15.0%	46.7%
13	Roofing type	A	Number	21	21	13	55
			Percentage	105.0%	105.0%	65.0%	91.7%
		B	Number	0	0	0	0
			Percentage	0.0%	0.0%	0.0%	0.0%
		C	Number	0	0	0	0
			Percentage	0.0%	0.0%	0.0%	0.0%
		D	Number	0	0	0	0
			Percentage	0.0%	0.0%	0.0%	0.0%
14	Possession	A	Number	21	21	13	55
			Percentage	105.0%	105.0%	65.0%	91.7%
		B	Number	21	21	13	55
			Percentage	105.0%	105.0%	65.0%	91.7%
		C	Number	21	21	13	55
			Percentage	105.0%	105.0%	65.0%	91.7%
		D	Number	21	21	13	55
			Percentage	105.0%	105.0%	65.0%	91.7%
		E	Number	20	21	13	54

			Percentage	100.0%	105.0%	65.0%	90.0%
		F	Number	21	21	13	55
			Percentage	105.0%	105.0%	65.0%	91.7%
		G	Number	21	21	13	55
			Percentage	105.0%	105.0%	65.0%	91.7%
		H	Number	21	21	13	55
			Percentage	105.0%	105.0%	65.0%	91.7%
		I	Number	21	21	13	55
			Percentage	105.0%	105.0%	65.0%	91.7%
		J	Number	21	21	13	55
			Percentage	105.0%	105.0%	65.0%	91.7%
		K	Number	21	21	13	55
			Percentage	105.0%	105.0%	65.0%	91.7%

Annex 2: Household income

II	Average household income	Agriculture	3,297,180.95	3,004,997.14	1,649,904.62	2,650,694.24
		Coffee	2,699,252.38	1,131,869.52	1,005,748.46	1,612,290.12
		Livestock	83,547.62	141,142.86	57,384.62	94,025.03
		Trade	69,523.81	-	-	23,174.60
		Forest products	14,904.76	1,666.67	-	5,523.81
		Farm labor	12,142.86	10,857.14	-	7,666.67
		Other labor work	57,142.86	30,476.19	-	29,206.35
		Remittance	16,666.67	7,142.86	-	7,936.51
		Others	45,238.10	92,380.95	-	45,873.02
		Ground total	4,069,276.19	3,598,387.62	1,981,389.23	3,216,351.01
III	Average coffee production costs	Input	503,595.24	309,723.81	274,100.00	362,473.02
		Labor	182,142.86	44,076.19	89,515.38	105,244.81
		After harvesting	35,880.95	12,894.74	3,076.92	17,284.20
		AMCOS deduction	198,497.14	86,253.00	138.46	94,962.87
		Others	-	-	-	-
		Ground total	920,116.19	447,612.38	366,830.77	578,186.45
			193,775.06	171,351.79	152,414.56	517,541.40
	Average coffee productivity (Kg of red cherries/tree)		0.946281281	0.25135369	0.784468358	0.66070111
	Average coffee productivity (Kg of red cherries/ha)		2262.183107	813.5535714	1526.201923	1533.979534
	Average profit from coffee		1779136.19	684257.1429	638917.6923	1034103.675

Annex 3: Questionnaire for household survey

S/N_____

End-line Survey in 3 AMCOS (Ichesa, Hamwelo, Msia)

Questionnaire for household survey

Date	
Village	
Name of interviewer	

Please explain to the respondent

The purpose of this interview survey is to know coffee farming as business in our target villages. Your answers will be valuable information to us. Your personal information will be kept confidential.

I) General information

S/N	TOPIC	QUESTION	ANSWER	REMARKS
	Name	What is your name?		
1	Age	How old are you?		
2	AMCOS membership	When did you become a member of AMCOS?	Year : Period of membership (year):	
3	Household size	How many family members do you have in your households?		
4	Size of the Land/Farm (Unit:ha)	How many hectors of farm land do you have?		
5	Size of coffee farm (Unit:ha)	How many hectors of coffee farm do you have?		
6	Land ownership	What is the land title of your farm?	A. Yours B. Family land C. Rented from other owner	
7	No of coffee trees	How many coffee trees do you have in the farm?	Traditional: New varieties: Total number:	
8	Age of coffee trees	What is average age of coffee trees?	Traditional: New varieties:	
9	Coffee yield last	How many KG of		

	year (red cherries)	red cherries did you get last season?		
10	Coffee yield last year (parchments) *Note: If s/he does not know Kg of red cherries in Q.9, please ask this. It can happen if s/he uses hand pulperly or sells parchments directly to a middleman/buyer. Please explain the situation in the remark column.*	How many KG of parchments did you get last season?		
11	Main agriculture crops	What crops do you produce mainly? (Please answer major three)	1. 2. 3.	
12	Type of house	What kind is your house?	A. Block B. Wooden C. Mud bricks	
13	Roofing type	What is your house roofing?	A. Iron sheet B. Tinny C. Grass D. Others	
14	Possession	Circle what is applicable (multiple answers)	A. Radio B. Solar panel C. TV set D. Bicycle E. Vehicle F. Motor bike G. Fridge H. Mobile phone I. Sewing machine J. Toilet K. Warehouse	

II) Household Income

Please tell us annual income of your household in Year 2015.

	a) Name of product/Item	**b) Total quantity/year**	**c) Unit price (tin, kg, bag etc) * If the respondent sold the product over two times and the price varied (eg. low season and high season), please write different unit prices.**	**d) annual income (b*c)**
1. selling agriculture products				
	Total of selling agriculture products			
2.. selling livestock				
	Total of selling livestock			
3. petty trade				
4. collecting and selling forest products				
5. work as farm labor				
6. other labor work				
7. remittances				
8. others				
	Total of others			
Total				

III) Coffee production costs last

Please tell us coffee production costs of last season in 2014/2015

Note for interviewer: You need to fill out either No.3 or No. 4. If the respondent does not know how much deduction made by AMCOS in No.4, you should calculate it later by yourself.

	a) Items	**b) Total quantity/year**	**c) Average unit price**	**d) annual expenditure (b*c)**
1. Agriculture input	Seed/seedling			
	Fertilizer			
	Pesticide			
	Herbicide			
	Fungicide			
	Others			
	Total of agriculture inputs			
2. Labor	Weeding			
	Spraying			
	Fertilizer application			
	Red cherry picking			
	Others			
	Total of labor			
3. Costs after harvest (such as CPU user fee, transportation, storage) **if you do not pay such costs to AMCOS**				
	Total of costs after harvest			
4. If you pay the costs after harvest to AMCOS, how much was deducted per kg of red cherries/parchments? *Note: Please specify whether per red cherries or parchments/*				
Other				
Total				

10.4 Presentation Material for the Wrap-up Meeting

Wrap-up Meeting for Mbozi Pilot Activities

Comparision between 2013 and 2015

A.Size of farm (ha. per farmer)

	Size of farm	Size of coffee farm	Remark
Ichesa	2.7	1.1	Endline survey (2016)
Hamwelo	2.7	1.0	Endline survey (2016)
Msia	4.6	0.9	Endline survey (2016)

B. Income (per household, Tsh)

	2013	2015	Remark
Ichesa	2,000,000	4,069,000	For 2013, data from supplementary baseline survey
Hamwelo	1,160,000	3,598,000	For 2013, data from supplementary baseline survey
Msia	N/A	1,981,000	For 2013, data from supplementary baseline survey

C. Income from coffee (per household, Tsh)

	2013	2015	Remark
Ichesa	1,050,000	2,699,000	For 2013, data from additional baseline survey
Hamwelo	810,000	1,131,000	For 2013, data from additional baseline survey
Msia	800,000	1,005,000	For 2013, data from additional baseline survey

D. Proportion of coffee income (B/A, %)

	2013	2015	Remark
Ichesa	52.5%	66.3%	For 2013, data from additional baseline survey
Hamwelo	69.8%	31.4%	For 2013, data from additional baseline survey
Msia	N/A	50.7%	For 2013, data from additional baseline survey

E. Coffee class (1-9, 1 the highest)

	2013	2015	Remark
Ichesa	9	5	For 2013, TCB assesment. For 2015, CMS assessment
Hamwelo	9	6	For 2013, TCB assesment. For 2015, CMS assessment
Msia	9	6	For 2013, TCB assesment. For 2015, CMS assessment

F. Farmgate price (Parchment, Tsh/kg)

	2013	2015	Remark
Ichesa	3,000	4,700	
Hamwelo	2,500	4,600	
Msia	2,700	4,400	

G. Shipment volume (Parchment, kg)

	2013	2015	Remark
Ichesa	N/A*	8,613	
Hamwelo	5,000	3,651	
Msia	8,000	11,362	

* No data for 2013, for 2 separate groups operated in 2013. They were united in 2014. And the production volume was 5,737 kg.

F.Size of farm (ha. per farmer)

	Size of farm	Size of coffee farm	Remark
Ichesa	2.7	1.1	Endline survey (2016)
Hamwelo	2.7	1.0	Endline survey (2016)
Msia	4.6	0.9	Endline survey (2016)

Appendix 11

Suggestions on the Critical Matters Arose during Backstopping on DADP Guideline to LGAs

SUGGESTIONS ON THE CRITICAL MATTERS AROSE DURING BACKSTOPPING ON DADP GUIDELINE TO LGAs

INTRODUCTION

The ALSMs has been preparing the second phase of the Agricultural Sector Development Program (ASDP II) to be implemented for ten years; with the main objective of transforming the agricultural sector towards higher productivity, commercialization level and smallholder farmer income for improved livelihood, food security and nutrition. The programme consists of four components include (i) Sustainable Water and Land Use Management, (ii) Enhance Agricultural Productivity and Profitability, (iii) Rural commercialization and Value Addition and (iv) Strengthening Sector Enablers.

At local level, DADPs will continue to be main tool for planning, designing and implementing programme components under supervision of the LGAs in order to promote social and economic development. Hence the Planning and Implementation Thematic Working Group in collaboration with JICA-RADAG prepared a guideline for Comprehensive District Agricultural Development Plans-phase II (DADP II) underlying with ASDP II in order to guide and ensure that all LGAs are preparing and implementing the DADPs in accordance to ASDP II. For common understanding, backstopping on DADP guideline was conducted to all regions in the mainland of Tanzania.

MATTER ARISING DURING BACKSTOPING ON DADP GUIDLINE TO LGAS

During backstopping various matters arose in accordance to chapters in the guideline but further clarification, indicative measures and guidance should be given to all LGAs in order to find permanent solution on these matters especially on coordination and financing modality which are not clearly emphasized. Among these issues/ matters include;

1. **Contribution of the Private Sector/ DPs to the Agricultural Sector:** According to the LGAs, most of off budget actors are intervening in the agricultural activities but sometimes they never show the actual budget of the activities they intervene. Due to this most of LGAs are not in position of capturing most of actual budget of the off-budget activities.

   Suggestion of P&I Thematic working group on this matter: PO-RALG in collaboration with the Ministry of Finance and Planning should provide all private sectors with an official letter that will ensure that all off-budget players that are intervening in agricultural activities in local level, must provide LGAs or RSs with

their TOR and budget of their intervention (i.e. investment costs). Such a letter can be distributed to representative organs such as ANSAF, ACT and AWG. With the letter, PO-RALG should direct LGAs to contact off-budget players in a district in order to obtain information for planning and implementation of comprehensive DADP.

2. **Contribution of the Produce Cess, Livestock and Fisheries Levies to the local fund:** In accordance to LGAs, the agricultural sector contributes more in own source at local level than other sectors but funds from own source is not disbursed equally to the sectors especially for agriculture sector. It was suggested that the indicative percentage for the agricultural sector should be given to ensure that there is a certain percentage from own source fund is given to the agricultural sector.

   Suggestion of P&I Thematic working group on this matter: The Agricultural Sector Leading Ministries (ASLMs) through PO-RALG should provide the directive letter to the LGAs to ensure that specific percentages of funds from own source are disbursed to the agricultural sector as articulated in DADP Guideline. With such a letter, ASLMs should also request DEDs to submit their official reply letter, showing their commitments to agricultural sector.

3. **LGDG funds**: According to LGAs, LGDG funds are not fairly distributed to all sectors especially for agricultural sector hence it affects the implementation of the planned activities.

   Suggestion of P&I Thematic working group on LGDG: ASLMs should determine the minimum percentage of LGDG funds to be allocated to the agricultural sector. PO-RALG then should provide the directive letters to the LGAs to ensure that the funds are disbursed to the agricultural sector by indicating such a percentage. ASLMs should make follow-up over whether the LGAs have allocated the agreed portion to the agricultural sector by means of DADP Progress Report as well as other reports concerning LGDG.


JICA