global forum for rural advisory services
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Module 10: The Role of Extension in Supporting Value Chains Part 2, Practical

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In 2012 GFRAS developed the "New Extensionist" document, which details the role that extension plays in an agricultural innovation system, and the strategies and capacities needed (at individual, organisational, and system level) http://www.g-fras.org/en/activities/the-new-extensionist.html. Based on this document the GFRAS Consortium on Extension Education and Training emerged to promote the new extensionist, mainly through training, curricula review, and research on extension.

The Learning Kit contains 13 modules designed for self-directed, face-to-face, or blended learning and can be useful resource for individual extension field staff, managers, and lecturers.

The Role of Extension in Supporting Value Chains module is developed as part of the New Extensionist Learning Kit http://www.g-fras.org/fr/652-the-new-extensionist-core-competencies-for-individuals.html.

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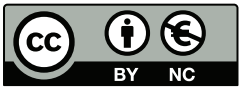

Contents

1. Before you begin

1.1 General instruction

This module should be used in conjunction with the workbook provided. As you read through the module, you will find different visual features that are designed to help you navigate the document.

Figure 1: Icons used to highlight important information throughout the manual

The module makes use of keywords (difficult or technical words that are important for you to understand). To ensure that you receive the full benefit from the module, keywords will be marked the first time they occur and defined in a box containing the keywords symbol. Make sure that you read the definition of any words that you are unsure about.

1.2 Activities

Each session in the module will contain various types of activities to help you become knowledgeable and competent. The module contains three types of activities:

A **pre-assessment** is to be completed before reading through the module overview and introduction, and a **post-assessment** is to be completed once the entire module has been covered. This will measure the degree to which your knowledge has improved by completing the module.

Each session contains one or more **session activities** to be completed, in the workbook, where indicated in the module. These activities measure your ability to recall and apply theoretical knowledge.

At the end of each study unit a **summative assessment** needs to be completed. These assessments are longer than the session activities and will test your knowledge on all the work within the study unit.

1.3 Assessment instructions

Keep the following in mind before doing any of the assessments:

- All assessments are to be completed in the provided workbook.
- The manual contains all relevant information you will need to complete the questions, if additional information is needed, such as the use of online sources, facilities will be made available.
- Work through the activities in a study unit and make sure that you can answer all the questions before attempting the summative assessment. If you find that you are not certain of any part of the training material, repeat that section until you feel confident.
- The summative assessment must be done under the supervision of your trainer at the end of your learning period.

Module 10: The Role of Extension in Supporting Value Chains Part 2, Practical

Module outcomes

After completing this module, you will be able to:

1. Demonstrate how market analysis tools are used;
2. Discuss value chain upgrading strategies; and
3. Evaluate the use of ICTs in value chain services in the agriculture sector.

Module overview

The purpose of this module on **marketing** and **value chain** development is to help extension agents, who are new to working with markets, understand the basic components of marketing and value chains. This module will also focus on the way in which extension agents can work with farmers and other key chain actors to target market opportunities and to develop an action plan that farmers can use to engage with markets successfully.

In this practical part of the module, you will be familiarised with the use of market analysis tools and value chain upgrading strategies, as well the use of **information and communication technologies** (ICTs) in value chains services.

Module introduction

For many years, the role of the extension agent was to help farmers produce more, which was an effective strategy when most farmers sold their goods directly to government. However, farming conditions and circumstances have changed and farmers currently work with or compete with local and international farmers to sell their goods at prices that enable them to cover their production costs and provide them with a profit. In this new and highly competitive market, the role of the extension agent has also changed, in that the new extension agent needs to support farmers in several areas.

An effective extension agent needs to:

- Help farmers to enhance their productivity by using sustainable and climate smart production methods;
- Support farmers in organising themselves, so that they can benefit from **economies of scale** and gain improved equity and trust through building their **social capital**; and
- Enable farmers to identify and engage with appropriate markets to improve their levels and consistency of income.

In order to ensure that farmers are successful in improving their production systems and market performance, the new extension agents must have a working knowledge of markets, agricultural marketing and agricultural value chains.

Complete the pre-assessment in your workbook.

Marketing: The process responsible for identifying, anticipating and satisfying customer requirements profitably.
Value chain: A set of connected actors that work together to add value to a product and increase efficiency and competitiveness, while linking producers to processors and markets.
Information and communication technology: The integration of communication devices, applications and services, including computers and computer networks, mobile phones and television to enable users to access, store, transfer and manipulate information.
Economies of scale: The cost advantage resulting from an increased output of a product.
Social capital: A network of social or economic institutions and individuals that cooperate to create collective value change.

Study Unit 1: Using market analysis tools

Study unit outcomes

After completing this study unit, you should be able to:

- Identify and explain different market strategies and interventions;
- Explain the market opportunity identification (MOI) process;
- Identify market opportunities by following the steps in the MOI process;
- Identify the key points that are evaluated in a value chain analysis; and
- Identify and explain the steps involved in the value chain analysis.

Study unit overview

This study unit provides more detailed information on the specific tools that are used in value chain development. The study unit includes examples of when and how to use the tools, as well as the types of results that are developed when using these tools.

Study unit introduction

In order to operate successfully in the agri-food market, farmers should be familiar with marketing strategies, the method of identifying investment and development opportunities in the market, as well the value chain analysis. By advising smallholder farmers on applying these strategies and methods, extension agents can contribute to farmers increasing their income and improve their livelihood options.

Session 1.1: Market strategies

Session outcomes

After completing this session, you should be able to:

- Identify and explain different market strategies and interventions.

Introduction

In market-led or value chain approaches, there are differences in the investment approach, based on who the driver in the initiative is, as shown in Table 1.

Table 1: Market strategies

Type of strategy	Methods	Lead agency and partners	Market
Livelihood strategy	• Territorial assessments; • Market opportunity identification; • Market visits; • Production planning; • Profitability assessments; • Environmental assessments; and • Basic business plans.	• Farmer organisation; and • First buyer link.	• Local market options; • Generally informal markets; and • Secure first buyer link.

Type of strategy	Methods	Lead agency and partners	Market
Value chain upgrading strategy	• Territorial approach; • SMART skills for field agents and farmers; • Value chain analysis; • Business planning; • Service integration; • Implementation planning; and • M & E processing.	• NGO facilitator; • Farmer organisations; • Several links in value chain; and • Financial services.	• Local market; • Growth regional markets; and • Shift from informal to more formal markets.
Intermediary firm business model	• Inclusive business model; • Link method; and • ValueLinks.	• Intermediary company that sets buying conditions; and • Finance.	
Inclusive business model	• Inclusive business model; • Link method; and • ValueLinks.	• Lead firm in value chain; • All suppliers in chain; and • Investors.	• Growth markets; • Formal markets; and • Value-added markets.

In the following sections, you will find more detailed information on each of these strategies. Figure 1 illustrates the market strategies.

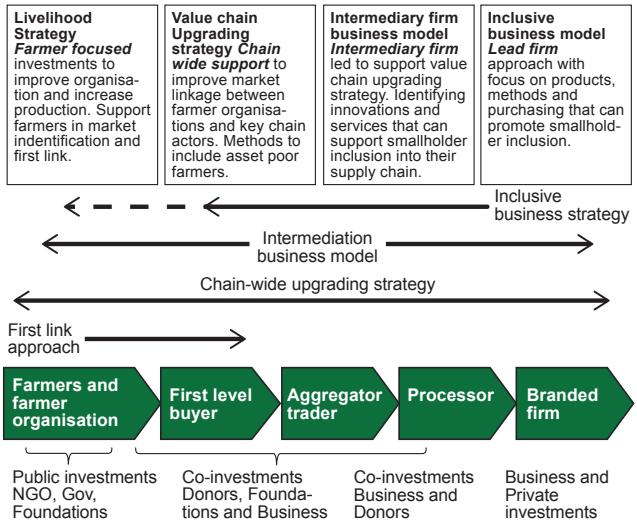

Figure 1: Market strategies and interventions

Market strategies and interventions

Livelihood strategy

This approach typically begins with a primary focus on supporting farmer organisations and identifying opportunities for farmers to enhance productivity, nutrition and market linkage. The intervention is regarded as a **livelihood strategy**, because it aims to assist farmers in adopting more sustainable production methods, promotes crop/enterprise diversification and support in other areas, such as savings and loans, as well as water and sanitation to stabilise farming families and build their resilience.

Livelihood: Individuals' ways of supporting their existence, both financially and in terms of their careers.
Livelihood strategy: The combination of activities that people choose to perform, in order to achieve their livelihood goals, e.g. productive activities, investment strategies and reproductive choices.

More information about the strategy can be found in Table 2.

Table 2: Key information about the livelihood strategy

Marketing approach	Marketing methods focus on first link sales in the value chain.
Target clients	• Pre-commercial farmers; • Farmers in groups; and • Basic cooperatives.
Lead agency	• Government extension; and • NGOs.
Key service providers	• Public research; • Input supply; • Lead farmers; • Community mobilisers; • Money lenders; and • **Micro-finance institutions.**
Finance services	• Money lenders; and • Micro-finance institutions.
Funding	• Public sector; • Governments; • Foundations; and • NGO co-investments.

Micro-finance institution: A financial institution that is designed to work with households and enterprises with smaller borrowing capacity than clients of commercial banks.

Value chain upgrading strategy

Value chain upgrading follows a chain-wide approach. Value chain analysis leads to the identification of key actors within a sub-sector who are interested in working together to improve their

competitive advantage. More information about the strategy can be found in Table 3.

Table 3: Key information about the value chain upgrading strategy

Marketing approach	Identifying key actors in a value chain.
Target clients	• Semi-commercial farmers; • Farmer cooperatives; and • Trader associations.
Lead agency	• NGOs working with governments; and • Intermediary firms.
Key service providers	• Public research; • Extension from public and private sector; • Input supply; • Farmer groups; • Chain actors; and • Finance institutions.
Finance services	• Money lenders; • Micro-finance institutions; and • Banks.
Funding	• Public sector; • Governments; • Foundations; and • NGO co-investments.

Intermediary firm business model

The intermediary firm business model takes on a chain-wide approach, but it is selective in that the work is channelled towards a single or a small number of firms. These firms are normally major aggregators within a sub-sector or processors. They are not at the end of a market chain; they are supplying other larger processors or retail firms. This approach seeks to

align suppliers more effectively and to improve efficiency in the series of actors who supply them. Many value chain projects work around a large intermediary firm, which often provides the bridge between informal and formal business operations. This is a particularly important partnership process for smallholder farmers who are often unaware of the product requirements for formal and higher value markets. More information about the strategy can be found in Table 4.

Table 4: Key information about the intermediary firm business strategy

Marketing approach	Intermediary firm has identified market with links to target buyers.
Target clients	• Business partners from farmers; • Traders; • Business development services (BDS); • Finance services; and • Government support for business.
Lead agency	Intermediary firm working with NGOs.
Key service providers	• Public research; • Input supply; • Farmer groups; and • Value chain actors.
Finance services	• Banks; and • Impact investors.
Funding	• Private sector co-investment; • Public sector; • Foundations; and • NGO co-investments.

Inclusive business model

The inclusive business model is an approach based on lead

firms that build robust and long-term trading links with a set of established business partners, from production through to retail. The traditional business model focuses on a single firm, whereas the inclusive business model aims to provide a set of core business principles that are supportive of partners along the chain and specific attention is paid to the types of procurement practices and support services that are required to improve the stability of trade with smallholder farmers. The lead firm identifies a market to align suppliers more effectively and to improve efficiency in the series of actors who supply them. Many value chain projects work around a large intermediary firm, who is often the bridge between informal and formal business operations.

More information about the strategy can be found in Table 5.

Table 5: Key information about the inclusive business strategy

Marketing approach	Identify a market to align suppliers more effectively.
Target clients	All suppliers in the value chain that support the lead firm, with particular emphasis on trading conditions and relations with smallholder farmers.
Lead agency	Lead firm working with NGOs and target suppliers.
Key service providers	All required core chain and service providers necessary for the smooth operations of the market chain.
Finance services	• Banks; and • Trade finance through business partners.
Funding	• Private sector; and • Co-investment from public sector


Complete Activity 1.1 in your workbook.

Session 1.2: Market opportunity identification (MOI)

Session outcomes

After completing this session, you should be able to:

- Explain the market opportunity identification (MOI) process;
- Explain how you will help clients to spot the market gap;
- Conduct a market visit to assess market options;
- Identify market opportunities by following the steps in the MOI process; and
- Explain how you will help clients to select a product for investment.

Introduction

The aim of **market opportunity identification** (MOI) is to provide farmers and field agents with a simple and systematic participatory method for the rapid collection of market information to identify and select products and services for investment and agri-enterprise development. The MOI process can be adapted for large, complex investment projects, but it can also be reduced to a simple version, which enables local producers to undertake market studies and identify investment options, based on their local knowledge and on market demand. This approach is a participatory approach that provides an alternative to relying on pre-selected products that have been selected by external experts. The ability to identify market opportunities is a core skill that farmers and field agents need to acquire, if they are to engage with markets successfully, particularly when an externally funded marketing project ends and skilled service providers are removed.

The market opportunity identification process helps agents and farmers to:

- Evaluate market demand for a range of products;
- Select products of most interest to a farmer, farmer group, or cooperative;
- Decide which **market strategy** to pursue; and
- Compare different products and explore market options for **value-added products**.

Market opportunity identification: A systematic, participatory method for collecting market information to identify and select products and services for investment and agro-enterprise development.

Market strategy: A model that directs the way in which a producer will focus limited resources on the best opportunities, in order to increase sales.

Value-added product: A product that has been produced or processed in a way that increases its value, e.g. processing wheat into flour.

Farmers can invest in the following four main types of market strategies:

- Market penetration;
- Product development;
- Market development; and
- Diversification.

These strategies are based on the type of product and market as shown in Table 6.

Table 6: Market strategies based on market and product type

	Existing product	New product
Existing market	1. Market penetration	3. New product
New market	2. Market development	4. Diversification

The decision on the type of market strategy depends on the farmer's assets, resources, aspirations and appetite for risk. The lowest risk strategy is market penetration, whereas the highest risk strategy is diversification.

The MOI follows the same basic steps as a value chain assessment, but is generally more geographically focused.

Steps in MOI

In the following sections, the different steps in the MOI processes are explained:

- Step 1: Agent works with clients to organise a market assessment team;
- Step 2: Agent helps to design the questionnaire;
- Step 3: Clients assess products of interest in target markets (long list);
- Step 4: Clients conduct a detailed analysis of a few products (short list); and
- Step 5: Clients make final selection on which product to investing in for their enterprise.

Figure 2 illustrates these steps.

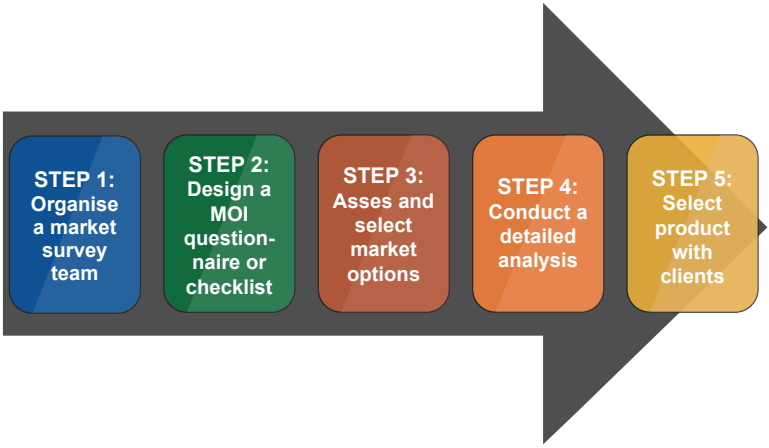

Figure 2: Steps in the MOI process

Step 1: Organise the survey team

The first MOI step is to organise a **market survey** team to support the client—whether it is a farmer, farmer group or a cooperative team—to conduct a market survey. The marketing team will be responsible for gathering information from the farmer group, collecting data and information from the market, analysing information and either preparing an investment plan or working with farmers to make a decision on a product for further investment.

Market survey: The systematic collection of market-related data (e.g. data on target markets and customers) from a population or part of a population to determine the present status of a situation, event or process.

The survey team should be small (three to five members) and should include two or three representatives of the clients, i.e., farmers, as well as one or two technical members. It is important to include smallholder producers in the team, because:

- They are the clients in the research and, therefore, their point of view is important;
- They participate in the decision making when market options are selected and discarded; and
- The survey will gain more credibility from the rural community if smallholder producers, who are their equals, are included in the team, thereby increasing the possibility of implementing research results.

Step 2: Design a first level MOI survey questionnaire or checklist

The extension agent will need to help the farmers or cooperative team to develop survey **questionnaires** or checklists. The questionnaire can be basic to determine key aspects such as product demand and basic **buying conditions** in the local market. The survey instrument can also be quite complicated, particularly if there are several interesting market options.

Questionnaire: A list of questions that are asked to respondents (e.g. consumers of a particular product) to obtain specific information.
Buying conditions: Product, price, quality, sales conditions and payment terms.
Primary data source: Written or oral information obtained from a direct witness of, or a participant in, an event or a process, e.g. direct accounts, correspondence and speeches.
Secondary data source: Primary data that has been analysed and or processed, thereby providing second-hand information about an event or a process, e.g. books, journal articles, newspapers and collected consumer information made available by consumer research organisations.

As with all surveys, the questionnaire will be used to collect primary market information on product options in the target markets. In many cases, **primary data** collection is supported by **secondary** information, which is information that has already been collected and is available in existing records, for example price information from a market information service. The information collected by means of the questionnaire and other sources is used to help compile lists of product options, based on market demand.

Basic survey questions

The following types of questions may be included in the survey questionnaire:

- Where can the buyers be reached (i.e. buyers' contact information)?
- What are the trends in demand for the (selected) products?
- Which products in this market are in highest demand and why are they in high demand?
- Which products are in low supply and why?
- What are the prices of the main products of interest?
- What is the seasonality of the main products of interest?
- What are the buying conditions, i.e.:
  - Volume?
  - Quality?
  - Minimum purchase lots? and
  - Buying frequency?
- What are the terms of payment?
- Would you (i.e. selected buyer) be interested in working with our farmers?

Step 3: Assess and select market options

In some cases, the first market survey may be enough for farmers to make a selection on a production and a buyer. This is often the case, if farmers already have a good idea of what they want to produce and sell.

However, discussions with farmers and market surveys may generate many products of interest. If there are too many choices generated during this initial stage, the market teams need to remove some market options. The process of filtering down from a long list of products to the right product for investment may involve one or two more steps.

The first way of making choices can be done using a simple set of discard criteria. The following section outlines three levels of filtering products, so that investors can make a decision on how to invest, based on sound market information. Figure 3 illustrates the levels of product filtering.

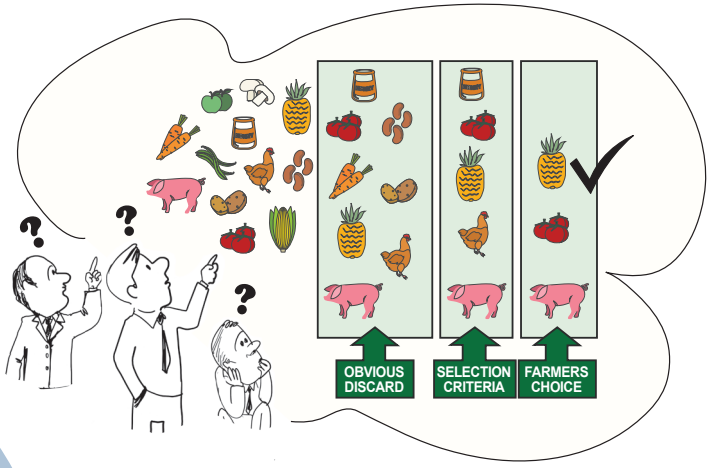

Figure 3: The three levels of product filtering

Filter 1: Removing obvious discards

The first level of filtering removes products that are not suitable for further consideration. This filtering eliminates products that cannot be grown in the area for agronomic or environmental reasons, as well as products that are unsuitable for smallholder producers. They may be unsuitable because they require a level of investment that is too high, sophisticated production methods, or they are culturally or socially unacceptable.

Step 4: Conduct a detailed market analysis

The second level of analysis provides more detail about a product, including agronomic, marketing and financial information. Collecting this information takes more time than the first basic survey, but this analysis provides important information for business development.

For a more detailed analysis, the survey team may use or adapt the questions given in the tables below. The results of this type of questionnaire can be used to determine:

- Production requirements;
- Expected yields;
- Product demand;
- Costs;
- Potential profit levels;
- Investment needs; and
- **Return on investment** (ROI).

Return on investment: A measure of the profit of an investment, expressed as a percentage of the original cost.

Product data collection form

Table 7 gives an example of the product data collection form.

Table 7: Product data collection form

Product name	Time for complete cycle	Pre-production cycle	Technical demand	Soil requirements	Soil pH	Water requirements
	Years	Months or years	Low, average or high			mm/year
Planting period	Labour needs	Irrigation needs	Altitude/ temperature	Major pests and diseases	Planting density	Annual expected yield
		Yes or no			Number of plants/ ha	t/ha

Livestock production form

Table 8 is an example of a livestock data collection form.

Table 8: Livestock data collection form

Product	By-products	Technology level	Capacity	Number of breeders	Period of growth	Nutrition regime
		Low, medium or high				
Inputs	Main disease and pests	Equipment needs	Working capital	Investment	Annual sales	Gross margin

Marketing collection form

Table 9 is an example of a marketing data collection form.

Table 9: Marketing data collection form

Product	Sold currently	Perishability	Type of client	Services to the client or supplier	Type of market
	Yes or no	High Medium Low	SM = Supermarket FI = Food industry I = Industry Rest = Restaurant	TA = Tech assistance CR = Credit	L = Local R = Regional N = National Exp = Export
Product	Growth of demand	Quality requirements	Packaging needs	Delivery requirements	Commercial relations
	High Medium Low	High Medium Low		PZ = Delivered at zone PW = Delivered at warehouse	Ag = Agreement AL = Alliance C = Contract

Financial data collection form

Table 10 is an example of a financial data collection form.

Table 10: Financial data collection form

Product	Level of technology	Price stability	Production investment	Average # of workdays/ year	Sales per workday	Profit analysis
	High, medium or low	High, medium or low	$/ha		$	$
Product	Cash flow workday	IRR without financing	IRR with financing	NPV without financing	NPV with financing	NPV without financing
	$	%	%	($)	($)	($)

Income and revenue data form

Table 11 is an example of an income and revenue data form.

Table 11: Income and revenue data form

Product type		Currency			
Land area		Currency per $			
Date	Materials	Units	Quantity	Price per unit	Cost
		Kilograms, bags, etc.	A	B	A × B
Pre-production					
	Tools				
	Land rental				
Total pre-production costs					

Production					
	Seed				
	Fertiliser				
	Agro-chemicals				
Total production costs					
Post-harvest					
	Bags				
Total post-harvest costs					
Marketing costs					
	Transport to market				
	Market fees				
	Communications				
	Other				
Total marketing costs					
Total consumable materials costs					
Total consumable materials costs ($)					

Analyse profitability

The profitability analysis focuses on elements such as:

- Cost of production;
- Expected revenue (income), based on past experience/unit area; and
- **Gross margin**.

Figure 4 shows the profitability analysis of a farmer growing beans in Uganda.

Gross margin: The total sales revenue (income) minus the cost of goods sold, divided by the total sales income and expressed as a percentage.

GROSS MARGIN ANALYSIS FOR CLIMBING BEANS: INCOME/ACRE

COSTS/ACRE	SHILLINGS	NOTES
Land preparation	40,000	Animals hired for ploughing
Seeds	24,000	New variety
Planting	5,000	
Staking - Supports	60,000	240,00 for staking materials but will be used over 4 seasons
Weeding x3	15,000	Used mainly family labour some costs not included
Fertiliser	25,000	
Pesticides	6,000	
Labour for harvesting	18,000	
Packaging	1,000	
Transport to market	5,000	
Market fees	1,000	
TOTAL COSTS/ACRE	**200,000**	
Harvest kgs	1200	
Market price/kg	750	
INCOME	**900,000**	
GROSS MARGIN	**700,000**	

Figure 4: Example of a profitability analysis

The level of detail that the team requires should be decided in consultation between the field agents and the clients (farmers, groups, cooperative, agri-entrepreneurs, etc.). At this stage, critical business skills are also built, which the teams will need as their businesses grow.

Step 5: Select products with clients

The final filtering in the MOI process involves the clients selecting a product. The decision has to be based on preferences of the investor. This process can be done for mixed groups or through a series of meetings with producers according to their wealth ranking, so that investment options can be made according to the levels of risk that producers want to take on.

The detailed MOI survey provides farmers with information on the:

- Production requirements;
- Market demand; and
- Financial costs and revenues for a specific product.

The farmer group and the survey team need to write up, systemise and analyse this information, so that they can present it to the full farmer organisation, who uses the information to make an informed decision about what product(s) they should invest in for their production and collective marketing strategy. Figure 5 shows an example of sharing survey results with farmers.

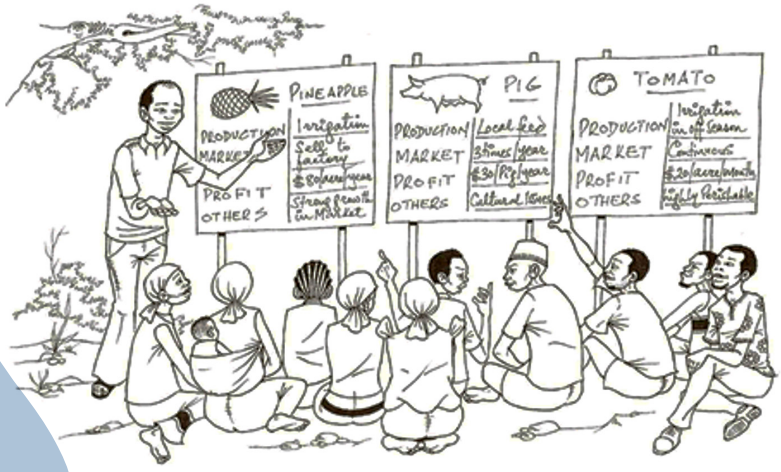

Figure 5: Sharing survey results with farmers

Following the decision on which product to develop as an agri-enterprise, the survey team then:

- Sets up a planning session to link their production targets, so that they meet the needs of the target buyers; and
- Works with the farmers so that they can develop both a business plan and an implementation plan.

Complete Activity 1.2 in your workbook.

Session 1.3: Value chain analysis and upgrading

Session outcomes

After completing this session, you should be able to:

- Identify the key points that are evaluated in a value chain analysis; and
- Identify and explain the steps involved in the value chain analysis.

Introduction

The value chain analysis can follow a MOI survey, but in most cases a value chain analysis is based on a prior product selection process. This is a more extensive analytical method, which provides a systematic process to assess market options. It aims to change the existing buying and selling culture from the realm of occasional and opportunistic sales transactions from individual farmers and transient traders to more consistent sales. This approach builds relationships between organised groups of farmers selling into a known set of trading partners, who are linked to growth and higher value or higher volume markets.

The key issues that are evaluated in a value chain analysis are outlined in Table 12.

Table 12: Key points to be evaluated in a market chain survey

Key points	Detail
Dimensions of the market study	• Map of the area, market chain, market channel and product flows; • Rapid overview of the economic status of the countries; • Macro-economic developments; and • Trade and competitiveness: recent reforms, performance and market access.
Product case studies and analyses	• Production zones; • Importance of the product to earnings, rural livelihoods, poverty alleviation and economic growth; • Principle production and marketing constraints limiting the product export expansion; and • Medium- and long-term market outlooks across the product, for national, regional and export trade.
Clients for study	• Exporters; • Commercial buyers; • Processors; • Farmer associations; and • Service providers.

Key points	Detail
Demand analysis	• Growth categories (exponential growth, steadily increasing demand, or stagnant); • Market size (estimate volume of the market, key segments products, and segments buyers); • Market opportunities identified by market type (local, district, national, regional or export); • Price trends over past five to ten years; • Volume trends over similar period; • Principal buyers of this product, competitors and the advantages they enjoy; • Market barriers; • Market requirements in this product area for which customers/importers will pay; • Quality and health standards that have to be met; • Processing and packaging requirements; • Volume and delivery time requirements; and • Product differentiation needed to succeed.
Supply analysis: Analysis of the market chain	• Production costs and margins down the market chain; • Possible changes that would overcome any bottlenecks within the system; • Principal constraints to production of this commodity; • Costs of production; • Finance/credit; and • Quality control measures.

Key points	Detail
Major challenges to market entry within the identified markets	• Organisation; • Technology; • Services; and • Policy.
Institutional and market barriers	• Market barriers on local, national and regional level; • Finances; • Price information; • Grades, standards and health certifications; and • Market linkages.
Institutional and policy constraints	• Private sector organisation/institutional set-up along the production/marketing chain; • Government barriers; and • Trade barriers.
Regional comparison of competitive advantages	• Highlights of the most competitive areas and products; • Analysis of areas with comparative advantage that are being exploited and other areas that may have comparative advantage but are not able to realise this potential; and • Suggestion of specific types of investment that would provide the highest economic gain, given that future research and development investment is limited.

Key points	Detail
The way forward: Production and market growth strategies for the product market chain	Development of strategies for the sub-sector on national and regional advantage basis: • Growth markets and product areas; • Priority requirements (changes in production, processing and quality control and enhancement, product differentiation, technology and investment); • Respective roles and actions of private and public sectors; and • Short-term and long-term actions needed (balancing poverty reduction and growth objectives).
Priority government intervention to support the production and export development strategy	• Areas where government or donors have greatest impact growth from this market chain; • Infrastructure development; • Improved planting material/product improvement; • Processing and processing efficiency; • Market information; • Attracting foreign investment and technology; • Policy, legislative and institutional support; • Indicative costing, timing, phasing and prioritisation of these proposals; and • Areas in which donor assistance may be best applied.
Conclusions	• Major finding; and • Recommendations and steps in interventions for future research and development and or commercial applications.

Whether a market process is led through a company, an extension agent, a farmer organisation or a chain facilitator, the process generally consists of the following steps:

- Select the survey team, organise support staff and meet lead clients (training and innovation);
- Identify key issues for analysis;
- Conduct a literature review;
- Select market and key informants;
- Map the market chain;
- Prepare a market survey questionnaire or checklist;
- Visit markets and key informants in the market chain to collect information:
- Hold focus groups with farmers (supply side analysis);
- Interview buyers to understand market requirements (demand analysis); and
- Assess services available through the supply chain, (efficiency);
- Gather information on opportunities to improve trading relations;
- Collect information for business plan (production, marketing, finance, risk, and competition);
- Analyse data from the surveys; and
    - Prepare a series of reports to share with target clients: investors, donors, researchers, partners, lead firms, service providers and farmers.

Step 1: Select the survey team, organise support staff and meet lead clients

A first step in the design of a value chain survey is the formation of the team that will plan and carry out the survey. This team will be responsible for:

- Collecting information;
- Conducting the analysis; and
- Writing the final report.

The composition of the market assessment team can vary, depending on the resources available and the objective of the

market assessment. The team should not exceed five or six members to enable open personal discussion of potentially sensitive commercial information. The entire team should be involved in the design and implementation of the survey. Where possible, team members should have different and complementary skills and expertise. The requirements that the survey team should meet, are outlined in the following sections.

Knowledge and skills

Ideally, at least one person in the team should have a strong background in market research and the analysis of agricultural commodities. One team member should have strong technical knowledge about the production of the target product, including production, post-harvest, and processing issues. If possible, one team member should have contacts in the trading community (i.e. traders, transporters and processors working with the target commodity). Team members should be motivated, have good facilitation and interviewing skills and should work well in a team.

Including government staff

Where possible, the participation of relevant national, provincial and or district government staff should be included. Including government staff in the survey team contributes to mainstreaming results from the study as a decision making tool within government and enhances the influence of the market survey on future policy and market development interventions. Extension workers should take part in the market study and they should be able to conduct a market survey as part of their routine work.

Visiting clients and farmer communities

If possible, bring the team to meet farmer communities or the lead firms to gain a clear view of the clients, their ambitions and needs.

Some or all the participants in the survey team may need training on the market assessment method, or they should have attended refresher sessions to enhance and or update their communication, facilitation, interviewing, documentation and analytical skills prior to the survey.

Step 2: Identify key issues for analysis

Market chains are complex systems involving a range of activities, actors, relationships and regulations. In order to be efficient in the information collection stage, the survey must focus on the key purpose of the value chain analysis and design the interview process to address the most relevant issues. Particular attention should be given to any specific requests for information by the commissioning agency and from clients/future beneficiary groups.

For example, farmer groups, who normally sell fresh cassava roots, may want to know more about processing methods, processors and the prospects of dried cassava and technologies associated with storage of dried cassava products. In this case, the survey group should ensure that questions address both fresh and processed goods and that the survey team members are well informed about these areas, before they go to the field. This will help the team members to discuss relevant issues with market chain actors from an informed position.

To help make decisions on the focus of the analysis, the survey team should build a survey checklist similar to the one given in Table 13.

Table 13: Key issues checklist

Areas of investigation	Issues	Reasons for investigating
Commodity characteristics	• Grades and end uses; • Degree of bulkiness and perishability; • Handling and storage requirements; • Degree/type of processing; • Type and magnitude of post-harvest losses; and • Packaging methods and materials.	• Commodity characteristics influence the performance of the whole marketing system, including the type of marketing functions performed, how they are performed and the relative cost at which they are performed; • The nature of the production process influences the timing and magnitude of producer sales and marketed flows; and • The identification of the causes and means of reducing post-harvest losses can expand food availability and improve the incomes of all participants in the marketing chain.

Areas of investigation	Issues	Reasons for investigating
Consumption patterns	• Seasonal and long-term trends in domestic and export markets; • Consumption patterns for different socio-economic and ethnic groups; and • Future market prospects.	• Demand drives (or pulls) production, processing and marketing; • The strength and seasonality of demand affect production and storage incentives, as well as the direction and size of product flows; and • Post-harvest losses are high in many countries and identifying the causes and means of reducing these losses can expand food availability and improve the incomes of all participants in the marketing chain.
Supply situation	• Production by year and by region for recent years, noting trends and variability; and • Flows from major supply areas to major markets, including exports and imports.	• Production levels and variability affect prices and risk levels; and • Shifts in supply over time may indicate response to policies, technological change, the institutional environment, etc.

Areas of investigation	Issues	Reasons for investigating
Prices	• Long-term trends in real prices at the farm-gate, wholesale and retail levels; • Long-term trends in real export prices; • Seasonal and cyclical trends in prices; and • Changes over time in input and output prices.	• Prices provide a measure of incentives facing participants in the marketing system; • Changing input and output prices may indicate shifts in production and marketing incentives; and • The domestic pricing structure relative to international prices provides insight into regional and national comparative advantage.
Organisation of marketing systems	• Marketing channels and stages; • Important assembly, wholesale and retail markets; • Types, numbers and geographical distribution of firms at key stages in the marketing system; and • Existence and importance of alternative institutional arrangements, such as contracts, vertical integration, direct marketing, cooperatives or associations and open market sales.	• The structure of the marketing system influences the conduct of participants, which, in turn, affects performance; and • Analysts need to examine the benefits and costs of alternative institutional arrangements.

Areas of investigation	Issues	Reasons for investigating
Operation of marketing systems	• Practices and strategies of market participants regarding input purchases and product sales, processing and storage; • Vertical coordination mechanisms: sale arrangements, risk sharing, information dissemination; • Sources, uses and distribution of production and marketing information; • Responsiveness of market participants to shifting supply and demand and policy changes; and • Evidence of monopolistic or **oligopolistic** situations in the market.	• The behaviour of market participants affects the performance of the marketing system; • Access to information affects the ability of different market participants to respond to changing market conditions; and • Better vertical coordination can improve the matching of supply and demand and reduce risk.

Areas of investigation	Issues	Reasons for investigating
Marketing infrastructure	• Transport infrastructure (roads, ports, airports, waterways and railway); • Market places; • Storage and processing facilities; • Communications; • Electricity; • Water supply; and • Infrastructure adequacy and bottlenecks (evidence of excess or underutilised capacity).	• In many countries, infrastructural constraints cause severe bottlenecks to marketing; and • Excess, underutilised capacity suggests uneconomic investments and deficient allocation of resources.
Government, marketing institutions and policies	• Regulations: rules, input and product regulations, laws affecting marketing and trading, property rights; • Public marketing institutions; • Macroeconomic policies: price policies, exchange rate policies, labour policies, **fiscal** and **monetary policies**; and • Banking and credit policies.	• The regulatory environment affects the incentives facing market participants and their behaviour; • Public marketing institutions influence the organisation, operation and performance of marketing systems; • Macroeconomic conditions shape the environment in which market participants make production and marketing decisions; and • Banking and credit policies determine who has access to formal credit.

Areas of investigation	Issues	Reasons for investigating
International trade and commodity competitive-ness	• Commodity exports and world market situation; • Imports of the commodity or substitutes, as well as their impact on production, markets and prices; • Trends in exports and imports; • Likely changes in exports and imports and emerging market opportunities or dependencies; and • Competitiveness of exports in particular foreign markets.	• International trade affects production and marketing incentives and opportunities, consumption patterns and preferences, as well as the behaviour of market participants; and • International market conditions influence a country's comparative advantage in production and export of agricultural commodities.

Oligopolistic market situation: A situation in the market which numerous suppliers in a market compete to sell their product to a small number of buyers and their actions may affect the prices and costs of their competitors.
Fiscal policy: The policy by means of which a government adjusts its spending levels and tax rates, in order to monitor the national economy.
Monetary policy: The policy by means of which the monetary authority (the Reserve Bank) controls the size and growth rate of the money supply in the country.

Step 3: Conduct a literature review

One or several team members should undertake the task of conducting a **literature review**, or alternatively, a consultant can be hired for this purpose. This decision is based on the resources and time available, as well as the analytical skills of team members.

Literature review: A critical assessment of the literature (secondary information sources) related to the value chain survey, in order to identify what is already known about the area of investigation.

It is easier and faster to collect secondary than primary data and it is often more accurate. For example, quantitative data is frequently available from government statistics and previous studies, which enables the team to gain an understanding of the seasonality and historical trends in demand and supply, as well as the prices for a specific product. In addition, detailed information on export markets can sometimes be obtained from existing sources, without actually visiting those markets.

The literature review, which is based on the information in secondary sources, should precede the collection of primary data from the field. The literature review provides the team with information on:

- The production and marketing system;
- Gaps to be filled by the primary data; and
- The essential background for subsequent fieldwork and analysis.

Key sources of secondary information include:

- Official statistics from statistical departments;
- Ministries of agriculture, trade or finance;
- Donor agencies;
- The Internet;
- NGO reports;

- Specialised journals;
- Bulletins and newsletters;
- Documentation of trade associations and chambers of commerce; and
- Other rural development projects.

This information is cheaper to access than primary data from the field and it should provide the team with an important framework from which to assess information given at the interview stage.

Step 4: Select markets and key informants

The value chain survey team needs to decide on the type and number of markets that will be visited and the type and number of key informants who will be interviewed.

Key informants

The following two types of key informants should be interviewed: market participants and knowledgeable observers. These types of informants are outlined in the following two sections.

Market participants

Market participants are the actors involved in the production, marketing and processing of the agricultural commodity that is being analysed. Examples of market participants include:

- Input suppliers;
- Farmers;
- Traders;
- Transporters;
- Storage service providers;
- Processing firms;
- Importers; and
- Exporters.

Knowledgeable observers

In most value chain studies, there is a small number of insightful, knowledgeable people, who do not participate in the production or marketing of the commodity, but who can offer a broad, and

sometimes detailed, perspective on the sub-sector. Figure 6 shows an example of the key informants in the value chain survey.

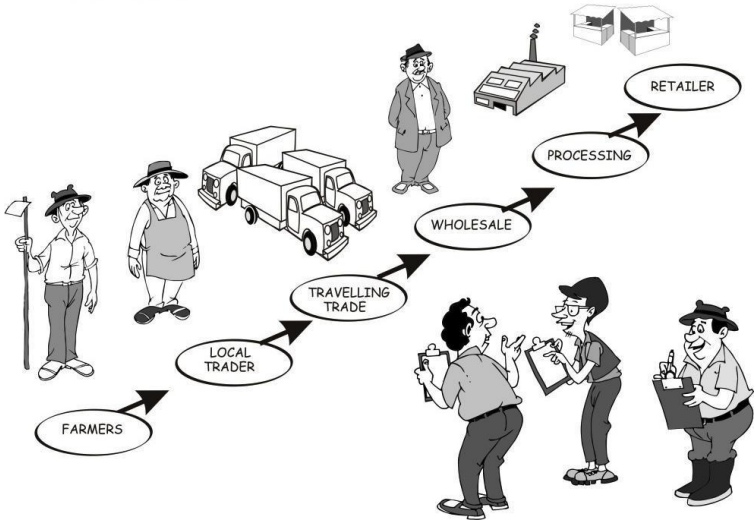

Figure 6: Key informants in the value chain survey

When selecting key informants, the survey team must answer the following four questions:

- Who should be interviewed?
- What is their role or function?
- How many interviews are needed at each level?
- Which interview method should be used to ask the questions?

Sample

A **sample** unit is part of the **population** of the survey. Population refers to the entire group of people (key informants) that should be studied/interviewed, whereas a sample is a selected group that is defined from the population. Sampling is used because it enables the survey team to collect information from a smaller, more manageable part of the population. Based on what they learn about the sample, they can draw conclusions about the population.

Sample: A selected group that is defined from the population.
Population: The entire group of people that should be studied/ interviewed in the value chain analysis.

A local market study focuses on village, community and perhaps district and provincial markets. In this case, the key informants will include local input dealers, farmers, collectors, traders and processors, as well as extension officers and staff from local government agencies and development projects.

A broader market study will cover all the critical nodes (points) in the market chain—from producer to retailer and exporter—and all major types of markets (commune, district, provincial and national) should be visited. Other key informants will include policy makers, researchers, technical and administrative staff from government and non-government agencies, as well as representatives from donor agencies. A list of key informants that can be included in the sample unit, and the advantages and disadvantages of including them, is given in Table 14.

Table 14: Key informants in the sample unit of the value chain survey

Types	Advantages	Disadvantages
Importers and or exporters	Know trade figures	May know little of informal activities
Institutional buyers	Major buyers	Little knowledge of chain up to themselves
NGO staff	Inform local social situations	Often production biased
Extension agents	Detailed knowledge of farmers	Poorly supported

Types	Advantages	Disadvantages
Agricultural producers	Know input system and costs	Many are subsistence
Processors	Knowledge of chain	Focused on one section
Brokers	Detailed knowledge of local situation	Know little of area beyond activities
Wholesalers	Located at a key node in the system	Very busy, may be uncooperative
Retailers	Located near to consumers	Generally suspicious about giving prices

Sample size

It is important that the survey team selects a representative sample, which means that the sample resembles the population in as many ways as possible, because it allows the team to generalise the survey results accurately. As a general sample size rule, a minimum of three to five interviews should be conducted for each stage of the market chain.

Sampling procedure (technique)

Sampling procedure refers to the way in which key informants are selected for the interview. The team can opt for a purely random sampling—i.e. interviewing informants who are available—or the team may start by interviewing larger or well-known/respected traders and processors within a specific market chain, as they are likely to have the most insight into the market dynamics.

As the fieldwork progresses, the survey team may feel the need to interview additional key informants, in order to improve the quality of the data and information collected and gain a deeper understanding of key issues. The team may also become aware of new markets and key informants as the fieldwork progresses.

Step 5: Map the market chain

A simple but effective method of supporting the market survey planning is to make a first level sketch of the existing market chain. This method is also a useful exercise for more formal analytical marketing teams and for field agents working with farmers. This first level approach aims to answer the following questions:

- Who are the known actors in the market chain?
- Who are the core chain actors?
- Who are the service providers?
- Where are they located?
- What are their roles or functions?
- How do they relate to each other?

There are no rigid rules for value chain mapping and there are many variations of the theme of market maps. Figure 7 shows a simple map of the market chain that was developed by using a participatory approach with farmers.

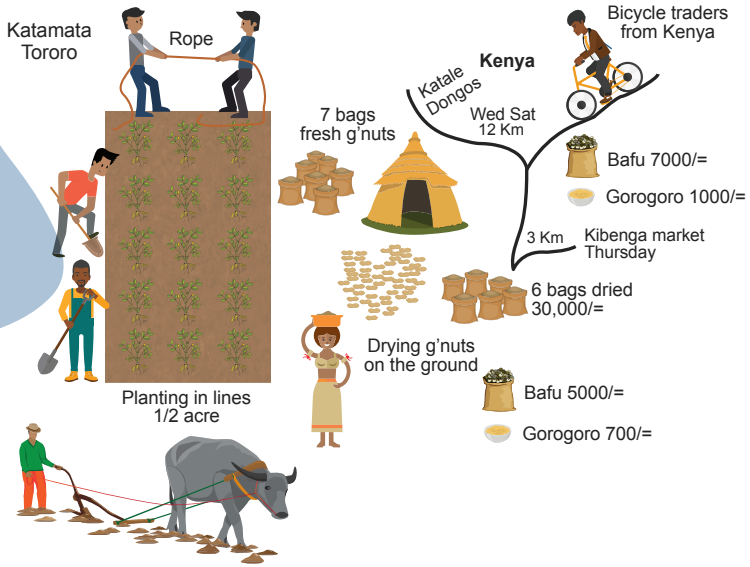

Figure 7: Example of a market chain map showing the current situation

In this case, the farmers created a market map, showing the current situation. This approach is usually complemented with a second map that shows the desired market situation, which is the vision of what the farmers would like to achieve through a market chain upgrading process.

Other market maps indicate the flow of goods from input suppliers through farmer to end markets. The map in Figure 8 shows a market chain map reflecting the desired future, with the farmers having information on the way in which livestock flows through the different market actors to the end markets.

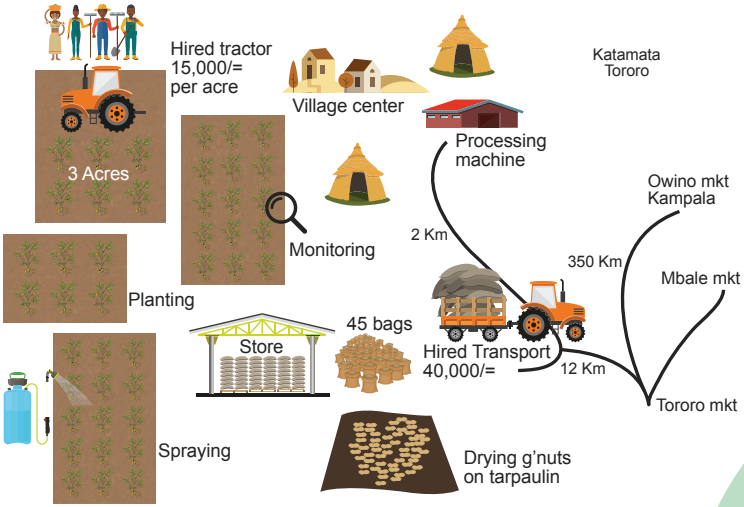

Figure 8: Groundnuts market chain mapping

In most cases, these maps do not include specific named chain actors. The survey part of the process will provide that additional level of detail.

Figure 9 gives an example of a market chain map in tabular format.

Functions	Participants/actors							
	Village stores	Input supply companies	Small-scale producers	Producer associations	Medium-scale and commercial producers	Traders	Processors	Wholesalers
Export								■
Wholesaling								■
Processing							■	
Assembly				■	■	■		
Production			■		■			
Input supply	■	■		■	■			

Figure 9: Tabular approach to the market chain map

In this diagram, the approach enables the team to develop a checklist of market actors. This is a useful tool to apply before developing survey instruments or questionnaires and checklists, as the team can be sure to develop survey tools for each type of market actor. Using this tabular approach, the market team can:

- List end markets across the top of the map;
- List functions down the left side of the map;
- Fill in participants/actors according to their functions and markets, presented as block forms with inserted text in each entry;
- Draw the linkages between participant blocks with arrows in the direction of the product flow; and
- Clearly define market channels in a vertical manner, culminating at end markets at the top of the map.

If participants/actors are involved in more than one function or market, the block can be extended to reach the relevant functions/markets. If their functions are not consecutive in the chain, the skipped function block is presented with dotted lines. Actors should be grouped by categories of firms rather than individual firms by name as shown in Figure 10.

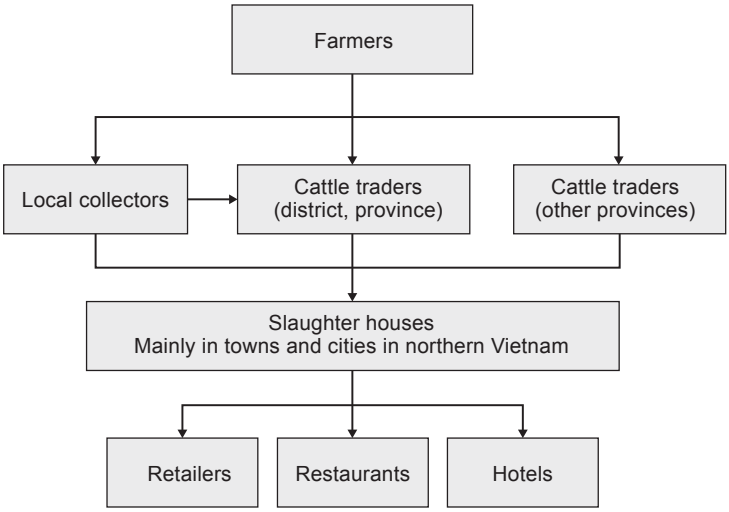

Figure 10: Actors grouped by categories of firms

Step 6: Prepare a market survey questionnaire or checklist

The survey team has to prepare a questionnaire or a set of checklists, which will be discussed in the following two sections.

Value chain analysis questionnaires

A structured questionnaire consists of a series of carefully prepared questions, which focus on the key issues that have been identified in Step 2 and are asked in a logical sequence. In a structured questionnaire, close-ended questions are used, which means that each question has a number of options that the key informants have to choose their responses from. In an unstructured questionnaire, use open-ended questions. Open-ended questions do not have suggested answers or options which gives the key informant the freedom to answer the questions based on his/her personal knowledge and or experience.

Questionnaires can be developed into digital format, which can speed up data collection and analysis. If you are planning to use digital forms for data collection, you need to make sure that the team fully understands the survey instrument and that they have tested it before going to the field.

The following are examples of simple questions that can be included in the value chain analysis survey questionnaire:

1. For each of the markets (buyers) where farmers sell their product:
    - Is the market for this product growing, stable or declining?
    - Who buys the product?
    - How big is the market?
    - How many similar buyers are there?
    - What are the purchase conditions?
    - At what price?
    - What quality?
    - What time?
    - What volume?
    - How often do they sell and buy?
    - What is the form of payment?
    - Are there price fluctuations during the year?
    - Are sellers and buyers happy with existing relationships? Why?
    - Do they purchase from smallholder producers? If not, why not?
    - What are the major constraints that buyers face?
    - Do they recognise any opportunities to improve their business?

Value chain analysis checklists

Checklists are abbreviated questionnaires that the survey team interviewers use as a guide to major issues that need to be discussed with the key informants—i.e. the issues that have been identified in Step 2.

Checklists differ from questionnaires in that they serve as a prompt for an interview with an individual informant or a **focus group**. When using checklists, a team often works with one person leading the conversation and another person writing down the key informants' responses. The skill in conducting the interviews is the ability to have a normal conversation with the interviewee (key informant), while collecting detailed information and probing the person for valuable information.

Focus group: A small group of key informants (usually six to twelve informants) who are conducting a discussion, which is facilitated by the interviewer, on the key issues of the value chain survey.

Teams should prepare different checklists for different types of key informants, because each type of key informant is particularly knowledgeable about specific issues, based on their position and function within the marketing system. For example, farmers may be able to provide useful information about local input supply and market channels, but they may lack a clear understanding of processing, the export trade and key policy and regulatory issues. Transporters may be knowledgeable about product flows, the state of road infrastructure and the availability and cost of transport services, but unaware of prices, storage practices, and marketing arrangements between different market chain actors.

It is recommended to test the checklist with several people before using it for field work to make sure that the questions are understood, the time allocated is appropriate, the sequence of the questions is logical. Based on the outcome of this test, the checklist can be reviewed (if necessary).

See Figure 11 for an example of a value chain analysis checklist.

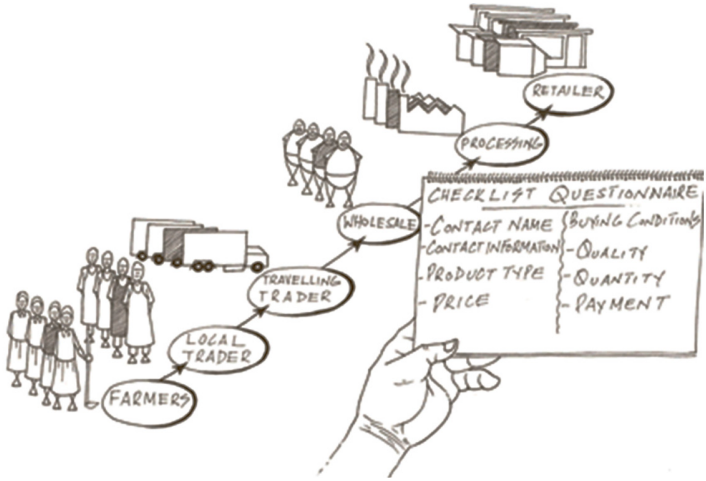

Figure 11: The value chain analysis/survey checklist

Table 15 provides a checklist that can be adapted for different actors in the value chain.

Table 15: Detailed checklist to be adapted for different actors and service providers

Input traders	
Background information	• Location; • Years in operation; and • Type of product X and other products traded.
Procurement and sale of product X	• Volumes traded per type of product X (month, year); • Seasonality in product X sales; • Suppliers of product X and their location; • Buyers of product X and their location; and • Current wholesale and retail prices for different product X.

Input traders	
Trends	• Trends in product X sales (e.g. over the past three years) and reasons behind these trends; • Perception of future product X demand trends (e.g. over the next three years) and key driving factors; • Trends in product X prices (e.g. over the next three years) and reasons behind these trends; and • Perception of future price trends (say over the next three years) and key factors that are likely to drive these trends.
Transactions	• Buying arrangements/conditions, e.g. sales on credit, prompt cash payment, etc.; and • Selling arrangements/conditions, e.g. sales on credit, prompt cash payment, payment in kind, etc.
Policies and regulations	• Key policies and regulations; and • The influence of key policies and regulations on the development of product X trading.
Constraints and opportunities	• Key constraints to the development of the product X trading business; • Solutions to these problems; • Key opportunities to develop the wholesale business; • Factors that may enable this development; and • Recommendations for improving farmers' access to product X.

More experienced market analysts tend to prefer using short checklists, rather than large questionnaires, which may be cumbersome and the process of asking many prepared questions may have a negative effect on the key informant. Analysts often find that they get more useful information if they use a short checklist and have a more natural conversation about a business. In this case, the checklist serves as a reminder of the types of questions to ask and the areas of information that need to be covered. An example of such checklist is given in Table 16.

Table 16: Example of a short checklist for informal interviews

Commodity characteristics	• Grades • Types • Varieties
Consumption patterns	• Seasonality • Trends
Supply situation	• Production • Demand • Storage • Trade flows
Price relationships	• Seasonal and cyclical • Supply and demand
Actors in the chain	• Market channels • Marketing arrangements
Marketing behaviour	• Practices • Vertical integration • Market power
Market infrastructure	• Roads • Markets • Communications
Government	• Regulation • Marketing • Price fixing

Global trade	• World market situation • Tariffs • Sanitary and phytosanitary (**SPS**) measures • Technical barriers to trade (**TBT**)
Timing of the study	Timing of study relative to market cycle

Step 7a: Plan survey time in the field

The timing and duration of the market survey depends on:

- Target product;
- Number of market places visited;
- Number of key informants selected; and
- Type of information required.

The survey team needs to consider the most appropriate period and time for conducting the market assessment. The peak marketing season is usually the best time to find traders, observe transactions and to collect price data. On the other hand, producers may be on their farms harvesting the crop and, therefore, they may be absent from the community. Traders may also be very busy conducting their business.

Time of day

The team must choose the time of the day of the interviews carefully. For example, most trade in perishable products takes place during the night and very early hours of the morning. These periods may be the best times for interviews, if the objective is to observe transactions, but far from ideal for interviewing busy people.

Duration

The duration of survey varies. Two to four days may be sufficient when the objective is to collect information on a particular

product within local markets only. A more complex market survey, for example on the national level, would involve more key informants and could take between four to five weeks to complete the field work and then two to three weeks to finalise the report.

Step 7b: Survey sequencing

There are no firm rules of where to start a value chain analysis. The point at which the survey team starts may depend on the scope of the exercise and it may also be driven by the overall aim of the intervention–i.e. is the survey being developed to support farmer market linkage or it is an intermediary firm who wants to strengthen trading links? One option is to start by interviewing exporters or larger traders in wholesale and terminal markets, which will give you an immediate overview of the market scope. The first interviews will help to identify next level options for interviews with actors going upstream towards the producers. Starting with the larger buyers will give the team a quick and broad perspective of the market chain, which may help in orienting the team before engaging with local market participants. This strategy, is particularly sensible if the survey outcome is to support a policy approach or a lead firm-based value chain upgrading process. The alternative option is to start with focus group discussions at the farmer community level and then move down the market chain. The team first interviews farmers, then local traders and processors, before moving onto market participants at regional level and finally traders, processors, exporters and importers at the top end of the market chain.

Step 7c: Data collection tools

There are several methods and tools that the survey team can use for collecting data from a range of actors in the market chain, including farmers, traders, processors and retailers. These people operate in different worlds and, therefore, require different ways of engagement. The following list provides some ideas on tools that the survey team can use to match approaches with specific situations:

- Focus group;
- Product ranking and prioritisation;
- Historical calendars;
- Market mapping;
- Evaluation of service provision;
- Market visits;
- Learning journeys;
- Checklists or semi-structured interviews;
- Structured interviews; and
- Direct observation.

These tools can be used either alone or in combination and the survey team should decide which tools are best suited for the scale and scope of the marketing chain survey being undertaken. It is extremely unlikely that any survey would use all these data collection tools. Instead, the survey team should select the tools that are most appropriate to meet the needs of the purpose and terms of reference of the survey.

See Table 17 for more information on these data collection tools.

Table 17: Data collection tools for value chain surveys

Data collection tool	Reasons for use	Time to use	Time
Focus group	• To gain information on a specific issue or product from a representative group of people, who can provide information on behalf of a community; • Can also be used with consumers if information on their perception about certain products is required.		

Data collection tool	Reasons for use	Time to use	Time
Ranking and weighting	• To find out what farmers are growing and the priority of these products in relation to food products market products and income and market linkages; and • Can also be used to rank constraints in production and marketing.	At the participatory diagnosis phase to select and prioritise products for further market investigation.	2–3 hours
Historical calendar	To find out: • When major events happened in the community over the past 10–15 years • Who has supported the community; and • What went well and what did not work.	At the participatory diagnosis phase to: • Determine what has worked; • List local service providers; and • Evaluate their value to the community.	2–3 hours

Data collection tool	Reasons for use	Time to use	Time
Market mapping	Enables farmers, traders and service providers to draw a picture of their marketing system, which is a simple means to express their current understanding of their market links and relationships for specific products.	Having selected a product, this method is used to map out the production and marketing links and relationships. You can also do an existing market map and a desired future market map, thereby combining mapping and visioning, which is very helpful for a team.	2 hours
Evaluation of BDS	Rapid assessment to gain an inventory and quality score of service providers that work/worked in the project area and identify successful innovations, gaps and options.	At the outset of the survey to discover existing services and how these support market access.	2 hours

Data collection tool	Reasons for use	Time to use	Time
Market visit	All market surveys collect information from a range of marketplaces, but participatory market visits enable the survey team to bring together chain actors, such as farmers or extension officers, into the process and to expose them to basic market analysis.	In situations where market surveys include a high degree of participation (e.g. farmer participation) and for capacity building processes.	1–3 hours depending on survey scope
Learning journey	The method enables actors from along the value chain to come together and follow products down the chain, to experience and appreciate the constraints and opportunities of each actor.	Commonly used by larger corporate buyers who are unfamiliar with their market chain beyond their direct suppliers.	1 week

Data collection tool	Reasons for use	Time to use	Time
Semi-structured interview	This is a rapid and flexible method that is used to collect data from diverse actors and determine critical issues; particularly opportunities, constraints efficiencies and incentives.	Throughout value chain survey to collect information on services access from all actors within the market chain.	1 hour per interviewee
Structured interviews	Focused and standardised approach to collect information and compare responses to common questions across defined response groups.	Before or after a semi-structured interview, in order to gain insights on more specific issues.	1 hour
Direct observation	Method used to compare an interviewee's information against their behaviour or marketing activities.	Throughout value chain survey to: • Clarify information that is unclear; and • Confirm the scale and scope of an activity.	15 minutes

Step 7d: Interview guidelines

You may want to keep the following guidelines in mind when conducting survey interviews:

- Introduce yourself and your organisation;
- Always be polite and professional when interviewing key informants;
- Be clear about the purpose and timing of the interview;
- Stress confidentiality;
- Be friendly and relaxed;
- Use humour;
- Follow a logical sequence in your questioning;
- Ask simple and clear questions, one idea at a time;
- Avoid leading questions and complicated questions;
- Ask most sensitive questions last;
- Do not ask prices until later in a conversation;
- Be prepared to listen and learn;
- Engage the respondent (key informant), for example:
  - Do not be afraid to challenge the accuracy of the information provided;
  - Use diagrams to assist discussions; and
  - Offer to buy a tea or coffee if the interview is taking longer than planned;
- Investigate new areas of interest as they arise;
- Avoid lengthy interviews, rather follow up if necessary;
- Use the information from one interview to guide and improve your next interview; and
- Ask the informant whom you should interview next.

Step 8a: Select methods to analyse data

Given the range of information that can be collected from the various chain actors, there are also different types of analyses used in value chain surveys. It is not necessary to use all methods: the survey team should assess the most relevant types of tools for the target study. The sections below provide a summary of some methods of analysis that you can use with a more detailed outline of the most useful tools follows.

Step 8b: Data analysis: Cross-check data and information in the field

The importance of checking the validity of the information and views provided by key informants cannot be overemphasised. Market participants may have their own agendas and interests, which may influence the accuracy of the information provided and affect their views on particular issues.

Data cross-checking methods

The methods that are commonly used to check the quality and validity of the data collected during fieldwork are outlined in the following sections.

Mirror imaging

This type of interviewing consists of asking the same set of questions to informants at the same stage and or at adjacent stages in the marketing chain and then checking the consistency of their answers. A strong difference in responses may require further investigation.

Triangulation

Triangulation involves interviewing informants with different perspectives to arrive at a better understanding of particular issues. It also makes it possible to check if there is consistency in the answers across different actors.

Observation

Observation involves checking the views of market participants and the information provided against their actual behaviour. Direct observation methods should be employed during visits to villages, market centres, processing facilities, warehouses, etc. During these visits, the survey team can observe production activities, post-harvest handling, sorting and grading practices, storage technologies, transport of produce and transactions. This will enable them to compare what key informants are saying, e.g. regarding their scale of operation or

the quality of produce handled, to their behaviour and the way in which they are organised.

It is important to note that direct observation is not only a validation method, but it can also be used as a method to collect additional data. For example, much can be learned from going to a site and watching what is happening. For example, an empty warehouse may tell you something about the state of the business operations.

Supervision of interviewers

Supervision of interviewers is optional but recommended. This can be done by phoning or visiting key informants to confirm that they have, indeed, been interviewed and that key issues have been discussed.

Data analysis methods

Some of the more important methods used in data analysis are outlined in Table 18.

Table 18: Data analysis methods

Analytical method	Reason for use
Right size the analysis	Make sure to collect the right level of data for your study, e.g. do not collect national statistics if you are studying market options for a district: always collect the data at the appropriate level.
Trend analysis	To gain a better understanding of the changes in the market over time.
Market volume analysis	To gain an understanding of the size of the market that is being evaluated.

Analytical method	Reason for use
Profitability analysis	Tools such as gross margin analysis, internal rate of return (IRR) and net present value (NPV) determine the profitability of an existing enterprise or proposed business.
Margin analysis	To provide a measure of the efficiency of a market system and to observe margin equity along the chain.
Projections	Method to predict changes in demand for a selected product based on specific market drivers, such as population growth, changing incomes, urbanisation and consumer habits.
SWOT	This is a strategic planning tool that is used to evaluate the strengths, weaknesses, opportunities, and threats in a project, business venture, or any other situation in which an organisation or individual requires a decision in pursuit of an objective.
Problem tree	To identify and prioritise problems and to map out the causes of a particular problem.
Solution tree	To find solutions to the problems identified and to develop a series of interventions to overcome the problems systematically.
Scenario building	A technique used to lay out potential plans for specific types of clients. The method requires the analyst to identify the most promising agri-enterprise opportunities and then to provide information on target market, investment needs, potential partners, likely gains and risks.

In the following sections, these methods are discussed in more detail.

Updated marketing maps

Modern mapping using geographic information systems (GIS), and data collection systems allow for highly accurate recording of where interviews take place and where specific types of actors and services are located. Where possible, survey teams should collect GIS data as part of their survey questions.

Digital data collection systems and digital survey tools enable survey team members to:

- Collect information on locations;
- Take photos and create videos;
- Record audio files; and
- Link all this information to the data upload.

This functionality can be very helpful in collating data more rapidly, cleaning data, determining distances, locations and mapping other types of data to the survey points.

Trend analysis (Time series data)

Based on a combination of secondary and primary data, the market survey team can collect information on trends in prices and market growth for a selected product, in order to identify patterns or trends. Market information services are a good source of this type of information, as they collect price data over long periods. Time series data can be used in a simple linear regression analysis, available in Microsoft Excel, to show whether prices for the selected product are increasing, staying the same or decreasing. To avoid problems with changes in the value of currency over time, it is standard practice to deflate all prices by using the national bank **commodity price index** (CPI). This enables the analyst to compare real prices over time.

Commodity price index: An index of weighted average of selected commodity prices that may be based on spot or futures prices.

This type of analysis can be applied to areas such as growth projections, yield or production, prices and other forms of key trends influencing market opportunities as shown in the graph in Figure 12.

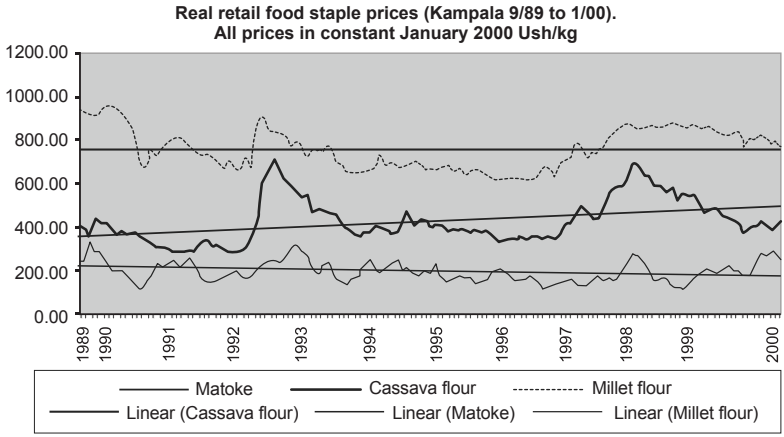

Figure 12: A graph based on trend analysis

Market volume trends

Using a combination of secondary and primary data, the survey team should develop an estimate of the size of the market being analysed. This usually requires a combination of information based on production data and sales or export data for the selected product.

Sources of secondary data may include household survey information of the target project area, sub-national data from district of provincial government sources and national data sets. For major food and export products, this data is often included in government statistics, developed for the budget, agricultural census data, or available at organisations such as the World Bank's Living Standards Measurement Study, (LSMS) and the Food and Agricultural Organization (FAO).

It is important to note that the data in global information sources may not be entirely accurate, because it does not always take seasonal variations into account. Therefore, it is recommended to compare global figures to local information given by larger traders. It should also be noted that if production data is used in the analysis of market volume, the analyst should take the ratio of the product used by the household and that sold into the market into account. This information can be obtained from household data and, to a degree, through focus groups with farmers. See Figure 13 for an example of market volume trends.

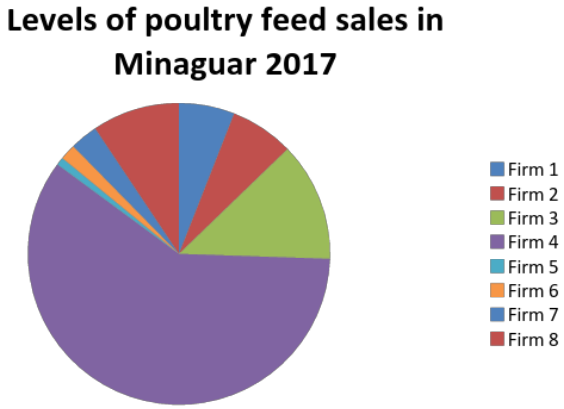

Figure 13: Example of market volume trends

Projections and regression analysis

Following trend analysis of existing market prices or volumes, market researchers can use regression techniques to indicate future directions of markets. In order to do this type of analysis, the survey team needs to make certain assumptions and use multipliers for specific market drivers that will affect the future demand.

The simplest form of this type of analysis is to project future demand based on changing population. This analysis is based on current levels of consumption multiplied by national growth rates over time. Rates of urbanisation is also a useful multiplier.

For example, rice production in Vietnam was approximately 39,1 million **metric tonnes** (mt) in 2009/10 (26,1 million mt, milled basis). Vietnam used to be a major exporter of rice, but with increasing population, these exports are declining.
Depending on the amount exported in a given year, we will estimate a 5% export level, the total consumption level would be 2,479,000 mt. Given a growth rate of 2,4%, the demand for rice on a population growth rate alone will increase by approximately 59,508 mt/year.

Metric tonne: A unit of weight that is equal to 1,000 kg.

In other cases, demand for certain products may be in decline, due to other drivers, such as increasing income, which enable consumers to buy preferred substitute products, thereby causing a decline in the demand for the inferior goods. This type of analysis is useful to gain an understanding of future demands and, therefore, whether an investment in that sector is justified.

Profitability analysis

The most critical aspect of marketing is to provide customer satisfaction at a profit. However, many farmers do not keep reliable records and they are often not sure about their costs, actual revenues or profit margins. It is important to determine current levels of profitability, which can be used to determine the likely gains in profitability that may occur with investment in new market interventions.

Gross margin analysis

The simplest form of financial analysis is a gross margin analysis, which is shown in Figure 14. This analysis typically provides the information for an agricultural business venture over a one-year period. This approach can also be used as a means of verification of profit at the end of the season, to confirm whether the plan has accurately met the forecasted figures.

Gross margin analysis for climbing beans: Income/Acre

Costs/Acre	Shillings	Notes
Land preparation	40,000	Animals hired for ploughing
Seeds	24,000	New variety
Planting	5,000	
Staking - Supports	60,000	240,00 for staking materials but will be used over 4 seasons
Weeding x3	15,000	Used mainly family labour some costs not included
Fertiliser	25,000	
Pesticides	6,000	
Labour for harvesting	18,000	
Packaging	1,000	
Transport to market	5,000	
Market fees	1,000	
Total Costs/Acre	**200,000**	
Harvest kgs	1200	
Market price/kg	750	
Income	**900,000**	
Gross margin	**700,000**	

Figure 14: Gross margin analysis for bean production

Financial data can be projected over time, so that the business investor can see how costs, revenue and profits change over time. In many cases, the initial period of investment means that profits are low in the first one to three years, due to the costs of start-up. However, profits generally increase, as loans and capital outlays are paid off.

IRR and NPV

To review profitability over time, a slightly more complicated financial analysis can be performed using methods such as the **internal rate of return** (IRR) and **net present value** (NPV). These methods give the investor an idea of how revenue and profit will change over a fixed time frame, such as the next five or up to ten years and, in this way, the profitability of an investment can be calculated. These types of analyses can be done by using Microsoft Excel, which has specially formulated macros and tutorials to explain the correct way of undertaking these analyses.

Internal rate of return: A metric that is used to measure the profitability of potential investments.
Net present value: The difference between the present value of cash inflows and cash outflows.

Margin analysis

Margin analysis provides a measure of the efficiency of a market system. The survey team can collect prices and costs of a business along the value chain and by using this information, the team can build a picture of the efficiency of the transactions along the chain and also identify areas in which excessive margins are being extracted within the chain.

Margin analysis also:

- Reveals where there are major costs in doing business;
- Shows whether traders are taking more profit from the value chain than others (although generally, they are not); and
- Helps farmers to see their share of the final market price, which can help them in terms of sales price negotiations and also motivate them to upgrade their business methods to capture more value from their products.

Table 19 shows an example of a margin analysis.

Table 19: Costs and margins in the dried cassava trading chain

Elements in the trading chain	Cost	Cost margin
Farmer	Ugandan shilling(Ush)/100 kg	% of selling price
Selling price	10 000	
Village assembler		
Purchase price	10 000	
Selling price	12 000	

Elements in the trading chain	Cost	Cost margin
Gross margin	2,000	16,70%
Costs		
Transport	1,176	
Net margin	824	6,90%
Urban Retailer	Ush/100 kg	% of selling price
Purchase price*	22,000	
Selling price*	30,000	
Gross margin	8,000	26,70%
Costs		
Overhead	4,875	
Variable	300	
Total costs	5,175	
Net margin**	2,825	9,4%
*Equivalent flour price after adjusting for 2% milling losses		

Evaluation of business development service providers

Evaluating **business development services (BDS)** gives the survey team an inventory of service providers, their roles in the value chain and a measure of the quality of their services. The quality could be assessed by users in a particular target area, or by target value chain actors.

Business development services (BDS): People and organisations that support the production, supply and marketing of goods, without owning the product involved, e.g. market access support infrastructure support and training support.

Unlike secondary data, which provides averaged information, this type of analysis aims to find out current information from value chain clients:

- Whether services of public sector agents or private business support services are available;
- If they are being used frequently; and
- The way in which their quality is perceived.

This type of analysis needs to provide a picture of the services that a community or a set of value chain actors have access to. The inventory can be collected as part of the value chain survey.

The survey team collect the data to show:

- Trends in service provision;
- How these have changed and how farmers and or other value chain actors perceive or approve of the changes being made;
- Whether the services are free or require payment and whether they are affordable;
- Which services are missing; and
- The best service providers to link up with in any agro-enterprise project.

It is important to try to capture the formal service providers, as well as those people that provide informal services, e.g. traders who lend money or provide information on prices in different markets.

Figure 15 shows an inventory of services received by Ttaago Village in Tanzania.

Institutional inventory of services received Ttaago village

Name of organisation	Roles	Time arrived	Rank
Vanya Agr. Dev. Project	Credit (seeds, fertilisers) Agricultural development	1982	☺☺☺☺☺
Crops Agric. Research	Research – demonstration on improved varieties of beans	1991	☺☺☺
Local Government	General administration	1990	☺☺☺☺☺
Taanwero	Pest control of army worm	Only came 1998	☺☺
Muvahil	A new CBO iniciated by Sanya ADP as a federation of 235 groups	July 2003	☺☺☺☺☺
Dido	Agricultural extension, training, demonstrations, linking with other partners	1985	☺☺☺☺☺☺☺
Agri-Service	Sunflower processing, marketing of pigeon peas. Promised to link farmers to external markets of pigeon peas	2002	☺☺
Action 2000	Just started with quality protein maize, not sure about market potential	2003	☺

Figure 15: Institutional inventory of services received by Ttaago village (Tanzania)

SWOT analysis

When a market survey is used to identify a market opportunity, a SWOT analysis can be used to evaluate the strengths, weaknesses, opportunities and threats for supply to a target agro-enterprise.

The SWOT categories are shown in Table 20.

Table 20: The SWOT analysis matrix

	Helpful (To achieving the objective)	Harmful (To achieving the objective)
Internal (Attributes of the organisation)	Strengths	Weaknesses
External (Attributes of the external environment)	Opportunities	Threats

The lists in Table 21 provide ideas of what can be reviewed when a SWOT analysis is done as part of the product/agri-enterprise analysis.

Table 21: Issues to be reviewed during a SWOT analysis

Strengths and weaknesses	• Financial and intellectual resources; • Location, customer service; • Efficiency; • Infrastructure; • Quality; • Staff; • Management; • Price; • Delivery time; • Cost; • Capacity; • Relationships with customers; • Brand strength; • Local language knowledge; • Ethics; and • Principles.
Opportunities and threats	• Political/legal elements; • Market trends; • Economic conditions; • Expectations of stakeholders; • Technology; • Public expectations; • Competitors and competitive actions; • Bad public relations (PR), criticism; • Global markets; • Security; and • Climate change.

The SWOT analysis can be used by the survey team to create profiles of competitors, which are compared with the target agri-enterprise group, focusing on their relative competitive strengths and weaknesses, as identified in the SWOT analysis.

Depending on the detail of the exercise, the marketing team can use this method to examine competitors' costs, sources of profits, resources and competencies, competitive positioning, product differentiation, business linkages and other factors. If the marketing team can define the current market situation and the existing agri-enterprises, this can assist the marketing team to identify a niche for the client in the market. This will also help the marketing team to identify strategies that would best suit the client group to be competitive within the market given the profiles of competitor groups, companies and other regions.

Problem tree analysis

Problem tree analysis:
A planning tool that maps out the causes and effects of an identified issue or problem.

Problem and solution trees are participatory tools that can help a survey team to think through a specific challenge and to identify the range of problems that prevent a goal from being achieved. In the marketing context, the problem tree can be used to identify problems that reduce market performance for a specific product in a selected market chain.

The problem tree exercise begins with a brainstorming session in which participants list all problems that affect the market performance of a selected product and work out the relationships between problems. In a group situation, it is useful to write down the problems on individual cards, one problem per card, so that cards can be moved according to their importance.

When analysing the causes of the problem, it is important to define the real cause. This will lead to suitable and effective interventions. For example, one constraint is lacking access to governmental credit. The real cause of this constraint may not come from the lack of a credit programme, but from inadequate information provision. Tools such as the problem tree can assist in making logical decisions and developing more effective interventions.

Once all the problems have been shared and discussed, the second task is to arrange the cards into a logical hierarchy and draw links between them. The group should work towards a priority problem that is identified as the core problem—i.e. it is linked to most other problems. In the example below for the fattened chickens, the core problems were defined as weak organisation of the farmers, poorly organised marketing linkages and costly inputs.

The next stage deals with related problems and issues, which are divided into cause and effects, based on the core problem. To link this to the tree analogy, problems are considered as roots and effects as branches. The discussion should try to find all cause and effect relations and the cards should be moved accordingly. There can be more causes to one effect or more effects to one cause. Links should be shown clearly on the diagram, in order to show cause-effect relationships. The horizontal links show joint causes and combined effects.

See Figure 16 for an example of a problem tree.

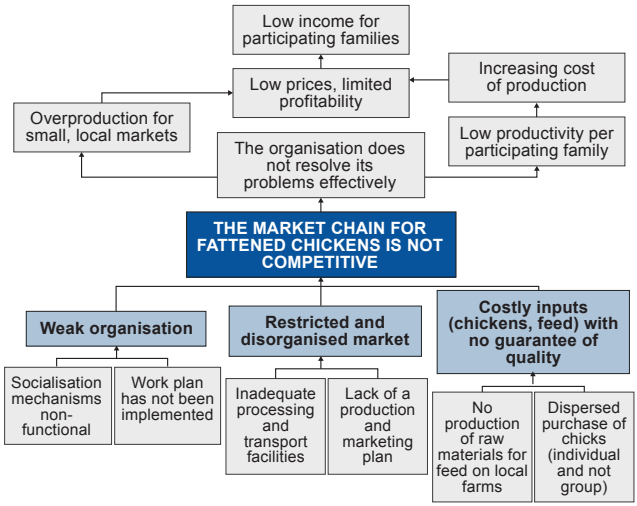

Figure 16: Example of a problem tree

VC: Solution tree

In this exercise, the survey team takes the problem tree and inverts all the problems into positive objective statements. In this way, the central problem becomes the central objective. This process of converting problems into solutions builds a hierarchy of development objectives and interventions. The problem and solution trees provide a simplified view of cause and effect relationships. In this way, the survey team can identify ways in which the farmer group or client can prepare its target market options and implementation plans to tackle key issues.

The solution tree is essentially used as the basis for the design of the implementation programme. The direct causes of the problem become specific objectives and causes can be translated into targets. The lower level causes of problems are then turned into solutions and these become activities for specific interventions.

Figure 17 illustrates a solution tree for improving market competitiveness of chickens.

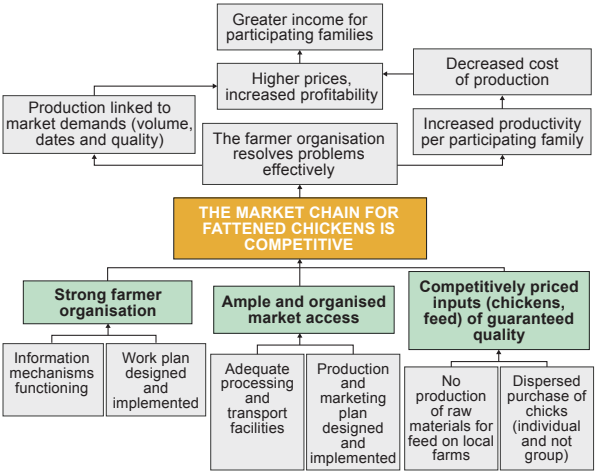

Figure 17: Example of the solution tree

Scenario building

Scenario building is another technique that is used to lay out options for plans for specific types of clients. This method requires the survey team to identify the most promising agri-enterprise opportunities for specific types of clients. For example, selecting opportunities for a cluster of farmer groups requires the survey team to match local assets, skills and leadership qualities with investment and market access options. The scenario also needs to provide:

- A simple plan outlining the scale or volume of the target market;
- Buyers;
- Quality issues;
- Supply issues;
- Investment requirements;
- Potential partners involved and their responsibilities; and
- Likely gains and risks.

As an example, the marketing team who worked with potato farmers in south western Uganda, considered the following market options for the farmers:

- Sales of potatoes in the local market;
- Sales of potatoes in the nearest large city, 80 km from the farms;
- Sales of potatoes in a fast food restaurant in the capital city 400 km away; and
- Sales of potatoes in the wholesale market in the capital city.

Scenarios can be developed to highlight market opportunities for a range of clients, including BDS options, niche market options, export market options and market linkage options to supply industrial and or high-value markets.

The potential market scenarios presented must all be based on findings and results from the survey. These scenarios are not intended to be detailed plans and their purpose at this stage is to highlight options for presentation to farmers and or other clients.

Step 9: Results and interpretation

As the results are assembled, the value chain survey team's task is to build a common understanding of the market system for the studied commodity. Both secondary and primary data and information should be used to describe the market system. To help organise their thinking, you and your team can start by answering the following questions:

- What are the different channels and key stages in the value chain?
- What are the main production areas and wholesale and consumption centres?
- What are the scales of operation at each stage of the value chain?
- Who are the key players?
- How profitable is this value chain for target producers, traders and processors?

Step 9a: Preliminary diagram of the marketing chain

You and your survey team may consider using the preliminary maps/diagrams that are outlined in the following sections.

Core chain actor's map

Sketch a diagram of the value chain and update this with new information collected in the survey. You could rework this diagram to include the different channels observed in the survey and add new participants and their functions at each stage.

Business services map

Sketch out a map showing where the key service providers are located and identify the gaps in the service provision. Indicate whether the services are quality coded.

Infrastructure

The infrastructure map shows the main flows for the studied commodity, from production sites to the markets and areas of consumption. This map could show roads, lakes, rivers and locations of the main markets, so that the group members can see where key activities are taking place.

Drawing these diagrams in the initial stages of the analysis helps the survey team to process, analyse and visualise the data and information collected and to share it with others. It also makes it easier to identify areas where further information may be required. The value chain diagram can then be refined, while fieldwork progresses and the analysis is further developed.

Step 9b: Results from the demand study

This step involves the following actions:

- Identify the major products, markets and market chains;
- Provide figures on the size of these markets, and a figure of the total market demand for the product in question within the target territory;

- At the product level, information is required on price, volume, trends, quality criteria and uses;
- The results should prioritise products in terms of where the enterprise can increase sales, increase product value and volume of trade (i.e. how to be more competitive); and
- The demand analysis should record the names of traders, buyers and processors, so that any future intervention can be developed in partnership with these actors after the analysis of the results have been made.

Step 9c: Key results from the supply study

Key results from the supply study involve in the following information:

- A map of the country or district being studied with major production zones of the selected commodity identified;
- Information on the seasonality of producing a commodity;
- Seasonal and trend information on prices of the target raw commodity and, if possible, for processed products derived from the raw material, e.g. cassava roots, cassava chips, cassava flour, cassava starch, etc.;
- Marketing costs along the value chain, showing costs paid by, and to the intermediaries from the farmer to the consumer;
- Marketing costs along the value chain should include margins along the chain; and
- Flows of the commodity through the main supply chains, coming from the major areas of production.

Other areas to explore include:

- Price trends and behaviour;
- Market requirements;
- Market participants and their behaviour;
- Efficiency of the marketing system;
- Relevant research that aims to address key constraints; and
- Policy and institutional environment.

Step 10: Recommendations for interventions

One of the ways to develop interventions is to apply the solution tree methodology as outlined earlier. The next step is to analyse the feasibility of recommended interventions. This can be done either before or after writing the report, but a critical analysis of objectives must be done prior to discussing the value chain survey results. The priority of the interventions should also be clarified with related stakeholders.

The following key questions are relevant:

- Has this intervention/solution been applied before?
- If it has been applied, what are the reasons for its failures or successes?
- If it has failed, but still has merit, what must be done to ensure success?

For new interventions, the survey group should review how practical they are by using the feasibility matrix shown in the example given below. This matrix will assist in answering the following questions:

- What can each stakeholder contribute to the implementation of the intervention/solution (human or financial resources, etc.)?
- What is the potential benefit (short- and long-term) of the intervention/solution for each stakeholder?
- What does each stakeholder need to do to ensure the long-term and sustainable benefit?
- What are the risks or difficulties of each stakeholder when implementing the intervention/solution?
- What are the related costs involved for each stakeholder?

See an example of the usability matrix on the next page.

Table 21: An example of a feasibility matrix

Problem: Limited market opportunities for seed potatoes				
Recommended solution/intervention: Production and marketing of both seed and ware potatoes to high value markets, using new varieties and irrigation and storage facilities.				
Related potential stakeholders participating in the implementation of the intervention.	Contribution	Potential short- and long-term benefit.	What should be done to ensure the sustainability of the intervention?	Possible risks or difficulties.
Farmer group	• Land; • Labour; and • Management.	Increase in productivity, quality and income.		• Drought, • Mismanagement; and • Lack of discipline.
Extension/NGO	• Provision of training in the use of new technologies; and • Cost share in testing new methods.	Increased skills and ability to adapt to existing and new challenges.	Work with more than one extension agency.	Short-term support.
Research	Pilot testing of new technologies.	• Improved yields; • Better disease resistance and ability for year-round production.	Introduction of new varieties, methods and irrigation.	Lack of funds to support the process.

Problem: Limited market opportunities for seed potatoes				
Input supply merchant	Improve access to fertiliser and agro-chemicals.	Long-term supply of essential inputs to boost yields.	Clear business planning that includes input supply.	Inability to supply at competitive or affordable price.
Micro-finance agency	Provision of loan options to meet long production cycle.	Access to reliable and lower cost finance than moneylenders.	Building relationship with MFI to develop and promote new loan options for farmers.	Low repayment rates, better option for loans.
Buyer	Provision of agreement for year-round procurement.	Steady income.	Constant focus on improving production and sales performance.	Quality criteria too high, volumes not met, alternative buyer.

Step 11: Write a survey report

The team leader should be the main author of the survey report. They should be responsible for coordinating report writing and editing the draft and final versions. The allocation of tasks among different team members will depend on their specific skills and experience and their availability. All survey team members should provide comments to draft versions, before these are sent to other reviewers. In addition, some members can be responsible for writing specific sections or preparing some annexures of the report.

The structure, writing style and content of the report depends on its purpose and the audience. A report aimed at providing the basic findings of the survey for producers to improve their production activities is clearly different from a report targeting a donor who is interested in more strategic, systems level investments. The report should be understandable to the target audience.

When preparing a market report for a stakeholder's group or a potential lender or investor, then more details should be added. For this second type of audience, a short written report could be circulated before the meeting and this report should include all the financial records.

Market reports generally have the following structure:

- Executive summary;
- Introduction;
- Target clients for the study;
- Methodology;
- Key findings;
- Specific recommendations to the target clients:
  - Technical;
  - Marketing;
  - Finance; and
  - Policy;
- Conclusions; and
- Annexures.

The report should clearly identify how target clients can use the results to make decisions in their planned agri-enterprise projects. In more formal written documents, the report should also contain sections with references and annexes.

 Complete Activity 1.3 in your workbook.

Concluding remarks

This study unit focused on the use of market analysis tools. Firstly, the different market strategies and interventions were identified and explained, including the livelihood strategy, value chain strategy, the intermediary firm business model and the inclusive business model. Secondly, the MOI process was explained and the steps that should be followed in order to identify market opportunities by means of MOI were discussed. In the last session of the study unit, the value chain analysis, which provides a systematic process for assessing market options, was discussed in detail.


Complete the summative assessment in your workbook.

Study Unit 2: Value chain upgrading strategies

Study unit outcomes

After completing this study unit, you should be able to:

- Identify the assumptions and decision points in value chain upgrading;
- Explain the value chain investment process;
- Assess value chain upgrading strategies on farmer and extension agent level; and
- Design a business plan for the implementation of a value chain upgrading strategy.

Study unit overview

This study unit provides information on the way in which intervention teams can use the results of market assessments and value chain analyses to move from analysis to action. The types of interventions you will use depend on the focus of the project, the location, the type of clients that are being targeted and the scale of planned intervention and upgrading process. Target clients may include farmers and farmer groups and a combination of marketing actors in a value chain, including traders, processors retailers and the service providers that are linked to a specific market opportunity.

Study unit introduction

The main purpose of the value chain analysis is to assess and implement value chain upgrading strategies that will enable farmers to expand their market and livelihood options. Value chain upgrading can occur in different categories, including product upgrading, functional upgrading and channel upgrading.

In this study unit, you will focus on value chain upgrading initially at the farm and extension agent level, but you will also explore broader value chain upgrading approaches. Once the value chain upgrading strategies have been identified, the farmers/clients should be assisted in the development of a business plan for the implementation of the strategies.

Session 2.1: Value chain upgrading strategies

Session outcomes

After completing this session, you should be able to:

- Identify the assumptions and decision points in value chain upgrading;
- Explain the value chain investment process; and
- Assess value chain upgrading strategies at the farmer and extension agent level.

Introduction

There are several stages in a value chain upgrading process that you need to consider, including:

- Demand analysis and key supply channels;
- Identify chain actors for supply of goods to target market;
- Develop and prioritise key interventions at each stage in the chain;
- Organisation;
- Production technologies;
- Marketing strategies;
- Research and policy;
- Provide training that may be required; and
- Establish a monitoring and evaluation process to set targets and measure performance.

Depending on context, the value chain upgrading strategy seeks to bring together the following three key areas or sets of actors:

- Capable farmers, who have the necessary skills, capacity and organisation;
- Willing buyers, who have inclusive procurement practices; and

- Business-minded policy makers from national and local government that foster a conducive business environment for growth. This is shown in Figure 18.

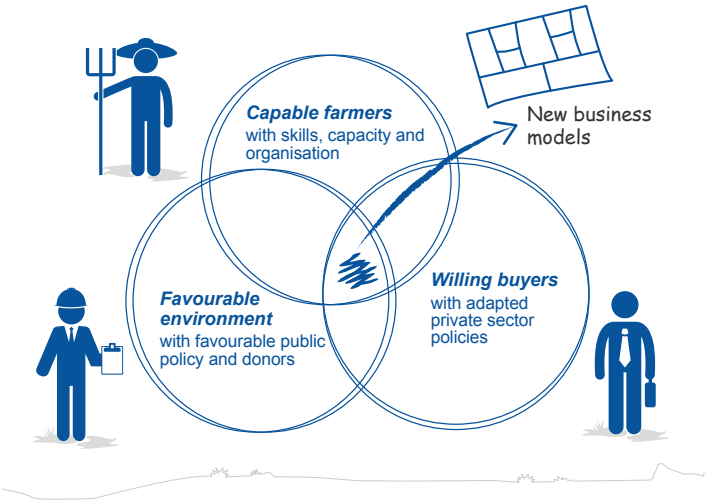

Figure 18: Key areas of value chain upgrading

With these assumptions, facilitation groups, such as NGOs, can work with these players to identify market opportunities, prioritise areas for support and co-invest in new business arrangements, often referred to as inclusive business models, which will enable equitable market growth that provides opportunities for smallholder integration.

Assumptions and decision points for value chain upgrading

The value chain upgrading strategy is based on the following assumptions and decision points:

- There are capable, organised farmers who can produce target product sustainably at a profit;
- Farmers share a common vision;
- There are capable extension services to support a chain wide intervention;

- There are willing buyers:
  - Markets have been identified; and
  - Value chain studies have been completed;
- A value chain upgrading process has been planned and agreed upon by chain partners;
- Value chain partners are willing and able to commit to an upgrading process;
- There are available funds and or access to financing for upgrading processes to take place;
- There is trade finance available to support the business transactions;
- The necessary BDS are in place; and
- There is a conducive policy environment for market growth.

In many situations, not all of these assumptions hold true, in which case additional work is required to meet the necessary conditions to begin or accelerate the upgrading process. For example, if farmers are not well organised, they need to work with extension agents to build their capacity to be reliable suppliers of quality goods in the target value chain.

If extension agents do not have the necessary skills to train farmers in specific aspects of the upgrading plan, such as business planning, then the project facilitation team either has to find alternative extension agencies with those skills or the existing agents will require training in business to support their target farmers.

Each of the assumptions needs to be evaluated and, if the conditions are not met, a plan needs to be put in place to address the situation.

Chain-wide development

The chain-wide facilitation team needs to identify the right service providers for each stage in the value chain upgrading process. Figure 19 shows an example of chain-wide development for a project entitled New Business Models for Sustainable Trading Relationships. The purpose of this project was to explore the

development of a new business model that would be inclusive for smallholder farmers in Ethiopia.

The overall chain-wide facilitation team organised three sets of support teams, each focusing on upgrading a specific part of the value chain. The decision to specialise service provision was made to support the three different types of market actors. The aim of the project work was to increase sales of white pea beans produced by smallholder farmers in Ethiopia to the baked bean canning markets in the United Kingdom.

The three different groups of service providers had skills in and supported:

- Farmer to first link buyer;
- Intermediary firm to canning factory; and
- Factory to retail.

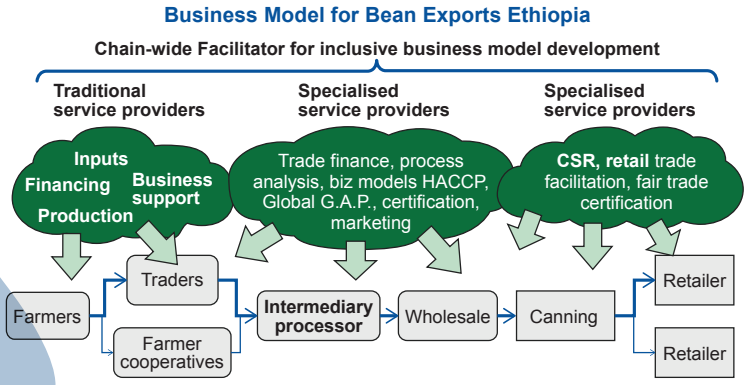

Figure 19: Example of chain-wide development in Ethiopia

As shown in Figure 19, the upgrading approach and associated services were different for each of these areas, which required hiring different types of service providers and experts to support a chain-wide approach.

At the time that this project was designed in 2007, most of the beans being exported from Ethiopia were going to lower value markets across the world, largely to the Middle East and Eastern

Europe. A company called ACOS, established a joint venture business in Ethiopia to target the higher value canning industry in the United Kingdom and the fair trade market in the Netherlands.

Value chain upgrading strategies on farmer level

Linking farmers to markets is a complicated process. The general idea is that, when working with the poorest and most marginalised farmers, the approach generally starts with building the organisation and social capital of farmers and helping them to organise farmers into basic groups.

Intervention at the farmer group level includes:

- Visioning;
- Exchange visits;
- Market visits for deal making;
- Identifying chain champions;
- Market liaison agent go between;
- Learning journeys revisited;
- Developing a business plan and associated intervention plan; and
- Piloting.

In the following sections, different strategies for upgrading the value chain will be outlined.

Commercialising smallholder farmers

By its nature, the private sector focuses on target markets, profit and sustainability planning. The more formal agricultural companies often work with the more progressive larger farmers, where they can source higher volumes of produce. However, these larger firms have come to realise that, as the demand for food products continues to grow, they need to reach out to ever more marginal farming communities. This raises a critical question as to whether these firms have the investment capital and commercial appetite to invest in the business development of what are largely pre- or semi-commercial farmers.

The more marginal farmers require basic skills building to strengthen their organisation and improve their productivity before they can embark on upgrading their business and financial skills. Once they have acquired basic business skills, these farmers will be more able to navigate modern market chains, and these farmers will seek market opportunities more aggressively.

Shifting the competency model from production to business services

Over the past 20 years, farmer organisations and their service providers have gravitated away from an almost exclusive focus on production to include a more business facing approach. This shift has been taken up by the private sector, particularly through input supply companies, NGOs and project contractors, who have adopted the business methods as part of the value chain approach. Government extension organisations are also taking on more of the business aspects of service provision through hiring more agri-business specialists, but there is a need to find ways of accelerating and expanding this BDS area within government agencies.

With the growing pluralism of extension agencies, farmers are gaining access to business support services, through the different types of agencies providing support. To meet the business needs of farmers and farmer organisations and to enable them to compete more effectively in a target markets, the new extension or more diversified service industry need to build their ability to help farmers acquire skills in the following areas:

- Analysing market opportunities and market demand;
- Mapping market chains;
- Making production and demand led decisions for product(s) selection;
- Defining and recording production costs;
- Undertaking profitability analysis;
- Keeping financial records;
- Evaluating which BDS are needed to improve their competitiveness;

- Being able to develop a common business vision for investment; and
- Both preparing and helping farmers to invest in a business plan.

As the business skills of farmers and their organisations become more sophisticated, the groups will also need to learn more about:

- Meeting product specifications at a profit;
- Negotiating new business models with chain partners;
- Evaluating profitability on a seasonal basis;
- Linking research with their innovation methods;
- Diversifying from single value chains to whole farm planning and profitability; and
- Generating long-term upgrading plans that include chain-wide processes.

Factors affecting market access

Enterprise development is an inherently risky area in terms of investment and business options, particularly rain-fed agriculture. Farmers working as individuals or in farmer groups are exposed to the risks of erratic weather, volatile market prices, intense competition and the often high costs of capital.

There are many failures in early-phase businesses—in agri-enterprise as much as any business sector. It should come as no surprise that millions of smallholders in developing countries still face serious challenges in making the shift from low input, low return farming into the more risk prone areas of higher invest and higher income pathways.

Studies that have been done in this field make it possible to calibrate the types of investments and outcomes that extension projects should expect. These studies also emphasise that market linkage is not the ultimate or only solution. It is likely that, even with business support, large numbers of smallholder farmers will not make the shift to high income pathways. Therefore, extension services need to be flexible in terms of working with and meeting

the needs and aspirations of more progressive higher investment farmers and in supporting the stabilisation of low input farmers.

There is a number of factors that restrict farmers' ability to engage in value chains and, if these factors can be overcome, it may help to raise the prospects for more successful value chain approaches and market linkages. These factors include:

- Location and business maturity within a target area;
- Access to infrastructure, such as roads and power, agricultural services, water and production technologies; and
- The skills, education and organisation of the farming community in terms of their ambitions, discipline and ability to prepare plans, set goals and follow a common implementation schedule.

When decisions are made to invest in a particular area, these factors should be taken into account to ensure that project designs actually improve market linkage prospects—both during and after a project.

Farmer organisations to support collective marketing

For extension to be effective, the limited numbers of extension agents can increase their reach to farmers by working with organised farmers, rather than individuals. Organised farmers gain economies of scale, so that they can compete with larger farmers and supplies from imports. An example of an organised farmer organisation is shown in Figure 20.

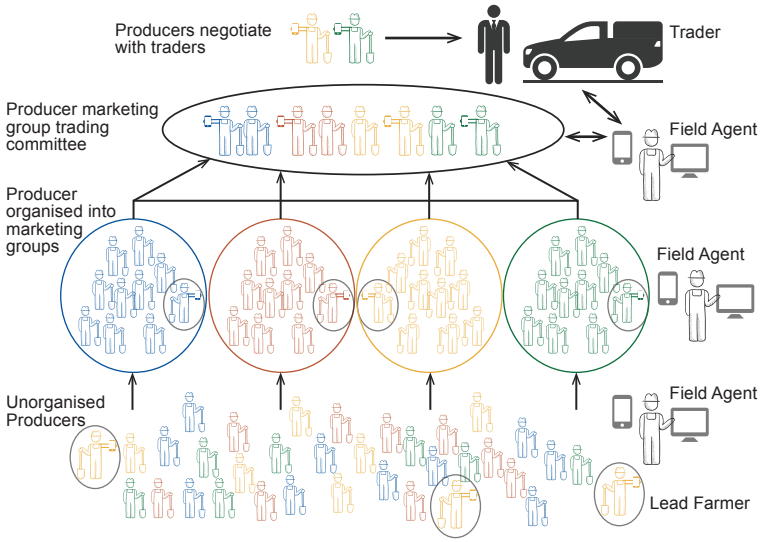

Figure 20: Organised farmer organisation

Extension agencies need to approach projects and programmes with a view to investments that build the capacity of farmers to buy inputs in bulk and then support bulked sales of the produce.

A typical value chain project includes a basic market analysis and an upgrading package that can be used to improve production technologies to enhance productivity, bulk harvest and develop trading relationships with identified buyer(s). The ultimate goal of an extension process is to leave behind either an empowered and democratic farmer organisation or a confident agri-entrepreneur, who is able to support a growing market opportunity with durable trading relationships. This section explores some of the farmer organisations that are being testing and scaled by various extension services that have successfully linked farmers to markets.

Smallholder farmers, who operate as individuals, generally receive poor market prices for inputs, services and produce sales, particularly farmers selling lower value field crops. One of the

most important reasons for farmers working together in groups is that it enables them to come together and enjoy the benefits of economies of scale, so that they can compete more effectively with larger farmers. Farmer groups can use their social power to plan together and buy inputs at a lower cost through bulk procurement, for example. Farmers can also use their economies of scale in groups and cooperatives to support bulk sales of aggregated goods in order to access better unit prices, higher volume and higher value markets.

A key role of extension agencies and agents is to help farmers organise themselves into groups and build their capacity to plan together, buy inputs in bulk and work towards a group planning process that supports bulked sales of their produce.

The main reasons farmers participate in collective marketing are:

- Improving economies of scale;
- Lowering transaction costs;
- Increasing quality control;
- Gaining an incentive to increase production;
- Improving access to finance;
- Obtaining communal equipment and services; and
- Creating social advantages, such as building bonds by learning together and testing new ideas.

Value chain upgrading on extension agent level

In the following sections, the upgrading strategies on the extension agent level will be discussed.

Acquisition of knowledge, competency and advisory skills

As discussed in Study Unit 2, there are different types of agencies and organisations involved in providing advisory services to farmers, ranging from the public, civil society and private sector. All these service providers need to collect information and gain certain levels of knowledge and competency before they can

provide meaningful advisory services to farmers. Farmers also have a choice in terms of the types of advisory services they need and that they can access through various means, such as kinship, memberships, partnerships, alliances and business relationships.

There is a growing range of extension topics and needs for which most teams and individual agents cannot provide a comprehensive set of services. The more pluralistic nature of modern extension means that farmers have considerably more choice in the types of advice they access, the way they access information and knowledge and whether or not they pay for services. In order to play an effective role, extension agents tend to specialise in specific advisory services.

Extension teams need to define their area of support and agents need to acquire the right set of skills in a particular area, be that input supply, production, post-harvest, marketing, nutrition, gender, innovation, etc. These core sets of skills change with time and as research identifies new needs and clients make investment decisions.

Depending on the types of services, there are many ways in which service providers gain skills and competencies in their professions. Some extension agents are specifically trained in an area through formal national education systems, such as university degrees or college diplomas, while others take courses as part of their working duties and gain certification for specific skills over time and others learn through long-term experience on the job.

Many extension agents are certified or affiliated with an organisation in some way. These certifications and affiliations give the agents legitimacy to provide quality services, which enables the agents to build networks and trust with their clients, whether these are farmer organisations or individual farmers. The long-term nature of extension agent relationships is based on their performance and also on the means of supporting the service.

Government extension agents tend to be open-ended contractors, which allows for decades of support within an area. Most civil society organisations are more project-oriented and, therefore, time bound. The duration of private sector support is driven by market performance.

To maintain relevance and keep up with current thinking and trends, extension agents need to refresh their skills from time to time and the process of on-the-job training is important to maintain effectiveness.

Training opportunities in the NGO community

In the NGO community, there are several ways and opportunities of staying up-to-date with current practises, for example:

- Attending official training courses;
- Attending short-term face-to-face training events and specialised meetings;
- Accessing knowledge through books and bulletins;
- Accessing e-learning modules or online courses;
- Accessing information on the Internet; and
- Peer-to-peer learning.

Training opportunities in the project setting

In the project setting, field extension agents are typically provided with training by means of cascade training. A lead or subject matter expert is required to develop training materials, after which training events are organised where trainers are trained to build the capacity of the agents below them. This cascade can include several layers of people, as illustrated in Figure 21.

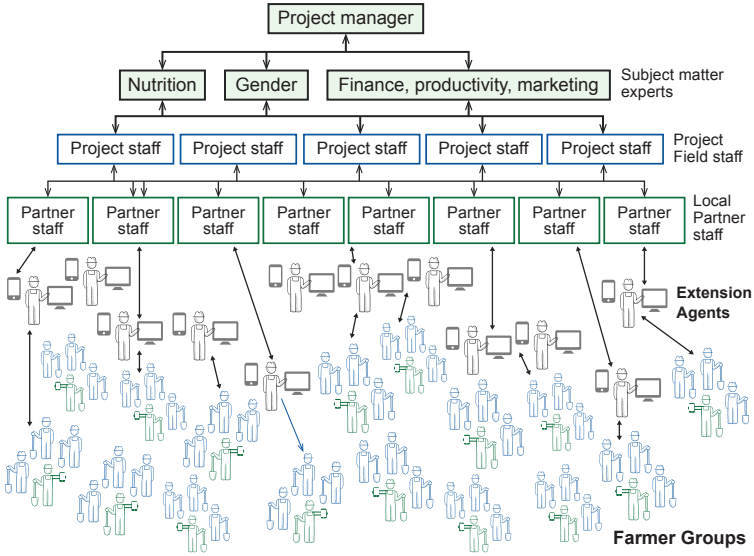

Figure 21: Training cascade

The effectiveness of the training systems, and particularly training cascades, that reach down to farmer groups and individual farmers is something that remains uncertain. Although there are some programmes that have been very successful in providing a clear skills building process, there are still many gaps in the system and it is hard to access data on skills levels. More needs to be done to support agricultural advisors at the field level, particularly those who need to develop new skills to complement the more traditional production-based advisory services.

Complete Activity 2.1 in your workbook.

Session 2.2: Business planning (Business canvas)

Session outcomes

After completing this session, you should be able to:

- Design a business plan for the implementation of a value chain upgrading strategy.

Introduction

A **business plan** is a document that outlines the financial and operational goals of a **business enterprise** for the near future and shows how these goals will be achieved. In other words, a business plan is a written description of the future of a business enterprise. A business plan also describes:

- The enterprise and its products or produce;
- How it produces and markets its products;
- The risks its faces and how to deal with them;
- Access to resources and partners;
- Key activities involved in production and marketing of a product or service; and
- Its financial situation and financing needs.

Business plan: A document that outlines the financial and operational goals of a business enterprise or unit for the near future.

Business enterprise: Any operation or organisation that provides goods or services with the primary motive of making a profit.

A typical business plan consists of three parts, each with several subsections:

Part 1: An outline of the business
1. Introduction
2. Business organisation
3. Product
4. Marketing strategy
5. Risks
6. Business operation plan

Part 2: Financial data and analysis
1. Marketing costs
2. Income streams
3. Profit and loss analysis

Part 3: A loan analysis (if the group wants to borrow money)
1. Financial requirements

Purpose of the business plan

The main purpose of a business plan is to:
- Guide the enterprise over the long-term
  A business plan brings your ideas and decisions together and puts them in concrete form in one document to guide the group's direction;
- Facilitate understanding and agreement
  Despite intensive discussions, members of the group may have different understandings of what the group aims to do; a business plan helps to identify and remove such misunderstandings;
- Improve organisation and decision making
  Because a business plan follows a certain structure, it helps the group to make sure it has collected and organised all the information that it needs in a suitable way, which makes decision making easier as the farmers work towards launching their businesses;

- Test and strengthen financial feasibility
  The business plan requires the group to compare its resources and income to its costs and expenditures and it shows whether the enterprise can make a profit;
- Measure performance
  The business plan gives the group clear targets and group members can use these targets to monitor their performance and make changes in the production season, if the original plan needs to be amended;
- Ensure continuity
  Farmer groups typically elect their officials every year or two. A business plan ensures that a new group of managers can take over operations smoothly, reducing the risk of disruptions and abrupt changes in direction;
- Sell the enterprise
  Business partners, such as major suppliers, contract partners, big customers and business services, may want evidence that the group has thought through its business plan and will be a viable concern; a business plan gives them the information and assurance they need;
- Convince lenders and donors
  Banks and microfinance institutions want evidence that the group's enterprise will be profitable, before they will agree to lend it money. They usually require a business plan as a condition for a loan. Donors also want to be confident that the group is viable, of which the business plan can be evidence; and
- Guide implementation
  The business plan shows what the group needs to do to achieve its goals. It keeps the members and the management focused on what has been agreed and it acts as a framework for the group's implementation plan (the list of tasks and activities the group members have to do each year or production cycle).

Visualising a business plan

Before asking farmers to design and compile a formal business plan, it is helpful to give them some tools to visualise their business plan. This will help them to understand how a business plan is built from basic parts and to understand how the components/parts of a business plan fit together.

A visual method to help design a business plan is the model canvas, which is shown in Figure 22. This method has been adapted to fit the situation of small-scale farmers in developing countries.

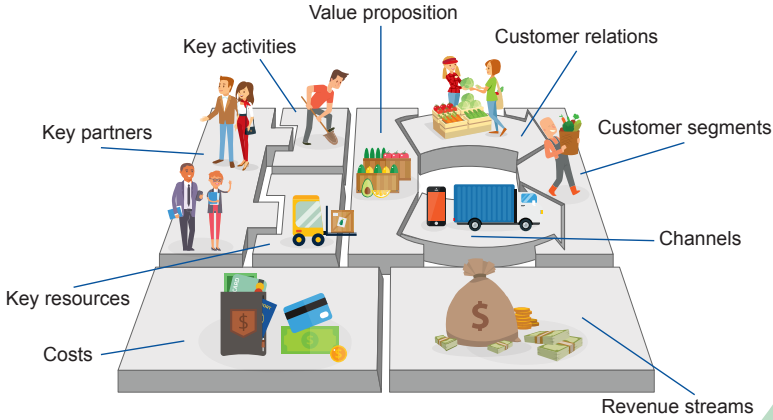

Figure 22: The different parts of a business plan fitting together

Table 22 records more detailed information on the nine areas of the model canvas.

Table 22: The nine areas of the model canvas

	1. Customers – These are the buyers of the product, such as traders or consumers. For most products, there is more than one type of customer. For example, a supermarket may buy the highest grade output, but the lower grades will have to be sold in a local wholesale market and lowest quality used to feed animals.
	2. Value proposition (product) – This is a statement that clearly and concisely describes the unique value of a firm or group's products. It states the firm's/group's core objectives, which set it apart from the competition. In most cases, the value proposition focuses on a specific product that the farmers plan to produce. Products may include things like maize or milk.
	3. Channels – These are indications of the way in which the group plans to deliver the product to the buyer, e.g. by having members deliver to a village collection center ready for pick-up.
	4. Customer relationships – These indicate how the group plans to identify buyers and create and maintain relationships with them, through basic agreements, alliances and or contracts.
	5. Income – This is the money the group earns from selling the product.

	6. Key resources – These are the inputs and resources that the group uses to produce the product and they include land, equipment, seed, fertiliser and labour, as well as the group's internal organisation.
	7. Key activities – These are the activities that the group plans to do to produce the product, e.g. planting, crop management, harvesting and drying.
	8. Business services and partners – These are the services and partners that the group uses to produce and market its product, such as input suppliers, the agricultural extension service and a microfinance institution.
	9. Costs – These are the costs that the group incurs in order to produce and market the product.

Figure 23 gives a helpful way for farmers to think about and plan their enterprise. The canvas consists of a large sheet of paper divided into nine areas, each representing one aspect of the enterprise.

8 Business services and partners	7 Key activities	2 Value proposition describes the unique value of products/services being offered	4 Customer relationships (promotion)	1 Customers (buyers)
	6 Key resources		3 Channels (place)	
9 Costs			5 Income (price)	

Figure 23: A model canvas

Writing a business plan

Once you have gathered the information you need, writing a business plan should be fairly easy. All you have to do is to put the right pieces of information in the right place. If the process of writing a business plan brings up questions that the group has not yet thought through, you may have to stop the writing in order to discuss these issues and either gather more information or make the necessary decisions.

Table 23 provides the basic sections of a business plan with the basic information and explanatory questions that are associated with each section. If you have used the business canvas to organise the information, you can now write down the information into the standard format, as outlined in the table.

Table 23: Content of a business plan

	Subsections	Key questions
Introduction	Project name	Name of the agri-enterprise team and goal of the business.
	Address	What is your contact address?
	Phone number	What is your phone number?

	Subsections	Key questions
Business	Vision and sales goal	What is the vision of the enterprise? Goal = Sales targets
	Describe the business	How long has this group been in existence? Is the group registered?
	Name the key positions in the business	Chairperson; Treasurer; Secretary; Lead farmer; and Market agent, etc.
	Number of members by gender	What is the number of men and number of women in the group?
	Current savings/bank statement	Latest financial statement and savings levels (if any).
Value proposition (Product)	Product name	What product will you sell?
	Existing/new	Is this an existing product or a new product being offered by your group?
	Benefits to buyer	Why is the buyer(s) interested in product? What is unique: is it cheaper, better quality, local, or are there other benefits, or advantages?

	Subsections	Key questions
Marketing strategy introduction	Define target market	Who is your target market (local, district, national, supermarket)?
	Location	How far is this market from the production site (km)?
	Market type	Is this an existing market or a new market for your group?
	Describe customers	Who is your buyer—type of trader, or processor?
Product	Describe the key product attributes	Explain attributes of the product (variety, quality, packaging, etc.).
Price	Describe price setting	How will the price be established? What is the offer price, contract price?
Place	How will you get the product to market	Sales team; Street vending; Carry; Pick up; Cycle; and Lorry, etc.
Promotion	How will you promote your product	Voice; Phone; Through a trader; and Person-to-person contacts, etc.

	Subsections	Key questions
Market risks	Identify key risks to plan for	What are the key risks to the action plan? How can the risks be overcome?
	Risk mitigation plans	Are there ways of minimising the risks?
Business operation plan	Describe your business flow	Describe the step-by-step activities from production to sale.
	Pre-production activities	Input procurement and nursery.
	Production activities	Ploughing, sowing, and weeding.
	Post-harvest activities:	Drying; Sorting; and Storage, etc.
	Marketing activities	Buyer linkage; Negotiation; Transport, etc.
	Key partners	Partners may include extension agents, input supplier, transporter, etc.
	Key resources	Land; Labour and staff; Crops; and Processing methods, etc.

	Subsections	Key questions
Production costs	Total material costs	Calculate costs per season/year.
	Total labour costs	Calculate costs per season/year.
Income streams	Projected sales volumes	Planned sales volumes: give clear units of sale, e.g. 100 kg bag.
	Projected sales price	Selling price of product. Give dollar conversion: 250 shillings/bag = $1/ bag.
	Estimate season income	Estimate seasonal sales.
Profitability	Gross margin	Calculate gross margin and net income.
Fine tuning	Strategies to increase profit	What changes can be made to increase gross margin?
Financial requirements	Startup capital requirements	How much capital do you need to start the business?
	Capital funds available	How much capital do you and your members/partners have?
	Capital funds required:	How much capital are you lacking?
	Method to raise funds	How can raise you the funds that you are lacking?

Complete Activity 2.2 in your workbook.

Concluding remarks

This study unit focused on the value chain upgrading strategies. After identifying the value chain upgrading strategies and the assumptions and decision points for value chain upgrading, chain-wide development was discussed. The value chain upgrading strategies on farmer level and extension agent level were also addressed. The study unit was concluded with a discussion of business planning and the design of a business plan for the implementation of a value chain upgrading strategy.

 Complete the summative assessment in your workbook.

Study Unit 3: Using ICTs in value chain services

Study unit outcomes

After completing this study unit, you should be able to:

- Identify different ICT support services; and
- Explain the use of ICT in agricultural development.

Study unit overview

In this study unit, you will be familiarised with different ICT-based support services and the application of ICT-based support services in agricultural development and support.

Study unit introduction

New ways of using information and communications technology (ICT) systems are transforming lives across the world. As the digital infrastructure expands, there will be an increasing number of ICT-based services seeking to provide governments, NGOs, the private sector and the farming community with an exciting range of services.

The role of ICT services has spread to virtually all aspects of agri-enterprise activities and the support work that is done to support farmers. The use of ICT will soon be a major and integral part of the development world and work.

Session 3.1: Using ICT-based support services

Session outcomes

After completing this session, you should be able to:

- Identify different ICT-based support services; and
- Explain the use of ICT in agricultural development.

Introduction

This session explores some of the ways in which ICT is used to support the farming community and particularly the ways in which it is strengthening the value chain, development work and extension services.

ICT support services

Mobile telephone services have become a reality in virtually all corners of the world. For many millions of smallholder farmers and traders, mobiles phones have become an essential tool of the trade, strengthening existing business ties and opening up new opportunities with huge reductions in transaction times and cost. The use of the basic mobile phone through the developing world is rapidly being followed by the Internet and the **smartphone**.

There is a growing number of ICT service providers that are exploring the prospects of providing services directly to farmers as a business opportunity. In this way, technology will enhance the ability of agencies working in the agricultural sector to reach more farmers with ever more sophisticated methods.

ICT is already a key part of the data collection systems and they are increasingly being used to complement to face-to-face communication and **capacity building**. In addition to providing

basic services and enhancing the reach of existing extension services to farmers, ICT systems will play a transformational role in managing information in modern services. In the past, managing extension services was done through manual processes that worked through weekly and monthly meetings. It was difficult to monitor where field agents were operating and virtually impossible to establish a feedback loop with the farmers. Additionally, a basic lack of data from the field has hampered impact studies in development.

Smartphone: A mobile phone that performs all or many of the functions of a computer, including Internet access and an operating system that can run downloaded applications.
Capacity building: Social or personal development that focuses on the obstacles that prevent or hinder individuals, governments and international organisations from reaching their development goals.
Baseline data: The initial collection of data, against which subsequently collected data can be compared.

Many of these data and information management issues can be addressed through routine data collection systems, combined with more systematic communications and tracking systems. These systems will allow extension services from various agencies to establish online information management programs that link to work programmes for the field staff, as they deliver services to the farming community. With support from mobile devices, field agents can register farmers on online data systems, collect **baseline data** and monitor progress of a farmer group throughout the farming season. New tools will enable farmers to work with field agents to prepare business plans and to monitor their market performance in specific value chains, or provide more support to whole farm planning.

Based on the farmer profile data, the field agents will be able to help farmers to link to other mobile linked services, such as market information, e-money, e-credit, inputs supply, and to initiate options for linking farmers to buyers and transport options to deliver goods to buyers. Using combinations of new services, field agents will have a new collection of tools to support farmers.

Using ICT in agricultural development

There are numerous applications that were originally built to support health or land research that are now being adapted to support other sectors such as agriculture. The result is that many service providers and technology teams are racing to find new applications for the farming community. Therefore, the use of ICT is also increasing rapidly in agricultural development, where ICT applications range from the highly sophisticated, fully integrated chain-wide agri-business service packages used by the most commercial farmers, to basic voice and text messaging that is used very effectively by less resourced smallholder farmers and traders.

In order to take advantage of this marketplace, the private sector, NGOs and governments are investing in a range of new tools to link farmers with assets, services and markets. The diagram below shows the different types of information products that are being used in various market chains, from the pre-production phase through harvesting, processing and logistics to sales and marketing.

Figure 24 illustrates the use of ICT applications throughout the agricultural development system.

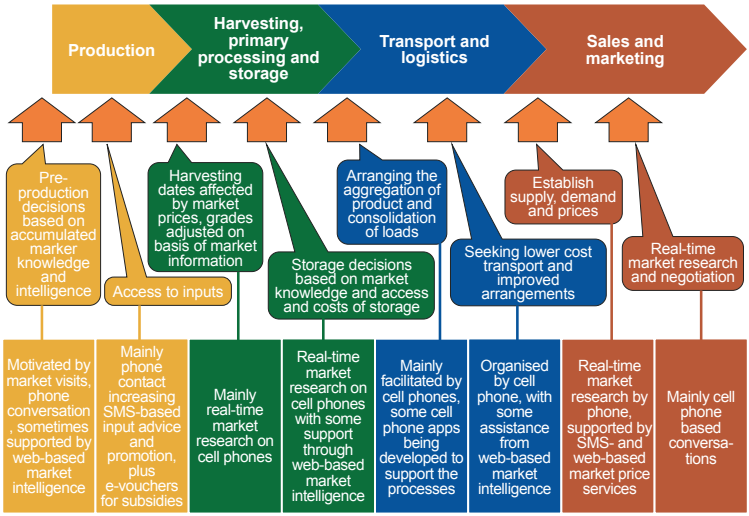

Figure 24: Using ICT applications throughout the agricultural development system

ICT applications that are being used within the agriculture sector include the following:

- Voice and text communication;
- GPS for locating, targeting, mapping, and tracing people, assets, products and resources;
- Distance and e-learning;
- Analytical tools and calculators;
- Monitoring and impact analysis;
- Financial support via mobile transfers, mobile savings, mobile investing;
- Agricultural market platforms for trading, transfer and barter; and
- Chain-wide production, trade and financially integrated systems.

SMS-based networks

In 2005, Ken Banks set up a system in South Africa for the authorities to communicate with the public about wildlife conservation issues, without relying on the Internet. This system

could send, receive and organise text messages through a mobile device by using only a mobile phone and a laptop. This system transformed into Frontline SMS, which was released as a public open source application in 2008. Since that time, Frontline has been downloaded in 70 countries to help groups of people organise around a specific theme and share information on a regular basis. Frontline SMS is currently used in all major sectors, with specialised teams supporting the use of Frontline SMS in disaster response, human rights monitoring, community radio, health, education, agriculture and credit.

In the agriculture sector, many NGOs use Frontline SMS to establish a basic network of their field staff by using their mobile phones. This network is used to send simple messages about work schedules, alerts and reporting matters. This methodology can also be used to build short surveys, which are circulated to the field staff, who respond to questions in a series of interviews with farmers.

Geospatial imagery and mapping

Although global positioning systems (GPS) has been around for more than 20 years, the release of Google Earth in 2004 brought the idea of GPS into everyday life. The world suddenly had a relatively simple map that could be used by millions to link data about people, project activities and assets to a dynamic visual presentation. Many companies are engaged in developing a package of GPS mapping and mobile phone survey instruments that are linked to **cloud computing** analytics. This is a powerful combination of technologies, which makes it possible to administer surveys or collect information in remote areas, use the mobile phone system to record the location of the data source and then synchronise this information into an online database.

Cloud computing: A computer network of remote servers (rather than local servers or personal computers) that is hosted on the Internet and used to store and process data.

The Harvest Choice team from the International Food Policy Research Institute (IFPRI) has built a series of spatial datasets that study agricultural production for staple food crops and linked this with poverty mapping and food security. The datasets and associated analytical tools are used to generate strategic, policy-oriented information about the potential payoffs from interventions designed to enhance the productivity of smallholder farming systems. In one study, they evaluated production levels of poor smallholder farmers in Sub-Saharan Africa (SSA) with an analysis of the way in which this would change with specific policy changes, such as greater use of fertiliser.

The maps in Figure 25 and Figure 26 show the area of land allocated to maize, the production levels in low input conditions and the crop response under intensified conditions (where fertiliser and hybrid seed are used).

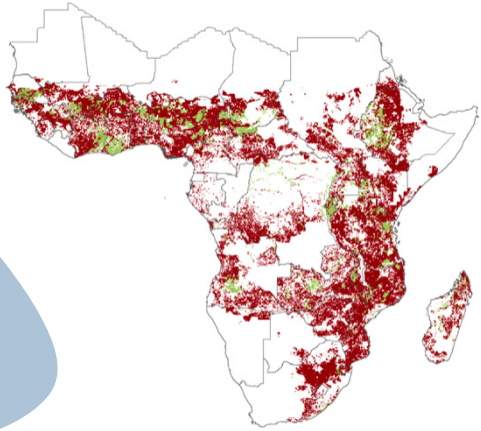

Figure 25: Maize area with > 3 t/ha in majority of years under low input (green areas)

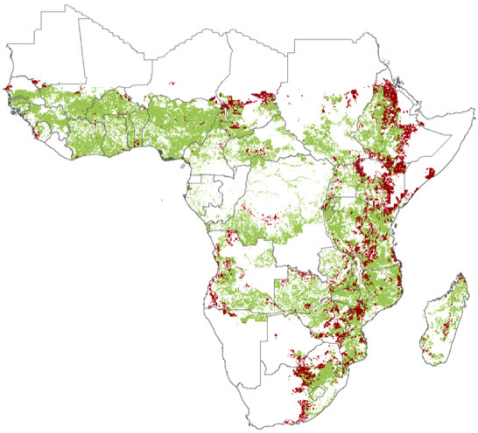

Figure 26: Maize area with > 3 t/ha in majority of years under high input (green areas)

This type of analysis is being used by researchers, donors and, increasingly, by governments and NGOs to make investment and project design decisions in agriculture. It is also used to set monitoring targets for the likely gains that could be achieved by implementing such policies.

E-learning and distance learning

The education gap and access to information and learning technologies are major challenges for many poor countries, where large percentages of the populations are illiterate. In the past 20 years, there has been a massive global push to support the rights to education.

E-learning tools are now widely used in the teaching and learning environment. The e-learning environment is attractive, in that courses can be standardised to meet specific learning goals and the courses can be initiated by students at any time, which reduces costs and enables students to work to their own time table.

There are many options from basic ABC methods available on a mobile phone to sophisticated **learning management systems** (LMS), which support a teacher to set up a virtual classroom, load course materials and enrol students. The students read or interact with the course materials, take quizzes to test their levels of comprehension of the lessons and exercises to test their ability to use the knowledge.

E-learning: Learning that is conducted via electronic media, usually the Internet.
Learning management system: A software application that is used for the delivery, administration, documentation and reporting of electronic courses and training programmes.

Figure 27 shows a screenshot of a CRS course on agricultural marketing basics that is used as part of the training materials to support field agents in learning about buying and selling agricultural goods.

Figure 27: Screenshot of a CRS distance learning agricultural marketing course

Within the development realm, there is a considerable effort to provide distance learning tools for basic education, but also to provide training to project and partner staff. Companies, such as Sum Total, are working with NGOs to build distance learning capability, which will allow course participants to work on courses. This can be done in remote offline situations, with students only having to go online to exchange questions and test scores with supervisors. Similarly, Google has created the Moodle online open source LMS.

Analytical tools and calculators

To support the needs of individual farmers and farmer groups, there is also an emerging trend in applications to analyse specific farm options. For example, the International Rice Research Institute (IRRI) is building an application to provide farmers with fertiliser recommendations. Extension or loan agents can use this application on a tablet or a mobile phone to provide specific farm fertiliser recommendations for rice. The system works through a short questionnaire and a powerful online, cloud-based analytical system, which uses the farm level data to generate a custom recommendation.

IRRI plans to extend the service by building a Rice Doctor application that helps extension agents diagnose problems with farmers in their fields and provide customised recommendations. This approach is being adopted by a number of the international agricultural research centres as a means of disseminating agricultural knowledge more widely to the farming community.

CRS is testing a basic business planning tool and profitability calculator, known as Farmbook, which provides a number of functions, in that it:

- Enables field agents to register farmers, build business plans and evaluate the profitability of specific products in their business plans;
- Provides customised business information to an individual farmer or a farmer group; and

- Helps farmers to make more informed decisions on which crops to grow and where to sell their products.

It is likely that the use of these farmer-focused calculators will increase in the future, particularly when farmers start to buy more sophisticated mobile phones with data plans and are prepared to pay small amounts of money for specific, localised responses. These applications will enable farmers seeking certain types of information to download a related application and fill in a data form. This process will set in motion a process of online data analysis, which, in return, will send a tailor-made recommendation to the farmer.

Agricultural market platforms for trading, transfer and barter

In order to support farmers with decision making, companies in the private sector in many countries are developing online and mobile-based market information services. Esoko is one of the pioneer mobile-based market information services. The company is developing a suite of marketing tools that enable farmers to:

- Access commodity market prices in all the major markets in a country;
- Make offers and bids;
- Set up personalised alerts; and
- Ask questions to a helpline.

Esoko is developing services to support farmers in terms of weather alerts and transport links.

Market surveys and econometric studies have shown that improved access to commodity price information is improving market integration in countries and reducing price volatility, as better price discovery is making buying and selling more efficient.

ICT and value chain-wide systems

In every developing country, there is a number of first world commercial agricultural operators selling their goods into local, regional and international markets. Although the number of commercial farmers is currently low in places like sub-Saharan Africa, they are already using sophisticated ICT packages to support their crop planning, production, logistics and financial dealings. To support their needs, a small but growing number of companies have built farm data management systems, which help these firms to optimise their operations along the value chain.

Muddy Boots is one of the data firms that has developed a number of products, including QuickFire and Greenlight REF, which are used by large commercial farming operators and exporters, such as Unilever, to manage produce sourcing from thousands of smallholder farmers. These sophisticated value chain products allow processors and international buyers to track goods in transit and to process information on finance, logistics and food safety along the entire value chain. This helps businesses improve their efficiency and address fundamental issues—including product quality, timeliness and food safety—as well as issues related to enterprise sustainability.

Another example that is focused on supporting smallholder integration within value chains is Cropster, which works mainly in the coffee sector. Cropster is an ICT-based company that supports various stakeholders in the supply chain by providing specialised information resources for coffee farmers, traders, roasters and distributors. The company provides high level analytics for each of the actors in the value chain, enabling them to upgrade their existing practices to share their knowledge with their value chain partners in ways that optimise the entire chain. Other market chain support companies include Sourcetrace, Farm Force and Chainpoint.

Mobile money: A high-tech solution for cash-strapped communities

The M-Pesa ('M' for 'mobile', 'pesa' is the Swahili word for money) financial service is an example of a mobile money service. M-Pesa was first introduced in Kenya in 2007, where the service has become the main way of sending millions of small cash transfers from urban centres to rural communities. The service allows users to deposit money into an account stored on their cell phones and send balances by using SMS technology to other users, who could redeem these deposits for regular money. In its first two years of operation, M-Pesa reached nearly 40% of the adult Kenyan population. The M-Pesa service currently operates in several countries and supports more than 9 million users. By facilitating the safe storage and transfer of money, it supports mass remittance flows and helps local trade, by making it easier to pay people with security, and to receive secure and rapid payment for goods and services.

A similar system is being used in Zambia to disseminate e-vouchers to farmers. Farmers who register on the system, receive prepaid mobile phone vouchers worth about US $50 to purchase inputs from agro-dealers. Farmer organisations may be able to develop similar arrangements with input suppliers.

The World Food Programme has also used a similar system with scratch cards that enable food aid recipients to access their food rations from warehouses or local vendors in the scheme.

Supporting the agricultural development sector

In the agricultural development sector, there are a number of companies providing ICT-based services, but only few of them are making a profit, while most still require a combination of public and private funding to remain financially viable. One of the support networks that is helping with the integration of ICT into the development sector is an agency called NetHope.

NetHope is a **consortium** of NGOs working with the ICT industry, which aims to promote web-based and mobile applications that support both disaster relief and development programmes. A recent initiative from NetHope is the humanitarian marketplace, which is a portal designed to help NGOs access a range of new applications for testing. The site will allow for ratings and expert analysis about the usefulness of a select number of services. NetHope is also seeking to help the NGO community aggregate demand for certain applications and products, to support bulk purchases and reduced costs for NetHope members.

Consortium: An association consisting of two or more organisations, companies or governments that participate in a common activity by sharing their resources.

Other initiatives that are helping to raise the profile of new ICT applications include the microLINKS portal and Global Broadband portal. Both of these initiatives are supported by the United States Agency for International Development (USAID), with the aim of:

- Providing a constant flow of information about new ICT opportunities for development agencies; and
- Providing information about the way in which projects are adapting technologies and processes to accelerate development outcomes.

In order to realise the ICT transformation in the agricultural development sector, organisations from both the public and private sectors need to create new types of partnerships and business networks with the millions of smallholder farmers in the developing world.

Table 24 provides a list of ICT initiatives in agricultural development.

Table 24: Examples of ICT technology used in agricultural extension

ICT enhanced service	Examples of ICT-based extension service providers	Who is doing this?	Target client	Technology needed	Links to services
Basic phones	First generation phone technology enables buyers and sellers to make contact and discuss or negotiate on terms of offers, bids and sales directly. The mass penetration of the mobile phone network is a leading source of communication across developing nations, which is rapidly transforming service options. Farmers receive information on market prices, input supply, transport, loan options, having access to a mobile phone for business is having a transformative effect on how people approach the production and sales of their goods.	• Frontline SMS; • Voto mobile; • Human Network International; • Government extension services; and • NGOs.	Farmers directly	$20 phone	https://www.votomobile.org/ http://hni.org/what-we-do/3-2-1-service/
SMS technology	The use of text messages is a lower cost means of communication, costing from 4 cents to 20 cents per message. The method has the advantage of documenting and recording retrievable information.	• Seed companies; and • Weather services.	Farmers directly	$20 phone	

ICT enhanced service	Examples of ICT-based extension service providers	Who is doing this?	Target client	Technology needed	Links to services
Voicemail	Due to issues with illiteracy, companies are establishing robo-calling centres to make contact with farmers to give them basic advice on key farming practices.		Farmers directly		
Call centres	Data and call centres, staffed by experts who provide services to clients with mobile phones.	• Kencell; • Esoko; and • Human Network International.	Farmers directly		
Java-enabled phones	Second generation phones that have colour screens and can combine communication with basic video capability.	Purdue University: PICS bags. See videos.		$40 phone	http://ag.purdue.edu/ipia/pics/Pages/home.aspx
SMART phones				$150 phone	
Television	The use of television has not yet been fully explored to support farming communities in most developing countries, but the television series in Kenya entitled Shamba Shapeup is now one of the most successful programmes on the national network.				Shamba Shapeup: http://www.shambashapeup.com/

ICT enhanced service	Examples of ICT-based extension service providers	Who is doing this?	Target client	Technology needed	Links to services
Radio	Farm Radio International develops radio scripts, information packages, a weekly electronic news service, and a special online community called Barza, and shares them with thousands of African broadcasters. They, in turn, use these resources to research, produce and present relevant and engaging programmes for their audience of tens of millions of farmers. These resources are: Aimed at increasing food supplies and improving nutrition and health; Simple, safe, affordable and practical; Ecologically sound and environmentally sustainable; Suitable for communication by radio; Proven useful and transferable within the developing world; and Appropriate to both female and male small-scale farmers.	Farm Radio International	Directly to farmers	Radio	Farm Radio International: http://www.farmradio.org/

ICT enhanced service	Examples of ICT-based extension service providers	Who is doing this?	Target client	Technology needed	Links to services
Call centres	Call centres with systems in place to receive calls and respond with a network of agricultural experts. The call centre provides basic extension support to farmers who are unable to access information through traditional face to face extension services. Examples: KenCall, Ghana Call and Mali Shambani.				
Websites linked to innovation	There is a huge number of agencies, e.g. Google Farmer's Friend and FAO.				
Videos to share ideas	Digital Green				
Distance learning	Brainhoney, Moodle and Lingos.				

ICT enhanced service	Examples of ICT-based extension service providers	Who is doing this?	Target client	Technology needed	Links to services
Data collection systems	There are a number of companies that provides tools to build standardised survey forms, many of which also offer automatically linked cloud associated databases. In some cases, such as with IFormBuilder, the forms can be filled in offline and synched with a database on return to connectivity. Supports rapid data entry, transfer and analysis; Reduces re-entry error; and Accelerates information use.	IFormBuilde; Do Forms; Dimagi; and ODK.			
Mapping		ESRI; Google Earth; and Poimapper.			
Financial services	Rapidly expanding area of?	MPESA; and Opportunity bank.			
Performance monitoring		Kimetrica; and COSA.			

ICT enhanced service	Examples of ICT-based extension service providers	Who is doing this?	Target client	Technology needed	Links to services
Market linkage	Provision of market information to millions of smallholder farmers and rural traders; Types of information include commodity prices, weather alerts, input service reports, and crop monitoring alerts.	Reuters Lite; Esoko; KIT-Uganda; RATIN; Farmforce; We farm; My farmer; Source trace; and Chainpoint.			
Market information	Provision of market information to millions of smallholder farmers and rural traders; Types of information include: commodity prices, weather alerts, input service reports, and crop monitoring alerts.	Reuters Lite; Esoko; KIT-Uganda; and RATIN.			
Marketing links	Source Trace				
Farmer group business tools	FarmBook				
Community agents	Grameen Community Knowledge Worker (CKW)				

Complete Activity 3.1 in your workbook.

Concluding remarks

In this study unit, the use of ICT-based support services in value chain services was the focus area. Different ICT-based support services were identified, after which the use of ICT in agricultural development was discussed.


Complete the summative assessment in your workbook.


Complete the post-assessment in your workbook.

Glossary

Definitions

Word	Definition
Aflatoxin	A class of toxic (poisonous) compounds that is produced by certain moulds in food and that may cause liver damage and even cancer.
Agricultural inputs	Products or resources that farmers use in farm production, e.g. seed, fertilisers and agri-chemicals.
Agricultural market	The group of consumers and organisations that is interested in a particular agricultural product, has the resources to buy it and is legally allowed to buy the product.
Agricultural marketing	The set of business activities that are performed in the flow of products from the beginning of agricultural production to the hands of consumers.
Agricultural value chain	The goods, services and processes involved in an agricultural product moving from the farm to the final customer (consumer).
Arbitration	Settling a dispute between parties by a neutral third party (known as the arbitrator), without taking court action.

Word	Definition
ArcGis	A geographic information system for maps and geographic information that can be used to create and use maps, analyse map information, compile, share and discover geographic data and manage geographic information in a database.
Baseline data	The initial collection of data, against which subsequently collected data can be compared.
Business development services	People and organisations that support the production, supply and marketing of goods, without owning the product involved, e.g. market access support, infrastructure support and training support.
Business enterprise	Any operation or organisation that provides goods or services with the primary motive of making a profit.
Business plan	A document that outlines the financial and operational goals of a business enterprise or unit for the near future.
Buying conditions	Product, price, quality, sales conditions and payment terms.
Capacity building	Social or personal development that focuses on the obstacles that prevent or hinder individuals, governments and international organisations from reaching their development goals.
Cholera	An acute infection that results in diarrhoea, severe dehydration and death.

Word	Definition
Cloud computing	A computer network of remote servers (rather than local servers or personal computers) that is hosted on the Internet and used to store, process and process data.
Codex Alimentarius	A collection of internationally recognised standards, codes of practice, guidelines and other recommendations relating to foods, food production, and food safety.
Commodity	A raw product (e.g. copper) or an agricultural product (e.g. coffee) that can be bought and sold.
Commodity price index	An index of weighted average of selected commodity prices that may be based on spot or futures prices.
Consortium	An association consisting of two or more organisations, companies or governments that participate in a common activity by sharing their resources.
Cooperative	An organisation that is owned and run jointly by its members (e.g. a group of farmers), who share in the profits.
Dispute	A conflict in the legal or business environment, e.g. a conflict of claims, rights, prices or demands of one party that are met by opposing claims from another party.
Diversification	The strategy of entering a new market or a new industry, in order to increase sales and profitability.

Word	Definition
E-learning	Learning that is conducted via electronic media, usually the Internet.
Economics of scale	The cost advantage resulting from an increased output of a product.
Emerging economy	An economy with low to average income that is progressing to a more advanced economy by means of rapid growth or industrialisation.
Expatriate	A person living in a country other than his/her country of citizenship.
Feeding regime	Specific nutrition formula that is fed to animals at different stages in their growth, e.g. chick mash, layer mash and broiler mash when feeding chickens.
Fiscal policy	The policy by means of which a government adjusts its spending levels and tax rates, in order to monitor the national economy.
Focus group	A small group of key informants (usually six to twelve informants) who are conducting a discussion, which is facilitated by the interviewer, on the key issues of the value chain survey.
Gross margin	The total sales revenue (income) minus the cost of goods sold, divided by the total sales income and expressed as a percentage.
Horticultural crops	Garden crops that include fruit and nuts, vegetables, flowers and medicinal plants.

Word	Definition
Information and communications technology	The integration of communication devices, applications and services, including computers and computer networks, mobile phones and television to enable users to access, store, transfer and manipulate information.
Internal rate of return	A metric that is used to measure the profitability of potential investments.
Knowledge broker	An individual or an organisation that develops relationships and networks with and between the producers and users of knowledge by providing linkages and knowledge sources.
Lead farmers	Farmers who lead farmer-to-farmer extension services, based on their agricultural expertise.
Learning management system	A software application that is used for the delivery, administration, documentation and reporting of electronic courses and training programmes.
Literature review	A critical assessment (evaluation) of the literature (information sources) related to the value chain survey, in order to identify what is already known about the area of investigation.
Livelihood	Individuals' ways of supporting their existence, both financially and in terms of their careers (occupations).

Word	Definition
Livelihood strategies	The combination of activities that people choose to perform, in order to achieve their livelihood goals, e.g. productive activities, investment strategies and reproductive choices.
Macro context of markets	The broad economic context in which the market operates.
Market analysis	The study of the demand and supply characteristics and actors for a particular product (e.g. maize), or a sub-sector (e.g. grains) within a defined geographic area.
Market opportunity identification	A systematic, participatory method for collecting market information to identify and select products and services for investment and agro-enterprise development.
Market strategy	A model that directs the way in which a producer will focus limited resources on the best opportunities, in order to increase sales.
Market survey	The systematic collection of market-related data (e.g. data on target markets and customers) from a population or part of a population to determine the present status of a situation, event or process.
Marketing	The process responsible for identifying, anticipating and satisfying customer requirements profitably.

Word	Definition
Marketing mix	A set of tactics and strategies that a company uses to promote its product in a particular market and that is made up of the so-called four Ps of marketing: product, price, place and promotion.
Marketing plan	A document (plan of action) that outlines the current market position of a company, as well as the activities involved in meeting specific marketing objectives for a particular period (e.g. a year).
Marketing strategy	A model that directs the way in which a producer will focus limited resources on the best opportunities, in order to increase sales.
Metric ton	A unit of weight that is equal to 1,000 kg.
Migrate	Relocate or resettle.
Misconception	A wrong conclusion, based on faulty facts.
Monetary policy	The policy by means of which the monetary authority (the Reserve Bank) controls the size and growth rate of the money supply in the country.
Mycotoxin	Any toxic substance that is produced by a fungus in food.
Net present value	The difference between the present value of cash inflows and cash outflows.

Word	Definition
Oligopolistic market situation	A situation in the market which numerous suppliers in a market compete to sell their product to a small number of buyers and their actions may affect the prices and costs of their competitors.
Opportunistic selling	Selling products at prices that are higher than their fundamental value.
Parameter	An element or a characteristic that defines, limits or controls a particular system or sets the conditions of its operation.
Pesticide	A toxic substance that is used to kill weeds and insects.
Plant propagation	The process of cultivating or creating new plants from sources such as seedlings, cuttings, bulbs and other parts of plants.
Plant propagation material	Plants and parts of plants that are used for plant cultivation or propagation.
Population	The entire group of persons or key informants that should be studied/ interviewed in the value chain analysis.
Primary data source	Written or oral information obtained from a direct witness of, or a participant in, an event or a process, e.g. direct accounts, correspondence and speeches.
Problem tree analysis	A planning tool that maps out the causes and effects of an identified issue or problem.

Word	Definition
Product grading	The process of sorting units of a product into defined classes or grades of quality according to specified standards.
Questionnaire	A list of questions that are asked to respondents (e.g. consumers of a particular product) to obtain specific information.
Ration	See: Feeding regime.
Remittance	Funds that expatriates send to their country of origin.
Retailer	A business that sells goods directly to individual consumers.
Return on investment	A measure of the profit of an investment, expressed as a percentage of the original cost.
Sample	A selected group that is defined from the population.
Secondary data source	Primary data that has been analysed and or processed, thereby providing second-hand information about an event or a process, e.g. books, journal articles, newspapers and collected consumer information made available by consumer research organisations.
Side selling	Selling products to another buyer, who is not part of the sales agreement.
Smallholder farmer	A farmer who owns a small plot of land, on which he/she grows self-sustaining crops, and relies mainly on family labour.

Word	Definition
Smartphone	A mobile phone that performs all or many of the functions of a computer, including Internet access and an operating system that can run downloaded applications.
SMART skills	Skills for Marketing and Rural Transformation.
Social capital	A network of social or economic institutions and individuals that cooperate to create collective value change.
Standard	A grade or level of quality to which products have to conform.
Subsistence farmer	A self-sustaining farmer who grows enough food to feed his/her family.
SWOT analysis	A framework that is used to analyse the internal strengths and weaknesses of a company or a project and the external opportunities and threats.
Tier	A level within the hierarchy of an organisation or a system.
Trade agreement	An agreement between two or more countries that stipulate the terms according to which goods and services can be exchanged.
Trend	A general direction, course or tendency.
Typhoid infection	A bacterial infection that can spread throughout the body and affect several organs.
Urbanise	Become more industrial or city-like.

Word	Definition
Value chain	A set of connected (linked) actors that work together to add value to a product and increase efficiency and competitiveness, while linking producers to processors and markets.
Value-added product	A products that has been produced or processed in a way that increases its value, e.g. processing wheat into flour.

Abbreviations

Abbreviation	Meaning
ACDI/VOCA	An international development (non-profit) organisation that promotes economic opportunities for cooperatives, enterprises and communities through the application of sound business practice.
ArcGIS	A geographic information system for maps and geographic information that can be used to create and use maps, analyse map information, compile, share and discover geographic data and manage geographic information in a database.
CPI	Commodity Price Index
BDS	Business development services
CIAT	International Center for Tropical Agriculture
CKW	Community Knowledge Worker
CRS	Catholic Relief Services
DFAT	Department of Foreign Affairs and Trade (Australia)
DFID	Department of International Development (United Kingdom)
FAO	Food and Agriculture Organization
G.A.P.	Good Agricultural Practice
GIS	Geographic information system
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
GPS	Global positioning system

Abbreviation	Meaning
ICT	Information and communications technology
IFPRI	International Food Policy Research Institute
IIED	International Institute for Environment and Development
IRR	Internal rate of return
IRRI	International Rice Research Institute
LMS	Learning management system
LSMS	Living Standards Measurement Study
M4P	Making Markets Work for the Poor
MEAS	Modernizing Extension and Advisory Services
MOI	Market opportunity identification
MSE	Micro and small enterprises
Mt	Metric ton
NGO	Non-government organisation
NPV	Net present value
PPM	Plant propagation material
ROI	Return on investment
SDC	Swiss Agency for Development and Cooperation (Switzerland)
Sida	Swedish International Development Cooperation Agency (Sweden)
SPS measures	Sanitary and phytosanitary measures
SSA	Sub-Saharan Africa

Abbreviation	Meaning
SWOT	Strengths, weaknesses, opportunities, threats
TBT	Technical barriers to trade
TOPS	Technical and Operational Performance Support
USAID	United States Agency for International Development, which provides economic and development assistance around the world.
USDA	United States Department of Agriculture

Resources

- http://www.premiumtimesng.com/news/top-news/200289-lagos-reopens-mile-12-market-clashes.html
- http://www.crs.org/sites/default/files/tools-research/guide-to-strengthening-business-development.pdf
- http://thenextweb.com/shareables/2011/01/31/real-future-store-the-supermarket-of-the-future/#gref
- www.ictinagriculture.org/ictinag/node/105
- http://labs.harvestchoice.org/2011/08/yield-reliability-room-for-improvement/

Other modules of the New Extensionist modules are:

1. Introduction to the New Extensionist
2. Extension Methods and Tools
3. Extension Programme Management
4. Professional Ethics
5. Adult Education for Behavioural Change
6. Knowledge Management for RAS
7. Introduction to Facilitation for Development
8. Community Mobilisation
9. Farmer Organisational Development
10. **The Role of Extension in Supporting Value Chains**
11. Agricultural Entrepreneurship
12. Gender in Extension and Advisory Services
13. Risk Mitigation and Adaptation

Other related modules developed by GFRAS are on:

- Evaluation of Extension Programmes
- Policy Advocacy for RAS