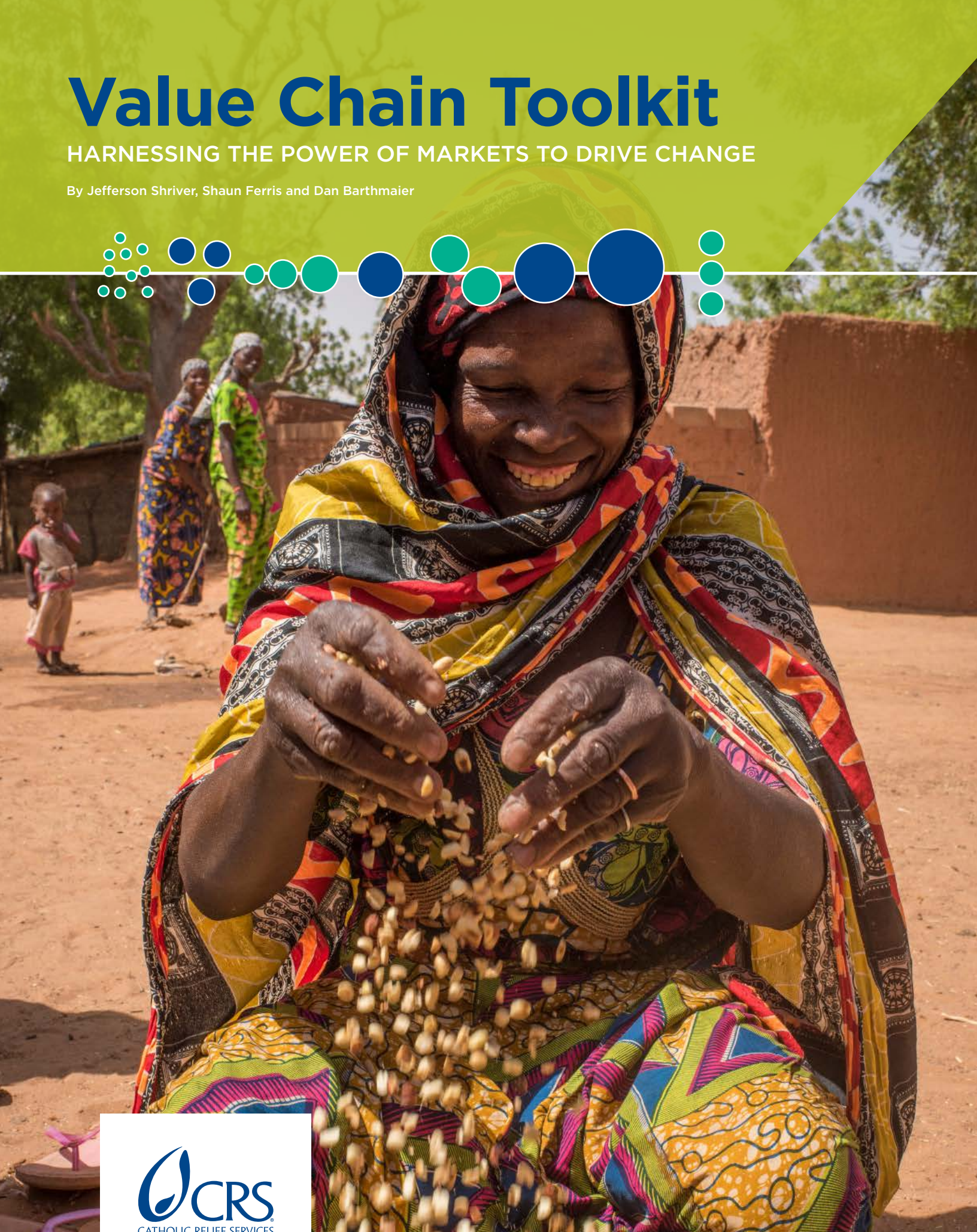
Value Chain Toolkit

HARNESSING THE POWER OF MARKETS TO DRIVE CHANGE

By Jefferson Shriver, Shaun Ferris and Dan Barthmaier



CRS
CATHOLIC RELIEF SERVICES

Since 1943, Catholic Relief Services has held the privilege of serving the poor and disadvantaged overseas. Without regard to race, creed or nationality, CRS provides emergency relief in the wake of natural and man-made disasters. Through development projects in fields such as education, peace and justice, agriculture, microfinance, health, HIV and AIDS, CRS works to uphold human dignity and promote better standards of living. CRS also works throughout the United States to expand the knowledge and action of Catholics and others interested in issues of international peace and justice. Our programs and resources respond to the U.S. Bishops' call to live in solidarity—as one human family—across borders, over oceans, and through differences in language, culture and economic condition.

Cover photo: In Angoual Tanko village in Niger, women are members of a peanut-processing business, using tools and training provided by Catholic Relief Services' PASAM-TAI project. The oil from peanuts is sold in the community, and profits are shared amongst the members. *Michael Stulman/CRS*

Catholic Relief Services
228 West Lexington Street
Baltimore, MD 21201-3443 USA
1.888.277.7575

www.crs.org

Value Chain Toolkit

HARNESSING THE POWER OF MARKETS TO DRIVE CHANGE

By Jefferson Shriver, Shaun Ferris and Dan Barthmaier

DECEMBER 2018

CONTENTS

TABLES

FIGURES

Portrait of producer Juan Hurtado seen at his plant nursery in Las Delicias Community, San Ramón, Matagalpa, Nicaragua. *Oscar Leiva/Silverlight for CRS*

CRS Value Chain Tool Kit

The Value chain tool kit provides methods to support male (♂) and female (♀) farmers in the "Build to Grow to Prosper" phases of the CRS Pathway to Prosperity (**Figure 1**). Through this work CRS is striving to achieve industry leadership in value chain service delivery and influence that is gender-sensitive. Value chain programming is now synonymous with agricultural development and CRS aims to adopt this approach across our project portfolio.

The value chain approach builds on many years of work with farming communities across the world and this guide has been developed to provide greater consistency in theoretical framework and program execution. Given the range of countries where CRS works, value chain practices vary from one country or region to the next, and our field staff capacities have tended to be stronger in the Recover and Build segments of agriculture than in those related to Grow and Prosper. Given the increasing pressure of farmers to commercialize and the competitiveness in the agricultural development sector, there is an urgency for development organizations to provide better business advise to commercializing smallholder farmers. This requires us to modernize our rural advisory methods, services and strategies so that we can assist millions of ♀♂ farmers to increase their productivity and engage in modern markets, in ways that are profitable, sustainable and socially equitable. The CRS Value Chain Tool Kit serves as a foundation for this upgrading process.

CONTENT SUMMARY

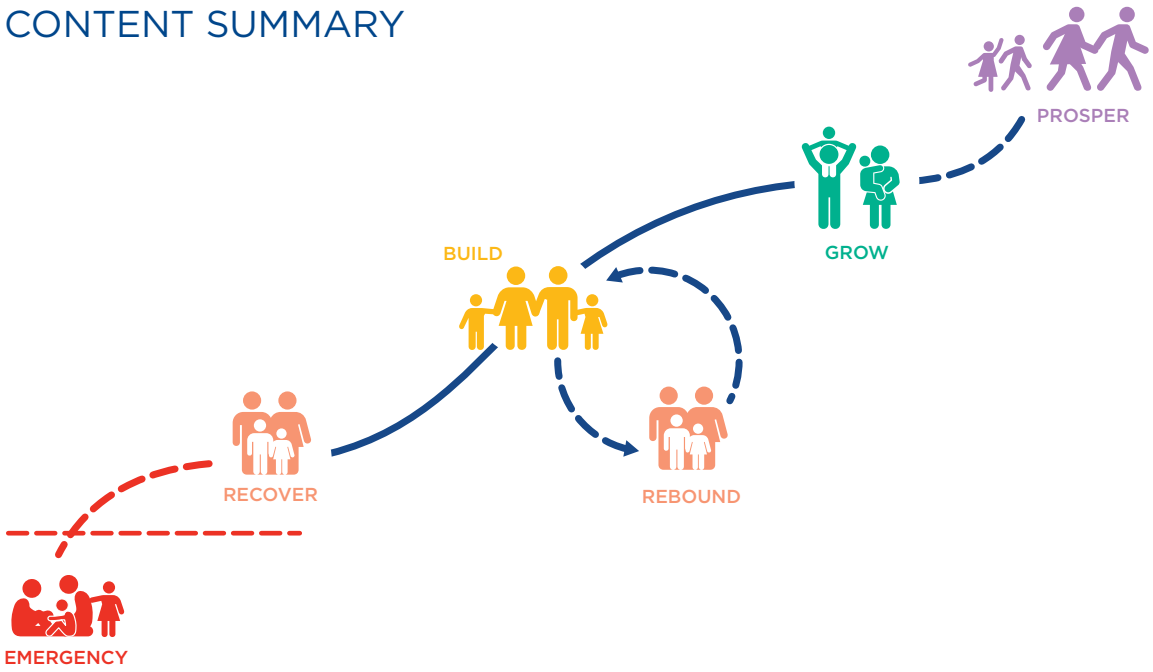


Figure 1. Pathway to Prosperity

Much has been written on value chains in the last 15 years. Instead of writing entirely new material, this Tool Kit, pulls together some of the best practices from leading practitioners working on value chains, including CIAT's[1], German Cooperation (GIZ)[2] and the Global Forum for Rural Advisory Services (GFRAS)[3]. The Tool Kit is divided into two parts: Value Chain Introduction and Program Design (chapters 1–5), and Value Chain Program Implementation and Relationship Brokerage (chapters 6–10).

1 CIAT's Territorial approach to agro-enterprise development and Links methods
2 GIZ – Value links Ref
3 Ferris, S. and S. Irwin. 2016. New extensionist learning kit. Module 10: The role of extension in supporting value chains. Global Forum for Rural Advisory Services (GFRAS). Lindau, Switzerland.

Portrait of Everth Esteban Rodríguez Jarquín, 20, from El Ocote #2 Community in Siuna, North Nicaragua seen in his family cocoa plantation. Everth is part of the PROGRESA CARIBE program from Catholic Relief Services that helps youths to enter the value chain of cocoa production. The program is targeting 28 youths in the area. *Oscar Leiva/Silverlight for CRS*

Chapter 1
Introduction to Value Chains

SESSION OUTCOMES: AFTER COMPLETING THIS SESSION, YOU SHOULD BE ABLE TO:

- Identify marketing strategies and describe key elements of a value chain.
- Identify market types

This chapter provides the reader with a rapid overview of the value chain concepts, language and components. If you already know the terminology and ideas, you can skip this chapter. If you want to refresh on the actors, structure and linkage methods for value chains, these short sessions will provide you with the basic ideas and terminology.

VALUE CHAIN THEORY AND DESIGN

SHIFTING FROM FARMER PRODUCTION TO VALUE CHAIN APPROACHES

Development projects and extension teams can no longer simply assist farmers to produce more, modern advisory services need to identify the commercial goals of ♂♀ farmers and help them to realize those ambitions. This means that both field agents and farmers need a range of skills that will support upgrades in organization, productivity and business acumen. Project implementation needs to make the roles and responsibilities on both sides of an upgrading strategy clear from the outset. The advisory services need to fully understand the farmers and the farmers should play a lead role in their transformation.

Wherever possible, agricultural services should plan around commercial gains and ideally services should transition from free to fee based, so that all parties are investing at a level, that will lead to sustainable outcomes. Farmers and development agencies who fail to understand the business framework, are unlikely to maintain project supported gains when these services are withdrawn. If farmers cannot access or afford the inputs and market networks that were facilitated by field agents, they can rapidly slide back to low levels of production and sales. The early gain and backslide story is a recurrent problem with many projects, we need to understand this challenge and provide more resilient

approaches so that farmers take on new ideas, technologies and skills that they want to invest in, in the future.

The Value Chain method is a systems approach that seeks to understand the needs of connected "core chain actors" (i.e., those who buy and sell products from farmers, traders, processors, wholesalers, and retailers, as well as consumers) and to identify the key business development services—such as input suppliers, advisory services, and financial services—that support the competitiveness and efficiency of value chain operations.

A value chain approach can increase gender equality and women's empowerment or it could create more inequities. A gender-sensitive value chain approach can help reduce food insecurity as the *State of Food and Agriculture 2010-2011* determined that women's yields could grow by 20–30 percent if the gender gap in accessing agricultural inputs were closed. It can strength value chain efficiency as value chains are highly dependent on strong linkages and positive collaboration among actors, and women are important stakeholders all along value chains, though they are often invisible or overlooked. It can shift gender relations, increase or decrease women's access to and control over income (Rubin and Manfre, 2014) and/or lead to shifts in the balance of decision-making power at household and community levels given changes in men's productive roles and earning capacity.[4]

This approach is gaining favor with donors, companies and development teams, as the principles of the approach can be applied to a broad range of products, locations and types of farmers. The approach can be used for vulnerable farmers who are seeking basic market linkages with a local informal buyer and support more sophisticated producer organizations selling high quality produce to many formal buyers. The value chain approach involves more than solving specific farmer-based problems. It builds the capacity among business partners to address common constraints and builds relationships between individual actors, organizations, and firms that connect informal and formal worlds. When the value chain approach is offered to smallholder farmers, the process seeks to:

- identify markets that ♀♂ farmers can access and supply;
- identify value chain partners to support market access for smallholder farmers;
- enable value chain partners to become more competitive within a target value chain;

4 http://www.fao.org/3/a-i6462e.pdf; https://www.enterprise-development.org/wp-content/uploads/WEE_in_Market_Systems_Framework_final.pdf; https://www.mercycorps.org/sites/default/files/Gender%20and%20Market%20Development_Mercy%20Corps.pdf

MARKETING STRATEGIES

FROM MARKET LINKAGE TO VALUE CHAINS

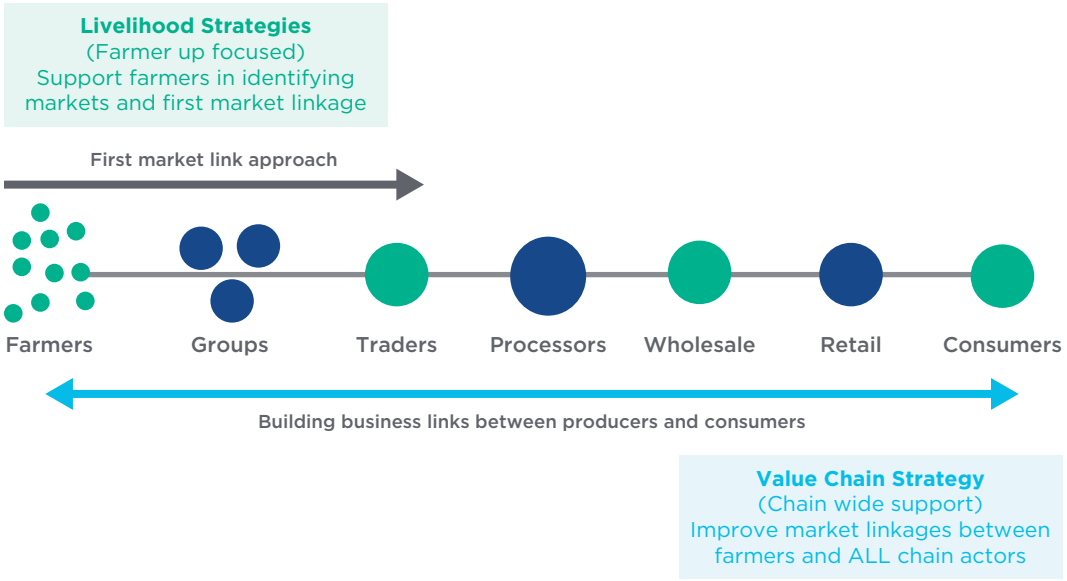


Figure 2. Marketing Strategies

Seeking stability: When working with more vulnerable farmers the standard approach focuses on assisting farmers to form groups. These groups are provided with technical assistance and often given improved technologies, such as free seeds and fertilizer to produce more. These farmers are then helped to identify the first level of market, which is typically a local buyer in the nearby market or a trader. 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 stabilize farming families and build their resilience. This is essentially a **Livelihood strategy**, it supports farmers in achieving basic livelihood outcomes, e.g. productive activities, investment strategies and reproductive choices, **Figure 2**.

Seeking better business relations: Value chain upgrading is a much broader approach that identifies relationships between market actors that link producers with consumers. Value chain analysis enables the upgrading team to bring together interested business partners, identify bottlenecks in the market system and find ways to improve their competitive advantage. Farmers are often a weak link in the chain and therefore value chain strategies will assist farmers, but this work is done with the ambition of improving roles and business relationships so that outcomes are developed within a more sustainable business framework.

There are various terms to describe the marketing linkages between farmers and consumers, such as *market chains, supply chains,* and *value chains.* These terms are used interchangeably and describe how actors work together to support the flow of goods, knowledge, and finances between the people.

WHAT IS A VALUE CHAIN?

A **value chain** is a set of connected activities that work together to add value to a product while linking buyers, sellers, and markets. An **agricultural value chain** can be defined as the goods, services, and processes involved in an agricultural product moving from the farm to the final customer. This value chain is shown in **Figure 3**.

BASIC THREE LEVELS OF A VALUE CHAIN

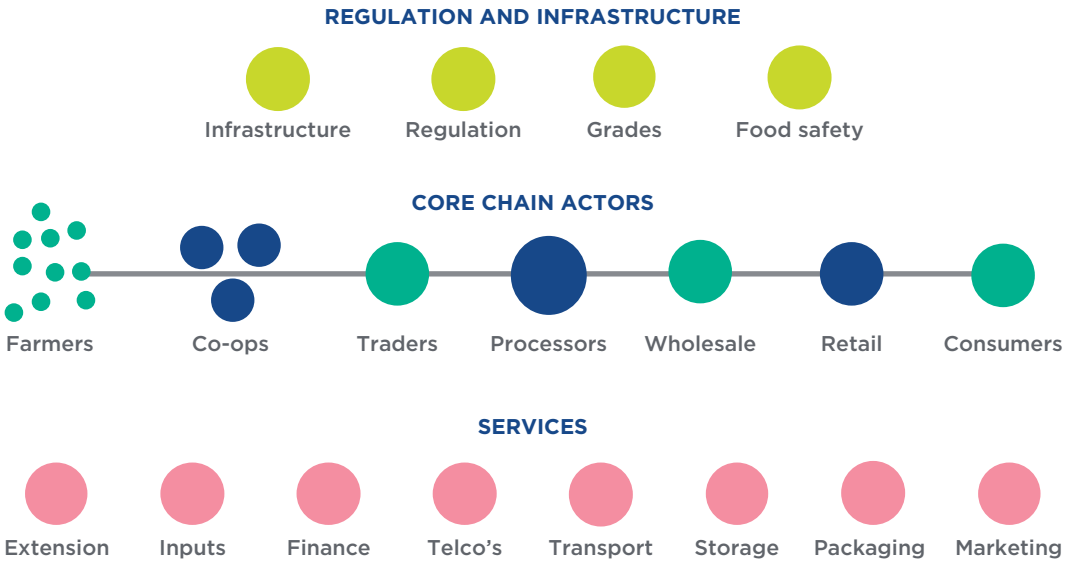


Figure 3. The Value Chain Structure with its three levels of actors

Value chain actors refer to the individuals, companies, organizations, and associations with a market chain or value chain that are involved in regulating, producing, buying, selling and providing services that enable products to move from farmers to markets where they are purchased by consumers. Depending on their position within the chain, or association with the chain, all the actors are seeking to capture market share, deliver maximum value and increase profit margins. Gender dynamics within the local context will affect male and female actors' ability to capture market share, deliver maximum value and increase and benefit from profit margins.

MARKET LINKAGE TO VALUE CHAINS

All market-based projects begin with some form of diagnostic or scoping assessment to determine the market demand and structure of a specific product(s). Based on the results from this analysis, the development team set up meetings to bring together like-minded ♂♀ actors along a market chain to explore prospects for developing improved production, sales and business linkages. The value chain process includes several actors from the core chain, as well as business development services (BDS), and as required regulatory agencies. Value chains can include inclusive business model where a lead firms in the chain seeks to change their business strategy to support long-term trading links with low income smallholder farmers.

The role of the value chain team, is to identify specific markets and build business relationships between key actors, such as farmer organizations with their buyers and develop links to services so that farmers can access the necessary inputs and finance to sustain and scale their business operations. Value chain agents (VC agents) may start a project by selecting a product(s) and linking farmers with first order buyers. However, as farmers build their capacity, the VC agents will work to improve chain-wide,

Cured vanilla from smallholder farmers in Madgascar. *Jefferson Shriver/CRS*

systems-level operations including gender biases, so that more people benefit from the upgrading process and that more durable trading relationships are established.

TYPES OF AGRICULTURAL MARKETS

Agricultural markets range from small local markets, where farmers sell directly to local consumers, up to globally integrated modern markets, where thousands of farmers sell millions of tons of produce into mass consumer markets. In between, there are many levels of markets and market chains that make up the global food system. In value chain upgrading, you need to consider a range of market types and the benefits and disadvantages of these market types and, through dialogue with ♀♂ farmers, help them to make decisions on the markets that offer them the best returns at an acceptable risk. In the following sections, the most important informal and formal agricultural market types will be discussed.

INFORMAL MARKETS

For most smallholder farmers in developing countries, the most accessible markets are informal markets. These markets are termed "informal" because they exist beyond the tax system and no records are maintained. Informal markets may trade up to 80–90% of agricultural goods in developing countries and so are important markets for smallholder farmers. Informal markets include produce transactions such as farm gate (on the farm),

roadside sales; village markets; rural assembly markets; and sales within the main urban wholesale and retail markets.

Informal markets are attractive to smallholder farmers, who generally get paid in cash on delivery, and have few, if any, rules and regulations. There are no formal grades, or standard measures and no traceability systems and farmers set prices based on local supply and demand conditions. The lack of grades and standards benefits small volume, low-quality suppliers and buyers, who may be more interested in value and quantity, than quality.

Although basic in structure, informal markets handle large volumes of produce and are generally highly efficient in terms of produce throughput. These markets are managed by trading associations that maintain supplies and often manage price volatility through a tight network of traders. Efficiency within these markets is also surprisingly high, as no enforcement of grades means that postharvest losses are lower than formal markets since there is considerable flexibility in the quality of goods that can be sold. There are, however, some disadvantages of in informal markets.

- Weak governance leads to price fixing and lack of food safety.
- Lack of investment by market managers, often leads to crowded and unsanitary conditions.
- Lack of a business upgrading limits options for investment and growth.

In the following sections, the different types of informal markets will be outlined and particular barriers that are likely to limit female participation more than males in the different markets are highlighted

Farm gate markets: are the simplest market type, farmers sell their products directly from their farm to their neighbors or traders, who travel in search of goods to buy, or to local buying agents. Farm-gate markets are convenient for the farmer as they have no marketing cost, such as loading or unloading and there is not time lost in reaching agreements with the other members of a marketing group before the sale is made. Women are likely to sell more at farm gate markets, particularly if women face mobility constraints. Depending on the context, when women relinquish their product for sale at a market further away to their male partner, the male partner may retain some or all of the income. Prices for goods sold at the farmer are often low.

Informal assembly markets: Informal assembly markets involve farmers and small local traders coming together regularly to sell their goods to larger traders. In other words, the buyers in assembly markets are traders, not consumers. Assembly markets are normally found in rural areas or in small towns close to farming areas. Many assembly markets are held only once or twice a week and some are held in the harvest season only. Depending on the context, women may face cultural constraints that limit females engaging with traders, who are often male. Furthermore, the timing of the assembly market may conflict with women's domestic responsibilities that may limit their ability to meet with traders.

Informal wholesale markets: Informal wholesale markets, which are generally found on the outskirts of larger towns and cities, are markets where traders (and a few farmers) deliver produce in bulk. Retailers[5] come to these wholesale markets to buy bulk goods, which they make into smaller lots to sell in their stalls and shops. In addition to the potential barriers mentioned above, females' lack of access to transportation and limited production levels resulting from inadequate access to inputs, technologies and assets (land) may hinder their engagement.

5 **Retailer:** A business that sells goods directly to individual consumers.

Informal retail markets: Informal retail markets are markets where consumers and small businesses (such as restaurants and street-food vendors) buy their daily or weekly supplies of food. It is possible for farmers to sell in bulk directly to retail markets, but in order to do so, they must work out a system with the retailer. Wholesalers may try to prevent farmers from selling directly to retailers. For women, direct sale to informal retail markets may also be hindered, depending on the context, if females are not organized in associations that aggregate their main key crops.

FORMAL (MODERN) MARKETS

Formal markets consist of all the businesses, enterprises, and economic activities within the agricultural and food sectors that are structured, monitored, protected and taxed by government and or adhere to internationally recognized standards, such as the **Codex Alimentarius.**[6] Formal markets systems often fall under specific private and public-sector food safety regulations.

In addition to the more quantified legal framework, formal or modern markets generally set clear quality standards and grades for their procurement or buying approach. Purchasing is often organized around a consistent supply in terms of quantity, quality and frequency. These terms and conditions are stipulated in some form of buying arrangement, such as an agreement of sale, or a contract.

Farmers and farmer organization, who sell into formal markets, must meet these standards if they are to maintain the business relationships. To engage with these more regulated markets, farmers need to be organized and have the means to aggregate sufficient quantities of consistent quality produce to maintain the demand cycle. Failure to comply with the standards has consequences, meaning that the buyer may reject a consignment of goods or will apply a discount on an agreed price as compensation when farmers do not meet the required agreements.

As formal markets are seeking more defined products, they are also more competitive. Formal buyers do not always offer higher prices compared with the informal sector. However, they generally offer more consistent pricing methods, higher volumes and extended seasonal buying. The following are typical characteristics of formal markets:

- Produce must meet regulated quality standards, and food safety regulations are increasing.
- Information on prices and volumes is recorded and shared.
- Produce is traceable.
- Formal market owners invest in infrastructure and storage systems.
- Sanitation is monitored throughout the market system.

Despite the additional requirements and risks, there are many advantages for farmers to sell into formal markets. These markets offer clear market signals on procurement, long terms sales, more transparency in terms of trade and opportunities for developing long-term, trust-based trading relationships between farmers and buyers. Formal markets are also attractive to consumers, as they focus on produce quality, sell produce using grades and standards, and have legal enforcement of these systems.

The higher levels of regulation in formal markets can at the same time deter smallholders. The more rigorous terms and conditions in formal market sectors tend to favor larger farmers and, if smallholder farmers want to engage with these markets, they need to be

6 **Codex Alimentarius:** A collection of internationally recognized standards, codes of practice, guidelines, and other recommendations relating to foods, food production, and food safety.

well organized and fully adhere to the market requirements. For females, the constraints are often greater as females traditionally have less market bargaining power given their limited inclusion in contracts and underrepresentation in organized groups resulting from high membership requirements and cultural norms on females' public role[7]. Value chain teams can help farmers access these more lucrative markets, and work with formal buyers to develop more inclusive business models that have a better appreciation about smallholder options and their constraints. In the following sections, different types of formal markets will be discussed.

Food processing markets: Higher urban incomes are changing consumer food habits towards more processed and packaged foods. In the food and beverage industries, processors whether they are small and medium sized enterprises (SME's) or larger established companies, offer farmer groups, and traders robust new markets and the prospect for long-term stable business relationships.

Feed markets: Globally, we are eating more meat and milk products and this creates a growing demand for animal feed products. Livestock feed processors require sources of both carbohydrates and protein in their feed products and formulations, which offers farmers the opportunity to grow a range of crops, including maize and soybean, to supply the feed processor markets.

Supermarkets: As countries urbanize people want to buy in convenient, one-stop shops. Supermarkets enable consumers to buy a large variety of different types of goods at the same time. The food is attractively packaged and of good quality. In developing countries, supermarkets serve mainly middle- to higher-income urban people. Farmers can sell directly to supermarkets, but they must meet strict volume and quality requirements.

Hotels and restaurants: Urbanization and rising incomes leads to changes in diets, with urban consumers buying higher-quality and higher-value products, such as vegetables, meat, and dairy. Urban centers also concentrate large numbers of consumers whose lifestyle involves buying cooked meals at hotels and restaurants. To ensure quality chefs often work directly with farmers or with reliable suppliers of high-quality produce. The higher value of these markets offers new opportunities to farmers to sell their goods at better prices to buyers with more income.

Export markets: Examples of export trade traditionally included a mix of food and fiber products, such as coffee, cocoa, tea, tropical fruits, nuts, and cotton. This list is expanding as the trade in agricultural produce is becoming ever more globalized with goods moving in all directions. The global trade in being fueled by the consumer demand for the year-round supply of all food products, which requires processors and retail outlets to have suppliers from across the world to provide their fullest inventory of fresh goods throughout the seasons.

WHO ARE THE MAIN ACTORS IN AGRICULTURAL VALUE CHAINS?

As shown previously in **Figure 3,** value chains are made up by a combination of people working closely together to move, aggregate and add value to a product, as they link producers, traders and processors with markets. There are three main levels of actors.

- **Core value chain actors**: who physically buy and sell a product and link farmers and consumers.
- **Business development services**: which enable value chain actors to trade efficiently.

7 The barriers with the informal markets are applicable to formal markets.

- **Regulatory agencies**: which support the policies and standards within value chains.

CORE VALUE CHAIN ACTORS

The core value chain actors, include farmers, processors and traders, who perform the functions required to produce and market agricultural products. After production, each of the core value chain actors physically sells or buys the product. The number of ♂♀ actors can range from two or three to ten or fifteen separate entities spanning multiple transactions. A value chain can be local—when farmers sell to nearby traders and retailers—but with modern market chain management, many value chains are national or span countries and continents, see **Figure 4** for the basic structure.

WHAT TYPE OF MARKET LINKAGE IS BEING CONSIDERED?

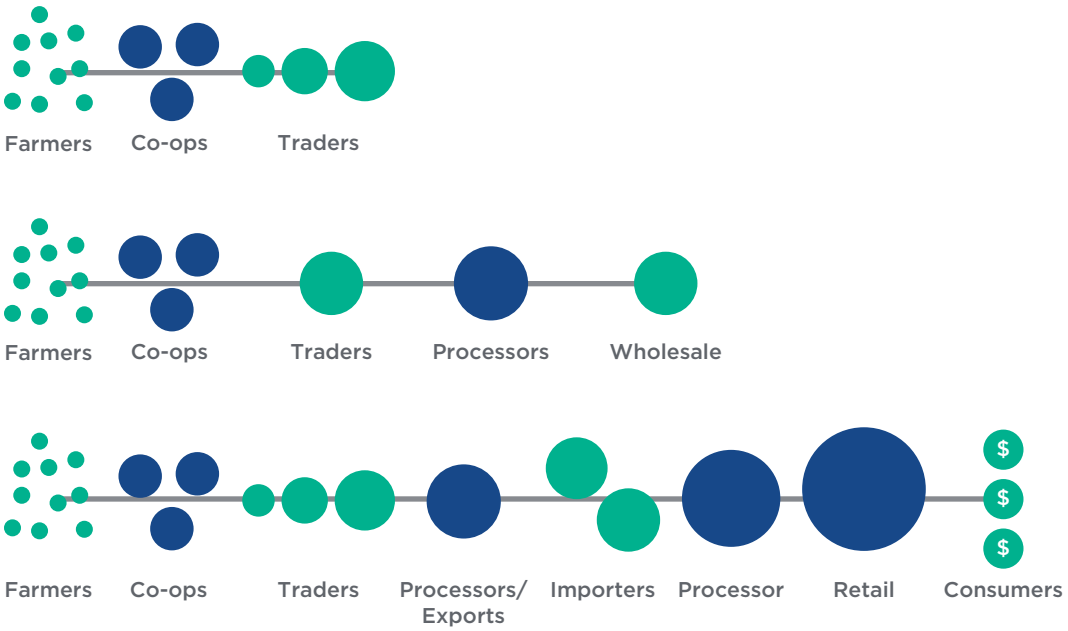


Figure 4. Short and Long Value chains

The basic roles of the core chain actors are illustrated above, which explains the roles of each of the core chain actors in the value chain. Remember, given the context, ♀♂ can be any of these core chain actors so when reading about them below, think about the gender and age differentials that evolve given gender norms on roles, responsibilities, and relationships and how this may affect linkage across the core chain actors.

Farmers: Farmers grow crops or raise livestock, and they or their family members do the initial processing (harvesting, drying, sorting, etc.). They occasionally sell directly to consumers (often other people in their village), but more usually they sell to traders.

Collectors: Collectors are small, local traders, who buy directly from individual farmers. They may buy some produce from many farmers and store it until they have enough to sell to a larger trader or processor. Collectors have limited capital, trade small volumes and may face crop loss due to pest, diseases, and toxin growth. They may use motorbikes or may own or rent a small truck.

Processors: Processors, who transform the product in some way, include millers, feed manufacturers, butchers, leather workers, coffee roasters, juice makers, canners, and

companies that make potato chips or that package frozen food. Processors vary from small household enterprises to big firms. They can be located in rural areas or in a town or city, and they may use traditional or modern technologies.

Wholesalers: Wholesalers deal with much larger volumes than collectors. They own or rent a bigger vehicle and have their own storage warehouses. They buy most of their supplies from smaller traders or processors, but some also buy directly from farmers. Wholesalers supply retailers in towns and cities.

Retailers: Retailers sell products to consumers. Supermarket chains are large companies that handle big volumes of many different products. In contrast, small shops and market vendors sell much smaller volumes and fewer goods, and do not keep sizeable stocks.

Consumers: Consumers, who are at the end of the value chain, are the people who buy and use the product. They include the end users, who eat or drink the food, or wear clothes made of wool or cotton. Consumers also include companies that use the product to make something else, such as a restaurant that uses peanut oil to fry food.

BUSINESS DEVELOPMENT SERVICES

These are people and organizations that support the production, supply, and marketing of goods, without owning the product. They provide a wide range of functions including input supply, advisory services, infrastructure and finance. Business development services are essential in supporting the core market chain actors in performing their commercial functions. These services are likely to be less accessible to female actors and if accessible, the services may not be tailored to females or other vulnerable group needs. Examples of business development services include:

Input suppliers: Input suppliers provide the key products that farmers need to grow crops and raise animals, including seeds, agro-chemicals, veterinary medicines, irrigation pumps and pipes, farm tools, equipment such as threshers, and spare parts. In other words, input suppliers essentially provide all the basic materials and equipment that farmers need for production.

Communication services: Smooth information flow is vital for the proper functioning of a value chain. Communication may occur face-to-face, by telephone or email, on the Internet, or by means of a traditional postal service. Mobile phones and email are becoming more important in the developing world. Many buyers now purchase only from suppliers who have a mobile phone.

Rural advisory services (RAS): Farmers and other actors in the chain need specialized information and advice about production, post-harvest, processing, marketing, management, finances, and business strategy. There are many types of RAS, including (i) Agricultural extension officers, (ii) Lead farmers, (iii) Non-government organization (NGO) field agents, (iv) Private sector field agents and specialized consultancy firms.

Market information services: Farmers need various types of market information including:

- **Spot prices:** The price of the product at a certain place at a specific time.
- **Price trends:** Price variations from place to place and from season to season.
- **Price premiums:** The prices offered for specific grades or standards of produce, or for larger or smaller amounts of the product.

This information helps farmers make more informed decisions on what to grow, where to sell, when to sell, and how to sell their products. In addition, farmers also need other types of market information, including links with potential buyers, information on product quality and quantity, and frequency of delivery, as well as payment conditions, such as how the payment is made (e.g., cash, check, or bank transfer) and when the payment will be made (e.g., on delivery, end of the month, after 30 days, etc.).

Financial services: Financial services provide the capital that actors in the value chain need to keep their business viable. Farmers need credit to buy seeds and fertilizer; pay laborers to plough, weed, and harvest; buy sacks and crates; pay to mill their grain; and take produce to market. Similarly, traders and processors also need credit to buy produce, pay for transport and storage. Credit providers include local moneylenders, savings clubs, microfinance institutions, and banks. Other financial services include savings, insurance, leasing, warehouse receipts, and loan guarantees.

Research support: Research provides farmers with new products and better methods to produce. New crop varieties may be higher yielding, resist pests and diseases, have higher nutrient content, are less labor intensive or tolerate drought. New farming methods may enable farmers to reduce their workloads, increase their productivity and/or reduce their risks and costs. Research also helps farmers become more competitive, improve their quality, reduce their losses, or add value to their output.

REGULATORS IN THE AGRICULTURAL VALUE CHAIN

"Key regulators" refers to the actors/role players and agencies on Level 3 in the value chain that set formal and informal policies, **standards,**[8] and legal regulations that govern the way in which the core actors and business service providers conduct their businesses and deliver their products or services. These rules and standards are often applied through public sector agencies, such as ministries of finance, ministries of agriculture, standards bureaus and tax authorities, or customs officials. These regulators are often engaged in providing licenses, registering groups to buy and sell specific goods and enable businesses to access basic services, such as power, water, roads and land. In addition to government regulation, there is also an increasing number of private sector standards and certification systems that set rules to suppliers about food safety and food production systems.

The importance of regulators in the value chain is frequently overlooked, although they can play a critical role in the functioning of markets and the ability of agri-enterprises to participate in the value chains successfully. They can also create gender barriers such as preventing women from working or running a business. The legal framework is a critical part of operating modern markets, as this allows distant producers and traders to operate together within a system of **arbitration**[9] that allows for rapid **dispute**[10] settlements if trade agreements are not met.

Food safety regulation: In many developing countries, production and food safety standards are rarely monitored, inspected, or enforced. In this unregulated situation, there are few quality standards or standardized methods, agro-chemical limits, or **product grades.**[11] Products are traded using local measures, which vary according to product, market type, and location.

8 **Standard:** A grade or level of quality to which products have to conform.
9 **Arbitration:** Settling a dispute between parties by a neutral third party (known as the arbitrator) without taking court action.
10 **Dispute:** A conflict in the legal or business environment.
11 **Product grades:** The process of sorting units of a product into defined classes of quality according to specified standards.

Although most countries are part of a global agreement, known as the Codex Alimentarius, few developing countries put these measures into practice. Sanitary conditions at the farm or at points of sale along the chain are generally not inspected regularly, which means that handling conditions are subject to various forms of risks and hazards associated with infections, contaminations, and variable produce quality. For the most part, conditions are such that food remains fit for consumption, but the lack of standards in the food systems has risks for consumers.

The most important driver currently, for improving production and food safety enforcement is based on private sector and international **trade agreements.**[12] Farmers who want to sell their goods into modern markets, at home or abroad, must meet the food safety and trade agreements.

Food safety issues in Value chains: Markets across the world are changing rapidly and consumers are becoming increasingly aware of the benefits of good, wholesome food in their diets and the hazards of low-quality and contaminated food. If farmers want to sell their produce in formal markets, they need to be aware of the market requirements and the penalties if food products fail to meet standards.

Organizations such as the United Nations Food and Agriculture Organization (**FAO**) and the United States Department of Agriculture (**USDA**), work with Governments in developing countries to build capacity of national food laboratories, so they can monitor and manage standards in food production systems. This work aims to ensure that a nation's food supply is safe and finds ways to avoid infections caused by unsanitary food and water sources which can lead to **cholera**[13] and **typhoid infections.**[14] Poor storage may also lead to hazards, such as exposure to **aflatoxin**[15] and **mycotoxins**[16] and chemical buildup.

There is also a need to monitor foods for contamination by heavy metals, such as lead, mercury, and cadmium, which are occasionally found in food. There is also concern about improper use of **Pesticides**, particularly in countries with unregulated or unmonitored food-production systems. Pesticides are used in many agricultural operations, from fruit and vegetable production to animal-feeding operations.

GLOBAL G.A.P. To address the food safety concerns, GLOBAL G.A.P. was developed by European retailers to address consumer concerns for food safety; environmental impact; and the health, safety, and welfare of workers and animals. Their solution was to integrate their own standards and procedures and to develop an independent certification system for Good Agricultural Practice (G.A.P.).

MARKET LINKAGE TERMS AND METHODS

Although all farmers engage with markets, there are millions of farmers who do not have strong marketing skills, and many are not associated with business organizations that could help improve their market performance. In this section, you will learn about the types of marketing strategies that are common with **smallholder farmers**[17] in rural areas, and different ways in which extension agents can help farmers gain a better understanding of their market options.

12 **Trade agreement:** An agreement between countries that stipulates terms by which goods and services can be exchanged.
13 **Cholera:** An acute infection that results in diarrhea, severe dehydration, and death.
14 **Typhoid infection:** A bacterial infection that can spread throughout the body and affect several organs.
15 **Aflatoxin:** A class of toxic compounds that are produced by certain molds in food and that may cause liver damage.
16 **Mycotoxin:** Any toxic substance that is produced by a fungus in food.
17 **Smallholder farmers:** Farmers who own small plots of land on which they grow food crops and rely mainly on family labor.

Opportunistic market sales: The majority of smallholder farmers in emerging economies produce sufficient food crops for their family needs. They work as individuals and are not part of a marketing group with production targets. When harvests are good, these farmers sell small amounts of surplus produce of mixed quality to the nearest buyer, immediately after harvest, to resolve their cash needs and buying food later in the season at a higher cost. These farmers typically sell from their farm gate to local brokers or traveling traders. This passive or opportunistic sales has few costs and minimal risks, but also attracts the lowest price for their goods. These farmers are often referred to as price takers. It is common to find that these farmers do not know their production costs and they may be selling their goods for less than what they have paid to produce them.

Informal sales agreements: For many farmers, a legal sales agreement is not an attractive option because it increases their marketing costs and requires a level of commitment to their co-farmers and buyers that they are not prepared to keep. Farmers are often reluctant to take on these responsibilities, as they prefer the flexibility of either not selling, or selling to any buyer who offers an acceptable price, or buys at a time that is most convenient to them.

Smallholder farmers, who are more organized and who make plans to sell through their **cooperatives,**[18] often set up basic sales agreements with buyers. These sales agreements are not formal or legal documents, but they do help farmers to coordinate their activities with other farmers and assemble or combine their goods to sell to larger buyers. These informal sales agreements are often made on a handshake or through a letter of intent to sell.

Buyers have learned that it is difficult to force informal farmers into legal contracts and have opted to offer farmers a sales agreement that focus on a product volume. Few buyers set fixed price agreements, as farmers are very price sensitive, so agreements generally stipulate that prices will be negotiated at the time of sale. These basic market agreements are a helpful first step in strengthening trading relationships. They allow buyers to provide specifications of sales, in terms of volume and quality aspects. They also allow farmers to set a target with the buyers, thereby helping with their internal production and marketing plans. The advantage of the informal sales agreement is that it has no legal commitments and can be set up quickly. The disadvantage of this approach is that it can easily be broken, as farmers fall back into **opportunistic selling**[19] or **side selling.**[20] Females are also disadvantage in engaging in this marketing strategy given limited participation in cooperatives and access to assets, inputs and technologies that contribute to the quality standards and production levels agreed upon.

Contract farming and marketing: Contract farming provides smallholders with a direct sales agreement into a target market. The agreement is typically based on specifications such as price, quality standards, and sales volumes. Contracting has many variations, but is generally supported by an intermediary firm, who secures the market and then sources produce with smallholders to increase supply volumes and control quality. These intermediary firms often support financing, technology, and produce logistics, which significantly reduces risks for smallholders.

Contracting is used in many formal trading arrangements for goods such as coffee, cocoa, cotton, and high-value horticultural produce for both domestic and export markets. As countries urbanize and food systems formalize, contracting is also used

18 **Cooperative:** An organization that is owned and run jointly by its members (e.g., a group of farmers) who share in the profits.
19 **Opportunistic selling:** Selling products at prices that are higher than their fundamental value.
20 **Side selling:** Selling products to another buyer who is not part of the sales agreement.

to meet food quality standards in food supply chains. The rise in formal food markets, such as fast food restaurants and supermarkets, has also increased contracting farming and marketing. Contracts are attractive to farmers as they offer (i) more consistent access to markets, (ii) competitive pricing, which, may offer farmers slightly below prevailing market prices, (iii) access to new knowledge and technologies (iv) access to finance and (v) improved social capital through organizations that offer learning and future market opportunities.

The disadvantage of contract farming is that smallholder inclusion is often limited to startup phases, until the market is filled by larger, more competitive farmers. When smallholder farmers participate in contract farming, there is often low female participation resulting from limited access to or ownership of land, control over labor and cash resources, and not having a bank account. Smallholder farmers often carry the most risks and, if they accept loans to support production and the crops fail, they need to find some means of paying off debts, which may lead to selling their land and valued assets. Furthermore, farming contracts have been shown to contribute to intrahousehold conflict through productive resource reallocation between contract farming requirement and subsistence farming priorities and decision on control over income, particularly payment to men for work largely done by women.

Vertical integration: is a business arrangement in which a single company owns the activities along a supply chain. In the classical vertical integration systems, a company owns the product from production to retail. A more common approach to vertical integration that includes smallholders is through production and marketing contracts, where farmers and businesses are locked into exclusive, long-term business arrangements to produce and supply a product. With these types of contracts, it is important to consider men's and women's ability to negotiate and manage relationships, advocate for change in the business enabling environment, access due process and enforce contracts.

This model of integrated production and marketing is common for livestock and particularly poultry production. Under production contracts, growers raise animals according to conditions set by the integrators. Production contracts include detailed conditions for growers, who are paid based on the efficiency of the use of feed provided by the integrator to raise the animals. Under these contracts, farmers agree in advance to sell their animals to integrators at an agreed price.

Certification schemes: Certification schemes, such as Fair Trade, have been supporting smallholder production for more than 20 years. Certification schemes are common in the retail sector and there is a number of leading certification agencies that offer marketing channels for smallholder farmers, including the following: Fair Trade, Organic, UTZ and Rainforest Alliance. When using a certification scheme, ensure that both members of the household couple are aware and knowledgeable of the scheme requirements.

Unlike contracting, which focuses on supply coordination, certification is based on cooperation. The schemes usually provide farmers with a minimum floor price for their goods and a premium price for highest-quality goods. Apart from the commercial advantages, these schemes also offer a social development dimension, such as health clinics, schools, and local road building.

Inclusive business models: As formal markets expand, and companies extend their sourcing reach into local farming communities, there has been a rise in opportunities for smallholders to become suppliers of large commercial buyers. These Lead firms are exploring ways to build more sustainable trading relationships that integrate smallholders into their global supply chains.

In general, the business case is a combination of firms that want to use links to small holders for **story-based marketing**[21] to reach the growing **ethical consumer market**[22]; and seek ways to gain greater legitimacy in domestic markets within developing countries. The new business model approach is also attractive to social enterprises who are developing new ways to source produce in ways that supports farmers and reduces their buying risks and secures future growth.

LIMITATIONS OF VALUE CHAINS

As with all methods value chain approaches have limitations, these include:

- Farmers may effectively grow and sell produce (e.g. maize) but remain extremely poor.
- Market prices for a commodity can plunge to below production costs, sometimes for many years.
- Value chain projects tend to work on one product whereas farmers produce many products.
- Buyers can switch to other producers who sell at lower prices.
- If gender is not considered, value chains could do harm to the households we are working with.
- Smallholder farmers need help with multiple areas, such as: food security; running a mixed farm; and improving the overall well-being, diets, education, and medical needs of their families.

Despite these limitations, value chain methods help both development agencies and farmers to find ways of commercializing their farming systems and for companies to be more inclusive.

Conclusion: The first step in understanding the value chain, is to be familiar with the terms and structures of the approach. You should know its components, which include types of markets, types of actors who buy and sell a product, the various services that make a chain more competitive, the regulatory organizations that support the smooth operation of a value chain. You should understand the gender dynamics to ensure we do no harm. In this session, you will focus on the types of agricultural markets.

21 **Story-based selling:** Selling in which storytelling and emotion are used to connect with customers' feelings of trust and liking.

22 **Ethical consumer market:** A market that is characterized by ethical and environmental concerns, such as animal rights, human rights, and pollution.

Members of "Cooperativa Integral Nuevo Edén" (New Edens Cooperative) in El Progreso municipality, San Marcos, Guatemala participate in a savings group as part of microfinance component of CRS Café Verde project. *Oscar Leiva/Silverlight for CRS*

Chapter 2
Tools for Value Chain Scoping, and Market Assessments

SESSION OUTCOMES

After completing this session, you should be able to:

- describe the main tools used in value chain analysis; and
- describe how these tools can be used for specific types of projects.

Introduction: Value chain analysis is part science, part art! Agents and teams working on value chain analysis need to play the role of the detective and gather information through books, reports and interviews with men and women of different ages. The people that you interview may be sharing confidential information that has commercial value, and therefore you need to be able to gain people's confidence quickly and show that you can provide interesting ideas and discuss business ideas as well as collect data. You also need to ensure the assessment team that are refining the tools and analyzing the data include gender and youth expertise. This section will present some tools that will help in gathering both primary and secondary information on target value chains. The main tools are summarized in the **Table 1**. below.

Table 1. Outline of methods used for value chain analysis and implementation

What	Type of analysis
1: Territorial Analysis	Used to define a project zone and create a visual inventory of partners, assets, market relationships
2: Value Chain Prioritization	Methodology to help project teams identify key criteria and gather information to help with the prioritization and selection of target value chains.
3: Visioning	Methodology to help the project teams share ideas on market linkage with farmers, as a first stage in defining market options
4: Value chain Map	Basic framework to identify key players in a value chain and their roles, develop current state and vision maps
5: Market Opportunity Identification	Basic market linkage approach used to assess triple bottom line data on target products for team assessments on selection
6: Value chain analysis	Expert-led approach that is not particularly participatory but helps identify market issues and key value chain stakeholders who are interested to take on a value chain upgrading process.
7: Detailed Value Chain Mapping	Populate value chain maps with information on transactions, and roles within a value chain. Can be used to record current stage of the chain and also be used for planning, analysis and upgrading strategies.

TERRITORIAL ANALYSIS

The territorial analysis is a participatory method that can be used by assessment teams to define the "big picture" and gain a better understanding of the productive assets and market opportunities for farming communities within a target geographic area. The approach helps the team to set boundaries of the geographic area "territory" to be studied, identify the underlying goals of a marketing strategy and then to populate a target area with information applying a gender and age lens on:

- Stakeholders and partners,
- Productive Assets;
- Supply-side information;
- Market demand data;
- Business partners and players;
- Business development services and
- Financial services;

This approach can be used as a pre-survey tool to gather information from the team about what is known already and how much of this knowledge is gender and age differentiated. The same approach can be used post survey tool to provide a visual representation of important business-related information. The spatially presented information can help the team to identify how productive asset are linked, how products flow through communities, who is producing what, where value is added and products sold. This approach helps to identify gaps in knowledge, which can be filled through primary or secondary information. Teams can use this approach to discuss ideas and observe how different types of information can be linked together. These results can be shared using reports and maps as shown in **Figure** .

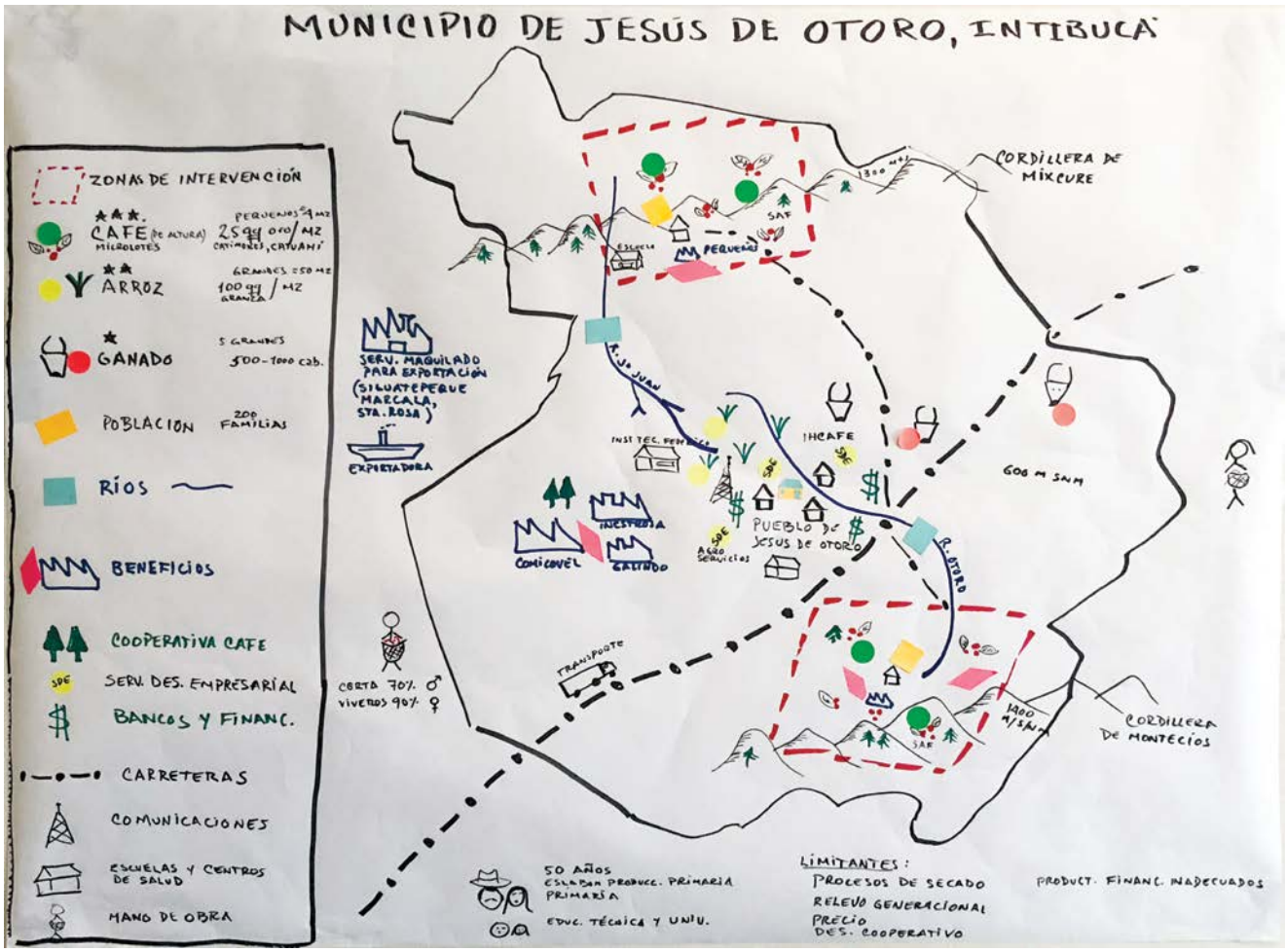


Figure 5. Illustration of territorial analysis

Following the analysis, the team can provide information on the following aspects:

1. Geographic boundaries
2. Stakeholders and partners who are interested in value chain investment and upgrading
3. Asset list from the target area: population, landholdings, roads, power, key markets, etc.
4. List of key products with insights into comparative advantages and product flow
5. Supply side information for target products
6. Market demand for target products
7. Identifying key business players operating in the territory and product portfolio:
8. Financial services
9. Availability and capacity of business development services
10. Innovation and research needs
11. Major policy implications

For details of a **group exercise** in how to use the approach and key results see **Annex 2.1**. The Outputs from Territorial analysis provides information on a range of different products. In the next step, the tool helps teams to make strategic decisions on where teams want to invest.

Criteria for Women-Friendly Value Chains that contribute to increased women's empowerment and gender equality include:

- High share of women employed in the value chain as compared to the economy at large
- High number of women entrepreneurs in the value chain.
- Women control equipment/ assets
- Women have or can acquire skills needed for profitable value addition opportunities through processing and diversification
- Women control the sales income and the enterprise
- Close to household within community area (geographically)
- Low entry barriers for small-scale and poor entrepreneurs (small scale of production, low start-up costs, not requiring major capital investment, using low-tech skills).
- Low entry barriers for women entrepreneurs (time and mobility, access to technology and assets, cultural constraints) Offering new opportunities for women.

CRS VALUE CHAIN PRIORITIZATION TOOL

The prioritization tool enables project teams can organize their information and make decisions on which products to select. The tool uses two levels of criteria (i) impact and (ii) feasibility, see Tables 2 and 3 Overleaf. Within the two sets of filters, teams can give different weights to the attributes so that the selection is biased towards their intervention areas.

The tables are developed within an excel spread sheet and team members are asked to assign values to the products, as shown in the left hand column against criteria that are listed across the first row. Participants can use a scoring range from 1-5 or 1-10 in each box. The scores will be multiplied by the weights. The two values from each table will then generate a means of ranking the products. The values from the two tables can be combined to provide each product with an overall ranking.

The choices of criteria were developed by CRS project teams, but these can be changed to meet specific project needs, or teams can shift the weights to bias results towards an overall strategy, or target group. The scoring from the process is meant to provide a means to begin a discussion around product selection; however, note that it is one point of reference and not meant to be a straitjacket. The findings of the selection process should be tested with local communities to gain their insights too. For details on Group work and links to spreadsheets, **see Annex 2.2**.

ENGAGING ♂♀ FIELD AGENTS

Having made choices on a "territory", product(s) and perhaps the target communities, one of the next steps in value chain development is to engage local community members (♂♀) and gauge their interest in taking on a value chain approach.

CRS has developed a set of SMART Skills which provide training guides for direct field implementation. Within the core skills, there are two guides that are most relevant to the value chain approach, these being (i) marketing basics and (ii) the seven steps of marketing. The aim of these guides is to build the skills of both the field agents and farmers to learn how to play effective roles in value chain analysis, implementation and recording of performance.

Table 2. Value chain impact Criteria

	# of farmers	Profit potential	Climate Smart / Resilience	Youth Friendly	Women Friendly	Jobs	Food Security	Scalability	Nutrient-Rich			
Criteria										Total scores	Rank	Weighted Rank
Weights	5%	20%	15%	10%	10%	10%	5%	20%	5%			
Illustrative products												
Maize												
Pulse Crops												
Cowpea												
Coffee												
Cocoa												
Nuts & exotics												
Gum Arabic												
Horticulture												
Small ruminants												
Poultry												
Indigenous vegetables												

Table 3. Value chain Feasibility Criteria

	CRS Presence in target territory	VC services in territory / strong private sector	Defined / growing market demand	Level of Small-holder inclusion	Upgrading potential / opportunities	Strong partners	Existing organized Farmer groups	CRS staff / local Knowledge of crop	Enabling environment / align with Govt policy	Donor / investor interest			
Criteria											Total scores	Rank	Weighted Rank
Weights	5%	20%	15%	10%	10%	10%	5%	5%	20%	5%			
Illustrative products													
Maize													
Pulse Crops													
Cowpea													
Coffee													
Nuts & exotics													
Gum Arabic													
Horticulture													
Small ruminants													
Poultry													
Indigenous Vegetables													

VISIONING YOUR BUSINESS:

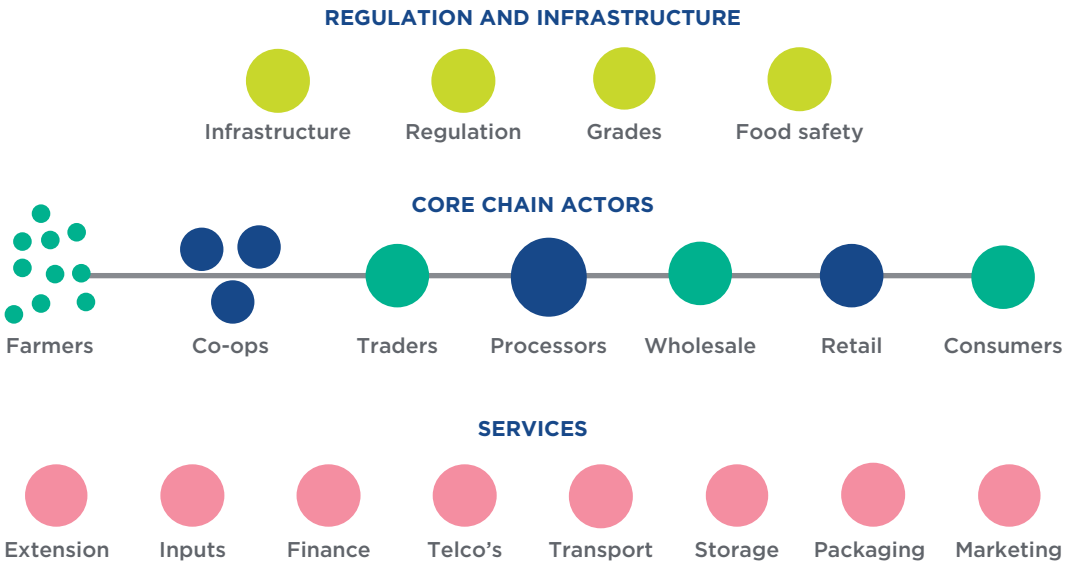
Visioning is a simple but helpful method that can be used by field agents and farmers to engage local community members in thinking about a value chain idea. This method basically asks ♀♂ farmers to describe their business situation today and what they would like to achieve in the future. This sets up their vision. The method then uses basic pictures and map to compare today versus the vision. The process then asks them to consider and plan how they intend to get to their vision. This approach can be built around developing a value chain(s) and enabling farmers to think through the steps of a business or implementation plan.

BASIC VALUE CHAIN MAPPING

Using basic value chain maps, helps as both a planning tool and a way to visualize information in terms of process and roles. The information helps to assess what is currently known and where there are clear gaps in the knowledge. The image below, provides the basic framework of a value chain. Teams can fill in what they know at the start of a value chain approach and then add detail to the map as the value chain analysis work proceeds including estimated proportions of ♀♂ participation and access to services.

The mapping approach can also be used by value chain teams to provide a spatial representation of the value chain actors and their roles and how they are physically arranged between production, storage, processing and sales.

BASIC THREE LEVELS OF A VALUE CHAIN



STEPS IN VALUE CHAIN MAPPING

1. Generate first level sketch of the existing market chain answers the following questions:
2. Who are the known actors (♀♂) in the market chain?
3. Who are the core chain actors (♀♂) ?
4. Who are the service providers (♀♂)?
5. Where are they located?

6. What are their roles or functions?
7. How do they relate to each other?
8. How do the service providers relate to ♀♂ actors?
9. Are there points in the process where nutrients are loss or added?

GROUP VALUE CHAIN MAPPING

The information from a value chain map can be more artistic, which helps different actors to understand how the various parts of the value chain are linked, see **Figures 6 and 7** below highlights how

MARKET OPPORTUNITY IDENTIFICATION

The market opportunity identification (MOI)[23] method provide farmers and field agents with a simple and systematic participatory means for collecting market information to identify and select products and services for investment and agro-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. The simplified local approach is participatory and provides an alternative to relying on products that have been preselected 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**[24] to pursue; and
- compare different products and explore market options for **value-added products**.[25]

These strategies are based on the type of product and market as shown in Table 4.

Table 4. 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 (i.e labor) decision-making power, aspirations, and appetite for risk. The lowest risk strategy is market penetration; the highest risk strategy is diversification.

The market opportunity identification (MOI) follows the same basic steps as a value chain assessment but is generally more geographically focused.

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

24 **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.

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

STEPS IN MARKET OPPORTUNITY IDENTIFICATION

Step 1: Agent works with clients to organize a market survey team with equitable gender and age representation.

Step 2: Agent helps to design the questionnaire.

Step 3: Clients assess products of interest in target markets (long list of >10 products).

Step 4: Clients conduct a detailed analysis of a few products (short list 3 products).

Step 5: Clients make final selection on which product to invest in for their enterprise.

Step 1. Forming a survey team: Everyone must start somewhere on survey work. Typically, market survey teams are small, but they should ensure gender and youth representation or appropriate engagement in survey development, analysis and recommendation development. First decisions on market surveys scope out the dimensions of the survey. How many products to consider? How many levels of the value chain? How many markets? How many people to interview at each stage in the value chain?

Choose a leader, decide on the main purpose of the survey. The team should include someone who knows the area, interview people in teams of one or two. When you are asking about business information, its best to have one person asking questions the other person writing notes. When interviewing people along the value chain, you will get best results by interviewing one person at a time. Ensure the gender of the interviewer is appropriate for the gender of the interviewee.

Step 2. Designing gender-sensitive questionnaires: When gathering data from the field or at a market, be sure to size your surveys or questionnaires to the needs. For many projects that are focused on short value chains, with only 2-3 linkage points, a survey can be relatively simple. The survey instruments will become more complex as the size of the analysis is expanded and there may be a need to design specific survey instruments for specific actors within the chain, questions for farmers, for traders, for storage agents, input suppliers, financial services. etc.

Step 3. Basic product analysis: To help field agents and farmers gain a first understanding of what traders are looking to buy, you can use a very simple questionnaire as shown in **Table 5**. This type of basic survey tool, can help farmers and farmer groups to gain a rapid understanding about product demands in a target market. For many farmers this may be the first time that they are using a market as a means to gather information rather than to sell their products. Learning from traders is an important part of building skills in marketing and planning for the upcoming season. The information from this simple type of survey maybe enough for some farmers to make a decision on what to grow and how to sell it to at the market, or the data can be used to make decisions on which products farmers should focus on for more detailed studies.

After a day on the field, the Latin American Delegation spoke about their impressions on the Howard G Buffet Foundation Center for No Till Agriculture and discussed about the lessons learnt with Dr. Kofi Boa. *Oscar Leiva/Silverlight for CRS*

Table 5. Basic demand survey instrument

Demand survey	Answers
Buyer name, phone number and sex	
Product	
Price / unit	
Quality required	
Quantity per purchase from farmers	
Method of payment	
Is this product highly seasonal?	
Would you be interested to buy this from our group	

Step 4. Detailed product analysis: If field agents and farmers want to gather more detailed information on products, the extension agent needs to work with the agripreneurs to analyze products and market options in more detail. This will require further market visits and interviews with experts or other buyers and often farmers who are growing the selected products, to learn more about how to grow the crop and gain a better understanding about risks and costs. Examples of the types of information that can be gathered are listed below.

Table 6. More detailed market survey instrument

Production requirements	Answers
Planting date (♀♂) and production time (days, months, years)	
Technical difficulties (low, medium, high) (♀♂);	
Soil and water requirements;	
Labor needs (paid and unpaid);	
Major pests and diseases; and	
Expected yield / unit area. (♀♂)	
Marketing requirements	
Defining buyers; type including ♀♂ and contact information	
Type of market (local, regional, national);	
Level of risk; (high, medium, low);	
Demand (high, medium, low);	
Quality criteria required; (variety, color, size, packaging)	
Delivery requirements (volumes and frequency of sales);	
Business relationship (agreement, alliance, contract).	
Finance and Profitability	
Level of technology required (costs, skills needs)	
Price stability;	
Pre-production investments;	
Time to first payment;	
Average workdays required and when in season	
Cost of production (♀♂);	
Expected revenue based on past experience / unit area;	
Gross margin.	
Internal rate of return (IRR)	
Net Present Value (NPV)	

Analyzing profitability: Profitability analysis focuses on elements such as cost of production, expected revenue (income) based on past experience /unit area, and gross margin, see Table 7.[26]

Table 7. Profitability analysis of a farmer growing beans in Uganda

Profitability for beans income / acre		
Costs / acre	**Shillings**	**Notes**
Land preparation	60,000	used oxen for plowing
Seeds	35,000	new variety
Planting	20,000	
Staking	120,000	360,000 will be used three years
Weeding x 2	50,000	
Fertilizer	40,000	
Pesticides	15,000	
Labor for harvesting (family and hired)	40,000	
Packaging	4,000	
Transport to market	10,000	
Market fees	6,000	
Total cost per acre	**400,000**	
Harvest	1,200	
Market price	1,500	
Income	1,800,000	
Gross margin	1,400,000	
Gross margin dollars	**350.00**	**4000**

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

Step 5. Final product selection: The final filtering in the MOI process involves the clients selecting a product. This can be only farmers, or it can include key actors along a value chain. Decisions can be made at a group meeting, so the facilitator needs to ensure all farmers have a voice in making this decision and disagreements should be thoroughly discussed and viewed through a gender and age lens. The detailed MOI survey results provide information on the production requirements, market demand, and financial costs and revenues for a specific product. The decision-making group and the survey team need to write up, systemize, and analyze this information, so that they can present it to the stakeholders. This information is used to make an informed decision about what product(s) the investment team should select for their production and marketing strategy.

After the decision on which product to develop within a value chain, the survey team then takes the following actions. Sets up a planning session to help the farmer group to link their production targets to meet the needs of the target buyers. Works with the farmers to develop both a business plan and an implementation plan.

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

VALUE CHAIN ANALYSIS (VCA)[27]

This method relies on semi-structured informal interviews with key ♂♀ informants and a minimum number of interviews with key ♀♂ stakeholders at different stages of the value chain. The interview approach provides the survey team with an opportunity to gather primary information from several value chain actors working on a target product. The gender-sensitive VCA is a way of:

- assessing the structure of a value chain for a target product, how it is organized, and performs;
- identifying key constraints and opportunities;
- understanding gender dynamics within a value chain such as power relations, visible and invisible roles and responsibilities, assess and control of resources and assets, participation, leadership, culture and legal environment
- identifying specific value chains or parts of a value chain that are most appropriate for a client group or investor to compete in; and
- prescribing interventions in the organization, technology, and management of a specific part of the value chain.

This type of analysis provides insight into the operations of specific market channels while focusing on their growth potential. It also provides information on the three key levels of the value chain including:

- Key actors and their activities and efficiency along the chain,
- Business support services involved, and
- Policy and regulatory frameworks.

The results can be used to identify opportunities and constraints within parts of the value chain and ways can be seen to improve a defined client's capacity to compete more effectively. The analysis should also identify the best points of leverage within a value chain by investing to improve value chain performance. Intervention plans may then focus on things like, farmer organization, production technology, specific chain actor performance, addressing gender inequalities, improving Business Development Services (BDS), or changing policies.

BASICS STEPS IN A VALUE CHAIN ANALYSIS

1. Define the value chain to be analysed, outlining critical constraints and opportunities,
2. Use information from territorial maps to decide on the scope of the survey.
3. Plan the basic survey overview; identify team composition including gender expertise, and delegate roles and responsibilities. Link activities to time frames and budget.
4. Conduct a focused review of relevant literature including relevant gender articles. Collect and tabulate readily available and relevant secondary data. Ifsex and age disaggregate data is available, tabulate using these disaggregation.
5. Based on findings from secondary data, define key study areas, and make strategic decisions about where to allocate scarce time and resources. Define issues, priorities, and gender-sensitive questions for focused study. Review the budget and time frames.

27 This information is based on the RMA method developed by Wandschneider, Ferris and . 2006.

6. Identify and interview ***knowledgeable*** ♂♀ ***observers*** of a subsector to obtain their views, opinions, and suggestions to test some of your ideas and focus your study area.
7. Identify, select, and conduct semi-structured informal interviews with ♂♀ market actors, or ***Key informants***, in the value chain (define sample size, cross-check process).
8. Visit physical facilities (e.g., markets, warehouses, transport, and cold storage facilities) and observe performance of marketing functions including gender implications.
9. Share and discuss findings, seek gender support to interpret gender-related results, draft a report with recommendations, and present it to clients and interested stakeholders.
10. Revise the report, based on feedback, and propose the next steps:
    a. Recommend policy and regulatory reforms.
    b. Develop gender-sensitive innovations in technology, institutional arrangements, and organization or coordination of marketing functions (and a monitoring plan).
    c. Conduct or recommend further focused, applied research.

DEFINING THE SCOPE OF A SURVEY OF A VALUE CHAIN

The planning of a value chain analysis should consider the complexity of the subsectors under study, the time, costs, and the capacity of the staff involved. Although some value chains will require expert assistance for analysis, most can be analyzed using basic common sense and a systematic approach to data collection. The survey team may decide to limit the study to local markets or conduct a value chain analysis over a broader area and trace a product from farm to major town markets.

In most cases, the survey team may have to travel outside the project area to follow the product to its final market destinations, or at least to the terminal markets within the country. The market facilitator should work with the survey team to write up these experiences.

REVIEW OF RELEVANT LITERATURE AND ANALYZING AVAILABLE SECONDARY DATA

One team member should review value chain and gender-related literature and analyze secondary data (sex and age disaggregated). Donor agencies, business associations, local universities, or research institutes are useful sources of information. Unfortunately, marketing data in most developing countries is scarce. However, information such as price trends, volumes traded, key market players, and firms is usually available, often at market offices, chambers of commerce, and some governmental and research bodies. Specific gender value chain analyses may be available from our peer organizations. If not, then non-value chain gender analyses and other gender literature can provide insights into areas to assess. These can often be found with donors (e.g. USAID), peer organizations and Google/Google Scholar.

IDENTIFY KEY AREAS TO ASSESS IN THE VALUE CHAIN STUDY

Although a survey needs to be broad enough to obtain a good overview of the value chain, it cannot cover all topics in depth. The team needs to prioritize areas of study and the methods for examining these components. All studies, should include a gender and age lens. The time and resources (e.g., number of analysts and logistical support)

allocated to the study will help limit the survey's scope. The survey teams should be in small groups of two to three analysts working together.

INTERVIEWING KEY INFORMANTS

Identifying and interviewing a small but deliberately selected sample of ♂♀ key informants in a commodity subsector is a critical element of a value chain study. Small samples of informants need to be chosen at each stage of the value chain. Information given by interviewees should be cross-checked Cross-checks are done by asking similar questions with actors at the same level in the value chain. Key differences for male and female informants should be noted. As a rule of thumb, a minimum of five interviews of one type of actor or firm should be conducted at each stage in the value chain. The level of variations in terms of types of firms or types of answers will influence the sample size. The more diverse the responses at each stage, the larger the sample of informants required. An appropriate sample size is generally where the responses become consistent. Types of key informants is shown below.

Types of key informants: Farmers, farmer groups, Traders (brokers, itinerant traders, wholesalers, retailers), Production managers of processing firms, Importers/exporters, Institutional buyers, Shopkeepers, open market stall holders, kiosk vendors, Extension agents, Managers of governmental agencies, Input producers and suppliers

Use different methods of questioning and review to understand how the value chain works

Mirror imaging;
repeat questions at one level in the value chain until you get a consistent response

Triangulation;
compare information from different levels, to validate findings

Observation;
look and consider if the responses match the action

Supervision of interviewers.
Share information across survey teams

SEMI-STRUCTURED INFORMAL INTERVIEW GUIDELINES

A checklist should be prepared for use in interviewing different types of key informants in the Value chain (Annex 2.3). This should include important topics and subtopics to cover, or several series of sequenced questions designed for a probing, logical, stepwise inquiry. Using these guidelines helps make the interviews more consistent, systematic, and focused. After each interview, the analyst should prepare a summary sheet of most relevant information ensuring gender and age differences and aspects are clearly acknowledged. These summary sheets are particularly useful in discussions during the survey and for preparing the final report (Appendix 2.4).

CONDUCTING ON-SITE INTERVIEWS

Interviews should be held at the place of operation. Facilities should be visited to observe post-harvest handling, sorting and grading, storage, transport, and transaction activities. This is done to cross-check what subsector participants say with how they behave and with their usual practices. Where good data are missing, a site visit can also help to estimate the scale of operations. For example, approximate wholesale market throughput for a product can be estimated based on observing a business day and asking different

wholesale traders about their sales volumes and market activity at different periods of the year relative to that day.

REPORT WRITING

After completing the fieldwork, the team members should meet and discuss their preliminary findings before too much writing has been done. This useful exercise forces team members to present tentative findings, conclusions, and hypotheses to other team members, who can challenge and debate them or simply get a better grasp of the bigger picture. The team should clearly identify any differences among ♀♂ value chain actors. The leader should write up the report. The other team members including the gender advisor/focal point should review the report and provide feedback. An outline for writing the final report is given in Appendix 2.5. The summary should be no more than 10 pages and be made available to clients, local administration, policy advisors, and key stakeholders.

USING THE VALUE CHAIN ANALYSIS RESULTS TO DEVELOP A BUSINESS PLAN

The value chain study will collect a considerable amount of information for a specific product, related to its value chain's actors, efficiency, and opportunities or constraints. The information should highlight growth potential of the product within the value chain and the efficiency or access to business support services. All these data are extremely valuable for the next stage: to develop the business plan.

To begin planning for enterprise development, the market survey should provide prioritized information on options for specific chain actors and service providers such as the following:

- Information on buyers, types of deals available, and their buying conditions (price, locations, minimum quantities purchased, standards of quality, frequency of supply, payment conditions, willingness to enter into sales discussions, etc.).
- Options to improve value chain performance based on specific interventions, prioritized according to client needs.
- Opportunities for technology innovations that would provide value-added opportunities at specific points in the chain and also facilitate the subsector.
- Opportunities for organizational innovation (e.g., by forming farmer or trader associations).
- Enterprise-level technical assistance that will increase competitiveness.
- Areas in which business support services and facilities need to be improved such as market information, production and marketing research, and extension increase demand or reduce transaction costs for client groups.
- Opportunities to address gender inequities identified in the value chain through appropriate gender-responsive or gender-transformative strategies and approaches.
- Reform options for policies and regulations.

DETAILED VALUE CHAIN MAPPING

As information is gathered from a value chain analysis, the survey teams can use this data to generate more complex value chain maps which show the flow of goods, services and finances within a target value chain. This information can be used to convey more complex data flows and also to identify where there are key constraints and or investment opportunities. The following guiding points can be used to help teams to

integrate survey results into maps to convey the findings to your various audiences. When integrating results note any difference among ♂♀ actors.

VALUE CHAIN MAPPING GOALS

- Define relationships and interconnections between the value chain actors.
- Understand the flow of products, services, information, and payments.
- Enhance communication between different actors.
- Identify entry points or key leverage points to improve the value chain.

KEY QUESTIONS

- What are the core processes in the value chain?
- How is the chain organized? Who are the key actors?
- How do products, payments, services, and information flow through the chain?
- Who are the key partners?
- What external influences affect the performance of the chain?
- What gender dynamics affect the performance of the chain?

WHAT IT CAN DO

- Visualize the diverse roles and connections between participating ♂♀ actors in the chain and identify sources of innovation and improvement.
- Provide information from a macro perspective about situation and context; provide a systemic overview and identify the context.
- Trace product and information flows.
- Support a visual and actor-oriented learning process.
- Identify blockages, bottlenecks, and disruptions in the market system.
- Agriculture and farming value chain maps

The common links in the chain for small-scale producers include those of pre-production, production, post-harvest, processing, sales, and retail sales, each of which can be subdivided further if necessary.

WHAT DOES THE VALUE CHAIN MAP ENABLE US TO VISUALIZE?

- Actors directly involved in the chain and their interconnections, roles, and functions
- Indirect actors and how they support the functioning of the chain
- Links, breaches, or blockages between the actors
- Product flow, Information flow, Financial flow
- Distribution of benefits
- External influences on the value chain

The examples given on the next page, shows how value chain teams can use value chain maps to bring together different types of information and show relationships and also where there are linkages and gaps.

STEP 1: EXAMPLE VANILLA VALUE CHAIN

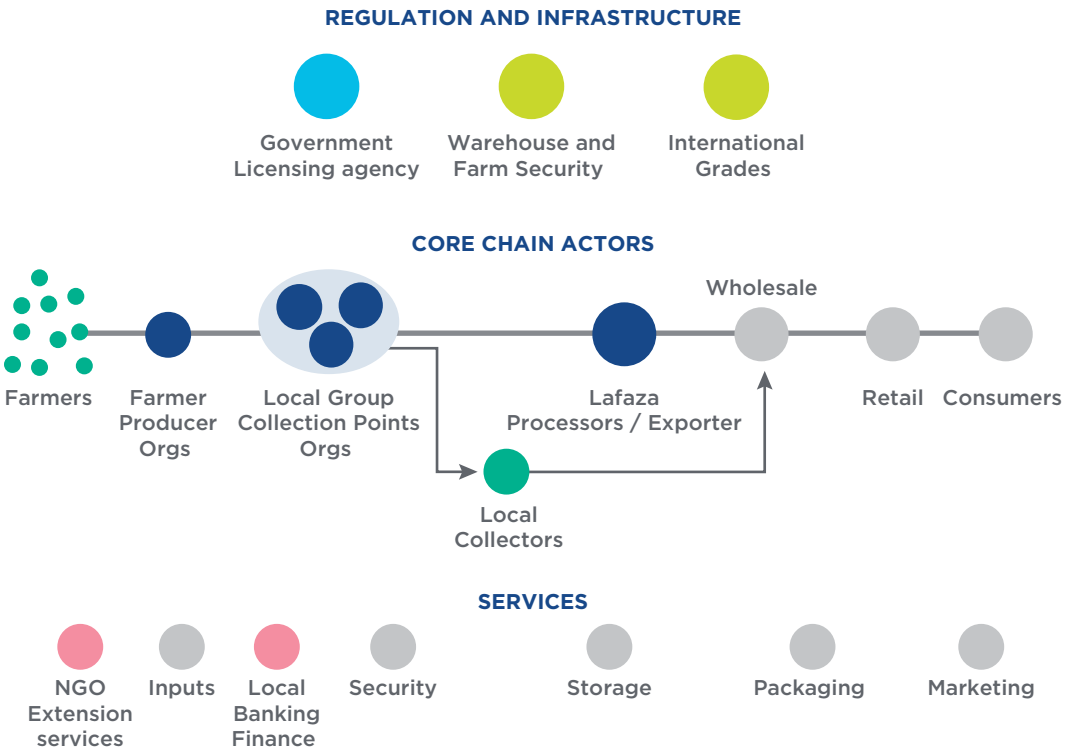


Figure 6. Basic value chain framework, with additional information relationships

CACAO VALUE CHAIN IN EL SALVADOR

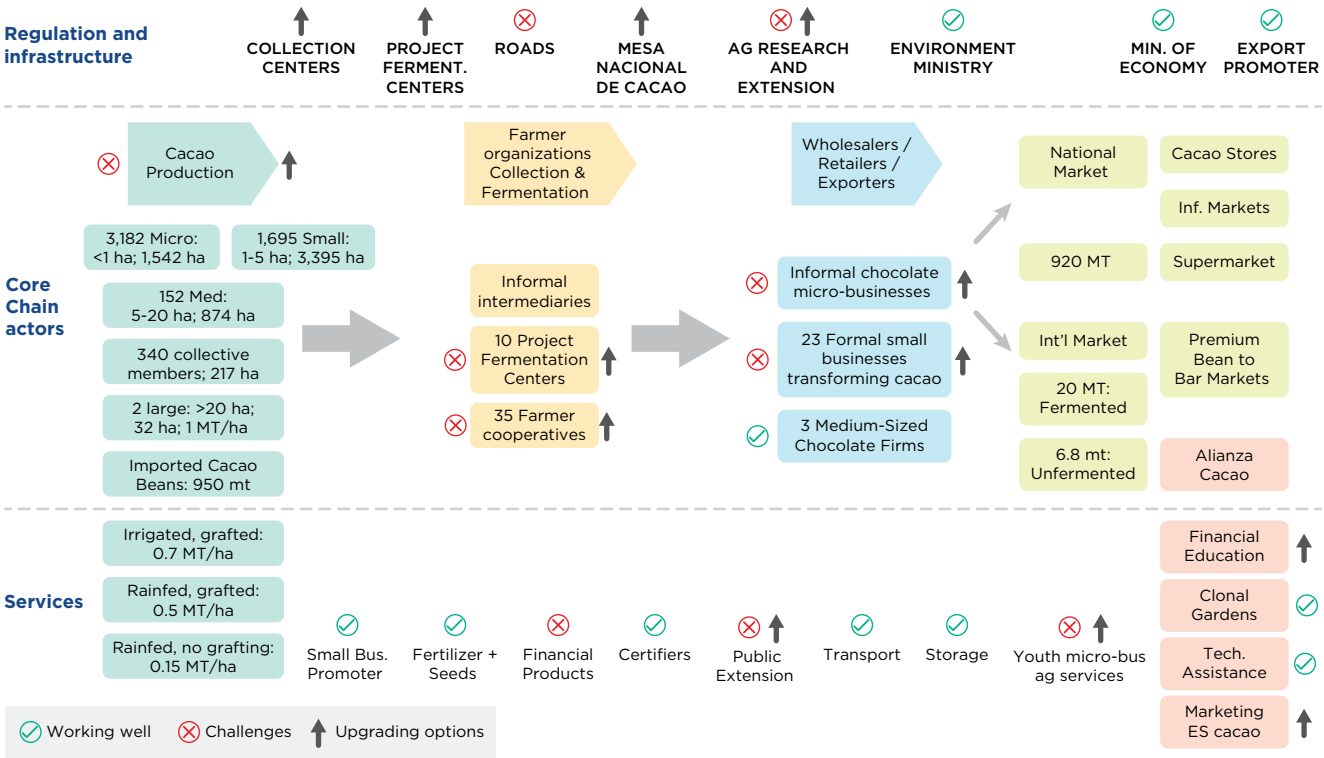


Figure 7. Value chain map with more information on transactions and relationships

Malagasy vanilla growers providing finished product cured vanilla for export markets, representing a high value upgrading strategy. *Jefferson Shriver/CRS*

Chapter 3
Value Chain Upgrading Strategies[28]

Our value chains approach supports a **triple bottom line** strategy that is consistent with the Sustainable Development Goals (SDGs), which aim to end poverty, protect the planet and ensure that all people enjoy peace and prosperity. This approach supports economic, ecological, and social dimensions to achieve resilient and sustainable outcomes, Table 3.1. Triple bottom line supports:

1. Building equitable economic structures that generate growth and provide a living income.
2. Production systems that promote sustainable farms and landscapes.
3. Promoting social inclusion to generate more resilient communities.

Table 8. Concept – Objectives of sustainable value chain development

Sustainability dimensions	Generic objectives of value chain development
Economic	• Economic growth—more value generated and captured • More jobs • ♀♂ Farmers and rural service providers enjoy a living income
Environmental	• Farming systems that support long-term productivity in sustainable landscape • Increasing soil and water management and reducing greenhouse gas emissions • Protection of biodiversity and ecosystems
Social	• Business models that integrate poor micro-entrepreneurs and workers • More inclusive and equitable opportunities for women and young people • Decent work conditions, benefits and wages that support resilient communities

28 Springer-Heinze, Andreas. 2017. ValueLinks 2.0. Manual on sustainable value chain development. Volume 1: GIZ. Eschborn, Germany. January 2017.

Economic objectives in value chains: To achieve economic growth, value chain approaches must be profitable and equitable, so that ♂♀ farmers can invest in upgrading their farming systems and meet their family's needs. To realize economic gains over generations the rates of growth must also keep pace with increases in population and in much of Africa that means reaching a 5-6% annual growth rate. Profitability is typically measured using gross margin analysis at the farm level and through the unit volume sales at the chain level. The objective however, is NOT to redistribute wealth, by helping some farmers to become more competitive than their neighbors, but to increase the overall market share by "growing the pie" so that wealth can be distributed to farmers and their business partners.

Environmental objectives in value chains: The profitability of a value chain must also be based on a sustainable production system to provide for long term growth. Natural resource degradation is particularly detrimental to poor people who depend on these resources for their living. Any value chain project needs to use the natural capital sustainably and productively and seeks ways to reduce the amount of natural resources used to generate one unit of economic value. It must also understand how the project could affect access to these resources by different vulnerable groups including females. This applies to the different categories of resources but is critical in terms of soil, water, and energy efficiency. Apart from lower resource intensity, value chains should also seek ways to limit pollution and greenhouse gas emissions.

Social objectives in value chains: Whilst, the empirical evidence shows that poverty rates decline in growing economies, there are many cases where economic growth can lead to highly inequitable gains in wealth. Value chain development therefore needs to be able to show that overall gains at the value chain levels also translates into higher incomes for poor ♀♂ farmers, microenterprises, and wage workers in the value chain. Growth is economically inclusive if it leads to the creation of additional jobs for low-skilled unemployed poor, especially women and the young, and the poor at the bottom of the pyramid and ensure equitable decision-making over the use of the income.

The unintended risks of value chain growth are that structural changes can be at the detriment of the poor, especially if labor-intensive enterprises are driven out of business or if too much business risk is shifted to smallholders. Value chain development should therefore include the objective to minimize the social drawbacks of upgrading and avoid the challenge of smallholders simply being replaced by a few larger farmers. Value chain development should recognize and address potential risks associated with gender-based violence and sexual harassment in work environments. Value chain development should also be sensitive to the local cultural context, such that cultural and technical traditions, including local knowledge and social networks are part of the package of economic progress.

VALUE CHAIN UPGRADING

Planning for value chain upgrading should include three tasks:

1. **Defining** the goal and general objectives.
2. **Diagnosing** options for change in a specific value chain.
3. **Programming** an achievable implementation plan within a project or program.

Value chain upgrading needs to consider the three core aspects of sustainable growth; starting with the economic dimension followed by the social and environmental dimensions. The profitability and competitive aspects of the enterprise need to be assessed to understand the underlying opportunities and constraints, conditions. The upgrading team then needs to formulate a series of innovations and solutions that will lead to increased productivity and higher unit sales.

ADDRESSING THE ECONOMICS

Based on the value chain analysis, the upgrading team, from managers to field staff and value chain actors, need to have a good understanding of the current economic status of the value chain. They need to be able to breakdown the components of productivity and profitability to identify were there are critical constraints and breaks in the system. To make effective changes in terms of productivity, market demand and competitiveness along the value chain, the team need to prioritize key issues and then work on a series of innovations and investments that will support improvements in structure and performance. To begin this type of assessment, the team should consider the following questions:

1. Where are the key problems for ♂♀ that need to be addressed to improve productivity?
2. What changes can be made along the value chain to unlock market development?
3. What specific combination of private investment and technical assistance are needed?
4. Why has the economic potential not yet been realized?
5. What are the factors behind stagnation and market failure that is hampering development?

Fair Trade Almond processing plant in Israel / Palestine. Agriculture processing plants provide an important source of employment for women in value chains. *Jefferson Shriver/ RS*

Ensuring environmental sustainability: Many farmers invest in production systems that generates short term market gains but at the expense of degrading their soils and water systems. Any production system needs to be designed so that it maintains or improves soil fertility and maximizes water use. Farmers are also facing major challenges in terms of declining land size and more variable weather caused by climate change, ♀♂ farmers need to develop methods that enables them to intensify their production and raise productivity and:

- Does the value chain allow for profitability and continued re-investment in the resource base?
- What types of investments do farmers need to consider to maintain long term productivity?

For the downstream chain actors, they also need to consider how their processing

- Which direction should greening take, where in the chain is this most relevant and which resources should get priority?

Social benefits: What are the key factors affecting exclusion or inclusion of the poor in the target value chain. Specific questions that guide the development of strategic options are as follows:

- Under what conditions can poor women, men, girls and boys benefit from the target value chain
- Where are their opportunities in the chain for poor men, women, boys and girls to be engaged?
- What precautions need to be taken to safeguard vulnerable groups, especially women and adolescent girls?

The team needs to consider these questions when undertaking their product selection work and in designing their value chain assessment. When developing the upgrading strategy the team will have as the reference, along with the results of other value chain analyses. The data generated in the chain analysis provide a baseline against which the anticipated change can be made clear. Therefore, strategic consideration can only be as concrete and detailed as the available baseline information.

Determining upgrading options: Making decisions on the most suitable upgrading strategy depends on several factors, the goal of the project, market demand, target community, their appetite for risk and gender dynamics. A lot of these questions can be answered from the market opportunity / value chain assessment and the assessment of different types of competitive advantage. The next issue to consider is the current performance of the value chain.

Challenges and breaks in Value chain performance: Comparing differences between targets and actual performances can be done in a table format. The most straightforward possibility for listing and visualizing constraints and opportunities is by introducing descriptive statements into the basic chain map as is shown in Figure 10**.**

STEP 2: EXAMPLE VANILLA VALUE CHAIN

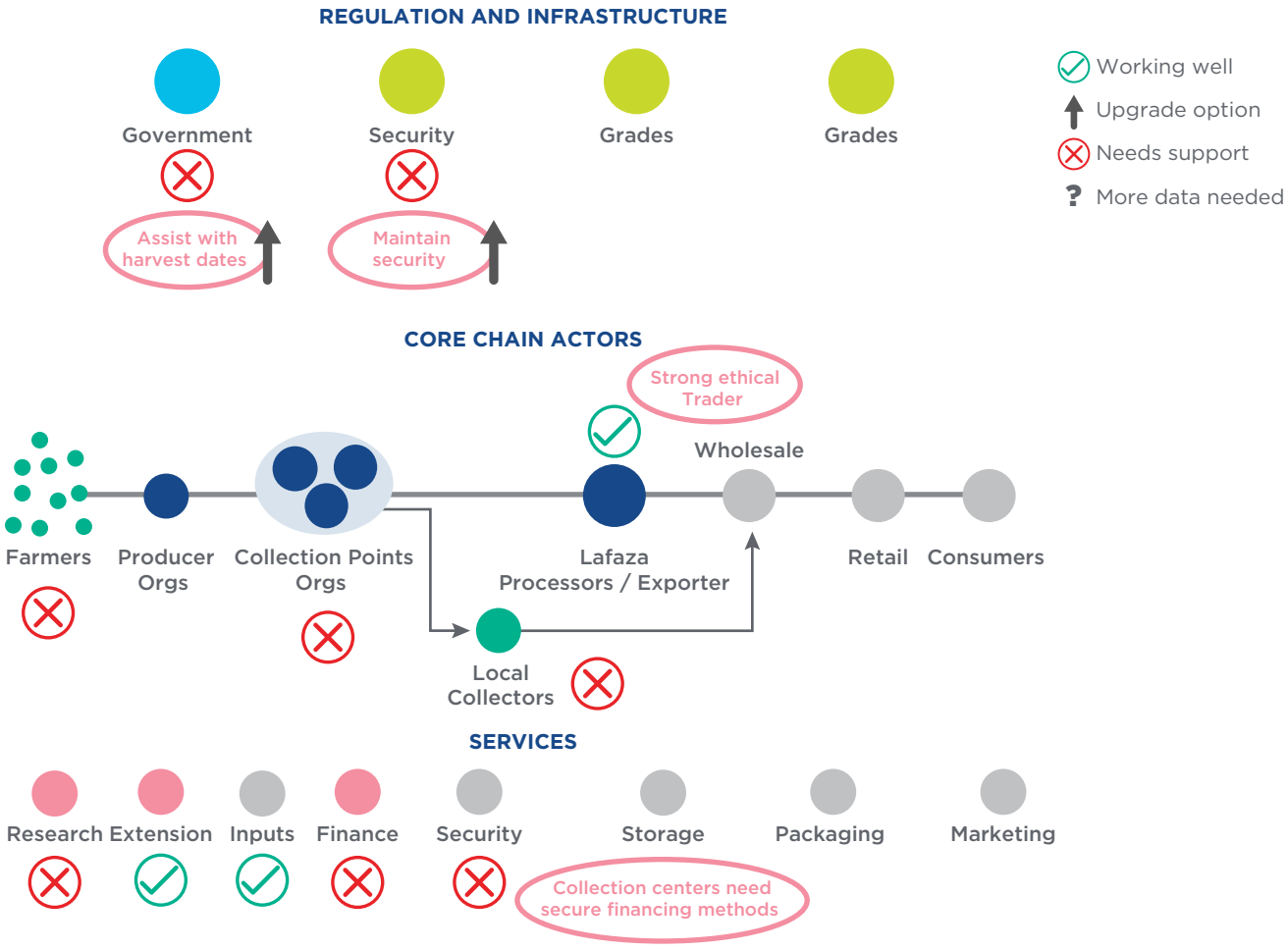


Figure 8. Identifying critical breaks in the Value Chain Map

Nicaraguan tomato farmer using micro-tunnels and agribon cloth to improve yields and reduce use of herbicides and pesticides. Use of these agriculture technologies represents a critical upgrading strategy for smallholder farmers. *Jefferson Shriver/CRS*

Another approach is to use a more detailed form of Visioning, Where the teams outline where we are now and How should the value chain look five years from now?

Market failure: We can specify the changes and investments needed to grasp new opportunities, but one key issue and strategic consideration remains: Why has the economic potential not been realized earlier? What are the deeper reasons for economic stagnation? Are there governance issues hampering development? Are there gender issues hampering development?

Assessing market failure and weak market linkages in value chains: An important reason why growth opportunities are not taken by value chain operators is market failure and dysfunctional business linkages. Market failures are major obstacles to value chain development that explain why the economic potential is not realized. Analysis should find out why markets and value chains do not work properly, are there gender dimension to the market failure, and to what extent market failures reduce economic performance.

TYPES OF MARKET FAILURE

Poor infrastructure: Market development can be the result of basic lack of infrastructure and missing services. Bad roads, missing marketplaces, and little storage capacity raise the production and marketing cost of agricultural products. When farmers have no access to inputs, limited extension and occasional links to markets, they are discouraged. Female farmers often have less access than their male counterparts. Farmers and local SME's often revert to a low poverty equilibrium, which causes low productivity and limited market linkage. Agricultural supply is fragmented, the cost of collecting produce from scattered producers increases, which makes the region less attractive for traders. The result is a stagnant, thin market with volumes below the potential.

Information Asymmetry: Rural communities can suffer from information asymmetry and do not regularly have access to information on the conditions and requirements of end markets. Lacking market transparency (information on prices, market demand, and the availability of products) raises the search effort for buyers and suppliers alike. Contracting is further complicated by missing grades and standards leading to disputes. Corruption and collusion may be other factors. The high market risk of both suppliers and buyers diminishes the incentives to deal with newcomers and to invest in effective business relationships. Traders keep critical information to themselves to protect their supply base. Similar coordination problems result from lack of access to capital and financial services.

Coordination failure: A general requirement of successful value chain development is communication and collaboration between actors to enable decision making and complementary investments: Setting up a pack house facility for fresh fruit presupposes a parallel investment into the orchards. Building hotels does not make sense unless the tourist attractions are developed and transport is available. If the parties do not work together, no one benefits. Here, the problem is a failure of the market mechanism. Market governance does not automatically lead to the coordination of business activities between private enterprises. Coordination failure describes a situation under which a combination of several problems block market and value chain development. The different problems reinforce each other leading to a vicious circle. It manifests itself in different ways:

1: IMPROVING COMPETITIVENESS AND PERFORMANCE

This is the classic approach to value chain development, which seeks to improve all the enterprises and linked business processes that have a bearing on competitiveness and performance. This approach focusses on cost reduction, differentiation, quality improvement, market segmentation and value addition. The upgrading approach will use a combination of innovations around technologies, services and help clients to acquire new skills. Types of upgrading approaches include: -

1. **Product upgrading:** Improving the productivity and quality of the primary or processed products
2. **Process upgrading:** Improving access to key business development services
3. **Functional upgrading:** Taking up new or more sophisticated business activities

A commonly used tool to help with marketing strategies in value chains is shown in Table 9. The Ansoff matrix presents combinations of innovations relating to the product and target markets. The matrix helps to assess which combination of current or new products and markets stands the best chance of succeeding. To select a strategy, analysts must assess the likely success of a product in different markets and the risks involved.

Table 9. 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 actual interventions for a particular chain will always be a combination of upgrading solutions that is specific to the value chain and context. The Ansoff matrix can be used to differentiate these strategies further:

- **Market penetration** focuses on expanding production and reducing unit cost. This means upgrading the production capacity to operate at a larger scale. Lower production cost means being able to sell at lower prices. Economic growth is achieved by higher volumes.
- **Market development** generally means selling the same products into a more lucrative market.
- **Product development** strategy is about improving product quality. Here, the focus is on new and better products that are more competitive and command higher sales prices.
- **Diversification** moves to entirely new products and markets innovating products and production technology as well as marketing. Growth is achieved in through increasing sales prices.

2: UNLOCKING MARKET FAILURES

This upgrading option is relevant where value chain development is blocked by market failures. It requires changes in coordination along the value chain, which can be improved by networking operators, by government regulation, by public steering of private investment, and by addressing gender barriers. Market failures can be caused by policy failure as well. Relying on government intervention to redress problems in this area is risky as public administration may be part of the problem. Solutions will include incentives for private enterprises as well as public agencies. On the private side, there should be a clear picture of the opportunities and promising business models as well as how the models could be financed. On the public side, local or Government decision makers need to understand their roles in economic development and provide the requisite support services. Communities and household members need to understand how their gender norms affect the market failures they are experiencing and decide how to address them.

Coordination of value chain actors along the supply line: The coordination of actors along a value chain has a physical dimension, such as overcoming the distance between operators appropriate for ♂♀ farmers. The business linkages can be projected onto a geographical map showing the connections between enterprises at different locations. The data in Figure X shows how producers, traders, and consumers are arranged along a supply route connecting villages and towns and with consumption points in major cities.

The map shows production zones and the location of markets and consumption centers linking this information to the elements of a conventional value chain map. Attaching information on the geographical location to the categories of operators, the value chain can be shown as a series of points on a geographical map. Thus, physical connections and distances become visible and potential barriers to women given cultural norms on mobility are highlighted.

CONCEPT – PRODUCT SUPPLY ROUTES ACROSS GEOGRAPHIES

MARKETING LINKS VALUE CHAIN

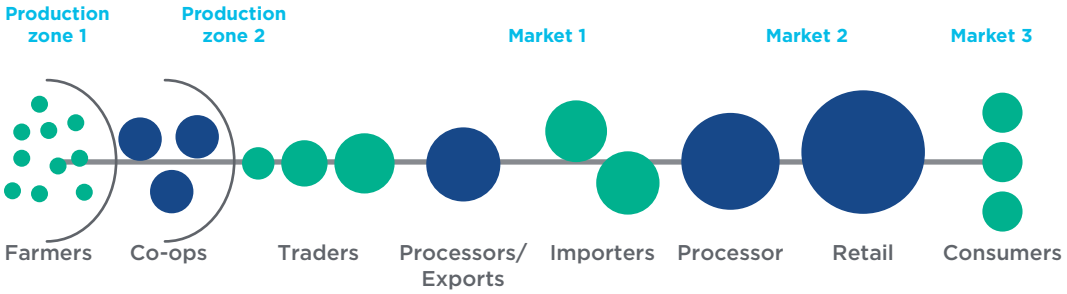


Figure 9. Conceptual map of value chain across production and marketing zones

Placing the information onto a geographic map helps teams to observe the physical nature of the coordination and to assess whether new supply arrangements can improve the overall business operations. For value chains to be successful, the security and costs of produce need to be under control and market mapping can help the team to assess links in the chain and if needed fix coordination failures. This work includes identifying buyers, sellers, and service providers along the value chain, sharing information and where necessary facilitating new linkages.

Government investments can support more competitive chains by investing in infrastructure, such as roads that help to connect farms and markets and provide public utilities such as water and power and market infrastructure at the right location. This approach can be applied to informal, traditional food value chains. Little additional funds are needed if the strategy limits itself to a more targeted allocation of the *available* public funds to given production zones and along the *established* marketing routes. Apart from the value chain development instruments, this public strategy also requires regional policies and planning instruments. The strategy targeting chain governance is highly relevant for poor producers who are particularly affected by market failures.

Investment corridors: The principle of coordinating investment along roads and within spatial boundaries can be used at different scales. At a much larger scale than the existing supply lines are government-led (agri-)business investment zones or economic corridors. These programs are meant to coordinate large public and private investments within a defined zone that connects production areas with ports and big cities. Examples for the implementation of this approach to promote market developments are the Southern Agricultural Growth Corridor of Tanzania (SAGCOT) and the Beira Agricultural Growth Corridor in Mozambique. Comparable approaches in non-agricultural sectors are cluster initiatives and industrial zones.

SUPPORTING ECOLOGICAL SUSTAINABILITY

The results of the environmental impact evaluation (IIE) will provide a list of environmental impacts related to an investment plan and typically investors require mitigation strategies to overcome any environmental threat and hazards. There are two types of environmental impacts:

1. Impact *of* the value chain on the natural environment.
2. Impact *on* the value chain caused by climate change or environmental degradation.

Both types of environmental problems threaten the economic model and therefore strategies to address these issues need to find ways of making the value chains “green,” or at least greener. The principle of *green economic development* is to find ways to resolve or mitigate the conflicts between economy and ecology. The following strategic considerations are of concern to all chain actors.

Fair Trade almond processing plant in Israel / Palestine. Small farmer organizations are now owning and managing processing plants like these and exporting value-added product to formal markets. *Jefferson Shriver/CRS*

STEPS IN THE UPGRADING ASSESSMENT

- **Ecological limits:** Are there critical red flags in the environmental assessment which indicate that the value chain crosses ecological limits?
- **Eco-efficiency:** Which possibilities to enhance resource efficiency exist in the value chain? How can conflicts over resource utilization be handled?

Environmentally sustainable solutions can be applied in production technology, organization of business processes, and consumption habits that aim at *reducing* inputs, *reusing* material, *maintaining* equipment and productive capacity, and *recycling* waste. By-products are not considered as waste but as raw materials that enters another value chain, thus capturing value from waste.

UPGRADING OPTIONS FOR ENVIRONMENTAL SUSTAINABILITY

There are three approaches for greening value chains and achieving improved environmental sustainability.

1. Management of the natural resources and ecosystems on which the chain relies,
2. Improving resource efficiency by reducing emissions, saving costs, and gaining better resilience,
3. Environmental regulation and policies

3: MANAGEMENT OF NATURAL RESOURCES AND ECOSYSTEMS

If the IEE detects local limits of resource use, the business model should find ways to protect the natural resources and ecosystems in the areas where the value chain operates. This is important for environmental impacts affecting value chains that build on local resources, these include value chains that are biodiversity-based products, agricultural products and fisheries, and also tourism based around natural attractions.

The value chain development strategy should find ways to stabilize and protect local ecosystems at a level that assures their long-term productivity and secures the livelihoods of poor people and enterprises that have no chance of leaving the site. Example, reducing starch run off from wet coffee mills. Protecting an ecosystem that supports *several* value chains calls for a program design that combines value chains with ecosystem management. This concept is particularly evident in the case of freshwater catch fisheries: The production process does not start with casting a line or net, but by protecting the water body and its shoreline, preventing pollution, releasing fry or juvenile fish, combatting alien species that put the native ecosystem at risk, and regulating access. Catching the fish for commercial purposes is just one technical step in a production process that, in fact, amounts to full-scale ecosystem management.

The connection of value chain development with ecosystems management is also made by approaches that reach beyond agriculture:

- Deforestation-free supply chains
- Water, Energy and Food Security Nexus

The principle of ecosystem management behind these approaches applies to the strategy formation for many value chains.

4: IMPROVING RESOURCE EFFICIENCY

Enhancing resource efficiency of the value chain is the first strategy for greening value chains. As long as the greening of the value chain is of economic benefit to the value chain operators, it is a win-win solution in which both environmental and commercial objectives come together. A classic example is energy-saving technology, which reduces emissions and saves money at the same time. Environmental problems, such as water shortages, are made up for by recycling and water-saving measures. The technological innovations give rise to modified or new business models and services as well as changes in chain organization and business partnerships. Improved resource efficiency responds to both types of environmental impacts. Ideally, it also opens the door to new business opportunities, and the transition process itself becomes a driving force for growth

5: ENVIRONMENTAL REGULATION POLICY

Environmental policy has two possibilities to change the incentives: One is a positive incentive, basically public payments that enable green investment; for example, investment that covers part of the cost of equipment. The other is taxation or environmental legislation. Instruments to achieve this include environmental standards, environmental taxes, restrictions on land use, or outright bans on certain products and technologies. The situation is similar to price changes induced within the economy, to which value chain operators have to react as well.

Farmers moving from rain-fed agriculture the use of drip irrigation can lead to significant yield increases, especially in horticulture. *Jefferson Shriver/CRS*

STRATEGIC CONSIDERATIONS RELATED TO SOCIAL BENEFITS

Generating social benefits is the key motivation for government and development agencies to promote value chains. Poverty reduction and economic inclusion of women and the young are essential elements in the concept of a sustainable and green economy.

STEPS IN THE SOCIAL ASSESSMENT

- Conduct a poverty mapping exercise to identify client segments that are linked to the value chain
- Ensure your value chain assessment tool collects sex and age disaggregated data, gender-specific questions related to the value chain and analyses and report this data with a gender lens.
- Identify economic constraints and opportunities of disadvantaged actors on the value chain especially women, boys and girls compared with buyers:
- Assess the potential for poor ♂♀ producers and daily wage earners to retain a position in the value chain as it upgrades? For females, assess their potential for controlling the income earned from this value chain?
- Assess safeguarding issues, particularly GBV and sexual harassment?
- Assess how conditions of livelihoods and nutrition affect poverty groups in the value chain?

This Colombian drying patio uses thick transparent plastic and bamboo to accelerate coffee drying in the sun and protect product from the rain, enabling coffee farmers in the highlands to reduce moisture and transportation costs in getting coffee to the dry mill. *Jefferson Shriver/CRS*

- Assess how this value chain can contribute to or not contribute to nutrition outcomes of the selected poverty groups

The general value chain hypothesis is that poverty is reduced with the growth of agro-enterprises and that gains from the value chain can be shared amongst all the actors. The impact of a value chain investment process on the community may depend on the selection of the product and it is likely that opportunities will be different for segments of the poor, i.e., poor farmers, poor suppliers and wage-earners. If the value chain includes poor producers and provides jobs for low-skilled workers, at least the potential for pro-poor growth exists.

Studies on the gains of globalization however, show that when there are winners, the wins are not always unevenly distributed and in high value markets poor smallholders are often left behind as the market scales and buyers focus on larger farmers. The question then, is under what conditions and to what extent do the benefits of economic development reach the poor, especially for women, girls and boys?

A large group of the poor are working or jobless wage laborers—from farm hands and day laborers to industrial workers. From a labor market policy and development perspective, this is an important group of the poor, given that their only asset is their ability to work. With no access to land, they are even worse off than self-employed farmers. Nevertheless, these groups tend to be less visible than the poor farmers and value chain service providers. This is especially true for the unemployed or only temporarily employed laborers and migrant workers. It is essential that the poverty mapping of value chains is inclusive in the sense that it not only shows poverty groups in, but also *around,* the value chain.

The strategic considerations concern the employability of the people concerned, and their competitiveness on the labor market on one side and the terms of employment on the other. The latter includes not only the question of wage levels, but also the working conditions and the stability of employment.

- *Industry and services more likely to generate employment than agriculture*
- *Employment opportunities shift to advanced business models in the same chain link*
- *High-value agricultural products offer greater employment potential*
- *Low-entry jobs are often gender-specific*
- *Female pay differential disincentive to participate*
- *Informal employment as transitory solution*
- *Inflexible employment policies that hinder female employees with children*
- *Lack of sexual harassment protection and enforcement*

A substantial part of the employment generated in value chain development and accessible to the poor is informal. It includes casual laborers such as porters, store men, helpers and self-employed intermediaries, petty traders and home workers. These jobs have the advantage of low entry barriers for the poor on one side, and low cost and high flexibility for enterprises on the other. Flexibility and cost reduction are achieved by increasing the number of casual workers. Illustrative of this global trend is the Ugandan cut flower industry in which 75% of the workforce is now employed on a temporary basis."[29] Access to informal employment is necessary for survival but offers little social security and is highly precarious at the same time. Casual day laborers in agricultural production do not have many opportunities for learning and their personal development.

LIVING WAGES AND DECENT EMPLOYMENT CONDITIONS

Of real significance is the question whether employment in a value chain enables poor people to move out of poverty or whether it leaves them "stuck" as working poor. If the poverty analysis of the chain shows that laborers working full time still face precarious living conditions, the economic inclusion in the value chain is not enough to make a decent living.

This thinking has promoted the use of a minimum requirements that allow poor workers a decent life. The idea is expressed in the term **living wage**. ILO (International Labour Organization) provides a general definition of the living wage:

"The idea of a living wage is that workers and their families should be able to afford a basic, but decent, life style that is considered acceptable by society at its current level of economic development. Workers and their families should be able to live above the poverty level and be able to participate in social and cultural life."[30]

29 Posthumus, H. (2007): "Rural employment promotion through the value chain approach", Background paper for the round-table discussion, IFAD Governing Council 2007. Available from: https://www.ifad.org/documents/10180/6bbdb3a2-f80a-4f02-b6dd-6e880a063fcc .

30 Anker, R. (2011): "Estimating a living wage: A methodological review", Conditions of Work and Employment Series, No. 29, Geneva: International Labor Organization (ILO).

BOX 1 –CALCULATING LIVING INCOME

Definitions

The definition of **living income** reads:

"A living income is the net income a household would need to earn to enable all members of the household to afford a decent standard of living. Elements of a decent standard of living … [as above for living wage]."

Calculating the minimum requirement of a decent life

For a country or region, a "basket of needs" is worked out that contains the following elements:

- Cost of basic quality life for an average person
- Cost of nutritious low-cost diet
- Cost of basic acceptable housing
- Other essential expenses
- A small margin for unforeseen events

Establishing the consumption needs frame and the work force frame:

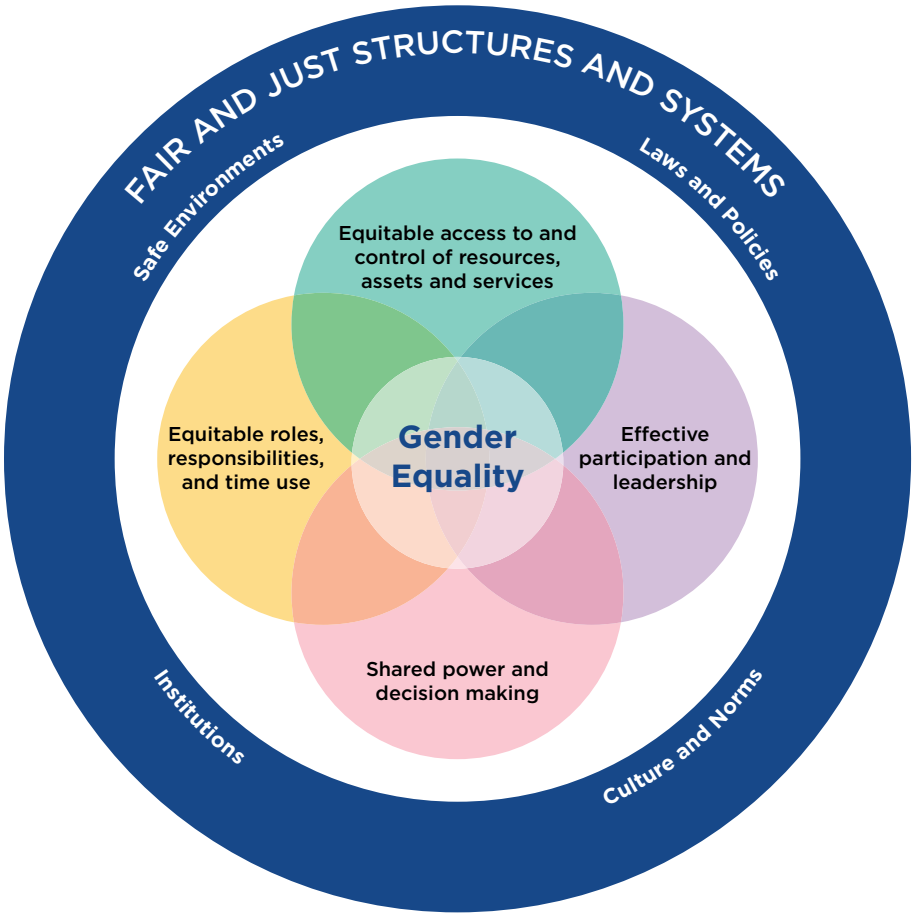
- Standard household size
- Standard number of full-time productive workers per household

6: BUSINESS MODELS BENEFITTING THE POOR

A strategy for sustainable chain development cannot assume that poverty groups will automatically benefit from the growing value added. Economic development is always accompanied by the transformation of business models. To strengthen their relative position in the chain, poor producers must change their business models as well. The types of business models poor producers and wage workers alike are seeking are those that are accessible and beneficial for poor producers and that that hire poor wage workers.

7: GENDER-SENSITIVE VALUE CHAIN DEVELOPMENT

Women, men, girls and boys experience and benefit from value chains differently. With value chain development, the upgrading can positively or negatively affect gender roles and relations depending on its designed and implementation. Addressing these differentials can enhance market efficiencies, capitalize on opportunities to make value chains work for *both* poor women and men, and improve profitability. KIT, Agri-ProFocus, and IIRR[31] argue the importance of gender equity for 3 overall reasons:



1. Social justice and equal opportunity
2. Poverty reduction, "fighting poverty is hard if you're gender blind"
3. Business opportunities, "serving women is good for business and the economy"

The collection of sex and age-disaggregated data and analysis of the gender-sensitive value chain assessment tools in chapter 2 identifies gender dynamics and conditions that need to be considered and addressed in the value chain development. This analysis considers gender in value chains from 6 domain (Figure X)

31 KIT (Royal Tropical Institute), Agri-ProFocus and International Institute of Rural Reconstruction (IIRR) (2012): "Challenging chains to change: Gender equity in agricultural value chain development". Amsterdam: KIT Publishers.

PRINCIPLES OF GENDER-SENSITIVE VALUE CHAIN DEVELOPMENT

There are several key principals to support gender-sensitive value chain development:

1. Use a "gender lens" at all stages of the value chain development processes, from value chain analysis to strategy formation, implementation and monitoring and evaluation
2. Understand different constraints and opportunities men, women, male and female adolescents face within the value chain as well as in their household and community that could affect their contribution and ability to benefit equitably from the value chain upgrading
3. Approach men, women, male and female adolescents as equal actors.
4. Engage women and adolescent girls with male headed-households and female-headed households as clients and recipients of goods and services.
5. Mentor women leaders.[32]
6. Use gender-sensitive recruiting to hire staff

FROM GENDER BLIND TO GENDER TRANSFORMATIVE VALUE CHAIN DEVELOPMENT

The **Gender Equality Integration Continuum**[33] categorizes programs by how gender norms and inequities are treated in the design, implementation, and evaluation. It classifies approaches as gender blind to gender aware programs, which are either responsive or transformative. Gender blind value chain interventions ignore factors that affect women, men, girls and boys differently such as economic, and social roles; rights; access to inputs, assets and services; control of income, and equitable participation in associations. They do not acknowledge power dynamics between men and women, boys and girls. Gender-responsive programs acknowledge local gender differences and norms and how that theses difference could affect the outcomes of value chain development. The program adapts the development process to support men, women, boys and girls within their roles and responsibilities but does not change gender norms or the underlying systems and structures the effect gender equality within the value chain. In gender transformative value chain programs, development teams promote gender equality by recognizing and strengthening positive norms that support equality and an enabling environment as well as empowering women and girls by changing social structures, policies and broadly held social norms that perpetuate gender inequalities.

GENDER-RELATED OPPORTUNITIES AND CONSTRAINTS IN VALUE CHAIN DEVELOPMENT

Literature has illustrated a number constraints and opportunities for women participating in value chains. Below is a few examples to help guide your thinking about value chain development that is equitable and values the contributions that males and females bring.

32 Rubin, Deborah, Cristina Manfre and Kara Nichols Barret. Promoting Gender Equitable Opportunities in Agricultural Value Chains. http://waterandlivelihoods.pbworks.com/f/Promoting+Gender+Equitable+Opportunities+in+Agricultural+Value+Chains.pdf

33 https://www.igwg.org/wp-content/uploads/2017/05/FG_GendrIntegrContinuum.pdf

DISADVANTAGES AND OPPORTUNITIES OF WOMEN ENTREPRENEURS

Women face many disadvantages that can limit their economic participation, below are a few examples:

- Higher poverty risk, which limits women's ability to be self-employed micro-entrepreneurs.
- Traditional and legal restrictions on women's ownership of property, especially land.
- In the absence of collateral, women have limited access to credit and financial services.
- Lower levels of education and literacy.
- Heavy workloads related to family and social responsibilities that compete with business obligations.
- Limited access to appropriate business services and inputs.
- Discrimination by public administration and extension agents.
- Social prejudices or legal restrictions impeding women to engage in particular business activities.
- Restricted mobility due to cultural norms, safety and access to transport.

These constraints often effect the size and location of women-led enterprises; they are often smaller than male-owned business and often confined to local, informal markets near the home. Women are more likely to be excluded from business activities that extend beyond the community.

Impact of business model development on women: The interventions to promote female entrepreneurship and wage employment are the subject of the strategic option targeting the economic empowerment of women. The issue here is the implications of developing the dominant business models for women. In farms and small rural enterprises, the main points are technology design, workload, and the distribution of financial gains between men and women. Generally, technology should be adapted to the physical conditions of women and help reduce their time input. At the same time, there may be benefits from using complementary talents of the sexes.

Gender equitable organization and governance of cooperatives and associations: Networks of business women and gender-specific commercial groups and associations have an important support function. A gendered value chain strategy should support them. The tools to develop horizontal cooperation are mostly generic. The key to greater gender equity within mixed associations is twofold: It requires an equal representation of both sexes in decision-making and adequate procedures within the organization. Solutions include the proper timing of meetings and the planning of activities in view of the limitations of women with regard to their mobility and reproductive tasks.

Access of women to adequate public and private services: To overcome gender gaps in service provision and service quality, service providers need to be cognizant and know how to adapt their approach based on gender roles and responsibilities, women's workload, norms and dynamics that influence the needs and wants of female clients and restricts their ability to engage with female clients. For example, rural extension services should consider a gender-balanced staff, the relevance of the content to female clients, the timing, location and safety of meetings. The private sector may need to develop women-friendly strategies to reach more female clients in an appropriate manner. To increase access to appropriate services, females' participation, recognition and voice needs to be strengthened and heard within organizations that influence these services.

Gender criteria in standard systems: Sustainability standards and codes of conduct should be adjusted to address gender equity issues such as discrimination, harassment, maternity leave, breastfeeding-friendly policies, and unequal pay as a criterion for certification. An example is the Sustainable Agriculture Standard of the Sustainable Agriculture Network (SAN), which includes a nondiscrimination criterion for gender in its chapter on fair treatment and good working conditions for workers. A detailed discussion and examples of relevant seals, labels, and standards, including women-only, is provided by KIT, Agri-ProFocus, and IIRR.

Policies and regulatory improvements in favor of gender equity: Next to improved business models, promoting political and regulatory change is an important field of gender mainstreaming because all gender issues are driven by institutions and socio-cultural factors. However, not all gender issues can be addressed by public policy. The typical male and female behavior belongs to the socio-cultural context. Attitudes are only indirectly amenable to policymaking. Policy solutions can be structured into social policies and services on one side, and institutional and regulatory policy on the other. Social services play a key role in economic empowerment as they relieve women from part of their reproductive workload. They cushion risk and vulnerability and thus contribute to freeing up resources that can be used for economic activities. Important types of social services benefitting women include:

- Free health care for women and children
- Day-care centers for children
- Family planning support
- School feeding
- Social security covering the needs of the sick and old, which women normally cover
- Literacy and numeracy training
- General education and training in life skills, especially for women

Although these services may not appear directly related to value chain development, they can make a decisive difference for the ability of women to participate in economic life. Saving women time and energy, they directly contribute to more gender equity. Other services and public utilities can have the same effect. Any type of service that reduces the time rural women have to spend on household chores, such as fetching water and wood, has economic significance. Examples include:

- Water supply at community level
- Solutions for household energy
- Solar lighting
- Efficient cook stoves
- Electrification of rural areas and urban slums

Service design and provision has to be arranged in response to women's needs. It goes without saying that men and women need to have equal access to all public services and social programs.

Institutional and legal reform: The change of laws and institutions determining gender relations depends on the political priorities and processes in a country. Fields of national policymaking that are accessible to policy advice regard policies to achieve the legal equality and political participation of women. Labor legislation is another field of national policy amenable to promoting gender issues. Gender equity at the workplace is an important concern in the ILO labor standards. However, achieving gender equality in

actual practice is a long-term agenda that cannot be reduced to producing legal texts. Every step in the right direction is welcome, but the time horizon for change extends further into the future than that of most value chain initiatives. Nevertheless, value chain strategies have the possibility to engage in affirmative action to address gender inequities in companies and business life. Policy advice should closely coordinate with organizations that are engaged in the improvement of gender equity.

The biggest challenge is presented by traditional, mostly rural institutions regulating the roles and rights of men and women, especially inheritance rules and land tenure. There can be no doubt that customary inheritance laws often strongly discriminate against women. These are not only disadvantages for women; they also present obstacles to economic development. At the same time, these institutions are deeply rooted in local cultural traditions.

Changing the patriarchal traditions connected to private lives is a very complex challenge. The question is whether the population accepts reforms that touch upon religious traditions and the vested interests of men. Passing laws is one thing; the actual implementation, another. Modern statutory laws on inheritance and property do not automatically translate into positive gender outcomes.

8: ECONOMIC EMPOWERMENT OF WOMEN AND THE YOUNG

The economic empowerment of female entrepreneurs and wage workers is the core of a gendered value chain development strategy. Increasing the economic participation of women in the value chain, providing them with their own cash income, is the key to improved gender relations and better chain performance.

Developing female entrepreneurship[34]: The strategy to develop female entrepreneurship should start with the business models and value chains in which female entrepreneurship already has a tradition. These industries include trade, agricultural processing, handicrafts, textiles and garments, and biodiversity products and services.

Developing youth agripreneurship: The approach for developing more jobs for youth is critical in the developing world, where in some cases youth, i.e., those under 18 make up more than 50% of the population. This requires an entirely new approach to finding a range of jobs for millions of people who are about to leave school. This can be a huge boon to a society in need of labour or a huge problem is no jobs are made available.

The issue is to move from microenterprises and backyard operations in these value chains to more profitable business models. One example is the business model for mechanized cassava milling and processing in Burkina Faso.

CONCLUSION VALUE CHAIN DEVELOPMENT STRATEGIES

This last section provides the principles and some tools combining the economic, ecological, and social considerations into an integrated strategy for the sustainable development of

34 Detailed treatments of support activities to promote female entrepreneurship are provided by the Women's Entrepreneurship Development Programme of ILO. See, for example, Patel and other publications on the ILO website. Other sources are KIT, Agri-ProFocus, and IIRR, and the World Bank, FAO, and IFAD *Gender Sourcebook*. The GIZ and OXFAM guide on *The Why, What and How of Gender-Sensitive Value Chains* provides the outline of a process design similar to the PACA methodology, the Participatory Analysis of Competitive Advantage.

a particular value chain. The term *strategy* refers to the entire value chain as well as to the strategies of individual actors. For one, it can be understood as a general vision on how to achieve the transition towards sustainability transforming the entire value chain.

Table 10. Overview of value chain upgrading options for value chain development

Upgrading options	Basic impact hypothesis	Expected impact
Economic growth		
Value chain upgrading	A specific combination of business innovations and improved services leads to greater value chain efficiency and performance	Better products or lower cost overall
Addressing market failure	Coordination of public and private investments along supply routes fixing breaks in the chain	Investment goes up, better products, or lower cost
Environmental sustainability		
Management of local ecosystems	Implementation of management plans keeps extraction below critical limits	Foundation for long-term sustainability of the value chain
Promoting business models with improved natural resource efficiency	Improved resource efficiency decouples production from natural resources, green products and services enable investment in resource-saving technology and stimulate growth	Less natural resource consumption, lower cost
Sustainability standards and regulation	Sustainability standards and environmental legislation impose limits on business processes	Resource losses and pollution stopped
Social equity		
Promoting business models for the benefit of the poor	Removing economic discrimination and promoting specific business models improves the competitiveness of the poor	Poor producers and workers contribute to and benefit from growth
Defensive interventions and complementary social strategies	Balancing disruptive change and preventing exploitative labor relations to protect the poor, services and financial transfers compensating social problems	No negative impact on livelihoods, poor better protected, and employability improved
Gender-sensitive chain development		
Gender-sensitive value chain development projects and programs	Moving from gender blind, to gender sensitive and onto gender transformative value chains	Investing in removing constraints and promoting opportunities for women's leadership in value chains
Supporting the entrepreneurship of women	Support investment in women led enterprises and startups	New business opportunities for women
Supporting youth entrepreneurship	Providing jobs to millions of young people	New employment for youth

FROM VISION TO ACTION

Value chain development seeks solutions at all points where the value chain needs to improve. These include improved business models, stronger business linkages, better services, financial arrangements and an appropriate regulatory framework. Each value chain solution suggests concrete changes in business models, linkages and investments. To operationalize the strategy, planners must arrive at the specific value chain solutions to work on and determine the action needed. This means synthesizing the strategic analyses and turning the considerations into action proposals. The questions are which changes to make and in what sequence. There are several possibilities to achieve that.

Generally, potential actions can be systematically inferred by:

- Determining possibilities to remove the barriers hindering progress
- Determining possibilities to fulfil the requirements

- Checking on points of leverage in the value chain

The first two points mean gathering the right information, analyzing the key issues, formulating a plan and developing an action plan. The second point means breaking down the ideas into manageable tasks. The third point identifies those elements of the chain where action might produce the greatest effect.

The procedure is to focus on those constraints and opportunities in the chain that are critical success factors and have the potential to advance or impede upgrading. Critical issues are found at the points of leverage. Points of leverage are the key business links or bottlenecks in the value chain affecting the overall performance or key services and sources of technology without which the chain cannot advance. Points of leverage can be identified as part of a value chain mapping exercise. Translating strategic options into value chain solutions may yield a large number of potential actions. To take a decision on action, the proposed solutions should be critically reviewed.

STEPS TOWARDS DESIGNING THE IMPLEMENTATION APPROACH:

- Draft the Vision Statement
- Revisit the Value Chain Map and identify all constraints, including gender-related constraints that are relevant to your vision statements
- 'Flip' the constraints/problems into possible solutions
- As a check, review the Strategic Options to ensure that all options have been considered. Each constraint/solution can be linked to one or more strategic options.

Smallholder horticulture production in Tanzania. On small plots, farmers can earn significant income selling high-yielding vegetables in informal and formal markets. *Jefferson Shriver/CRS*

Chapter 4
Value Chain Finance

Although financial services are critical for value chain upgrading, this is probably the area that has received least support. For long term viability of value chains, financial services are required at stages along the chain. However, given the informal nature of many value chains in emerging economies, gaining access to finance remains a major constraint, especially for smallholder farmers particularly women.

Smallholders are considered high risk by lenders as they have no collateral, no credit history, generally low financial literacy and no means of linking their land with a production history, to assess their risk profile. Most smallholder production is rain-fed, using low levels of technology and yields are typically low and of variable quality. If finance is available, many farmers cannot afford the terms and many farmers avoid formal debt, as they are concerned about defaults and asset losses. The challenge then is to find consistent and reliable methods to provide farmers with access to an appropriate level of financial service and build their financial literacy, so that they can assess their own risks and make sound decisions about using their financing options most effectively. This chapter introduces ideas on inclusive financial services, including an overview of sources and modalities of financing.

WHEN DO FAMERS NEED FINANCE?

Farm business processes are complicated. Most farmers operate multiple product enterprises throughout the year as they grow different crops through the seasons and many combine crops with some form of livestock production.

WHAT ARE THE FINANCIAL NEEDS IN THE VALUE CHAIN?

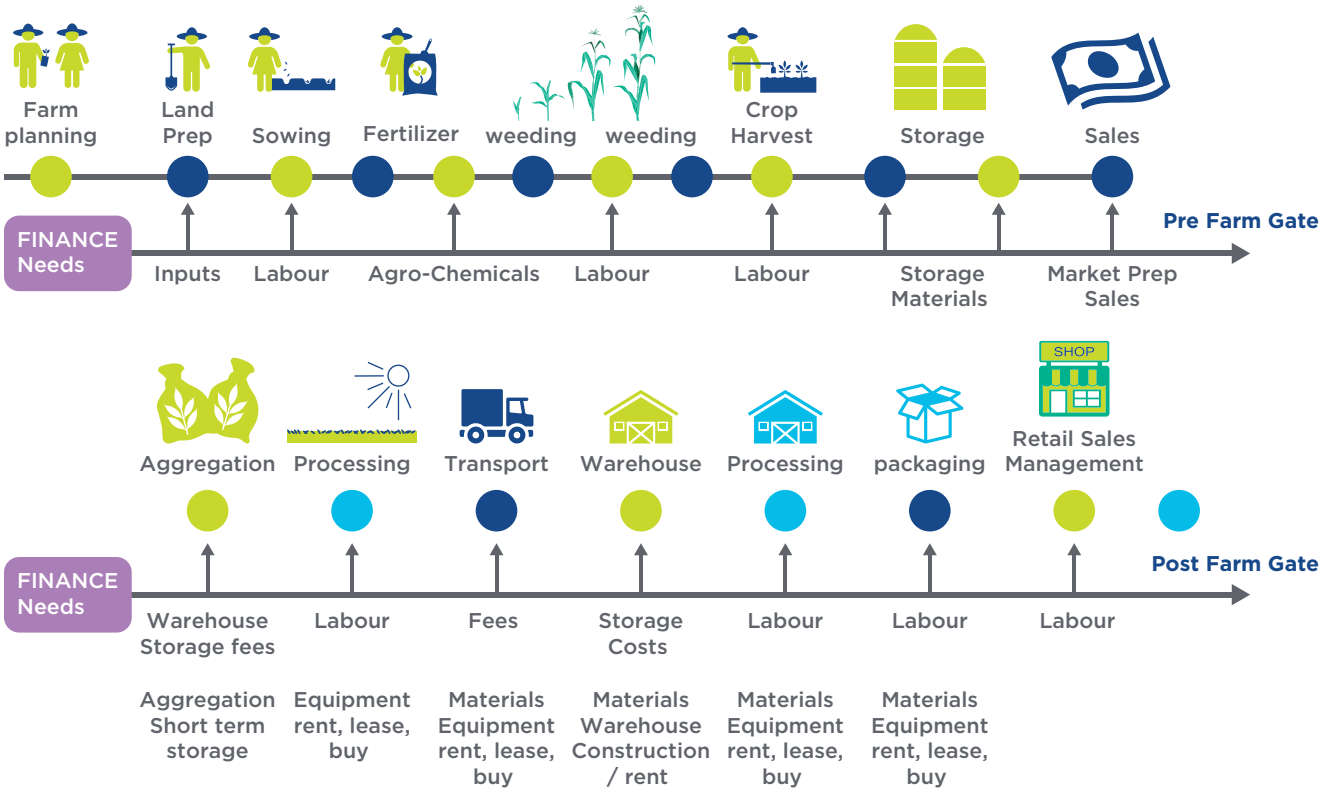


Figure 10. Financial needs all along the value chain

To meet their production needs, farmers require capital through-out the year to support their farming system. As shown in **Figure 1**, for any given product, such as maize, farmers will need finance to buy seeds, fertilizer, agro-chemicals, equipment and pay laborers to plough, plant, weed and harvest their crops. After harvest, farmers must pay for operations to maintain quality or add value to primary goods through aggregation, drying, grading and some crops need additional fermenting, curing and milling in the post-harvest phase in preparation for sale; funds are then needed to transport produce to market.

Farmers typically grow several crops in a year, **Figure 2**, shows the seasonal calendar for main harvest followed by a second harvest. For each of these seasons, farmers will need money to start a new crop and they may need additional financing to plant the second crop before they receive income from the first crop. It is common to find that farmers deal with a relay of cash outlays and revenue throughout the year and when working in farmer groups, they may face considerable delays between the time they harvest their crops and receive the full value of their sales. Balancing the books with a focus on use of high quality inputs, takes considerable organization, management skills and access to services.

As indicated in **Figure 1**, financing needs in producing and selling agricultural goods to a consumer do not end with farmers, all along the value chain, there are other actors including input suppliers, traders, processors, wholesalers and retailers who also need access to some form of finance to buy and sell produce, pay for transport and storage, buy equipment for processing and pay their workers in processing, marketing and selling agriculture products. For value chains to operate both efficiently and competitively, the actors need to have finances to maintain the quality and flow of goods.

HOW MUCH FINANCING DO FARMERS NEED?

INVESTING HOW MUCH?

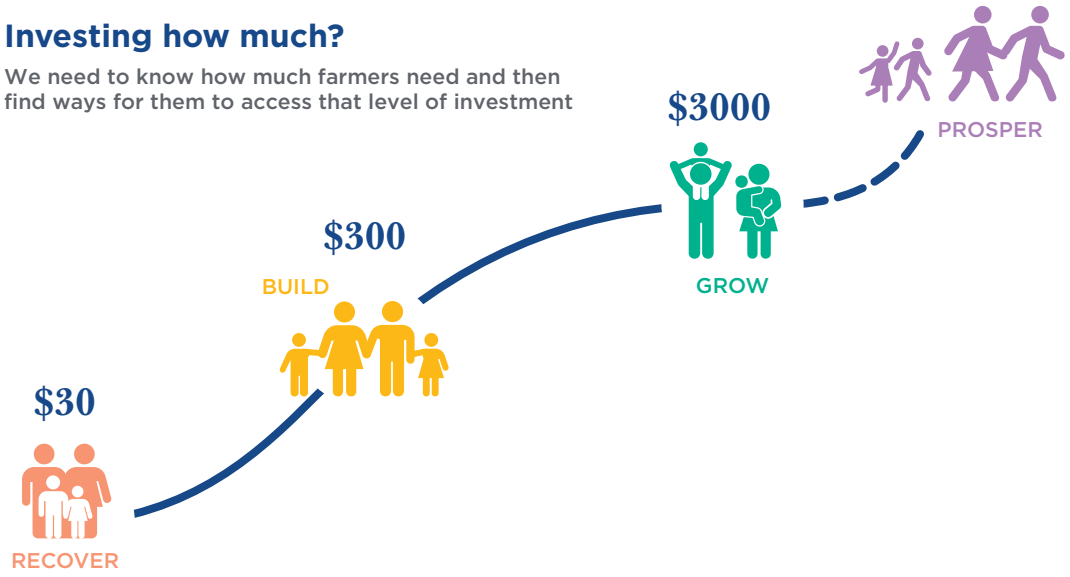


Figure 11. Financing needs of farmers by product and segment

The amount of money that farmers need each season depends on their farming mix, their assets, skills, product range, market opportunities and use of technology. If we consider the basic segmentation of farmers in Africa, along the Pathway to Prosperity, then we can generate some basic costs according to the levels. For example, a poor farmer, who may have 1 to 2 acres of land and produces maize, using home seed, no fertilizer and family labor, may have an out of pocket cost production that could be as low as $30-$50 per year. A basic costing is provided in **Table 11**. As farm sizes increase and farmers start to use hybrid seed, fertilizer and labor to ensure that they plant and weed on time, then their costs for 2-4 acres of land may increase to $300-$400 per season. Production cost increases considerably for those farmers who are planting more than 10 acres of land, with a full technology package. However, along with the increased costs of the production unit, there also comes a major upgrade in productivity, revenue and most importantly profit. See cost structure for maize farmers in **Table 11.**

Table 11. Cost structures for maize with different technology / labor packages

Poor (Recover) farmers		Middling (Build) farmers		Grow Farmers	
Costs and Profit per acre all Labor with Fertilizer	**all labor**	**Costs and Profit per acre all Labor with Fertilizer**	**all labor**	**Profit (gross margin) per acre all labor 2 acres with fertilizer**	**all labor**
Total income	60.00	Total income	340.00	Total income	1312.66
Total material costs	15.00	Total material costs	108.59	Total material costs	195.47
Total labor and services costs	20.47	Total labor and services costs	71.88	Total labor and services costs	121.25
Total costs	**35.47**	Total costs	**180.47**	Total costs	**316.72**
Profit (gross margin) per acre	30.00	Profit (gross margin) per acre	159.53	Profit (gross margin) per acre	995.94

INFORMAL VERSUS FORMAL FINANCIAL SERVICES

The terms **"informal"** and **"formal"** are based on their regulatory status. Any markets, transactions and loans that are termed 'informal', are because they exist beyond the tax system and are off any legal records. In most developing countries, informal markets, trade and lending make up more than 80%–90% of all transactions within the agricultural and food sector. This is therefore, an extremely important slice of the market, which is not yet being serviced by regulated lending agencies.

Formal lending agencies such as microfinance institutions and banks have been unable or unwilling to provide loan products for farmers. This is because there are more profitable sectors to lend into and rainfed farmers are high risk. Farmers and most traders are forced to rely on their own resources and high-cost loans from local moneylenders, loans from traders or community-based savings-led initiatives.

Across the value chain, the transition from informal and formal lending, typically comes when a product comes into an urban setting, where defined and consistent units are readily available to be aggregated, graded, traded, processed and sold to consumers. At this stage in the value chain, there is more clarity and certainty in the marketplace and risks are much reduced. The business model is more easily understood by formal lenders and this allows for more lending to take place. This basic concept of where informal meets formal within the value chain is captured in **Figure 4**.

FINANCING BEYOND FARMS TO VALUE CHAINS

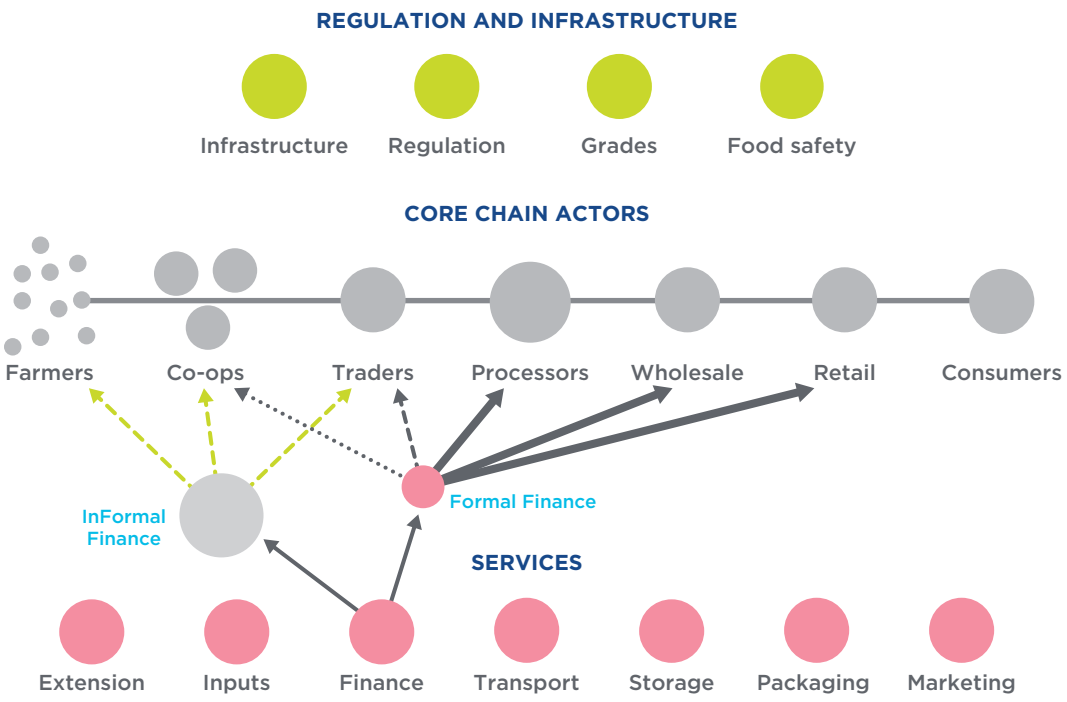


Figure 12. The transition from informal financing to formal financing

Smallholder horticulture production in greenhouses in Tanzania. *Jefferson Shriver/CRS*

Financing depends on the product and market type: Given the range of farmers, there are many financial products based on the scale of the farming operation and sophistication of the value chain. For low value products, such as maize, sorghum, millet, etc, the level of financing per farmers can be relatively low, particularly where farming is low input. Capital investments increase rapidly when working with more technology intensive system and specialized production systems such as horticulture and when considering local markets versus the longer national value chains or export value chains.

Financing arrangements differ when considering short term versus long term products such cabbages versus tree crops, such as coffee may take several years to first income, but will continue to yield for more than 20 years. Similarly, crop financing is quite different from livestock. To understand the needs of a farming community, the project team will need to work closely with the farmer organizations and their buyers to fully understand existing methods and alternative options.

Sources of Value Chain Financing: Although, financing for smallholders is a challenge, it is an area that is getting increasing attention because it is an untapped market. If lenders can find ways of reducing their risks, they could extend financing more efficiently. This process of learning how to work with millions of smallholders is slowly gaining pace as progress is made in gathering business data with the integration of mobile phones and information technology. The information in **Table 12**, provides a list of various sources of value chain financing and how they apply to farmers and other actors in the value chain.

Table 12. Types and sources of financial services

Type of lending	Key aspect
Savings groups	Saving individual money and gaining some interest. Loan levels are typically low $10-$30. Often times it is the female partner that is the member of the savings group. Includes ROSCAs, ASCAs and SILCs.
Family lending	Save and highly flexible form of lending
Local money lenders	Convenient, accessible, personalized, but terms generally high cost. This relationship can keep borrowers in persistent debt.
E-money	Means of conducting sales transactions through mobile phone transactions. Reduces risks of theft and enables trades to be done over long distance.
Farmer organization fund	Revolving funds: common method used by farmer groups to raise capital that is used by the group to buy inputs, help with aggregation of crops and sales.
Input suppliers and traders	lenders provide farmers with seed and fertilizer on credit with repayment in grain at the end of the season. This system provides farmers with essential needs but can lead to a debt cycle.
Savings and credit cooperatives (SACCOs)	Members can access higher loans compared with savings groups, more commercial in nature. This type of entity can provide short term lending to support inputs and marketing needs, but can also support larger, infrastructure loans for transport, warehousing and processing
Warrantage at storage	Ability of farmers to access cash based on value of goods in store, often a part value payment, which is very useful to farmers who need cash at harvest but want to improve sales prices.
Warehouse inventory credit schemes	More formalized system, where credit notes can also be traded, typically for more commercial smallholders. This system requires an accredited warehouse operator and an officially graded product that can be traded over distance. Requires a legal framework to operate effectively, provides farmers with transparent price discovery and credit on good terms.
Micro-finance institutes	First level of formal credit lending. Few MFI's offer to agriculture sector as they do not understand the risks and are mainly focused on urban business models.
MFI micro-loans	Small loans typically between $100 - $1000, accessed from Micro-Finance Institutes.
Commercial banks Debt based on hard and soft collateral	Traditional lender of formal credit lending. Few Banks offer to smallholder agriculture sector, some lend to larger farmers, especially those who can offer **hard collateral** based on asset ownership, or soft collateral such as **contracts** with formal buyers. and those who can mitigate risk through use of technologies such as irrigation or protected methods of production.
Micro-insurance	Insurance that farmers can take out against losses of inputs or total crops.
Loan Guarantees	A loan Guarantee, is a promise by one party (the guarantor) to assume the debt obligation of a borrower if that borrower defaults. A guarantee can be limited, or unlimited, making the guarantor liable for only a portion of all of the debt.
Impact investing	Impact investments are investments made into companies, organizations and funds with the intention to generate social and environmental impact alongside a financial return.
Debt and Equity financing	Business owners can utilize a variety of financing resources, initially broken into two categories, debt and equity. Debt, involves borrowing money to be repaid, plus interest, while equity involves raising money by selling interests in the company.
Venture philanthropy	This is a type of impact investment that takes the concepts and techniques from venture capital finance and business management and applies to achieving a philanthropic goal.
Venture Capital investments	This type of investment places emphasis on equity investments, whereby investors take a share of the value of the business. The venture capitalists realize their profit when they sell their stake in the company, making an "exit" from the business. The exit may come in the form of the shares being sold back to the management team, or through the sales of the equity stake to other external buyers.

The information in **Figure 5**, shows in general terms where these types of financial services are applied along the value chain.

FINANCING ALONG THE VALUE CHAIN

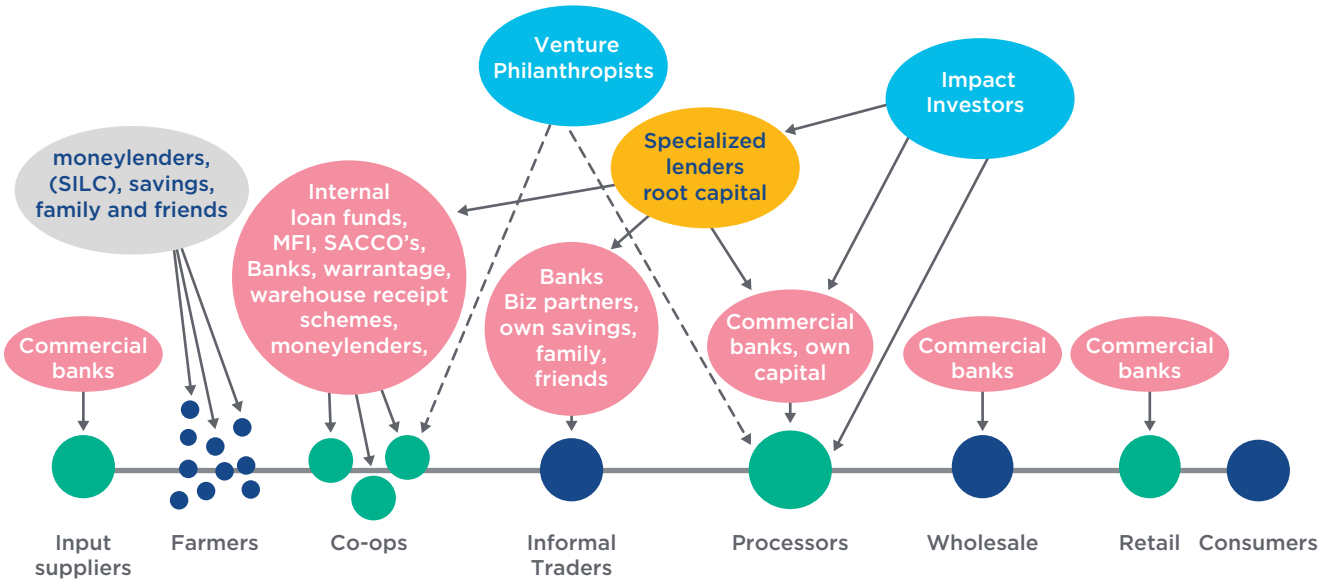


Figure 13. Conceptual diagram showing where various forms of financial services are applied.

INFORMAL FINANCING

Savings and Family funds: Most farmers operate their businesses using their own funds. When family members borrow money, they may not charge interest and the length of the loan, will depend on the ability of the borrower to repay. Family lending is common for farmers and local traders, who may borrow from several family members to bulk produce and sell into the local market. CRS has developed a financial guide, entitled **"financial education"**, which can help farming families organize their finances, and separate household and business financing.

Local money Lenders: The next most common means of access to financial services is through their local money lenders, who lend small amounts of cash to community members based on ties of familiarity. The rates offered by lenders can be high, 10% per week or 10% per month. Lenders support farmers with loans that last for the season. The lenders know that if farmers cannot repay in cash, that they can repay in produce. Whilst many revile money lenders as a poverty trap, they provide communities with one of the only reliable forms of credit on terms that they understand and respect farmers and farmers appreciate the flexibility of local lenders. Few projects work with local lenders.

Input suppliers and traders as financial service agents: Input suppliers typically offer farmers their goods for cash or a combination of cash and some credit. These suppliers, receive payment in cash or product at the end of the season. Unlike general money lenders, the input dealers and produce traders, have a good understanding of the agricultural business and its risks. They also know the pricing and the marketing channels, and their local knowledge is of great value to the community. Many of these local agents are linked to larger input dealers and trading companies who finance them as business partners.

Much attention is being given to finding ways of supporting local business agents with financing methods and business training, so that they can promote their services to farmers and lend to reliable farmers so that they buy quality seed, fertilizer, tillage equipment, agro-chemicals and associated safety equipment, so that farmers can use local financing to improve their productivity.

Savings for seeds: There are some new companies such as MyAgro and Tulaa, who offer farmers a way to save after harvest and during the off season, using credit agents, scratch cards or mobile accounts, such that the farmers are provided with a seeds, fertilizer and training package at the start of the next season. This type of arrangement works because if the farmers do not pay the full amount for the package, they do not receive the inputs at harvest and their funds may be locked until the next season, or when the account is dissolved by the farmer.

Savings and Loan Groups: Savings groups have proven to be one of the most robust services that NGO's offer farmers. Farmer can learn this skill in 10 weeks of training. Groups of people, come together and commit to regular savings schemes with the possibility of small loans to members within the group. During the savings year, members can access small loans, $5-$20 which can be used for basic consumption or to invest in an enterprise such as agriculture. These small amounts can be used to buy seeds, or to pay for labor needs. At the end of the savings cycle, the groups have a share out, where members are returned their savings with interest in loans. This larger annual payment, (typically $30 - $100), can be used to pay for larger input needs such as seed, fertilizer, investing in upgrading a farm, buying a pump, or tree seedlings, or go towards other types of working capital.

To date, savings and loan groups have rarely been designed or used for value chain programming. However, as shown in the diagram below, this may lead to a strategy whereby, savings groups synchronize their savings approaches to meet part or all their main crop inputs. This is a major savings for the farmers and enables them to avoid high interest loans from input suppliers which inevitably compromises their ability to trade their produce at best market prices.

Often saving and loan groups are made up of women who may or may not be part an explicit member of the value chain. Furthermore, depending on the local context, women may be members of the savings group but do not make decisions on how savings and loans are used. CRS has used a SILC+ Gender Transformation Approach (GTA) to address these gender-related barriers.

Local private sector service providers (PSP's): To support the training of savings groups, CRS has developed a fee-based service provider, termed the private sector service provider (PSP). These agents are trained in how to establish savings groups and provide financial literacy training for a fee. This means their services are sustainable beyond the end of a project cycle. The role of these trusted local intermediaries is potentially an important link between farmers and input suppliers and lending agencies. CRS has found that linking PSP's with local agronomists is an important step in helping poor farmers to learn about and plan for investing in improved production and product sales.

Micro-credit based on savings credit history: The success of savings groups has also been noted by other lending agencies. Service providers such as Opportunity International Bank, an international lending agency, that is seeking ways to use membership of a savings group, as a means of verifying credit worthiness for additional

Cold storage room in Tanzania using charcoal-filled siding. The appropriate technology creates conditions for cold storage without the use of fossil fuels.

lending. Lending agencies such as Opportunity International are working with PSP's to target key clients for additional personal loans.

The aim of this approach is three-fold. First to identify eligible candidates, within known groups who can be offered credit. Second to offer a new line of credit to individuals or select members of a group and third to encourage community members to transition from informal lending into a more systematic savings and lending arrangement, with formal agencies. The prospect of using the records from a savings group, as a first level of "credit" profiling offers lending agencies new avenues for provision of micro-loans to this hard to reach client segment.

Mobile money: The advent of mobile phones and mobile money, provides a means of drastically reducing financial transaction cost and virtually eliminates the problem of distance. It may or may not help close the gender financial inclusion gap given barriers with incompatible technologies, financial resources to purchase phones and credit, and poor digital literacy. The use of mobile money is attractive for rural enterprises as it offers speed and security. Some savings groups are already using mobile money as their saving currency, but records remain the same, a physical record book.

People use mobile money as a means of transferring cash between family and business associates. Business transactions can only be done once a relationship has been developed, but this new approach offers remote producers with a major new opportunity. The use of mobile money depends upon the country with the run-away success story being Mpesa in Kenya.

Mobile Credit is also being made more readily available to clients and this system has the advantage that transaction costs are low, once a credit history has been established. In Kenya the mKopa team, are offering clients with credit packages, starting with small loans, that if repaid, can lead to larger loans. The loans are also being offered for consumer goods such as solar lights, fuel efficient stoves and basic home appliances. These loans are not yet geared to the agricultural sector, but this will come.

SACCO'S (SAVINGS AND CREDIT COOPERATIVE ORGANIZATION'S)

Community based Savings and Credit Cooperative Organization are legally registered organizations that are owned, managed and run by its members. SACCO's provide the local business community with a legal financial entity, whose members have a common bond and who operate in accordance with the Sacco's by-laws. The SACCO is generally larger than a SILC and there is no maximum number of people who are shareholders, therefore it is common to have hundreds of people as members. SACCO's are typically established by and for local commercial actors who seek to raise capital for their business interests. This network of local business operators means that people with greater financial skills and capacity make up the membership. A SACCO is run along similar rules and regulations as a community Bank and must be registered with a central Government financial institution.

Few farmer organizations take advantage of SACCO's and NGO's should pay more attention to helping farmers work with SACCO's. The SACCO has greater investment capacity that a savings groups, and will also bring together local members with business skills, so that investment plans can be assessed on their merit and potential within the local context. The SACCO can also lend without collateral which offsets a major problem for farmers who do not have legal land rights and cannot use land as collateral.

Health warning: Whilst SACCO's offer a higher order of financial services compared with SILC groups, the quality of SACCO's is highly variable. There are many cases where SACCO's have suffered from elite capture and cases where fund managers have absconded with the members funds. In their favor, when SACCO's are run well, they can provide an important financial hub for a community providing essential capital into services that support community needs.

Revolving Loan Fund: As Farmer organizations mature, one of the first services they offer to members is a loan fund for their members. These funds can be used to support trainings, general meetings, buy inputs in bulk and buy produce at harvest for storage and bulk sales onto traders. Once an organization runs a loan mechanism they can build a track record and over time, may be eligible to receive credit from other external agencies such as social investment funds, MFI's or local banks.

The most common type of loan under this structure is trade finance or short-term working capital where loans are issued in cash or through in-kind inputs. These funds are used to buy inputs for members and bulk produce at the end of the year to support collective marketing. Longer term capital asset investments are less common under this mechanism. Farmer businesses organizations can greatly benefit from training in the management of business plans and how to manage a loan fund. Such organizations often

need help in generating a basic governance structure and in developing transparent methods to develop their lending policies.

CRS LINKING COOPERATIVES WITH INVESTORS

CRS has worked with farmer cooperatives to help them prepare financial and social documentation to negotiate for funding from specialized lending agencies such as Root Capital. In the ACORDAR project in Nicaragua, Root Capital made available a credit line of USD $4 million in loans to small- and medium-scale coffee farmers through their cooperatives associations. The cooperative associations were required to have well-established credit programs and accounting software to manage the loan portfolio. Once Root Capital disbursed the loans, the cooperative associations on-lend funds to the base (first tier) cooperative or, in some cases, directly to farmers. Cooperative associations earn a nominal interest margin on these loans. Loan terms range from 6-18 months, depending on the crop cycle.

Microfinance Institutions: (MFI's) focus most of their loans towards short-term, urban business loans. Agriculture lending is considered high risk, longer term and lacking traditional collateral. This lack of MFI alignment with the needs of the agriculture sector has resulted in bottlenecks and the perception that MFI's do not yet represent a viable financing alternative in their current form.

Crop insurance: whereas virtually all commercial farmers have some form of insurance, virtually no smallholders have insurance. Farmers take on the full risk of the business and when crops fail, they lose with no access to compensation. There are many projects testing ways of providing smallholders with insurance, but premiums are usually too high for most farmers to consider.

ONE ACRE FUND

The One Acre fund is a micro-finance agency that has transformed itself into a farmer cooperative agency. The service bundle includes: (i) Financing farm inputs, (ii) basic insurance, (iii) seed and fertilizer, (iv) Training and (v) Market linkage. One Acre mainly focuses on maize production, and they have a basic package which enables farmers to gain access to seeds and fertilizer. The combination of training and inputs, makes the farming process significantly more productive, by working with farmers and supporting their financial, agronomic and marketing needs. The One Acre Fund supports more than 500,000 farmers and has a loan repayment of over 95%. The key to their success is the integrated approach and the discipline of farming as an organization and using finance to support both the inputs, production and marketing of farm produce.

Specialized lending agencies, such as One Acre Fund, who focus on specific types of farmers, crops and geographies, are providing farmers with insurance if they adhere to the full production-loan package. Technology is also being used more frequently now to assess weather induced crop losses and there are many pilot project testing index linked insurance with pay-outs being made based on remote satellite data and virtual weather systems.

Warrantage: At harvest, farmers need finance to pay for storage and marketing. This however, comes at a time when farmers have little available cash. To offset the immediate need for cash, farmer organizations with a warehouse and a loan facility, can offer farmers a part payment for crop that meets their marketing standards and is placed into the store. The farmers may receive 40-50% of the value of the crop on delivery and then receive a second payment based on the final price paid to the farmer organization. This is an effective means of financing crops and alleviating farmers from the other problem, of selling a part of their crop at peak buying times to traders, who will be paying lowest season prices. When using warrantage, quality control of the produce needs to be regulated particularly for crops that could be contaminated with mycotoxins. When farmer organizations are unable to provide farmers with some cash support at harvest, they also tend to side sell part of the harvest. This undermines the ability of the farmer cooperative to sell collectively, and therefore there is strong business logic in making a short-term payment to members to secure their ability to store make good on their bulk sales.

FORMAL FINANCE

Traditional bank loans: can be accessed when banks have an inclusive approach to lending or prioritize the rural sector. NGO's, bilateral donors, and multi-lateral funds can help to reduce bank lending risk by investing in a loan guarantee fund for a bank's smallholder agriculture portfolio. USAID's Development Credit Authority (DCA) was set up for this purpose.

BROKERING LINKAGES WITH FINANCIAL SERVICE PROVIDERS

Based on experience in previous CRS Value Chain projects, five key elements are suggested as ways to support smallholder access financial services.

1. **Business Plan**: Farmer organizations should conduct business planning and use profitability / return on investment calculations to understand the level of loan and the role of a loan instrument and its terms in the life of their business. Identification of the proper financial service or product is feasible based on this needs analysis.
2. **Financial Management Capacity Building**: VC facilitator organizations should prioritize capacity building activities for smallholder producer organization to meet long term financial service needs. Areas of importance to financial service provision include the building of negotiation and leadership skills to obtain favorable financing terms from external actors, and the development or strengthening of an internal credit fund. External intermediation in financial service provision by VC support organizations should be viewed by all stakeholders as a temporary one.
3. **Loan fund:** When farmer organizations seek seed capital or a second-tier loan to re-lend to their members, the farmer organization must have a strong, well-managed revolving loan fund. If a loan fund is in a very early stage of development, project managers should be careful not to push growth too fast.
4. **Separation of roles**: Any loan instrument supported by a project should be clearly separated by the grant function of the same project. If not, the loan fund runs the risk of being perceived as a grant, and establishing a culture of repayment is less likely.
5. **Legal Agreements**: A Memorandum of Understanding or formal agreement between the financial service provider and the farmer organization is needed to clearly identify the demand for credit and agreed-upon terms and conditions loan use and repayment.

Loan Guarantee: This is a financial instrument that an individual or organization can use as part of the collateral when applying for a loan. In this case, a lender may accept higher levels of risk on a loan, because they can recoup first losses through the guarantee bond.

Short term and supported with hard collateral[35]: In this case, the bank will have a proposal process and a term sheet that outlines their basic requirements and conditions. Such as length of loan, interest rates, guarantor requirements and conditions when a default is applied. In most cases, a bank will require some form of asset-based guarantee that if farmers default they could sell the assets to pay off the debt. The typical asset that farmers use is their land. This type of asset is challenging for most smallholders, particularly female farmers as they do not have legal title to their land or do not have joint ownership, and so have no commercial assets.

Short term loan based on soft collateral[36]: In some cases, banks will lend to farmers / farmer organizations, based on the production value of the crop they are growing, or based on the value of a contract. Contract arrangements are favored by banks when there is a formal buyer involved in the transaction, see Triangular payments methods below.

Triangular arrangements: A contract in which goods are sent to the contract holder. The payments are then made via the lending agency before going back to the client business. In this case, the lending agencies can monitor the level of contract fulfillment directly and remove their portion of the loan costs, i.e, the principal and interest before passing the rest of the revenue back to the client company, **Figure 16**

TRIANGULAR INVESTMENTS IN VALUE CHAINS

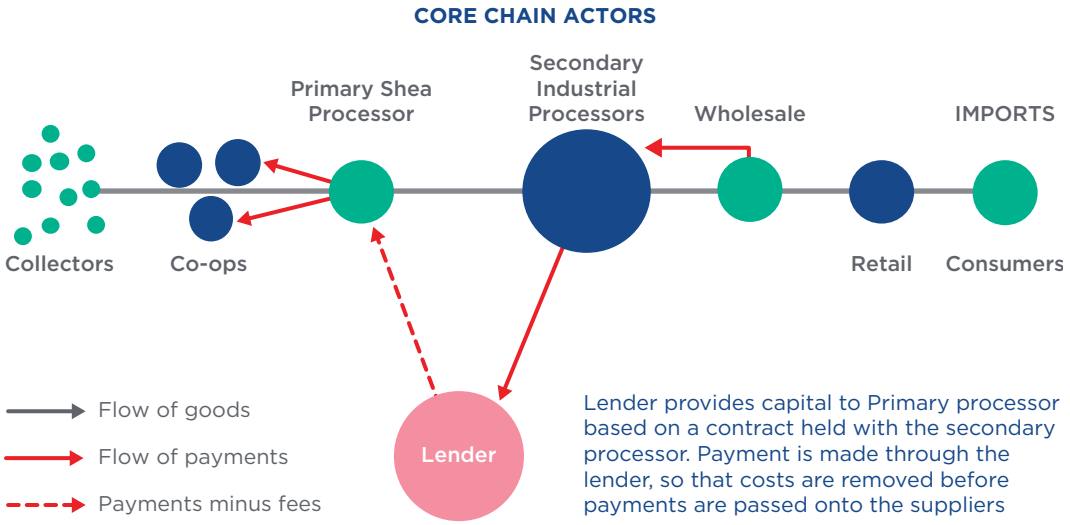


Figure 14. Triangular payments can use a contract as soft collateral to pay suppliers

Warehouse receipts: Most trading within informal markets is made with cash. This means that traders who could be buying more goods, are unable to fully service the market as their cash is tied up until the produce is sold. This process of buying and selling with physical cash can take many months. The excess goods on the market either remain in storage and suffer losses or are sold at a lower price. The result is that farmers suffer and the overall trading system remains under-invested. One means to unlock the capital within the system is through a system of Warehouse receipts. This approach is similar

35 **Hard Collateral**: physical asset such as land, property, equipment. Or a bond which maybe 10% of the value of the loan, that is kept during the time of the loan and released on fulfilment of the loan. A loan guarantee

36 **Soft collateral**: Contract with formal buyer, value of goods in store, value of goods in field, verification of business history.

to Warrantage, but in this case the inventory is held within registered stores. The stored goods are used as collateral by banks to enable traders and or farmers, to release a part of the value of the produce so that they can re-invest those funds, whilst the goods remain in store. **Figure 17**

For this system to function, the value chain players must shift out of the informal marketplace and engage in a formalized system of trading. This is a major cultural shift for many and it is complicated, as many players must work together to make the process viable. An effective system needs:

- A regulated, independent warehouse offering public storage.
- Professional warehouse operators with reputable skills in handling and storing grains, and ability to test for aflatoxins and other possible contaminants.
- Insurance policies covering a variety of risks.
- Depositors willing to pay a premium to store graded commodity in formal warehouses.
- Buyers willing to purchase graded commodity.
- Market intelligence (e.g., analysis of production, consumption, trade flows from other surplus areas that will affect prices).
- Financial institutions willing to develop loan products to finance commodity in storage and contribute significantly to the program's potential success.

WAREHOUSE RECEIPTS IN VALUE CHAINS

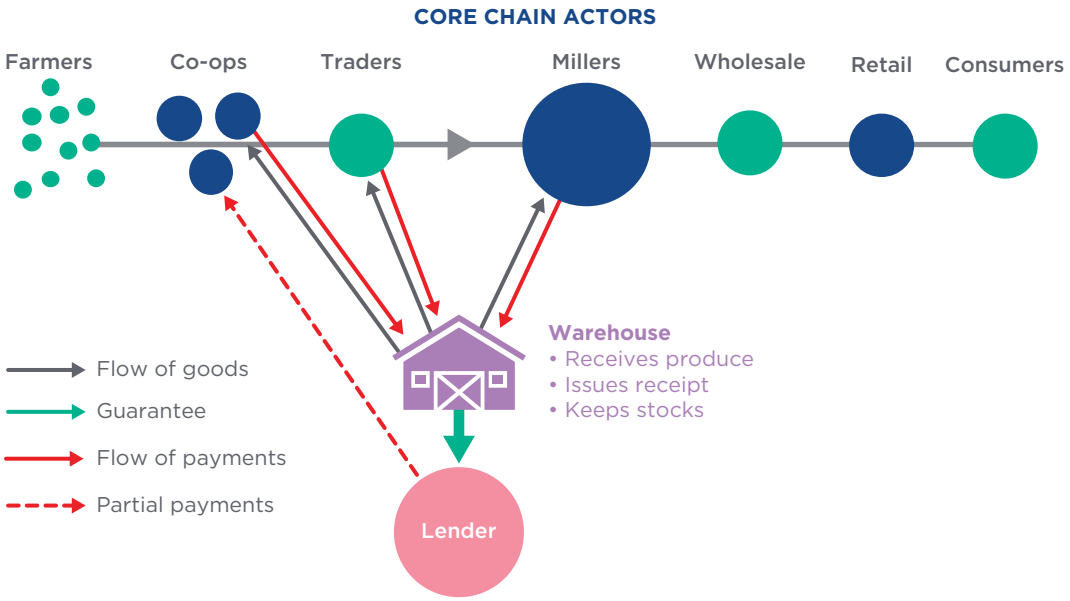


Figure 15. Warehouse receipts as a means of increasing capital flows for the value chain

Successful warehouse receipt system also requires a policy framework in which to operate a speedy and transparent arbitration process in case of dispute. In many cases, this system works as a pilot when the cost of the warehouse operations is subsidized. However, few systems operate commercially due to the high cost of warehouse services, not being affordable within the local economic framework.

Loan size: One of the complicating issues with banks, is that as each loan has a cost of processing independent of size, banks prefer to provide fewer larger loans, which offer them a better return, rather than dealing with many small loans that are as costly to

administer but have lower yields. Hence it is often more straight forward to negotiate with a bank for $100,000, or $1,000,0000 than $1,000.

Missing Middle: The dilemma that many small and medium enterprises (SME's) face, is the lack of funds that are available between the MFI's and local banks who can loan up to a maximum of $40,000 – $50,000 but prefer to lend at $1000's - $10,000's level; and those financial institutions who cannot loan below a commercially viable level of less than $300,000. The space in between the MFI's and formal lending institutions is often referred to as the "**Missing Middle**". The missing financing space, is a major reason why many businesses fail to grow as they cannot access thee capital required to advance their business model. The result of this missing finance is generally limited private sector growth.

Roots and tubers farmer in Nicaragua, producing for niche export markets in the U.S. *Jefferson Shriver/CRS*

Social Investment Funds: Project developers and managers can also facilitate direct relationship development between social investment funds and farmer-owned businesses. Over the past 10 years, CRS and its partners have established relationships with institutions such as Root Capital, Oikocredit, Rabobank, and other providers of large scale, low interest, second tier/wholesale loans. Many of these loans have been sourced for cooperative associations in the coffee and cocoa sector who in turn make loans to their base cooperatives and end users. Some of these strategic alliances were established prior to the project, but some took effect during the project implementation. In the case of socially minded investors, technical and organizational capacity building services provided by CRS is helpful in reducing their investment risk.

Tanzania horticulture farmer on one quarter of an acre. *Jefferson Shriver/CRS*

Private investments: Government funding and philanthropy are insufficient to solve the scale of the social and environmental challenges that the smallholder world is facing. The infusion of private capital from institutions and individuals is also much larger now than being offered by public donors. Tapping into this new private capital stream is critical to providing greater food security and support to business development in emerging economies. Emerging economies offer investors with opportunities for growth and there is a growing market for both local and foreign investors to provide new sources of financing to help identify, incubate and accelerate agri-business in parts of the world that cannot access finance from the local banking sector. These new types of investments are seeking opportunities in virtually all sectors including agriculture, renewable energy, housing, healthcare, and education. Much of this capital flow is as foreign direct investments from industrialized to emerging economies, this financing is targeting mainly high value, high return types of agri-business and does not yet reach smallholders or the informal economy where they operate with their business partners.

Impact Investing: Impact investment essentially follows the same approach as traditional investors, but places money into companies, organizations, and funds with the first goal of generating measurable social or environmental impact alongside their secondary goal of financial returns. Catholic Relief Services (CRS) is exploring impact investing as

a means of financing businesses that create positive social benefit (social enterprises) that are aligned with CRS' mission and programming. In nearly all cases, impact investing will be used in combination with grant funds. The public funds being used for technical assistance and the private funds for business working capital, or infrastructure. This approach is aiming to scale our approaches and support greater sustainability of CRS programs for the benefit of vulnerable communities. Impact investing is not a substitute for traditional philanthropy and grants, but is a valuable complement that leverages the large amounts of capital that is seeking new opportunities.

Venture Capital and Equity investment: Start-up companies with a potential to grow need investment. Investors can place their capital into such businesses but rather than offer debt financing, they take an ownership stake in the company. This type of investment is known as venture capital. The venture capitalists realize their profit when they sell their stake in the improved company, making an "exit" from the business.

Venture Philanthropy. An alternative to impact investors, who provide debt to companies, is an emerging field of venture philanthropists, which combine the socially minded ideas of impact investment but focus on investments through an equity position. This approach is of interest to agencies such as CRS, as the approach can be used to explore new ways of investing in early stage SME businesses, who do not have the necessary financial history or financial need to be considered for investment. The venture philanthropy approach is a way to address the missing middle situation, by investing in a pre-commercial phase of a company and helping to incubate them until they are mature enough to receive finance from traditional lenders. This is a type of investment that takes the concepts and techniques from venture capital finance and business management and applies to achieving a philanthropic goal.

Blended Finance Approaches: CRS can partner with a variety of private sector actors, including smallholder farmer entrepreneurs, cooperatives and micro-enterprises, small and medium-sized firms, and large domestic and multinational corporations to achieve programmatic impact.

Through CRS Impact Investing, debt or guarantees can be provided to companies that help achieve CRS program objectives, especially around sustainability and exit. For example, consider a seed company that receives investment capital to expand its distribution network into a village. Once the project ends and the donor funds discontinue, the seed distributor will stay in the community and farmers can continue enjoying reliable access to seeds for as long as the enterprise remains.

Impact investments can often require grant-supported preparation, such as enterprise development advisory services or legal and financial due diligence review. Initial grant support can come from donors that are seeking innovative and sustainable solutions.

SUMMARY OF SMALLHOLDER FINANCING SCHEMES

The following information, shown in **Table 13**, is a summary of sources of smallholder financing schemes. The first two columns demonstrate multi-actor options for traditional credit schemes using linkages within and external to the value chain. The third column represents more traditional credit mechanisms. Value Chain facilitators should assist farmer organizations in understanding the terms of the loans so they can evaluate the appropriateness, affordability, and limitations of the resources being offered before assuming responsibility for repayment.

Table 13. Overview of financial methods and arrangements

Period	Value chain finance[36]		Individual lending
	Value Chain internal finance	Value Chain external finance using VC linkages as hard / soft collateral	VC-external finance using hard collateral
Short-term Savings led	• Based on farmer's ability to save and lend to group members	• Based on family financing with preferred terms to business partners • Credit from SACCO via local business network	
Short-term *(up to 12 months)*	***Based on contracts*** • SACCO's • Supplier credit • Buyer credit • Finance interlinked with production contracts	***Based on hard collateral (assets):*** • Warrantage • Warehouse receipt finance • Trade finance, such as factoring, purchase-order finance, repo finance • Export trade finance (export receivables financing), especially letter of credit, bill of lading financing ***Triangular arrangements with buyers, based on soft collateral: (crops and contracts)*** • Short-term bank loans based on guarantees or contracts plus on-lending • Credit based on production contracts	***Based on hard collateral / cash flow*** • Bank overdraft • Individual short-term credit • Microfinance loans
Medium and long-term *(1-7 years and longer)*	***Based on hard collateral:*** • Equity capital of buyers / lead firms	***Triangular integrated arrangements based on hard and soft collateral:*** • Medium-term bank loans based on contracts of buyers and on long-term support by NGOs and/ or producer associations – using a combination of different financial instruments	***Based on hard collateral and/ or balance sheet:*** • Financial Leasing • Operating Leasing • Individual term loans • Equity venture capital

37 Springer-Heinze, Andreas. 2017. ValueLinks 2.0. Manual on sustainable value chain development. Volume 2, Value Chain Solutions, Module 8 Chain Financing. GIZ. Eschborn, Germany. January.

The small coffee producers that participated in a field day at Cooperativa San Carlos II in Osicala, Morazán were able to visit a benefit of organic coffee that is working to reduce the water consumption required for this process. The optimal state of the cherry was explained to be able to be processed, float coffee, pulper regulation, coffee milling processes (honey, semi-washing and washing). *Oscar Leiva/Silverlight for CRS*

Chapter 5
Project Implementation—Partnerships, Governance and Facilitation

CHAPTER OBJECTIVES

- Understand the different types of actors in a value chain project and management structures
- Obtain a deeper understanding of project facilitation in a value chain setting

IMPLEMENTORS IN VALUE CHAIN DEVELOPMENT

As we have observed Value chain development is a collaborative venture involving a range of chain actors. In any Value chain project, there are clusters of actors that form a business coalition. The three main levels comprise the (i) core actors, (ii) business services and (iii) regulators. The implementation of the value chain approach means convening these actors and discussing live business situations. When working in discussion groups, the core chain actors are often split into one cluster around farmers and farmer groups and a cluster of aggregators, processors and traders or retailers. These groups are split because geographically they are located in different places, but also because they are very different people with difficult issues to discuss. Farmers often wanting to focus on production, whereas the aggregators and marketing teams are focused on quality and sales. For each different cluster the convening teams need to make critical decisions on who should represent the groups as each of these groups, whether from public or private sector their own specific interests and motivations.

These actors are supported by an overall facilitator, this organisation assumes responsibility to drive the value chain development for a certain period of time. The facilitator is responsible for setting up components of the overall investment, convening the actors, fostering collaboration, introducing innovations, building business relationships, monitoring the overall performance of the investments and reporting back to the donors and investors.

BASIC THREE LEVELS OF A VALUE CHAIN

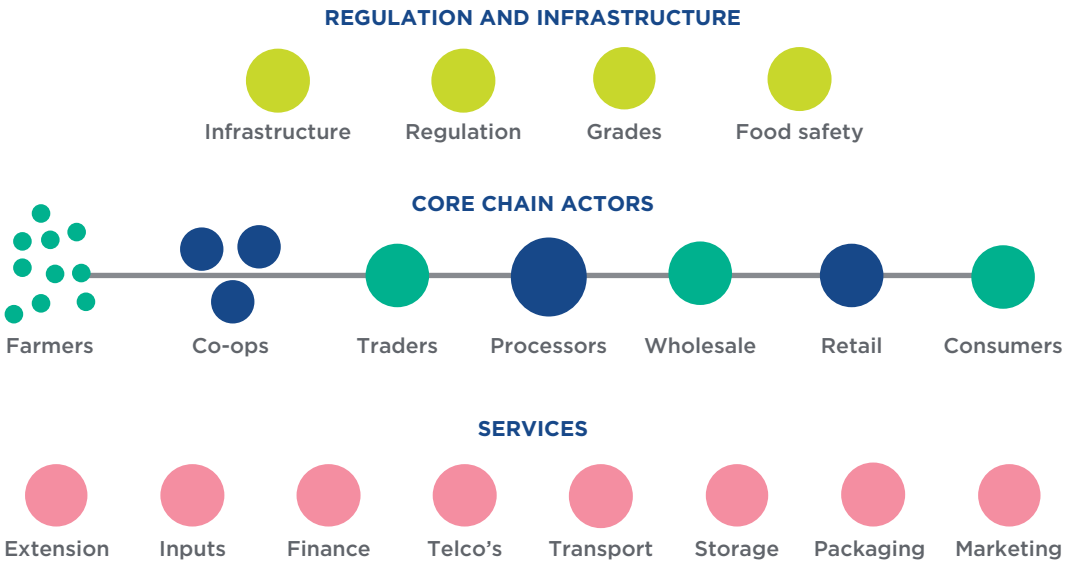


Figure 16. The Value chain and its three sets of actors

Development led approaches: Most value chain upgrading projects are led by development agencies with project funding from international and bilateral donors. Development agencies have taken on the facilitator role, as they are external to the local business context, have a short-term role, are able to hire specialist for short and long term technical assistance and given that they do not have a commercial stake in the value chain, they can mediate between the various public and private partners.

Typically, the development agency will begin an upgrading process by leading the value chain analyses and working with partners to prioritize products and identify the key challenges that need to be addressed to improve productivity and competitiveness. During the start-up phase, there are a series of consultation meetings, where the actors self-identify from the private sector, public sector and the farming community to engage in an investment project. Facilitation teams are encouraged to include gender specialists in this process.

Figure 19 below, provides an example of white bean production in Ethiopia which is transformed into canned baked beans in the United Kingdom (UK). The chain wide facilitation team provides technical assistance across the various parts of the value chain. In this case, there were three technical package areas being facilitated by the lead organization.

The first support team focused on working with research, extension and farmers with a heavy focus on improving productivity, organization, postharvest aggregation and cleaning of beans and then linking to the trade network and the main intermediary processing company.

The second set of technical assistance was working between the farmer organizations and aggregators through the primary processing centre and at this stage the product transitions from the informal to the formal sector.

The final group of technical experts were working on the interface between the intermediary processing companies, the canning factories and the multi-national retail sector. This is a very specialized field.

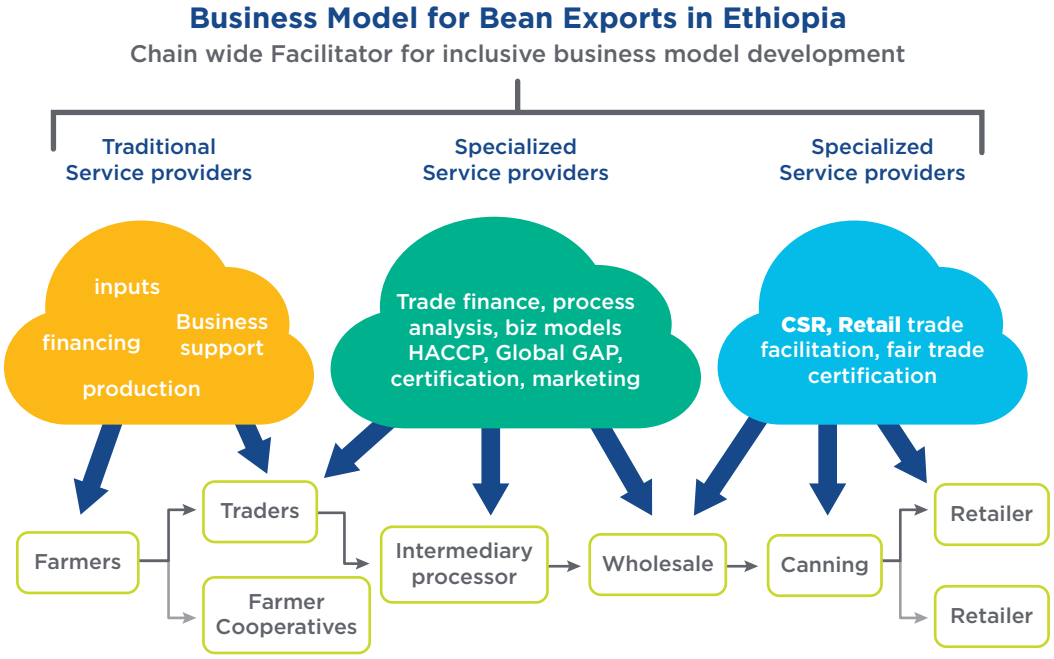


Figure 17. Illustration of different technical assistance groups working at different points in the chain

As is clear in this example, value chain projects are generally designed to build on the existing eco-system of public and private sector actors. In some cases, if it is a new crop to a region, then additional time is required to work with chain actors who are interested to adapt to the new market opportunity.

To avoid dependency issues, facilitation teams establish working approaches that offer technical assistance, but farmers and the firms take on the risk of the business and investments are made with using their own capital. There are cases where facilitations agencies buy down risk, to accelerate the adoption of new innovations and there is an increasing use of financial instruments such as loan guarantees and co-investments, but the basic principle is to maintain a business approach wherever possible and use scarce public sector funds for critical issues and to overcome intractable problems. The aim is to foster business relationships, incubate and accelerate business models and launch partners within competitive businesses.

Private companies and business associations led approaches: In some cases, lead firms play the value chain facilitator role, with the aim of improving links to their suppliers and market outlets. Lead firms facilitate these types of value chain developments with the aim of reducing risks when opening up new markets, pioneering new products, testing new technologies and new business models. The advantage of value chain development led by private companies is the focus on tangible factors and economic viability. Therefore, the scope and outreach of value chain solutions is likely to be smaller than in most public value chain development programs. Businesses engage in value chain development on a voluntary basis. They will only stick to it if they can realize tangible results.

Government and Public Administration led approaches: Value chain development is of interest to public sector agencies as it can generate income, jobs and open new market opportunities and if done well, can have positive environmental impacts. Some public agencies prefer to focus on the regulatory aspects of the value chain with emphasis on labor conditions, product safety, licensing and environmental protection.

Rice farmer from Madagascar. *Staff/CRS*

However, some Governments have set up value chain business clusters to promote specific value chains and find ways of co-investing into a value chain with support from the private sector and producer organizations. The Australian Government has established a sophisticated approach to foster strong public: private sector value chain support teams, with major co-investments being made by farmers, private firms and Government who understand the value of working together to raise competitiveness. Government approaches tend to support value chains that meet certain criteria, such as:

- A strong public interest in the value chain, driven by industry and policy stakeholders,
- Importance of target value chains as a means to boost the economy and as a means to,
- Overcome fragmentation, where value chain actors have been unable to coordinate a value chain effectively themselves

CONVENING VALUE CHAIN ACTORS

The facilitation part of the value chain process invests considerable time in fostering better business relationships. This is achieved by bringing together value chain actors or hosting meetings to discuss plans, outline investment options and then once a value chain process is “in play”, to monitor progress. Effective facilitation involves setting up meetings with actors at specific points in the value chain. It is common that facilitators work with partners from specific points in the value chain. For example, some meetings

may only be for (i) farmer groups, other meeting may include (ii) farmers and traders; other meetings may support service providers such as (iii) input suppliers, banks and buyers. As the process matures, there will be opportunities to gather representatives from these groups to attend mixed cluster meetings. The purpose of the mixed groups is to learn from each other and promote links between actors in the target value chain. This process of convening individuals and groups, helps the value chain actors to identify common interests, build trust and discuss their challenges and how to fix them. Given the local context and existing gender dynamics, particular efforts may be needed to ensure females have an equitable voice during these meetings. Th aim of this work is to establish a common vision, along with goals, targets and a shared "value chain investment strategy". Although this approach can take time to establish, it is a powerful engine of change when there is strong ownership and co-investment in the vision amongst and between chain actors.

VALUE CHAIN PLANNING

The results from the convening sessions are chain wide plans. The chart in Figure X, shows the upgrading plan that was developed as part of the white pea bean value chain in Ethiopia. This outline plan, indicates the work that was supported in Ethiopia, and provides the intervention teams with a chain wide view of the activities. When developing a plan, you will also want to consider what gender-related actions to include based on the gender-sensitive value chain analysis.

Value Chain Upgrading Checklist for Bean Export Market Chain in Ethiopia

Supply chain intervention points	Input supply				Productivity Enhancement					Post-Harvest Management			Marketing	Business Linkages		Consumer Support
Project Focus																
Direct			*****										*****	*****	*****	*****
Through Partners			***	***	***					***	***	***	*****			
Other projects	***	***			***					***	***	***	*****			
Strengthen Bus. Dev. Support Services	↓↓↓↓↓	↓↓↓↓↓	↓↓↓↓↓	↓↓↓↓↓			↓↓↓↓↓					↓↓↓↓↓	↓↓↓↓↓	↓↓↓↓↓	↓↓↓↓↓	↓↓↓↓↓
CHAIN	←															→
All farmers			↑↑↑↑↑		↑↑↑↑↑	↑↑↑↑↑		↑↑↑↑↑			↑↑↑↑↑					
Most	↑↑↑↑↑	↑↑↑↑↑					↑↑↑↑↑			↑↑↑↑↑		↑↑↑↑↑	↑↑↑↑↑	↑↑↑↑↑	↑↑↑↑↑	↑↑↑↑↑
Few				↑↑↑↑↑					↑↑↑↑↑							
Value Chain Interventions	Access to new seed varieties	Bulk fertilizer purchase	Access to market information	Access to finance	Planting on time in rows	Tillage land preparation	Weed Control	Better crop husbandry	Irrigation / crop drought insurance	Drying	Grading	Storage	Collective action	Agreements/ Contract sales	Improved information flow between buyer and sellers	Consumer Better Business Support
Actions	Co-op invest in bulk seed purchase and links to research	Improved collective action	Business skills upgraded / improved MIS	New finance and savings instruments scaled out	Farmer Marketing Groups trained	Access to lower cost tillage methods	Service weeding teams in place		Access to water harvesting options		Farmers grade their produce	Increased access to storage	Bulk quality produce and sell to known buyer	Negotiate for forward sales agreements	Develop channels for negotiation	Raised profile of business model usage
Outcomes and Gains	Informal and formal seed sectors increase supply	Reduced fertilizer costs	Increased awareness of market options and trends	Investments increase in agricultural markets	Yield gains	Yield gains	Yield gains	Yield gains	Reduced risk	Lower loss, higher quality	Increase product value	Increase produce value	Increased income	Increase income stability	Increase income stability	Increased Demand

Figure 18. Checklist for Value chain upgrading options

CO-INVESTING IN VALUE CHAINS

An important aspect of the value chain upgrading plans includes decisions on how and where to invest in the upgrading effort. The planning teams need to identify the most critical constraints and then consider the sequence of investments. This approach also needs to consider what can be done with existing funds, held by the chain actors, through better co-ordination. What aspects of the upgrading can be supported through private sector services or investments and what actions can only be done with some level of public / external funding.

The scope and ambition of upgrading a value chain are often dependent upon available funds. In fragmented value chains, it may be that upgrading is highly determined by external funds. Whereas in more mature value chains a larger share of the investments may come from farmers and core chain actors. Whichever the case, the long-term objective is to establish an overall business model that supports value chain development on a permanent basis.

Why engage in chain development?

- Forum for learning among stakeholders, a place to discuss key issues,
- An opportunity to align and harmonize shared business interests and grow the market
- A means to develop a joint vision for collective action, and
- Convening a "safe" space where diverse actors can co-develop an investment plan.

Purpose of the Value Chain Working Group

- Meeting place where all stakeholders relevant to the VC development can meet and plan,
- Opportunity to elect leaders that represent specific points in the chain, gives voice to all of its members, represents its diverse member and entrust the capacity in this leadership team to call business meetings and make decisions for their members.
- Perform business planning and the tasks at the lowest cost possible
- Develop long term planning and performance monitoring teams

Levels of Convening meetings:

Stakeholder meetings are defined by their scope and scale, with stakeholder participation falling into specific categories:

- National stakeholder forum or conference
- National or regional committee
- Regional or local working group
- Roundtable or platform
- Core group

Table 14. Convening Roles for Value Chain groups

Convening model	Character / Description	Convening tasks
National stakeholder forum or round table	• Meeting of industry representatives, government and donors at national level—motivated by public or private investment plans	• Development goals and strategic investments • Prioritize key challenges and coordinate who does what in terms of value chain development programs
National or regional value chain committee	• Body representing groups at different stages of the value chain. • One value chain committee per value chain.	• Assess development potential and problems of the value chain, including gender-related constraints, that are of common interest to the value chain business community • Keep an overview and follow up on the issues
Local value chain working group	• Task force of enterprises and support service providers working on a specific issue, the group is dissolved once the issue is re- solved	• Jointly develop and implement a solution for a problem area identified at a higher level of steering

STAKEHOLDER INCLUSION

An important quality criterion of steering structures is that they mobilize the participation of stakeholders. The stakeholder landscape looks differently depending on how the value

chain development problem is conceptualized in the first place. Committees are made up of representatives of operators at the different value chain stages and of all relevant change agents. Representatives of groups of operators speak on behalf of the entire category of operators they belong to. Its important that these representatives reflect the voice of their entire category of operators such as fameless, youth, elderly and disabled. The difficulty is that the numbers of operators vary. In primary production, the numbers of smallholders or small enterprises sharing similar business models is very large. Hence, there is an issue of due representation. In fact, forming steering structures in large value chains presupposes the existence of collective organizations at the meso level, such as farmer associations or business membership organizations. Where these do not exist, the organization of collective interests becomes an issue of its own. It is a long-term task that has to be addressed separately. In the meantime, second-best solutions are required in which public agencies take care that smallholders and small and medium sized enterprises get an effective voice. At the same time, the existence of value chain development programs is an incentive for small enterprises to organize themselves better.

INSTITUTIONALIZING COLLECTIVE ACTION

Steering structures are often initiated by government agencies on behalf of an externally funded value chain development program. To secure continuity and sustainability, the responsibility for promoting the development of an industry must be anchored in the business community itself. As external supporters withdraw, a long-term institutional solution is needed to foster the ownership, responsibility and collective action of value chain actors.

Institutional solutions can take the form of competitiveness agreements (often seen in Latin America) or inter-professional value chain associations (often found in Francophone Africa). Interprofessional associations are formal committees of sector representatives in important value chains, often led by the government. These formal associations can form from the base of more informal working groups and steering committees.

VALUE CHAIN FACILITATION

Strategy formation and implementation processes need to be set apart from the support processes facilitating the value chain development process. In contrast to the upgrading activities pursued by the value chain actors, facilitation is not a permanent function. It is mostly taken up by external development agencies as a task limited in time. However, development agencies are not the only ones to lead value chain development support processes. Government and business membership organizations also take on facilitation functions. The precondition for starting any support process is the explicit interest of the actors engaging in value chain development. Unless there is a clear decision and commitment on the side of operators and service providers, there is no need for value chain development support processes and no role for facilitators either.

TASKS IN SUPPORT PROCESSES AND FACILITATION

Support processes are temporary activities performed by external development agencies to facilitate value chain development. The support process includes tasks to engage partners and get a value chain development project going. Typical activities performed by facilitators in the value chain development:

- **Organizing meetings of value chain stakeholders:** Implementation is agreed in meetings of different formats, varying from small groups up to larger workshops. Facilitators invite the relevant stakeholders, ensure equitable representation and voice, organize the venue and provide materials.

- **Communication:** To build relations and stay in touch, facilitators spend a lot of time on the phone and on meeting value chain development actors in person, networking and constantly informing and involving them as partners. Depending on the local context, male facilitators may need to be accompanied by a female facilitator when engaging with value chain actors.
- **Creating awareness and understanding of value chain development:** The value chain approach is a new way of thinking. Therefore, facilitators need to make sure that stakeholders understand the approach. The ideas and methodology are shared at the beginning of multi-stakeholder workshops, and by ValueLinks training.
- **Acknowledging, creating awareness and supporting actions to addressed gender dynamics that effect the value chain development and its actors:** The value chain actors and maybe even the facilitator has grown up in the community, region or country in which the value chain development process is taking place and the gender dynamics that may affect the value chain development process and those engaged it may not be visible. The facilitator needs to become aware and acknowledge these gender constraints and opportunities and then support raising awareness with value chain actors and supporting them to implement at a minimum in a gender-sensitive manner. The facilitator is encouraged to work with a gender specialist to support these efforts.
- **Moderating agreements on objectives and strategy:** Facilitators help to jointly analyze the value chain, to agree on shared objectives and strategy and to decide about concrete upgrading actions. The facilitator enables the stakeholders to accomplish these tasks by providing tools, methods, technical know-how and market information, and by guiding participants through the process.
- **Mediating conflicts:** Conflict management refers to conflicts arising between different value chain operators and between public and private stakeholders. Stakeholder workshops provide an appropriate platform to meet in person and make divergent interests transparent. Facilitators moderate conflicting parties and help sort out the differences in a structured way.
- **Coordinating different development agencies and support services:** Very often, several development agencies work in the same value chain. Project coordinators meet with colleagues from other projects in donor rounds to avoid duplications and harmonize efforts.
- **Assist the implementation of actions:** Generally, the implementation of business solutions is the responsibility of the value chain actors. Facilitators assist enterprise putting gender-sensitive solutions into practice by providing training and giving advice. Wherever development agencies cannot serve the needs themselves, facilitators connect with technical specialists and external trainers.

Table 15. Value Chain Practitioners Roles Matrix

	Front Lines	Implementation	External	Managers	Influence Reps
Project Actors	Field Agent, MEAL	CRS Project Manager, MEAL, Gender Specialist	Specialized Advisor, RTA, STA	COP, DCOP	COP, CR
Clients	Farmer Orgs	Private sector, BDS, finance, inputs	project team support, private sector	PSE in target value chains, working groups, donors	Relationship with key actors in government, church, private sector, UN, FAO, donors
Functions	Training, collecting Information, service Delivery, organizing, planning	Coordination, approving plans, adapting materials, monitoring against targets, data collection	Capacity and using tools, analysis, assessments, upgrading support	Governance, investment decisions, procurement	Convening, sharing information aligning partners

Ugandan peanuts fresh out of the ground. Scovia Namayonga harvests her peanut crop near Namulu, Uganda. Jock Brandis is a founder of the Full Belly Project. He invented a peanut sheller to shorten the farm to market process move more quickly ensuring a higher quality of crop and thus a better price for farmers, and higher quality of the product in the food chain. *Rick D'Elia for CRS*

Chapter 6
Supporting Farmer Organizations and Agripreneurs

Each actor along a value chain is a business, whether a farmer, an agripreneurs, a farmer business organizations (FBOs), a trader, a processor or a retailer, the goal is to enhance productivity, profitability and meet the needs of consumers.

Entrepreneurship captures much what it takes to be successful in value chains, that is the capacity to identify a new opportunity, build a vision and then take on risks, take on innovation, organize people and manage a new business venture to make a profit.

Agricultural entrepreneurship (**agripreneurship**) is that same approach when applied to the production and marketing of agricultural products. Most smallholder farmers produce food for their families, but at the same time, all smallholders sell a portion of their production into various markets and that balance between home use and market sales is shifting towards markets. Therefore, smallholder farmers are already working towards being agripreneurs and they all have the common goal of farming as a business and improving their profits. Farmers may work alone or become part of a farmer group where they invest as an individual in their production system but sell collectively. Millions of smallholders find that by working within groups and entering into regular business relationships with other value chain partners, that they are more competitive. Typically, farmers shift from working as individuals towards some form of cooperative or **contractual marketing** approach and, if successful, they go on to create medium to large-sized businesses.

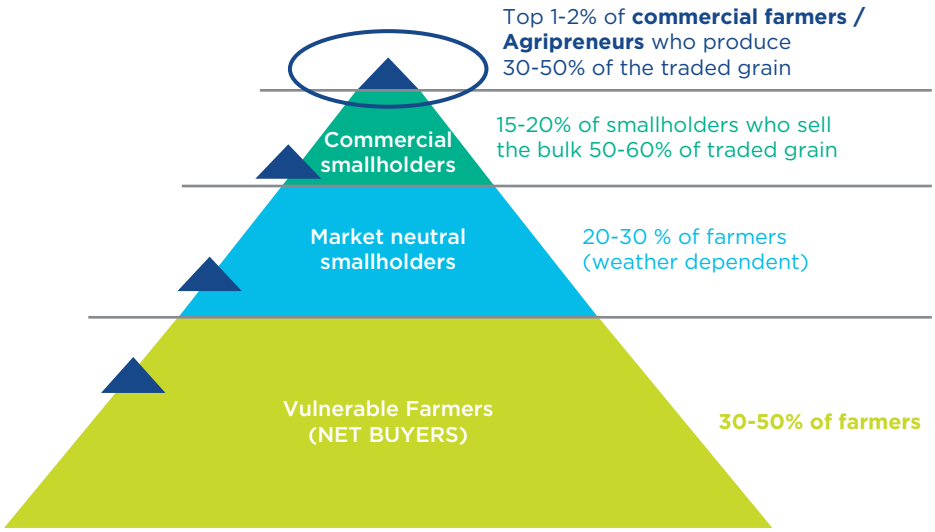
One of the key elements of success or failure in agro-enterprise programming is the institutional capacity and strength of smallholder business organizations. Sustained smallholder participation in value chains can rise and fall based on the elements of good organizational leadership, institutional governance, management capacity, service delivery, and the employment of equitable and inclusive business models. Assisting farmers to build effective business organizations is complicated and CRS is still working

on finding “effective practices”. The SMART Skills guide on **Organizing and Managing Farmers’ Groups**, is a start, but there are few farmer business organization models that have been shared systematically across country programs or projects.

This chapter aims to fill this gap for CRS and provide a review of successful business models. The chapter begins with an overview of different levels of socio-economic levels of farmers to understand their participation in value chain processes.

PROGRESSIVE FARMERS AND AGRIPRENEURS

How can we support agripreneurs at all levels?



Not everyone is an outstanding “agripreneur”. Farmers in general need to be more agripreneurial if they are to be successful in todays competitive marketplace! Agripreneurs need specalised support to accelerate their business operations

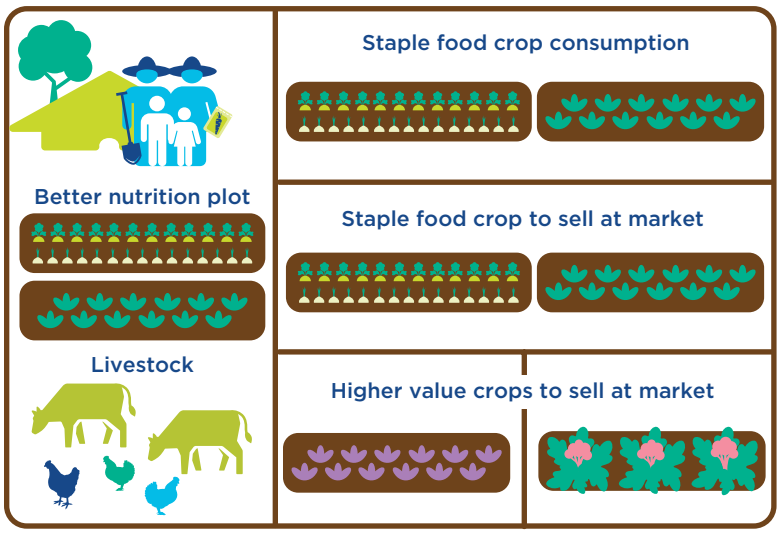
FARMER SEGMENTATION

COMMERCIAL FARMERS AND AGRIPRENEURS

As can be seen in the graph to the right, commercial smallholders make up a smaller but important segment of total smallholder farmers earning a livelihood from agriculture in developing countries. These farmers sell their excess food staples as well selling higher value cash crops. The numbers of agripreneurs is a small sub-set within the population, who are engaged in more sophisticated levels of value chain participation and business development around the world. All of these farmers, along with market neutral smallholders are part of CRS’s value chain development programs.

Most households we work with, own less than two hectares of land. Within these households the land is likely shared between the male and female head of household and possibly others. These farmers, particularly females, typically have limited access to services and markets, but they can participate in value chains with the right support. Prospects for market linkage include improving their sales of staples for consumption, so they buy less food, improving financial management through savings and diversifying a portion of their farm to higher value products, and seeking income opportunities off the farm.

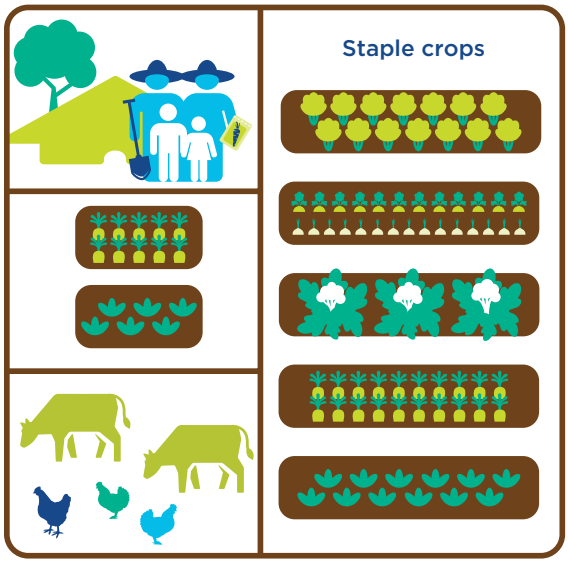
2-10 ACRE FARMERS



Gains
- Improved production
- Better organized farms
- Aggregated sales
- Better cash flow
- Employment for others

Farmers with land holdings of 2-10 acres are often commercial smallholders who have increased opportunities for on-farm income diversification and expansion, and more frequently access more competitive markets than smaller farmers. Farmers with 2-10 acres can make shifts from market neutrality to surplus quickly, producing food staples for both family consumption and local markets. They can specialize in higher value, short cycle and perennial crops for additional income generating opportunities. With sales from these products, they can re-invest in their farms and increase productive assets and even make additional land acquisitions to expand their productive base.

2 ACRE FARMERS: PROSPECTS



Gains
- Improve staple production
- Better organized farms
- Saving to help cash flow
- Seek off farm incomes

Possible sales of Other higher value products, such as honey, vegetables, fruit and animal products

FARMER ORGANIZATIONS AND INCLUSIVE BUSINESS MODELS

When considering criteria for strong, functioning organizations, the following elements are of importance:

- **Operational structure**: what are the structures these organizations have in place to carry out their business operations and decision-making? These structures should include a governance body and policy, financial and administrative systems and general processes for day to day operations. How do these processes provide transparency to the organization's associates? Does the organization have effective bookkeeping and basic financial management systems in place? Does the organization have gender-sensitive organization management such as nomination process that ensure diversity in elections, approaches to ensure all group members can equitably contribute, appropriate fees and time commitments that encourage diverse participation?

Leadership: Is the leadership accountable to its membership, and are there governance systems in place for leadership rotation? Does the process encourage female leadership? Is the leader an effective communicator and decision maker? Does the leader address underlying factors that limit full engagement from demographic groups (gender, age, disability, etc)? Does the leader used various approaches for group members to share opinions and influence final decisions?

- **Business relationships**: producer organizations have business relationships with various stakeholders including buyers, financial institutions, donors, governments, service providers and input providers, among others. Which type of stakeholders does the organization have relationships with? How stable are the organizations relationships with these other relevant stakeholders? How diversified are their relationships? Do they depend on one single partner?
- **Market**: producer organizations rely heavily on their markets, so it will be important to know to which markets the organizations are linked to, as well as how stable and reliable their markets are. What is the organizations strategy to maintain its market and enter new ones?
- **Producer ownership**: does the organization have a clear elaborate policy on associates' ownership? How does the organization distribute dividends? Does the organization reinvest from its earnings? What are the mechanisms to communicate results and earning to its associates?
- **Enabling environment**: how much does the current environment enable the business to thrive? What challenges does the environment impose for the organizations?
- **Strategic planning**: planning allows an organization to maintain focus and aim at achieving targets and goals. Do the organizations develop a strategic plan? How often? Do they follow KPI's? Do they plan to diversify their markets and crops? Do they possess problem identification and problem-solving skills?

BUSINESS MODELS AND FARMER ORGANIZATION TYPOLOGIES

Using business models to support small-holder poverty alleviation schemes requires a clear definition of business models themselves. Bill Vorley describes a business model as "...the way a business creates and captures value within a market network of producers, suppliers and consumers, or, what a company does and how it makes money from doing it". Vorley also describes business models as "...how an individual firm organizes itself

and its relationships in order to create and capture value[38]. Business models then, tell us how the building blocks of production, marketing, costs and revenues come together to provide a **value proposition** in the marketplace that differentiates the firm from its competitors. The business model concept is linked to business strategy (the process of business model design) and business operations (the implementation of a company's business model into organizational structures and systems)." USAID[39], describes a business model as "…. how a business creates, delivers, and captures value, revealing an understanding of the product, logistics, financing, supply chain, pricing, payment, and sales." These different definitions essentially offer the same concepts of value-add and value-creation, particularly as this relates to how the business makes money.

A concise review of business models by the FAO, in which motivation behind each type of business model is described, is discussed in Smallholder business models for agribusiness-led development, published in 2012. This framework for business models is a clear guide for cooperation agencies to consider. A number of businesses have explicitly included gender equality into their business models as they have realized they cannot achieve their potential growth without women. For example, Coca-Cola, "has made a commitment to economically empowering five million women in their value chain by 2020." They realized many of their enterprises are owned or managed by women, that half of potential resources they need for their products are grown by women and women are primary buyers of their product[40].

Table 16. Business models and lead organizations

Driver	Description	Purpose	Strategy
Producer-driven	Smallholder groups, associations, cooperatives	Stable market position Sustained income flows	Professionalize as autonomous organization. Association with buyers from position of strength.
Buyer-driven	Processors, retailers, exporters, traders, wholesalers, lead firms	Supply chain actors pursuing upstream / downstream integration, Balancing social needs of ♂♀ SH farmers and realities of modern markets, re quality and volume	Intermediary organizes production, may act as "social intermediary," may facilitate direct trade and more transparent, traceable market access.
External Intermediary-driven	NGO's development agencies, governments	Non-supply chain actors facilitate links amongst actors to enhance smallholder inclusion and competitiveness of chain	

The following are business models that are relevant to smallholder farmers commonly found in CRS programs or with potential in the future. It is not an exhaustive list of all models.

PRODUCER-DRIVEN MODELS

SILC Group. CRS has organized thousands of Savings and Internal Lending (SILC) Groups to promote community savings and micro-lending all over the world. Some of these groups make loans to their members for agriculture related activities, or may expand their mandate to engage in other agriculture activities. While SILC groups rarely engage in value chain programming, social organization resulting from their formation may be a starting point to more sophisticated farmer organization.

Producer Group. Producer groups at the community level are formed by projects to participate in agriculture related activities such as production trainings, demonstration

38 Vorley 2009: Linking worlds: New Business Models for Sustainable Trading Relations between Smallholders and Formalized Markets

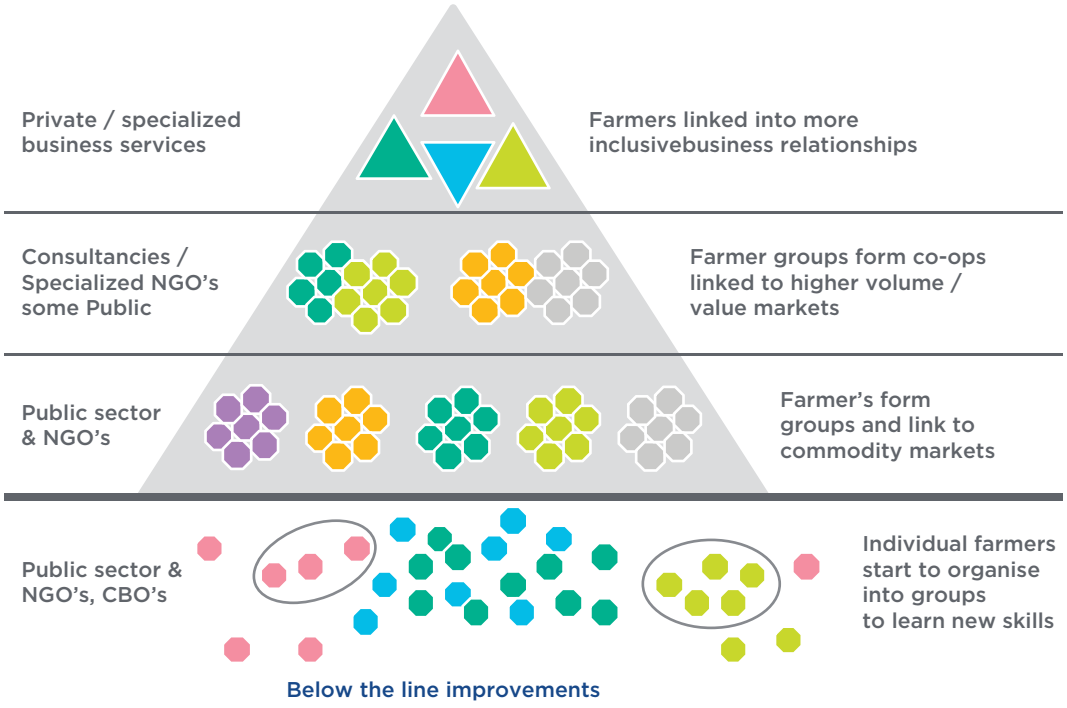
39 A Guide to Optimizing Partnerships with the Private Sector for Smallholder Impact, 2014

40 https://www.mcc.gov/resources/story/story-kin-apr-2015-gender-equality-a-smart-business-proposition

plots, and collective purchase of inputs and storage facilities. They may be called farmer field schools, farmer learning centers, and many are organized by a lead farmer and have 15-25 farmer members. These groups often make arrangements to sell their produce at a local market, or to an intermediary who arrives at the farm or the village and pays cash for immediate harvest sale.

Marketing Group – Collection Point Model. Producer groups may be clustered into marketing groups to sell their crops collectively to a larger market, to fetch a slightly better price. The volume they generate from selling their harvests together gives them more leverage in negotiating with buyers beyond farmgate intermediaries. Marketing groups may coordinate with other community-based marketing groups to establish a series of collection points where product is stored and sold to a more direct market venue. The marketing group will usually conduct basic book keeping on notepads regarding farmer members, volumes sold, and income received. The advantage of marketing groups is that they are flexible and can function without a lot of governance systems and formality. Management can be minimal and meetings beyond the farmer group unit to agree on sales conditions may only be required at the start of the season and at the time of storage and sales. It is important that when farmers start to associate beyond the primary group, they have a transparent system for group representation at the association level, as well as reporting mechanisms to provide regular and timely feedback to members.

STRATIFICATION FROM RECOVER, BUILD TO GROW



An example of a farmer owned business is **Soppexcca** based in Nicaragua. They produce and process coffee, and recently have diversified into cacao and honey. They began with 68 members in 1997, and have grown to become a second-tier cooperative of 18 smaller cooperatives with 650 total members. They have increased their coffee procurement relationships from three to ten, and their coffee exports from 1,800 sacks to 23,000 sacks. They have reinvested in their business and vertically integrated in their coffee value chains by purchasing and managing a dry mill. They sell roasted and ground coffee on the national market, and own and managing two cafe's for retail sales at the local level. They manage a $2 million internal credit fund for loan provision to their members with high loan recovery rates.

Farmer-owned business. This model is a formally incorporated business structure for farmers to pool their assets to access particular types of business services (e.g. processing or marketing), gain access to finance, or limit the liability of individual members. Such businesses are often owned by cooperatives to facilitate business transactions, or through other types of ownerships through associations or rural enterprises. The details regarding ownership, decision making and owner participation vary for these arrangements according to the legal framework of each country in which they are located. The cooperative is a common type of farmer-owned businesses used by NGOs, aid groups or cooperation agencies to reach large groups of farmers. The cooperative model has a long history and utilizes a highly democratic decision-making, which may be apparently slow at times, but which allows for thorough participation by members.

Lead Farmer-Broker. Communities may organize production planning and consolidate their harvest volume to sell to a specific, more competitive intermediary asking for a specific variety of crop or quality specification. Under this arrangement, the community may name a leader to negotiate with the buyer the terms of the sale on their behalf. This community "broker" may receive a commission by the buyer for his or her efforts, or may act as a volunteer. This model often functions when an intermediary buyer is present at the community level and offers a farm gate or community level transaction with immediate cash payment.

Joint venture. This model is through co-ownership of a business venture by two independent market actors, such as an agribusiness and a farmers' organization, or two businesses. A joint venture involves sharing financial risks and benefits, as well as decision-making authority in proportion to the equity share. In this formal model, used generally by large companies, neither company merges to become part of the other as they both retain ownership and identify as different entities even though they do share joint ownership of the business venture at hand. This type of business model is not currently common with smallholders or smaller producer organizations given the complexity of developing accounting and ownership agreements. However, the model has potential to be empowering to smallholder farmers, as it provides them with partial ownership of additional supply chain functions

An example of a joint venture is **Divine Chocolate Company**, which is a joint company owned by a union of cocoa farmers in Ghana, a UK-based fair trade body, and Oikocredit. Another example is from South Africa after 1994, when a variety of these ventures was supported by the government as part of the land reform programs and Malaysia with various palm oil companies. In both these cases, entities belonging to the governments

were involved partially in ownership of the venture or in supporting farmer groups who participated.

BUYER DRIVEN MODELS

Lead Intermediary Firm with extension services. This model is led by a national or regional trader or processer, often linked to a lead firm, that provides direct technical assistance, inputs, processing services and market access to farmers or farmer organizations. The extension service may represent a training of trainer modality to farmer organization technicians, NGO support staff, to lead farmers, or directly to the farmer. The lead intermediary firm is interested in consolidating a consistent source of product volume and quality from smallholder farmers for particular market venues.

The lead firm and/ or anchor firm would conduct business with a variety of suppliers through a dedicated supply chain network for upstream work and may own the processing and marketing initiatives of down-stream work. Smallholders may participate as part of the supply chain, however they are not directly involved in ownership, rarely in decision making and less so in profit sharing with the main business unit, as they are in most cases merely supplying a product to a larger and more sophisticated intermediary.

An example of this model is in Madagascar with the spice trading company **Jacaranda**. Jacaranda has partnered with a CRS agriculture project to provide planting material, technical assistance, and a guaranteed market for the turmeric crop. Jacarandas has assigned staff to this effort, and is partnering with the project to provide production costs, gross margin estimates, and sales agreements between them and farmer groups.

This black pepper farmer from Madagascar is earning over $1,500 in gross income on his small plot, drying and selecting the pepper in post-harvest to add value and increase his margins. *Jefferson Shriver/CRS*

Contract farming. This model demands more formal agreements between farmers and buyers. Farmers grow and deliver agricultural produce for specified quantity and quality on an agreed date. In exchange, the company provides upfront inputs, such as credit, seeds, fertilizers, pesticides and technical advice, all of which may be charged against the final purchase price. The contractor agrees to buy the produce supplied, this may be for a specified amount and at a specified price. However, as market prices are highly volatile, many contracts with smallholders tend to fix prices at the time of sale, to avoid produce being sold to opportunistic traders. Contract farming tends to be most successful with higher value, often perishable products, such as horticulture where significant amounts of labor are required.

One example of contract farming is with the community level cooperative Coosmprojin and Unispice in Nicaragua. Coosmprojin was founded in 2004 and has 78 members. Until 2012 they produced fresh vegetables primarily for the informal market. They initiated relations with Unispice in 2012, and with national level formal supermarkets Walmart and La Colonia in 2013. Unispice was founded in 1991 and promotes an inclusive business model with smallholder farmers for the purchase of fresh vegetables in Central America. Unispice provided French bean seed, technical assistance, a fixed, competitive price, provided boxes for harvesting, and handled storage and post-harvest processing and transport of product from Nicaragua to their plant in Guatemala. The cooperative

purchased six greenhouses, dug a well, and built a processing center to wash, package and store vegetables. The model promoted shared risk and shared investment amongst the two entities. The result is that Unispice received high quality product with timely deliveries, gaining a trusted supplier. The cooperative gained experience with a formal and secure market, learned to process vegetables for a demanding formal market, and improved the incomes of their farmer members.

EXTERNAL INTERMEDIARY-DRIVEN MODELS

Value chain facilitation and service delivery from Ethical Agent / Honest Broker. For many years, development cooperation has intervened through projects to provide facilitation and service delivery in value chains where services do not yet exist or where facilitation amongst actors is needed to increase competitiveness and smallholder inclusion. The intervention is usually for a fixed period, with an established exit strategy of the external actor. This model is most useful where an enabling environment exists for value chains, and where potential for permanent facilitation and service delivery can eventually be transferred from temporary actors to permanent ones. This actor is sometimes called an ethical agent or honest broker. The role of the ethical agent includes the following:

- Chain-wide oversight and reach
- Understand the model and network of the supplier, as well as the support and upgrading that may be necessary to supply a more formalized and demanding buyer
- Facilitate co-investment

Multi-Stakeholder Platforms. As value chain actors share the same constraints and interests, they also have an incentive to collaborate at a multi-sectoral level. The purpose of collaborating at this level is mutual learning and the joint access to support services, especially information and training. This type of collaboration unites local cooperatives and individual companies at a higher (often national) level and therefore requires other forms of organization.

In broad markets with a large number of competing operators and many parallel marketing channels and, generally, in weakly organized spot markets, the interventions cannot be limited to the micro level. Here, upgrading means addressing business linkages at a large scale, changing the conditions under which business contacts are made. Solutions need to benefit the market at large. This means that the interventions of facilitators have to refer to the macro level of market institutions and public support services in the first place, while the collaboration with individual companies is restricted to pilot investments and public-private partnerships.

ORGANIZATIONAL STRENGTHENING TOOLS

BUSINESS MODEL CANVAS

The Business Model Canvas is a strategic management and lean startup template for developing new or documenting existing business models. It is a visual chart with elements describing a firm's or product's value proposition, infrastructure, customers, and finances. The following table lists the categories of the BMC with a description of each.

Table 17. Segments of the Business Model Canvas

Category	Description
Customers	Buyers, traders or consumers (♀♂)
Value proposition	A statement that describes the unique value of a firm or group's products
Channels	The way in which the group plans to deliver the product to the buyer
Customer relationships	How the group plans to identify buyers and create and maintain relationships with them (♀♂)
Key resources	The inputs and resources that the group uses to produce the product
Key activities	The activities that the group plans to do to produce the product
Business services and partners	Services and partners that the group uses to produce and market its product
Costs	The costs that the group incurs in order to produce and market the product

Below is an example from CRS Value Chain Tool Kit Training.

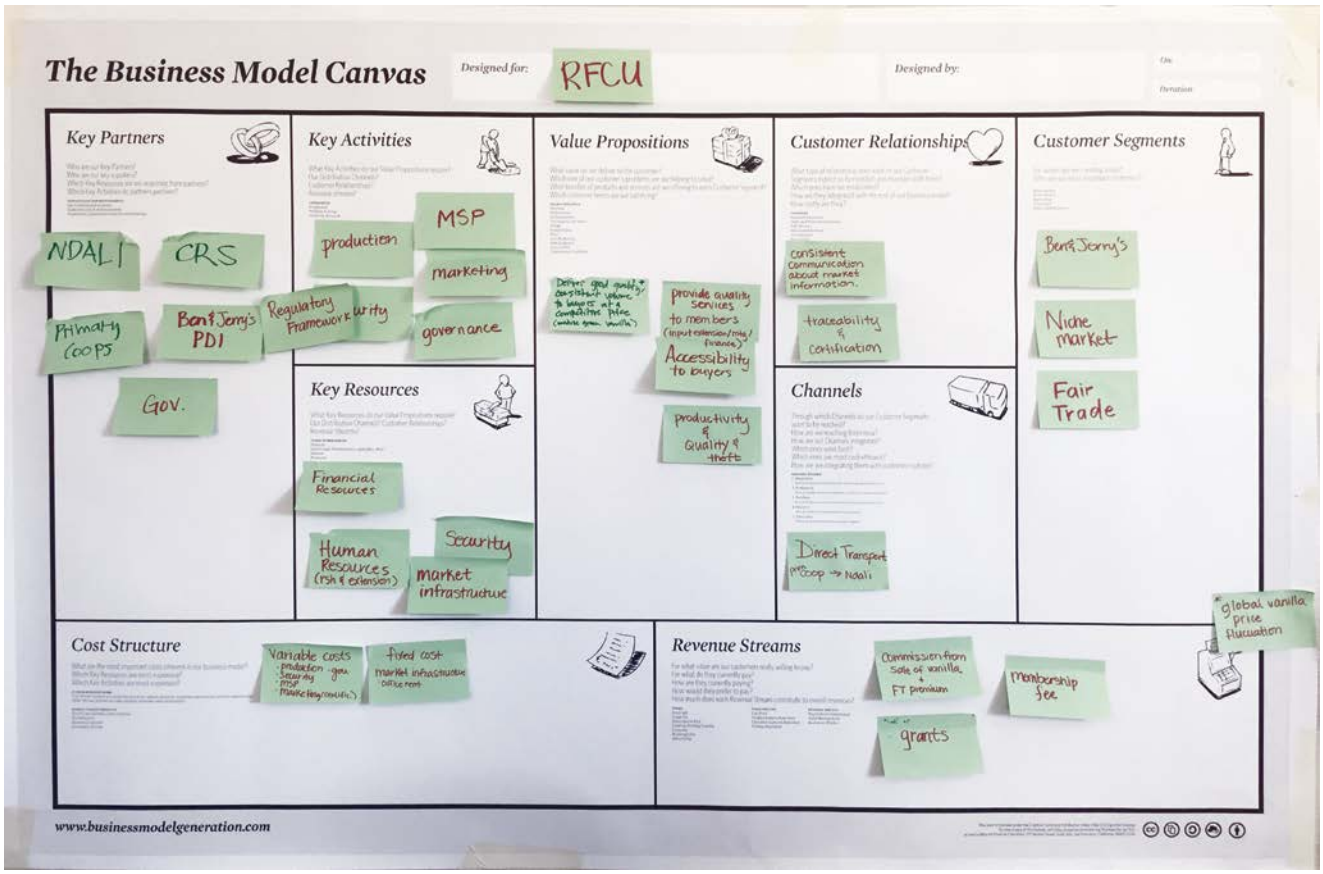


Figure 19. Example of Business Model Canvas for APROCA Equador

This banana collector and wholesaler in Madagascar buys banana bunches on a weekly basis from smallholder farmers in the locale and trucks them to capital city. Bananas provide an important source of cashflow year round for Malagasy spice and coffee farmers who intercrop bananas in agroforestry systems. *Jefferson Shriver/CRS*

COOPERATIVE ASSESSMENT TOOL

This an evaluation method that CRS has used in two regions of the world which provides an evaluation of a farmer business based on various categories of business operations. The evaluation is carried out with the farmer business, and the results are shared through a scorecard so that the business can know what it is doing well and what it needs to improve. These categories are the following: Strategic and business planning; business alliances; market venues and relationships; accounting and financial management; financial and technical service provision; human resources; gender equity; sustainable production practices; governance; internal and external communication; influence in practices and policies; and leadership. The full tool is available as an annex to this manual.

SCOPE INSIGHT

This is an online tool for evaluating farmer organization and SME professionalism and capacity. It has four main components: 1) Measurement tools and systems, to assess farmer organizations level of professionalism, opportunities and needs; 2) Capacity

building tools to improve levels of professionalism; 3) program implementation guidance, to standardize ways farmer organizations can execute programs and partnerships; 4) Data management systems to learn and claim program success. CRS is currently reviewing the possibility of adopting this tool for use around the agency. Please see **Annex 6.1** for a presentation of the tool.

ASSISTING FARMER ORGANIZATIONS TO MANAGE RISK

RISK MANAGEMENT

Smallholder farmers, particularly females, face many risks as they seek more permanent participation in value chains. Price volatility caused by market instability, production instability that results from erratic weather conditions and climate change, fluctuating food safety requirements and sudden changes in public policy, increases in GBV and harassment are some of the primary risk factors farmers face when seeking a livelihood in agro-enterprise. It is important that farmers understand the risks they are taking on when working within Value chain programs and that the team can develop risk mitigation measures in response to these factors.

IDENTIFYING RISKS

A risk is anything that may lead to loss, damage, danger or injury. There are four major types of risks: financial risks, operational risks, reputational risks and employee-related risks.

FINANCIAL RISK

Financial risk refers to the money flowing in and out of the farm enterprise and the possibility of a financial loss occurring. Examples of financial risks include:

- External economic pressure which may lead to changes in currency values, which, in turn, affects the import of inputs, such as fertilizer and agro-chemicals and also affects the prices for export goods, such as coffee or cotton;
- Loss of a key supplier or a key customer;
- Increase in production or operational costs; and
- Increase in lending rates, bank charges and interest rates.

OPERATIONAL RISK

Operational risk refers to an unexpected failure in production or the business, which may be caused by: A climatic effect that leads to crop failure; low yields or animal losses due to drought, pests or disease; Storage infestations leading to major losses in quality; problems at a key processing stage; Political unrest.

EMPLOYEE-RELATED RISK

The workers may also cause risk in the business, for instance: Seasonal labor not being available at the right time, such as at harvesting; Lack of knowledge and/or training; Employees providing poor customer service; High staff turnover; theft, and harassment.

REPUTATION RISK

The reputation of a business is linked to the beliefs or opinions that customers hold about a business, its products and services. Reputational risk may occur if the enterprise is seen as unreliable in terms of being unable to meet the quality and volume needs of buyers, not honoring contract agreements, selling to alternative customers at the last minute, not repaying loans, covering up harassment cases. These types of activities and decisions can

lead to negative publicity about the business, criticism of the quality of the products and, in some cases, legal action.

MARKET-RELATED RISKS

Smallholder farmers often face difficult choices, particularly about which markets to serve. When advising farmers on market opportunities, it is important that they are matched with appropriate types of markets and risk is a key factor in making decisions on the suitable market. Many markets suffer from high levels of volatility in prices, particularly during peak periods of harvest, when prices for goods fall rapidly. Extension agents should not try to link the most vulnerable farmers with the highest risk, highest return markets.

THE USE OF THE ANSOFF MATRIX IN RISK ANALYSIS

The use of the Ansoff matrix, **Table 18**, is a helpful guide to matching risk with farmer skills, aspirations and capacity to take on risk. The Ansoff matrix is a tool that is used to help a business determine its product and market growth strategy. The matrix assumes that growth possibilities depend on whether it is an existing or a new product in new or existing markets. By placing products into the Ansoff matrix, farmers and field agents can gain an idea of the type of marketing strategy they need to develop to be successful with the target product, as well as the level of risk involved in each strategy. The risk increases from 1 to 4, with 1 being the least risky market option and four being the highest risk option.

Table 18. The Ansoff matrix with risk levels

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

Understanding the basic costs and potential for loss with any market needs to be very clear to farmers. A general rule is that higher profits means higher risk, for example selling a known product into a known market is less rewarding but also has less risk than selling a new product into a new market. Risk management involves the following two aspects:

- Anticipating when an unfavorable event may occur and, if possible, acting to reduce the chances of it happening; and
- Taking actions that will reduce the unfavorable consequences should the event occur.

STEPS IN THE RISK MANAGEMENT PROCESS

The agricultural risk management process has five steps, which are discussed below:

Step 1: Identify possible sources of risk, such as environmental factors, unstable market prices, gender considerations;

Step 2: Identify possible outcomes resulting from the sources of risk, including low production and low-income periods in the production cycle;

Step 3: Decide on alternative strategies;

Step 4: Assess the consequences of each possible outcome of each strategy; and

Step 5: Evaluate the results between the cost of risk and the gains that can be made.

Ground nut and rice farmer in the dry southern corridor of Madagascar. Food staples like these are consumed at the household level, with excess sold on community and municipal informal markets. *Jefferson Shriver/CRS*

RISK MANAGEMENT APPROACHES AND STRATEGIES

There are a number of strategies that farmers and agripreneurs may consider to minimize risk. It is important to note that whatever strategy you choose, it is not possible to avoid the risk entirely and there are always direct or indirect costs involved in implementing a risk management strategy. The risk management strategies are outlined in the following sections. See Table 10, where the use of the Ansoff matrix in risk analysis is outlined, as well.

PRODUCTION RISKS

Production risk may be managed by implementing:

- Risk-reducing inputs, farmers can improve the chances of better yields if they buy higher quality inputs such as quality seed, fertilizers, pesticides, compost and make investments in water management such as irrigation;
- Risk-reducing technologies, such as drought-resistant varieties and disease and pest-resistant varieties for crops, irrigation technology for high-value crops and breeding livestock specifically for the market;

- Low-risk operations, e.g. smallholder farmers planting a drought-resistant sorghum, rather than other varieties that may fail in a drought;
- System flexibility, which makes it possible to make quick and short-term decisions and changes to production and sales; and
- Production diversification techniques such as: Managing multiple farm enterprises together at the same time or in the same season; Engaging in the same farm enterprise in different locations; Engaging in the same farm enterprise over successive periods or seasons; and Generating income from off-farm activities.
- Facilitators can help reduce risk by supporting female farmers in accessing and controlling the risk-reducing inputs and technologies and strengthening their decision-making power on decisions that affect adoption of low risk operations

MARKETING RISK

Marketing risk is a result of the variability of product prices and the uncertainty of future market prices. It can be addressed by using the following risk management strategies: Spreading sales by storing a crop after harvest until it can be sold at different times and for better prices; Enhancing profitability by selling directly to the final consumers; Making contractual agreements with buyers in advance, thereby ensuring a fixed product price; Developing trust with the buyers in order to obtain the best deal and maximize profits; Keeping track of market prices relevant to their products.

FINANCIAL RISK

Financial risk is caused by uncertainty and borrowing money to finance farming operations. It can be addressed by the following strategies: Farmers who save for future investments are able to buy inputs with less need to borrow capital, this reduces their exposure to debt; Increasing the capital available to farmers through loans, which enables them to expand their operations, bearing in mind that they have to meet the financial obligations of paying back the loan; Improving female decision-making over the use of loans and savings so the loan can be applied to their business and be paid back. Improve liquidity by selling assets that are most easily converted into cash; Generate additional income by leasing assets (e.g. land, machinery and equipment), which allows the farmer to use equipment that might not have been profitable to buy; Managing the timing of investments, e.g. by spreading purchases over several months, rather than buying all equipment at the same time; Where possible farmers should insure operations against major risks, such as death, accidents and sickness, as well as fire and loss of crops by storms or floods.

INSTITUTIONAL RISK

Institutional risk can be minimized and managed by: Forming farmer producer groups that work together in terms of saving, **credit mobilization,** service delivery and bulk buying and marketing; Establishing cooperatives, which provide the benefits of - Buying inputs and supplies in bulk; Sharing transport to reduce costs; Negotiating collecting with buyers; Mobilizing savings and credit with members.

MANAGING INSURANCE

Another means of reducing risk is through insurance. At present, few farmers in the developing world, and especially those who work in rain-fed farming, have access to insurance. This means that farmers are reluctant to invest too much in any one business due to the risks of failure and loss. The financial sector is making an effort to invest in **weather indexed insurance** systems, but to date, the premiums are typically high and the payout systems have limitations based on the resolution of the data available. Despite

Carlos Cajal/Silverlight for CRS

these challenges, the use of insurance will be an important part of the risk reduction approach for farmers in future.

Weather indexed insurance: An insurance system in which the payout is linked to measured environmental conditions by using indices (closely related to agricultural production losses), such as rainfall, wind speed, temperature and vegetation levels.

Specific risk management instruments include:

- Technology development and adoption (R&D, postharvest technology, software development, IT, education programs)
- Enterprise management practices (e.g. farm diversification, certification, just-in-time management, inventory control, food safety practices, logistics planning, early warning systems)
- Financial instruments (e.g. credit, insurance, warehouse financing)
- Investment in infrastructure (transport / communication, energy, informatics and knowledge transfer, storage and handling, processing facilities, weather stations)
- Policy and public programs (regulatory measures, agricultural policies, property rights, labor laws, disaster management, safety nets); and private collective action (action by cooperatives, industry associations).

CASE EXAMPLE 1: PRICE RISK MANAGEMENT

In the coffee value chain, CRS is engaged in price risk management. Oikocredit is collaborating with Fair Trade USA (FTUSA) and CRS to implement a project that will address the most important risk that small coffee farmers face to their livelihood: price volatility. Coffee is a commodity that suffers wide price variations that are driven by international demand and supply. Small farmers lack sufficient experience and knowledge in implementing strategies to mitigate this risk. Although Price Risk Management (PRM) is not a new concept, cooperatives still struggle with executing these complex financial strategies and tools successfully. PRM is the mitigation of risk associated with buying and selling a product (coffee in this case) through the course of time and a fluctuating market. This risk is mitigated using financial tools such as options derivatives, including the purchase of both call and put options and the purchase of futures contracts. The choice of which financial tool to use is driven by its relative cost and by the needs and knowledge of the user.

The project supports the provision of technical assistance and financial services to build coffee cooperatives' capacity to directly implement PRM. Many coffee coops in the region already have a strong understanding of the mechanics of puts, calls, and futures contracts. Nevertheless, much of the knowledge is concentrated at the coop management level and possibly even with some coop board members. Few are managing their own PRM strategies since PRM is considered too complex to take on independently. Many also do not have the basic accounting/inventory management systems in place to effectively manage cash flows and coffee stocks. Knowledge and understanding of the benefits of implementing PRM is also very limited at the small farmer level since lessons learned from trainings do not trickle down to the farm level.

The PRM Project aims to bring together key value chain actors who share a common vision for addressing the challenges of sustainable agriculture and the inclusion of small holder farmers in high value markets.

Alefa stops in a local shop to buy a bar of soap. *Georgina Goodwin for CRS*

Chapter 7
Private Sector Engagement and Value Chains

CHAPTER OBJECTIVES

- Understand the place of the private sector in development work and how CRS works with the PSE actors
- Understand how to use the basic tools for engaging the private sector

WHY ENGAGE THE PRIVATE SECTOR?

NGOs are consistently working with public and private sector in market-based development work to achieve greater system sustainability. The private sector, with properly aligned incentives, will continue to deliver services to the farming community long past the end of a donor-funded project.

To support greater prospect of sustainable outcomes, the development industry is moving from a "Free to Fee" based model, transitioning from handouts towards mandating **co-investment** from project participants, including farmers and other value chain actors. Co-investment is a sure sign of having "skin in the game" which shows that all parties are genuinely committed to the program. Handouts distort incentives, encouraging partners to take on activities which they would not do on their own and are likely to cease when the project ends. Requiring co-investments requires much more planning and also leads to a self-selection of those parties who are truly interested and in activities that are deemed worthwhile by all involved. This does not however, mean excluding the poor or females Value chain engagement can be adjusted to meet the needs of most clients or accompanied by gender interventions to support females engagement, but the principle is that everyone is co-invested.

Once the project ends and CRS exits, the aim is for all value chain activities to continue: the definition of sustainability. To do this, value chain facilitators must have a clear plan and vision for facilitation and transitioning out. Who will be doing what activity? Who will be paying for that activity?

TOOL: WHO DOES / WHO PAYS MATRIX

Sustainability of program activities is a key requirement for most donors. Avoiding direct provision of services or becoming part of the value chain, is a first rule. One that is often overlooked by NGOs in their drive for success. Completing a simple *Who Does / Who Pays* tool forces practitioners to think through the project vision and avoid the pitfall of providing too much direct assistance.

Practitioners should conduct an analysis of service provision and who pays during the project design phase. For example, a service function critical to the value chain could be "Agronomy Extension Services". In the current situation, it may be delivered by the government, and paid for by the government, but with insufficient agents. The practitioner must ask the question, "What is the vision we want to see in the future?" On option is that the private sector provides those services. Who pays for them? Perhaps the farmers, as part of the price of the inputs they are purchasing from the input supplier. Perhaps the large off-takers, who would benefit from the increased quality of product the extension services would guarantee. It is CRS' task to explore those incentives and design a project that works with them, not against them. What activities can CRS undertake to ensure that the "who pays" column does not include CRS and other NGO actors indefinitely.

CURRENT SITUATION

Functions	Players	
	Who Does?	Who Pays?
CORE CHAIN		
REGULATION AND INFRASTRUCTURE		
SERVICES		

FUTURE VISION

Functions	Players	
	Who Does?	Who Pays?
CORE CHAIN		
REGULATION AND INFRASTRUCTURE		
SERVICES		

Framework for Defining Future Sustainability: Who Does / Who Pays Matrix, M4P Springfield Centre

Practitioners should fill out the form during the project design phase. For example, a service function critical to the value chain could be "Agronomy Extension Services". In the current situation, it may be delivered by the government, and paid for by the government, but with insufficient agents. The practitioner must ask the question, "What is the vision we want to see in the future?" One option is that the private sector provides those services. Who pays for them? Perhaps the farmers, as part of the price of the inputs they are purchasing from the input supplier. Perhaps the large off-takers, who would benefit from the increased quality of product the extension services would guarantee. It is CRS' task to explore those incentives and design a project that works with them, not against them. What activities can CRS undertake to ensure that the "who pays" column does not include CRS and other NGO actors.

ENGAGING THE PRIVATE SECTOR – WHAT IS THE ROLE OF CRS?

Private sector engagement (PSE) is about harnessing the power of the private sector to assist in opening new opportunities and reducing chronic poverty. It is about helping

the private sector change the way they do business so that their activities benefit the poor and women while their business benefits. It is about giving the private sector a seat at the table in an active way during the program design process and retaining that engagement throughout the program. Examples of PSE would be building a relationship with technical consulting companies that provide training or business development services (BDS) to farmers. This might include working with input supply companies so that they identify new markets and new points of sale so that remote ♂♀ farmers can access quality seed. It also includes building relationships with companies of all sizes ranging from micro, small and medium enterprises (MSMEs) to regional, national and multi-national corporations (MNCs), who can develop new business models that include ♀♂ farmers and support gender equality.

Carlos Cajal/Silverlight for CRS

A private sector engagement is **not**:

- A donor relationship where we set up small businesses and give the private sector equipment as part of the program participants or beneficiaries.
- A limited corporate social responsibility (CSR) program in which the private sector actor is providing financial or material support only to meet public relations goals.
- A material aid relationship where the private sector donates goods to farmers.

NGO experience shows that there are five primary approaches that we should adopt in PSE programs: [41]

FACILITATOR: An important aspect of sustainability is facilitation. Rather than CRS directly implementing activities, we find ways of bringing local actors together to do the work and we simply act as a 'connector,' building relationships, filling in knowledge gaps, supporting gender equality and 'mentoring' the actions of the permanent local actors. By taking a back-seat role, and promoting relationships among local actors, we ensure that activities can continue without CRS. Specific facilitation interventions can take many forms, such as:

- Bringing together value chain actors to discuss common problems
- Connecting agro-dealers with farmer organizations, so that farmers know where they can access quality seed.
- Supporting a competition to develop and scale use of new technology.
- Linking importers with rural retail outlets to increase the availability of alternative energy products.

Ideally, we try to limit our role in PSE programs to facilitation, but we may need to add additional roles listed below because of gaps in the market.

Technical Support Services: In many situations, CRS provides technical support to the private sector or other actors to increase capacity to fulfill their existing role or to take on new roles. This includes providing sector technical knowledge on production systems, learning about savings groups, business planning and governance, business modeling, market research, market linkage, gender equality and mentoring.

41 Adapted from Mercy Corps, "Private Sector Engagement Toolkit"

Public Investor: In some circumstances CRS will co-invest with a business to incentivize a new approach. This may be done to test and demonstrate viability of a new concept, spur behavior change, support a pilot or inception phase. The co-investment is essentially to "buy-down risk" of the new product, expansion into a new area or to encourage uptake.

There are some situations, where CRS provides both technical assistance and grants to a business. An example is the provision of a grant to an MFI to cover initial operating costs, or to set up a loan guarantee, or to capitalize an MFI to enable them to lend onto target MSMEs. Grants to private businesses must be structured to ensure that all funds are used for the specific program objectives and not result in excessive profit for the business or its owners. It is also important to ensure that the grant is used for short-term and/or start-up costs and that the activity can continue without ongoing subsidy.

Private Investor: In some circumstances, CRS may provide investment capital into a business as part of a PSE program. This type of lending could be **debt** or **equity** investment. These types of loans are made when private sector financing is unavailable, or where private sector are unwilling to invest due to perceived risk.

INCLUSIVE BUSINESS PRINCIPLES[42]

When we facilitate and strengthen relationships between smallholder ♂♀ farmers and private sector, we need to consider what are our guiding principles?

WHAT EXACTLY IS AN INCLUSIVE BUSINESS?

The World Bank defines an Inclusive business as *a private sector approach to providing goods, services, and livelihoods on a commercially viable basis, either at scale or scalable, to people at the base of the pyramid by making them part of the value chain of companies' core business as suppliers, distributors, retailers, or customers*

CIAT has developed a list of inclusive business principles which they refer to as the New Business Model. These principles can be used to help our thinking on developing and evaluating business relationships. This process has many questions that are related to each of these principle areas, see **Annex 7.1**. The results can be used as a starting point to consider levels of inclusivity for small-scale producers. The principles highlight success factors for improving inclusivity, fairness, durability and financial stability in business relations between small-scale producers and formal buyers.

The goal is to evaluate fairness of the business relationship and where necessary to identify actions to improve inclusivity. The New Business Model principles are not a magic wand which will automatically achieve smallholder inclusion. These principles should not be used as a check-list but rather as guides to assess and improve business models.[43]

Principle #1: Chain-wide collaboration: The resolution of problems, in both commercial and social aspects of the New Business Model, means that all, or most, of the actors in the chain need to establish shared goals for collaboration.

Principle #2: Effective market linkages: Farmers and their organizations need to be linked to a stable market that not only provides them with access to key services but also has clear signposting in terms of quality standards, volume and price (Principle 4). These linkages should contribute to improved livelihoods for the producers.

42 CIAT Link 2.0

43 Lundy, M., Amrein, A., Hurtado, J J., Becx, G., Zamierowski, N., Rodríguez, F., & Mosquera, E, E. (2014). Methodology LINK : a participatory guide to inclusive business models with smallholders. Version 2.0. Cali, CO: International Center for Tropical Agriculture (CIAT).

Principle #3: Fair and transparent governance: Fair and transparent governance refers to the establishment and implementation of clear and consistent quality standards, clear commitments to buy and sell certain volumes of certain grade products at certain times, and equitable processes of risk management.

Principle #4: Equitable access to services: One of the special challenges faced by small-scale producers is gaining access to services such as finance, market information and best agronomic practices that could improve quality, yield, food safety and environmental practices.

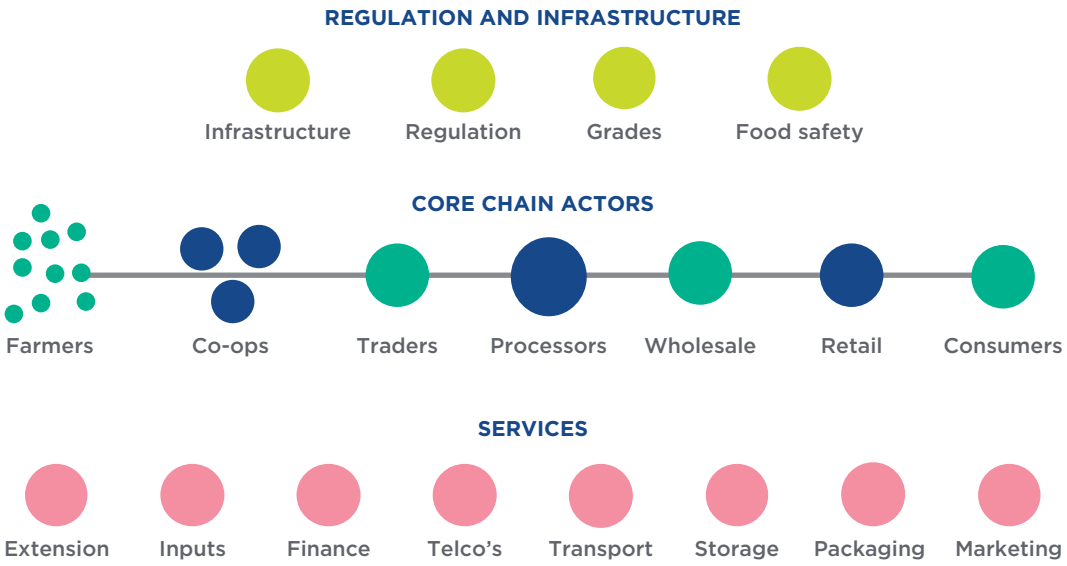
Principle #5: Inclusive innovation: New Business Models promote innovation in products, services and the processes that underpin multiple actors along the chain. Innovations should be developed with smallholder ♀♂ farmers, rather than for them. Inclusive innovation development supports competitiveness, improves commercial value of goods and services, and when gains are shared among partners, fosters more durable businesses.

Principle #6: Measurement of Outcomes: A business saying states that "you cannot manage what you do not measure". Indicators and monitoring plans are required to assess the health of the ongoing trading relationship, both as a for-profit business and in its effectiveness as a vehicle for community development.

Application of Principles: From Theory to Practice: CIAT's tool to evaluate the application of guiding principles towards longer-lasting and more inclusive business relationships is a scorecard method to evaluate the business relationships against each of the principles. Value chain actors can use the score cards to grade each criterion based on their perception of their role / business and other chain actors with whom they interact (i.e., producers, buyers, suppliers, support services, etc.). The grading is a six-point scale ranging from "strongly agree" to "strongly disagree."

PRIVATE SECTOR ENGAGEMENT – WHERE TO BEGIN?

BASIC THREE LEVELS OF A VALUE CHAIN



The first step is to return to the Value Chain Map and place all the value chain actors into position. Then the facilitator can work with actors to analyze each of the relationships

depicted between actors in the chain, along and between the three main levels: Regulation and Infrastructure, Core Chain Actors, and Services. Relationships to be examined include those between private sector actors and farmers, as well as relationships between actors that currently do not involve the private sector at all. Is there a current relationship or delivery of goods and services that might better be served by involving the private sector?

For each connection in the chain, we need to ask whether the business relationship is working well. Be practical in the use of this tool. You **don't** need to discuss every actor, refer to your value chain map and your business model canvas and discuss the relationships that are most critical to your target clients. At the heart of any business model is the value proposition being offered by the business to their potential customers. For any business relationship, the value proposition must address the needs of the customers.

Horticulture processing plant in Tanzania. Smallholder farmers sell raw material to a trader who washes, selects, and packages fresh vegetables for national and export markets.

CREATING A "WIN-WIN" RELATIONSHIP

Identifying the pain points in a business relation, is a useful way for both actors to raise concerns and understand whether and how a business partners can address the issues. If there are ways that a supplier can find better ways to support their buyers, changes can be made to create a win-win relationship. What is the problem for the farmers? What is the challenge for the buyer? How can we fix it? Often, people are not aware of the problems of others, so some fixes are possible.

There is a wide range of PSE interventions but in practice, NGOs including CRS intervene most often in the following areas:

- Establishing stronger relations between Farmers and **Input Suppliers**
- Farmers and processors relationships with **financial Services** (illustrated by Ethiopia GRAD example below)
- And relationships between farmers and **buyers or processors** (illustrated with Tomato Jos, below)

EXAMPLE OF A "WIN-WIN" RELATIONSHIP: TOMATO JOS IN NIGERIA

CRS Nigeria has partnered with Tomato Jos Farming and Processing Limited, a Nigerian social enterprise and tomato processing company, to make sure that smallholder farmers benefit from the opportunity tomato processing can offer. Together, CRS and Tomato Jos are piloting a new smallholder farmer inclusion model for the production and supply of tomatoes. Tomato Jos is training farmers on best agricultural practices so that farmers can increase their yields from the Nigerian average of 7 tons per hectare to the global average of 35 tons per hectare. CRS is helping farmers organize themselves into farmer groups and build their marketing capacity. Together, farmers can use their bargaining power to ensure that they are getting a fair price. With higher yields and a direct link to a buyer, tomato farmers in Nigeria can make up to five times their previous incomes and achieve a sustainable livelihood through tomato production.

Tomato Farmers

Pains:
- Lack of agronomy knowledge
- Lack of guaranteed buyer
- Credit for inputs

Products and Services:
Tomatoes at volume

Tomato Jos

Pains:
Lack of consistent, reliable source needed to make paste

Products and Services:
Guaranteed market

Farmers were able to offer Tomato Jos their tomato harvest in exchange for Tomato Jos offering farmers a guaranteed market. Tomato Jos supplied seeds and fertilizer on credit and accompanying technical services to the farmers which enabled the farmers to meet the quality and volume requirements. Tomato Jos set up an outgrower scheme with the farmers as well as a lead-farmer model, and then purchased the tomatoes from the farmers after subtracting the cost of the inputs. CRS facilitated this relationship by helping Tomato Jos design and manage the outgrower model and by helping farmers build and strengthen their cooperative to better meet their members needs and negotiate with Tomato Jos.

METHODS OF STRENGTHENING PRIVATE BUSINESS LINKAGES

Strengthening business linkages through sales agreements or contracts, serves several purposes. This approach provides greater security to farmer organizations and enables both sides of the agreement to fully understand the conditions of the sale. Contracting helps in making the transition between informal selling and more formal arrangements with domestic or international buyers. Contracts generally improve the distribution of benefits and smooth out volatility in sales, which is highly desirable for most smallholders. Use of contracting, also improves the efficiency of the business transaction, reducing the costs of contract supervision and the information costs, and builds trust between business partners.

As value chains upgrade to higher value products, the types of contractual relationships between suppliers and buyers evolve: Standard commodities, such as maize or wheat, are mostly traded in spot markets ("arms-length" transactions), as the standard quality can be met by many producers. Both suppliers and buyers can easily switch between trading partners. In the case of high-value, perishable or branded products, more sophisticated forms of contracting are required to assure quality and reliability of supply. Hence,

product upgrading involves the more defined contractual agreements, which require more standardization and discipline by the suppliers. The different forms of contractual arrangements are listed the box below. The list is organized in order of an increasing degree of detail and mutual obligations.

BOX 3 CONCEPT: FORMS OF CONTRACTUAL ARRANGEMENTS[43]

INTENSITY OF RELATIONSHIP	
Spot market (arms-length transaction)	Transactions are completely market-based. Contracts are verbal and often anonymous.
Forward contracting	A cash transaction in which a commercial buyer and seller agree upon delivery of a specified quality and quantity of goods at a specified future date. The price is agreed upon in advance
Regular subcontracting of suppliers / preferred supplier arrangements	Regular subcontracting of suppliers / preferred supplier arrangements Buyer has a list of preferred suppliers with whom forward contracts are made regularly. This provides security and reduces search costs on both sides.
Outgrower Schemes	A big farm contracts with neighboring farmers to complement the own production volume. Outgrowers receive technological services but may sell to other buyers as well.
Contract Production / contract farming	The supplier works for one buyer exclusively. Product and technology are clearly specified, and suppliers receive the necessary inputs

FACILITATING BUSINESS LINKAGES

External facilitators can be helpful in facilitating new contractual relationships. However, keep in mind all that business linkages are commercial relations and are a private responsibility. External facilitators should not interfere in making contracts and setting conditions. Facilitators need to carefully reflect on their role in supporting private business linkages, to avoid market distortions and all partners should be treated equally.

Pilot contracts can serve as a model for others and their use can be scaled up easily. Also, it is helpful to provide draft copies of contracts or sales agreements so that partners can use the information to draw up more defined business options. If the team needs to invest in the contract, these types of relationships can be justified if the external support to contracting is essential to set up something new, such as opening a new market, and if this investment into market development is covered by the expected returns in growth of turnover and incomes (hence a favorable cost-benefit relationship).

44 GIZ

Jennifer Hardy/CRS

PRACTICAL HINTS: ACTIVITIES TO AVOID IN SUPPORTING BUSINESS LINKAGES

In the interest of an efficient use of public funds and a sustainable impact of support measures, facilitators should ***not****...*

- take over any marketing or other commercial functions themselves
- become a party in any commercial contracts, e.g. providing guarantees of sale
- give any preferential treatment to individual operators

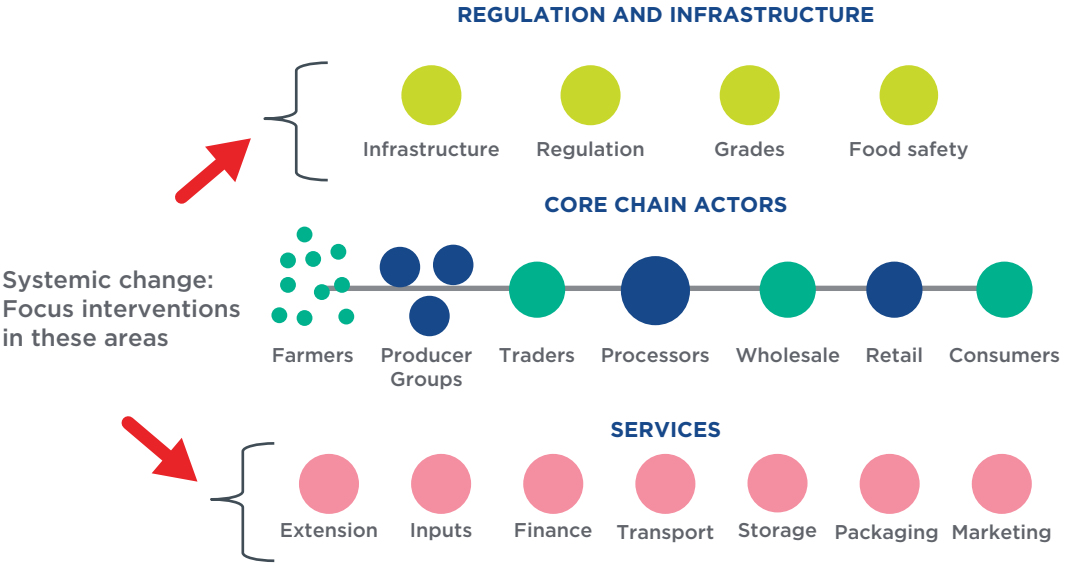
STRENGTHENING BUSINESS SUPPORT SYSTEMS

The competitiveness of value chains often depends on the availability and affordability of services. Services are key to providing access to inputs, knowledge, information and skills necessary for value chain upgrading. As farmers engage in more sophisticated value chains, business relationships generally become more demanding especially for product sales terms and conditions. As farmers Intensify production and processors invest in new machinery, these types of upgrades require additional information, new skills, better logistics and often higher product standards. To take on these improvements operators need more specialized support.

However, for many of our clients in development projects, they have limited access to the necessary services, particularly women, such as input supplies, advisory services and finances. They are either too distant or too costly. There is then a danger that NGO's step in to provide these services. As mentioned previously, the role of the NGO is to facilitate and find ways of encouraging private sector to develop business models that enable more actors to access the services at affordable prices.

As part of the value chain approach, facilitators need to build the capacity and business relations between core chain actors and the business service providers. Focusing on the business support services requires a more systems level approach, as services generally support many different types of actors, and will certainly support, for examples, farmers who are working on many different value chains. BDS support therefore addresses some of the underlying constraints that prevent the effective development of market systems around poor people.[44]

INDUCING SYSTEMIC CHANGE



- In this view, the CORE of the value chain is de-emphasized
- Each BDS can be thought of as a value chain—i.e., what is the supply and demand for finance?

Figure 20. Mapping ways to support different parts of the Value chain

45 "A synthesis of The Making Markets Work for the PoorM4P) Approach", Springfield Centre

ETHIOPIA'S "GRADUATION WITH RESILIENCE TO ACHIEVE SUSTAINABLE DEVELOPMENT" (GRAD) PROGRAM - SUPPORT TO MICROFINANCE INSTITUTIONS

Goal: create access to financial services for Chronically Food Insecure (CFI) Households with very limited or no access to formal financial services and located mostly in remote areas.

CRS provided:

- Financial education and business skills training to households to make them ready to access financial services
- A loan guarantee fund for MFIs to buy down the risks. The minimum ratio of loan guarantee to loan disbursed was 1 to 2 meaning for every dollar loan guarantee fund, the MFI was required to loan out two dollars to GRAD target HHs

Banks provided:

- Agreed to lower interest rates (15-18%) for these program participants
- Open branch offices in locations close to target HHs

Results: 8,069 CFI HHs (female 2,456, male 5,623) with no or limited access to formal financial services have access loans from three MFIs. Five rounds of loans were provided during the project implementation period. The MFIs received loan guarantee fund amount of $682,701 and loaned out $1,818,691 to 8,069 target HHs. After the project end, the loan guarantee fund will remain with MFIs and will serve as a revolving fund for those four target districts. The MFIs have obligations to continue providing financials service in those woredas after the project phase out.

A key concept of this approach is each support function can be viewed through a supply and demand lens. Each business development service can be thought of as a micro-value chain i.e., what is the supply and demand for finance services supporting that particular value chain? What are the challenges that male and female value chain actors in accessing these financial services?

Inducing change at this point in the chain is less intrusive than with core actors and avoids the pitfall of placing the development organization in a direct role in the value chain. Change in the support services reaches a wider range of beneficiaries, not just those involved in the value chain we are directly supporting and provides sustainable solutions that last beyond the program lifespan. On the downside, using this approach delivers program results slower as compared to direct intervention and requires patience.

BUSINESS MATCHMAKING

Besides the political and strategic interests, enterprises also have a plain commercial interest in common, particularly in export-oriented industries. Private enterprises must find new business partners. Strengthening platforms for business contacts is another value chain solution. It can mean two things: one is the creation of platforms in an industry, the other is the promotion of enterprises to make better use of the existing platforms, particularly to participate in international trade fairs.

Organized smallholder farmers and social entrepreneurs processing and exporting agriculture products participate in global trade fairs to develop relationships with value chain actors. *Jefferson Shriver/CRS*

MAJOR INSTRUMENTS OF BUSINESS MATCHMAKING

- *Facilitating participation in trade fairs and organizing exhibitions*
  Exhibitions are organized to assemble operators and stakeholders active in a particular market
- *Organizing business delegations to importing countries*
  These business delegations are normally held to build up new business contacts with previously identified concrete buyers in the importing country.
- *Organizing buyer/seller meetings*
  Meetings between buyers and sellers can be organized as workshops to exchange experiences
- *Operating electronic B2B platforms*
  The aim of these internet tools is similar to the previous directories but normally offers more detailed information. Normally users can fill in a concrete search request and partners are listed according to specific criteria such as country, sector, type of partner.

FACILITATING PARTICIPATION IN TRADE FAIRS

Another approach for building capacity of small-scale enterprises to bring producers to existing platforms for business matchmaking. One way to help small enterprises to take part in trade fairs. This exposes producers and processors to a new level of engagement

with their competitors and also to new buyers. This approach is a classic instrument for export promotion.

Entering an export market is costly. Small enterprises and start-ups cannot shoulder the investment into export marketing on their own, they need to cooperate. The export capability of the value chain rests in the collaboration of producers, traders and business associations to present a quality product and establish a common brand. The value chain solution is in the capacity to make that collective effort. After opening a new export channel, traders must sustain the business linkages themselves and this needs backing from their partners at home.

PARTNERSHIPS WITH PRIVATE SECTOR (PPP AND DPP)

Collaboration between public and private sector is a common concept in value chain development. In this case, each of the players should define their roles and come to a common vision. Value chains are composed of private enterprises and it is through their decisions and investment that economic progress is achieved. The role of the public sector is to support the non-competitive areas, and this often involves, technical assistance, providing greater access to services and helping to regulate the business environment to promote greater commercialization. PPPs range from informal and short-term collaboration to mutually binding long-term commitments, depending on the nature of the value chain.

Beyond the general importance of private partners, public-private partnerships (DPP) are of interest in value chain development—contracts between a government or development agency on one side with a particular private company on the other to achieve a common objective. If the interest of an individual enterprise coincides with the public interest, the cooperation creates a benefit for both sides. The private investment serves the company and generates advantages for the value chain at the same time.

- Cooperation projects between the public and private sector
- Jointly planned, financed and implemented by businesses or business associations and development agencies and other partners such as state or civil society.
- Development agencies provide capacity development, technical knowledge, support to gender equality and facilitate dialogue, while private companies provide their unique technical knowledge, invest capital, and use innovative means to support change.
- Partners share the costs and risks equally in this win-win arrangement.

A DPP represents an overlapping of public and private interest

PRECONDITIONS FOR PRIVATE SECTOR PARTNERSHIPS

- **Compatibility** with the goals of public development is provided. Projects must demonstrate a clear development outcome.
- **Complementary effort** results in benefits for all partners involved. Public and private contributions should complement each other so that the cooperation enables both partners to achieve their respective objectives more efficiently and more cost-effectively.
- **Cooperation** does not imply subsidies to core activities of the enterprises (*subsidiarity*); government funds cannot be used to support an activity the company was going to undertake already, and vice-versa.
- **Both public and private partners invest** own resources in the cooperation.

DEVELOPMENT PARTNERSHIPS WITH THE PRIVATE SECTOR (DPP) AND PUBLIC-PRIVATE PARTNERSHIPS (PPP): HOW THEY DIFFER

PPP is used for the provision of a public service by a private entity, such as infrastructure projects. DPP capitalizes on overlapping economic and development interest for collaboration, with financial contributions from both entities.

DPP CONCEPT ... *OVERLAPPING PUBLIC AND PRIVATE INTEREST*

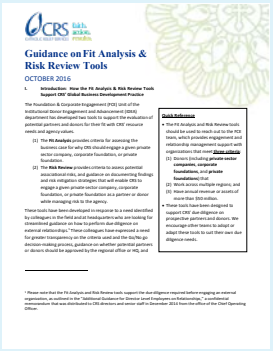
Targets	• Profit increase • Access to new markets / Market growth • Access to qualified workforce • Image, reputation, risk management (Social Corporate Responsibility	• Poverty reduction • New / improved employment opportunities / Income increase • Protection of the environment / natural resources • Gender equity
Impacts	• Benefits for the companies • Benefits for disadvantaged population segments • Economic, social or environmental benefits	

TOOL: DATA COLLECTION FORM FOR PRIVATE SECTOR

CRS' Impact Investment team has developed a simple data collection tool to use when interviewing private sector companies to assess their potential as project partners and ability and willingness to form inclusive business relationships with project beneficiaries. This Data Collection Form is included as an Annex 7.2, and a Template MOU for Private Sector Partnerships is Annex 7.3

VETTING PRIVATE SECTOR ENTERPRISES: TOOLS

Vetting Tool (Risk and Fit analysis) from CRS Foundations & Corporate Engagement: https://global.crs.org/teams/IDEA%20Department/Guidance/IDEA%20Guidance%20on%20Fit%20Analysis%20+%20Risk%20Review_Oct2_2016_FINAL.pdf


Guidance on Fit Analysis & Risk Review Tools

OCTOBER 2016

Record-keeping at farmer collection centers is critical data as smallholder farmers sell their product collectively to more competitive markets. *Michael Stulman/CRS*

Chapter 8
ICT and Data Management

STUDY UNIT OUTCOMES

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

- Identify different types of digital support services; and
- Explain how to use digital services to support value chain upgrading.

Digital technology is used to describe all the devices and analytical methods that enable information and communication technologies to support our work. This includes the use of computers, the internet and most importantly the application of mobile digital phone / internet services that enables farmers to access information and communications.

The digital world is transforming lives across the world and as the digital infrastructure expands into ever more remote rural areas, farmers can take advantage of these systems to access information, people, products, finance and markets. As the network spreads and deepens, more companies are exploring ways to use this information bridge to provide Governments, private sector, farmers and NGOs, with an exciting range of digital services.

The ability to access information to interact with remote family members, share information and build business relationships is one of the most profound changes affecting our world today. As these technologies become more pervasive they will become an integral part of farming systems. For development agencies, the challenge is how to take advantage of digital opportunities to enhance value chain development, so that business innovation can be accelerated and scaled.

The digital revolution: For millions of smallholders, agro-dealers and rural traders, the arrival of mobile has offers an exciting new business tool, which enables them to expand their business relationships with huge reductions in transaction times and cost. Most rural actors have entered the world of communication through basic mobile phones. However, the mobile infrastructure is being rapidly extended into very remote areas and as technology costs continue to fall, there is little doubt that more farmers will soon be using feature phones followed by **smartphones,** which will give them full internet access.

These products and services are essentially creating the infrastructure for a digital marketplace and that offers development agents and agencies a new way to engage with the farming community. To ensure these new ways of engaging with the farming community are inclusive and empowering we need to recognize that a gender divide in access to ICT still exist. The FAO 2018 publication on Gender and ICT: Mainstreaming Gender in the Use of Information and Communication Technologies (ICTs) for Agriculture and Rural Development[45] provides ideas on how to address gender in ICT.

The arrival of digital systems provides a game changing opportunity for working with ♂♀ farmers. This is particularly relevant to value chain upgrading, where farmers face a number of key challenges:

- Under-invested extension means too few field agents advising farmers
- Lack of extension means reduced demand for technologies
- Lack of rural banks means that farmers find it difficult to save, access credit and transfer funds
- Inability to collateralize farms means that farmers cannot access finances based on their assets
- Lack of organization reduces aggregation and this weakens market linkages
- Weak market linkages mean that farmers can't afford technologies

These challenges have trapped farmers in chronic poverty and whilst digital systems on their own cannot solve these problems, if digital systems are combined with advisory services, financial and marketing system, then the prospects for accelerated growth seem more plausible.

What information? Whilst millions of farmers could benefit from access to better information, service providers and development agencies often run into the challenge of trying to understand exactly what types of information helps farmers? The first set of ideas have focused on single ideas, such as:

- Market price information
- Pest and Disease monitoring
- Location of nearest inputs
- Weather predictions and alerts
- Flood or drought warnings

These types of information are important and commercial farmers are taking full advantage of this information to make better decisions about what to plant, when to plant and where to sell. However, for most smallholder farmers, they want advice not information. They want advice they can act on. Given that agronomy is very localized, farmer want advice that is customized to their location and their crops or livestock. This makes generic information less appealing to farmers.

Many smallholder farmers are also used to the idea that training, information and rural advisory services should be **free**. There is a tradition of free services for farmers and the shift from farmers accepting **free** advice to **fee-based services** is still a major cultural change, but it is an inevitable change. The dilemma then is that if farmers must pay for many of the new digital services, they will only be willing to do so, when they can realize

46 https://www.ictworks.org/wp-content/uploads/2018/05/7-success-factors-gender-ictforag.pdf

the value of such services. This change means we need a better understanding about their costs and incomes and this is where field agents will play an important role.

INTERMEDIATED SERVICES VERSUS SELF SERVICE

In many countries agricultural extension services have experienced years of decline and underinvestment. In most countries, in Africa and Southern Asia, 100's or even 1000's of farmers are now nominally supported by a single Government extension worker. To some extent Government extension services are being complemented through short term NGO field agents and in some countries with private sector extension agents. Private agents are generally focused only on high value products. A key challenge then is one of numbers which suggests that agricultural extension services need to be augmented with some form of digital support to achieve greater scale.

One approach is to find ways where physical agents can expand their coverage through the use of digital tools, this is an intermediated approach, the physical agents providing both advise and support in navigating and using digital tools and systems. The alternative is to replace physical agents with SMART self-service digital tools which farmers can use to access information and opportunities. Given the low levels of digital literacy amongst many smallholder farmers, the intermediated approach will probably be the most common strategy in the next 5 years, but this strategy may change as younger farmers who are more used to digital technologies take on a greater level of decision making.

Digital extension services: For most INGO's and Government agencies, there has already been a shift away from paper-based data collection systems into digital data collection systems, or at least a combination of paper data collection and digital data storage. The use of electronic forms is becoming more common as mobile data systems become more accessible, cheaper and easier to configure.

Field agents are also using a combination of phone communications, messages and digital forms to complement face-to-face activities. In most cases, at least at the office, extension agents have access to computers and the internet, many extension agents use email and have access to agricultural information sites through the internet. This allows extension agents to access information and to search for new information about issues related to their farming community. Access to the internet also allows field agents to receive part of their training through digital e-learning tools and the use of video means that extension agents can take on new information more quickly and if they have access to mobile technologies, they can share this information with farmers directly or where farmers are comfortable with information over their phones, through mobile alerts, video clips and updates.

Data Collection: In addition to assisting data collection and enhancing the reach of existing extension services, the key to successful services will be to know what information is important to farmers and how that information can be shared with 100's, 1,000's and 10,000's of farmers?

Digital management: Digital systems are also changing how field teams are deployed. In the past, managing extension services was done through meetings. It was difficult to monitor where field agents were, on a daily basis, and virtually impossible to establish a feedback loop with the farmers.

These issues can now be addressed through routine digital data collection systems, combined with more systematic communications and tracking. These systems allow extension services to establish online information management programs that provide

information resources and better field scheduling with farmers. Field agents can establish case management systems with ♀♂ farmers, by registering them into online data systems. This allows field agents to establish a records systems, beginning with **baseline data** and then monitoring progress of a farmer / farmer group throughout the farming season.

Digital farm records: New tools will enable farmers to plan and record their activities in business and production plans provide a means of monitoring their production and market performance in specific value chains, or to provide more support to whole farm planning. Based on the farmer profile data, **digital field agents**, can assist farmers to link with other mobile services, such as market information, e-money, e-credit, inputs supply agents and to initiate options for linking farmers to buyers and other postharvest services such as transport options to deliver goods to buyers.

USING DIGITAL 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 DIGITAL is also increasing rapidly in agricultural development, where DIGITAL 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.

WHAT ARE THE ICT OPTIONS ALONG THE VALUE CHAIN?

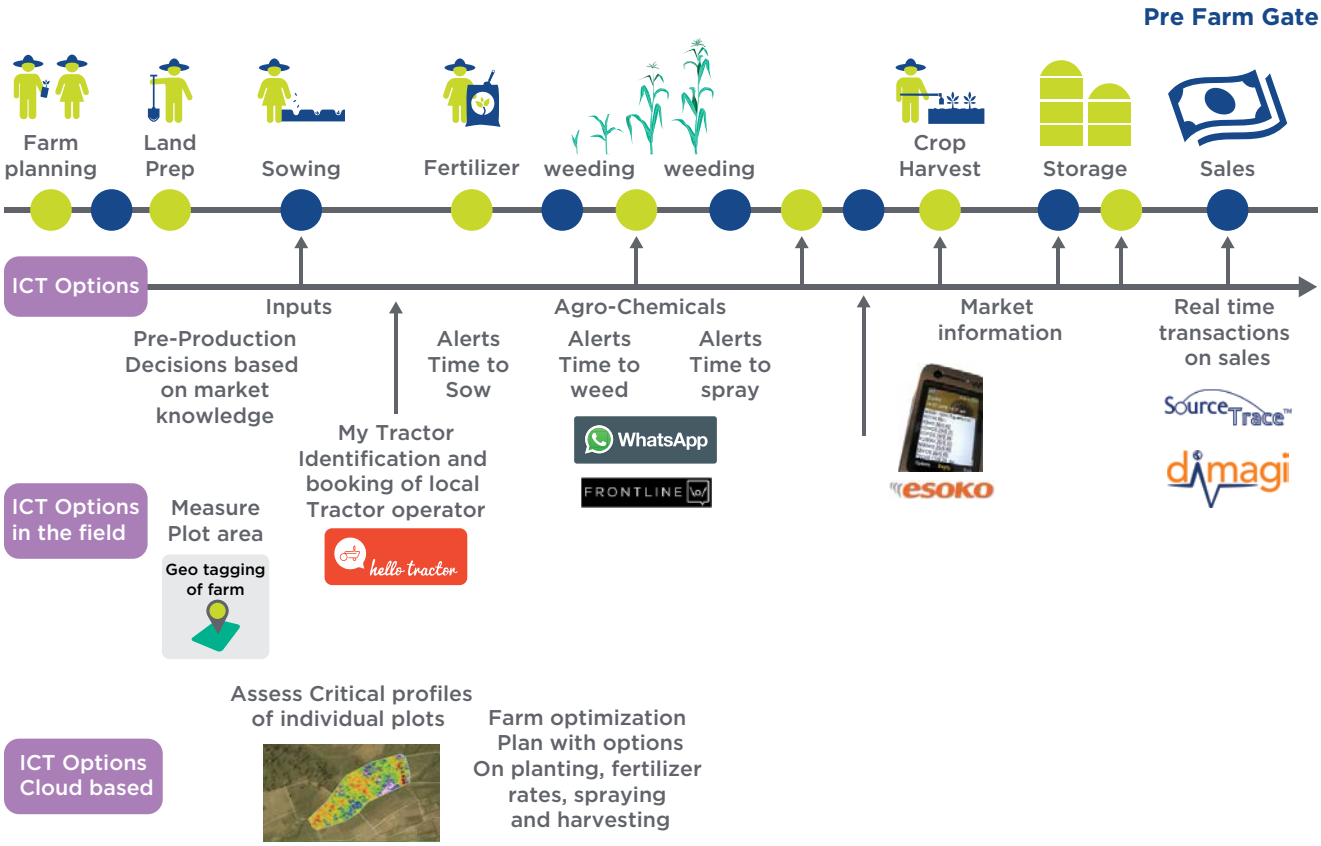


Figure 21. Using digital applications throughout the agricultural development system

USING DIGITAL APPLICATIONS IN AGRICULTURAL VALUE CHAINS

There are very many that are being used within the agriculture sector include the following:

- Voice and text communication;
- GIS /GPS for locating, targeting, mapping, and tracing people, assets, products and resources;
- Distance and e-learning;
- Analytical tools and calculators;
- Monitoring, evaluation impact analysis;
- Weather, digital soils maps, Pest and Disease Alerts
- Call up services, to hail a tractor or lorry to transport goods
- 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 TEXT-BASED NETWORKS

Ken Banks set up a system in South Africa in 2005, for the authorities to communicate with the public about wildlife conservation issues, without relying on the Internet. This system could send, receive and organize 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 was used in 70 countries to help groups of people organize around a specific theme and share information on a regular basis. Frontline SMS is still being used in all development sectors.

In the agriculture sector, Frontline SMS is used to establish a basic field agent networks using their basic $20 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.

SOCIAL MEDIA PLATFORMS

Since that time, millions and even billions of users worldwide have upgraded their phones and linked into a host of social media platforms such as Twitter, WhatsApp, FaceBook and WeChat. All of these free platforms are now being used by agricultural agents, farmers, farmer groups, and value chain groups to profile themselves, share information, promote their products and find buyers and sellers. These social media platforms are increasingly being used to form online business groups.

A farmers' "Digital Farmers Kenya," has more than 100,000 users and allows farmers to swap photos, ask questions, advertise products for sale, and share other valuable information. **Kalgudi** is a similar free platform designed for agricultural initiatives. Kalgudi is an app on mobile devices which helps to bring together various agricultural agents such as farmers, traders, input dealers, buyers, farmer organizations, researchers to share their needs, ask and answer questions, receive news and information, market linkages.

To help with learning methods, farmers and extension agents are increasingly turning to YouTube or short videos to provide information to other farmer and agent networks. YouTube has a large collection of content from land-grant university extension programs and similar public and private programs from around the globe. Digital Green and access agriculture are media companies that focus on developing agricultural extension information which can be shared locally and globally. As the internet extends into the rural areas, much of the video will become cloud based and will be available for use by digital rural advisory agents or for farmers directly.

GEO-SPATIAL IMAGERY AND MAPPING

Google Earth released back in 2004, brought the idea of GIS into everyday life. The world suddenly had a digital map that could be used by millions to link data about people, business and social activities with assets to a place. The private sector is developing solutions linking field-based data to **cloud computing** analytics. This is a powerful combination of technologies, which makes it possible for field agents to collect information from people and gather data from plots, which can be analyzed in virtually real time, as data is synchronized with online databases and analytical engines.

This capacity to link field-based sensors to online computing is further being automated and this is the basis for modern precision agriculture. This technology has the capacity to overcome many of the basic physical barriers faced by remote rural farmers, as they can now be positioned, and data can be associated with their location, including weather, soils, markets, inputs supply, finance, etc and this is changing perspectives on how to manage value chains, using remote technologies to improve efficiencies.

The map below shows how farmers field can be plotted, using a SMART phone, or a satellite image or a drone image. These plots transform land into digital assets and this is opening many new possibilities for value chain partners and business development services to engage with farmers.

This same technology is being used to support mechanization in agriculture. The Hello Tractor team have developed a “uber” style hailing application for tractor service providers in Africa and similarly, sophisticated operators such as John Deere are now offering a digitally enabled fleet of tractors, that can be monitored from distance, and also monitored for performance and break down prospects, so that the machines can be fixed before they fail.

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 standardized 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 literary training methods available on a mobile phone up to sophisticated **learning management systems** (**LMS**)**,** which enable teachers to set up a virtual classroom, load entire courses and enroll 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.

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. There are many distance learning platforms which allow students to take courses, both online and offline. 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 analyze specific farm options. For example, the International Rice Research Institute (**IRRI**) is building an application to provide farmers with fertilizer recommendations. Extension or loan agents can use this application on a tablet or a mobile phone to provide specific farm fertilizer 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 customized recommendations. This approach is being adopted by several of the international agricultural research centers 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 ICT4Ag Toolkit, which provides several 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, localized responses. These applications will enable farmers seeking certain types of information to download a related application, 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.

MOBILE MONEY: A HIGH-TECH SOLUTION FOR CASH-STRAPPED COMMUNITIES

Mobile money has been most popular in countries where financial transactions are limited by local infrastructure. M-Pesa, first introduced in Kenya in 2007, has transformed into the main way of sending millions of dollars of small cash transfers between urban and rural communities. The service allows users to deposit money into an account stored on their cell phones and send balances via text to others, who can redeem these deposits for regular money. In its first two years of operation, M-Pesa reached nearly 40% of the adult Kenyan population. 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.

Similar systems are establishing across the globe. These systems can be used for sending cash and vouchers. Farmers can use the Mpesa accounts in Kenya to save with their TULAA accounts and receive quality seeds at planting. Other companies are using scratch cards and vouchers that enables farmers to buy inputs from agro-dealers.

AGRICULTURAL MARKET PLATFORMS FOR TRADING, TRANSFER AND BARTER

To support farmers with decision-making, companies in the private sector in many countries are developing online and mobile-based market information services. There are several services which now offer market price information via the phone. Esoko was a pioneer mobile-based market information services. The company developed 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 also linked in services to support farmers access to 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. This business model is being adapted and updated as the range of competitors expands.

Digital service providers have entered the development world as a different type of player than traditional NGO's. The digital providers are typically small startup companies, that may begin as niche operations and then scale as investors enable them to expand and markets grow. Many of the Digital service providers remain highly dependent on publicly supported markets, but the trend is to establish fee-based services, for B2B and B2C services.

DIGITAL AND VALUE CHAIN-WIDE SYSTEMS

In every developing country, there are many first world commercial agricultural farmers selling produce into local, regional and international markets. Although the number of commercial farmers is low in sub-Saharan Africa, they are using sophisticated DIGITAL 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 optimize their operations along the value chain.

Muddy Boots was an early mover that developed several products, including QuickFire and Greenlight, 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.

But this marketplace is expanding and there are several value chain service providers such as FarmForce, Chainpoint, Cropster, SourceTrace, Innovincy, Dimagi, who provide specialized information resources for target products. Much of the early work was focused on the higher value export crops such as cocoa, coffee, cotton and high value horticulture. These companies provide high level analytics for each of the actors in the value chain, enabling them to upgrade existing practices and share performance and traceability data with value chain partners.

As with the emergence of social media platforms, the niche value chain companies are now facing greater competition from larger digital platform companies such as SalesForce and SAP who are extending their Customer Relationship Management (CRM) solutions into the world of smallholder farmers.

SUPPORTING THE AGRICULTURAL DEVELOPMENT SECTOR

There use of digital services in agriculture is both emerging and accelerating. At this time few of the companies are profitable and while most still require a combination of public and private funding to remain financially viable, they are all being developed on the prospect of business model and not a public service.

The power of digital services may not have been fully realized as yet, but Governments, Donors and private investors are all looking to the digital marketplace and the use of digital tools provide some new solutions to accelerate development outcomes. There is optimism that digital can help us to

- Leapfrog limited access to advisory services through digital field agents
- Leapfrog intermediated advisory services through direct sourcing of online information
- Leapfrog one-way information flow with multiple-way information systems
- Leapfrog lack of land titles by geo-tagging the ♂♀ farm plots, as a new form of registry.
- Leapfrog lack of assets by using digital plots to access financial options.
- Leapfrog lack of credit history with digital credit scores based on plot production and sales history
- Leapfrog physical banks through digital finance

- Leapfrog poor market access through digitized collective marketing

In order to realize the promise of this digital transformation in the agricultural development sector, organizations 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.

Freshly harvested coffee cherries.
Oscar Leiva/Silverlight for CRS

Chapter 9
Creating an Enabling Policy Environment

CHAPTER OUTPUTS

- Understand how to identify and address policy issues that support triple-bottom line approaches to value chain development.
- Develop an action plan for addressing policy bottlenecks to value chain development.

Market processes are imperfect, and often do not generate the desired social and environmental outcomes anticipated from value chain development. Governments alone cannot be relied on to correct market failures: there needs to be **advocacy** from civil society and economic actors to foster policy changes that lead to equitable and sustainable outcomes from value chain investments. CRS and others can collectively intervene in the sphere of value chain development to promote more socially and environmentally equitable outcomes. To improve our role, we should be asking the following questions:

- How can farmers and value chain actors play a role in advocacy?
- Where has advocacy been effective in fostering an enabling environment for value chains?

> *"Through conducive enabling environments, **opportunities and incentives** are expected to exist for firms and entrepreneurs to **invest and thus contribute to employment generation and income growth**. **Competition** is considered as playing a central role to **foster innovation, efficiency and productivity**. It also contributes to ensure **sharing of benefits of productivity improvements with society as a whole**. The **policies and behaviors that governments adopt and implement play critical roles in shaping the investment climates of societies and inducing changes**." FAO*

Policies can be both *restrictive* and *enabling*: restrictive policies place limits on resource use and economic power, whereas enabling policies, create favorable conditions that

support environmentally or socially-desirable business activity. Policy and structural change can also advance reforms to have an impact at scale, that is sustainable and empowers communities to promote reform.

Policy interventions is therefore an integral part of the value chain project cycle. Policy interventions can occur at all stages of the project cycle, and can be integrated into each part of the value chain upgrading process. For example, information collected and analyzed using value chain scoping tools can be used to help inform policy needs (refer to Chapter 2 for more information on these specific tools and their use).

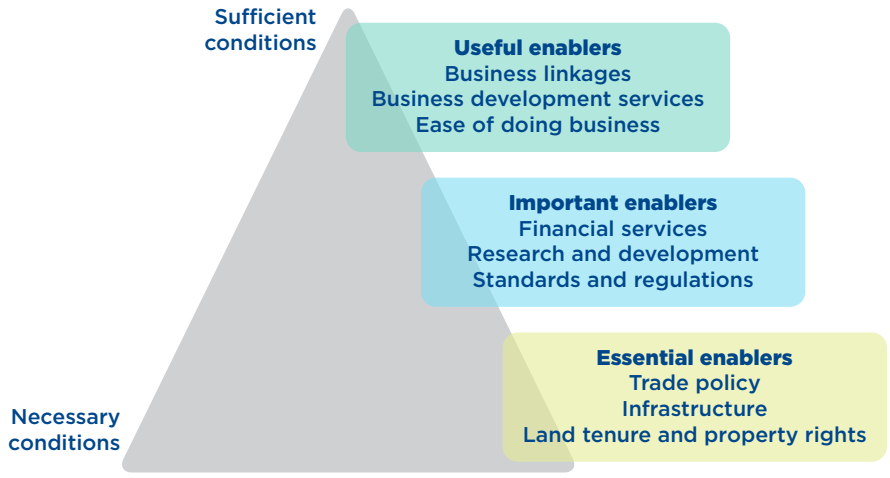
IDENTIFYING POLICY NEEDS

Policy intervention is needed wherever business decisions create the risk of negative social and environmental outcomes, inhibit equitable participation in value chains or if market mechanisms fail to achieve sustainable economic development. Favorable conditions for investment, as well as subsequent employment and income generation, is known as the *business environment* or *business climate*. Well-functioning and coordinated national policies, regulations, and institutional frameworks are crucial to provide a healthy business environment for thriving value chains.

Whether enterprises can realize their market potential depends on the general business environment in the economy and the business conditions within each value chain. Identifying which conditions are essential to the functioning of a value chain is part of the value chain analysis. Depending on the context of the value chain, the project, the commodity, the country, and other factors, the needs will differ. The diagram below outlines some of the key conditions.

General framework conditions of the business environment in the country:

- Macro-economic policies and conditions (monetary policy, interest rates, customs duties on imports of intermediate goods, taxation etc.)
- Laws and regulations for business registration and licensing, employment, associations and cooperatives
- Contract security and enforcement
- Extension and quality of road and rail network and port infrastructure
- Availability and cost of utilities (energy and water)



Hierarchy of enabling needs for agroindustry competitiveness (FAO)

Framework conditions for doing business in a Value Chain include:

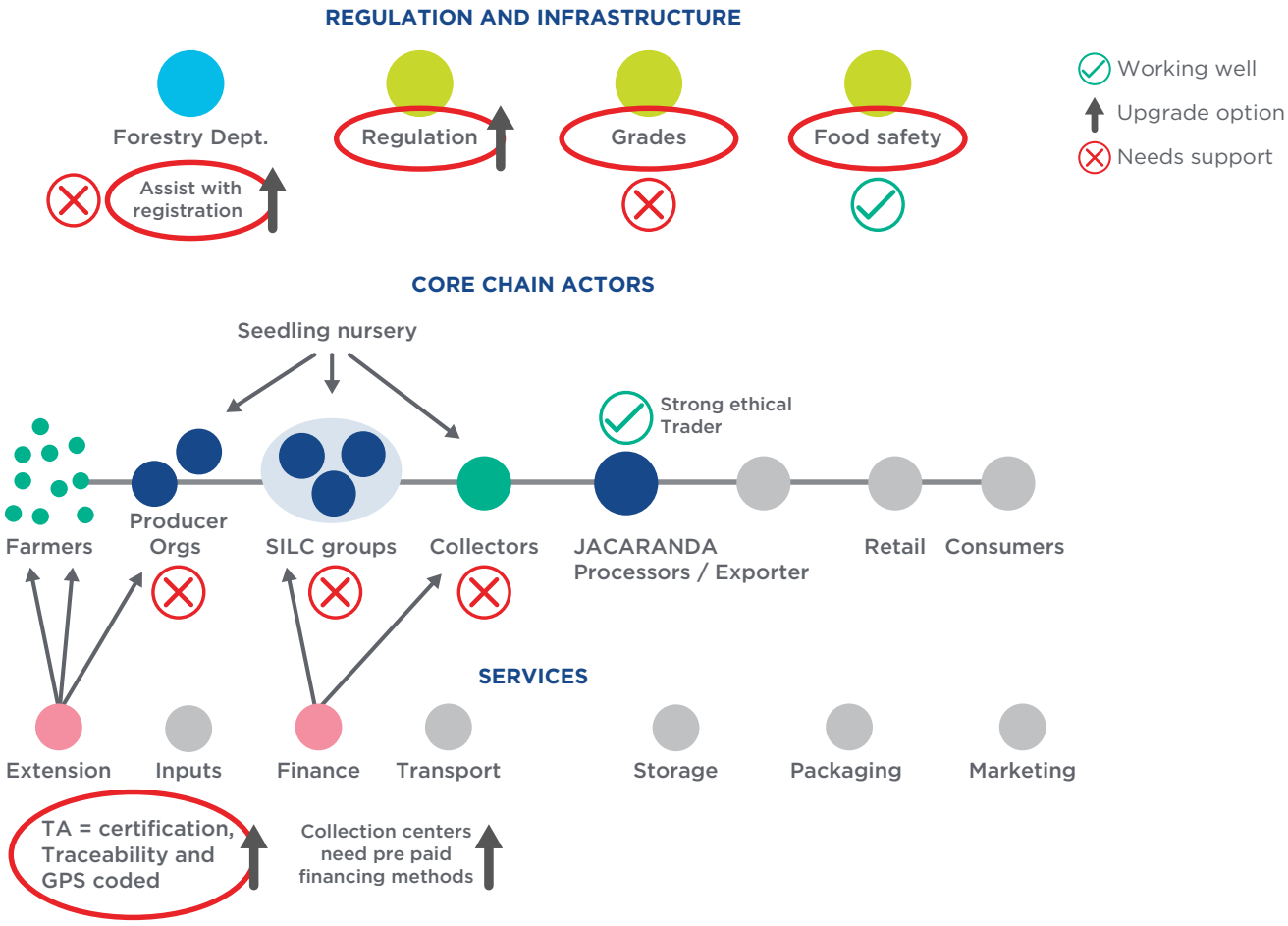
- Existence (or absence) of grades and standards for product
- Specific regulation, such as land and water rights in agriculture, food laws, sector-specific trade policy or product-specific taxes and levies
- Existence (or absence) of specific support services funded by government, such as research, technology and education institutions
- Market failure within the value chain, caused by lack of coordination, information asymmetry, opportunistic behavior and mistrust

USING THE VALUE CHAIN MAP TO IDENTIFY AREAS OF INTERVENTION

Value chain assessment tools can serve as a canvas for policy intervention. Use the value chain map that you have already developed to identify areas for policy upgrades along the value chain.

1. Identify areas on the map that are working well and areas that need support
2. Identify policy upgrade options that will improve the chain.
3. Discuss where upgrades are needed, and which are feasible.
4. Indicate interventions on the map

Ease of Doing Business Index, World Bank Group: This annual report from World Bank analyzes and ranks the business climate in each country using indicators with a tested impact on economic growth, including: obtaining construction permits, getting electricity or credit, paying taxes, enforcing contracts, etc. A limitation of this index is that it analyzes only the formal sector, even though many countries have economies based largely on commerce in the informal sector. (*image from World Bank*)



ASSESSING AND PRIORITIZING POLICY NEEDS

Assess the effectiveness of policy interventions (the potential impact) and the ability of CRS, partners, or other actors to implement policy actions. List potential policy upgrades to create a matrix of feasibility.

Assess Feasibility

1. List the interventions and clarify the changes proposed
2. Rank the interventions on a Capacity / Impact table
3. Prioritize the main upgrades on the table
4. Indicate who is responsible for which tasks, and where partners are best placed to assist

Certifications: Farmers get higher prices if they are certified organic. Farmers can also be linked into a traceability system so that farms that are GPS tagged have greater visibility in the marketplace.	↑
Government Organizations: Improve relations between value chain actors and government organizations. Create opportunities for collaboration, and for government to support value chain development.	↑
National Market: Improve regulation regarding grades and quality to ensure fair distribution of profits along the value chain and to stabilize price fluctuations.	↑

Step 3: Assess Feasibility

- Effectiveness of policy interventions (impact)
- Ability to implement policy

LEVEL OF IMPACT	CAPACITY TO SUPPORT: Low	CAPACITY TO SUPPORT: High
Low		
High		

Example: Vanilla upgrading intervention impact and priority

Guiding questions on policy upgrades for value chain development

1. Which policy instrument is most appropriate to address the problem?
2. How does the policy instrument work?
3. Is it possible to achieve the objective with the chosen policy instrument?
4. How effective is the policy instrument in achieving its objective?
5. How complex is the implementation of the policy instrument?
6. Is there a gender dimension to the policy instrument? If yes, what is it?
7. What is the cost of implementing, including administrative and monitoring costs?
8. What is the implementation time as compared to the timescale of value chain development?
9. How long until the impact of the policy is seen?
10. Is there a good political framework?
11. Are framework conditions clarified?
12. Can the policy instrument be modified, for example by implementing at a different scale, such as municipal instead of state?

Different kinds of policy instruments

REGULATORY	MARKET-BASED	VOLUNTARY
Norms, rules & regulations, and mechanisms for ensuring compliance	Taxes, subsidy, loan	Research, innovation, responding to consumer demand

TYPES OF POLICY INTERVENTIONS

There are three types of instruments for policy interventions: regulatory, market-based, and voluntary. Though these three approaches can overlap, they describe distinct ways to direct a policy outcome.

Regulatory instruments: Most government interventions are prescriptive and regulatory in nature. Regulations define allowed or disallowed business activities. They contain the

Vanilla processing plant in Mananara, Madagascar. Vanilla is one of the highest value agriculture products in the world and a pathway out of poverty for smallholder farmers. *Jefferson Shriver/CRS*

norms and rules to follow and the mechanisms of control ensuring compliance. They exist on all levels. To be effective, regulations impose sanctions in case of non-compliance. Regulatory solutions must be reliable, so that actors can build their business models on stable conditions.

Market-based instruments: Market-based instruments use markets to create incentives for a specific industry to adopt the wanted behavior. This can include favorable taxes, subsidies, loans or other kinds of support to private firms or actors. This kind of support can reduce the risks of participating in the chain by lowering barriers to entry or reducing uncertainty surrounding a particular market. Note that this type of intervention distorts market forces and may create "artificial profit," and is therefore usually unsustainable in the long-term.

Voluntary instruments: These instruments are used to create change without changing regulations or laws. On the supply side, this can include voluntary research and development or demonstration of technologies by private firms. Examples include research on alternative energy or medical treatments (although there are often public subsidies involved that encourage this voluntary behavior). When private firms choose

to use only certain inputs or sources that meet industry-led standards, this voluntary behavior can likewise bring positive change in a market.

Demand-led voluntary instruments can help to promote value chains. Adding a consumer perspective can change the way value chains are organized and what output they produce. Experience with consumer pressure shows that firms value their consumer opinions and that they are prepared to introduce higher standards if consumers are willing to accept a higher price.

Voluntary standards can also be undertaken in anticipation of new regulation that will be more stringent than current laws. Firms will sometimes begin to adopt stricter regulatory measures to ensure compliance with new laws before they are passed.

EXAMPLE: VOLUNTARY STANDARDS FOR ORGANIC PRODUCTION METHODS

The introduction of Certified Organic or Fair Trade labels demonstrates how consumer demand encouraged enterprises to adopt new stringent standards and develop a new market that met a specific consumer need.

CASE: CRS INFLUENCE ON SOCIAL POLICY IN PUBLIC AND PRIVATE SECTOR—COFFEE AND SLAVE LABOR IN BRAZIL

Problem/ Context:

- Coffee is a significant sector in Brazil, with more than 300,000 coffee farms in the country.
- With a strong institutional commitment to transparency, Brazil's National Commission to Eradicate Slave Labor (part of the Ministry of Labor and Employment) published a "dirty list" to expose farms and companies with negative and unlawful labor practices.
- In 2013, 15 coffee farms were placed onto this list for having employed workers under "conditions analogous to slavery," including forced labor, debilitating work days, degrading working conditions, and debt bondage.

Campaign:

- 2013-14: CRS commissioned local partner NGO *Reporter Brasil* to carry out research on slave labor in coffee value chains.
- 2013-16: Coffeelands published blog posts to expose the problem to the American public and the international coffee community, and to encourage public advocacy by coffee consumers.
- 2016: CRS wrote and published the policy brief *EXPLORING ISOLATED CASES OF MODERN SLAVERY: Farmworker Protections and Labor Conditions in Brazil's Coffee Sector.* To view the full report, visit: http://bit.ly/23u0iSS
- Brazilian companies were asked to sign the *National Pact to Eradicate Slave Labor*, to map labor risks on supply chain, and to join InPACTO, a creative platform for ongoing private-sector engagement to rid Brazil's supply chains of slave labor.

- CRS asked the U.S. Congress to pass *Business Supply Chains Transparency for Trafficking and Slavery Act*, which would require U.S. companies to report on efforts to eliminate or remedy trafficking and slavery in supply chains.

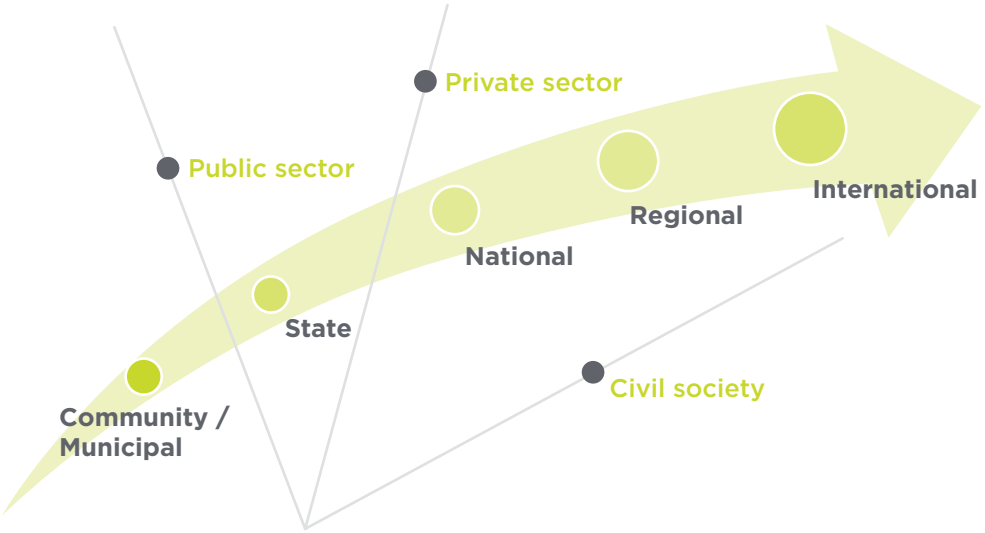
Result:

- 2015: The Specialty Coffee Association of America (SCAA) created a Farmworker Committee on its Sustainability Council and identified farm labor as one of the industry's "critical issues at origin." CRS chairs the committee.

POLICY MAKING AND ADVOCACY

The next step in the policy process is to determine at what scale the policy intervention is most appropriate: community, state, national. At CRS, most policy interventions occur at the community and municipal levels. Next, determine what segment of actors the policy intervention affects, and whether it should be led by the public sector, private sector, or civil society.

It is important to note that in many developing countries, most of workforce is in the informal sector, where the influence of government policies is limited. **This must be considered in policy design** when considering the potential reach of policies. Where should the intervention take place to have the greatest impact?

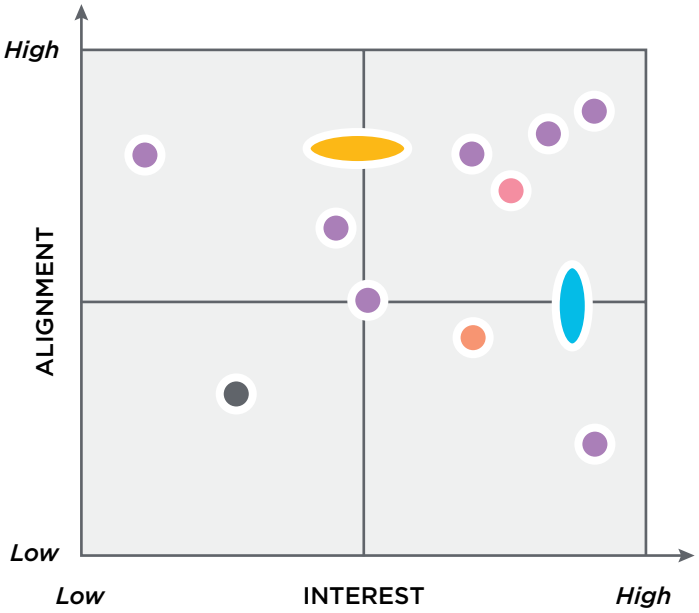


Scale of Intervention and Actors (original image by author)

Identify Key Actors from earlier value chain analysis (Chapter 2), and list all of the actors that may affect the policy outcome (partners, people to influence, etc.).

- Different Ministries (trade, agriculture, labor)
- Private sector
- Elected officials
- Actors along the value chain: input suppliers, farmer coops, customers
- Community members within project intervention area

ACTOR MAPPING ANALYSIS



From CRS LACRO document, provided by Dan McQuillan

Actors are mapped based on demonstrated evidence about behaviors: discourse, attitudes, procedures, as well as using background studies, interviews, direct knowledge of actors, observation, etc. The following questions also help with mapping:

Alignment: Do they agree with our approach? Do they agree with our assumptions? Do they have the same priorities for action? Are their thoughts aligned with ours?

Interest: Are they committing time and money to an issue? Do they want something to happen (whether it is for or against what we propose)? Are they organizing or attending events on the subject? Are they publicly speaking about this?

Approach: How to undertake policy interventions (from Feed the Future)

- *Convening* stakeholders for dialogue and inclusive policymaking:
  - Build momentum for reform
  - Promote knowledge-sharing across countries and regions
  - Facilitate coordination on regional initiatives
  - Establish or support ongoing dialogue mechanisms
- *Capacity building*: for local institutions and stakeholder groups to advocate for and implement enabling environment policies.
  - Study tours, training, infrastructure upgrades
- *Direct advocacy*:
  - policy papers, diplomacy, working groups, research, and communications campaigns

CASE STUDIES

THE ALLIANCE TO CREATE RURAL DEVELOPMENT THROUGH AGRO-ENTERPRISE RELATIONSHIPS (ACORDAR), NICARAGUA

CRS served as facilitator to foster collaborative relationships among participating cooperative enterprises, private sector supply chain actors and the Rancho Grande municipal government to create a friendlier municipal / business environment for agricultural value chains.

PROGRAM PHASES

Phase I: Obtain interest and buy-in from local governments. Dialogue with mayors to explain benefits of participating, especially increased tax revenue and local investment. Formal commitments from government.

- *Phase II*: Farmer Capacity development. Trained on municipal legal framework and developed actions plans to lobby governments
- *Phase III*: Active participation. Of farmer groups (including women's' groups) in municipal decision-making bodies and technical commissions
- *Phase IV*: Mechanisms for continuing engagement. Including government transparency and participatory decision-making methods

IMPACT

- Worked with 3,000 direct beneficiaries
- Influenced 25 municipal governments to invest $19 million in value chains: infrastructure (roads and water) and value chain support (storage facilities, sanitation, market access)
- 16 legal regulations implemented, including: forest and agriculture fire prevention, protection and adequate use of water sources, regulation of irrigation areas, agriculture-based water and solid waste management; and watershed and natural reserve protection
- Increases in production, income, sales, employment

KEY TAKEAWAYS

- Target municipalities with accountable government, who are committed to following participatory governing methods.
- Work with "forward-looking farmer groups who have organizational capacity.
- Select area of intervention through analysis of need and opportunities in terms of social, environmental, and economic situation.
- Build trust with local authorities through dialogue.

REVITALIZING VANILLA IN UGANDA (RVU)

From Joel Okwir, CRS Uganda

Overview: Uganda does not have a clear regulatory framework for vanilla industry. Because of widespread theft of vanilla, many farmers harvest and sell vanilla when still immature as a preventative measure. Without laws in place to regulate the vanilla trade, this practice could continue to threaten both high quality vanilla supply and the livelihoods of smallholder farmers. Ugandan government has not placed a priority on regulating the vanilla supply chain given its lower volumes relative to other commodities such as coffee and cocoa, and the Vanilla Exporters Association (VANEX) has been inactive. CRS is working to address these challenges by collaborating with and engaging private sector actors, farmer institutions, and local as well as central governments

POLICY OBJECTIVES

1. Advocate to the local and central government structures to influence local and national level legislation regarding vanilla production and trade.
2. Ensure that public and private sector policies are in place to safeguard farmer harvests of ripe vanilla against theft and to prohibit the trading of unripe vanilla.
3. Increase governmental prioritization of vanilla sub-sector in its agriculture sector strategic plan.

APPROACH

AGENDA SETTING:

- Stakeholder meeting
- Community awareness/ ownership
- District govt engagement
- Government direct engagement with stakeholders

POLICY FORMULATION:

- Development regulatory framework

DECISION MAKING:

- At District/ Local government, vanilla ordinance was drafted with input at various stages from stakeholders. CRS facilitated communications and funding.

At Central/ National Government, Ministerial policy instrument drafted to regulate buying, processing, and exportation. Shared with stakeholders for input. CRS

CONCEPTUAL FRAMEWORK

PROGRESS

- High-level commitment from government officials and Sustainable Vanilla Initiative
- Vanilla Desk created at Ministry of Agriculture, Animal Industry & Fisheries
- Kasese District Local Govt passed the vanilla ordinance, submitted for approval by government Solicitor General
- 10 sub-counties in Kasese District passed the vanilla by-laws
- Directive from the President of Uganda to support security organizations to enforce vanilla by-laws and ordinances
- Arrests and prosecution of offenders

CHALLENGES

- Difficulty in harmonizing interests of multiple actors in the chain
- Risk of political interference
- Difficulty in creating buy-in from government due to past experience of vanilla price slump
- Building trust from Private Sector/Vanilla buyers
- Corruption within the public sector, especially in dealing with offenders

LESSONS LEARNED

- Need champion viewed by all stakeholders as neutral
- Earning the trust of the actors, especially the private sector, takes time, requires consistent engagement and clear value propositions
- Clear messaging of intentions and actions
- Private sector willing to support actions (including financially) if they are convinced of benefits.

GROUP WORK: IDENTIFYING AND ADDRESSING POLICY BOTTLENECKS

1. Using the products that you have already generated (business model canvas, value chain map, etc.), identify existing or potential policy bottlenecks within your Value Chain. List these bottlenecks. Identify any gender dimensions in these bottlenecks.
2. Discuss whether you are able to practically address any of these bottlenecks within the scope of your project. Prioritize which policy issues to address.
3. Explain your approach:
   - At what level will you intervene (local, national, international, private sector)?
   - Who are the key actors?
   - How will you intervene (i.e. raising awareness among stakeholders, collecting data on the problem, partnering with local government…)?
4. Use your conclusions to make an action plan for upgrading your value chain using policy interventions.

Coffee wet mill station in Central America.
Oscar Leiva/Silverlight for CRS

Chapter 10
Performance Management and Learning

CHAPTER OBJECTIVES

- Have a basic understanding of what type of data needs to be collected at each stage to assess value chain performance
- Know which tools are recommended at each stage

The compelling part of value chain projects is the potential to drive innovative technologies, improve smallholder incomes and create jobs. The question then is, how do we know if value chains fulfill on their promise? Do value chains improve the lives of farmers and the other actors in the value chain? This chapter looks at value chain performance measurement and presents methods to establish income benchmarks and sample monitoring and evaluation plans and performance indicators.

MEAL AND VALUE CHAIN METRICS

The CRS Agriculture and Livelihoods team has selected a set of 25 metrics to assess progress for the Agriculture and Livelihoods Theory of Change, see full list in **Annex 10.1.** within this list of metrics there are some that focus on farmers and the value chain.

Within the CRS Agriculture and Livelihoods program's Theory of Change, there are 7 building block ideas, that when combined, help us to build the evidence to show how our work leads to the three major impact measures, shown on the right side of the figure below.

CRS Agriculture and Livelihoods Program Theory of Change

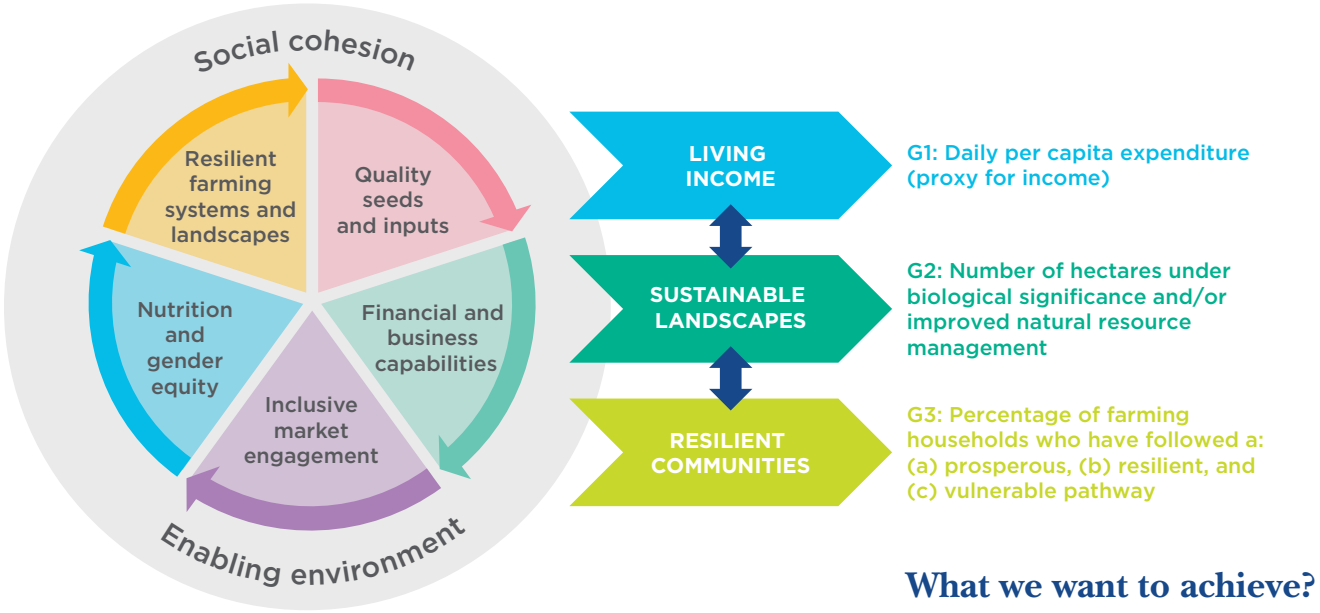


Figure 22. Building Blocks within the Agricultural Livelihoods Theory of change.

FARMER LEVEL METRICS

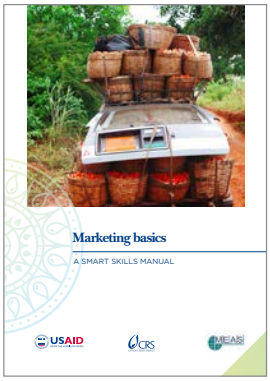
Building Block 5, is focused on measuring Facilitating Market Access, which is most relevant to value chain programs. The two key indicators for BB5 are focused on farmers, and they include *Value of Incremental Sales* and *Gross Net Income*. By calculating the gross margin, sales are captured and so only one Protocol is defined for both indicators.

Building Block 5: Metrics
BB5.1 Value of incremental sales (collected at farm-level) (US$) by sex and age range - USAID Indicator 4.5.2-23
BB5.2 Gross net income per hectare of farming system (US dollars/ha) by sex and age range - USAID Indicator 4.5-16, 17, 18

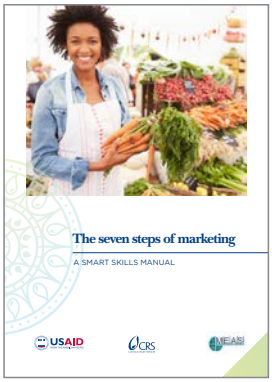
ICT4AG TOOLKIT

ICT4Ag Toolkit is a set of tools that helps field agents learn about markets and market linkages and gain skills to analyze farmer incomes and market performance. ICT4Ag Toolkit has two main components, (i) SMART Skills guides see below and a (ii) gross margin calculator.

Marketing Basics



Seven Steps of Marketing



The methods enable field agents to learn basic analytical tools, which can be applied to the value chain situation. The focus of this analysis however, is at the plot level.

Crop Cost Benefit Calculators: In the project design phase, it is necessary to run some economic modelling on the potential costs and revenue of a given crop / animal before we start to promote a specific investment. We must always ask the questions, Is what we are recommending to our farmers profitable? Surprisingly, many programs do not do this and this breaks our first law of "**do no harm**". Promoting ideas without understanding the risks, costs and benefits could be very problematic if farmers lose money. ICT4Ag Toolkit provides a simple gross margin analysis that can be done at the start of a project and with farmers through the seasons. CRS also has some excel sheets that can be used at the start and during a project to record costs, incomes and profits of farmers. It is recommended that in EVERY project, we do this analysis with a sample of ♀♂ farmers. A Full example is given in **Annex 10.3.**

LIVING INCOME METHODOLOGY

Another way of assessing the effectiveness of a value chain on farmers is to assess changes in their Living Income. A Living Income benchmark, is used to assess whether a family is able to raise sufficient incomes to achieve a decent standard of living in a given place or region. Once a living income benchmark is established, it can be used to inform a variety of conversations about whether a specific project's interventions are really enabling farmers to live well. This type of analysis is helpful in sense that it goes beyond the effects of a single value chain on the family and provides a better understanding about how much a specific market linkage approach has on the overall family's economic wellbeing.

Definition: A "**living income"** is the amount of income sufficient to afford a decent standard of living for the income earner and her/his family. Elements of a decent standard of living include food, water, housing, education, healthcare, transport, clothing and other essential needs including provision for unexpected events. These elements are defined according to the common methodology developed by experts, Richard and Martha Anker, and used by the Global Living Wage Coalition.

The Living Income methodology builds on the methodology developed for calculating a "**living wage,**" but applies it to the household. The living wage, is a slightly easier concept to calculate as it determines how much a salaried individual earns. Farmers' income is more complex as they include revenues from multiple products and seasons, incomes from off farm work, perhaps seasonal migration work, remittances and incomes from other family members. Therefore, when interpreting the results from the living income approach, it need to be taken into consideration how much a value chain will contribute towards achieving a living income.

WHAT MAKES UP A LIVING INCOME BENCHMARK?

The living income benchmark is the (cash) amount sufficient to afford a decent standard of living for the income earner and her/his family. Builds off the methodology developed for living wage, but applies to household.

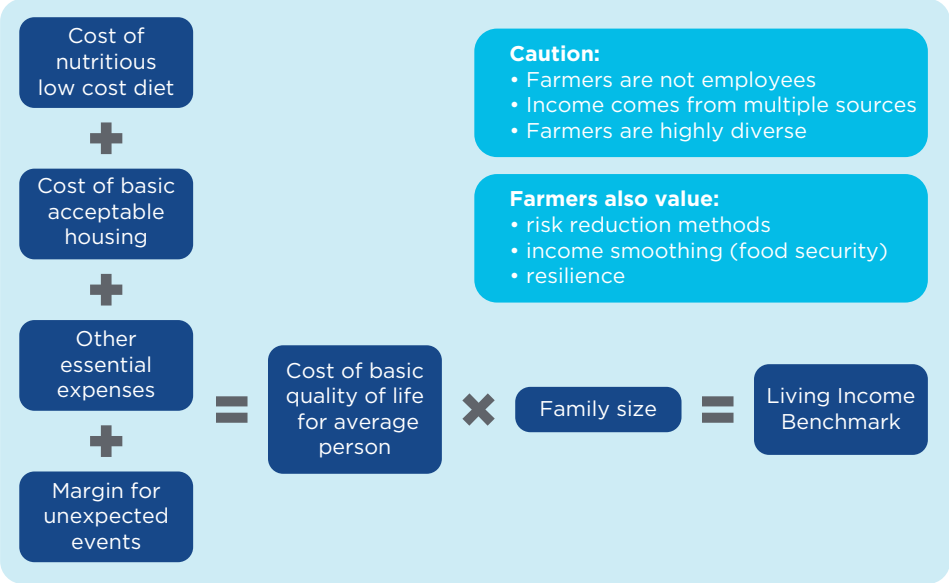


Figure 23. Living Income Benchmark Example

CRS' Revitalizing Vanilla in Uganda Project conducted a baseline study in which they calculated the current incomes of the vanilla farmers, the Living Income Baseline, and then established scenarios for what was needed for a farmer to reach that level. Details of the full example are included in **Annex 10.2**.

Women Empowerment Agriculture Index for Value Chains (WEAIVC): The WEAI was was developed in collaboration between the United States Agency for International Development (USAID), International Food Policy Research Institute (IFPRI), and Oxford Poverty and Human Development Initiative (OPHI). The WEAI and the Abbreviated WEAI are designed to assess the empowerment status of women in farm households. The WEAI4VC is being designed to measure empowerment of men and women across the value chain, (1) producers, (2) entrepreneurs, and (3) wage workers, processing, trading, and marketing. It is being piloted in Bangladesh and the Philippines. If interested in the WEAIVC, contact your gender advisor.

COOPERATIVE ASSESSMENTS

Farmer organizations are at the core of the AL-SPA theory of change, as these structures, provide the foundation on which other skills, such as improved production, financial literacy and market linkage can be layered. Given their critical role, it is important to analyze how well these organizations are working. CRS has developed tools to assess the performance of farmer groups and coops. Cooperative assessments help us to determine the quality of management. CRS has a Cooperative Self-Assessment Tool, developed by Veronica Gottret et al, (20XX). This diagnostic tool allows us to monitor the:

- administrative and financial management performance of producer organizations
- quality of technical, business and financial services offered by the organization to its associates;
- strength of their organizational processes
- gender equity

Soy bean farmers in Tanzania. *Dan Barthmaier/CRS*

This tool has two elements:

A questionnaire that is used to assess skills and services provided by the organization at different levels within the organization, i.e., with farmers, board of directors, management, operational staff, and partners. The assessment reviews a range of management areas and then provides performance scores from 1-5. The basic criteria for the self-evaluation is shown in **Table 19**. This table also includes the weighting given to each area based on its importance.

An excel spreadsheet, where the data is captured and analyzed. The excel tool produces a graph that illustrates the current group performance. The guide for facilitated self-evaluation of producer organizations is available on the Agriculture and Livelihoods SharePoint site. The results from the assessment are recorded on a spider diagram which allows for quick viewing of an organizations score in all categories and against set targets and can be tracked over time.

Table 19. Contents of the Guide for Self-evaluation of the Producer Organizations

Main Areas	Secondary Areas	Weight
1. Strategic Business Orientation	1.1 Strategic vision and strategic plan	0.15
	1.2 Business plan	
	1.3 Specific business strategies	
	1.4 Cross-cutting strategies	
2. Organizational Structure and Functionality	2.1 Structure organization and functions	0.15
	2.2 Legal status of the organization	
	2.3 Management structure and functionality	
	2.4 Operational structure and functionality	
3. Business management	3.1 Administrative management	0.20
	3.2 Financial and accounting management	
	3.3 Technical / technological management	
	3.4 Commercial management	
	3.5 Environmental management	
	3.6 Management of internal and external communication processes	
	3.7 Development of alliances	
4. Organizational Processes	4.1 Participation and representativeness	0.20
	4.2 Leadership and transparency	
	4.3 Membership and commitment	
5. Services Offered by the Organization	5.1 Business services	0.30
	5.2 Capacity building services	
	5.3 Financial services	

VALUE CHAIN ASSESSMENTS

CRS Nicaragua's PROGRESA Norte program's MEAL system provides an example of a comprehensive system used to assess performance along the value chain, see levels and metrics in Table X below. When creating such MEAL systems ensure that data is at least sex if not also age disaggregated.

Table 20. Levels of the Value chain and associated measures

Value Chain Actor/Level	Methods of Data Collection
Producer Households	• Survey of households on the "5 capitals" • Register of sales, costs, and net income • Progress out of Poverty Indicator (PPI) survey • Food Security Survey
Producer Organizations	• Facilitated self-evaluation • Org books: register of costs, sales, net income and financial indicators
Implementing Partner	Evaluation of Services: • Access • Coverage • Relevance • Sustainability
Private Sector	• LINK methodology, to evaluate business models, practices, and relations with actors in the value chain
Public Sector	• Context Analysis • Influence of standards • Regulatory frameworks • Incentives

METRICS: HOUSEHOLD LEVEL

Information is collected on the practices and technologies carried out by the farmers. Productivity, information is collected on areas and the volumes of production; income is based on sales; production costs provides information on investments. The five capitals provide information on knowledge, relationships, natural resources, physical and financial that the producers have; the living conditions (poverty index - PPI) provides a measure of food security and also dietary diversity. Likewise, frequency and coverage are considered for the collection of data. The table below shows these items.

Table 21. Levels of the Value chain and associated measures

Description	Frequency	Coverage
• Agricultural and livestock practices and technologies • Productivity • Income - Sales • Costs of Production • Five Capitals • Progress out of Poverty Index • Food Security	• Baseline Evaluation • Midterm Evaluation • Final Evaluation	• Population sample
• Capacities • Goods and Services	• Regular Monthly Monitoring	• 100%
• Agricultural and livestock practices and technologies • Productivity • Income - Sales • Costs of Production	• Biannual Monitoring Campaigns	• Population sample

METRICS AT THE PRODUCER ORGANIZATION LEVEL

At the level of the cooperative, the Cooperative Assessment Tool was used, and information that is collected provides an insight into their business performance as measured through 6 areas: Strategic business orientation; Organizational and functional structure; Business management; Organizational processes; Services offered by the organization and gender equality. It is then displayed by means of the spider chart, with the changes plotted and compared in different periods to assess their progress.

Table 22. Metrics at the Producer Organization level

Description	Frequency	Coverage
Evaluation of the performance of producer organizations, through the facilitated self-assessment	Baseline and annual survey	100% of organizations
Training and delivery of goods and services	Monthly	100% of organizations
Business Alliances	Semi-Annual	100% of organizations

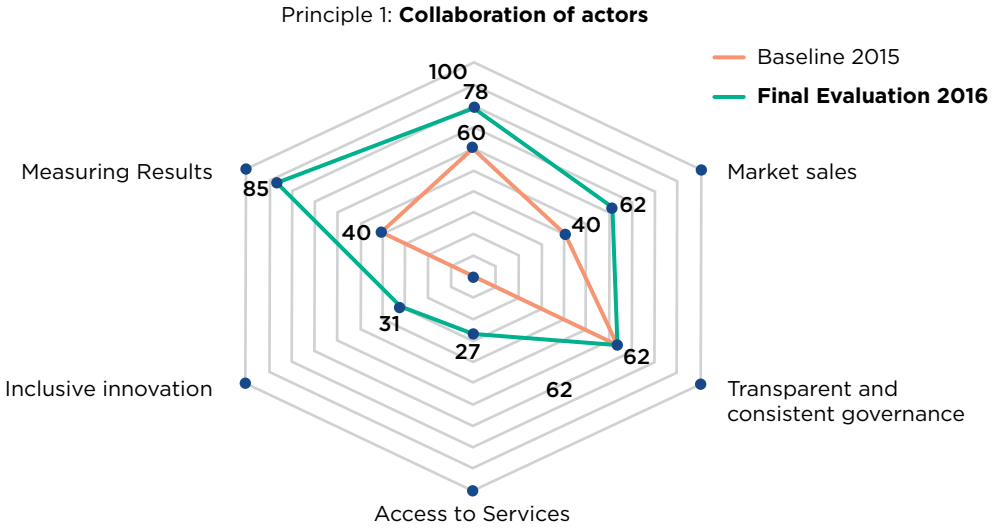
Table 23. Metrics at the private sector level

Description	Frequency	Coverage
CIAT's LINK Inclusive Business Principles	Baseline, Midterm Evaluation, and Final Evaluation	100% of businesses

The evaluation of the performance of producer organizations and buyers is done using CIATs LINK Inclusive Business Model methodology that was detailed in Chapter 7, *Private Sector Engagement*.

Results of the Inclusive Business principles are then displayed in the same spider chart as the Cooperative Assessment Tool:

Evaluation of business relationship between COOLARPA R.L. with VILCHEZ Tinoco



METRICS AT THE IMPLEMENTING PARTNER LEVEL

At the partner level, CRS utilizes the standard tools that the organization has traditionally used.

Table 24. Metrics at the implementation partner level

Description	Frequency	Coverage
• SRFMP Assessment (Standard Assessment Guide)	• Baseline	• 100% of organizations
• Learning analysis and partnership with CRS	• Midterm and final evaluations	• 100% of organizations
• Evaluation of services: Access, Coverage, Applicability, Relevance, Sustainability	• Midterm and final evaluations	• 100% of organizations

Asad Zaidi for CRS

Table 25. Metrics at the public-sector level:

Description	Frequency	Coverage
• Provision of Services and Alliances (national and city government)	Baseline and biannual	100% of institutions working with the project
• Context Analysis Influence • Standards and Regulations • Frameworks and Incentives	Baseline and biannual	100% of institutions working with the project
• Provision of Services and Alliances (national and city government)	Baseline and biannual	100% of institutions working with the project

These measures are collated and used to gain an overall perspective about how the value chain is operating. This is a complicated process and CRS is only learning how to do this work. However, we feel that its important that future work focusses on only on the gains at the farmer level, but also at the farmer organization so that we can observe if our primary clients are making the types of gains that were envisaged in the initial business plans.

It is also important to expand our thinking to monitor and measure the performance of the value chain in general as sustainability and scaling will be dependent on the competitiveness and sales all along the chain.

Catholic Relief Services, 228 W. Lexington Street, Baltimore, MD 21201, USA
For more information, contact pqpublications@crs.org.