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FINANCE IN VALUE CHAIN ANALYSIS—A SYNTHESIS PAPER

microREPORT #132

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ACRONYMS

AMAP	Accelerated Microenterprise Advancement Project
ASCA	Accumulating Savings and Credit Association
ATM	Automated Teller Machine
EIB	European Investment Bank Group
IFAD	International Fund for Agricultural Development
IFC	International Finance Corporation
FI	Financial Institution
FSKG	Financial Services Knowledge Generation project
FSP	Finance Service Provider
MFI	Microfinance Institution
MSE	Micro and Small Enterprise
MSME	Micro, Small and Medium Enterprise
NGO	Non-Governmental Organization
ROI	Rate of Return
ROSCA	Rotating Savings and Credit Association
SACCO	Savings and Credit Cooperative Society
USAID	United States Agency for International Development
VC	Value Chain
VCA	Value Chain Analysis

INTRODUCTION

OBJECTIVE

The objective of this paper is to present a systematic approach to incorporating finance in value chain analysis (VCA). As the lifeblood in the value chain, finance is often one of the critical constraints to economic growth. Understanding the financial structures both within and between firms in the value chain is necessary for the development of upgrading strategies that effectively increase competitiveness. The paper synthesizes some of the more pertinent literature on the topic and adds to this some key insights gained from a recent set of case-studies completed under USAID's AMAP FSKG project.

DEFINITION

Finance in value chain analysis is here defined as going beyond conventional finance analysis in two ways. First, it includes finance that is based on the relationship between two or more actors in the value chain, either directly (one actor provides credit to another) or indirectly (one actor obtains credit from a FI based on a sales relationship with another actor). This is how value chain finance is typically defined in the literature. Second, it includes a broader, systemic multi-level perspective on finance. This means we are not approaching finance from a specific target group perspective (e.g., rural finance) or type of finance (e.g., microfinance). Rather it includes all actors in the value chain and all types of financing.

IMPORTANCE

Analyzing finance through the value chain lens allows the analyst to identify sustainable finance models that support the key upgrading opportunities distilled from the value chain analysis. It may be found that a conventional loan to an urban-based anchor firm in the value chain leads to faster growth of a particular sub-sector than micro-loans to poor rural households, or it may be found that both are needed simultaneously. Or it may be found that finance is not a binding constraint. For example, if a processor is advised (or already plans) to upgrade to more efficient equipment that can process larger volumes of raw material with certain product specifications, then it will also need more working capital to buy and inspect the increased volume. At the same time, middlemen and farmers will need more working capital and possibly investment capital to assure the supply of that increased volume and its compliance with new product and process standards. In turn, there may be a need for investment finance to establish or upgrade input or service providers who for example manufacture new packaging materials for traders or audit farms for compliance with standards.

REPORT STRUCTURE

This report has two main components. First, the value chain analysis approach is summarized to provide the contextual framework for the report. Second, the set of case-studies developed under the AMAP FSKG projects are summarized and used to support a systematic discussion on the various issues relevant to the analysis of finance in a value chain context. An annex provides a list of recommended key informant questions.

THE VALUE CHAIN ANALYSIS (VCA) FRAMEWORK

While we summarize the essence of VCA here to provide a structure for our discussion on finance, an in-depth understanding of this analytical approach is assumed. Key reference documents here are Kula, Downing and Field (2006) and Kaplinsky and Morris (2001). From the donor's perspective, value chain analysis is applied to sub-sectors that have passed an initial selection process that assessed their eligibility based on selected criteria such as growth potential, potential impact on vulnerable groups (income, jobs), overall size, strategic relevance for the economy as a whole, achievable impact per dollar invested, etc¹. For the selected sub-sectors, VCA then essentially analyzes the end-market opportunities, value chain structure and dynamics, and the operating environment with the overall objective to identify the main sources of growth and the key leverage points (system nodes such as large processors, geographic clusters, and policies). The VCA report is then used to develop upgrading strategies (commodity development plans) that increase competitiveness and that are sustainable and maximize impact for the selected performance indicators (sales and income growth, job creation, etc.). In this context, finance is a critical, but secondary consideration: first, the upgrade has to be feasible independent from how it is financed; then the best model to finance the upgrade has to be developed (leverage equity). In some cases finance may not be feasible (cost of capital is higher than ROI, risk too high, credit market too small)

Three main steps can be distinguished in VCA. First, the main functions and firm types are identified. This involves mapping out the main activities and services involved in moving the product from the producer to the final consumer (input supply, production, processing, and distribution). The value of the end-product to the end-consumer has many components (price, taste, convenience, image, etc.) and is the cumulative outcome of every value-adding activity along the value chain (value can be added or lost at each link in the chain). Hence the perspective that, increasingly, it is value chains rather than individual firms that are competing with each other. The various activities and services adding value to the products are executed by various firms. Value chain actors are those firms in the value chain that actually take ownership of the product as it flows through the supply chain. In VCA it is taken into account that value chain actors at a certain horizontal level often are a quite heterogeneous group. This group needs to be broken down in more homogenous sub-groups in order to take the variation in terms of the firms' capacities and objectives into account. For example, VCA distinguishes between small processors using primitive technologies and large processors using state-of-the art equipment. Firms that do not take ownership of the product, but help add value to it, are service providers. For the latter, sector-specific, cross-cutting and financial service providers are distinguished. Basic data on the numbers of firms, volumes and values for the various firm-types need to be collected.

Second, VCA analyzes how the various firms are structurally connected, using the framework depicted in Figure 1. There are five structural elements: end-markets, the business and enabling environment, vertical linkages, horizontal linkages, and supporting markets. Value chain analysis starts from an end-market

¹ Throughout this report we refer to sub-sectors as the collections of distinct value chains that connect a specific raw material to various end-markets. For example, the flow of Nile perch from Lake Victoria to EU consumers is one of several value chains in Kenya's fisheries sub-sector. We apply value chain analysis, as a methodology, to the sub-sector as a whole.

analysis which looks at market sizes and growth rates, market segmentation, consumer behavior, supplier requirements, competitive position (benchmarking), network relationships, and so on. It also takes the process of globalization into account. Globalization increases both the competitive threats in domestic markets (imports) and the opportunities in overseas markets (exports). The business and enabling environment (both national and global) analysis looks at policy, regulations, trade agreements, and public infrastructure. The analysis of vertical linkages looks at the governance mechanisms and transaction costs between successive value chain actors. It also includes how information flows and capacity building within the value chain are stimulated (e.g., through embedded services). The analysis of horizontal linkages assesses the degree of collaboration between value chain actors at the same level in the chain. The value chain actors can for example jointly purchase inputs or market outputs, and thus benefit from economies of scale and increased bargaining power. On the flip-side, collusion may reduce competitiveness and, in turn, innovation. Supporting markets (the service firms) play a key role in firm-level upgrading. These include cross-cutting services such as business management consulting, transportation and communications; sector-specific services such as specialized equipment manufacturers; and financial services.

Third, VCA analyzes the dynamics that affect how the structure changes over time. The primary factors driving or blocking the dynamics of the value chain include changes in: market demand, technology, available services, profitability, risk, barriers to entry, large-firm behaviour, input supply, and policy. Change spreads through a number of dynamic elements, including: upgrading through investment by individual firms, value chain governance, power exercised by firms in their relationships with each other, inter-firm cooperation and competition, and the transfer of information and learning between firms.

The dynamic perspective on value chains implies positive or negative feedback loops. To further illustrate this at the firm-level, economic growth can be modeled as the outcome of a positive feedback loop from performance (customer value creation) to governance structure (contract) to profits (rent) to upgrading (profit reinvestment) and back to performance (Figure 2). MSMEs typically do not keep records and financial literacy levels are often very low. For the greater part, these small agri-businesses have only a vague idea of their profitability. However, profitability is essential. It's the basic but often not fully assessed premise of economic development: growth implies profits. Throughout this paper, we will link our analysis to this fundamental question: do profits increase?

FIGURE 1: VALUE CHAIN STRUCTURE

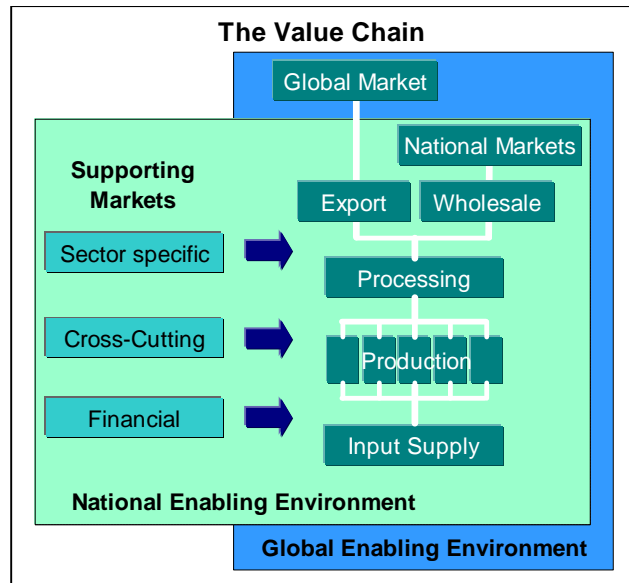
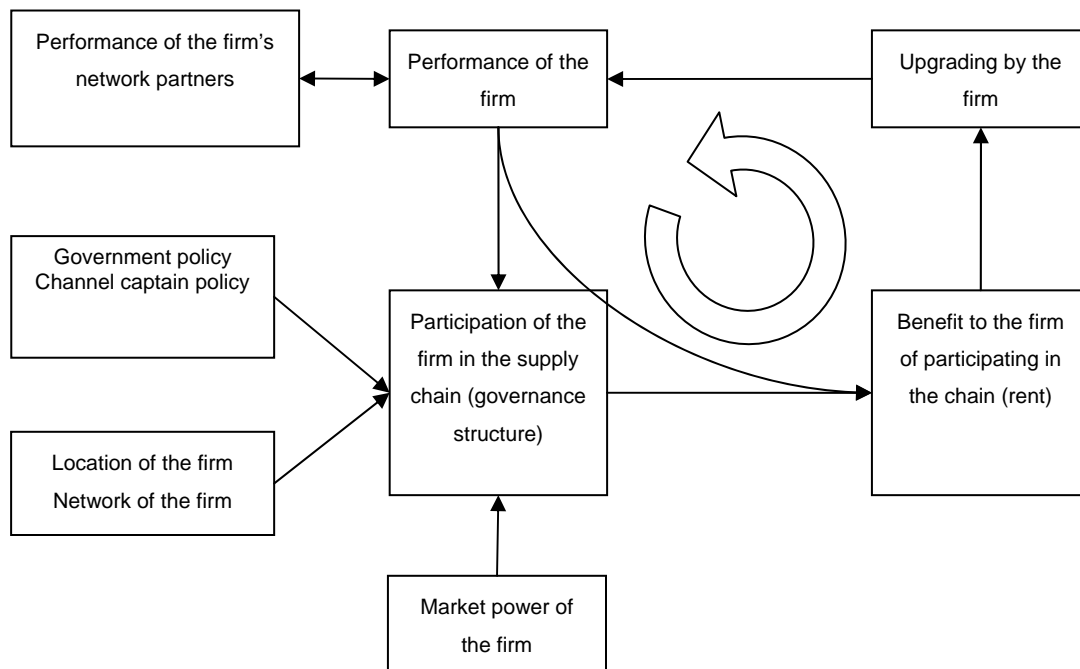


FIGURE 2: THE POSITIVE FEEDBACK LOOP DRIVING FIRM GROWTH IN VALUE CHAINS



Finally, two more notes on upgrading. First, in developing a growth strategy for the sub-sector under analysis, it is important to distinguish between product and labor markets. It may not always be optimal or feasible to upgrade ‘en masse’, but rather it is important to take into account that when zooming in on a particular sub-sector, that growth strategies will likely involve “winners” who create jobs for “losers”, either directly or indirectly (through increased need for service firms and the multiplier effect).

Second, different types of upgrading can be distinguished:

- Process upgrading : increasing the nature of internal processes such that these are significantly better (differentiated) or more cost-efficient than those of rivals, both within individual links in the chain (for example, increased inventory turns, lower scrap), and between the links in the chain (for example, more frequent, smaller and on-time deliveries);
- Product upgrading: introducing new products or improving old products, with increased value to end-consumers, faster than rivals. This involves changing new product development processes both within individual links in the value chain and in the relationship between different chain links;
- Functional upgrading: increasing value added by changing the mix of activities conducted within the firm (for example, taking responsibility for, or outsourcing accounting, logistics and quality functions) or moving the locus of activities to different links in the value chain (for example from manufacturing to design);
- Channel upgrading: moving existing products into a new pathway leading to a new end-market (for example, moving from domestic markets to export markets);
- Chain upgrading: moving to a new value chain for the production of a different product.

ANALYTICAL VCF FRAMEWORK WITH CASE-STUDY ILLUSTRATIONS

This section presents a systematic discussion on the finance issues in value chain analysis. It is broken down into three components: (1) a framework for analyzing the existing finance situation; (2) a framework for developing finance models for the upgrading opportunities; and (3) an overview of the case-studies developed under the AMAP FSKG project that were used to field-test and illustrate this analytical framework.

UNDERSTANDING THE CURRENT CASH FLOW AND CREDIT STRUCTURE (ANALYTICAL PHASE)

Building an understanding of the current cash flows and credit structures at the level of each actor in the value chain, i.e., before any upgrading opportunities are considered, should be an integral part of analyzing the value chain structure as described in the previous section. The various aspects of finance in the value chain can be organized in three groups (Figure 3). First, there is a set of issues related to finance within the firms. Second, there are supply-side finance issues which relate to the nature of the different types of financial services provision that currently exist in the value chain. Third, there are finance issues that relate to the transactions between firms and how these transactions are governed.

FIGURE 3: FINANCE IN VALUE CHAIN ANALYSIS

Intra-firm Finance	Finance Services Provision	Inter-firm Finance (Governance)
<ul style="list-style-type: none"> • Basic Cash Flow Analysis • Current Financing Needs and Mechanisms • Cultural and Knowledge Related Factors 	<ul style="list-style-type: none"> • Types of Finance Services Providers and Products • The Finance Service Providers Market Knowledge • Issues of Accessibility • Finance Policy Environment 	<ul style="list-style-type: none"> • Nature of the Governance Structure • Presence of Value Chain Finance

INTRA-FIRM FINANCE

Basic Cash Flow Analysis

Understanding businesses requires understanding their financial structures. How much net profit does the business generate in a year? How risky is the business? Different business models are possible: conventional vs. organic, small vs. large, rain-fed vs. irrigated, with and without storage, etc. All these different types of business are distinguished in the mapping component of VCA and they all have different cost and revenue structures. For the most common or basic business model(s), the analysis should look at: fixed assets and depreciation; current annual variable and fixed costs and revenues (multiple products, multiple markets possible), the profit/loss and ROI calculation. Losses due to spoilage, family labor (valued at market prices), taxes, and seasonal harvest/sales price variability need to be taken into account. A sensitivity analysis is also part of this component. This sensitivity analysis can include assessing the profit/loss calculation over the last 5 years. It can also include identifying which cash-flow related factors have the biggest impact on profitability and how much risk they represent (variability of factors such as input and output prices, losses, etc.).

Current Financing Needs and Mechanisms

Given the cash flow analysis developed in the previous component, the next step is to assess what forms of asset and working capital financing are currently used by the value chain actors and how these match the cash flows. Three factors need to be highlighted in this context. First, the role of seasonal cycles needs to be taken into account. For example, farmers will need finance during land preparation and planting, and then will not need any credit until the peak harvest season. Timing is crucial in farming. Marketing cooperatives, staggered production, and storage are some of the tools value chain actors can use to help resolve this. Second, firm diversification can play an important role. For example, a farmer uses the revenues from selling a staple crop to pay for the inputs for a cash crop cycle that starts at the same time. This implies that the income from selling a particular crop cannot always be used to pay back a loan used for planting this crop at the time of the harvest of the crop. Third, the role of household finance needs must be included in the cash flow analysis, a lesson learned from the microfinance sector. Household needs may compete with business finance needs. For example, a balloon payment should not be scheduled to occur when school fees are due.

Cultural and Knowledge Related Factors

Apart from the businesses they manage, it is also important to understand the value chain actors and the socio-cultural environment in which they operate. This includes knowledge and cultural factors. Knowledge factors include the actor's knowledge of the profitability of their business and what drives it (financial record keeping) as well as their knowledge and understanding of the various formal and informal credit options that are available to them. Cultural factors include the actor's attitudes, risk/cost perceptions and behavior related to saving, obtaining and repaying credit from various sources, and - reinvesting retained earnings to grow their business. Gender and age are factors that often influence this behavior and that thus need to be taken into account.

FINANCE SERVICES PROVISION

Types of Finance Services Providers and Products

This component of the analysis begins with mapping out the current landscape for the provision of financial services. It includes listing all the types of finance service providers that are or could be supporting value chain with their description, strengths and weaknesses, and the market segments they target or are best suited for. This information can be used graphically by adding a finance flow overlay in the VC map. It also includes developing an inventory of the three types of finance products offered by the finance service providers: saving, credit, and risk management. Different types of financial service providers and products are listed in Table 1. Two further elements need to be assessed here. First, the core finance products may be accompanied by related services such as financial literacy and business management skills training, marketing information, or market linkages facilitation. Second, the importance of savings and its link to credit needs to be underscored. Easy access to banking services that include savings will facilitate a shift away from consumption, provide better access to credit, and lead to higher reinvestment of retained earnings in the agribusiness, three critical steps to increased competitiveness and growth.

TABLE 1: TYPES OF FINANCIAL SERVICE PROVIDERS AND FINANCIAL PRODUCTS

Types of Financial Service Providers	Types of Financial Products
<ul style="list-style-type: none"> • Commercial banks • Microfinance institutions (for-profit or mission-driven, non-profit MFIs) • Value chain actors • Informal finance mechanisms (ROSCAs, ASCAs, SACCOs, credit unions, money lenders, friends & relatives) • Venture capital firms and angel investors • Public funding (government, donors, international development investment institutions such as EIB, IFC, IFAD) 	<ul style="list-style-type: none"> • Savings accounts • Short-term credit for working capital (bank overdrafts, receipts-based financing such as factoring, warehouse receipts, market loans, in-kind loans and in-kind payments, trade credit) • medium/long-term credit for investment (equipment leasing, commercial loans, grants, loan guarantee programs, revolving funds, venture capital) • Insurance products against price and yield risk

The Finance Service Providers' Market Knowledge

It is important to assess how well the finance service provider (FSP) understands the nature of the business and how well they understand the borrower in the new market they are entering. The FSP's understanding of the sub-sector includes their knowledge of the unique cash flows of the various types of agribusinesses and the overall size of the market (number of potential customers for the various products and the resulting aggregated sales potential). The FSP needs to understand the critical aspect of timing in agriculture (when working capital is needed) and that farmers are "betting the whole farm" repeatedly during each cycle (Plant now! Spray now! Harvest now!). The FSPs understanding of the borrower can be analyzed along the five Cs of screening loan applicants:

1. **Capacity** (to repay loan): [most critical] How strong is the borrower's business? What are the cash flows? Are they realistic? What is the contingency plan if cash flows are lower than anticipated? What is the income-to-debt ratio? Risk mitigating elements such as the long term relationships, contracts and life insurance fit in here;

2. **Capital** (lost by the borrower if the firm fails): How much equity does the borrower have invested in the business, how much would he or she lose if the business fails?
3. **Collateral** (to replace decreasing cash flows if needed): What physical assets that can easily be sold for cash does the borrower own? What is their value? Will the borrower be able to weather a crisis? Risk mitigation through loan guarantors fits in here;
4. **Conditions** (in the wider operating environment): How do economic conditions and the intended purpose of the loan (asset financing, working capital) influence projected cash flows?
5. **Character** (of the borrower): How responsible is the borrower? What do we know about his/her financial history? What is the overall impression? Risk mitigation through group formation fits in here.

Issues of Accessibility

Apart from the development of the finance product itself, it is important to consider how accessible it is. Accessibility has three components. First, there is geographic location of the access point. Distance to the branch represents costs in terms of time and money for potential customers. Solutions such as ATMs and mobile banking can have a big impact. Second, the actual costs for the services themselves (fees) influence whether or not the product is within the reach of the targeted customers. Third, the cumbersomeness of the application process for a loan or an account influences accessibility. If the process takes a long time, requires a large set of documents in the screening phase, or has requirements in terms of monitoring and enforcement that are difficult to meet, it will put the product out of the reach of potential clients. For rural finance, the spread-out nature, small size, and perceived riskiness of small agribusiness and transient/seasonal laborers in the rural areas caused many FSPs to decide that these value chain actors are considered “unbankable”. In turn, this implied that many banks did not open up branches in these areas and did not develop tailored products that those in the rural areas can access. Value chain finance and/or informal finance mechanism are often the only options left. Some innovative banks have however been able to address this challenge.

Finance Policy Environment

The analysis should also include a discussion of the banking regulations and policies and their impact on the firms’ finances or the provision of finance services to them. It should assess how governments can use taxation, subsidies, regulation (standards) and enforcement to influence the finance industry.

INTER-FIRM FINANCE (GOVERNANCE)

Nature of the Governance Structure

The governance structure can have a great impact on the availability and cost of finance products and therefore it is important to assess its nature. This assessment includes a general characterization of the type of governance structure (hierarchical, directed, balanced, market) and an analysis of the specifics of its nature in terms of trust, market power, and contractual format. Dimensions of the contractual format to assess include: payment format and timing, price determination, order specification and frequency, and other idiosyncratic stipulations. Group formation (horizontal collaboration) can have an impact on the governance structure as it affects many of its determinants, including the distribution of market power distribution, improved efficiency (economies of scale, lower transaction costs), and reduced risk through self-enforced control mechanisms.

Presence of Value Chain Finance

The analysis should next assess how the governance structure affects the costs and risks related to finance (screening, monitoring, and enforcing). A more stable market relationship, i.e., moving away from spot markets to transaction relationships in which the seller and buyer know each other, affects the five Cs of screening, especially capacity. For example, if the lender is the buyer, she knows that the borrowing seller is guaranteed of a market/price, and since she knows the seller, she can reasonably assess how likely it is that the seller will be able to produce the desired quantity/quality at the right time and sell it to her. The loan repayment can be directly deducted from the payment to the seller.

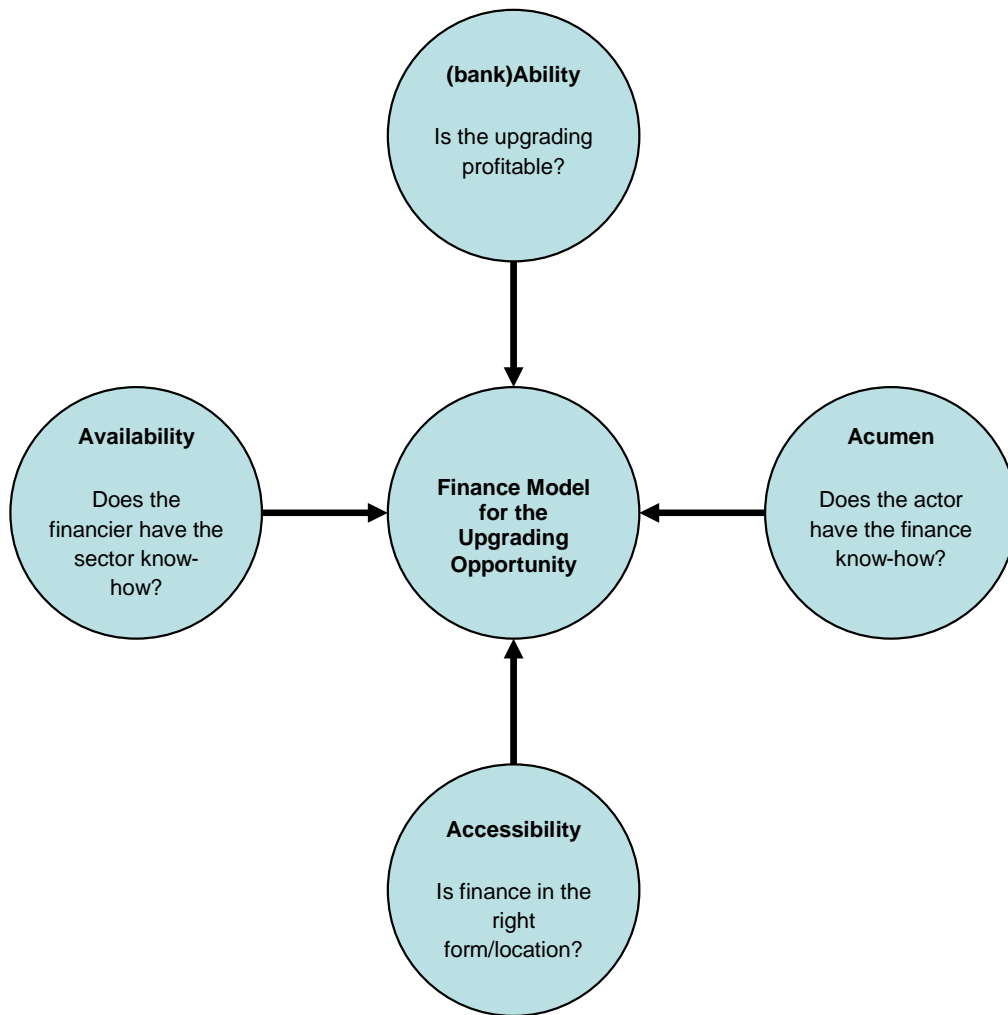
Value chain finance can be provided for various reasons: secure supply or assure its quality, access to critical inputs, reduce side-selling risks, improve profitability, and so on. Profitability can be increased directly through the interest payments or indirectly by using increased market power to lower the supplier price or increase the sale price. Similarly, value chain finance can be accepted for various reasons: no alternative available, lowest cost option, most trusted option, and so on.

Value chain finance can be seen as a positive or a negative element. Its positive aspects include that due to the lower screening costs, it may be the only or most risk-tolerant and efficient credit provision format to finance upgrading investments, and that it can be combined with other embedded services such as training (e.g., on financial literacy or business management skills), transportation, quality control, and technical assistance, to name a few. Its negative aspects include that it may be unsustainable, limited in terms liquidity, efficiency, and product range (banking is not the core business), costly (high risk premiums charged), and increasing the dependency of the borrower (weakened market power).

UNDERSTANDING THE FINANCE OF THE CONTEMPLATED UPGRADING OPPORTUNITY (STRATEGY PHASE)

Once the value chain is mapped out in detail and the basic upgrading strategy has been identified, the finance analysis shifts to identifying the optimal finance model for the upgrading opportunity. The FourA framework is developed to facilitate this design effort (Figure 4).

**FIGURE 4: THE 4A FRAMEWORK FOR ANALYZING UPGRADING FINANCE
(A. JANSEN, 2007)**



(BANK) ABILITY

The first step is to analyze how the upgrading opportunity impacts investment, working capital (cash flows), and profitability. It is important to take a multi-year perspective and include not just the investment in year 1, but also the additional working capital requirements linked to the investment in subsequent years. Profitability needs to first be assessed in the without financing scenario to make sure the upgrading opportunity is profitable in its own right (Net Present Value >0). Credit options can then be considered by the borrower if the loan cost is lower than the return on investment of the opportunity without financing. If credit is needed to realize the upgrading, then it has to be profitable from the perspective of the lender as well. There has to be a sufficiently large market to warrant developing and marketing a savings, credit or risk management product. In terms of the broader value chain it is important to consider what the upgrading by one value chain actor implies in terms of the need for increased finance for other actors in the value chain.

ACUMEN

To assess whether the upgrading opportunity will be successfully implemented, it becomes necessary to understand its relationship with the upgrading actor. The analysis needs to assess how many value chain actors will likely take up the upgrading opportunity, if they will be able to achieve the assumed profitability, and how likely it is that the upgrading will lead to firm growth (i.e., that actor will reinvest the increased profits over time). The value chain actor's credit needs need to be assessed. A credit need may not exist, or may exist but not be related to the identified upgrading opportunity. If there is a credit need, the market opportunity for the lender needs to be assessed (value of loan portfolio, number or borrowers) as well as the borrower-related risks for the lender.

AVAILABILITY

If a profitable credit market exists related to the upgrading opportunity, the next step in the analysis is to look at the credit supply side. From the list of potential finance service providers (whether they be value chain actors, financial institutions or informal organizations), those who are most suitable, best positioned need to be identified. This includes an assessment of the value chain actors who could provide value chain finance, for whom the risks of default are lower (for example, because they have a geographic monopoly) or for whom any loss on the loans is overcompensated by the gains on the operational side (for example, because it leads to increased supply resulting in economies of scale benefit).

If there is no lending available for a seemingly profitable upgrading opportunity, it becomes important to identify what the constraints are. Lenders may be willing but not able to provide credit for various reasons, for example because there is no liquidity or there is an information gap. Lenders may be able but not willing to provide credit because the market for credit is too small or not profitable, the perceived risk of bad debt is too high and there are no clear risk mitigation options, the risk of side-selling is too high, and so on.

Strategies exist to address some of these capacity, incentive or risk-related constraints. For example, the risk of side-selling can be reduced by making the cost of defection higher in a game theoretic sense: link credit to critical embedded services or to higher prices. But other risks are more difficult to mitigate: cost and price volatility, weather, and other risk factors such as conflict, pests, or spoilage. It should be noted that in this context, commercial banks hold an advantage over other finance institutions in that they typically have a larger clientele and broader geographical coverage, which allows them to effectively cover covariant risks through direct insurance services or by pooling emergency funds financed by clients.

ACCESSIBILITY

The last component is assess whether or not a finance product is available from one of the suitable finance providers that is tailored in form (term, size, interest rate, other requirements) and geographic location to the nature of the upgrading opportunity and upgrading value chain actor. If such a product does not exist, it needs to be designed from scratch in collaboration with the type of credit provider that has the greatest incentive, capacity, or risk-tolerance. If several options exist, the most effective and efficient one needs to be selected. If there are no options directly available, donors may get more directly involved in the provision of credit, but should be well aware of (and mitigate) the risk of market distortions if credit is provided below market rates.

CASE-STUDY ILLUSTRATIONS

Table 2 summarizes the case-study material recently developed under the AMAP FSKG project, providing the main findings and recommendations with respect to finance issues. These case-studies illustrate the concepts discussed above. More detail can be found in the referenced documents.

TABLE 2: AMAP FSKG VALUE CHAIN FINANCE CASE STUDIES

Commodities and Country	Main Findings	Main Recommendations	Reference
Maize, Sugar Cane and Sunflower Oil in Uganda	<ul style="list-style-type: none"> Directed governance structures have lead firms that have the capacity to better screen and monitor farmers benefiting from direct finance and are in a stronger position to enforce sanctions in case of default Value chain finance is not feasible in case of market governance structures In addition to the governance structure, value chain actors such as processors may provide direct finance at its own cost if this is needed to secure its main business function (e.g., sufficient raw material supply) 	<ul style="list-style-type: none"> Donor programs should consider facilitating direct value chain finance mechanisms in the case of directed or balanced governance structures For directed value chains, it is important to take into account that these are based on power imbalances that could lead to an inequitable distribution of benefits 	Johnston (2007)
2. Fish in Kenya	<ul style="list-style-type: none"> Governance mechanisms that are based on power imbalances force smaller value chain actors (e.g., small artisanal fish processors) to act in seemingly economically irrational ways (knowingly buy more than can be sold) Direct finance offers a credit solution when there are no alternatives, but creates dependencies and does not help build the business management skills of MSEs Social (lack of a savings culture) and environmental factors (overfishing) greatly affect business profitability and growth. 	<ul style="list-style-type: none"> Assistance programs should take the triple bottom line into account: economic, social and environmental issues to assure sustainable growth Upgrading investments should always be accompanied with an analysis of the their impact on working capital requirements Accessibility to finance products for MSEs need to be enhanced through financial literacy training and geographic closeness (mobile banking) Savings and credit need to be tackled simultaneously. 	Ardjosoediro and Neven (2008)
3. Mango in Mexico	<ul style="list-style-type: none"> Conventional credit relationships between value chain actors and commercial banks are rare and will constrain investment as upgrading strategies are implemented to access promising markets Bi-direction trade credit between buyers and suppliers is important but characterized by a lack of liquidity, resulting in sub-optimal channel choices (farmers sell where they get quick payment, not best price, traders buy from whom gives them credit, not the best price) 	<ul style="list-style-type: none"> Financial institutions need to be assisted in terms of understanding the structure, profitability driving factors, risks, and dynamics of a value-chain so that they can profitably and sustainably access with finance products and strategies that match existing cash flows 	Bourns (2008)

Commodities and Country	Main Findings	Main Recommendations	Reference
4. Potato, Rice, Shallot and Tomato in Mali	<ul style="list-style-type: none"> The four value chains are underserved by finance services, hampering growth of both direct value chain actors and service providers such as trucking logistics or ITC firms Financing would make the rice sub-sector more competitive overall, while at the same time making producer poorer Driven by a supportive government, the microfinance institutions are well-represented but their financial products are not well adapted to the seasonal cash flows and input needs of crops other than the key target crops (grains and cotton) A lack of understanding of the nature of the agribusinesses on the part of the banks led to farmers defaulting on loans or harvesting/selling at sub-optimal times (e.g., at peak harvest) to repay loans 	<ul style="list-style-type: none"> Finance design begins with end-market goals and the upgrading activities needed to reach those markets, but finance may not be a constraint and should never be a goal in and on itself (no finance for finance's sake) Finance constraints need to be simultaneously tackled at all levels of the value chain where they are a constraint, and for both value chain actors and service providers Finance product design needs to take the temporal nature of the farms' and households' cash flows into account, which may encompass more than one product/value chain (e.g., counter-seasonal crops) 	Jansen, A., Pomeroy, T., Antal, J. Shaw, T., and A. Campion. (2007)
5. Apples in Albania	<ul style="list-style-type: none"> Value chain actors such as large importers and wholesalers with deep pockets have invested equity funding in upgrading investments (e.g., controlled atmosphere storage) and are slowly moving toward a balanced type of governance with larger farmers, thus creating an environment of risk-sharing in which direct or indirect value chain finance can emerge Value chain finance has not yet emerged in any significant way though because neither set of actor has enough familiarity with the other to accept the necessary risk sharing 	<ul style="list-style-type: none"> When finance is not a constraint, support programs may still be important in terms of assuring an efficient and effective use of the available credit by value chain actors When certain proposed upgrading strategies represent to big a risk for value chain actors, explore if the upgrade can be broken down into "small, risk-able steps" (e.g., a pack-house operator initially provides direct credit to a farmer for a spraying program, rather than for a drip irrigation system) 	Lenaghan (2008)
6. Artichokes and Citrus in Peru	<ul style="list-style-type: none"> Limited access to conventional finance is one of the key constraints for Peruvian farmers to invest in the production of artichokes and fresh citrus for lucrative global markets Processors of artichokes, large wholesalers, and input suppliers have started to provide direct finance to farmers as an embedded service in a contractual relationship in which making a profit on the finance is of secondary importance relative to production profitability, risk reduction, and market expansion Higher returns have in turn facilitated access to conventional short term finance, but the continued lack of medium to long-term finance hinders growth of this sub-sector 	<ul style="list-style-type: none"> Facilitate the flow of information from agricultural value chains to financial markets to reduce real and perceived risks Design intervention with lead-firms ("connector firms") to create integrated components that focus not only on increasing access to finance, but also provide technical knowledge to both the lead firm Identify ways to improve access to longer term agricultural finance Make the study of value chain finance continuous in order to better understand its role in agriculture and financial sector development 	Campion (2006)

Commodities and Country	Main Findings	Main Recommendations	Reference
Coffee in Malawi	<ul style="list-style-type: none"> • Commercial growers are generally able to access working capital credit from the local banking sector, mostly through overdraft facilities • Commercial growers mostly self-finance investment capital • There appears to be a communication gap between the banks who claim to have credit lines in USD available and commercial growers who indicated that their main finance gap is longer term loans in USD for investment (needed because their sales are in USD and they want to manage exchange rate risks) • The smallholder coffee growers depend heavily on SACCOs which are undercapitalized and lack the bridging capital to deal with the 6-month coffee cycle 	<ul style="list-style-type: none"> • Partnerships between larger commercial banks and smaller MFI can increase the capacities of the latter, and increase the reach of the former (synergy) • The finance institutions and the growers need to better inform each other on the nature of their respective business to reveal opportunities for new finance products 	Oliva and Agar (2006)

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ANNEX: KEY INFORMANT INTERVIEWS—DISCUSSION QUESTIONS ON FINANCE

The following provides some guidance in structuring the data-collection and analysis taking the issues discussed in this paper into account. It assumes that an initial value chain analysis of the selected sub-sector has already been conducted, but may need to be verified/updated or strengthened.

PART 1: BUILD ON EXISTING STUDIES AND ANALYSES TO DEVELOP A VALUE CHAIN UPGRADING PLAN

The study team members will review existing materials from various sources, for the selected sub-sector and conduct necessary stakeholder interviews to: (1) assess existing dynamic trends in the value chain; (2) assess constraints operating at different levels of the value chain and in different market channels; (3) evaluate stakeholder strategies and capacities; and (4) develop a set of propositions for value chain upgrading that can be presented to stakeholders in the value chain and the agribusiness finance sector. Specific questions to be addressed include:

- What are the main market trends and opportunities in terms of demand for [the end-products] in domestic, regional and export markets? Is demand rising or falling and how fast? What are the relative strengths and weaknesses of domestic firms in international markets?
- What are the key market channels through which product flows? What are the value chain governance systems for the main value chain channels or channel? How does finance play out in these governance systems?
- What are the shares in and distribution of, the final consumer price among the various links of the main sub-sector supply chains?
- What are the alternative logistical and technical options for improving the sourcing of raw product on a value chain basis, considering both options of internalized production and collaboration with other value chain actors? Specifically, what would be required to begin pilot out-sourcing or contract farming arrangements? What are the risks and potential rewards of different alternatives?
- What is the potential for developing new value-added product market channels?
- What are the requirements for food safety standard compliance, including traceability, in order to reach targeted markets, and what upgrading needs do they imply?
- What ancillary support services, not now available in the country to the sub-sector, need to be developed on a horizontal basis across the different product/firm specialization areas now being developed?
- What are the main factors that affect firm-level profitability of different actors involved at different stages of the value chain (production, collection/trade, processing and distribution/retail)?

- For each type of actor, what do the cash flows and profit and loss statements look like (rough sketch initially)? What are the levels of working capital and investment loans in this context? How do factors such as seasonality and multiple income sources (from other agribusiness or non-agribusiness activities) come into play here?
- What are the dynamic trends in terms of investment/disinvestment at key value chain leverage points?
- What are the key technological, procedural, financial, and institutional constraints in the value chain and what are the potential gains from addressing them?
- What would be the major elements of a value chain upgrading plan to address the constraints and what would be the financing requirements of such a plan? I.e., what are the key upgrading opportunities and their cash flow structures (show profitability independent of financing)?

PART 2: CONDUCT AN ASSESSMENT THAT OUTLINES THE FINANCING NEEDS IN THE UPGRADING PLAN AND ASSESSES THE SUPPLY AND DEMAND OF AVAILABLE FINANCING ALTERNATIVES

The study team will seek to quantify the needs for financing to support the upgrading strategy. Using the value chain finance guidelines developed in this paper, the team will:

- gather information about supply & demand for finance at each step of the value chain as well as for critical business development service providers supporting the value chain; and, how will these vary by market channel (assuming there may be more than one market channel)?
- assess demand & supply side risk elements that hinder financing and explore value chain finance approaches to mitigating these risks (such as alliances, collateral registries, etc.);
- identify potential providers of finance, and analyze their respective incentives and capacities in providing finance; what are the possibilities for leveraging financing provided by private investors, NGOs and government agencies?
- provide guidance for the design of financial products (by either a financial institution, NGO, a value chain actor or a partnership) linked to the nature of the main upgrading opportunities (required operating finance (working capital) and investment finance) and the associated implementing value chain actors (e.g., loan repayment capability) as identified under Part 1;
- analyze potential financial products for impact on MSME sustainability and profitability (cash flow impact & sensitivity analysis).