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LESSONS LEARNED ON MSE UPGRADING IN VALUE CHAINS

A SYNTHESIS PAPER

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ACRONYMS

AMAP BDS	Accelerated Microenterprise Advancement Project Business Development Services
CAFE	Coffee and Farmer Equity
EU	European Union
EUREPGAP	Euro-Retailer Produce Working Group Good Agricultural Practices
GAP	Good agricultural practices
MOU	Memorandum of understanding
MSEs	Micro- and small enterprises
SPS	Sanitary and phyto-sanitary
USAID	United States Agency for International Development

EXECUTIVE SUMMARY

USAID's Microenterprise Development office seeks to link economic growth and poverty reduction by fostering the competitiveness of value chains and promoting the participation of MSEs within these chains. In many cases, MSEs must respond to new market opportunities by innovating and increasing value added, a process also known as "upgrading." This paper examines how MSE owners respond to upgrading opportunities within the context of the value chains in which they operate. Four specific types of upgrading are considered:

1. Process upgrading is an increase in production efficiency, resulting in either greater output for the same level of inputs or the same level of output from fewer inputs.
2. Product upgrading is a qualitative improvement that makes the product more desirable to consumers.
3. Functional upgrading is the entry of a firm into a new, higher value-added level in the value chain.
4. Channel upgrading is the entry of a firm into a pathway that leads to a new, higher value-added end market in the value chain.

FRAMEWORK OF ANALYSIS

Firm owners' upgrading decisions can be considered a dynamic response to the structure of and behavior of firms in a given value chain. The structure of the value chain influences the dynamics of firm behavior, which influence how well the value chain performs in terms of competitiveness and the benefits captured by MSEs. The structure of a value chain is characterized in terms of five elements:

1. End market opportunities at the local, national, regional, and global levels
2. Vertical linkages between firms at different levels of the value chain
3. Horizontal linkages between firms at the same level of the value chain
4. Supporting markets, including finance, business services, and input markets
5. Business and enabling environment at the local, national, and international levels

These five structural elements shape the behavior of individual firms and the dynamics of the value chain. For example, when end market opportunities are strong, firm owners innovate in response to the incentives provided by higher profits and expectations of continued future sales. Thus, upgrading can be considered a dynamic response to value chain conditions. Other dynamic features of the value chain include the level of cooperation and coordination between firms, information transfer and learning, and the power that some firms exert over others. The power of end markets and exogenous changes that shape the business and enabling environment are important contributors to value chain dynamics.

This study focuses on one specific aspect of value chain dynamics, which is the upgrading behavior of micro- and small enterprises. In making their upgrading decisions, MSEs consider a number of criteria, including enterprise profits, risks, sustainability, and household resource constraints. Because individual MSEs do not place the same relative importance on these decision criteria, they may respond differently to the same upgrading opportunity. There is interdependence of decisions among firms in the value chain and MSEs' upgrading decisions can be heavily influenced by the actions of lead firms and whether lead firms provide information, technical assistance, and market inducements to encourage MSE upgrading.

In many cases, upgrading is preceded and accompanied by a learning process in which MSE owners acquire new information, knowledge and skills. To a large extent, MSE owners' opportunities for learning are determined by the structure and dynamics of the value chain. Possible sources for information, technical assis-

tance, advice and training include stand-alone providers of business and technical services, similar firms (peers) in the value chain, buyers, input suppliers, and information provided as a public good.

NINE VALUE CHAINS

Information from nine value chains was used in this study:

1. Guatemala—woven textile handicrafts
2. India—handmade traditional leather shoes
3. Pakistan—embroidered garments
4. Guatemala—high-value horticultural vegetables
5. Honduras—horticultural crops
6. Indonesia—cocoa
7. Kenya—avocados
8. Mexico—specialty coffee
9. Mozambique—oilseeds

The comparison of upgrading information across these three handicrafts-related value chains and six agriculture-related value chains resulted in several types of findings, including generalizations about the primary impetus behind each of the four types of upgrading. Many of the findings highlight the importance of linkages between firms, especially vertical relationships between MSEs and lead firms, and the positive role played by learning opportunities and strong information flows.

PROCESS UPGRADING

1. Process upgrading is driven by the need to cut costs and/or increase output in response to competition within the value chain or between value chains. Competition in the form of low-cost alternatives both from inside the value chain and/or from competing value chains may put pressure on MSEs to reduce the prices of their products. This competition forces MSEs to respond by increasing their production efficiency or, in other words, by upgrading their production processes.

2. Vertical linkages are an important source of information and technical assistance for process upgrading. This assistance frequently comes in the form of embedded services, whereby technical services are provided as part of the product transaction. Stand-alone services from supporting markets were a much less important source of learning for process upgrading for the value chains included in this study. By providing forward contracts, lead firms can reduce some of the risks that would otherwise discourage MSE producers from process upgrading.

3. Horizontal linkages are also a source of information and learning for process upgrading. The formation of groups of MSEs often helps MSE producers gain access to training, finance, information and advice from other firms in the value chain, such as buyers and input suppliers. Horizontal linkages, either formal or informal, are also an important way for producers to share experiences and useful information on production processes with each other.

4. Lack of investment capital can be an important constraint to process upgrading. When process upgrading requires investments in long-term equipment, such as power machinery, heavy tools or irrigation equipment, then the availability of investment financing can become a critical factor in firm owners' process upgrading decisions. In many places, there are few options for MSEs seeking long-term credit to purchase durable equipment.

PRODUCT UPGRADING

- 1. Product upgrading is motivated by changes in end markets, usually stemming from changes in consumer preferences.** To remain competitive in changing markets, MSE producers must upgrade their products to meet consumer preferences. The coffee industry provides a clear example of demand-driven upgrading. Consumers have become increasingly aware of the origins of coffee and the social and environmental issues associated with coffee production. There has been a corresponding growth in consumer demand for specialty coffee that meets certain health, safety, environmental and social standards.
- 2. A well-functioning value chain transmits information to producers about consumer preferences and the price signals associated with those preferences.** In order to respond to changing demand, producers must have information about consumer preferences. One of the best ways to entice firm owners to invest in product upgrading is to offer them higher prices for higher quality products. Because of the importance of vertical information flows, intermediaries often play a central role in promoting product upgrading.
- 3. Because firms that buy from MSEs must satisfy their own buyers further up the chain, they have an incentive to provide MSEs with embedded services that encourage product upgrading.** When consumers demand new or different products, the pressure to respond is applied to firms all the way down the value chain. In addition to offering price premiums for improved products, buyers also may provide non-price incentives, such as technical and design assistance, training and input advances. These embedded services encourage product upgrading by reducing the costs and risks to MSEs.

FUNCTIONAL UPGRADING

- 1. Functional upgrading by MSEs is motivated by the desire to eliminate the market power of intermediaries, the desire to improve the flow of market signals to producers, or both.** There are two distinct ways that functional upgrading can occur: 1) an entire level of firms may be eliminated, thus changing the structure of the value chain and often improving the quality of information flowing to MSEs or 2) a single MSE producer or producer group may move to a higher level in the value chain.
- 2. When an intermediary is eliminated, the functions formerly performed by the intermediary are taken on by buyers, by MSE producers, or divided between both.** In Kenya, the functions previously performed by avocado brokers have been divided between MSE producers and exporters. To successfully assume new functions, such as coordinating orders, record keeping and managing payments, MSE owners often rely on the formation of horizontal linkages, such as producer groups.
- 3. When critical functions are not performed reliably by producers, buyers or existing intermediaries, then a new layer of firms may be (re)introduced between MSE producers and their buyers.** The new layer of firms may perform existing functions more effectively, more efficiently or on a larger scale. Alternatively, they may introduce new value-addition functions that were previously missing.
- 4. Moving to a new level of the value chain entails risks associated with shifting relationships, changing power balances and the need for new categories of knowledge and skills.** Moving to a new level in the value chain often involves the establishment of new vertical relationships that may require MSEs to deal with different types of businesses, interact with new social groups, or cross class boundaries. Functional upgrading frequently requires MSEs to master new, often complex, information and skills related to branding, marketing, product development or design.

CHANNEL UPGRADING

1. Channel upgrading by MSE owners is motivated by the desire to improve risk-adjusted returns.

Higher prices, higher sales volumes and more effective risk management through diversification all provide incentives for MSEs to enter into new market channels. MSEs may also enter into new market channels to seek an outlet for lower quality products that do not meet export or other high-value market standards.

2. Channel upgrading is a dynamic response to changing market conditions. Firm owners respond to changing consumer preferences and prices in a dynamic way, so that channel upgrading is rarely a complete and one-time-only shift from one market channel to another. In some cases, MSEs shift to a new market channel to escape declining prices. In other cases, MSEs seek less volatile prices.

3. Selling exclusively to the highest-priced market channel may not maximize an MSE's risk-adjusted returns. Markets are dynamic and the end market paying the highest prices today may not pay the highest prices tomorrow. The risks associated with price and demand fluctuations are an important motivation for MSEs to sell in multiple market channels, including lower-value market channels.

CROSS-CUTTING THEMES

1. There is often a connection between product upgrading and other types of upgrading. There is a link between product and channel upgrading in that product upgrading may be a requirement for entering a new market channel. Similarly, product and functional upgrading are linked in that the creation of direct relationships between producers and exporters facilitates the flow of information about the type and quality of products demanded in end markets.

2. New knowledge and skills are often required to reduce the risks associated with process and product upgrading. Training and technical assistance enhance MSE owners' ability to manage new and improved production while also helping them to mitigate risks.

3. Physical and social distance can hinder upgrading. Expenses associated with inputs, transport, and training may increase with distance from markets, reducing the profits from upgrading. In some cases, the transport of products or cash payments over long distances may expose MSE owners to increased security and market risks. Socio-cultural segmentation based on gender, caste, class, or ethnicity also can constrain upgrading. Functional upgrading in domestic market channels may be easier for MSEs because physical and social distances between layers of the value chain are smaller and better information is available.

4. Information and communication technology can facilitate upgrading. Increased access to information and communication technology (ICT), such as cell phones, fax machines, and the internet, can help MSEs strengthen horizontal and vertical relationships with other firms in the value chain and, through these relationships, improve their opportunities and incentives for upgrading. In addition, cell phones and the internet provide MSEs with better access to current market information.

EFFECTS OF VALUE CHAIN STRUCTURE ON UPGRADING

The findings can be summarized by considering what they say about the effects of value chain structure on MSE upgrading:

- 1. End markets are the main drivers of process, product, and channel upgrading.**
- 2. Vertical linkages are the primary channel through which information and incentives for upgrading reach MSEs.**

3. **Horizontal linkages facilitate upgrading by helping MSE owners overcome limitations associated with their small scale of operations.**
4. **Supporting markets for MSE upgrading are generally weak, with lead firms sometimes stepping into the gap to provide embedded services.**
5. **Within the business and enabling environment, some of the major impediments to MSE upgrading come from social, educational, and geographic boundaries.**

CONCLUSIONS AND LESSONS LEARNED

From this analysis, several lessons about facilitating MSE upgrading have emerged:

1. **Improve transmission of market information and price signals to MSEs.** To increase benefits to MSEs in value chains, it is important to strengthen vertical information flows and to ensure MSEs receive a price premium for higher quality.
2. **Increase the bargaining power of MSEs.** The bargaining power of MSEs relative to their buyers can be enhanced by improved MSE knowledge of markets, prices, and quality.
3. **Promote effective collaboration between MSEs.** Collaboration can increase MSE bargaining power, reduce buyers' transaction costs of dealing with large numbers of MSEs and provide a platform for sharing information and demonstrating new products, processes, or technologies.
4. **Develop financial markets for MSE investment capital.** Process and product upgrading often require long-term investments for which MSEs must seek outside sources of capital.
5. **Reduce MSE owners' isolation.** Physical and social isolation of MSEs limit market information flows and increase transaction costs, therefore limiting their capacity to respond to and benefit from upgrading opportunities.
6. **Identify socio-cultural limitations to upgrading.** Socio-cultural norms related to gender, caste, class or ethnicity affect information flows, market signals, participation in business networks, and inter-firm relationships.
7. **Resist the urge to herd all MSEs into one market channel.** Diversification of market channels helps MSEs manage risk and is a rational response to dynamic markets.

However, there are limits to upgrading. Upgrading decisions will be shaped, in part, by individual circumstances that converge to affect risk tolerance. These include income levels, wealth/asset levels, household economic goals, the composition of the household economic portfolio, and the availability of viable alternatives. Moreover, the impact of gains or losses will be greater for households at lower income and asset levels. For poorer households, the risks of upgrading an MSE may outweigh the potential profit gains. In such cases, participation in the value chain as a wage laborer or operating an MSE in a supporting market that is not dependent on a single value chain may be a preferred option.

Even when MSEs do upgrade, it should not be assumed they will always benefit. The benefits of upgrading depend on the growth potential of the value chain and the number of MSEs that can participate. Initial gains may not be sustained over time due to competition among producers and changes in end markets.

I. INTRODUCTION

The Millennium Development Goals have brought greater attention to worldwide poverty and a renewed call for poverty reduction. While the goals emphasize the multiple dimensions of poverty, there is general agreement that economic growth is a necessary condition for sustained poverty reduction. In countries where the poor are linked to growth opportunities and have the resources they need to take advantage of these opportunities, economic growth reduces poverty more quickly (Kula, Downing, and Field 2006). One way to link growth and poverty reduction is by promoting the participation of MSEs in growing industries. Since MSEs provide income to large numbers of poor people throughout the developing world, widespread MSE participation in productive, competitive value chains offers significant opportunities to increase the income of the poor.

In many cases, MSEs must respond to market opportunities by innovating and increasing value added, a process also known as “upgrading.” Upgrading at the firm level is a necessary (although not sufficient) condition for MSEs in developing countries to participate in and benefit from the global economy (Giuliani, Pietrobelli, and Rabellotti 2005). Through upgrading, MSEs can enhance the competitiveness of a value chain, and thus contribute to economic growth. At the same time, they benefit when their increased value-added contributions to the value chain translate into higher returns to the MSEs. They also may benefit in other ways, such as by gaining a more secure and steady income source or improving their knowledge and capacity to respond to changing market conditions. A deeper understanding of MSE upgrading and the factors that affect MSE owners’ upgrading decisions are the subject of this paper.

A. UPGRADING, LEARNING AND RELATIONSHIPS

Upgrading involves a learning process through which those who run enterprises acquire new knowledge—often through relationships with other firms in the value chain or with firms in supporting markets. Firm owners then translate this knowledge into innovations that increase value added. In the ideal situation, upgrading is based on the capacity to innovate and to ensure continuous improvement in products and processes. The opportunity and ability to learn are essential. The industrial development literature focuses on dynamic capabilities as the factor that affects the capacity of enterprises to upgrade. Dynamic capabilities arise from the firm’s internal capacity to learn and change from what it has done in the past (Teece and Pisano 1994).

The discussion of upgrading in more recent value chain literature looks beyond the firm to the relationships between firms.¹ It emphasizes systemic processes and inter-firm relationships within value chains and how they affect different types of upgrading (Kaplinsky and Readman 2001). This literature offers a wider view of upgrading that considers changes in the nature and mix of activities within each link in the chain and across the distribution of activities along the chain. One of the implications from this perspective is the importance that it places on the vertical relationships between MSEs and lead firms in the value chain, since lead firms can drive upgrading by creating favorable conditions that promote MSE upgrading.

Within the value chain literature, there is also some attention to the influence of firm size on upgrading (Kaplinsky and Readman 2001). When upgrading is associated with relatively high fixed costs, these costs are disproportionately higher for smaller firms, which may also be more capital-constrained than larger firms. Smaller firms also may be unable to operate at a level that allows sufficient economies of scale to profit from

¹ To review the discussion of upgrading in the value chain literature, also see Caspari (2003), Kaplinsky (2000), Humphrey and Schmitz (2000), Schmitz and Knorringa (2000), McCormick (1999), Rabellotti (1998) and Schmitz and Humphrey (1998).

upgrading. To overcome some of these size-related obstacles, MSEs can engage in joint action to coordinate their activities and create collective efficiencies. As the type of upgrading shifts from process and product upgrading to functional upgrading, there is a greater reliance on disembodied technologies, which require MSE owners to have greater skills to manage and share knowledge. The nature of the horizontal relationships between MSEs also changes to become more focused on collaboration around knowledge rather than around physical production processes.

While the literature provides important insights about the importance of learning and relationships in promoting upgrading, there is relatively little emphasis on MSEs and the upgrading decisions made by MSE owners. Instead, most of the focus is on changes at the value chain level and on decisions made by larger firms closer to the retail level. Improved understanding of the dynamics of MSE decision-making at the producer level of the chain is critical for strengthening the link between globalization, economic growth and poverty reduction. Identifying how factors that affect the performance of value chains also affect the decisions of MSE owners to upgrade will help to clarify what needs to be done to maximize the opportunities for MSEs in the context of globalization.

B. PURPOSE AND SCOPE OF STUDY

The overall purpose of this study is to improve knowledge about the conditions that promote MSE upgrading. This paper examines how MSE owners respond to the benefits, costs and risks associated with upgrading opportunities. The conditions that promote upgrading opportunities, and MSE owners' responses to these opportunities, are all interpreted within the context of the value chains in which the firms operate.

While upgrading is an issue that cuts across firms of all sizes, the focus of this study is confined to MSEs. The scope is limited to MSE upgrading both because the scale of the enterprise matters in upgrading decisions and because, through MSEs, there is the potential to link the poor to growth opportunities and reduce poverty. In addition, the study analyzes upgrading at the firm-level only, as opposed to upgrading that occurs at the level of the overall value chain.

The paper draws on data provided by project documents and reports associated with nine value chains. The value chains were selected because of their relationship to USAID's AMAP and because they represent a variety of sectors in different locations. It is important to note that most of these reports were not written with the specific question of upgrading in mind and some have more information on upgrading than others. Moreover, this study does not attempt to review the effectiveness of any donor-funded interventions associated with these value chains. Instead, the available information is used for a comparative analysis of MSE upgrading in different contexts.

The next section introduces the conceptual framework for the analysis of MSE upgrading. This is followed, in section III, with a description of the key features of each of the nine value chains. Of the value chains selected for this study, six are related to agriculture and three are related to small-scale production of handmade goods. The main findings from the analysis, in terms of lessons learned about MSE upgrading, are presented in section IV. The final section provides a brief discussion of the implications of the findings for facilitating MSE upgrading and enhancing MSE benefits.

II. FRAMEWORK OF ANALYSIS

In order to better understand the conditions that promote MSE upgrading, this section provides a framework for analyzing firm owners' upgrading decisions. In this framework, upgrading is treated as a decision made by an MSE owner in response to an upgrading opportunity and within a specific value chain context. In making an upgrading decision, an MSE owner considers a number of criteria, including enterprise profits, risks and risk management strategies, and household resource constraints. Opportunities for learning, the nature of relationships between firms, and the structure of the value chain all influence the upgrading decision in important ways.

A. VALUE CHAIN CONTEXT

Firm owners' upgrading decisions are made within the context of the value chains in which they operate. To understand how upgrading decisions fit within the value chain context, it is helpful to consider a causal model linking value chain structure, dynamics and outcomes (figure 1). According to this model, the structure of the value chain influences the dynamics of firm behavior and these dynamics influence how well the value chain performs.²

Figure 1: Causal Model of Value Chain Context



The structure of a value chain can be characterized in terms of five elements:³

1. **End market opportunities** at the local, national, regional, and global levels
2. **Vertical linkages** between firms at different levels of the value chain
3. **Horizontal linkages** between firms at the same level of the value chain
4. **Supporting markets**, including finance, business services, and input markets
5. **Business and enabling environment** at the local, national, and international levels

These five structural elements shape the behavior of individual firms and the dynamics of the value chain. For example, when end market opportunities are strong, firm owners innovate in response to the incentives provided by higher profits and expectations of continued future sales. Thus, upgrading can be considered a dynamic response to value chain conditions. Other dynamic features of the value chain include the level of cooperation and coordination between firms, information transfer and learning, and the power that some firms exert over others. The power of end markets and exogenous changes that shape the business and enabling environment are important contributors to value chain dynamics.

² This is patterned after the structure-conduct-performance paradigm that provided the foundation for industrial organization theory.

³ For a more in-depth discussion of these value chain characteristics and the interplay between power, learning and benefits, the reader is referred to Kula, Downing, and Field (2005).

This study focuses on one aspect of value chain dynamics: the upgrading behavior of micro- and small enterprises. In the most general sense, “upgrading” is defined as “innovation that increases value added.” More specifically, there are four types of upgrading that are considered in this study:⁴

1. **Process upgrading** is an increase in production efficiency that results in either greater output for the same level of inputs or the same level of output from fewer inputs. Process upgrading reduces the cost of production and may be attributable to improved organization of the production process or by the use of an improved technology.
2. **Product upgrading** is a qualitative improvement in the product, making it more desirable to consumers. “Quality” is defined very broadly to include any extrinsic, intrinsic, tangible or intangible changes resulting in the product being able to command a higher final price.
3. **Functional upgrading** is the entry of a firm into a new, higher value-added level in the value chain. This moves the firm closer to the final consumer, requires the firm to take on new functions, and positions the firm to receive a higher unit price for the product.
4. **Channel upgrading** is the entry of a firm into a pathway leading to a new, higher value-added end market, such as a local, national, regional and/or global end market. Firms may operate in one or more market channels at the same time.

In addition to upgrading, other dynamic elements of the value chain include inter-firm cooperation, the transfer of information and learning between firms, and the power exercised by firms in their relationships with each other. These dynamic elements are interrelated and can exert a recursive influence on the structure of the value chain. For example, power asymmetries affect the distribution of profits and risks, which play a major role in MSE owners’ calculation of the risk-adjusted returns to upgrading. In another example, end market opportunities give lead firms an incentive to provide market information and learning opportunities to their suppliers, resulting in stronger vertical linkages along the value chain and expanded upgrading among suppliers. These dynamic elements of the value chain—upgrading, learning, inter-firm cooperation and power—all play a role in determining value chain performance, which is measured in terms of the two critical outcomes of value chain competitiveness and MSE benefits.

B. MODEL OF THE UPGRADING DECISION

1. DECISION CRITERIA

As MSE owners decide how to respond to upgrading opportunities, they may consider several relevant criteria. One important consideration is the level of profits they expect to receive from upgrading. When the exact value of future profits is unknown, MSE owners must take this uncertainty into account and make their upgrading decisions on the basis of risk-adjusted returns. Firm owners rarely have complete information about the likelihood of each outcome. The more they can learn about the upgrading opportunity, the better they will be able to assess the risks.

Profits are not the only consideration affecting firms’ upgrading decisions. The concept of risk-adjusted returns also takes into account any number of economic and non-economic criteria that are relevant to the

⁴ A fifth type, *inter-sectoral upgrading*, is the entry of a firm into a completely different value chain. Inter-sectoral upgrading was not examined due to lack of data in the nine cases examined.

MSE owner.⁵ While each individual MSE owner may consider unique criteria in making an upgrading decision, most MSE owners will include the following decision criteria:

- **Profits:** Also known as net returns, these are the payments made to the firm for its products and/or services (revenues) minus the firm's cash and in-kind expenses (costs).
- **Risks:** These are the chances of incurring losses not only in terms of profits, but also in terms of assets, household consumption flows, social capital and business relationships.
- **Sustainability:** This includes the implications of the decision for future income flows, continued market access, long-run opportunities, long-run relationships, and future economic security.
- **Household Economic Portfolio:** The synchronization of the household's production, consumption and investment activities, given the available resources and the household's economic goals.

2. WEIGHTING THE CRITERIA AND POVERTY EFFECTS

In most cases, MSE owners will place more importance on some decision criteria and less importance on others. In calculating risk-adjusted returns, the decision criteria can be assigned different weights, which reflect the relative importance the MSE owner places on each aspect. Because of this, individual MSE owners may consider the same upgrading opportunity, but respond differently because they do not place the same relative importance (weights) on the decision criteria. The weights reflect the individual preferences of the decision maker and are associated with individual circumstances such as household income level, wealth/asset levels, risk tolerance, household composition and social capital.

Poverty can have a predictable effect on the way MSE owners weight the decision criteria. The poor tend to be more risk averse, which is another way of saying that they place relatively more importance on avoiding losses. In practice this might mean that an MSE owner would decide against upgrading, even though it offered higher expected profits, because there was also some chance of losing money that provides the family's sole means of survival. In addition, the poor tend to place more importance on current income relative to future income. The less able the household is to meet its basic survival needs, the stronger this effect will be. Thus, poverty affects upgrading decisions by reducing MSE owners' willingness to incur risks and to forego current income in favor of future income.

3. DECISION CONTEXT AND INTERDEPENDENCE

Upgrading decisions are made within a specific context, which includes the value chain context described above (section II.B). Favorable structural elements—strong demand in end markets, a conducive business enabling environment, extensive linkages between firms, and effective supporting markets—can all work to encourage MSE upgrading. The dynamic elements of a value chain also have a critical influence. When there are cooperative, win-win relationships between firms and sufficient opportunities for entrepreneurs to learn about upgrading alternatives, MSE upgrading is more likely to occur. This highlights the interdependence of decisions among different firms in the value chain. In particular, MSE owners' upgrading decisions can be heavily influenced by the actions of lead firms and whether lead firms provide information, technical assistance and market inducements to encourage MSE upgrading. Global factors that affect competitiveness,

⁵ The multidimensional calculation of risk-adjusted returns is a type of multiple attribute decision making (Yoon and Huang 1995) based on multiple attribute utility theory (Keeney and Raiffa 1979).

trade agreements, and shifts in consumer taste all exert influence from the “top” of the value chain and through the business and enabling environment.

Upgrading decisions are also influenced by contextual factors at the “bottom” of the value chain. For example, the household economic portfolio, with its associated objectives, alternative economic activities and resource constraints, provides an important context in which there also may be interdependence in the resource allocation decisions made by members of the same household. The community and cultural context may influence upgrading behavior in terms of providing risk-sharing mechanisms, discouraging commercial interaction between different social or ethnic groups, encouraging entrepreneurialism or exerting pressures for conformity. Finally, historical experiences can provide an influential context for upgrading decisions both on a personal level, through the relationships and trust that exist between decision makers, and on a macroeconomic level, through current and past events such as business cycles and inflation.

C. FROM LEARNING TO UPGRADING (AND BACK)

In many cases, upgrading is preceded and accompanied by a learning process in which MSE owners acquire new information, knowledge and skills. There are two stages of learning. The first stage precedes the upgrading decision, while the second stage comes after the MSE owner has chosen to upgrade. In some cases, this second-stage learning represents a continual process involving recurrent innovation.

Stage-one learning precedes the upgrading decision and is primarily concerned with the acquisition of information. There are two distinct types of information in this stage. First, there is basic awareness of the upgrading opportunity. In other words, the MSE owner must first become aware that the upgrading opportunity exists. A second type of pre-decision learning is the acquisition of information that can be used to evaluate the upgrading opportunity. This might consist of information about prices and costs, intermediate and end markets, and risks. This information helps the MSE owner to calculate the risk-adjusted returns to upgrading.

Once an MSE owner has decided to upgrade, there is often a second stage of learning, associated with acquisition of knowledge and skills for successful implementation of the innovation. Particularly with process and product upgrading, stage-two learning might include the acquisition of new technical and production skills. With functional upgrading, the entrepreneur may need additional business and communication skills. Channel upgrading might require all of these. In some cases, upgrading becomes a continual process of learning and innovation. Once firm owners “learn how to learn,” they have the flexibility to innovate in response to constantly changing market conditions. This can lead to a sustainable cycle of learning and upgrading.

There are a variety of possible sources for information, technical assistance, advice, and training:

- stand-alone providers of business and technical services
- similar firms (peers) in the value chain
- buyers to which the MSE is vertically linked
- input suppliers to which the MSE is vertically linked
- information provided as a public good

These sources may differ in terms of the costs to the MSE and the quality and usefulness of the information provided. There is even the possibility that information will be withheld or that misinformation will be provided for strategic reasons.⁶ Differences in cost, quality and reliability of the sources of learning may affect

⁶ For example, an agrochemical supplier may recommend higher than necessary doses of pesticides in order to increase product sales to farmers. Another example would be a handicrafts exporter who does not wish to reveal the names of his or her international buyers to a supplier for fear that the supplier will sell directly to the international buyers.

the pace and effectiveness of MSE upgrading. To a large extent, MSE owners' opportunities for learning are determined by the structure and dynamics of the value chain in which they operate.

D. APPLICATION OF THE FRAMEWORK

In this analysis, data from nine value chains were examined to uncover patterns relating the five structural elements (end market opportunities, business and enabling environment, vertical linkages, horizontal linkages and supporting markets) to the dynamic element of upgrading. Specific opportunities for process, product, functional and channel upgrading were identified in each value chain, and then the influence of value chain structure on MSE owners' upgrading decisions was analyzed. Risk-adjusted returns, poverty, decision interdependence and opportunities for learning were all assumed to play a role in the decision process and the creation of upgrading incentives and disincentives.

III. OVERVIEW OF NINE VALUE CHAINS

Information drawn from nine value chains was used as the basis for this study. These value chains were selected because of their geographic and sectoral variety, their relationship to USAID’s AMAP BDS, and the availability of adequate documentation. There are three handicrafts-related value chains and six agriculture-related value chains. Some value chains reach only domestic markets, while others reach both domestic and export markets. In each value chain, several specific upgrading opportunities were identified. The characteristics of the nine value chains are summarized in table 1 (next page). This section provides brief descriptions of each value chain. For more detailed information, the reader is referred to the original documentation sources, which are cited in the reference list.

A. HANDICRAFTS VALUE CHAINS

1. GUATEMALA—WOVEN TEXTILE HANDICRAFTS⁷

Guatemala is known for its colorful, handmade textile handicrafts. These products are sold in high-end exclusive retail shops, the low-end popular tourist shops and export markets. MSEs operate at several levels of the handicrafts value chain: as producers (weavers), intermediaries, and retailers in the popular and tourist markets. The majority of the textile weavers are indigenous women working on back strap looms. Though the back strap loom allows for higher quality products and intricate designs, it also is associated with low labor productivity. At the same time, firms in the Guatemalan handicrafts value chain are finding it difficult to compete with low-price Asian textiles.

Promising opportunities in the handicraft value chain include product and process upgrading. For example, weavers who switch from the back strap loom to the more efficient foot loom are able to produce textiles more rapidly. Product upgrading can be facilitated by improvements in communication throughout the value chain on fashion and design trends. This will enable MSEs to tailor their products to better meet consumer demand.

2. INDIA—HANDMADE TRADITIONAL LEATHER SHOES⁸

The leather subsector in the Jaipur and Dausa districts of India is dominated by production and sale of traditional *jootis*, or slip-on shoes. *Jootis* production employs a significant portion of the rural poor. Traditional leather artisans come from the *raigar* caste, one of the lowest social castes in India. Due to caste-based social segmentation, these artisans experience limited economic mobility.

The end market opportunities for traditional *jootis* are rural and urban domestic markets. The rural market share, however, is shrinking due to competition from low-cost, synthetic shoes and slippers. The main opportunities relate to product upgrading through new designs and higher quality *jootis*, both of which appeal to urban buyers, and the production of other types of leather goods.

⁷ See Dunn and Villeda (2005) and Dunn, Bloom and Church (2005).

⁸ See Jones and Shaikh (2005), MEDA (2003), MEDA and ECDI (2003), and MEDA and ECDI (2004).

Table 1: Summary of Value Chain Cases

COUNTRY	VALUE CHAIN	END MARKETS	TYPES OF UPGRADING	MAIN UPGRADING OPPORTUNITIES
HANDICRAFTS				
Guatemala	Woven textile handicrafts	<ul style="list-style-type: none"> • Domestic popular and tourist markets • Domestic shops • Exports to U.S./E.U. 	<ul style="list-style-type: none"> • Process • Product 	<ul style="list-style-type: none"> • Switch to foot looms to increase labor productivity • Change design, color and texture of weave
India	Handmade traditional leather shoes	<ul style="list-style-type: none"> • Domestic rural and urban markets 	<ul style="list-style-type: none"> • Product • Inter-sectoral 	<ul style="list-style-type: none"> • Produce new <i>jootis</i> designs • Produce alternative leather goods for mass market
Pakistan	Embroidered garments	<ul style="list-style-type: none"> • Domestic affluent women • Expatriate Pakistanis 	<ul style="list-style-type: none"> • Product • Channel 	<ul style="list-style-type: none"> • Improve materials and designs • Identify female sales agents to work directly with embroiderers
AGRICULTURE				
Guatemala	High-value horticultural vegetables	<ul style="list-style-type: none"> • Domestic and regional supermarkets • Domestic wet markets • Fresh and frozen export to U.S./E.U. 	<ul style="list-style-type: none"> • Process • Product • Channel 	<ul style="list-style-type: none"> • Adopt international sanitary and phyto-sanitary (SPS) standards and “good agricultural practices” (GAP) • Sell in new supermarkets channel
Honduras	Horticultural crops	<ul style="list-style-type: none"> • Domestic supermarkets • Exports to U.S. 	<ul style="list-style-type: none"> • Process • Channel 	<ul style="list-style-type: none"> • Practice integrated pest management • Sell directly to in-country exporters through producer cooperatives
Indonesia	Cocoa	<ul style="list-style-type: none"> • Domestic • Export 	<ul style="list-style-type: none"> • Process • Channel 	<ul style="list-style-type: none"> • Improve quality of beans by fermentation • Introduce intensive production techniques • Form farmers’ groups to sell directly to processors and exporters
Kenya	Avocado	<ul style="list-style-type: none"> • Domestic • Export 	<ul style="list-style-type: none"> • Process • Channel 	<ul style="list-style-type: none"> • Plant (or graft) new varieties of trees • Adopt EUREPGAP standards • Form farmers’ groups to sell directly to exporters or oil processors rather than through traders
Mexico	Specialty coffee	<ul style="list-style-type: none"> • Export 	<ul style="list-style-type: none"> • Process • Product • Channel 	<ul style="list-style-type: none"> • Adopt environmental best practices • Differentiate products through branding • Integrate pest and disease management • Form cooperatives to meet minimum contract size
Mozambique	Oilseeds	<ul style="list-style-type: none"> • Domestic oil market • Domestic poultry feed market 	<ul style="list-style-type: none"> • Process • Product • Inter-sectoral 	<ul style="list-style-type: none"> • Develop outgrower schemes through producer associations • Use new, higher-value seeds (sesame and soybean) • Sell oilcake to livestock feed market

3. PAKISTAN—EMBROIDERED GARMENTS⁹

High quality, contemporary, hand-embroidered garments are in high demand by middle class and affluent women in Pakistan and neighboring countries. Embroidered garments are primarily produced in woman-owned MSEs in rural areas. The high demand for hand-embroidered Pakistani garments is largely unmet as the garments on offer often do not meet the design standards and are sold into low-value traditional markets.

Due to cultural traditions, most Pakistani women embroiderers are unable to leave their homes and are strictly forbidden from associating with men who are not family members. As a result, they are unable to transact directly with the predominantly male input suppliers and sales agents. Male family members are frequently used as intermediaries, but they tend to transmit little market information to the embroiderers. Therefore, the women remain largely unaware of market opportunities for more modern and higher quality products.

This value chain stands apart from the others studied in this paper in that gender segregation is the major constraint to upgrading. The most dramatic upgrading opportunity is for these homebound embroiderers to engage in woman-to-woman sales transactions, working through female sales agents to circumvent the male relatives. These business relationships will improve the flow of market information and lead to other upgrading opportunities, such as improving design and quality and reaching high-value urban markets.

B. AGRICULTURE VALUE CHAINS

1. GUATEMALA – HIGH-VALUE HORTICULTURAL VEGETABLES¹⁰

The western highland area of Guatemala provides an excellent climate for the cultivation of snow peas, sugar snap peas, broccoli, green beans, French beans, baby carrots and other high-value horticultural products. Some of these crops have been grown in this area for almost 30 years and exported in both fresh and frozen form to the U.S. and the E.U. In addition, horticulture products are supplied to the hospitality industry and to the growing number of Central American supermarkets. Currently, approximately 250,000 smallholder farmers cultivate horticulture products using labor-intensive techniques.

The foremost upgrading issue in the Guatemalan horticulture sector stems from pressures to increase SPS standards and comply with health and safety requirements set by the U.S. Food and Drug Administration and by EUREPGAP. In addition to using only approved chemicals, smallholders are asked to adopt a set of GAP that ensures the healthfulness of the final product, which is often consumed without cooking. In order to better verify producers' compliance with SPS, many exporters and supermarkets are moving increasingly toward direct commercial contact with producers, thus eliminating their transactions with intermediaries and wholesale markets.

2. HONDURAS—HORTICULTURAL CROPS¹¹

In 1998, Hurricane Mitch decimated the horticulture sector of the Honduran economy. Efforts to rebuild the sector were directed to various levels in the value chain. At the level of smallholder farmers, non-traditional horticulture crops were introduced along with production technologies to control pests and improve quality. Efforts at other levels in the value chain provided incentives to smallholder producers to upgrade. These included quality control and inspection services and training and technical assistance to packing houses, exporters and microprocessors. In addition, the production technologies and technical assistance that were pro-

⁹ See Kumar, Bharati and Sagar (2003).

¹⁰ See Dunn, Bloom and Church (2005).

¹¹ See Chalmers, Field and Downing (2005).

vided to smallholders are adaptable to various types of horticulture, giving farmers the capacity and flexibility to respond to market changes by switching to different types of horticultural products.

For smallholder farmers, constraints to producing non-traditional products include lack of market information and technology. A history of weak technical assistance and a general mistrust of brokers and exporters were disincentives to upgrading. Major incentives included unmet and growing demand in international markets and increased capacity and demand from processors and exporters. The availability of high quality seedlings from input suppliers for jalapeño pepper, watermelon and other crops was another incentive. Infrastructure investments following the hurricane increased producers' returns.

3. INDONESIA—COCOA¹²

Indonesia is currently the world's third largest cocoa producer. Over 400,000 smallholder farmers operate in the Indonesian cocoa value chain. These smallholder farmers usually sell their cocoa beans to local collectors or local traders, who then sell the beans to a local processor or to an exporter of unprocessed beans. Indonesia's competitive advantage is in bulk, high-fat content, unfermented beans. There are few competitors in the global market and demand tends to be relatively inelastic. While fat is a desirable trait in cocoa beans, Indonesia's beans tend to be discounted on the international market due to lack of flavor.

Though there are many promising upgrading opportunities in this value chain, they come with challenges. Fermentation, a form of product upgrading, enhances bean flavor and leads to a higher price in the world market. However, the current marketing structure, which is built on volume-based transactions, does not provide commercial incentives for farmers, processors, intermediaries or exporters to improve quality through fermentation. Adopting more intensive production techniques to address the problems of decreasing land availability and aging tree stock is another upgrading opportunity.

4. KENYA—AVOCADOS¹³

Tree fruits are grown by large numbers of Kenyan smallholders and are an increasing share of horticulture exports. Avocados, Kenya's largest tree fruit export crop, were introduced to many Kenyan smallholders in the 1980s, but the industry fell relatively dormant in the 1990s with the closure of the government parastatal agency promoting smallholder avocado production. Currently, export firms source avocados from brokers who buy from farmers, but the quality is inconsistent and the volumes and types of avocados that farmers produce do not meet the demand.

Growing demand for avocados in the world market in recent years, the existence of mature trees on many smallholder farms, and export firms with links to European and Middle Eastern markets create market opportunities for producers. Kenyan smallholder avocado producers can upgrade in response to these market opportunities by improving production techniques, introducing new avocado varieties, directly linking to exporters and diversifying market outlets to include avocado oil processing plants.

5. MEXICO—SPECIALTY COFFEE¹⁴

Over 25 million farmers worldwide grow coffee. The international commodity market, in which supply greatly exceeds demand, dictates the price that roasters will pay and gives producers little leverage for negotiation. Producers in the Chiapas coffee value chain are predominantly smallholder farmers. They are generally

¹² See Panlibuton and Meyer (2004).

¹³ See Snodgrass and Sebstad (2004).

¹⁴ See Millard (2005).

far removed from the final product market, both geographically and in terms of the number of intermediaries between the farmers and the end market.

In recent years there has been strong growth in demand for specialty coffee, which presents upgrading opportunities for smallholder producers. To respond to this market demand, smallholders can adopt environmental best practices, pursue organic or fair trade certification, and differentiate their coffee through branding strategies. Though these upgrading strategies may bring benefits in the form of increased and/or steadier income, the substantial costs associated with upgrading may outweigh the benefits. A key challenge is reducing these costs.

6. MOZAMBIQUE—OILSEEDS¹⁵

Alongside horticulture and dairy, oilseeds are a principal agricultural product in Mozambique. The majority of producers in the oilseeds value chain (primarily sunflower) are smallholder farmers with one-half to one hectare of land, on which they also produce maize and horticultural crops. Many oilseed processors are also MSEs, working with traditional, manual oil presses. The oil and the oilcake—the byproduct of oil processing used for poultry feed—are sold primarily in domestic markets.

Despite the availability of competitively priced oil imported from South Africa, there is still strong domestic demand for Mozambican oil. Many processors are operating below capacity, unable to meet the ever-growing demand. Market opportunities exist for increased production of soybean oil, sesame oil and oilcake.

Improving technologies and using higher quality seeds are also opportunities for upgrading. Recent land redistribution programs in Zimbabwe led to an influx of Zimbabwean farmers. These immigrant farmers brought skills and expertise that have stimulated the overall growth of the chain. However, the most prominent and enduring constraint to upgrading remains the lack of financial services tailored to the needs of the industry and the MSEs operating within it.

¹⁵ See Kula and Farmer (2004).

IV. ANALYSIS AND FINDINGS

The comparison of upgrading information across the nine value chains resulted in several types of findings. First, it was possible to generalize about the primary impetus behind each of the four types of upgrading. For each of the four types of upgrading—process, product, functional and channel—the first statement in the section indicates the primary driving force behind that type of upgrading. Second, many of the findings highlight the importance of linkages between firms, especially vertical relationships between MSEs and lead firms, in promoting MSE upgrading. Similarly, the findings point to the positive role played by learning opportunities and strong information flows.

A. PROCESS UPGRADING

1. Process upgrading is driven by the need to cut costs and/or increase output in response to competition within the value chain or between value chains. Competition in the form of low-cost alternatives both from inside the value chain and from competing value chains may place pressure on MSEs by reducing the demand for their products. This competition forces MSEs to respond by increasing their production efficiency or, in other words, by upgrading their production processes.

Cheaper products from Asia, specifically China and India, have contributed to declining sales for Guatemalan textile handicrafts in global markets. To remain competitive in this climate, many Guatemalan weavers have sought to increase their labor productivity in one of two ways. One way is to switch from the back strap loom to the foot loom. Switching to this large, stationary weaving instrument allows producers to weave more cloth per hour of labor input and to weave larger pieces of cloth. Another way for weavers to increase labor productivity is to reduce the complexity and density of the designs produced on the back strap loom, allowing them to produce more pieces in less time. By increasing labor productivity, these two types of process upgrading help the Guatemalan value chain compete with lower cost Asian products.

In the horticulture sector, where markets are highly competitive, MSE producers are under constant pressure to increase productivity in order to keep costs down. In Guatemala, smallholder farmers adopt improved cultivation techniques such as better planting densities, hybrid seed varieties, planting seedlings instead of seeds and using integrated pest management to increase their productivity.

Likewise, in Honduras, where MSE horticulture producers must compete with large-scale producers, smallholders increase their efficiency and yields by introducing techniques such as drip irrigation, environmentally sustainable disease and pest management and staggered production schedules.

Though the primary motivation for process upgrading is competition within or outside the value chain, there may be other threats to competitiveness that do not involve other firms. In the cocoa value chain in Indonesia, for example, the primary threat to competitiveness is internal rather than external: the amount of available land is decreasing and the productive tree stock is aging. Because Indonesia's competitive advantage is its abil-

PROCESS UPGRADING

An increase in production efficiency, resulting in either a) greater output for the same level of inputs or b) the same level of output for fewer inputs. Process upgrading reduces the costs of production and may involve improved organization of the production process or use of a new or improved technology.

Examples

- Textile weavers switching to more efficient types of looms
- Horticulture producers switching from furrow to drip irrigation

ity to produce large quantities of low-grade cocoa, it is crucial to maintain high volumes through increased productivity. To address this challenge, Indonesian cocoa farmers must employ improved crop husbandry techniques in order to maintain or increase their productivity.

2. Vertical linkages are an important source of information and technical assistance for process upgrading. Vertical linkages in both directions—up the chain to buyers and down the chain to input suppliers—provide valuable information and services to assist MSE producers with process upgrading. This assistance frequently comes in the form of embedded services, whereby technical services are provided as part of the product transaction. Stand-alone services from supporting markets, as in commercial BDS, were a much less important source of learning for process upgrading for the value chains included in this study.

One large horticulture export firm in Kenya provides embedded services to avocado farmers including chemical spraying, fruit grading and transportation to warehouses. Farmers also learn basic pruning and spraying practices from the buyer. The technical assistance and services provided by the exporter assist the producers in process upgrading to increase efficiency and productivity.

Buyers often agree to provide the kinds of embedded services that promote process upgrading in their contracts with their MSE suppliers. In Guatemala, smallholder horticulture farmers commonly enter into forward contracts with buyers, which can specify quality standards, area of land to be planted, harvest dates, approved chemical and product price. As part of this forward contract, lead firms agree to provide inputs such as seeds, seedlings, agrochemicals and technical assistance to enhance productivity. In this type of arrangement, producers repay the lead firm with the proceeds from the harvest.

Similarly, many oilseed producers in Mozambique engage in contract farming. Processors or traders enter into contracts with farmers prior to planting or harvest to produce a specified quantity and quality of a particular oilseed at a pre-arranged price. In such a contract the buyer agrees to provide inputs, credit, technical advice and market services, while the farmer agrees to sell exclusively to that buyer (Setboonsarng 2004). Outgrower schemes are also common in which “smallholder producers...offer their land and labor in return for a package of inputs and extension services” (Pearce 2002, 2). Extension services may be provided by oil processors in contract farming or by commercial farmers in outgrower schemes.

By providing forward contracts, lead firms can reduce some of the risks that would otherwise lead MSE producers to decide against process upgrading. This is particularly important for producers in a value chain such as coffee, which is extremely competitive and highly unstable for the farmer. In Mexico, coffee producers were willing to invest money and effort in upgrading because they had contracts stipulating that the lead firm would purchase their product so long as it met the pre-determined specifications.

In many agricultural value chains, input suppliers are a primary source of information on the selection and application of agricultural inputs. This type of information exchange is very widespread. Through informal conversations, leaflets, posters and so on, input suppliers routinely provide product-specific information to producers on an individual or group basis. An example of this type of vertical information flow can be found with Guatemalan seed suppliers, who provide farmers with information on recommended cultivation techniques for each particular type of seed. Likewise, in Honduras, agrochemical input suppliers regularly provide information on the proper application of chemical fertilizers. The ability of smallholders to interact with input suppliers is important for this information transmittal. As discussed in cross-cutting issues (below), geographic distance, gender discrimination or other cultural barriers can diminish information flows.

A potential problem arises when input suppliers have an incentive to provide inaccurate information. Agrochemical suppliers, for example, may be more motivated to sell products than to inform farmers about the benefits of reducing chemical use. However, some suppliers recognize that in the long term “dispensing qual-

ity information and advice that helps growers improve their efficiency and yields, is in fact very much in [their] self-interest” (Chalmers, Field and Downing 2005, 7).

By delivering information and technical assistance in group settings, buyers and input suppliers can reduce delivery costs and expand the number of MSEs reached. In the case of Mozambican oilseeds, producers form groups so that financial and non-financial services can be provided by processors. These services help producers to engage in process upgrading by showing them how to use better seeds and technologies for improved crop yield. In Kenya, agricultural input suppliers visit rural farmers groups on a regular basis to provide information, thus reaching both men and women farmers in more remote areas.

3. Horizontal linkages are also a source of information and learning for process upgrading. As mentioned in the previous section, the formation of groups often helps MSE producers gain access to training, finance, information and advice from other firms in the value chain, such as buyers and input suppliers. However, horizontal linkages also are an important way for producers to share experiences and useful information on production processes with each other. When asked in a survey to name their sources of useful technical advice, information or training related to enhancing tree fruit production, Kenya tree fruit farmers cited neighbors, family and friends first. Surprisingly, buyers came nearly last on their list.

Beneficial horizontal linkages may exist among a group of many MSEs or between only two MSEs. These linkages may be formal or informal. In Kenya, farmers see producer groups as a forum for exchanging information on market prices, buyers and market demand for avocados. In addition to providing tangible benefits related to production, farmers also consider participation in producer groups as a way to reduce isolation and develop a sense of belonging. Likewise, leather artisans in India commonly exchange information on shoe production with friends and/or relatives through informal discussion settings. It is not uncommon for artisans to work directly under the guidance of another artisan for several days.

In agriculture, the successes of a lead farmer provide important demonstration effects, leading other farmers to adopt new practices. In Honduras, a project intervention was based on this principle: that the best marketing tool for promoting a new technology was the demonstration effect from observing the successful application of the technology on a neighbor’s farm.

4. Lack of investment capital can be an important constraint to process upgrading. When process upgrading requires investments in long-term equipment, such as power machinery, heavy tools or irrigation equipment, then the availability of investment financing can become a critical factor in firm owners’ process upgrading decisions. In many places, there are few options for MSEs seeking long-term credit to purchase durable equipment. Where long-term financing is available, MSE owners may lack acceptable forms of collateral. Consequently, lack of investment capital is a common constraint to process upgrading.

For textile weavers in Guatemala, switching from the back strap loom to the foot loom is the most significant process upgrading opportunity. However, the initial investment required to purchase the foot loom is so high that it is cost-prohibitive for most MSEs. The only financial services that MSE weavers can access are small lines of credit from input suppliers or cash and in-kind advances of working capital from their buyers. In fact, while the firms that buy from MSEs may be willing to extend short-term working capital to their many suppliers, these buyers are not usually in a position to tie up large amounts of capital in numerous risky, long-term loans.

In agriculture, lack of investment capital prevents many MSE producers from purchasing irrigation equipment. In the Mozambique oilseeds value chain, investments in irrigation and oil processing equipment greatly enhance the productivity of small producers. However, the financial services to acquire the necessary capital to purchase such equipment are unavailable to most producers.

Irrigation is the main process upgrading opportunity in the horticulture value chains studied in this paper. In Honduras, a drip irrigation system costs thousands of dollars, which is “beyond the cash-flow realities of many small farmers” (Chalmers, Field and Downing 2005, 4), and financial institutions are generally unwilling to provide them credit. In Guatemala, too, there is a lack of affordable irrigation systems that would enable farmers to extend the growing season and thereby increase their productivity dramatically. In Kenya, tree fruit farmers need credit to invest in spraying equipment to increase their yields.

B. PRODUCT UPGRADING

1. Product upgrading is motivated by changes in end markets, usually stemming from changes in consumer preferences. To remain competitive in mercurial markets, MSE producers must upgrade their products to meet consumer preferences. The coffee industry provides a clear example of demand-driven upgrading. Over the past 15 years, consumers have become increasingly aware of the origins of coffee and the social and environmental issues associated with coffee production. With this increased awareness, there has been a corresponding growth in consumer demand for specialty coffee that meets certain health, safety, environmental and social standards.

In response to this changing demand, many coffee growers have tapped market opportunities for specialty coffee by upgrading their product to meet specialty coffee specifications, such as international organic and fair trade certifications or lead firm-developed standards such as Starbucks’ CAFE practices.

Making the changes that are needed to achieve higher standards can be cost-prohibitive for MSE owners. In order to provide MSEs with adequate incentives to adopt practices that cost them time and money, buyers may follow a “carrot” and/or a “stick” approach. In the case of coffee farmers in Chiapas, Mexico, complying with CAFE practices allowed them to receive a higher unit price for their coffee, thus providing a “carrot” type of incentive. On the other hand, the lead firm can employ a “stick” approach by exerting its buying power to influence MSE producers to upgrade their product by simply refusing to buy from them unless they upgrade. In Chiapas, the lead firm is increasingly requiring compliance with CAFE practices as a precondition for remaining a coffee supplier.

Similarly, MSE producers of fresh fruit and vegetables must comply with SPS standards in order to participate in export markets. Food safety concerns are growing, influencing the demand for products that meet certain SPS standards. National and regional market channels often have their own standards, which are generally less stringent than international standards provided by the U.S. Department of Agriculture and EUREPGAP. These standards can involve soil and water testing, exclusive use of approved chemicals, proper application of chemicals, use of protective clothing, documentation of chemical use, tests for chemical residuals and proper storage and handling.

MSEs are increasingly engaging in product upgrading to meet this consumer demand for safer and healthier products. At the time of the study of the Kenyan avocado value chain, many farmers were attending trainings on how to comply with certification standards. Horticulture producers in Guatemala are required to use only the agrochemicals that have been approved by their buyers. For producers in many agricultural value chains,

PRODUCT UPGRADING

A qualitative improvement in a product that makes it more desirable to the consumer and earns a higher unit price.

Examples

- New colors and designs in textiles and handicrafts
- Compliance with food safety, environmental and social standards in agriculture and fresh produce
- Convenience packaging of fresh horticultural products

the incentive to comply with SPS and other standards relates largely to gaining market access, as meeting such standards is a precondition for participating in many high-value export markets.

Fashion reflects another type of consumer preference, one that is constantly changing. The Guatemalan handicrafts and Pakistani embroidered textile value chains provide illustrations of the need for MSEs to continually revamp the design of their products in order to meet consumer demands. This type of product upgrading relies heavily on detailed and timely demand information being passed from the consumer through the value chain to the producer. Though it may be challenging for small producers to keep abreast of current trends, creating new designs and products is critical for reaching and maintaining access to high-value markets. In fact, in these industries, product upgrading is absolutely essential to the future competitiveness of the value chain.

2. A well-functioning value chain transmits information to producers about consumer preferences and the price signals associated with those preferences. In order to respond to changing demand in end markets, producers must have information about consumer preferences. One of the best ways to entice firm owners to invest in product upgrading is to offer them higher prices for higher quality products. If there are no incentives or rewards for producing higher quality products, then investments in product upgrading will not seem worthwhile to MSE owners. Therefore, one of the most important findings of this study is that a well-functioning value chain transmits market information and price incentives down to the producer in a timely manner, while a poorly functioning chain does not.

Some of the best information about consumer demand comes to producers through the vertical linkages that connect producers to end markets. These vertical relationships have the potential to provide the most accurate information about demand, since firms at the top of the value chain have the closest commercial contact with consumers.

Because of the importance of vertical information flows, intermediaries often play a central role in promoting product upgrading. Intermediaries act as liaisons between lead firms and producers, passing products and information between the two. Effective intermediaries, such as the artisan-brokers in the Guatemalan handicrafts value chain, relay detailed product information from exporters to producers so that all firms in the value chain can benefit.

Alternatively, ineffective intermediaries can greatly inhibit the flow of information to producers. They may suppress information about price differentials (i.e., maintain asymmetric price information) in order to preserve their own bargaining power and capture greater rents. This is evident in Kenya, where intermediaries in the avocado value chain were not grading the product and therefore were not paying—or relaying information about—price differentials for the higher quality fruit. Because consumer preferences for higher quality avocados were not being transmitted to producers, the producers were not receiving enough information and were therefore not upgrading.

In other cases, as in the Pakistani embroidered garment value chain, intermediaries were absent altogether. The embroiderers' male relatives transported products to buyers, but these relatives did not have the expertise or incentives to relay information about consumer preferences from buyers to embroiderers. Although the embroiderers had the skills necessary to produce the styles and quality of embroidery demanded in high-value markets, their lack of mobility and inability to communicate directly with their buyers—or through effective intermediaries—prevented them from receiving information on consumer demand. In addition, the embroiderers' lack of mobility also precluded them from exchanging information about product markets through horizontal linkages with other producers.

As mentioned above, when MSE owners believe they will receive higher prices for their upgraded products, they have an incentive to respond to the market information they receive. In Chiapas, Mexico, the lead firm offered farmers a higher unit price to produce coffee that met the buyer's environmental standards. The offer of a guaranteed price premium for this specialty coffee provided the incentive for producers to invest in upgrading. When the prices paid to farmers for bulk coffee began increasing, narrowing the price differential between the specialty coffee and bulk coffee, then the incentive for MSEs to produce the higher quality product began to diminish.

In the case of Indonesian cocoa, exporters do not differentiate between high quality and low quality cocoa since the country's competitive advantage in the world cocoa market lies in its ability to supply large quantities of low-grade cocoa. Since exporters are not currently seeking high-grade beans, buyers do not offer price incentives for smallholder farmers to upgrade and produce beans of a higher quality. In this case, MSE owners have no incentives for product upgrading.

It is important to note that price premiums must be consistent and predictable to provide strong upgrading incentives to MSE owners. In Kenya, the low prices paid by brokers for undifferentiated avocados did not provide producers with any incentives to upgrade, since higher quality products were not rewarded with higher unit prices. However, when a lead firm circumvented the brokers, formed producer groups and began dealing directly with producers, it was able to set quality specifications for avocados and work with the producers to meet them. Memoranda of Understanding (MOUs) were drawn up between the lead firm and the producer groups to specify both a price schedule for the avocados and the embedded services that would be provided. These MOUs created a degree of transparency that had not existed between producers and brokers. The producers were able to recognize the consistent price premium they would receive for the higher quality avocados.

3. Because firms that buy from MSEs must satisfy their own buyers further up the chain, they have an incentive to provide MSEs with embedded services that encourage product upgrading. When consumers demand new or different products, the pressure to respond is applied to firms all the way down the value chain. To satisfy their own buyers, firms that buy from MSEs must convince their MSE suppliers to upgrade their products. In addition to offering price premiums for improved products, buyers also may provide non-price incentives, such as technical and design assistance, training, input advances and specialized technical services. These embedded services encourage product upgrading by reducing the costs and risks to MSEs.

Artisan-brokers in Guatemala provide raw materials, such as export-quality dyed threads and highly specific design information, often developing exact prototypes to avoid costly production mistakes. Producers and buyers may complete several rounds of product development and feedback before a design is agreed upon and produced on a larger scale. These input advances and lengthy design processes ensure that buyers will be satisfied with the product and mitigates the risk to MSEs in producing new designs.

There are numerous examples of buyers providing embedded services to encourage upgrading:

- In the Guatemalan horticulture value chain, SPS and other quality standards are specified in forward contracts between producers and buyers, and information concerning these standards is provided using visual aids such as posters and slides. Buyers also provide approved agricultural inputs and assist farmers with the process of becoming GAP certified.

- In the Mexican coffee value chain, the lead firm provides training on environmental best practices and information on coffee quality and coffee flavor profiles that enable MSE producers to better achieve consistently high quality coffee.
- In Kenya, avocado buyers/exporters offer producers pre-financing, technical advice and inputs in order to obtain a product that meets food safety and quality standards.

In summary, product upgrading is driven primarily by consumer demand. In order for a value chain to function well, information about changing consumer preferences should reach the producer level in a timely way so that producers may respond to those signals appropriately. Along with this demand information, MSE owners often require price and non-price incentives that lower their risk, making upgrading a worthwhile investment. If market information and incentives do not reach producers, then product upgrading is unlikely to occur.

C. FUNCTIONAL UPGRADING

1. Functional upgrading by MSEs is motivated by the desire to eliminate the market power of intermediaries, the desire to improve the flow of market signals to producers, or both. There are two distinct ways that functional upgrading can occur. One way is for an entire level or category of firms to be eliminated from the value chain, resulting in one less layer of firms between MSE producers and the end market. This type of functional upgrading changes the structure of the value chain and often improves the quality of information flowing to MSEs.

In Guatemala and Kenya, for example, horticulture producers and exporters bypassed intermediaries to form direct linkages. Producers and exporters now interact and negotiate direct transactions, often through producer groups. An important motivation for functional upgrading in these examples was that it allowed market signals on prices, quality, varieties, and volumes to be transmitted more accurately and consistently to MSEs. Similarly, Kenyan smallholder avocado growers and exporters began to bypass brokers, resulting in better market information and prices for growers and better quality and volume for exporters.

A second way for functional upgrading to occur is for a single MSE producer or producer group to move to a higher level in the value chain. This often is motivated by the desire of MSE producers to capture the rents paid to the intermediary and/or reduce the market power exerted by the intermediary. In Guatemalan handicrafts, for example, a few individual MSE producers functionally upgraded by negotiating directly with exporters to sell the products of other weavers. In the same value chain, other producers functionally upgrading by joining groups and electing representatives to negotiate directly with exporters on behalf of the group members. Producer groups can reduce the costs of functional upgrading and help MSE producers overcome obstacles related to lack of mobility, capital, and market information.

FUNCTIONAL UPGRADING

The entry of a firm into a new, higher value-added level in the value chain. The firm acquires new functions in the chain or abandons existing functions in order to increase the overall value of activities.

Examples

- Vegetable producers selling directly to exporters instead of selling to intermediary firms
- An artisan beginning to buy and sell the products of other artisans rather than to sell only her own products

2. When an intermediary is eliminated, the functions formerly performed by the intermediary are taken on by buyers, by MSE producers, or divided between both. In Kenya, the functions previously performed by avocado brokers have been divided between MSE producers and exporters. Through their groups, MSE producers maintain records on the amount of fruit supplied, manage payments to members, and coordinate relationships between smallholders and exporters. Group leaders assumed responsibility for negotiating prices and other contract terms. Exporters assumed responsibility for grading the fruit, transporting it and organizing tree spraying services.

Sometimes MSEs in supporting markets will take on some functions previously performed by intermediaries. In the Honduran horticulture value chain, for example, truckers have been trained to play a dual role both as transporters of high-value horticulture and as customs brokers to facilitate cross-border trade. In Kenya, stand-alone MSE providers of spraying services are increasingly taking over this function, which was previously provided as an embedded service by exporters.

It is important to note that if an intermediary is eliminated and the buyer takes on all of the functions previously performed by the intermediary, then MSE functional upgrading has not occurred. For example, in Honduras, with the elimination of brokers, one horticulture export firm took on logistical and coordination roles required to source directly from out-growers. By contrast, another horticulture export firm started to provide training to assist small producers with upgrading to perform these functions.

3. When critical functions are not performed reliably by producers, buyers or existing intermediaries, then a new layer of firms may be (re)introduced between MSE producers and their buyers. In some cases, a new layer of firms may be introduced or re-instated to improve the functioning of the value chain. The new layer of firms may perform existing functions more effectively, more efficiently or on a larger scale. Alternatively, they may introduce new value-addition functions that were previously missing. While this does not necessarily represent functional upgrading by MSEs already in the chain, it may support MSE participation and enhance the overall competitiveness of the value chain.

In Pakistan rural women embroiderers have little mobility outside of their home and they traditionally depend on male relatives to market their goods. To address the fact that these relatives were not effectively transmitting market signals related to design and quality, women sales agents entered as a new layer in the value chain. They work with women producers to improve design and quality in response to changing demand in urban national markets. These new agents facilitate horizontal linkages among rural embroiderers and vertical linkages between urban MSE garment makers, designers, retailers and exporters. By facilitating relationships of trust, improving information flows and working with embroiderers to improve design and quality, women sales agents are playing a critical role in promoting the growth and effective functioning of this value chain.

In Mexico, small-scale coffee producers attempted to bypass intermediaries and sell directly to a major international buyer. However, they lacked knowledge of processing and trading procedures and they could not reach the economies of scale needed to fulfill contracts competitively. Coffee farmers, as individuals and members of coffee cooperatives, took on obligations and were exposed to trade and currency risks without being fully prepared. Cooperatives were inexperienced in business practices and ineffective in transmitting market information to members. Faced with these difficulties, the international buyer entered into an agreement with a local intermediary to provide export services to cooperatives and individual coffee farmers. This intermediary received the coffee beans, sorted and graded them and negotiated transparent sales agreements. The increased efficiency in the value chain benefited farmers. Risk to the members of the coffee cooperatives was further reduced when the intermediary undertook quality control to meet the buyer's standards, thus reducing the possibility of rejected shipments.

4. Moving to a new level of the value chain entails risks associated with shifting relationships, changing power balances and the need for new categories of knowledge and skills. Moving to a new level in the value chain often involves the establishment of new vertical relationships that may require MSEs to deal with different types of businesses, interact with new social groups or cross class boundaries. Moreover, moving to a new level may result in the end of previous relationships, which also creates risks. In Kenya, for example, avocado producers used to depend on brokers, many of whom come from their own communities, for loans in the form of advance payments and for arranging the labor to pick their fruit. Now this informal source of finance is no longer available and producers, many of whom are women, have to assume the risk of hiring and managing laborers to harvest the fruit.

As MSE producers move closer to the end market and take on functions performed by others or eliminate intermediaries, this may cause a shift in power relations within the value chain. In some cases, functional upgrading brings MSEs into direct competition with their traditional buyers or with actors in the value chain with whom they have cooperated in the past. Traditional social relationships based on class, caste, ethnicity or gender may be disrupted with this shift in power. As a result, established sources of information and long-standing relationships may erode. These all are disincentives to functional upgrading.

Functional upgrading frequently requires MSEs to master new, often complex, information and skills related to branding, marketing, product development or design. For firms to link directly to international buyers, they need to understand export standards, customs procedures and documentation requirements. Coffee producers in Mexico were unable to master the processing technologies and trading procedures they needed to link directly to export markets. To establish contracts with exporters, avocado producers in Kenya needed an understanding of legal contracts and transparent bookkeeping procedures through which payments were made.

D. CHANNEL UPGRADING

1. Channel upgrading by MSE owners is motivated by the desire to improve risk-adjusted returns. Higher prices, higher sales volumes and more effective risk management through diversification all provide incentives for MSEs to enter into new market channels. In rural Pakistan, women producing superior quality embroidered garments were linked only to rural market channels until female sales agents linked them to higher priced urban markets in Karachi and Pakistani expatriate communities of the Middle East. These sales agents have linkages to retailers, exporters and exhibitions that allow MSE embroiderers to earn more for their products. Producers also benefit from improved product and design information that sales agents provide as an embedded service.

By entering market channels in which demand is based on branding (source, process or other attributes traced to producers), MSEs can not only receive higher prices, but also sell higher volumes in more reliable markets. An example of this is provided by Mexican coffee. By meeting environmental and quality standards, MSEs producing “conservation coffee” gain access to a more reliable, higher value market channel.

CHANNEL UPGRADING

The entry of a firm into a new marketing channel in the value chain. The shift can be between domestic, regional and global channels or, for example, between fresh and processed markets.

Examples

- Kenyan avocado small-holders begin to sell to a local oil processing factory
- Honduran horticulture producers begin to sell to domestic supermarkets
- Pakistani embroiderers and Indian shoemakers begin to sell to fashionable urban markets

One motivation for MSEs to enter into new market channels is to seek an outlet for lower quality products that do not meet export or other high-value market standards. This “down market” form of channel upgrading benefits MSEs by reducing waste and allowing them to sell a higher proportion of their total output. Kenyan avocado producers who sell their high-grade avocados to exporters are often left with large volumes of rejected lower grade fruit, which they can sell to an avocado oil processing plant at lower prices. Similarly, MSE oilseed producers in Mozambique sell oilcake for use in the production of poultry feed. As in Kenya, tapping into this end market allows producers to generate more revenue by selling a higher proportion of their product. In both the Kenyan and Mozambican examples, MSEs’ total risk-adjusted returns are higher, even though the secondary market channel pays lower prices.

2. Channel upgrading is a dynamic response to changing market conditions. Channel upgrading is a response by MSE owners to changing market conditions. New channels open up and old channels close down; consumer preferences and prices within existing channels fluctuate continuously. Firm owners respond to these changes in a dynamic way, so that channel upgrading is rarely a complete and one-time-only shift from one market channel to another. Instead, the changes may be partial, with producers continuing to sell in the old channels and shifting between channels over time.

Several examples illustrate how MSE owners respond to changing markets through channel upgrading. In the Honduran horticulture value chain, producers recovering from the collapse of markets following Hurricane Mitch responded quickly to the opening of two new market channels: supermarkets and regional exporters. In Kenya, smallholder avocado producers shifted their sales of lower grade fruit to the oil processing plant after the broker channel for lower grade fruit closed to MSEs that had signed contracts to sell their higher grade fruit directly to exporters.

In some cases, MSEs shift to a new market channel to escape declining prices, as in the case of coffee producers in Mexico who had been selling in undifferentiated coffee commodity markets. In other cases, MSEs seek steadier prices, as in the case of Kenyan avocado smallholders who shifted from the irregular price of the broker channel to a contracted price from lead firm exporters. By learning how to respond to dynamic markets by shifting and diversifying market channels, MSEs improve their capacity to deal with current and future market fluctuations, thus improving the sustainability of their enterprises.

3. Selling exclusively to the highest-priced market channel may not maximize an MSE’s risk-adjusted returns. As markets fluctuate over time, the end market paying the highest prices today may not pay the highest prices tomorrow. The risks associated with price and demand fluctuations are an important motivation for MSEs to sell in multiple market channels, including lower value market channels. Through this diversification strategy, MSE owners manage risks and maximize their risk-adjusted returns. Since market channels are dynamic and MSEs make their decisions on the basis of a number of decision criteria, it follows that they will prefer to maintain flexibility to shift as needed between a number of channels rather than to sell permanently and exclusively in one market channel.

In several of the case studies, local market channels continued to be an important source of income for producers, helping them to mitigate the risks of participating in higher value domestic or export markets. MSE cocoa producers in Indonesia reduce the price risks associated with the export market by selling cocoa to in-country cocoa processors. This was also the case in the Guatemalan handicrafts value chain, where most producers sell in more than one market channel: “[R]ather than specializing in one market channel, producers and artisan-brokers seek to exploit the advantage and manage the risks that are inherent in each channel” (Dunn and Villeda 2005). While unit prices are higher and cash flow is more predictable in the domestic channel, the volume of sales can sometimes be much higher in the export channel—but orders from export-

ers are sporadic and unpredictable. Therefore, producers maintain flexibility and maximize risk-adjusted returns by selling to both market channels.

In the case of Guatemalan textiles, exporters encourage weavers to sell in more than one market channel because exporters cannot always guarantee they will have enough orders to fully occupy the weavers who supply them. Exporters prefer that weavers seek additional market outlets in order to keep them actively employed as skilled artisans. In this case, diversification of market channels is not only desirable to the producer, but to the buyer as well. It helps to maintain the efficiency and competitiveness of the value chain as a whole.

E. CROSS-CUTTING THEMES

1. There is often a connection between product upgrading and other types of upgrading. There is a link between product and channel upgrading in that product upgrading may be a requirement for entering a new market channel. Several of the cases provide examples of this link. In Honduras, horticulture producers shifted from traditional to specialty fruits and vegetables in order to sell to regional and international markets. In Kenya, avocado producers who upgraded from Fuerte to Hass avocados were able to enter European markets, where Hass is preferred. Indian shoemakers who produced the more comfortable and fashionable *mojaris* were able to sell their products in the higher value urban markets.

Product upgrading may also be necessary simply to maintain a position in a current market channel. With increasing SPS requirements in the U.S., the E.U. and elsewhere, developing country farmers must change their production processes in order to meet new standards. While on the surface this suggests a link between product and process upgrading, the new processes related to SPS certification are not necessarily more efficient. In fact, the new processes may increase costs and/or reduce total output. In other words, compliance with SPS standards is a kind of product upgrading that helps MSE producers participate in export market channels, but it does not necessarily represent process upgrading in terms of efficiency gains.

The link between channel, product and process upgrading can be seen in the case of Mexico, where farmers selling to the undifferentiated coffee commodity market had no incentive to upgrade their production because they did not get paid a higher price for a higher quality. The specialty conservation coffee market paid a price premium but required new technical knowledge and skills related to conservation farming to comply with the coffee conservation standards. While the costs were significant, they were offset by increased benefits, not only through higher profits, but also through better quality soil and water to support future productivity and sustainability.

The interplay between product and functional upgrading is seen in Kenya and Guatemala. As avocado producers upgrade their fruit in response to opportunities in national or global markets, they become interested in bypassing intermediaries and linking directly to exporters. The direct linkage between producers and exporters facilitates the flow of information about the type and quality of products demanded, which helps producers to make more informed product upgrading decisions. In Guatemala, as weavers become artisan-brokers, they provide both information on new product designs and training to other weavers, which help to promote product upgrading.

2. New knowledge and skills are often required to reduce the risks associated with process and product upgrading. Process and product upgrading generally involve new or improved production techniques, but their application often comes with risks. Training and technical assistance to enhance MSE owners' ability to successfully manage new or improved production processes can help to mitigate these risks.

For smallholder avocado producers in Kenya, process upgrading can involve spraying trees at the right time with the right chemicals, applying fertilizers properly and pruning and picking at the right times. Improper application of these techniques, especially the use of chemicals, can lead to loss of investment, incidental damage to nearby crops, health risks to the farmer or environmental damage. Training programs for farmers to gain the appropriate knowledge and skills can mitigate these risks but may not be available to poorer MSE smallholders who are geographically, socially or economically marginalized.

Similarly, to reduce risks associated with process upgrading, cocoa smallholders in Indonesia need training on fertilizer application and pest management, and MSE weavers in Guatemala need training in the operation of foot looms. Access to training is often a key factor in process and product upgrading decisions. Effective training can reduce the risks associated with new production processes, techniques and technologies.

3. Physical and social distance can hinder upgrading. Physical distance can increase the cost of upgrading. Expenses associated with inputs, transport and training may increase with distance from markets, resulting in lower profit margins and reducing the potential returns from upgrading. In some cases, producers may face security (e.g., robbery or assault) or other market risks (e.g., spoilage or untimely ripening of produce) when transporting products or cash payments over long distances. Physical distance may be especially detrimental to functional upgrading, due to the higher costs of gathering market information and establishing effective contact with buyers.

Socio-cultural segmentation based on gender, caste, class or ethnicity also can constrain upgrading. Social barriers can reduce market opportunities by limiting mobility, as in the case of home-based women embroiderers in Pakistan. Historical divides between Asians and Africans in Kenya's economy affect trust, transparency and information flows in vertical relationships between firms. Power asymmetries between older male leaders and younger women producers affect the transfer of learning and information flows available through horizontal cooperation. Gender barriers in access to training can limit women's ability to acquire knowledge and skills required to upgrade and reduce upgrading risks. Language barriers can hinder communication and coordination between firms. On the other hand, social networks can facilitate upgrading by providing a basis for familiarity, trust and reciprocal relationships (social capital).

Functional upgrading in domestic market channels may be easier for MSEs because it is less costly and risky than functional upgrading in global market channels. In more traditional market channels in national value chains, physical and social distances between layers of the value chain are smaller and the information to be mastered is often more familiar and not as complex. Because they are more familiar with end buyers, MSE owners may be more likely to develop their own brands and designs. Products may not be as differentiated in domestic markets, so producing to exact specifications may not be as critical.

In general, upgrading requires more intensive interactions, rather than just transactions. The physical proximity of national markets and cultural familiarity makes information exchange and interaction easier. In some places, however, social segmentation related to religion, ethnicity and gender may interfere with these interactions. Cell phones are a positive development in helping women and other excluded groups to overcome social barriers—they are easy to use and can put buyers and sellers on different sides of social divides in direct touch with one another.

4. Information and communication technology can facilitate upgrading. Cell phones, fax machines, computers and the internet have a pervasive influence on businesses throughout the world. ICT plays an important role in knowledge sharing, innovation, productivity and competitiveness. As indicated in the Mozambique case, the demand for ICT-related supporting services increases as value chains grow and clusters emerge. Increased access to ICT can help MSEs strengthen horizontal and vertical relationships with other

firms in the value chain and, through these relationships, improve their opportunities and incentives for upgrading.

The low cost and widespread availability of ICT make it accessible to even the smallest enterprises. In rural and remote areas of many developing countries, MSE owners have access to cell phones, which have become cheaper and easier to acquire than land lines. Fax machines, computers and the internet, which may be too costly an investment for a single microenterprise, are quite affordable to horizontally linked groups of MSEs and are becoming standard office equipment among producers' associations in some countries. In Guatemala, handicraft producers join producers' associations to gain access to these forms of ICT, which facilitate the identification and pursuit of upgrading opportunities.

Cell phones and the internet provide MSEs with better access to current market information. Horticulture producers in Kenya and Guatemala use cell phones to check current prices in volatile wholesale markets. This improves producers' bargaining power vis-à-vis intermediaries and other buyers. Intermediary MSEs, in turn, use cell phones to check national wholesale prices and use the internet to monitor world prices. Armed with accurate price information, MSEs can bargain for better prices and improve their profits. Higher and more reliable profits increase the incentives for upgrading.

Access to ICT can help to improve MSEs' linkages to other firms in the value chain. Some MSE cocoa traders in Indonesia receive orders from New York and Makassar via phone and fax. Intermediaries in Guatemalan horticulture use cell phones to receive spot market orders from exporters. Producer associations in Guatemalan handicrafts receive orders and design information directly from exporters via email and fax. For MSEs, access to ICT can help to close geographic distances and promote functional upgrading by allowing MSEs to link directly to firms at higher levels of the value chain.

Lead firms, on the other hand, can use ICT to reduce the transaction costs of dealing with large numbers of MSE producers. In Guatemalan horticulture, exporters use computerized record keeping to track input credit balances, pesticide applications, delivery schedules, rejection rates and payments to MSEs. By facilitating linkages between MSEs and lead firms, ICT plays an indirect role in positioning MSE producers to benefit from lead firm-supplied embedded services, which in turn facilitate process and product upgrading.

F. EFFECTS OF VALUE CHAIN STRUCTURE ON UPGRADING

This section has presented the detailed findings, organized in terms of each of the four types of upgrading. The findings can be summarized by recasting them in terms of the structural elements of value chains. This summary helps to clarify how the five elements of value chain structure—end markets, vertical linkages, horizontal linkages, supporting markets and business and enabling environment—influence firm-level upgrading by MSEs.

1. End markets are the main drivers of process, product, and channel upgrading.

- Changes in consumer preferences provide the impetus for product upgrading (see IV.B.1).
- Cost-cutting competition for market share provides the impetus for process upgrading (see IV.A.1).
- Dynamism in end markets, combined with the risk management responses of MSE owners, provide the impetus for channel upgrading (see IV.D).

2. Vertical linkages are the primary channel through which information and incentives for upgrading reach MSEs.

- The firms that link MSEs to end markets play a critical role in facilitating process and product upgrading by providing market and product information, technical assistance and embedded services that improve the risk-adjusted returns to MSE upgrading (see IV.A.2 and I.V.B.2).
 - When information and incentives are not effectively transmitted through vertical linkages, or when the value of these services is small relative to the rents captured by intermediaries, then there are incentives to restructure vertical linkages, possibly including functional upgrading by MSEs (see IV.C.1 and IV.C.3).
- 3. Horizontal linkages facilitate upgrading by helping MSE owners overcome limitations associated with their small scale of operations.**
- Horizontal linkages help MSEs to achieve the scale they need to attract large buyers; spread the costs of upgrading support, assistance and investment; and assume new functions in association with functional upgrading (see IV.A.3 and IV.C.2).
- 4. Supporting markets for MSE upgrading are generally weak, with lead firms sometimes stepping into the gap to provide embedded services.**
- When supporting markets are weak and end market demand for product upgrading is strong, lead firms have an incentive to provide embedded services to encourage MSE upgrading (see IV.B.3).
 - In general, weak financial markets for MSE investment capital represent a critical constraint to MSE upgrading, since lead firms are reluctant to offer long-term loans to MSEs (see IV.A.4).
- 5. Within the business and enabling environment, some of the major impediments to MSE upgrading come from social, educational and geographic barriers.**
- Depending on the social and cultural context, certain categories of MSE owners may receive lower risk-adjusted returns to upgrading due to their social class, ethnicity or gender (see IV.E.3).
 - When transportation and communication infrastructure are poor, then MSEs in remote locations may face unattractively low risk-adjusted returns to upgrading (see IV.E.3 and IV.E.4).
 - Illiteracy is an impediment to upgrading because it stands in the way of learning and the acquisition of new skills that are needed for upgrading (see IV.C.4 and IV.E.2).

V. CONCLUSIONS AND LESSONS LEARNED

A. FACILITATING MSE UPGRADING

From this review of upgrading in nine value chains, several lessons have emerged. These suggest ways to facilitate MSE upgrading and increase the benefits to MSEs by reducing many of the costs, risks and constraints to upgrading. In line with the principles put forth in the Donor Guidelines for BDS development (Committee of Donor Agencies for Small Enterprise Development 2001), facilitation activities ideally should provide incentives that encourage competitive performance of MSEs. They may involve subsidized short-term programs that improve knowledge and skills of MSE producers, jump start market linkages, identify new services to support upgrading, or build capacity of existing service providers to support upgrading. In Honduras, for example, a development program to revive the horticulture sector involved a mix of facilitation activities, including technical information regarding production and marketing, market access through specialized brokers, and access to needed input markets and transport services. Governments can facilitate MSE upgrading by fostering an enabling policy, legal and regulatory environment and by providing public goods such as basic infrastructure, education and information services. The results of this study point to seven universal ideas for facilitating MSE upgrading.

1. Improve transmission of market information and price signals to MSEs. MSEs will have little incentive to upgrade if there are “weak links” in the flow of market information and price differentials related to quality. To increase benefits to MSEs in value chains, it is important to strengthen vertical information flows and to ensure MSEs receive a price premium for higher quality. In Pakistan, women sales agents have facilitated the flow of information to individual producers about designs and colors demanded by urban buyers. This, along with the payment of higher prices, has helped to elicit a strong product upgrading response. If intermediaries take these price premiums as rents, then MSEs will have little incentive to upgrade. Buyers may demand higher quality as a condition of doing business, without offering higher prices, but MSEs will be less likely to respond unless there are some compensating reductions in costs or risks. In any case, the minimum requirement is for MSEs to receive timely information about consumer preferences in end markets.

2. Increase the bargaining power of MSEs. Increased bargaining power for MSEs provides greater incentives to upgrade by increasing the risk-adjusted returns to upgrading. The bargaining power of MSEs relative to their buyers can be enhanced by improved MSE knowledge of markets, prices and quality. Horizontal collaboration among MSEs for purposes of collective bargaining can play a key role in improving profits in the short run. It can also open the door to future opportunities for MSE owners by bringing about new knowledge, skills and relationships that shift power and information asymmetries in favor of MSEs. Avocado smallholders in Kenya formed groups linked to a lead export firm. Through the groups they negotiated a memorandum of agreement with a lead firm that guaranteed a market for upgraded fruit at an agreed upon price in return for embedded services to support upgrading.

3. Promote effective collaboration between MSEs. Horizontal collaboration among MSEs can take a number of forms. It can involve a large group of MSEs or just two or three. It can be either formal or informal. Collaboration may occur through groups formed specifically for business purposes, or groups formed for other purposes. Collaboration can be a one-time activity or take place on an ongoing basis. In any case, horizontal collaboration can facilitate upgrading in several ways. It can increase MSE bargaining power, re-

duce buyers' transaction costs of dealing with large numbers of MSEs, and provide a platform for sharing information and demonstrating new products, processes or technologies. Producer groups and other structures that promote horizontal cooperation among MSEs can help to bridge the physical and social distance among individual MSE producers and between groups of MSEs and buyers. This can reduce isolation of individual producers and build social capital. Horizontal collaboration can facilitate MSE access to support services such as training, extension or finance; it can provide a platform for buyers to provide embedded services to larger numbers of MSEs. The benefits of horizontal collaboration are reflected in the coffee value chain in Mexico and the horticulture value chains in Guatemala and Kenya.

4. Develop financial markets for MSE investment capital. Process and product upgrading often require long-term investments for which MSEs must seek outside sources of capital. While lead firms may provide working capital to their suppliers, there are few lead firms that can bear the expense and risk of providing long-term financing to hundreds or thousands of MSEs. Other existing sources of formal and informal finance for MSEs (banks and microfinance institutions; savings and credit associations; and loans from friends, relatives and moneylenders) are mostly short-term working capital loans. The terms and conditions of these loans do not fit MSEs' upgrading investment needs. Making longer-term investment capital available to MSEs can enhance their capacity to respond to and benefit from upgrading opportunities. Lack of capital to upgrade was an unaddressed constraint for MSEs in many of the nine value chains. This suggests scope for donors to facilitate innovations in the development of financial products and services to support MSE upgrading in promising sectors.

5. Reduce MSE owners' isolation. Physical and social isolation of MSEs can limit their capacity to respond to and benefit from upgrading opportunities. Both forms of isolation limit market information flows and increase transaction costs. They also limit human and social capital accumulation among MSE owners, which has a negative effect on business relationships and the capacity to respond to upgrading opportunities. Isolation can be reduced by improving physical infrastructure (roads, bridges, transport, etc.) and by promoting ICT. Improved literacy and public information campaigns can help to facilitate the flow of information related to upgrading. Facilitating the organization of producers in isolated areas or producers from excluded social groups in conjunction with other activities can improve upgrading opportunities and benefits. Facilitation activities supporting the entry of women brokers in the embroidered garment value chain in Pakistan have helped reduce the isolation of women producers.

6. Identify socio-cultural limitations to upgrading. As seen in several examples in this paper, upgrading opportunities are often limited by socio-cultural norms related to gender, caste, class or ethnicity. These norms affect information flows, market signals, participation in business networks and inter-firm relationships. Special facilitation may be needed to reach socially isolated groups, such as training targeted explicitly to these groups; initiatives to promote horizontal and vertical cooperation involving these groups through networks, producers groups and linkages between MSEs and lead firms; or other support services targeted to traditionally excluded groups. It is important to acknowledge social segmentation among MSEs and between MSEs and other firms in the value chain. For upgrading information and assistance to be effective, it must reach the right groups. For excluded groups to take advantage of upgrading opportunities, it is important to design facilitation activities that help producers overcome social barriers. In India, where working with leather is associated with a lower caste, the movement of producers into higher value-added activities within the leather value chain through product and functional upgrading may provide a stepping stone for lateral movement through intersectoral upgrading.

7. Resist the urge to herd all MSEs into one market channel. Dependence on one market channel can reduce the risk management options available to MSEs. The more a household depends on the MSE as its

main source of income, the higher the income risk to the household. Diversification of market channels helps MSEs manage risk and is a rational response to dynamic markets. To reduce risk, MSEs should not be pushed to operate exclusively in the market channel that pays the highest price today but may not pay the highest price tomorrow. Moreover, MSEs should not be pressed to totally abandon the domestic market; most MSEs continue to depend primarily on the domestic market and cutting these ties can increase their vulnerability to shifts in global markets. It is important for donors and facilitators to maintain an awareness of opportunities throughout the value chain and not become overly enthusiastic about a single market channel.

B. LIMITS TO UPGRADING

Upgrading can help MSEs link to growth opportunities and, to the extent that these MSEs involve poor people, it can increase the pace by which economic growth translates into poverty reduction. However, even when upgrading opportunities arise for MSEs, upgrading is not for everyone. Upgrading decisions will be shaped, in part, by individual circumstances that converge to affect risk tolerance. These include income levels, wealth/asset levels, household economic goals, the composition of the household economic portfolio and the availability of viable alternatives. Because these factors vary across producers, upgrading decisions also will vary. Moreover, the impact of gains or losses will be greater for households at lower income and asset levels. For poorer households, the risks of upgrading may outweigh the potential profit gains. In such cases, participation in the value chain as a wage laborer or operating an MSE in a supporting market that is not dependent on a single value chain may be a preferred option.

Even when MSEs do upgrade, it should not be assumed they will always benefit. The benefits of upgrading depend on the growth potential of the value chain and the number of MSEs that can participate. Initial gains may not be sustained over time due to competition among producers and changes in end markets.

For example, MSEs may have to invest in order to upgrade to meet SPS and other export certification standards, but the returns may not be higher if they are competing with large numbers of producers in many other countries. In another example, certain types of product and process upgrading are more easily accessible to MSEs because costs are low and they receive encouragement and assistance in the form of embedded services or other support from buyers. As more and more MSEs enter a value chain, heavy competition with few barriers to entry can set the stage for a “race to the bottom.” Some types of upgrading opportunities, such as in functional upgrading, are more limited in number and often more accessible to MSEs with certain advantages: larger enterprises; MSEs owned by people who have more resources, power and greater risk tolerance; or MSEs owned by people with the higher skill levels.

In addition to these market variables, factors in the enabling environment, inter-firm relationships, supporting markets and internal enterprise management further affect benefits. In some cases, poor people can benefit more from value chain growth as employees or as consumers than as MSE producers.

C. CONCLUSION

There is an active debate about the effects of economic globalization on developing country MSEs. Will MSEs be able to compete in the global economy, thus continuing to provide income to millions of poor and near-poor households? Or will MSEs be left out of economic globalization and forced into decline?

This review shows that upgrading can and does play an important role in helping MSEs compete in wider markets. Upgrading can benefit MSEs through increased profits in the short term. It also can open the door to future opportunities for MSE owners by bringing about new knowledge, skills, and relationships that shift power and information asymmetries in favor of MSEs. Producer groups and other organizational structures

that promote horizontal cooperation among MSEs can reduce the transaction costs of working with small producers and help to bridge the physical and social distance between and among producers and buyers.

From the perspective of MSE owners, incentives to upgrade are enhanced when the risks associated with upgrading are mitigated through better information on prices and market demand, access to supporting markets (finance, business services and technology), cooperation with other firms both horizontally and vertically, and a supportive enabling environment. Development programs can play an important role in facilitating MSE competitiveness by strengthening the incentives and reducing the risks associated with upgrading.

However, upgrading is not always the answer. Other factors often are at play which affect the competitiveness (or potential competitiveness) of MSEs in a particular value chain. For example, MSEs tend to have more of a competitive advantage when production is characterized by high labor intensity, low capital intensity, small production volumes and low entry costs. They also may be more competitive in seasonal industries that provide only a portion of their income. A diversified income base, in some cases, helps MSE owners to manage risk by providing greater flexibility in coping with market fluctuations. Moreover, firm-level competitiveness among MSEs may not always be enough. The competitiveness of the overall value chain (not just the MSE) is a critical factor in conveying MSE benefits.

In the context of competitive value chains and value chains where MSEs have a competitive advantage, understanding the incentives and disincentives for MSEs to upgrade can help to identify ways to reduce risks for MSEs, expand income and employment opportunities for poor people, and promote economic growth.

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