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Agricultural Value Chains in Developing Countries
A Framework for Analysis

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Abstract

The paper presents a framework for developing country value chain analysis made up of three components. The first consists of identifying major constraints for value chain upgrading: market access restrictions, weak infrastructures, lacking resources and institutional voids. In the second component three elements of a value chain are defined: value addition, horizontal and vertical chain-network structure and value chain governance mechanisms. Finally, upgrading options are defined in the area of value addition, including the search for markets, the value chain- network structure and the governance form of the chain. Part of this component is the identification of the most suitable partnerships for upgrading the value chain. The three components of the framework are derived from major theoretical streams on inter-company relationships and from the literature on developing country value chains. The framework is applied in a case example of a developing country value chain.

Keywords: Developing country value chains, research framework, upgrading

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Introduction

Globalization and expanding international markets as well as the fast-growing middle and high income classes in many developing countries offer opportunities for developing country producers to operate in emerging national and international markets. This means that producers must gain better control over production, trade and distribution in order to guarantee the quality and value added of their products and to operate in a cost-effective way. Moreover, these producers must adapt to stringent quality and safety standards and regulations in these markets (Dolan and Humphrey 2004). Important barriers for developing country producers in this respect are the lack of an enabling environment offering institutional and infrastructural support, availability of resources and efficient and effective coordination in value chains. In particular small-scale producers are at a disadvantage because they have little capital to invest, use traditional techniques, depend on family labor and lack contact with (international) market players (De Janvry and Sadoulet 2005; Daviron and Gibbon 2002; Reardon and Barret 2000). In the literature a multitude of cases are described where small farmers search for new forms of collaboration so as to increase their bargaining position in the value chain (Rondot and Collion 2001).

Global value chains are characterized by falling barriers on international trade due to decreasing tariffs and the lowering of price support and export subsidies in the last decades. At the same time we see increasing concentration and consolidation in all links of these chains. Furthermore, advances in communication technologies and declining transportation costs facilitate coordination between chain actors (Gibbon et al. 2008), not by vertical integration but by standardization of processes and sophisticated information and communication technology, meaning that *''the rising integration of world markets through trade has brought with it a disintegration of multinational firms…''* (Gereffi 2005, 80). Developing country producers that want to enter these chains are confronted with asymmetric power relationships (e.g. because of increasing global power of Western retailers and industries) that again impact on the distribution of costs and benefits over the chain participants, keeping value-adding activities in Western countries.

However, value chains can also be seen as a vehicle by which new forms of production, technologies, logistics, labor processes and organizational relations and networks are introduced. An important example is the car industry, in which increasingly fine-meshed production and distribution networks have emerged worldwide and developing country suppliers have been able to take their share of R&D and sophisticated production processes (Ivarsson and Alvstam 2005). Such an example shows how Western technological standards and systems to guide and control processes and flows of goods and information are increasingly used by developing country producers that participate in these value chains as well as in the newly emerging modern domestic value chains. In this respect, in the food sector, supermarkets in many Latin American and Asian countries have initiated total quality management programs for perishables like fresh fish, meat and vegetables. However, an important challenge for the still by far largest number of developing country producers is how to enter these value chains and how to improve so as to compete in these new markets. Therefore important questions to be tackled are the following:

- How can developing country producers become more efficient and value adding and collaborate with parties in value chains that are able to capture new market opportunities?
- How can value chains, as embedded in the international, domestic and local economic, legal and social-cultural environment, optimally use their business environment?
- What major upgrading opportunities are available and which parties are most suited to facilitate value chain upgrading?

The current literature does not offer an integrated approach to deal with these questions and a framework with key elements for an integrated study of value chains is lacking. Therefore this paper proposes a framework for research on developing country value chains to deal with this gap in the literature. Based on the framework, options for improvement of these chains will be drafted. Although the paper addresses various sectors of the economy, the major focus will be on agriculture, as this is for most developing countries still the largest sector (highest employment, contribution to GDP, etc.).

The next section will first describe the business environment of these value chains by defining major developing country constraints. Section 3 will describe various perspectives from different theoretical streams on value chains, capture the basic elements of these theories and propose the framework for value chain analysis. Section 4 explains value chain analysis whilst section 5 discusses upgrading options in value chains, applying the framework in a case and provides management and policy implications.

Constraints for Developing Country Value Chain Upgrading

The main aim of a value chain is to produce value added products or services for a market, by transforming resources and by the use of infrastructures – within the opportunities and constraints of its institutional environment. Therefore, constraints for value chain development are in our view related to market access (local, regional, international) and market orientation (e.g. Grunert et al. 2005), available resources and physical infrastructures (Porter 1990: factor conditions) and institutions (regulative, cognitive and normative; Scott 1995).

Market Access and Market Orientation

Quality demands, internationalization and market differentiation have led in developing countries to the emergence of distinct food sub-systems with specific quality and safety requirements, leaning on different market channels, e.g. local, national and international markets (see Figure 1).

Figure 1 illustrates the key distinctions between three sub-systems. The A-system can be characterized as the local low-income chain. Producers are usually small with traditional production systems. These chains aim at local market outlets with staple products. Local value chains may deliver to local markets. However, these chains may also connect to low-end markets further away. Because of many intermediary parties (traders), these A-system chains are relatively long, implying limited availability of (end-) market information, distribution of value added over a large number of actors, and longer transportation distances (both in distance and time). A-systems in developing countries deliver a high share of agricultural production volume,

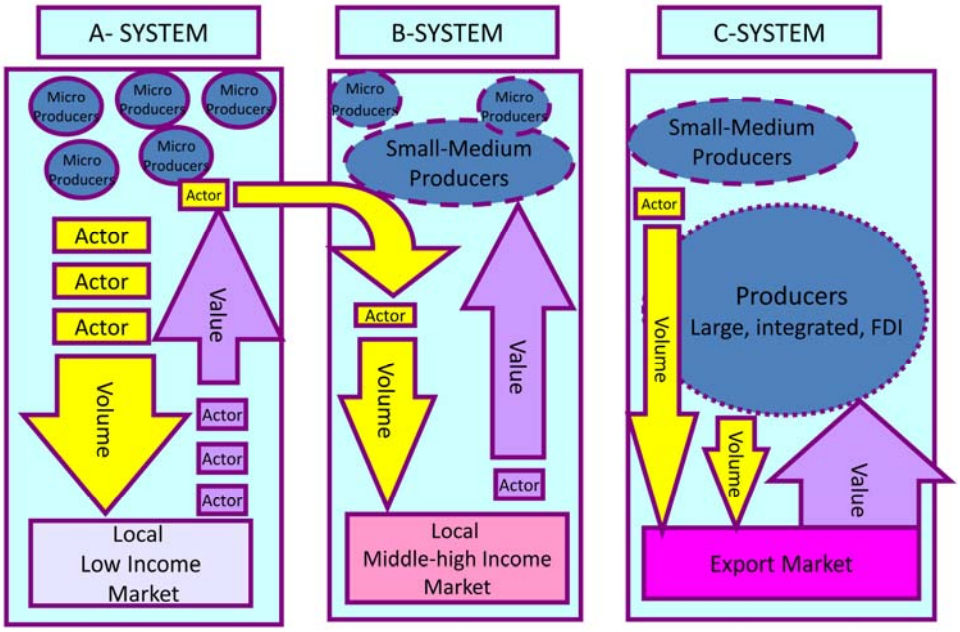

Figure 1. Economic sub-systems in developing countries (Ruben et al. 2007)

but generate relatively little value. An example of an A system is the production of cassava or sorghum by small local West African producers for local markets. Often these products enter into complex distribution networks for local markets in different places. The B-system can be characterized as the local middle to high income chain. These producers aim at the emerging supermarket sector in many developing countries. Most of the volume in these chains is delivered by small/medium size producers, organized in cooperatives and/or linked in subcontracting arrangements. Micro producers deliver inputs on demand to balance demand and supply in this system (buffer function). Although the production volume produced by B-systems is smaller than that of A-systems, the value generated is larger. B-systems increasingly produce according to national and sometimes international retail quality and safety standards. An example of a B-system value chain is the production of vegetables in Kenya for modern South African retailers operating in Kenya (Reardon et al. 2004). Finally, the C-system can be characterized as the export chain. It is completely focused on export, although low quality or rejected products are sold at the national, in many cases retail, market. The trend is towards increasing economies of scale and foreign direct investments. Export chains tend to become more integrated and with fewer actors. Although volumes are small compared to local markets, the value added is relatively high. An example of a C-system value chain is the South African table grape chain that focuses on export (Trienekens and Willems 2007), or the international flower value chains with production in Kenya and Ethiopia (Vollebrecht et al. 2010).

These sub-systems function largely independently, although one system may use input from another system to balance demand and supply (see for example the flow between the A- and B-systems in the figure). The co-existence of such weakly connected sub-systems poses important challenges to the development of harmonized quality and safety standards in developing countries (Ruben et al. 2007).

Market access is dependent on technological capabilities of producers, available infrastructures, bargaining power and market knowledge and orientation. Market orientation and market knowledge are conditional to market access. In this sub-section we focus on market orientation and market knowledge. Grunert et al. (2005) define market orientation of a value chain as *"..chain members' generation of intelligence pertaining to current and future end-user needs, dissemination of this intelligence across chain members and chain wide responsiveness to it"*. The more heterogeneous the end-market, the more market-oriented activities are expected to take place by upstream parties in the chain. This implies, in particular for non-commoditized products with high added value, that market orientation should be present at multiple parties in the chain. Therefore, to be able to participate in high value adding value chains, various parties in the chain up to the primary producer should have knowledge of and be willing to comply to demands in the value chain's end-market (Grunert et al. 2006). Therefore, a key condition for producers to be included in successful value chains is that they have access to market information and possess the ability to translate it to market intelligence. The further upstream market information on product quality and other product attributes requested penetrates the value chain, the more heterogeneous markets can in principle be served, assuming that producers can comply with market demands. In this way developing country producers may diversify their production portfolio and capture larger added value from differentiated market channels.

Resources and (physical) Infrastructures

Getting access to markets is not a sufficient condition for developing country value chains to be able to sell their products. Supporting infrastructures, resources including knowledge and capabilities are conditional for these chains to be successful. According to Porter (1990), factor conditions relate to the nation's endowment with resources such as physical, human, knowledge, technology and infrastructure. These factors enable or constrain value chain upgrading. Typical constraints faced by companies in developing countries include lack of specialized skills and difficult access to technology, inputs, market, information, credit and external services (Giuliano et al. (2005).

First, low levels of available physical resources such as input materials for production and other input supplies (e.g. energy and water) constrain value chain upgrading. For example, high energy costs in many Eastern African countries limit growth possibilities for companies and value chains. Second, the geographic position of a company or value chain may impact its competitive position, for example if it is located far from high-value markets (such as countries and regions in Central Africa). Third, availability of educated labor and the availability of knowledge (production, distribution, and marketing) is an important condition for innovative behavior of value chain actors. A fourth category is the level and availability of technology that can be used for production and distribution activities in the value chain.

Besides availability of resources the presence of an adequate distribution and communication infrastructure is a basic condition for value chain development and upgrading. Weak infrastructures hamper efficient flows of products to markets and exchange of market information upstream in value chains.

Institutional Voids

The third component we recognize in the business environment of value chains is institutions. Institutions impact organizational life. In our definition of institutions we follow Scott (1995), who makes a distinction between regulative, normative and cognitive institutions. Regulative institutions encompass legislation and government regulations and policies that companies can use and/or have to comply with. Normative institutions are embedded in business practices, business policies and ethical standards. Cognitive institutions reflect the way people interpret and make sense of the world around them on the basis of rules and schemata. Hence, diverse cultural belief systems, values and identities inform people (in different roles as consumers, producers, policy makers, citizens, etc.).

Developing countries are often characterized by institutional voids, defined as *"situations where institutional arrangements that support markets are absent, weak or fail to accomplish the role expected from them"* (Mair and Marti 2008). Government legislation, regulations and policies can constrain value chain upgrading, amongst other ways by setting trade barriers for production materials and production technology, by limiting the flow of information, national as well as international, by imposing unfavorable taxes and by denying infrastructural investments that would benefit value chains. Furthermore, business practices and characteristics of business relationships can limit value adding and profit orientation in valued chains. For example, inter-personal and inter-company relationships may enhance the social capital of a company, but also imply relational constraints that limit a free flow of goods and information (Lu 2007). Moreover, cognitive institutions may prevent innovations in products or processes and can limit a free flow of information and knowledge, mobility of labor, and relationships between communities.

A facilitating government that supports innovation and upgrading is often considered conditional for development (e.g. Murphy 2007). Moreover, standards, norms and regulations set by Western retailers and industries and supported and enforced by local governments and NGOs shape the institutional environment of developing country producers (Perez-Aleman and Sandilands 2008; Rissgaard 2009; Muradian and Pelupessy 2005; and, Dolan and Humphrey, 2000).

The next section proposes key elements for the investigation and assessment of developing country value chains by discussing the potential contribution of four theoretical streams in the literature to value chain analysis.

Theoretical Approaches to Value Chains

During the past decades there has been extensive theory building in the field of value chains (Lazzarini et al. 2001), reflected in many definitions and analytical approaches. Scientific disciplines that add to the development of value chain theory can be grouped into four streams with different perspectives on inter-company relationships, as outlined in figure 2:

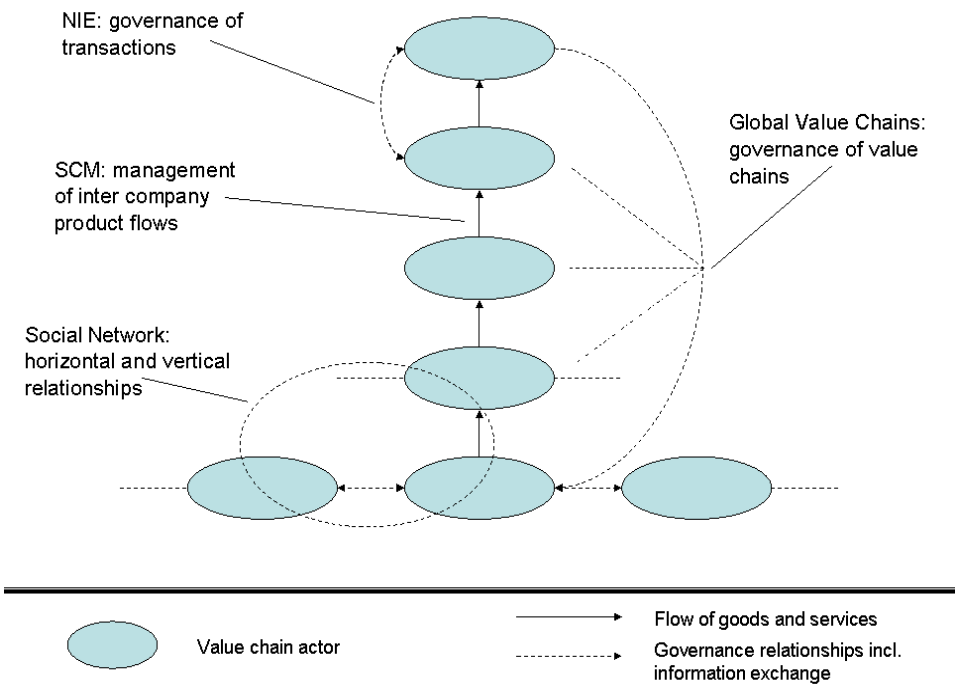

Figure 2. Perspectives of theoretical streams on inter-company relationships

- Global value chain analysis focuses on the position of the lead firm in value chains and power relationships between developing country producers and Western markets or multi- national companies (MNCs).
- Social network theory focuses on the inter-relationships between economic and social interactions in (production) networks composed of multiple horizontal and vertical relationships between value chain actors.
- Supply chain management studies management and control of inter-company operations (flows of products and services).
- New institutional economics studies the governance/organization of transactions between companies.

Global Value Chain (GVC) Analysis

GVC analysis originates from the commodity chain approach (Gereffi 1994) and investigates relationships between multi-national companies, the "lead firms", and other participants in international value chains. In this theoretical stream power relationships and information asymmetry are key concepts in the analysis of global value chains. Therefore, the focus is on governance and upgrading opportunities in developing country value chains (Gereffi 1999, Gereffi et al. 2005; Kaplinsky 2000; Kaplinsky and Morris 2002; Sturgeon 2001; Gibbon 2001; and, Gibbon and Bair 2008).

Kaplinsky (2001) made an important contribution to this theoretical stream by viewing value chains as repositories of rent. According to Kaplinsky (2001), rent arises from unequal access to

resources (entry barriers, Porter, 1990) scarcity of resources and from differential productivity of factors, including knowledge and skills. Economic rent is in principle dynamic in nature.

Nadvi (2004) extends the global value chain view to the poverty perspective by investigating the impact of engagement of local actors in GVCs on employment and income. He finds that employment and income are positively affected by inclusion of companies in global value chains, in particular when MNCs are involved. Although, at the same time, workers in GVCs become increasingly vulnerable to changing employment contracts and casualization of work.

Supply Chain Management

A literature stream that investigates management of operations in value chains is supply chain management. Supply chain management emerged in the logistics literature of the 1980s and initially focused on logistics planning and optimization of inventories across the supply chain. Supply chain management is customer oriented, i.e. customer demand is leading in this approach, and aims towards the integration of business planning and balancing supply and demand across the entire supply chain from initial producer to the ultimate customer/consumer (Bowersox and Closs 1996; Cooper et al. 1997). Information and communication systems are considered the backbone of smoothly running supply chains.

The term value chain, alongside similar approaches like the "filiere" approach (from French origin and the commodity chain concept that originated from world systems theory, Raikes et al. 2000), was first brought up by Michael Porter (1985) in the 1970s and 1980s, reflecting the value adding character of business processes within the borders of the company. Both supply chain and value chain approaches focus on primary processes, i.e. transformation and transaction processes in and across vertically related companies. From the developing country perspective, SCM focuses on process and quality improvement and optimization of distribution processes In the food sector, for example, a lot of research has been devoted to integrated quality management systems; such as the study by Francis and Simons (2008) on quality improvement programs in the red meat chain between Argentina and UK.

A third stream of literature focuses on governance of (bilateral) transactions between companies.

New Institutional Economics

New institutional economics (NIE), with branches such as transaction cost economics (TCE) and agency theory, investigates the rationale for governance choices regarding in-company and inter-company organizational relationships. In TCE transactions between companies are the basic unit of analysis (Rindfleisch and Heide 1997; Williamson 1985, 1999). Companies select the governance form that minimizes transaction costs, under conditions of bounded rationality and opportunistic behavior of partners. Value chain actors safeguard against risk of opportunism through joint investment, monitoring systems and specific organizational arrangements such as contracts. In agency theory one party (the principal) delegates work to another (the agent), who performs that work (Eisenhardt 1989). Roughly, agency theory defines governance solutions ranging between measurement of output of the supplying party/agent (transferring risk to the agent) and measurement of behavior/processes of the agent (transferring risk to the principal).

NIE is increasingly used to determine the best agreement/contract for developing country producers in highly uncertain business environments with opportunistic behavior of actors involved and weak (institutional) enforcement regimes (see e.g. Ruben et al., 2007).

Network Approach

The fourth theoretical stream of relevance for developing country value chain research is social network theory. The social network approach views companies as embedded in a complex of horizontal, vertical and business support relationships with other companies and other organizations supporting inputs and services (such as advisory services, credit facilitators and transportation companies). According to network theory, relationships are not only shaped by economic considerations; other concepts like trust, reputation and power also have a key impact on the structure and duration of inter-company relationships (Uzzi 1997). Since the 1990s, social capital theory has become an important branch within the network approach. Network relations may enhance the "social capital" of a company, by making it feasible to get easier access to information, technical know-how and financial support (Coleman 1990; Burt 1997) and by encouraging knowledge transfer between network partners (Humphrey and Schmitz 2002), thereby reducing transaction costs and improving access to markets (e.g. Gulati, 1998). In the last decade a lot of literature has emerged in the field of regional clusters, where intra-cluster vertical and horizontal relationships may support efficiency and effectiveness of business networks (Giuliani et al. 2005). In the context of NIE, network theorists argue that trust, reputation and dependencies dampen opportunistic behavior, implying that inter-firm relationships are more complex than NIE would predict (Gereffi 2005; Lu 2007; Ruben et al. 2007).

Based on these theoretical streams and the constraints to value chain upgrading discussed in the previous section, we propose below a framework for value chain analysis in developing countries.

Framework for Developing Country Value Chain Analysis

Our framework views value chains as production networks in which business actors exploit competitive resources and operate within an institutional environment. Therefore, we conceptualize a value chain as a network of horizontally and vertically related companies that jointly aim at/work towards providing products or services to a market. Building on Ruben et al. (2007), we characterize a value chain by its network structure, its governance form and the way value is added:

- *Network structure:* From supply chain management and network theory we draw the network structure of the value chain, including the market outlet (local, regional, international). Supply chain management focuses on vertical connections between economic actors aiming to jointly produce for a market. Network theory combines horizontal and vertical relationships between actors.
- *Value added:* From supply chain management, new institutional economics and value chain analysis we draw value added production. Supply chain management focuses on how value is added throughout the chain (value added can be defined in terms of (high)

quality, (low) cost, delivery time etc.). New institutional economics and specifically transaction cost economics focus on transaction costs. Value chain theory encompasses important discussions on where in the value chain value is added.

- *Governance form:* From new institutional economics, value chain theory and network theory we draw the governance and bargaining position of value chain actors, and related distribution of value added. New institutional economics investigates the optimal governance structure between economic actors. Value chain theory has developed a theory on chain-wide governance structures. Network theory focuses on (formal and informal) governance of horizontal and vertical relationships.

Changes in the institutional environment or the competitive base or in enabling infrastructures and availability of resources may alter the functioning and performance of value chains, thereby forming main constraints for value chain development. Alternatively, value chain actors may be motivated to improve their position in the chain, e.g. by getting involved in a different market channel, by enhancing value added (by improving quality and delivery conditions or lowering costs) and by re-organizing the collaboration with value chain partners. Such upgrading strategies may also be fostered by non-value chain actors such as governmental agencies, NGOs, public-private partnerships and development organizations.

Figure 3 depicts our framework. The arrows reflect a possible order of analysis of value chains: define constraints for the value chain under study – study (redesign) opportunities for this value chain – define upgrading options, taking into consideration value chain constraints.

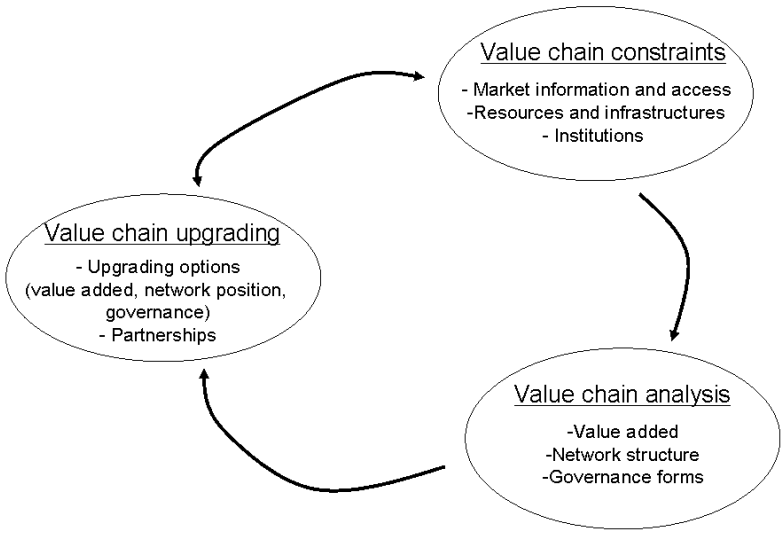

Figure 3. Value chain analysis framework

Value chain constraints have been discussed in the previous section. In the following sections the other elements of the framework will be discussed: Value Chain Analysis and Upgrading Options for developing country value chains.

Value Chain Analysis

In the previous section we presented three components of value chain analysis: network structure, value added and governance structure.

Network Structure

A network structure has two dimensions: vertical and horizontal. The vertical dimension reflects the flow of products and services from primary producer up to end-consumer (i.e. the value chain or supply chain). The horizontal dimension reflects relationships between actors in the same chain link (between farmers, between processors, etc.). Lazarrini et al. (2001) developed the concept of the netchain to show the interrelationships between the horizontal and vertical dimensions in value chains (figure 4).

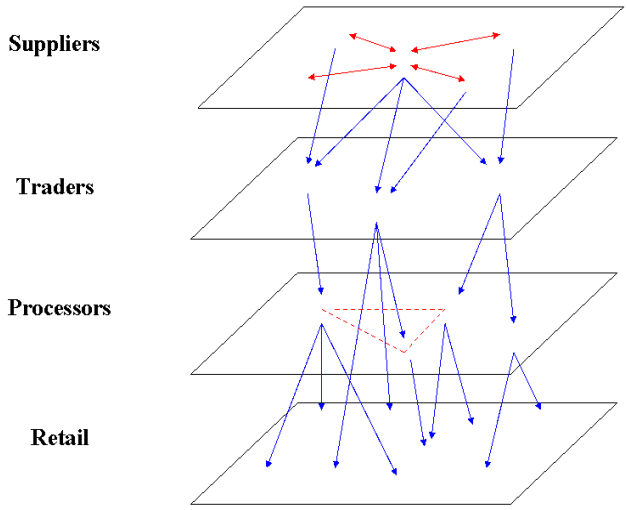

Figure 4. Netchain (Lazzarini et al. 2001)

Figure 4 shows vertical relationships between the various value chain links and horizontal relationships between actors in the same link. Vertically relationships may follow all stages in the value chain or may skip value chain links, for example, relationships between traders and retail. Horizontal relationships between actors can also have various shapes, such as farmer cooperatives or price agreements between traders. The structure of a network (netchain in figure 4) is largely dependent on the market channel(s) that are chosen by various parties. A marketing channel bridges the gap between producers and market and may be defined as a value chain or supply chain forming a "channel" for products and services that are intended for sale at a certain market.

A company's position in a market channel is dependent on the following key decisions (adapted from Stern et al. 1996):

- Which products or services will be delivered to which market. What are the required intrinsic characteristics of the product or service and the required extrinsic characteristics of the production process?
- Whether the company will adopt a single or multi-channel strategy. One company can deliver to more than one market (in terms of market requirements like quality level, delivery conditions, pricing).
- The number of stages in the channel. For example a producer can deliver directly to customers further downstream the channel or through intermediary partners (such as traders, distributors or processors).

Channel choices are heavily constrained by market access limitations such as supporting infrastructures to reach markets, access to demand and price information and specific demands from these markets such as production according to quality standards. Moreover, the ability of companies to take part in market channels is strongly related to characteristics of these markets, knowledge of market demands at the producer and the technological abilities of the producer. (Grunert et al. (2005) find that the more heterogeneous and dynamic the supply of raw material to the value chain, the more market-oriented activities can be expected to take place upstream in the value chain. Conversely, from an end-user market perspective, they find that the extent of heterogeneity and dynamism of end-user markets is a determinant of the degree of market orientation in the chain.

Market channels vertically structure the value chain/network. The horizontal dimension is shaped by purchasing, production and delivery dependencies between parties that are positioned in the same value chain links, such as sourcing or marketing cooperatives, or collaborative agreements between small and medium size processors, such as exchange of packaging materials in case of demand fluctuations. It may be clear that market access, market information and exchange of information through the vertical chain, but also control of quality standards, may be strongly stimulated and enabled by horizontal collaboration and information exchange, through communication of knowledge and through joint investments in supporting systems.

A value chain/network structure is in principle dynamic. For all sectors of the economy, globalization has led to increasingly fine-meshed sourcing, production and distribution networks around the globe. For example, Gereffi (1999) showed for the apparel industry how the global sourcing network evolved from links between Asian low labor-cost producers and Western value added producers, to links between Western brand producers and Asian added value producers. Asian manufacturers had moved a step forward in the production of value added products and developed multi-layered global sourcing networks for themselves, such that low-wage assembly could be done in other parts of Asia (see also Bair and Gereffi, 2003, for similar developments in the apparel industry in Mexico, where the industry was upgraded from mere manufacturing to R&D and design). Also in the food sector, with coffee (Kaplinsky and Fitter 2001) as a good example, differentiation in the last decades has led to further specialized distribution and sales networks worldwide. Fair trade and specialty coffee to be sold at specialty shops, for example, have achieved increasing market shares.

However, factors such as international regulations and legislation have also had a big impact on the formation of distribution networks. For example, Gibbon (2003) shows the important role of

international trade regulations on shaping international distribution structures, by discussing the impact of the US African Growth and Opportunity Act (AGOA) on the relocation of manufacturing facilities in developing countries. AGOA conferred a quota- and duty-free status, from 2000 to 2008, to clothing articles directly imported into the United States from beneficiary countries that meet certain political and economic conditions. This led to an almost immediate move of clothing manufacturing activities from countries like South Africa and Mauritius to Lesotho and Tanzania.

Value Added

Value added is created at different stages and by different actors throughout the value chain. Value added may be related to quality, costs, delivery times, delivery flexibility, innovativeness, etc. The size of value added is decided by the end-customer's willingness to pay. Opportunities for a company to add value depend on a number of factors, such as market characteristics (size and diversity of markets) and technological capabilities of the actors. Moreover, market information on product and process requirements is key to being able to produce the right value for the right market. In this respect finding value adding opportunities is not only related to the relaxation of market access constraints in existing markets but also to finding opportunities in new markets and in setting up new market channels to address these markets.
Value added capture can be divided into five major categories (Kaplinsky 2000):

- trade rents (forthcoming from production scarcities or trade policies)
- technological rents (related to asymmetric command over technologies)
- organizational rents (related to management skills)
- relational rents (related to inter-firm networks, clusters and alliances)
- branding rents (derived from brand name prominence).

To capture these rents a number of conditions have to be met: availability of resources, including knowledge and capabilities of chain actors, the infrastructure to bring the products to a market and comparative advantage in that market, for example through specific value added or economies of scale. According to Kaplinsky (2000) access to high income yielding activities, with high added value, requires participation in global value chains aiming at markets demanding products with high added value. As discussed before, these global value chains are often linked through long-term relationships and supported by foreign direct investments.

For commodities with low value added, however, the terms of trade with Western countries are in a downwards spiral(Fitter and Kaplinsky, 2001; Kaplinsky and Morris, 2002). This was very well illustrated by Nadvi (2004) in a study on a boom in the vegetables and fruit sector of several East African countries, that, however, did not lead to an equal increase in production of high value added products nor a decrease of poverty: *"In Kenya , exports of fresh vegetables rose by over 200% in value terms between 1993 and 1999 [….]. However, over half the population fell below the poverty line in the late 1990s, and rural poverty was particularly acute."* Moreover, for food production the upstream part of the value chain is not very suited for product differentiation, as in most food chains heterogeneity of raw materials upstream in the value chain is not exploited for serving market heterogeneity downstream in the chain. Raw materials are first made homogeneous and are differentiated again in processing and distribution stages (e.g.

through packaging), because of the high costs of separating and controlling various materials flows upstream in the chain (Grunert 2005). In international value chains this upstream part is in many cases located in developing countries; this being another explanation of why only little value added production in these chains takes place in developing countries.

There does however seem to be increasing room for specialization in fair trade and organic products from developing countries, while traditional commodity chains such as coffee increasingly show differentiation tendencies. For example, Fitter and Kaplinsky (2001) illustrate that nowadays in Western coffee specialty stores (such as Starbucks) the cost of coffee only represents a very small proportion of the price of a cup of coffee (4% in the case of a cappuccino). The remainder is in the ambiance, the brand, etc. For this type of specialty products, branding and adding additional value has become a conditional strategy to gain market share (Gereffi1999). At the same time, branding and labeling of specialty products by developing country producers is constrained through the private-label policies of many Western supermarket chains. Dolan and Humphrey (2004) show a rise in private-label penetration of retail in the UK from around 22% in 1980 to around 43% in 2001. Another example is given by Gwyne (2008), who shows that Tesco's private label of Chilean wine (Tesco Finest) covers more than 50% of wine sales in its shops. The trend towards increased private-label sales is ongoing in most Western countries, but it appears to be increasing at the highest rate in the UK.

Value adding in food production focuses in particular on safety and quality of the product. Quality can be divided into intrinsic characteristics of the product itself (e.g. color, taste, tenderness) and extrinsic characteristics of the process which cannot be measured on the product (e.g. organic or fair trade production). To safeguard the quality and safety of end-products, since the 1990s, Western retailers have defined various standards for the production and processing of food, such as British Retail Consortium (BRC), Gobal-GAP, Safe Quality Food (SQF). These standards are now applied by supermarkets and importers all over the world to coordinate supply chain activities and control food quality and safety. Besides generic quality standards that focus on quality and safety of food, we now increasingly find standards which combine intrinsic with extrinsic characteristics, e.g. high quality (and sustainable) *"Utz" coffee or the "Rainforest alliance"* bananas of Chiquita. While until recently these specific product and processing attributes focused on niche markets in Western countries, they now are swiftly integrated in basic retail and industry standards as indicated above. For producers to get access to modern retail markets, certification according to these standards is conditional (Jahn et al. 2004). However, because of these standards access to these markets for small and medium size producers is difficult and in many cases impossible, as was pointed out before (Dolan and Humphrey 2000). Perez-Aleman and Sandilands (2008) state that *"these well-intended social and environmental norms, or sustainability standards",* (from a Western consumer point of view), represent significant barriers to entry for these producers (Vellema and Boselie 2003; Giovannucci and Reardon 2001). Compliance with standards implies high certification costs (for producers) and high monitoring costs (for buyers). Although, in some cases we now see inclusion of small-holders in modern quality schemes, e.g. through cooperative governance forms or through retail or food industry programs (e.g. tea production in Kenya for Unilever; coffee production for *Nescafe* in Brazil).

Value added is produced in value chains aiming at certain markets and constituting a number of actors. The next section will discuss the governance of relations between these actors, the third element of our framework.

Governance and Bargaining Position of Value Chain Actors

Firms in value chains are linked in a variety of sourcing and contracting relationships, i.e. forms of governance (see e.g. Williamson 1985; 1999; Gereffi et al. 2001). We distinguish two perspectives in the concept of governance of developing country value chains:

- the transaction (cost) perspective that focuses on governance of transactions in vertical bilateral relationships between firms (Williamson, 1985 and 1999; Rindfleisch and Heide 1997);
- the global value chain perspective of Gereffi, Kaplinsky and others, where power relationships, the position of the "lead-firm" and consequences of the distribution of value added are the subject of study (Gibbon et al. 2008). Gereffi (1994, 97) defines governance as: *"authority and power relationships that determine how financial, material and human resources are allocated and flow within a chain"*.

From the transaction (cost) perspective, transactions between firms are governed under conditions of bounded rationality and opportunism of the actors involved. Transaction characteristics are largely explanatory for governance structures in a value chain. According to Williamson (1995, 1999) joint investments, the ability to measure the agent's performance and uncertainty are deciding factors for the costs of transactions. If transaction costs are low, actors will favor market governance. If they are high, they favor contracting or integration, thereby lowering these costs. Governance forms range from (spot) market relationship, through hybrid governance forms (e.g. contracts) to vertical integration or hierarchy (meaning bringing the activities of various companies together within one legal entity).

In this respect developing country business relationships are subject to many uncertainties caused by poor physical infrastructures (storage facilities, roads, telecommunication, etc.), weak institutional infrastructures (government support, sanction systems, etc.), unbalanced trade relationships (dependencies, opportunistic buyer behavior) and unfavorable social and political conditions, leading to uncertainties and risks for developing country producers (see also previous sections). Transactions are enabled and need to be supported by information exchange about characteristics of the product/service and delivery conditions. However, information exchange between companies in developing countries is in many cases hampered by information asymmetries between chain partners, lacking communication infrastructures, and diffuse market channel structures. This makes monitoring of transactions difficult (David and Han 2004; Grover and Malhotra 2003). An extremely promising development in this respect is the increasing use of cell phones by producers in developing countries, enabling them to transfer information about market demands and sales opportunities (Trienekens and Willems 2007; Ruben et al. 2007). At the same time, in the context of the food sector the introduction of quality and certification schemes goes hand-in-hand with increased monitoring and control by, in most cases, Western buyers and more integrated governance in the value chain, such as long-term contracts, thereby reducing the uncertainties stipulated above (Hueth 2002). In this regard the use of standards

implies reduction of coordination costs, but it may also reduce innovation capabilities that could lead to new value added, as innovation and standardization seem to be opposite forces in value chain development (Dolan and Humphrey 2006).

Summarizing, in general business relationships in international and modern domestic value chains with high investments, uncertain supply markets and weak monitoring and enforcement regimes are safeguarded through more integrated governance forms such as long-term contracts, joint ventures or vertical integration. Control over international value chains does not necessarily mean ownership over production activities throughout the value chain. Coordination and control are in many cases facilitated by standardization and advanced monitoring and communication systems (Trienekens 2009; Gereffi 2005). As also pointed out above, standardization may support consolidation of existing value chain structures where most production of value added takes place in Western countries.

From the global value chain perspective, Gereffi et al. (2005) developed a categorization based on three factors explaining the structure and organization of these chains:

- the complexity of information and knowledge transfer required to sustain a particular transaction, particularly with respect to product and process specifications;
- the extent to which this information and knowledge can be codified and, therefore, transmitted efficiently and without transaction-specific investment between the parties to the transaction;
- the capabilities of actual and potential suppliers in relation to the requirements of the transaction.

They arrive at a categorization of five governance types (market, modular, relational, captive and hierarchy) that reflect differences between the position of the lead firm and specific power/dependency relationships in the chain. This typology is intrinsically dynamic in the sense that governance types can develop from one type into another, from market type in the direction of hierarchy but also from hierarchy type in the direction of market depending on changing market demands and supply structures. The shift can be caused by a number of factors:

- Information complexity changes as lead firms seek to obtain more complex outputs and services from their supply-base.
- Within industries there is a continuous tension between codification and innovation.
- Supplier competences change overtime.

From the global value chain perspective, suppliers roughly rank from commodity suppliers, delivering products through arms-length market relationships, to turn-key suppliers, delivering customer-specific products produced with advanced capabilities (see also Gereffi et al. (2005) and Sturgeon (2001)). Moving from turn-key to commodity supplier information asymmetry and power balance is in most cases in favor of the Western value chain partner. In that respect increasing capabilities of suppliers and subsequent de-commoditization (Fitter and Kaplinsky 2001) of the value chain can lead to more balanced power and bargaining relationships in these chains. Additionally, horizontal relationships, in particular farmers cooperatives or associations

increase bargaining power of small farmers and at the same time lower transaction costs for retailers associated with purchasing from smaller farms.

Roles of value chain partners may change over time. For example, Dolan and Humphrey (2006) describe a development in the UK fresh vegetables and fruit market in which importers are given the role of category managers by the large retail chains, with tasks such as organizing the supply chain, integrating the management of the (whole) chain, developing the category and information exchange on prices, costs and margins. The rise of global value chain "managers" or coordinators (also, for example, 4th party logistics providers, Hsiao et al. 2009) leads to a specific form of relational rent accruing from governorship itself, as already defined by Kaplinsky (2000). In this regard, Gereffi et al. (2005) speak of "mundane" transaction costs – the costs involved in coordinating activities along the chain. These mundane transaction costs rise when value chains are producing non-standard products, products with integral product architectures, and products whose output is time sensitive (Baldwin and Clark 2000). Agricultural value chains are very time sensitive, meaning that highly developed coordination capabilities are needed in these chains, such as in the Dutch flower chain where flowers from countries from all over the world have to be distributed through the auction halls in The Netherlands to customers all over Europe and the rest of the world in a very limited time frame (Vollebregt et al. 2010). The auction organization (a growers cooperative in The Netherlands) is the global value chain coordinator in this respect.

Distribution of Value Added

Distribution of value added over various actors is strongly related to the governance form of the chain and depends on the power and bargaining position of actors, information asymmetry between chain stages and also the production technology used. Although inclusion in global value chains often brings a larger share of value added to developing country producers (Nadvi 2004), prices in Western markets do not automatically translate into prices for developing country suppliers. As Fitter and Kaplinsky (2001) showed, increasing differentiation of coffee prices at the retail or specialty shop outlets does not translate into increasing variance in prices paid at the farm gate (see also Bacon 2005). Differences in market power and dependency relationships have a clear impact on the (choice of) governance regime in trade relationships. A powerful party can dictate governance mechanisms (e.g. Schmitz 1999). In this respect, small-scale producers depend in many cases on downstream parties in the chain, such as intermediaries, transporters or exporters, for input supplies and credits on the one hand and market access on the other.

In communities with strong social structures, trust and number and intensity of relationships play an important role in collaborative agreements between horizontal parties and a subsequent increase of bargaining power. Therefore, the embeddedness of small-scale producers in a network of social relationships can provide them with the social capital to strengthen their position in the value chain (Gulati 1997; Coleman 1990). Trust may play an important role in both horizontal and vertical relationships. Trust is dependent on the duration of a relationship, consistency of exchanges between parties and (economic and social) reputation. In many value chains, trust and reputation replace more integrated governance mechanism as a safeguard against opportunistic behavior and to keep transaction costs low. The next section discusses the third part of our framework: upgrading of value chains.

Value Chain Upgrading

In defining upgrading options we build on the work of Gereffi (1999), Kaplinsky (2000), Humphrey and Schmitz (2002), Nadvi (2004), Guliani (2005), and Gibbon et al. (2008). For example, Gereffi (1999) defines upgrading as: *"…. a process of improving the ability of a firm or an economy to move to more profitable and/or technologically sophisticated capital and skill-intensive economic niches."* McDermott (2007:104) defines upgrading as: *"the shift from lower- to higher-value economic activities by using local innovative capacities to make continuous improvements in processes, products and functions"*.

Kaplinsky (2000) gives four directions in which economic actors can upgrade: increasing the efficiency of internal operations, enhancing inter-firm linkages, introducing new products and changing the mix of activities conducted within the firm. Building on Kaplinsky and others, Pietrobelli and Saliola (2008) define the following upgrading options: entering higher unit value market niches, entering new sectors, undertaking new productive functions and in all cases enlarging the technological capabilities of the firms. In most cases upgrading of value chains is achieved through attention to multiple business aspects, such as combined attention to product and process upgrading or collaborative product upgrading in combination with contractual arrangements. For instance Roy and Thorat (2008), in their study of the Indian grape cooperative Mahagrape, conclude that upgrading capabilities were largely related to the combined attention to innovative marketing in export markets and concurrent provision of technical assistance, inputs and (market) information to the farmers.

In this article we group different upgrading options from the literature according to the value chain elements of our framework: value added production, chain-network structure and governance:

- upgrading of value added production: through innovative products and product differentiation, innovative processes and innovative marketing activities;
- value chain-network upgrading: reaching for the right market and being part of the right market channel
- upgrading of governance form: choosing the right organizational form with horizontal and vertical value chain partners.

Upgrading of Value Added Production

Most approaches to upgrading found in the literature focus on upgrading of value added production. This can take various forms:

- upgrading of products (and packaging)
- upgrading of processes
- functional upgrading (insourcing production or distribution functions)
- inter-sectoral upgrading (where chain actors introduce value adding processes from other sectors to offer new products or services: e.g. a farmer who enters into tourism activities).

Product and process upgrading are most common in developing country value chains. Functional and inter-sectoral upgrading occur less often as most developing country producers are still commodity suppliers for Western value chain partners. Giuliani et al. (2005, referring to Humphrey and Schmitz, 2002b) show that although inclusion in global value chains may facilitate product and process upgrading, *"…firms become tight into relationships that often prevent functional upgrading and leave them dependent on a small number of powerful customers''* (see also Kaplinsky and Morris 2002).

Upgrading of value added in products is always related to (potential) demands in a market. As pointed out before, these can be related to intrinsic (product quality, composition, packaging, etc.) and extrinsic product attributes, which are related to typical process characteristics. In the last decennia attention paid by Western consumers to these extrinsic characteristics has increased considerably, leading companies to increase their attention to corporate social responsibility (CSR), ranging from issues such as labor circumstances to issues such as animal welfare. This has led to a boom in the introduction of CSR principles by Western industries and retailers, offering opportunities for value added niche market production by developing country producers. Figure 5 depicts key dimensions producers and value chains can focus on when upgrading extrinsic product attributes.

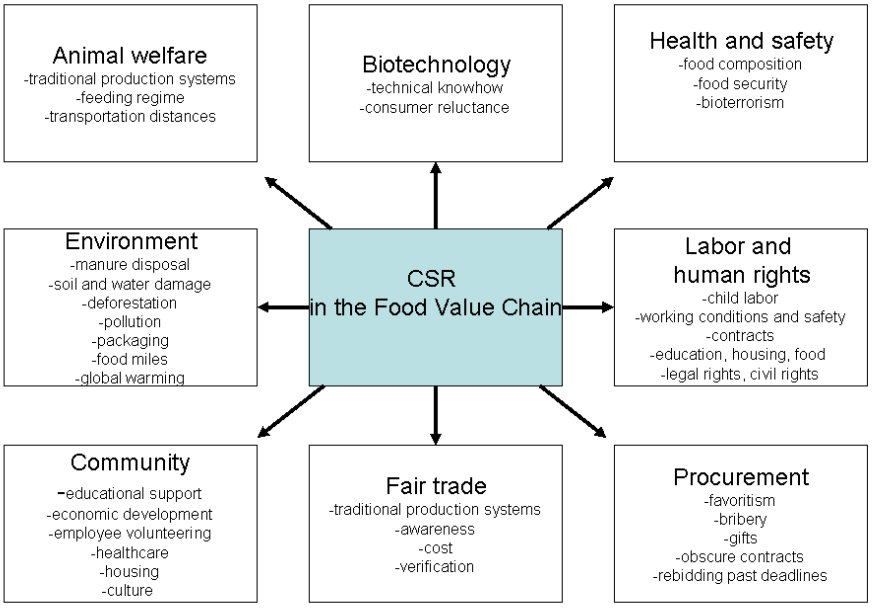

Figure 5. Dimensions of corporate social responsibility in the food chain (adapted from Maloni and Brown 2006).

Process upgrading focuses on the one hand on upgrading the product and on the other hand on optimization of production and distribution processes. The latter includes introduction of new technologies such as automated production and packaging lines, cooling installations and modern transportation technology as well as improved communication facilities in the supply chain such as internet connection, GPS systems or the intense use of mobile phones in production and transportation planning. For example, Francis and Simons (2008) describe how the processes of

the Argentina - UK red meat value chain are continuously improved via programs of waste identification, quantification and root cause elimination, to facilitate continuous learning within this value chain.

As mentioned before, a key issue for developing country producers is functional upgrading, for example to perform value adding activities in developing countries instead of just being commodity producers of products to be upgraded in the country of the Western customer. Aside from in production stages of the value chain, functional upgrading can also take place in intermediary functions, such as in the export sector, where exporters can achieve a role in collection, category management, packaging and sales of products (Dolan and Humphrey 2000). The developments in the apparel sector as described by Gereffi (1999) are a typical example of how value adding activities have been moved from developed to developing countries leading to new and more fine-meshed industry structures worldwide. Although primary processing activities, such as assembly of cars and processing of fruit juices are increasingly moved to developing countries, specialized processing, branding and marketing are still largely located in developed countries. Lowering of tariffs through the new WTO agreements and market differentiation by developing country producers as a response to increasing market segmentation in developed countries can support further development of value added production in developing countries.

Upgrading of Value Chain-network Structure

Upgrading of the network structure includes upgrading of horizontal as well as vertical relationships focusing on taking part in the right market channel. As discussed in previous sections, collaboration with horizontal partners may include joint purchasing of production inputs, joint use of production facilities and joint marketing of products. Moreover, in its most sophisticated form, horizontal collaboration might result in product differentiation combining value adding activities with other sectors of the economy (inter-sectoral upgrading). Many studies on developing country value chains focus on upgrading of horizontal relationships through the formation of producer associations or cooperatives (e.g. Roy and Thorat 2008; Bijman 2007; Rammohan and Sundaresan 2003).

An interesting example of regional upgrading is given by Fisman and Khanna (2004), who describe how the establishment of business groups in underdeveloped regions in India may support the entire development of the region. Large business groups attract supporting industries that can stimulate economic development. They can spread the costs of infrastructure buildings over more assets than a single firm. These improvements at the same time make it more enjoyable for skilled workers to live in the area. Also rotation of skilled workers is commonly used by the groups. Group firms often have an extensive supplier network that also serves them in more remote locations and they have offices in cities where the financial sector is well developed. Additionally, these groups usually have good government contacts to facilitate land-intensive projects. Establishment in less-developed regions is often supported by tax reductions.

Upgrading of vertical network (structure) relationships should focus on being part of the right channel aiming at the right market. Developing country value chains are now increasingly trying to differentiate their market outlets, which makes them less dependent on their current

customers, often Western retailers or industries. However, the previous sections have shown how difficult it is, in particular for small producers, to move to another market channel. Alternatively developing country producers might look for channels to more easily accessible markets, such as South African fresh producers accessing emerging economy markets in Asia, Brazilian pork aiming at the Russian market where quality and safety demands are less severe than in the EU, or Mango producers from Burkina Faso that aim at the Niger domestic market instead of at the European market (Nadvi 2004; Trienekens and Willems 2007; Trienekens et al. 2009; Humphrey 2006).

Upgrading of Governance Structures

Modern market-oriented chains have the tendency to become shorter (with fewer actors) as intermediaries between producers and downstream parties in the chain become superfluous because of the emergence of direct trading relationships between large producers (or producer groups) and downstream parties (e.g. Bair and Gereffi 2003). An example is the transformation of export-oriented producers to producer-exporters in some countries in order to lower transaction costs and exert full control over the supply chain. Inter-company relationships in these chains are often enforced by (transaction-specific) investments of processors or exporters (such as investments in cold stores, seeds, pesticides, credits) to decrease delivery uncertainty and increase quality and quality consistency of deliveries. In general, increased collaboration of actors in value chains may increase market power and facilitate a smooth flow of products and information.

In food chains, quality standards and certification are in particular relevant for business relationships and are often included in contracts. In vertically integrated companies certification by an independent party is of less importance, although the use of standards may be required.

Business relationships are supported by agreements between the parties involved. These can range from oral agreements to written contracts. A distinction can be made between a classical version of a comprehensive contract (where everything is fixed ex ante for the entire duration of the contract, covered by the law of contract) or a relational version (allowing for gaps not closed by contract law, embedded in a social system of relationships and subject to continuous re-negotiations). Because there is no such thing as a “complete” contract – especially not in developing countries with weakly developed institutional structures – many companies tend to prefer relational contracts implying interpersonal relationships and trust.

Horizontal collaboration between actors is in many cases considered an important enabler of value chain upgrading. Mesquita and Lazzarrini (2008), in their study of the impact of network relationships on market access, find that strong network ties between companies help substitute for the lack of a strong institutional setting to support arrangements between companies and in value chains. SMEs can exploit complementary competencies, share knowledge, technologies and inputs and develop greater responsiveness to global demands, and attain greater export levels as a result. Lu (2007, 2008), in his study into the relationship between social capital (Guanxi in China) and performance of vegetables chains, finds that producers with tighter social relationships with other economic actors in the value chain tend to be more successful.

Moreover, he shows that relationships considered traditional in these communities are of great importance to get access to modern markets.

Other studies focus on the role of clusters in upgrading. Gibbon (2001) finds that cluster-based upgrading demands an external push to be successful, such as a linkage to export networks. Giuliani et al. (2005) study relationships between clustering and innovation focusing on Latin American cases. They find that product and process upgrading may be strongly supported by knowledge and technology in related industries (e.g. plants and seeds). Also, public-private action through business-government-research institute collaboration can support innovation and upgrading processes in these clusters. Additionally, Murphy (2007) shows in a study on the Tanzanian furniture industry in Mwanza that insufficient government support and lack of collaboration due to mistrust (stealing of ideas) prevent cluster development.

In summary, upgrading of developing country value chains is related to:

- addressing markets that offer opportunities for increased value added,
- innovation in products, including marketing activities, and processes,
- vertical and horizontal organizational arrangements that enable chains to capture value from markets for various chain actors.

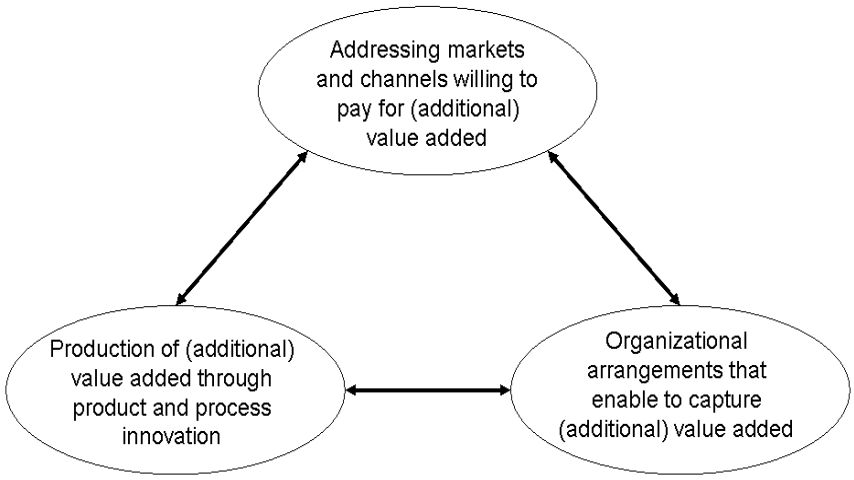

Figure 6. Developing country value chain upgrading options

Figure 6 shows the upgrading triangle. All three upgrading options are closely related. Production of value added only makes sense when there is a market for it. Distribution of value added over various actors is dependent on the governance structure (organizational arrangements) in the value chain. Organizational arrangements are closely related with power relationships in the value chain and thereby with the type of market addressed (e.g. local versus international market).

Application of the Value Chain Framework

We applied the above framework to the bottled Tawilis value chain case, as presented in Almazan et al. 2011). Tawilis is the only freshwater sardine in the Philippines, which can only be found in Taal Lake. For more than a decade, Tawilis has been processed into "Spanish sardines" in oil, more popularly known as bottled Tawilis. To date, Tawilis is reported to be exploited at the rate of 62% of the stock per year compared to the optimum of 30 to 50%. The main reason for the dwindling supply of Tawilis is the illegal operation of active fishing gear, overfishing, proliferation of cages and deterioration of water quality. In this research we investigated the current value chain and options for upgrading it towards a sustainable fish production chain. A survey among fishermen, traders and processors was performed in 2010. Figure 7 depicts the main features of the Tawilis value chain structured according to our framework.

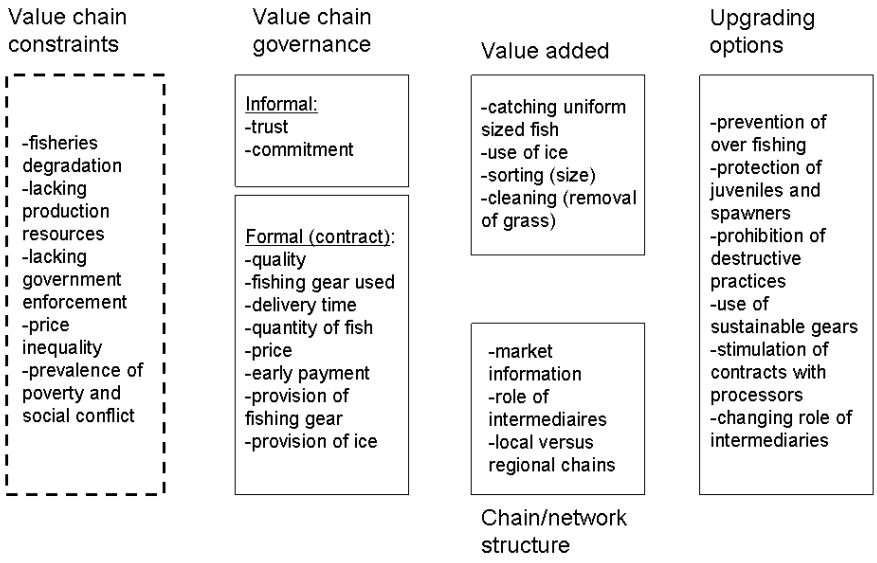

Figure 7. Main Features of the Philippine Tawilis Value Chain

Value chain constraints: Degradation of the sector has not been stopped through new government legislation or enforcement of current regulations. Fishermen also lack the means to buy the right gear or (a share in) a boat. They depend on the informal sector for credits, which prevents them from buying new fishing gear or using ice. Moreover small fishermen in particular are confronted with decreasing catches of fish, in part because of competition from larger fishing companies, leading to lower incomes of these fishermen and poverty in the fishing community.

Value chain governance: Most relationships in the value chain are long term, with family members or intermediaries who are members of the same community, based on trust and commitment. Many fishermen are dependent for credits on these intermediaries and remain with the same ones for years. Larger-scale fishermen often have formal contracts that specify product quality (size), delivery conditions, payment, and in some cases provision of fishing gear and ice.

Value added processes: The use of ice, sorting (size) and cleaning are the most important value adding processes in the current chain.

Chain-network structure: Information on local prices is well known by most actors. However, information about prices and requirements for bottled Tawilis in regional, and recently in national markets, is not shared broadly in the community. Especially for local production (by far the largest share in the current situation) intermediaries have a strong position in the chain even surpassing the position of the processors or retailers who depend on them for their supplies.

Upgrading: Upgrading of the production process through the use of sustainable gear is required in order to protect the main resources in the area (Tawilis sardines), but also for the fishermen to be able to deliver uniform-sized fish (product upgrading) to their customers. Moreover, the government should play a much stronger role in enforcement of legislation that supports this development. Upgrading of the channel (chain-network) structure can take the form of direct deliveries from fishermen to local processors or regional traders, thereby opening up opportunities for new markets. This will decrease transaction costs but also enable fishermen to enter into contracts with these processors who have the largest interest in uniform-sized fish and can reimburse quality and sustainability enhancing efforts of the fishermen. In fact one of the (preliminary) conclusions of this research is that contracts combined with transparent and formal credit facilitation between processors and fishermen may be the best guarantee for sustainable fishing practices in the future.

Reflecting on our value chain analysis framework (figure 3), value chain upgrading possibilities depend on the type of products and processes, and related value adding possibilities (uniform size and cooled fish), the market(s) addressed and possible channels to that market (through intermediaries or through direct contracts in the Tawilis chain), and finally the organizational arrangements between actors of these channels (trust and commitment alongside formal contracts for larger producers). Furthermore, these possibilities are constrained by the business environment of the value chain: market access/barriers (lack of information about more distant markets), available resources and infrastructures (lacking for small fishermen) and the institutional environment (weak enforcement regime of the government). This case shows the need and usefulness of an integrated analysis of this value chain and the role played by the elements of the framework we propose.

In the next section we will address management and policy implications for value chain upgrading which can be drawn from the framework and other studies referred to in this paper.

Management and Policy Implications

Upgrading in value chains can only be achieved through partnerships: private-private (between actors in the value chain) and public-private (between actors in the value chain and facilitated by an external party).

Upgrading by value chain actors (private-private) is in by far the most cases initiated by a lead party in the value chain (Gereffi 2005). The incentives for such a party can be access to higher quality materials or products, more efficient production and distribution processes, ensuring

supply of input materials in sufficient quantities (e.g. by a cooperative), or access to new markets. Examples of private-private upgrading have been given in previous sections, such as Unilever's inclusion of small tea producers from Kenya in its value chain or Nestle's move of value added *Nescafe* production to Brazil.

Non-chain actors can facilitate upgrading processes either by providing technological, organizational, political and educational support or by changing the macro-cultural discourse in general. For instance, in his case study on the upgrading process of the Argentinean wine industry, McDermott (2007) describes how the government facilitated the farmers in training and R&D and launched new collaborative arrangements among public and private actors. Also in other studies the presence of a third, external, party is mentioned as a major enabler of change and upgrading. For example, Perez-Aleman and Sandilands (2008), in their analysis of the sustainable production program of Starbucks, show the power of NGOs that brought about significant changes in the purchasing policies of Starbucks and also point at the presence of an independent external certification organization in the upgrading process of the value chain. Riisgaard (2009) points at different "actors for change" in defining and upgrading labor standards in the East African cut flower industry: in Tanzania the lead was taken by the labor unions, while in Kenya NGOs are the key player in the upgrading process. He also underlines the important role of Western retailers setting up CSR standards for their developing country suppliers.

However, evidence in the literature on the positive role of third parties in upgrading is far from conclusive. For example, Hanna and Walsch (2008), in their study on cooperation among small manufacturing firms, conclude that networks developed with the help of brokers were less successful than networks operated by the companies themselves. They show that networks developed with the aid of brokers focused on reducing costs and enhancing business processes, whilst firms developing their own networks focused on the ability to coordinate skills and joint targeting of market opportunities. This case shows that it is not only the parties that collaborate that enlarge chances of success but also the focus of their joint upgrading efforts.

Actors for change may include value chain actors (retailer, industry, producer cooperative) or non-chain actors (governmental organizations, NGOs or other parties in the business environment of the chain such as banking institutions or service providers). We will distinguish in value chain upgrading support from government and NGOs and support from chain actors and other economic actors.

Governments and NGOs may support value chain upgrading through legislation, regulations and policies that relax value chain constraints (figure 3). These may:

- provide market access through negotiating lower barriers for (international) trade;
- support physical infrastructure development to achieve a smoother flow of products through the value chain (better roads and distribution facilities such as storage of products and better communication infrastructures);
- give access for value chain actors to production technology and other resources through for example import subsidies, and provide access to credits;

- support knowledge infrastructure development by setting up well-functioning education systems and providing training facilities;
- provide a stable economic, political and legal climate.
- (e.g. Germott, 2007).

Businesses, in particular lead parties in the value chain, play a key role in value chain upgrading. These can be individual businesses, in many cases large companies, or groups of smaller businesses, such as horizontally organized cooperatives or producer groups (Ton and Bijman, 2006). Important activities may include:

- supporting product and process innovation linked to market requirements;
- developing and setting standards (quality, labor, environmental, trade, etc.) tuned to the possibilities and constraints of value chain producers;
- streamlining the value chain through better communication and planning and provision of communication means;
- setting up vertical governance mechanisms that facilitate a smooth flow of products and better distribution of value added;
- setting up horizontal governance mechanism to improve the power balance in the value chain and enhance the bargaining position of small producers(e.g. Ruben et al. 2007; Gibbon 2001).

A reflection on the elements contained within this framework could be useful in achieving balanced upgrading solutions for developing country value chains.

Conclusions

In this paper, we introduce value chain analysis in terms of its theoretical background and its application to value chains in developing countries. Although studies on value chains have provided valuable insights into their operations, our understanding of how value chains develop toward improved performance, termed ‘upgrading’, is limited. Most value chain studies to date focus on market relations and pay little attention to the business environment in which chain actors operate. Yet, this environment may both enable and constrain value chain upgrading processes. For a balanced analysis of value chains we proposed three key elements: network structure, of horizontal and (vertical) market channel relationships; value added, as related to the key competitive aim of any business chain; and governance, covering organizational arrangements between value chain actors. These elements should always be studied as embedded in the value chain’s business environment, where we focus on markets, resources and infrastructures and institutions. Moreover, they form the basis for our categorization of value chain upgrading options. Value chain actors may be motivated to improve their position in the chain by changing their production of value added, their relationships (governance) with other actors in the value chain and by choosing different market channels for their products. Finally, the role of non-value chain actors, such as development organizations and interest groups, in upgrading value chains has not been widely examined. However, with recent developments such as corporate social responsibility and pro-poor market development, these actors are likely to play a pivotal role in value chain upgrading.

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