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## DELIVERABLE I – Literature Survey

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### SADC/PRINT – VAIMS PROJECT

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## **1. Introduction**

This project aims to review, apply, and adapt existing value chain techniques that are both relevant to small stock, commercial as well as smallholder livestock systems and are adaptable for analysis in other settings. It will develop and employ an information management system that will support both qualitative and quantitative analysis of value chains that informs decision-makers on alternative, best-bet interventions at a chain level.

This type of information and analysis will help improve smallholder access to livestock markets, facilitate information sharing, and thus contribute to the development of successful value chains at a practical and institutional level. The study will leverage the collective strengths of the consortium comprised of the University of the Free State, University of Stellenbosch, and the International Livestock Research Institute (ILRI) in terms of expertise in Value Chain Analysis (VCA), animal science, and livestock economics, and agriculture (more specific livestock economics), will utilize the significant experience and reputation each institute has in the SADC region.

## **2. Background and motivation**

The livestock population in the SADC region is largely dominated by ruminants, with 47 million head of cattle, 28 million goats, 31 million sheep, and an estimated 245 million poultry. Population growth rates for cattle in the region are very low or even negative in some countries, whereas population growth rates for goats and sheep are positive (SADC PRINT Technical dossier, National Agricultural Statistics). While cattle numbers are relatively stable, goat numbers are increasing in almost every country. Sheep, although present in all countries are far less in number than goats—except in South Africa and Namibia where numbers in recent years stabilized just

below the 3 million figure in the latter. Most of these sheep are kept by large scale commercial and a hand full of small scale commercial farmers.

Substantive evidence exists about a slowdown in the relative importance of the livestock industry's ability to lead re-engineered growth in the generation of wealth in SADC countries. Producers and prospective producers, being virtually without relevant, accurate market information are seriously disadvantaged in basic decision-making concerning production opportunities and marketing options. Such a disadvantage contributes to very cautious enterprise entry and/or expansion and also to delayed market response by small-scale farmers and established ranchers alike.

This is at a time when the red meat industry is competing in a global market with countries that have ever changing and innovative consumer driven red meat industries constantly increasing their productivity at every level of the value chain. Better genetics has improved herd performance and productivity, while better pre- and post slaughter activities has improved the sustainability in quality of the end product. New product development are aimed to satisfy consumer preferences, especially in terms of the non-economic factors such as palatability, tenderness, variety, traceability and ethical factors such as the humane treatment of animals. Overarching these developments is more efficient information flow systems to inform value chain role players. Moreover, internationally red meat value chains have evolved rapidly and were re-engineered to better serve local and international consumers.

Commercial smallholder market access is limited by a number of factors throughout the livestock value chain. These factors include, poor access to markets, poor quality coupled with rising animal feed prices that increase production costs and deplete margins, little knowledge regarding animal health and disease control as well as limited knowledge with regard to animal improvement in the form of scientific breeding processes, distorting government policies, the lack of proper information

and the timeliness thereof, high transaction costs as well as imperfect monopolistic markets that depress prices and market incentives for farmers. A primary concern among many in the development community is the potential exclusion of the small-scale producers to these growing markets because of the emergence of strict vertical coordination relationships and supermarket procurement systems as well as the increasing specifications in terms of to health, hygiene, and product quality standards required by the export markets (Rich, Negassa and Ross, 2008).

With the growing importance of high-value agriculture in developing countries and its consequent complexity, efficient supply chain management is crucial to deliver products in a safe and timely manner (Rich and Narrod 2005). These supply chains require various coordination mechanisms used to manage the flow of products between intermediaries and ensure that quality specifications are met. Consequently, analytical tools and frameworks that provide guidance into the functioning of such chains are important means to understand whether such developments have positive or negative impacts on smallholders and to what extent the poor can benefit from these developments and to assist governments with policy reform towards effective agricultural systems, regional integration, etc.

Value chain approaches have been utilized by both researchers and development practitioners alike as a means to capture the dynamics of these fast-changing markets and to examine the inter-relationships between diverse actors that govern all stages of the marketing channel (see Rich *et al* 2008 for a review, but relevant sources include Kaplinsky, 2000; Dolan and Humphrey, 2000; Fitter and Kaplinsky, 2001; Ponte, 2001; Schmitz and Knorringa, 2000; Giuliani, Pietrobelli, and Rabellotti, 2005; Humphrey and Napier 2005). Value chain analyses alert stakeholders to inequities in power relationships based on the governance of the supply chain and have highlighted potential points of entry (and exclusion) for smallholders and identify the key relationships that need to be strengthened from a policy perspective, thus moving development thinking towards more of a systems approach (Rich *et al*.

2008). At the same time, however, there is a crucial need to apply these in the context of livestock systems in developing countries.

To that end, this project will review, apply, and adapt existing value chain analysis techniques that are both relevant to smallholder livestock systems and are adaptable for analysis in other settings. It will develop and employ a value adding information management system (VAIMS) that supports both qualitative and quantitative analysis of value chains that informs decision-makers on alternative, best-bet interventions at a chain level. This type of information will help improve smallholder access to livestock markets, facilitate information sharing, and thus contribute to the development of successful value chains at a practical and institutional level.

### **3. Objective**

The primary objective of this study is to create a methodology package for a VAIMS for marketing of livestock, more specifically small stock (sheep and goats), in the SADC region.

In order to achieve this primary objective, the following sub-objectives must be achieved:

1. The compilation of a literature review on methodologies used to analyse market chains in order to find the best fit methodology or adapt the best methodology for mapping and analysing the small stock sector in the SADC region (descriptive)
2. Identify the key variables required for the quantification of the small stock sectors in the SADC region

The project will focus on the mapping and quantification of the value chains within the small stock sector in the SADC region and will include the data requirements for the analysis of these value chains at different stages. The mapping and quantification of the small stock sector in the SADC region will ultimately lead to the

construction of an Information Management System (IMS) that can be used by the region as a whole.

## **4 Methods to analyse market chains**

Firstly it is important to distinguish between supply chains and value chains. The supply chain literature has its roots in the industrial engineering faculties and business schools and is aimed at creating a competitive advantage through unique and more efficient supply chain management while the value chain literature is rooted in development studies and sociology and started from the observation that agricultural and industrial development processes in developing countries are increasingly based on the interaction with lead firms in industrialised countries with the main focus at the analysis of power structures in the world economy (Meyer-Stamer and Wältring, 2007).

For the purpose of the study, this review will focus on value chain analysis as defined by Kaplinsky and Morris (2000), as the full range of activities required bringing a product or service from conception through the different production stages to the end consumer, and final disposal after that.

Various methods all aimed at analysing value chains, both qualitatively and quantitatively exist today. In this section an overview of the evolution of value chain analysis is provided. Early literature from the 1960's includes subsector analysis (SSA) as a tool used in subsector research and is similar to those employed in other economic and business studies. According to Boomgard, Davies, Haggblade and Mead (1986) subsector analysis arose from the confluence of several closely related strands of applied research and draws on work done in the marketing literature as well as that of business schools and on the industrial organisation literature in the economics profession.

It was also during the 1960s that the French scholars used the French *filière* (also known as Commodity Chain Analysis or CCA) approach to analyse the vertical integration and contract manufacturing in French agriculture. This concept describes the flow of physical inputs and services in the production of a final product (Roduner, 2004). Because of the static nature of this approach, i.e. non changing actors and national boundaries, it is less functional in analysing the global world economy. (Stamm, 2004). According to Roduner 2004 analysts using the French *filière* approach borrowed from different theories and methodologies and this is why the approach is seen as a “loosely-knit set of studies with the common characteristic that they are a *filière* (or thread) of activities and exchange as a tool and to delimit the scope of their analysis” compared to the global commodity chain approach which is centred on contributions form a distinct school of thought.

The *filière* approach also tends to be more static reflecting relations at a certain point in time (Kaplinsky and Morris, 2000). Kaplinsky and Morris (2000) state that, although there is no conceptual reason for that, *filière* analysis has generally been applied to domestic value chains which mean that *filière* analysis normally stops at national boundaries.

Global Commodity Chain Analysis (GCC) was introduced by Gereffi during the mid-1990s and primarily focuses on the analysis of the international trading system and the increasing economic integration of production and marketing chains (Roduner, 2004). CCA highlights the power relations which are embedded in value chain analysis and focuses on the governance of a chain. Gereffi (1994) showed that many chains are characterised by a dominant party who determine the overall character of the chain. Those dominant parties act as lead firms that become responsible for upgrading activities within individual links and coordinating interaction between the links. Gereffi identifies four dimensions of global commodity chains. Firstly, the input-output structure of the chain, secondly the territory it covers, thirdly its governance structure, and finally the institutional framework that

identifies how local, national and international conditions and policies shape the globalisation process at each stage in the chain

Porter (1985) described the value chain as the activities an organisation performs and links them to the organisations' competitive position. Therefore it evaluates which value each particular activity adds to the organisations product or services. VCA builds on the foundation of the SSA framework and can help an institution determine which type of competitive advantage to pursue, and how to pursue it. Porter (1985) identified five competitive forces interacting within a given industry: the intensity of rivalry among existing competitors, the barriers to entry for new competitors, the threat of substitute products and services, the bargaining power of suppliers, and the bargaining power of buyers.

Figure 1 illustrates how these three approaches overlap and build on each other. The following three sub-sections provide a more detailed review of the various approaches starting with SSA followed by CCA and GCC and finally VCA.

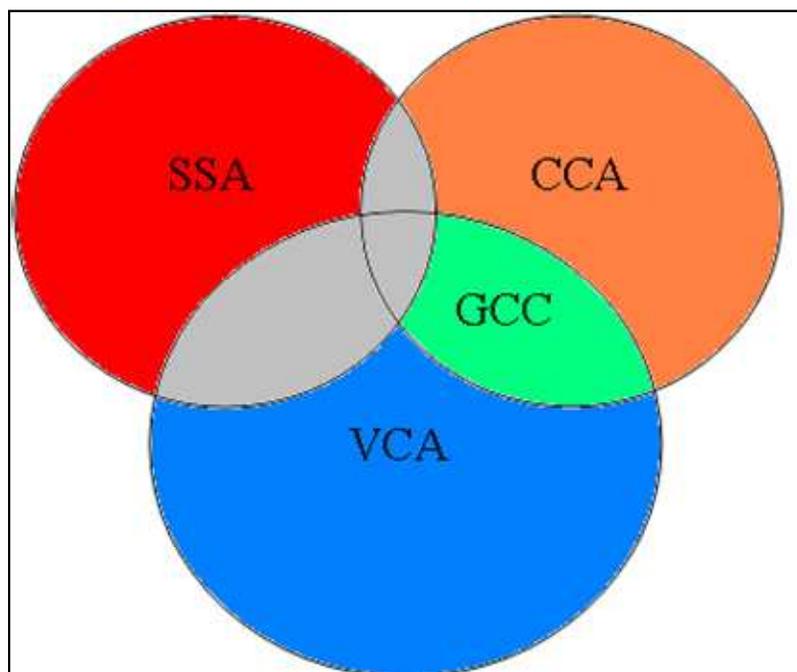


Figure 1: The evolution of chain analysis

## **4.1 Subsector analysis**

Boomgard *et al.* (1986) states that historically virtually all subsector work focused on agricultural commodities that described and evaluated the economic networks through which individual commodities are transformed and distributed to their ultimate consumers.

According to Boomgard *et al.* (1968), the term subsector analysis is somewhat misleading in the sense that a “subsector” does not refer to a subcomponent of an individual sector of the economy, but rather a set of economic activities that cuts across several sectors i.e. the agricultural- industrial- and commercial sectors. Holtzman (2002) defined a subsector as a vertically linked chain of production, marketing and transformation activities that move an agricultural commodity from the field to final distribution to consumers. Further, subsector analysis uses the underlying framework from industrial organisation theory in economics namely: how the commodity subsector is organised (structure), how the participants in the subsector behave or interact (conduct), and how the subsector performs in the aggregate (performance), (See Figure 2).

In addition, Holtzman (2002) classifies subsector analysis as a dynamic approach which examines how, not only markets but also industries respond to changes in international supply and demand conditions for a commodity, changes in technology and changes in management techniques.

SSA provides a framework for the evaluation of enterprise performance on sub-sector level through the analysis of the functioning of each actor in the chain, including cross-linkages, competition and coordination. Bottlenecks and opportunities are identified and by applying the leverage principle, effective, cost efficient interventions can be designed to impact on the chosen category of enterprises. (HPC , 2003)

SSA differs from conventional producer/consumer surplus types of analysis in terms of the degree of competition in food industries and within subsectors; the degree of innovation and technological change and their impact on performance; the economic incentives to invest, innovate, and improve organisation and management at the firm level; how international supply and demand conditions affect domestic production of agricultural commodities and domestic and international market opportunities and how well coordinated a subsector is across stages and the result in terms of product cost, quality, timeliness, and packaging (Holtzman, 2002).

Lusby and Panlibuton (2004) defined a subsector as a range of activities required to bring a product or service to the final consumer and includes producers, processors, input suppliers, exporters and retailers as well as vertical and horizontal linkages between them and highlighted four elements of importance in SSA namely the understanding of product markets and market trends; the relationships between participants; the identification of constraints and opportunities (technology, market access, organisation, policy, finance input supply, etc.) and subsector mapping in terms of the graphic presentation of inter-relationships within the sector.

Table 1 explain ten key areas of investigation in commodity subsector analysis and provides a checklist in matrix form of important areas to take under consideration when a subsector analysis is conducted. A major challenge to such an approach is to focus on the minimal and necessary information needs for the purpose of the VAIMS for livestock, whether it is for an initial diagnostic assessment or a baseline study for impact assessment. A potentially important contribution of a thorough subsector baseline study, used in impact assessment, is to pull together available information in a coherent and integrated package. If done well, such a baseline study can serve as a useful reference point for other analysts, policy makers and their assistants, selected trade association representatives and private industry managers. (Holtzman, 2002)

According to Holtzman (2002) The first two areas of investigation in Table 1 namely; commodity characteristics and consumption patterns are of importance because of

their specific relevance towards agricultural products and more specifically livestock and livestock products because of the perishability and post harvest/slaughter care (maintaining quality and freshness of food products requires investments in storage facilities, pre-cooling, sorting, transport and handling equipment). Consumption patterns refer to the demand of the product or the pulling effect of the product through the system.

Also included as areas of investigation is the domestic supply situation, commodity price relationships, international trade considerations, marketing system infrastructure, government institutions and policies and finally, the timing of a subsector study conditions what an analyst is able to observe.

**Table 1: Key areas of investigation in commodity subsector studies**

<b>Areas of investigation</b>	<b>Contents</b>	<b>Method of inquiry</b>	<b>Reasons for investigating</b>
1. Commodity Characteristics	<ul style="list-style-type: none"> <li>a) Different grades, end uses.</li> <li>b) Degree of bulkiness, perishability.</li> <li>c) Physical/handling requirements.</li> <li>d) Degree/type of processing</li> <li>e) Types and magnitude of post-harvest losses</li> <li>f) Packaging methods and materials for shipment and sale</li> </ul>	<ul style="list-style-type: none"> <li>1) Review commodity manuals, studies.</li> <li>2) Develop commodity calendars showing periods of production and transformation</li> <li>3) Observation of handling, processing, storage, any sorting or grading, and packaging</li> <li>4) Assess nature and degree of post-harvest losses in a rough way</li> </ul>	<ul style="list-style-type: none"> <li>a) Commodity characteristics can influence operation of the subsystem, which functions are performed, how they are performed, and the relative cost at which they are performed</li> <li>b) The nature of the production process influences the timing and magnitude of producer sales and market flows.</li> <li>c) Post-harvest losses are high in many countries. Identification of causes and means of reducing losses can expand food availability.</li> </ul>
2. Consumption Patterns	<ul style="list-style-type: none"> <li>a) Seasonal and secular trends in domestic and export markets.</li> <li>b) Disaggregated consumption</li> </ul>	<ul style="list-style-type: none"> <li>1) Review consumption studies, food balance sheets, and demand projections.</li> </ul>	<ul style="list-style-type: none"> <li>a) Demand drives (or pulls) commodities through subsystems.</li> </ul>

<b>Areas of investigation</b>	<b>Contents</b>	<b>Method of inquiry</b>	<b>Reasons for investigating</b>
	<p>patterns by= socioeconomic and ethnic group.</p> <p>c) Future market prospects.</p>	<p>2) Construct food balance sheets if data are available.</p> <p>3) Interview nutrition/consumption researchers, selected commodity importers, exporters, institutional buyers, and rural and urban consumers.</p>	<p>b) The strength and seasonality of demand affect production and storage incentives, as well as the direction and magnitude of marketed flows.</p> <p>c) Longer run trends and opportunities affect investment decisions of participants in the subsystem.</p>
3. Supply Situation	<p>a) Production by year and by region for recent years, noting trends and variability.</p> <p>b) Stocks for transformation and consumption by season and region.</p> <p>c) Flows from major supply areas to major markets, including imports and exports.</p>	<p>1) Review commodity studies.</p> <p>2) Interview large wholesalers, parastatal managers, crop production researchers, importers, exporters, processors, cooperative and trade association officials.</p> <p>3) Use map to show flows and apparent surplus and deficit areas.</p>	<p>a) Supply and demand are basic elements of economic analysis.</p> <p>b) Production levels and variability affect prices (depending on elasticities), returns via the price mechanism, and risk perceptions of producers.</p> <p>c) The level of stocks during different periods affects</p>

<b>Areas of investigation</b>	<b>Contents</b>	<b>Method of inquiry</b>	<b>Reasons for investigating</b>
		4) Describe seasonal variation in stocks and flows.	<p>seasonal variation in prices and commodity availability.</p> <p>d) Shifts in supply over time may indicate response to policies, technological change, the institutional environment, and alternative institutional arrangements.</p>
4. Price Relationships and Seasonality	<p>a) Secular trends in real prices at the farmgate, wholesale and retail levels.</p> <p>b) Seasonal and cyclical trends in prices.</p> <p>c) Changes over time in relative price relationships.</p> <p>d) Changes over time in input/output price and (product) value/(input) cost relationships.</p>	<p>1) Gather secondary price data for the commodity and close substitutes/complements for a ten or more year period.</p> <p>2) Deflate prices or express prices in constant price terms.</p> <p>3) Analyze secular, cyclical and seasonal price trends, and changes in relative price relationships over time.</p> <p>4) Estimate supply and demand relationships if data permit.</p>	<p>a) Relative prices are a measure of the structure of incentives facing food system participants.</p> <p>b) Changing relative price relationships may indicate shifts in production and marketing incentives, especially if coupled with accurate production and marketing cost data.</p> <p>c) The domestic pricing structure relative to international prices provides insight into regional</p>

<b>Areas of investigation</b>	<b>Contents</b>	<b>Method of inquiry</b>	<b>Reasons for investigating</b>
		5) Calculate input-product price ratios, and/or value-cost ratios over several years.	and national comparative advantage. d) Input-product price and value-cost ratios are proxies for the profitability of agricultural production.
5. Food System Participants and Organization	a) Marketing channels and commodity subsector stages. b) Important assembly, redistribution and terminal markets. c) Types, numbers, and geographical distribution of firms at key subsector stages. d) Prevalence and importance of alternative institutional arrangements, such as contracts, vertical integration, direct marketing, cooperatives, and spot markets.	1) Review previous commodity studies. 2) Check if existing enumerations or sample frames in government agencies (e.g., licensing offices). 3) Interview knowledgeable observers of subsectors and selected participants. 4) Draw a subsector map (flow chart) showing principal stages and marketing channels.	a) Food system organization (or structure) influences the conduct of participants, which in turn affects performance. b) High levels of concentration of firms at particular stages of the food system may lead to higher production/marketing costs than under conditions of lower concentration. c) Prevalence of myriad small firms who fail to specialize at one or more levels of the food system may lead to scale

<b>Areas of investigation</b>	<b>Contents</b>	<b>Method of inquiry</b>	<b>Reasons for investigating</b>
		5) Use a geographic map to show important marketplaces. 6) Identify firms using alternative coordination mechanisms and do case studies.	diseconomies and high costs. d) Analysts need to examine the benefits and costs of alternative institutional arrangements as the food system evolves.
6. Subsector and Food System and Operation or Behavior	a) Practices and strategies of subsystem participants (individuals, firms, organizations for procuring inputs, processing, storage and marketing of outputs). b) Vertical coordination mechanisms: exchange arrangements, risk-reduction/sharing, information dissemination. c) Sources, uses and distribution (equity) of production and marketing information.	1) Identify key stages and participants. 2) Develop informal interview guidelines. 3) Sample purposively based upon knowledge of the population of potential respondents from previous records or studies, or from the above characterization of subsystem (#5). 4) Conduct selected in-depth informal interviews. 5) Crosscheck findings with	a) Operation and behavior in the aggregate affect food system performance. b) Information is costly to gather and process, and access is unequal. This affects the ability of different size firms to respond to changing market conditions. c) The adaptability and responsiveness of commodity subsystems to changing conditions and uncertainty affect levels of output and performance, as well as the

<b>Areas of investigation</b>	<b>Contents</b>	<b>Method of inquiry</b>	<b>Reasons for investigating</b>
	<p>d) Adaptability and responsiveness of subsystem to shifting supply/demand, exogenous shocks, policy changes and uncertainty.</p> <p>e) Evidence of market power.</p>	<p>other subsystem participants and knowledgeable observers.</p>	<p>continued viability of the subsystem in a particular country.</p> <p>d) Better vertical coordination can improve the matching of supply and demand at successive stages of the food system and reduce risk. It is important to determine if this is associated with limited entry, unequal access to information, and unequal sharing of risks and rewards.</p>
<p>7. Marketing System Infrastructure</p>	<p>a) Physical infrastructure (transport, including roads, ports, airports and waterways; marketplaces; storage and processing facilities; communications; electricity; water supply).</p>	<p>1) Review studies of transportation and communication infrastructure, storage/processing capacity and utilization, and marketplaces.</p> <p>2) Inspect and assess the</p>	<p>a) In some developing countries infrastructural constraints constitute severe bottlenecks that slow food system development and penalize isolated areas and regions.</p> <p>b) Excess, underutilized capacity</p>

<b>Areas of investigation</b>	<b>Contents</b>	<b>Method of inquiry</b>	<b>Reasons for investigating</b>
	<p>b) Infrastructure adequacy and bottlenecks.</p> <p>c) Evidence of excess or unutilized capacity.</p>	<p>adequacy of a sample of the above.</p> <p>3) Use a map to show key infrastructure.</p> <p>4) Identify bottlenecks and constraints, uneconomic excess capacity (or inappropriate scale).</p>	<p>suggests uneconomic investments and resource misallocation.</p>
<p>8. Government Marketing Institutions and Policies</p>	<p>a) Regulatory environment: rules; input and product regulations; laws affecting marketing and trading activities; property rights.</p> <p>b) Public marketing institutions (parastatals, cooperatives, joint ventures); the extent and nature of their participation in marketing; effect on the behavior and performance of private participants in the food system.</p> <p>c) Macroeconomic policies: price</p>	<p>1) Regulations: use informal interviews with subsector participants to identify vexing or constraining regulations. Do follow-up interviews with selected policy-makers.</p> <p>2) Institutions: interview managers, determine the organizational mandate, outline its functions, estimate its market share, examine its pricing policies, assess the</p>	<p>a) The regulatory environment generally and specific regulations in particular affect the behavior and incentives of food system participants.</p> <p>b) Public marketing institutions dominate food systems in some countries, influence the organization, operation and performance of food systems in many countries, and generally affect the behavior of system</p>

<b>Areas of investigation</b>	<b>Contents</b>	<b>Method of inquiry</b>	<b>Reasons for investigating</b>
	<p>policies; exchange, interest, wage rate policies; fiscal and monetary policies.</p> <p>d) Banking and credit policies.</p>	<p>effectiveness of distribution and marketing services, and assess the impact of its participation on system performance.</p> <p>3) Policies: review macroeconomic assessments of the World Bank, IMF or others. Assess the impact of policies on the organization and operation of the food system &amp; the incentives of different system participants.</p> <p>4) Interview bank and credit agency officers. Determine whether credit is subsidized, how it is rationed, who gains access, and the sectoral distribution of credit.</p>	<p>participants.</p> <p>c) Macroeconomic policies condition and shape the environment in which system participants make decisions about investments and operations.</p> <p>d) All of the above contribute to food system stability and/or uncertainty, which greatly influence behavior.</p> <p>e) Banking and credit policies determine who gains access to formal credit, which is often subsidized.</p>
9.International Trade	a) Commodity exports and world	1) Analyze trade quantity and	a) Few, if any developing country

<b>Areas of investigation</b>	<b>Contents</b>	<b>Method of inquiry</b>	<b>Reasons for investigating</b>
and Commodity Competitiveness	<p>market situation.</p> <p>b) Imports of the commodity or substitutes and their impact on domestic production, markets and prices.</p> <p>c) Trends in exports and imports.</p> <p>d) Likely changes in exports and imports, and emerging market opportunities or dependencies.</p> <p>e) The competitiveness of exports in particular foreign markets.</p>	<p>price data available in statistical abstracts or outside assessments.</p> <p>2) Review international commodity production, price and trade forecasts.</p> <p>3) Compare prices of domestically produced commodities with international prices.</p> <p>4) Analyze the competitive position of a specific export commodity in key markets. Examine trends in export levels, market shares and prices, and ascertain reasons for changes.</p> <p>5) Interview exporters and importers and major domestic buyers in the foreign markets.</p>	<p>food systems are autarkic. International trade in agricultural commodities affects production and marketing incentives, consumption patterns and preferences, and the behavior and opportunities of system participants.</p> <p>b) International market conditions influence developing countries' comparative advantage in production and export (import) of agricultural commodities.</p> <p>c) In assessing export competitiveness, site visits to markets and buyers' premises and in-depth interviews with importers and end users in foreign markets provide a good picture of how a country's</p>

<b>Areas of investigation</b>	<b>Contents</b>	<b>Method of inquiry</b>	<b>Reasons for investigating</b>
		<p>6) Visit export-staging and import-receiving facilities.</p> <p>7) Inspect exported produce in terminal markets and compare with that of competing suppliers.</p>	<p>exports compare with those of other suppliers. Such visits to foreign markets often yield concrete input and insights into what needs to be done to meet international grades and standards generally and the requirements of particular buyers and end users.</p>
<p>10. Representativeness of the period under study</p>	<p>a) Timing of the study relative to the annual commodity production and marketing cycle.</p> <p>b) Agricultural and economic characteristics of the year of the study relative to earlier years or climatic cycles.</p>	<p>1) Compare rainfall data and production= estimates with earlier years.</p> <p>2) Compare economic data: GDP, balance of payments, inflation rates, trade patterns, exchange rates.</p> <p>3) Assess political factors: any change of government, policy changes, and movements towards (or away from)</p>	<p>a) The period of observation may be unusual with respect to climate, agricultural production, economic and political conditions, and the effects of recent changes.</p> <p>b) Food system development is an ongoing process. Historical perspective of long-run patterns of change in basic economic, institutional, political and</p>

<b>Areas of investigation</b>	<b>Contents</b>	<b>Method of inquiry</b>	<b>Reasons for investigating</b>
		democracy.	environmental conditions is valuable in understanding food system development.

Source: Holtzman (2002)

## Basic Conditions

## Structure

<p>Production trends and geographic distribution</p> <p>Consumption characteristics</p> <ul style="list-style-type: none"> <li>• Growth or decline (domestic and foreign markets)</li> <li>• Price, income and cross elasticities of demand</li> <li>• Difference by socio-economic and income group</li> <li>• Rural/urban differences</li> </ul> <p>Time characteristics of production and market cycles</p> <p>Type and degree of uncertainties: commodity price patterns, government policies, weather/climate patterns, access to and importance of external markets</p> <p>Laws and government policies and regulations</p> <p>Macroeconomic variables as incentives or disincentives: exchange rate, interest rates, inflation rate and differential impact</p>
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Industry Structure	Subsector organisation
<p>Number and size of buyers and sellers</p> <p>Entry and exit conditions</p> <p>Product characteristics</p> <ul style="list-style-type: none"> <li>• Perishability</li> <li>• Quality requirement</li> <li>• Deifferentiation</li> </ul> <p>Technology characteristic/cost functions</p> <ul style="list-style-type: none"> <li>• Capital intensity; minimum efficiency firm size</li> <li>• Rate of change</li> </ul> <p>Capacity</p> <p>Specialisation/difersification</p> <p>Vertical integration</p> <p>Financing and credit characteristics</p> <p>Collective organisations</p> <ul style="list-style-type: none"> <li>• Cooperatives</li> <li>• Trade associations</li> </ul> <p>Business objectives, attitudes and capabilities</p>	<p>Functional structure: location, timing and clustering functions</p> <p>Number of stages</p> <p>Number of parallel structures</p> <p>Information system</p> <ul style="list-style-type: none"> <li>• Type of information (grades, market conditions, etc.)</li> <li>• Distribution</li> <li>• Cost</li> </ul> <p>Structure of authority, rights and controls:</p> <ul style="list-style-type: none"> <li>• Decision autonomy</li> </ul> <p>Exchange institutions (auctions, buying stations, electronic exchanges)</p> <p>Types of exchange (spot markets, contracts, tying agreements, etc.)</p> <p>Risk-sharing institutions and arrangements</p> <p>Inter-stage differences (location, size of enterprise, seasonality, production characteristics): nature of assembly, sorting and assembling tasks</p>

## Firm decision environment

<p>Alternatives</p> <p>Incentives</p> <p>Control and</p>
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## Conduct

## Performance

Industry	Subsector
<p>Product strategy</p> <p>Pricing behavior</p> <p>Advertising</p> <p>Research and innovation</p> <p>Mergers and divestitures</p> <p>Risk management practices</p>	<p>Efforts to shift control</p> <ul style="list-style-type: none"> <li>• Types of exchange used</li> </ul> <p>Coordination activities</p> <ul style="list-style-type: none"> <li>• Prediction of future supply, demand, and price</li> <li>• Information communicated</li> <li>• Quality specification</li> <li>• Scheduling and timing synchronisation</li> <li>• Efforts to influence inter-stage cooperation/conflict</li> </ul> <p>Process of determining terms of exchange (private, treaty, administered, bid-offer-acceptance, etc.)</p> <p>Response to change forces</p>

Industry	Subsector
<p>Technical and operational efficiency</p> <p>Pricing efficiency (profit and output levels)</p> <p>Product characteristics</p> <ul style="list-style-type: none"> <li>• Quality/wholesomeness</li> <li>• Variety</li> </ul> <p>Progressiveness (process and product)</p> <p>Selling activities</p> <ul style="list-style-type: none"> <li>• Expense</li> <li>• Influence on consumption patterns and social values</li> </ul> <p>Market access and/or foreclosure</p>	<p>Allocative accuracy: extent to which supply offerings match demand preferences with regard quantity, quality, timing and location</p> <p>Stability of output, prices and profits</p> <p>Technical and operational efficiency</p> <ul style="list-style-type: none"> <li>• At each stage and in linking stages (transaction costs)</li> </ul> <p>Equity with regard to distribution of:</p> <ul style="list-style-type: none"> <li>• Returns vs. investments and risks</li> <li>• Rights and control vs. investment and risks</li> </ul> <p>Accuracy, adequacy and equity of information distribution</p> <p>Subsector adaptability</p> <p>Level and type of employment</p> <p>Waste and spoilage</p> <ul style="list-style-type: none"> <li>• Product waste</li> <li>• Resource conservation</li> </ul>

Figure 2: Structure, Conduct, Performance paradigm as applied to the commodity subsector approach.

Source: Adapted from Marion, B.W. (1986)

The three boxes in Figure 2 showing structure (S), conduct (C) and performance (P) or SCP attributes differentiate between industry- and subsector- specific characteristics. The structure component at subsector level are concerned with the number of firms as well as their market power at the different stages of the chain and the different marketing channels present within the chain. Conduct within a subsector refers to the specific coordination activities or efforts of the participants of the subsector in terms of cooperation or conflict between the different stages and the flow of information across stages. Conduct also considers how a subsector as a whole respond to changes in terms of price movements, supply shifts, changes in the world market conditions and emerging competitors or threats. Finally the analysis of performance at subsector level includes: matching of supply and demand between stages; the stability of output, prices and profits; technical and operational efficiency at each stage and linking stages; equity of returns relative to risks; the accuracy, adequacy and equity of information; the level and types of employment and the adaptability and responsiveness of the subsector. (Holtzman, 2002)

## **4.2 Commodity Chain Analysis (French *filière* concept)**

The Commodity Chain Analysis (CCA) approach is part of wider set of different approaches of chain analysis, including value chain and global commodity chain analysis. CCA is a neutral, value-free technique used to analyse existing marketing chains for agricultural commodities assessing how public policies, investments and institutions affects local production systems and consists of quantitative analysis of inputs and outputs, prices and value added a commodity chain through agent accounts (Tallec and Bockel, 2005).

Tallec and Bockel (2005) highlighted two important ways in which CCA can be used to analyse policies namely: as a tool for setting out complete financial accounts of the various agents<sup>1</sup> along the length of the chain, and as an accounting framework

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<sup>1</sup> The term is used to describe an economic actor , i.e. a basic unit in the economy, who undertakes an activity and makes decisions autonomously (Tallec and Bockel, 2005)

allowing for the systematic recording of a large part of the information necessary for a proper economic analysis, thus extending financial accounting analysis.

As in the case of VCA, CCA starts with chain mapping as a first step of the analysis to obtain an overview of the chain, the product flows within the chain, the chain actors as well as the type of interaction between the agents and can be used as a tool for economic analysis by either using the impact approach, using actual market prices as used by agents or the shadow price approach which uses computed (economic) prices instead of market prices to estimate the economic value of goods and services.

Tallec and Bockel (2005) further identified a number of important aspects when constructing a commodity chain, which includes the agents and institutional sectors that can consist of a physical person in the form of farmers, trader or consumers, or a legal entity in the form of a business, an authority or a development organization; the classification of agents in terms of their primary activity and includes firms, financial institutions, households, the government and the rest of the world; the specification and operation of the commodity chain (likely elements and agents) including the input supply chain, agricultural and livestock rearing process, processing, wholesaling, transport and retail industries, packaging industries, industries handling processing, transport, trade and distribution., financial services, research and extension services, credit services and consumers; the identification of activities and the flows between them, starting from the primary agricultural production activity and following the product downstream through the various marketing and processing channels to the final market as well as upstream to identify the principal input providers; the identification of agents, here Tallec and Bockel (2005) suggests to group agents in homogeneous categories and to separate functions for a technical analysis of the operation of the chain. Following this is a functional analysis of the agents and their interactions according to their principal function in the chain, the specific functions they carry out as well as the products concerned. The final aspects includes the creation of a flow chart (map) for the

specific commodity and quantifying the flow chart in terms physical monetary flows which allows for the assessment of the relative importance of the various segments in the chain.

According to Tallec and Bockel (2005) CCA incorporates institutional analysis (identification of flows and agents, analysis of the locations for decisions and collaboration), comparative analysis (the relative competitiveness of chains and of the strategies of actors), functional analysis (identification of bottlenecks within the chain) as well as economical analysis (modeling and simulation) and can be used for descriptive studies and monographs, sectoral, sub-sectoral and branch analysis, project analysis, studies of comparative advantage and competitiveness and sectoral and macroeconomic policy analysis.

The CCA approach tends to be more static and reflects relations at a certain point in time (Kaplinsky and Morris, 2000). Kaplinsky and Morris (2000) state that, although there is no conceptual reason for that, CCA analysis has generally been applied to domestic value chains which mean that CCA analysis normally stops at national boundaries.

The concept of global commodity chain (GCC) was introduced into the literature during the mid 1990's by Gereffi. The major contribution of the global commodity chain approach is its focus on the power relations which are embedded in value chain analysis. Global value chains or global commodity chains as described by Gereffi (1994) have four key dimensions namely; a specific physical input-output structure; its geography (the area it covers), inter-regional as well as international; governance structure as well as an institutional framework. Amongst these dimensions, the governance structure has received the most attention since it is where the key notions of barriers to entry lies, where chain co-ordination appears in the analytical framework, and where the distinction between producer-driven and buyer-driven global commodity chain governance structures is introduced. The input-output structure of the chain and the territory of the global commodity chain

covers have been used mainly descriptively to outline the configuration of specific chains.

GCC analysis emphasises the different ways in which activities along the chain are coordinated and defines chain governance as the process of specifying, communicating and enforcing compliance with key product and process parameters along the value chain (Humphrey and Schmitz 2004).

Humphrey and Schmitz (2004) explain that governance occurs when one firm follows parameters set and enforced by another. A distinction can be made between governance structure where the coordination is undertaken by buyers ('buyer-driven commodity chains') and structures where producers play the key role ('producer-driven commodity chains') (Gereffi, 1994; Gerreffi and Memedovic, 2003).

### **4.3 Value Chain Analysis (VCA)**

Porter (1985) described VCA as the activities the organisation performs and links them to the organisations competitive position. Therefore it evaluates which value each particular activity adds to the organisations product or services. Porter (1985) further distinguishes between primary and support activities (Figure 3), where primary activities are directly concerned with the creation or delivery of a product or service and can be separated into five main groups namely: inbound logistics (receiving, warehousing and inventory control if input materials), operations (value creating activities that transform the inputs into the final product), outbound logistics (activities required to get the finished product to the consumer), marketing and sales (activities associated with getting consumers to purchase the product), and services (activities that maintain and enhance the product's value). These five primary activities is further linked to four support activities which help to improve their effectiveness or efficiency, they include: procurement (the function of purchasing the raw materials and other inputs used in the value-creating activities), technology (research and development aimed at supporting the value chain activities), human

resource management (recruiting, developing and compensating employees), and infrastructure (finance, legal, quality management etc.). Thus, VCA addresses the nature and determinants of competitiveness and raises the sights from the individual enterprise to a group of interconnecting enterprises.

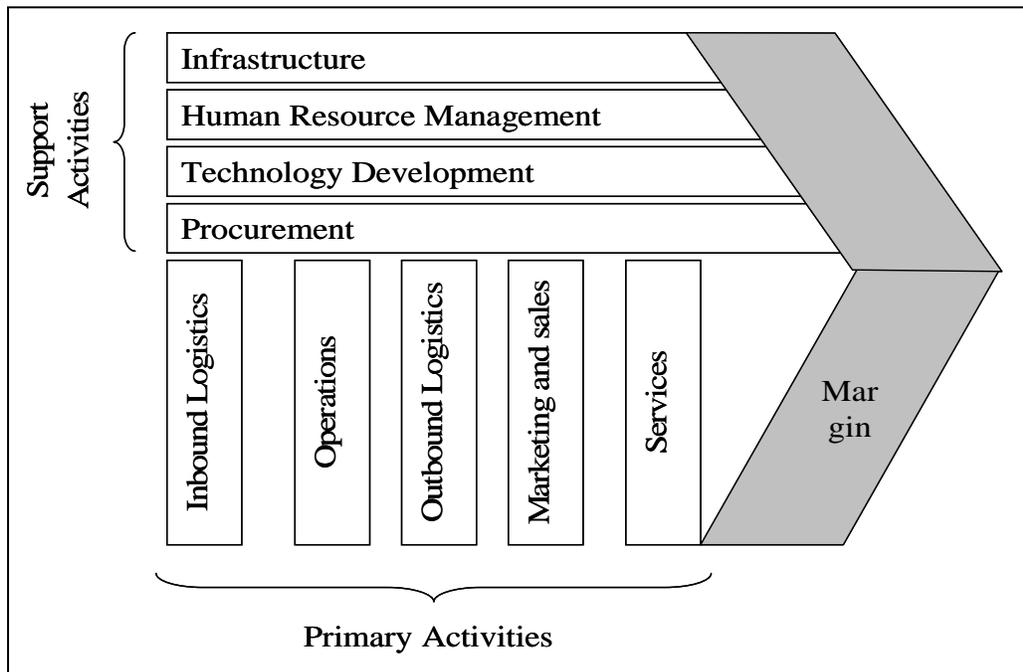


Figure 3: The basic model of Porter's value chain.

Source: Porter (1985)

Kaplinsky and Morris (2000) state that not only do value chains differ both within and between sectors, and also their national and social content. This implies that there is not just one way of applying value chain research because each chain will have particular characteristics, whose distinctiveness and wider relevance can only be effectively captured and analysed through and understanding of the broader issues which are involved throughout the chain.

Kula, Downing and Field (2006) see VCA as a continuation of the work begun under SSA and give four key points that differentiates VCA from SSA. These four key points includes: inter-firm cooperation as the key to competitiveness in the late 20<sup>th</sup>

and 21<sup>st</sup> century; power relationships in the sense that supplier and buyer relationships can increase collective efficiencies, external economies of scale, and improved competitiveness; distribution of benefits (the ability to control information increases the share of benefits); and learning and innovation as essentials for creating and sustaining competitiveness.

Three key elements of VCA were identified by Kaplinsky and Morris (2000) which links strongly to the GCC approach namely; barriers to entry and rent; governance and the different types of value chains – buyer driven or producer driven (see Gerreffi and Memedovic, 2003). Lusby and Panlibuton (2004) linked VCA and the GCC approach to SSA in the sense that it is complementary to SSA and provide additional analytical elements that can improve on, and build on the foundation of a subsector analysis framework. These elements include the geographic coverage (national, regional and global); global benchmarking; inter-firm cooperation and governance. Schmitz (2005) also see VCA as an increasingly useful method to gain a comprehensive view of the inter-locking activities involved when taking a good or service from the raw material to the producer and all the way to the final consumer.

Simmons, Francis, Bourlakis and Fearne (2003) defined VCA as a tool for analysing the nature and the source of value within a supply chain and the potential of reducing waste therein, focusing on the determinants of value within a manufacturing process rather than a simple measurement of process output.

Kula *et al.* (2006) defined a value chain as a supply chain made up of a series of actors, from input suppliers to producers and processors to exporters and buyers, engaged in the full range of activities required to bring a product from its conception to its end use. According to the author, value chain activities can be contained in a single geographical location or spread over wider areas like in the case of global value chains that are divided among multiple firms and are spread across wide geographic space. Richter (2006) states that one can perceive the VCA approach as an intervention tool for shaping sectors as well as economies because it takes (on macro level) all the steps of production into consideration, it analyses the links and

information flows, reveals strengths weaknesses, reveals the boundaries between the domestic and international chain and allows for international benchmarking. On micro level the VCA approach can be used to investigate and improve critical success factors such as quality, price, costs, dependability, volume, design and speed of delivery and by improving these critical success factors improve competitiveness.

Roduner (2005) distinguish between different participants in the value chain and group them in micro, macro and meso levels respectively (see Figure 4). Firstly, those participants who are directly involved with the primary product are referred to as value chain players and are grouped into the micro level. From Figure 4 can be seen that the micro level include role-players from the input suppliers, farmers, dealers and traders, until the final consumers, whether the product is consumed locally or exported. Clearly the micro level include only those participants who are directly involved with the product (Roduner, 2005).

The second level which has to be included in value chain research as suggested by Roduner (2005) is at a macro level and refers to these participants as value chain influencers. The value chain influencers are those participants who, as indicated by their name, influence the value chain. The value chain influencers include those participants who are responsible for the regulatory and administrative conditions as well as for international competition. These conditions include, amongst others, food law and regulations, food control and company inspection, customs and taxes, incentives, free trade agreements, etc.

The third and final level that is included by Roduner (2005) is referred to as value chain supporters and is grouped at a meso level. These participants included at the meso level are those responsible for providing information, training and promotions (see Figure 4). Clearly both the value chain influencers as well as the value chain supporters have a major influence on a value chain. Therefore it is important to consider them when conducting value chain analysis as suggested by Roduner (2005).

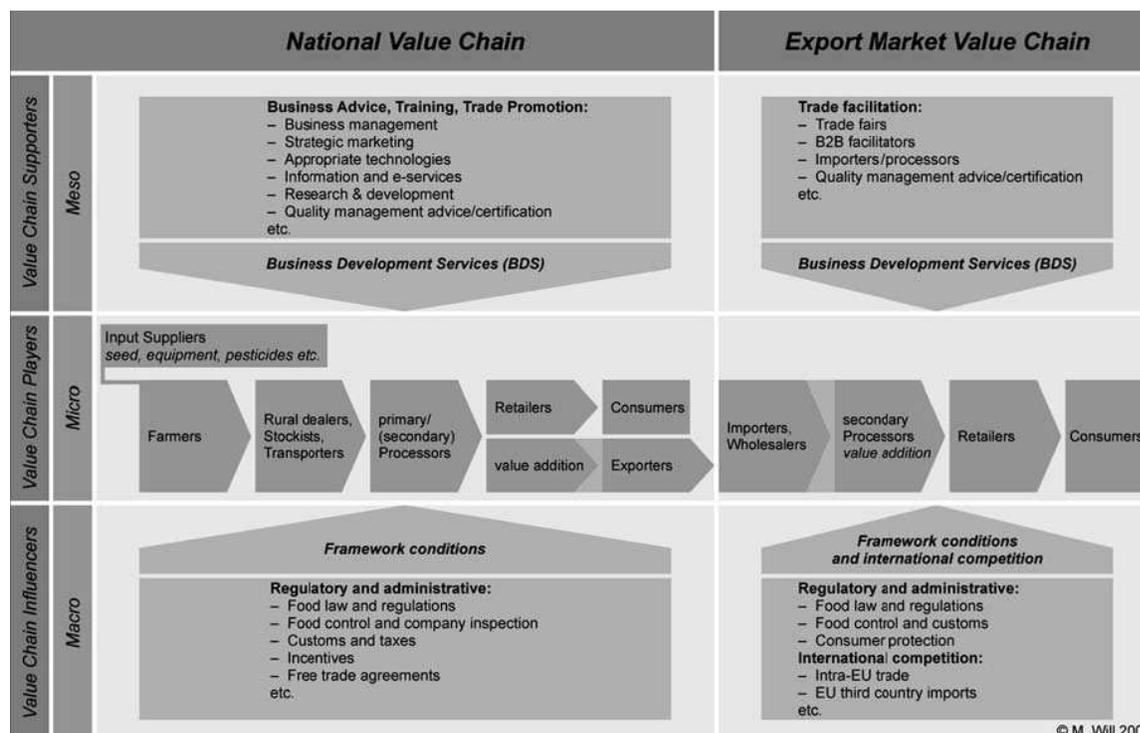


Figure 4: Value chain players, supporters and influences

Source: Will (2004) as in Roduner (2005)

## 5. The application of VCA

In order to do VCA effectively, for any industry or product, it is important to know how this industry is constructed in terms of information, product as well as money flows between the different segments/actors in the value chain.

Various methods, discussed in the previous section, can be used to analyse value chains. The most important step and also forming the core of the analysis is value chain mapping. The steps following value chain mapping, build on the value chain mapping exercise and therefore additional analysis may become necessary depending on the information required and includes quantifying and describing value chain detail, economic analysis as well as benchmarking and chain upgrading.

Within the contexts of the VAIMS it is important to set boundaries in terms of the detail requirements, which will have a direct effect on the data requirements, at an early stage. Value chain mapping includes the flow of the physical product, money, and information between all the links within the chain.

Lusby and Panlibuton (2004) indicate a number of general patterns or steps given the different approaches to map value chains or subsectors (also highlighted by Roduner, 2004) when conducting value chain analysis namely:

- Identify final markets (set boundaries)
- Identify key functions/activities
- Identify participants performing each function
- Map participants according to the specific functions they perform
- Map inter-relationships between participants
- Submit description to private sector and specialists and make the necessary adjustments or improvements
- Monitoring and evaluation

Figure 5 provides an example of what a small stock value chain in the SADC region could look like and includes the flows of product, information, and money through and between the different segments of the chain.

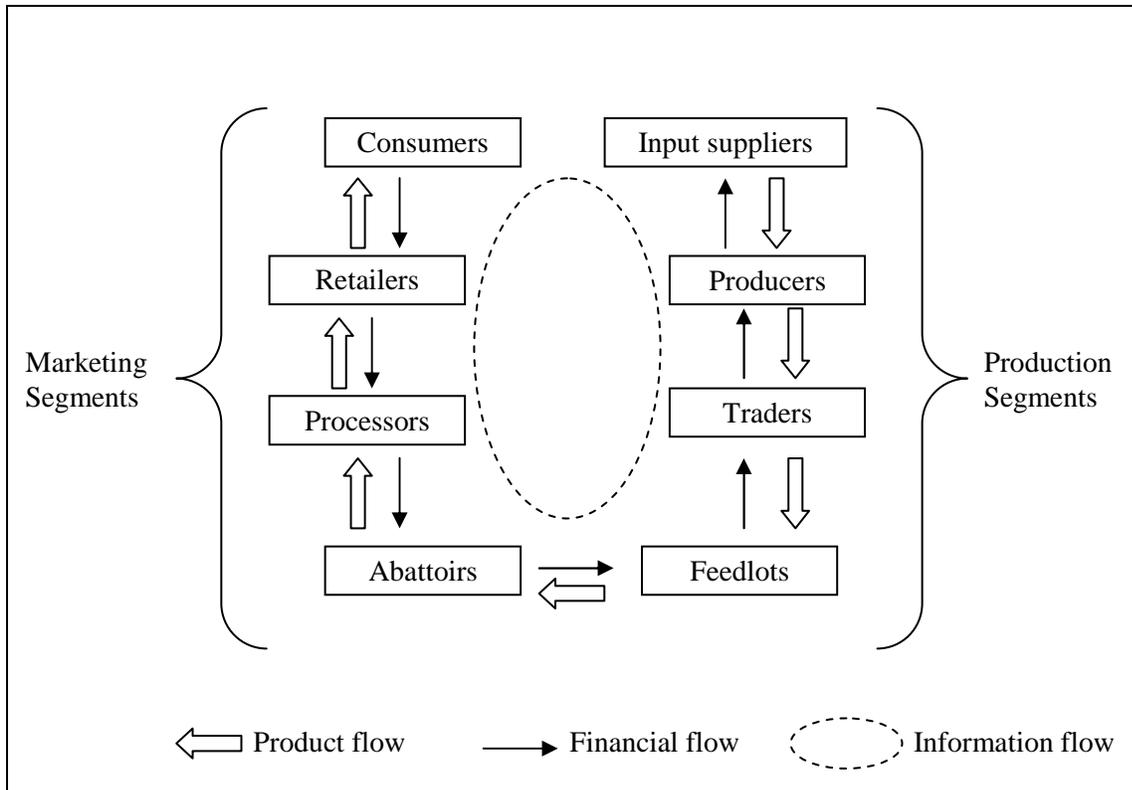


Figure 5: Example of a value chain.

According to Kaplinsky and Morris (2000) once the value chain in question has been identified and mapped, the task should then be to put numbers and values to the variables under investigation. The variables to be included will depend on the primary question being addressed by the research as well as the point of entry. Some of the variables, amongst others, will include:

- Gross output values
- Net output values
- The physical flow of commodities along the chain
- The flow of services, consultants and skills along the chain
- Employment, where relevant distinguishing between permanent and temporary staff, gender etc.
- Destination of sales – for example to wholesalers and retailers, concentration of sales amongst major buyers and number of buyers
- Imports and exports, and to which reason

Table 2 provide a number of aspect that needs to be included in chain analysis and includes commodity characteristics, demand and supply patterns, price relationships and seasonality, food system participants and organisations, subsector and food system operation or behavior, the marketing system infrastructure, government marketing institutions and policies, international trade and commodity competitiveness as well as the representativeness of the period under study.

**Table 2: Data requirements for chain analysis.**

<b>Area of investigation</b>	<b>Data required</b>
Commodity characteristic	<ul style="list-style-type: none"> <li>• Grades, and grading systems</li> <li>• Perishability</li> <li>• Physical handling requirements</li> <li>• Packing methods and materials for shipment and sale</li> </ul>
Consumption patterns	<ul style="list-style-type: none"> <li>• Trends in the domestic and export market</li> <li>• Consumption patterns by socioeconomic and ethnic group</li> <li>• Future market prospects</li> </ul>
Supply situation	<ul style="list-style-type: none"> <li>• Production by region</li> <li>• Stocks for transformation and consumption by season and region</li> <li>• Flows between markets, including imports and exports</li> </ul>
Price relationship and seasonality	<ul style="list-style-type: none"> <li>• Method of procurement</li> <li>• Secular trends in real prices at the farmgate, wholesale and retail levels.</li> <li>• Seasonal and cyclical trends in prices.</li> <li>• Changes over time in relative price relationships.</li> <li>• Changes over time in input/output price and cost relationships.</li> </ul>

Area of investigation	Data required
Food system participants and organisation	<ul style="list-style-type: none"> <li>• Marketing channels and commodity subsector stages.</li> <li>• Important assembly, redistribution and terminal markets.</li> <li>• Types, numbers, and geographical distribution of firms at key subsector stages.</li> <li>• Prevalence and importance of alternative institutional arrangements, such as contracts, vertical integration, direct marketing, cooperatives, and spot markets.</li> </ul>
Subsector and food system operation or behavior	<ul style="list-style-type: none"> <li>• Practices and strategies of subsystem participants (individuals, firms, organizations for procuring inputs, processing, storage and marketing of outputs).</li> <li>• Vertical coordination mechanisms: exchange arrangements, risk-reduction/sharing, information dissemination.</li> <li>• Sources, uses and distribution of production and marketing information.</li> <li>• Adaptability and responsiveness of subsystem to shifting supply/demand, exogenous shocks, policy changes and uncertainty.</li> <li>• Evidence of market power.</li> </ul>
Marketing system infrastructure	<ul style="list-style-type: none"> <li>• Physical infrastructure (transport, including roads, ports, airports and waterways; marketplaces; storage and processing facilities; communications; electricity; water supply).</li> <li>• Infrastructure adequacy and bottlenecks.</li> <li>• Evidence of excess or unutilized capacity.</li> </ul>

Area of investigation	Data required
Government marketing institutions and policies	<ul style="list-style-type: none"> <li>• Regulatory environment: rules; input and product regulations; laws affecting marketing and trading activities; property rights.</li> <li>• Public marketing institutions (parastatals, cooperatives, joint ventures); the extent and nature of their participation in marketing; effect on the behavior and performance of private participants in the food system.</li> <li>• Macroeconomic policies: price policies; exchange, interest, wage rate policies; fiscal and monetary policies.</li> <li>• Banking and credit policies.</li> </ul>
International trade and commodity competitiveness	<ul style="list-style-type: none"> <li>• Commodity exports and world market situation.</li> <li>• Imports of the commodity or substitutes and their impact on domestic production, markets and prices.</li> <li>• Trends in exports and imports.</li> <li>• Likely changes in exports and imports, and emerging market opportunities or dependencies.</li> <li>• The competitiveness of exports in particular foreign markets.</li> </ul>
Representativeness of the period under study	<ul style="list-style-type: none"> <li>• Timing of the study relative to the annual commodity production and marketing cycle.</li> <li>• Agricultural and economic characteristics of the year of the study relative to earlier years or climatic cycles.</li> </ul>

Once the value chain has been mapped and quantified, the next step will be the economic analysis of the chain. This analysis will draw from, and build on, the

various methodologies reviewed for value chain analysis including: SSA and the embedded S-C-P approach therein, CCA or *filière* approach, GCC, as well as VCA.

### **5.1 Measuring performance in a value chain.**

An essential part of value chain research is the measurement/evaluation of the performance of the given chain. According to Chibba (2007), all members of a value chain, both upstream and downstream, are actors who have an important impact in the performance of the chain and include quality (the degree to which a product is manufactured to the agreed specification), delivery (the ability to consistency deliver on the agreed due date), flexibility (the ability to effectively produce a range of different products) and cost (the ability to offer a lower product price than direct competitors). It is therefore important to evaluate the type of performance measure used given the nature of the value chain as it can affect the decision-making process.

Beamon (1999) highlighted that a generally applicable systematic approach to measure performance in value chains has not been developed because different types of systems require specific measurement system characteristics. According to Aramyan *et al.* (2006) the large number of performance indicators, and the lack of consensus on what determined the performance of a supply chain, complicates the selection of performance measures.

Jie, Parton and Cox (2007) applied four supply chain performance indicators namely (see Figure 6): flexibility, efficiency, food quality and responsiveness (also in Beamon, 1999; Li, 2002; Luning *et al.* 2002; Gunasekaran *et al.* 2004; Aramyan *et al.* 2006). According to David *et al.*(2006) supply chain performance is a two dimensional definition which consists of effectiveness and efficiency. Supply chain effectiveness is an indicator of consumer satisfaction while efficiency relates to the objective performance of processes. In Figure 6, quality is referred all aspects linked to the handling of the product/animal pre-and post slaughter while flexibility

refers to the agility of the supply chain in responding to changes in the marketplace in order to gain or maintain competitive advantage as well as the responsiveness to changes in consumer demand. Responsiveness refers to the velocity at which the supply chain provides product to the end consumer (**SCOR, 2006**) and efficiency consists of six indicators such as farm/plant costs, inventory cost, waste cost, transportation cost, labour cost and profit.

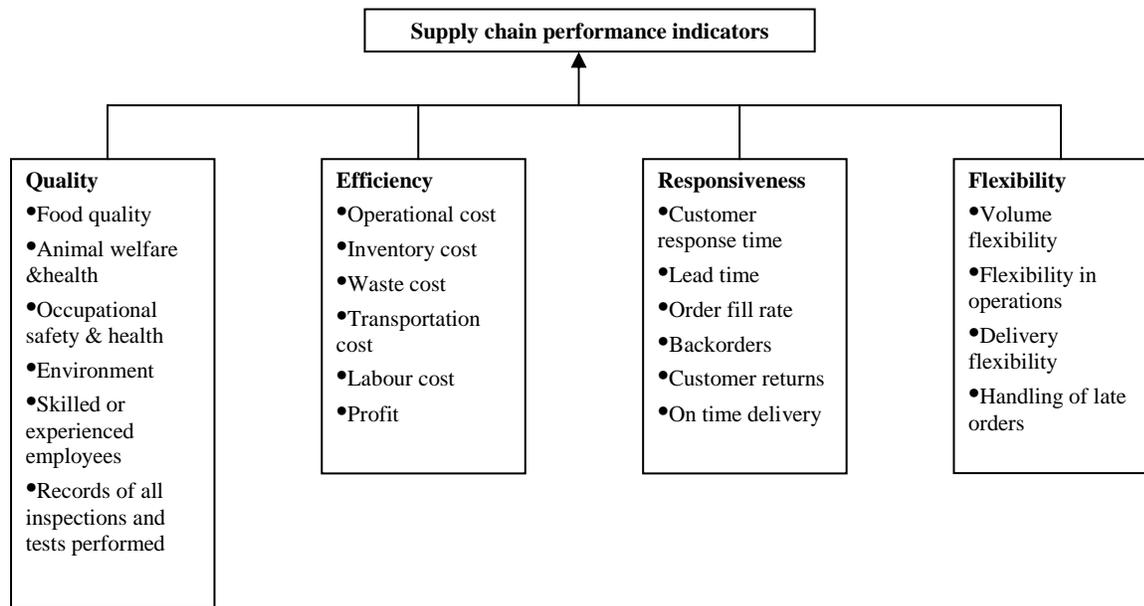


Figure 6: A conceptual framework of supply chain performance indicators

Source: Adapted from Jie *et al.* (2007).

The Food Chain Centre (FCC) uses a “lean thinking” approach, which is a generic term for a business improvement method that provides a way to do more and more with less and less. The FCC in partnership with the Red Meat Industry Forum (RMIF) applies lean thinking (also described as value chain analysis) across whole value chains aimed at improving the efficiency and competitiveness of British red meat. This method of performance measurement involves the reduction of “waste” in the value chain. Waste can be defined as any action within the value chain that adds cost but not necessarily value. The economic analysis of the value chain is the assessment of chain performance in terms of its economic efficiency and includes the determination of the value added along the different segments of the chain, the

cost of production, income at the different levels and the distribution thereof within the chain, transaction costs, the collection and distribution of information and enforcing of contracts, benchmarking and upgrading.

The perfect scenario would be the ability to collect, measure, and analyse all the data in the value chain in a timely, cost-effective and transparent manner and be made available in a perfectly transparent and equal basis to all the actors in the value chain.

## **6 Summary and conclusions**

Considering the importance of the first step in a value chain analysis process (the mapping of the value chain) it is necessary to prioritise this step. The mapping of the value chain will provide a better understanding of how the product, information and money flows between the different segments of the chain as well as how the inter-linkages between the different segments functions. By mapping the chain the relative importance of the different segments of the chain can be identified and will help with the identification of the starting point for the next step, namely the quantification of the value chain.

Given the focus of the VCA approach on the interactions and flows of product, information and money in the value chain and all the activities in each link of the chain it will help with the identification of areas of waste (adding cost without adding value) and will highlight possible areas of improvement in terms of production efficiency. This will be specifically helpful in terms of the very important small stock sector within the SADC countries, with the primary focus on poverty alleviating, environmentally sustainable growth, which will not be possible without access to the large and differentiated markets of the developed countries, or at least access to possible growing markets at regional or national urban markets for rural agricultural products in developing countries focusing on barriers to entry, rents and governance as important factors for the successful participation and integration enterprises in existing value chains

The issue will therefore be the development of policies that will facilitate answering question like; how small-scale, small stock producers can gain access to local, regional, national and even international value chains, how they can acquire a relevant share of the value added and how they can draw non-tangible benefits from the integration into these value chains.

A number of methodologies and approaches used to analyse value chains has been mentioned in this review. It is however important to note that it is very difficult to predetermine a specific methodology given the nature of the project. In order to analyse value chains in terms of performance, value adding activities, efficiency, competitiveness, etc. there has to be a value chain to start with. That's why the mapping and quantification, and the understanding of the interactions between the different actors within the chain are so important. This initial step will however only be as good as the information available and will rely heavily on the participation of the stakeholders or actors within the chain.

Given the importance of information when doing value chain analysis, one of the main challenges in the development of a VAIMS for small stock within the SADC region will be acquiring useful reliable and accurate data and statistics for the sector under investigation and therefore it will be important to determine the boundaries/depth of the study given the overall objective of reducing poverty in the SADC region through increased productivity and trade flows in the traditional livestock sub sector.

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