

A CASE STUDY**Agricultural value chain: Concepts, definitions and analysis tool****Deepak Pal and Laveena Sharma**

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ABSTRACT

'Agriculture continues to be a fundamental instrument for sustainable development and poverty reduction' (World Bank, 2008); yet, 'The role of market players constraint in agriculture remain pervasive and they are costly and inequitably distributed, severely limiting smallholders' ability to compete'. Dramatic and uneven control on prices of Agriculture produce have exposed the vulnerability of agricultural value chain in meeting global demand and call for increased investment in agriculture at all levels. The question is how the actors of value chain can be measured, particularly in a challenging milieu where actor/s certainty causes to add some cost along with reduction in available resources. An answer to addressing these constraints goes beyond conventional measures since agriculture has always been difficult to quantify the value chain in agriculture. Here, Key players are actors of market involved in agricultural value chain. It composed of all the actor/participant that has some involvement in commodity whether it is related to production to consumption like farmer, aadiya (middleman), distributor, wholesaler, retailer or consumer etc. it may vary produce to produce and The Cigar Box® is a unique toolkit developed by the Olivier van Lieshout, Marketing Economist, Global Facts, Heuvel 12a, 5101 TD Dongen, The Netherlands. It consists of simple, yet concise spread sheets which help the entrepreneur to calculate cost of goods, margins, contribution, break-even volumes and profitability. For a single product or a complete portfolio of products with the help of given tools. There are seven six-box models. Here we are only studied CB5 for value chain analysis. A unbalanced chain of Agriculture produce not only adds the additional cost to commodity but also put negative pressure on the viability of the agriculture sector and its potential to become a part of the solution to the problem of high gap between actual cost and price to end consumer and the major one is the identification of importance of each actor on the basis of contribution to the market. This paper is designed to help the policymakers/researchers/farmers/ producers to create. Value through opting the best-fit chain. A best fit chain has the optimum number of actor/s that can be able to manage the market activities. Presence of more/less no. of actor/s in market of actually needed leads to up the non-relevant cost and resources. Under this, we try to cover whole in short, via hypothetical example of Tofu product with backward and forward integration among agricultural value chain, primarily focused on actor/s, role and effect on market and product. We started with nitty-gritty introduction of pre-requisites. A principal objective of this paper is to better enable you to use such tools effectively. Research Methodology is based on analysis of secondary data that has been analyzed and interpreted with simple tools for sketch out the conclusions.

KEY WORDS : Agricultural value chain, Cost benefit ratio, Backward –forward integration

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Chains composed of companies (or individuals) that interact to supply goods and services are variously referred to as productive chains, value chains, filières, marketing chains, supply chains, or distribution chains. These concepts vary mainly in their focus on specific products or target markets, in the activity that is emphasized and in the way in which they have been applied. What they have in common, however, is that they all seek to capture and describe the complex interactions of firms and constraints against increasing productivity.

Although it is impossible to draw clear distinctions among these often overlapping concepts, it is still worth while to provide some basic definitions and highlight some of the differences. Typically, “value chain” describes the full range of value - adding activities required to bring a product or service through the different phases of production, including procurement of raw materials and other inputs, assembly, physical transformation, acquisition of required services such as transport or cooling and ultimately response to consumer demand (Kaplinsky and Morris, 2002). As such, value chains include all of the vertically linked, interdependent processes that generate value for the consumer, as well as horizontal linkages to other value chains that provide intermediate goods and services. It is also categorized as the knowledge value chain and the business value chain.

Value chains focus on value creation—typically via innovation in products or processes, as well as marketing and also on the allocation of the incremental value. By contrast, the term “supply chain” is used internationally

to encompass every logistical and procedural activity involved in producing and delivering a final product or service, “from the supplier’s supplier to the customer’s customer” (Feller *et al.*, 2006). Since the primary focus of supply chains is efficiency, the main objectives are usually to reduce “friction” (for example, delays, blockages, or imbalances), reduce outages or overstocks, lower transaction costs and improve fulfillment and customer satisfaction (Fig. 1).

The issue is not so much about which concept is superior or preferable, since they are complementary and their effective implementation can deliver improved business results. It must be noted, though, that practitioners of the supply chain approach often fail to consider to what extent cost reduction and inefficiencies in supply chain logistics actually add value and if so, who benefits. On the other hand, value chain proponents sometimes forget that effective value chains must rest in efficient supply chains. “Clusters” represent collections of firms and institutions that perform many of the functions segmented and described in both the value chain and supply chain literature. Clusters themselves display horizontal and vertical links among enterprises that produce a single or closely related product or service, which in turn may combine to satisfy the demand of a particular value/supply chain. The literature on clusters stresses the benefits of enterprise agglomeration and geographic proximity, which can generate economies of scale and positive externalities such as lower costs of intermediate inputs or services, better access to skilled personnel, or greater attractiveness to external

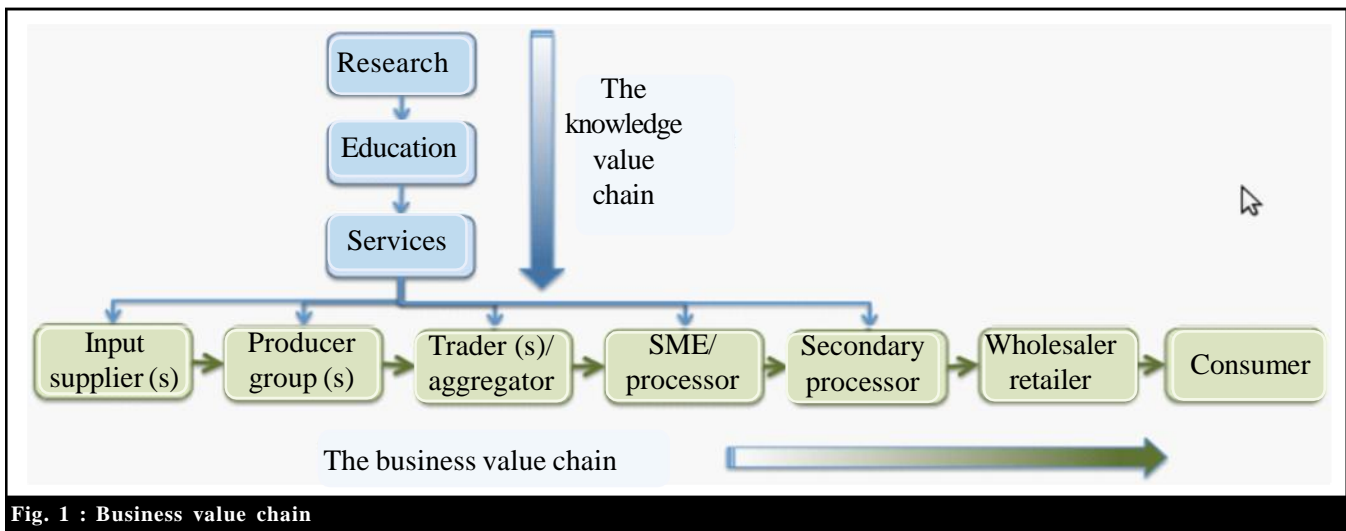


Fig. 1 : Business value chain

procurement agents. Improving clusters typically requires more emphasis on the local environment (both policies and institutions, public and private) and context in which it operates.

A managed value chain shifts from open market sourcing to dedicated supply chains to boost up the efficiency as given Fig. 2 and 3.

Generally the “chain” concept, whether value or supply, places less emphasis on the enabling environment, while “cluster” analysis often neglects the necessary linkages to specific target markets that exist outside the cluster. Another related concept is the Francophone filière (literally “thread” in horizontal co-ordination (Kaplinsky

and Morris, 2002). Filière studies do not have a single unifying theoretical framework and its practitioners have borrowed from different theories and methodologies for their analyses. The concept is often used as synonymous to commodity chain or subsector. The filière was initially used to study contract farming and vertical integration in French agriculture in the 1960s. It was, soon thereafter, applied to agriculture in developing countries, such as the model implemented to develop the cotton sectors in West and Central Africa. Over time, filière analysis focused more on how public institutions affect local production systems and how “inter professional associations” can help glue together direct and indirect

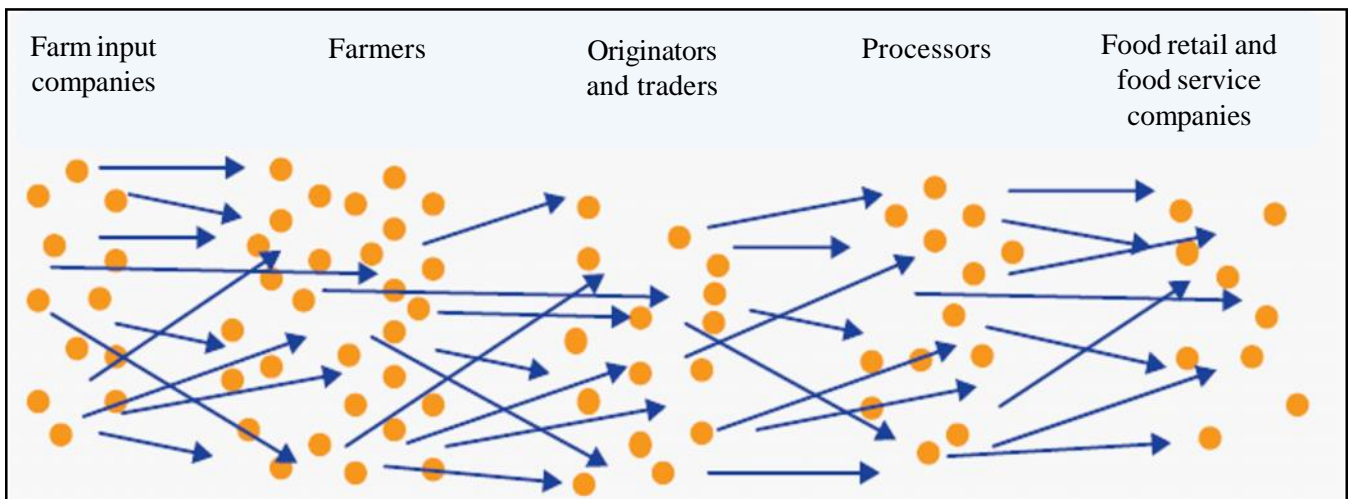


Fig. 2: Open market sourcing

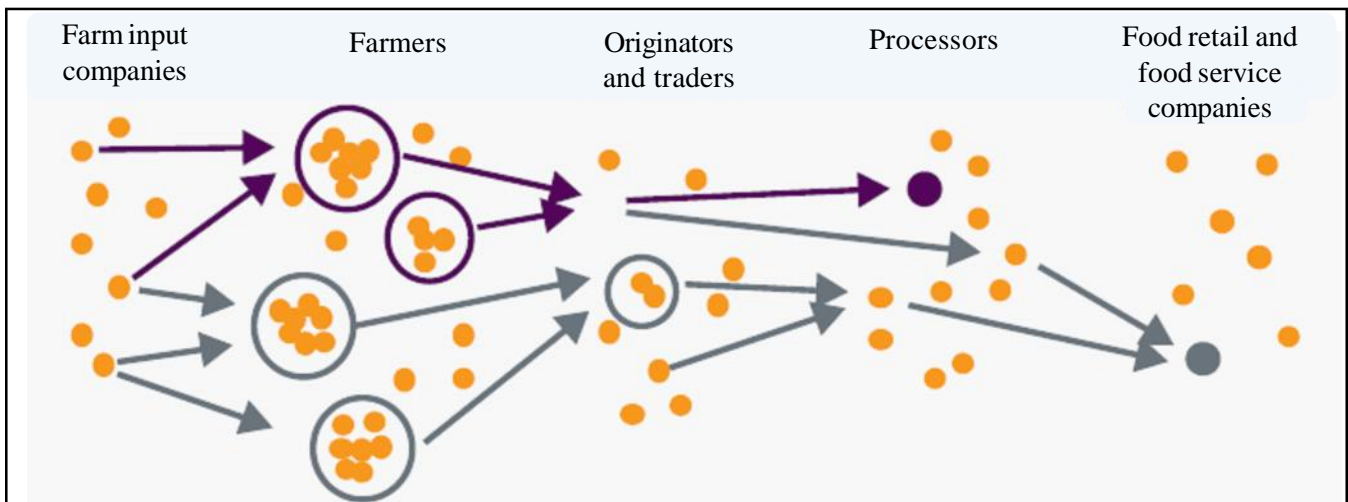


Fig. 3: Dedicated supply chains

economic actors, that is, those who handle the product of interest versus those who contribute ancillary goods or services.

All of the commodity system concepts discussed—whether chain, cluster, or filière—underscore the importance of linkages to gain value and advantages to compete in global markets. The term value chain is primarily used in this Guide, as it is inclusive and incorporates supply logistics, value addition, transactions, and market linkages. We use other terms occasionally (particularly supply chain) where we believe that the Guide’s conceptual focus or a specific case warrants.

Value chain analysis:

Interest in value chains is not new. Businesses have been using value chain analysis and implementation principles for years to formulate and implement competitive strategies. Corporations use value chain analysis to answer questions such as, “Where in the value chain should my business be positioned to improve its performance?” The value chain’s popularity has been reinforced by many important business strategy themes, including core competencies, comparative and competitive advantage, outsourcing, vertical and horizontal integration and best practices. Businesses (individually and in groups, such as clusters) have focused on value chains while searching for alternative ways to remain competitive. Value chain approaches have been used to guide product and process innovations, such as specialty or organic coffee, that final customers or receivers value. Further, there is increased awareness that procedures within a firm might not affect its own competitiveness unless other firms adopt similar or linked practices. Recognizing that partnerships and joint programmes aimed at better category management and sustainability need not be a zero sum game has paved the way for businesses to use collaborative value chain concepts to identify efficiencies and competitiveness both within and among firms, acting on opportunities to build win-win relationships. Recent technological developments that permit high levels of information sharing have reinforced businesses’ capacity to upgrade value chain productivity and supply chain efficiencies

More recently, governments and donors, realizing that upgrading the performance of individual actor of chain can best be achieved in the context of market based rewards for improved performance, have shown

significant can use value chain-based approaches as robust tools to protect threatened links, facilitate upgrading of others to generate greater returns and to promote foreign direct investment (FDI) programmes. Additionally, value chain analysis has been used to examine constraints in the enabling environment in which the chains operate. Value chains have also been used as a tool for SME development, with new methods of linking SME suppliers and service providers to the value chains of lead processors or marketers. More importantly, value chain analysis sheds light on the size of the firms participating in each link, how they are participating or could be participating in the chain and opportunities to facilitate or improve those linkages. This is particularly crucial in agriculture, where governments and aid agencies are confronted with the challenge of including small farmers in modern value chains so that they can benefit from the globalization of markets. The value chain concept is, therefore, not only relevant to deal with growth, but also with the equity dimension of the modernization of the agri-food systems.

Analyzing and evaluating value chains :

Value chain analysis rests on a segmentation of the different activities and mapping of interactions that may generate costs or value in the production. Interest in value chains is not new. Businesses have been using value chain analysis and implementation principles for years to formulate and implement competitive strategies. Corporations use value chain analysis to answer questions such as, “Where in the value chain should my business be positioned to improve its performance?” The value chain’s popularity has been reinforced by many important business strategy themes, including core competencies, comparative and competitive advantage, outsourcing, vertical and horizontal integration and best practices. Businesses (individually and in groups, such as clusters) have focused on value chains while searching for alternative ways to remain competitive. Value chain approaches have been used to guide product and process innovations, such as specialty or organic coffee, that final customers or receiver’s value. Further, there is increased awareness that procedures within a firm might not affect its own competitiveness unless other firms adopt similar or linked practices. Recognizing that partnerships and joint programmes aimed at better category management and sustainability need not be a

zero sum game has paved the way for businesses to use collaborative value chain concepts to identify efficiencies and competitiveness both within and among firms, acting on opportunities to build win-win relationships. Recent technological developments that permit high levels of information sharing have reinforced businesses' capacity to upgrade value chain productivity and supply chain efficiencies. More recently, governments and donors, realizing that upgrading the performance of individual firms can best be achieved in the context of market-based rewards for improved performance, have shown significant interest in value chain analysis and implementation. In their effort to devise interventions that can help reposition entire industries, build business competitiveness, and spur economic growth, governments and donors can use value chain-based approaches as robust tools to protect threatened links, facilitate upgrading of others to generate greater returns, and to promote foreign direct investment (FDI) programmes. Additionally, value chain analysis has been used to examine constraints in the enabling environment in which the chains operate. Value chains have also been used as a tool for SME development, with new methods of linking SME suppliers and service providers to the value chains of lead processors or marketers. More importantly, value chain analysis sheds light on the size of the firms participating in each link, how they are participating or could be participating in the chain and opportunities to facilitate or improve those linkages. This is particularly crucial in agriculture, where governments and aid agencies are confronted with the challenge of including small farmers in modern value chains so that they can benefit from the globalization of markets. The value chain concept is, therefore, not only relevant to deal with growth, but also with the equity dimension of the modernization of the agrifood systems.

Segmentation:

Value chain analysis rests on a segmentation of the different activities and mapping of interactions that may generate costs or value in the production and sale of a product or service. Although it is also concerned with structure, conduct, and performance, it differs from traditional commodity system or industry analyses in some important ways:

- It focuses on net value added instead of just overall revenue and gross physical output.

- It is concerned with cost build-up and value accretion, as well as the distribution of burden or benefit in both.

- It recognizes that linkages between productive activities and actors vary according to the specific product type and target market, even if the main actors are the same.

- It recognizes that economic activity is very dynamic, necessitating adjustments in strategy and tactics constantly as circumstances change.

- It recognizes that there are different kinds of value chains (buyer-dominated, supplier dominated, balanced, or directed) depending on which actors or activities have the most leverage, information and power.

- It looks not just at physical flows, but also informational flows.

- It seeks to better understand the constraints and opportunities within each segment, as well as the context in which the chain operates.

There are many ways to analyze or evaluate a value chain. Analysis can stem from research of secondary information, such as government or industry data, to interviews with industry participants. It can also be derived from participatory market assessments and market observations. Once the information is gathered, numerous tools and processes interpret and inform the resulting analysis.

The cigar box® :

It is a unique toolkit developed by the Olivier van Lieshout, Marketing Economist, Global Facts, Heuvel 12a, 5101 TD Dongen, The Netherlands. It consists of simple, yet concise spread sheets which help the entrepreneur to calculate his/her cost of goods, margins, contribution, break-even volumes and profitability. For a single product or a complete portfolio of products with the help of given tools. There are seven six-box models. Here we are only studied CB5 for value chain analysis.

- CB1 cost price for one single product,
- CB2 contribution for a range of products,
- CB3 daily monitoring of cost price for a range of products,

- CB4 investment and finance projections with yearly cash flow,

- CB5 cost price based value chain analysis,

- CB6 customer satisfaction analysis for one product or product category.

Objective to analyze a value chain using cigar box (CB5):

- Identifying the player/actors in the value chain,
- Defining contribution of each player/actor,
- Understanding value addition in the chain.

Hypothetical activity:

Here, to understand the value chain and its factor, we made a hypothetical value chain of Tofu (soy-paneer). Through this paper, I tried to put light on the value chain of tofu from the production of soybean at farmers field to the plate of consumer in the form of processed product of soybean. The product have transformed its from raw soybean to packed tofu, it caused the engagement of multi actor/s in the chain of divers field like farmer, collector, distributor, retailer and consumer etc. so I analyzed the each actor/s by using cigar box method to understand and got a clear picture of all actors in terms of cost of goods, margins, contribution, break-even volumes and profitability. It

would be clearer by the given sheet (Fig. 4).

Conclusion:

The critical issues in Indian agriculture are related to knowledge and economic awareness. Although there isn't a lack of initiatives and institutions to tackle these issues, we have to become better at managing big systems to achieve success in our endeavours. At the same time, we should look into such approaches like value chain. This will ensure that agricultural sector remains viable and caters to the country's needs. Good value chain can develop the healthy market system. This would enable the actor/s to get best possible prices for their produce and suits consumer too. It is now on us farmers to work towards ushering in a digital era in years to come in India.

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Cigar Box Analysis CB1									
Component	Farmer	%	Mediator (Wholesaler)	%	Tofu processor	%	Retailer	%	Share of retail price
Place / origin	Sihora		Jabalpur		Jabalpur		Jabalpur Mal		
Unit of measurement	Kg		Kg		Kg		kg		
Purchase price	0		30		37		250		
Processing ratio	1		1		5		1		
VC1 Raw material cost	4	13.33%	30	81.08%	185	74.00%	250	98.04%	
VC2 Irrigation cost	0.5	1.67%	0	0.00%	15	6.00%	0	0.00%	
VC3 Packaging cost	0	0.00%	0.4	1.08%	10	4.00%	0	0.00%	
VC4 Sales & Transport cost	0	0.00%	0.8	2.16%	8	3.20%	1.5	0.59%	
Variable cost Farmer	4.5	15.00%	31.2	84.32%	218	87.20%	251.5	98.63%	
Margin	25.5	85.00%	5.8	15.68%	32	12.80%	3.5	1.37%	11.76%
Margin			100.00		100.00		100.00		
sales price Farmer	30	%							
sales price to Mediator			37	%					14.51%
sales price to Processor					250	%			98.04%
sales price to Retailer							255	100.00%	

vc-variable cost

Fig. 4: Market actor (s)' share in commodity price

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