

Evaluating Value Chain Interventions for Livelihood Augmentation and Poverty Reduction

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1.0 Introduction

There is a growing interest among civil society organizations to take up market-led interventions which aim at better price discovery and realization for goods and services produced by rural communities. A handful of social entrepreneurs / NGOs have successfully facilitated the creation of “pro-poor value chains” in which people’s institutions control the chain and poor producers command a significant if not lion’s share of the terminal price. Such interventions have tremendous scope for generating self-employment for the poor and diversifying the local economy. Therefore value chain interventions (VCIs) represent an emerging area for evaluators.

The paper aims to introduce the reader to this emerging area which may be seen as a subset of market-led interventions. It also attempts to demonstrate the use of suitable tools and criteria for evaluation of VCIs with the help of selected examples from the Indian context. The paper draws upon the available literature on VCIs as well as case studies on VCIs from a larger study (Pastakia and Oza, forthcoming)².

The paper is divided into six sections. Section two defines market-led interventions and provides a typology of such interventions. The next section clarifies key concepts and processes needed to understand value chain interventions. Chapter four describes the dominant strategies for VCI, based on analysis of available case studies. Section five deals with the application of available tools and methods for evaluating VCIs and section six provides the conclusions.

2.0 Market-led Interventions

“Market-led” or “market-based” interventions in the context of livelihood augmentation are terms that are used loosely to refer to interventions that help the primary producers to get a better price for their produce. They include a wide range of interventions on a scale of complexity starting from simple initiatives like providing market intelligence to

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² These case studies are part of a larger work being brought out by Development Support Center, Ahmedabad in the form of a four-volume strategy handbook for practitioners, entitled *Livelihood Augmentation in Rainfed Areas*. They form part of Volume 2 which focuses on “Entrepreneurial Strategies for Augmenting Rural Livelihoods”.

framers or establishing forward linkages with potential buyers to creating an entire value chain (see table 1 for a typology).

Table 1: Typology of Market Led Interventions

SI No.	Category	Examples
A <i>Addressing Market Imperfections</i>		
1	Market intelligence to deal with market information asymmetry	MCX-India Post's <i>Grameen Suvidha Kendras</i> , ITC's <i>e-chaupal</i> etc.
2	Empowering primary producers through market exposure and education	OTELP's partnership with MART to educate common interest groups of forest dwellers surviving on sale of NTFPs in Orissa
3	Influencing the local market as a major player	Jannarth, an NGO in Aurangabad, that participates in the local <i>mandi</i> acting as a "persistent bull" to influence prices in favour of farmers
4	Creating local market infrastructure like <i>haats</i> , storage facilities etc.	Swadhina's <i>haats</i> in Jharkhand, AMUL's milk collection centers with automated fat testing equipment etc.
B <i>Tapping Market Opportunities</i>		
1	Market directed production	NGOs like TSRD and RDA in East Singhbhum, Jharkhand, which have promoted new production techniques and varieties after studying the tomato value chain and market requirements
2	Market linkages (backward and forward)	Poultry cooperatives promoted by PRADAN, which developed forward linkages with large traders in the broiler market and backward linkages for supply of high quality day-old-chicks.
3	Backward and forward integration	When the PRADAN promoted poultry cooperatives matured, they started integrated backwards to produce their own poultry feed and own eggs from a centralized hatchery. Forward integration is also attempted through the cooperative's own retail outlet.
4	Contract farming	Partnership between potato farmers in Jharkhand and PepsiCo for production of Frito Lays, facilitated by BASIX
C <i>Creating New Market Opportunities</i>		
1	Concept selling prior to product launch, through education, demonstration etc.	Production of vermicompost by SHGs promoted by various NGOs like BAIF
D <i>Working with entire value chains</i>		
		AGROCEL's organic cotton value chain; PRADAN promoted tasar silk value chain

Source: Self-compiled

Among all market led interventions, the most challenging is to work with the entire value chain, often generating livelihoods at different nodes of the chain. Working with entire value chains, however, calls for a long-term commitment on the part of the social entrepreneur and a sustained effort in working with various stakeholders (often covering

a decade or two). It presupposes expertise in dealing with markets and entrepreneurial skills in building value chains to meet the precise requirements of the market.

Alternative framework

It is worth mentioning that many researchers do not make the kind of distinction that we have made between market-led interventions and VCIs. For them any intervention in the value chain (upstream or downstream) that results in gains for the poor producers may be seen as a value chain intervention. With this understanding, Mundy (2006) provide a framework that distinguishes four basic forms of small scale farmer participation in supply/ value chains (see matrix in Figure 1).

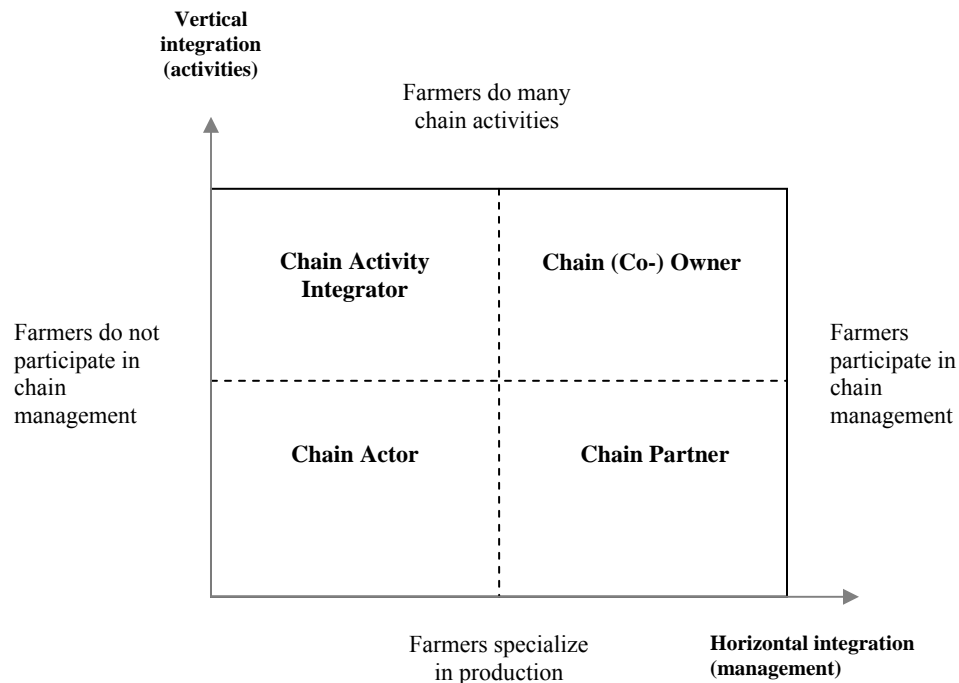


Figure 1: Forms of chain participation by small and marginal farmers

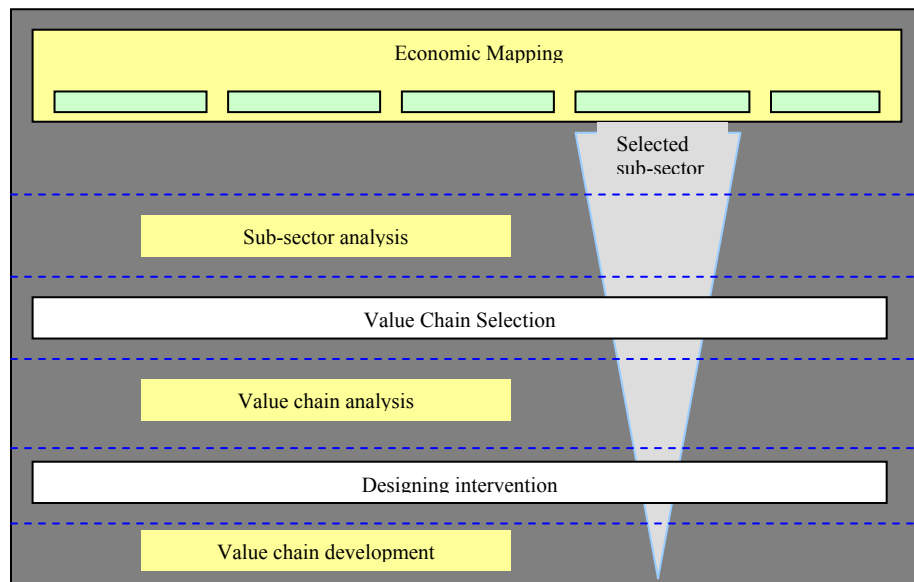
Farmers may be located anywhere on this matrix. To start with, most farmers belong to the category of *chain actors*. These are farmers who become crop specialists producing crops of high quality as per the requirements of the market. Becoming crop specialists is a necessary first step, prior to any other form of chain development. If they start integrating more functions in the value chain such as grading, storing, processing, branding, retailing etc. they graduate into the *chain activity integrators* category. This allows them to get a larger share of the revenues and in case of perishable products, minimize the losses when these cannot be sold immediately. Even when they perform more functions in the chain they are unable to exert control over the chain and are not able to influence factors such as pricing, technology, quality standards, logistics, timeframes etc. On the other hand *chain partners* are farmers who are organized enough to exert control even if when they have not moved up the value chain to integrate various functions. They have a long term partnership with traders, processors or retailers, which

aim at providing value to the end user while remaining profitable. The last category is that of *chain (co-)owners*. Here, farmers have not only moved upstream in the chain but have also improved their influence and control over the value chain. Chain (co-)owners are organized in business cooperatives that develop new products and reach the end-consumer. Such farmers' organizations can negotiate lucrative prices and take a fair share from the chain.

In Mundy's framework, the Chain (co-)owner category corresponds to the value chain intervention mentioned in our typology. What is worth noting from Mundy's framework, is that such an intervention leads to both economic benefits, in terms of better productivity and income levels for the farmer as well as socio-political benefits, in terms of better social capital of the farmers leading to higher bargaining power and influence over various decisions in the value chain.

3.0 Value Chain Interventions – Key Concepts and Processes

A social entrepreneur interested in designing a VCI in a given area, will need first of all to look at the state of the existing local economy. Beginning with an overview of the local economy, the analysis must funnel down to the specific value chain/ supply chain in which an intervention needs to be made (Figure 2). *Economic mapping* involves identifying the key sub-sectors in the target area. The social entrepreneur would have to select one sub-sector that has the maximum potential for generating livelihoods for the poor, where he/ she can make a difference given the strengths of his/her institution on one hand and the competitive advantage of the target area / population on the other.



Source: Hans Posthumus Consultancy (2007)

Figure 2: Analyses preceding design of VCIs

Sub-sector analyses usually involves mapping of the cluster of alternative marketing channels (supply chains and /or value chains) related to the particular product (e.g. ready-

made garments) or raw material (e.g. organic cotton) and selecting a supply/ value chain with the maximum potential for augmenting rural livelihoods. Finally an analysis of the ruling constraints in this chain would serve as the basis for developing a value chain development plan or intervention.

Distinguishing between a supply and value chain

A ***value chain*** describes the full range of activities required to bring a product from conception to its end use and beyond. This includes activities such as design, production, marketing, distribution and support to the final consumer (Ruijter de Wildt, Elliott, & Hitchins, 2006).

Supply chains are defined in similar terms prompting many to use the terms interchangeably. However, value chains are supply chains with a difference. They bring value to the final consumer and competitive advantage to the producer through strategic alliances. An illustration provided by Mundy (2006) brings out the difference clearly (Box 1).

Box 1: Differentiating between supply and value chains: Example of pineapple sub-sector

A beach resort on the island of Zanzibar serves its guests with fresh pineapple juice for breakfast, made from pineapples grown in Tanzania. In a typical ***supply chain***, farmers cultivating pineapples are at one end of the chain. Between the tourist and the farmer is a long chain of activities, planting, pest and disease control, harvesting, sorting, grading, packaging, transport, shipping and storage. Different actors carry out different activities, incur costs as well as risks and make profits in order to continue being a player in the supply chain. Some actors in the chain benefit more than the others, when they exploit advantages in the chain. For example, a trader who has the only truck in an area can buy at rock-bottom prices, then, sell at a high mark-up in the nearby town. Supermarkets or processors are often powerful players that can dictate terms to their suppliers and force down prices. Farmers are often at a disadvantage in such chains since they lack the market intelligence, are not organized and lack an understanding of the market. They do not control the terms on which they participate. This supply chain functions – but not very well: the farmers make little money and have no incentive to improve their product. The traders face a great deal of risk and can buy only low-quality produce. The end-user in this case the beach resort owner is never sure of getting fruit of the desirable quality at the right price.

Contrast this with the following ***value chain***. An association of farmers in Tanzania has negotiated a deal with a trader who buys a certain amount of high-quality fruit each week. The trader in turn has a contract with the hotel's supplier. This is a value chain – each of the actors in the chain is prepared to invest in the chain, and to support the other actors, to make sure that it functions smoothly. This makes sense for them all – all benefit from having a smooth supply of top-quality fruit arriving in the hotel for breakfast. Information is shared freely across the chain since all are working towards a common purpose. Developmental organisations can work with farmers' groups and other actors to convert supply chains into value chains.

Source: Paul Mundy (2006)

The precise points of difference between the two concepts are summarized in Table 2.

Table 2: Distinguishing between Supply and Value Chains

Aspects	Supply Chain	Value Chain
Overall focus	Effective planning and management	Satisfying a particular customer need
How does it function	Deals with all vertical chain activities leading from production to consumption.	Is a particular form of supply chain that deals with strategic alliances between number of actors in the chain
Expected outputs and outcomes	Price and cost effectiveness and efficiency; commodity driven	Value and quality; driving force is customer needs.
Power equations	Are often skewed and the more powerful players tend to dictate terms often exploiting others in the supply chain	Power equations are more balanced and farmers, being better organized are often able to negotiate terms on an equal footing. Common values tend to promote collaboration and mutual support between members of the chain.
Transparency and information flows	Information flows are skewed following the pattern of power relations within the chain. Farmers/ rural producers being unorganized have usually little idea about who the other players in the chain are, what happens to their produce after they sell it, or what types of products consumers want.	Transparency is important for the chain to function well. Information is shared across the value chain. Farmers/ rural producers are fairly well informed about the needs of the end users and try to adopt production to their specific needs. Sometimes end-to-end communication between producers and consumers is organized for the purpose.
Application	Not concerned about poor – just a default arrangement among business organisations	Being used to ask where the poor are located in a value chain and to identify pro-poor opportunities

Source: Adapted from Hans Posthumus Consultancy (2007)

Value Chain Analysis

Value chain analyses can be understood as the methodology by which the structure and processes of a value chain are understood. Mapping a value chain becomes the first step in VCA. Value chains can simply be represented through flow diagrams starting from the primary producer and ending with the terminal consumer. In a bid to make value chain maps comparable and easily understood, Haggblade and Gamser (1991) proposed a standardized technique for mapping value chains which is widely accepted. VCA aims at examining how an existing value chain works and whether there is scope for upgrading it. Alternatively, it can also be used to study an existing sub-sector or a set of supply chains, to explore the possibilities of creating a new value chain for the given product or raw material. VCA is no longer value neutral. *It is increasingly being used to ask where the poor are located within a value chain and what opportunities exist to involve them during the process of upgrading it through improved technology and strategic alliances for marketing.*

Pro-poor value chain intervention

A pro-poor VCI can be described as a market based intervention that looks at the entire value chain as an opportunity to generate/strengthen livelihoods for the poor, while creating value i.e. increasing the overall productivity and delivering quality products and services to the end user/ customer.

As pointed out by Ashley and Mitchell (2008), pro-poor VCIs aim to intervene at key points in the supply/value chain so as to change how they operate and improve the performance of the chain from the perspective of the poor. Based on a study of pro-poor VCIs in the tourism sector the authors identified four main strategic changes in the value chain which could benefit the poor (see Figure 3). While two of these changes help existing poor producers to augment their income the other two enable new entrants to join the value chain.

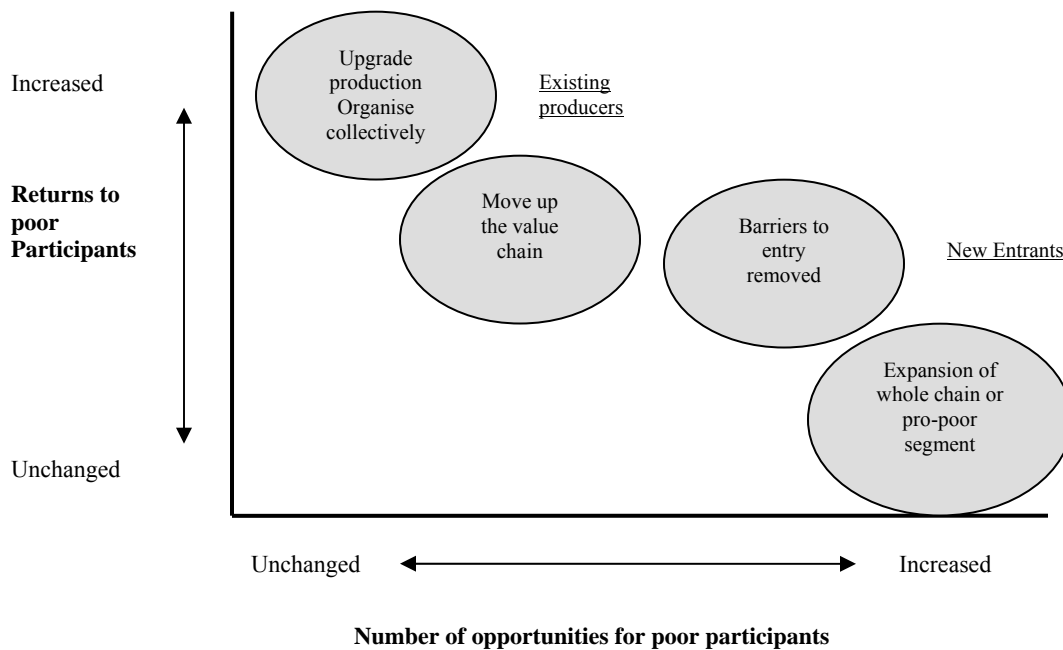


Figure 3: Value chain changes that increase participation of poor

4.0 VCIs in India – Strategies in Use

The authors studied a number of VCIs in India from different parts of the country. Based on these case studies it was possible to develop a typology of strategies in use (Table 3). These strategies are not mutually exclusive and therefore, more than one could be applicable in a given situation. For instance, in the process of reviving a value chain, it may also be necessary to add or subtract a node, which means modifying or reconstructing the chain. Similarly, it would be possible to adopt the strategy of leveraging in one part and modifying in another part of the same value chain.

Table 3: A typology of strategies for pro-poor VCIs

Sl No.	Strategy type	Examples
A	<i>Working with existing value chains</i>	
1	Reviving a sick value chain	BASIX's intervention in dairy value chain in Andhra Pradesh
2	Reconstructing a value chain	PRADAN's intervention in tasar silk value chain in Jharkhand
3	Leveraging a value chain	AGROCEL's strategy while creating a value chain for organic cotton garments
B	<i>Creating a new value chain</i>	
1	Linking distant consumers of specific value orientation with dispersed marginal producers	Consumer Friendly Movement's intervention to link rural artisans with fair trade consumers in the US interested in hand-crafted produce; Rangсутra's collaboration with FabIndia to link poor traditional artisan groups in the handloom and textile industry with ethnic fashion conscious urban consumers in India and abroad.
2	Creating a network of decentralized local value chains	SEWA's RUDI Bazar, an intervention to create decentralized value chains of processed food commodities; BAIF's intervention in creating local value chains for supply of vermicompost; Value chains for seed production by farmer's producer companies promoted by ASA under DPIP in Madhya Pradesh.
3	Creating ICT based value chains in the service sector	Source for Change, an all women rural BPO in Rajasthan

A) *Working with existing value chains*

It is usually a good idea to work with existing value chains especially if a high proportion of poor are involved and it offers considerable scope for up-gradation. It should be noted that the effort to upgrade a value chain often leads to innovative product and/or process development, and deployment of innovative production, marketing, systems and organizational strategies. Inadvertently, such innovations may change the structure and processes of the value chain completely. It may also result in the identification of new target customers leading to creation of a new value chain or rather a new avatar of the previous value chain. In such cases the distinction between working with old and new chains becomes fuzzy.

1) *Reviving a value chain*

Often one comes across a situation, where the inefficiencies that have crept into some critical nodes of a value change are so great as to render the entire chain ineffective or sick. In such a case both the end users (customers) and primary producers are the worst sufferers. An analysis of the entire value chain focusing on the *ruling constraints* at each level or node is critical in producing a plan of action to breathe new life into the chain.

In the late nineties BASIX³ became aware of the sickness that had crept into the cooperative milk value chain under the umbrella of the Andhra Pradesh Dairy Development Cooperative Federation. (APDDCF). Out of the six milk-chilling plants (MCPs) established by the Federation in the eighties, in Mahbubnagar district, three had become defunct by 1997. The MCP at Wanaparthy having a capacity of 10,000 liters per day (lpd) with a breakeven of 6000 lpd, had an average milk procurement of just 1290 lpd leading to heavy losses. APDDCF was contemplating closing down the MCP. It was at this point that BASIX decided to step in and revive the value chain, starting with Wanaparthy (Ghosh, 2005).

BASIX's assessment of the value chain showed that four key ruling constraints contributed to the Wanaparthy plant's impending closure:

- Limited milk collection
- Lack of production incentives
- Limited product and domain knowledge at the producers' level
- Limited availability of credit to village producers

Since the inefficiencies lay at the primary production level rather than at the chilling plant, the intervention was designed to address the four constraints at that level. BASIX entered into an agreement with the Wanaparthy MCP to provide credit to the producers. It helped the unit to address the ruling constraints in various ways including improving collection efficiency, introducing electronic milk testing machines for quick testing of fat, automation of accounting and payments, insurance of animals through a tie up with New India Assurance etc. (*ibid.*)

To reduce the high cost of logistics in moving milk to the chilling plant and back to local retail outlets, local sale of chilled, "loose" (non-packaged) pure milk was initiated using 100 liter micro-coolers at retail shops in small towns for the first time in November 2000. Local milk-pouch packaging machines were installed and milk was sold locally.

All these measures together had the desired results and the chilling plant saw a dramatic turn-around. The average milk procurement increased from 1300 lpd in 1998 to 6400 lpd in 2000. The impact on livelihoods was even more significant. The sale of milk from the villages increased from less than Rs 5 million to over 24 million while the net profit of milk producers increased by Rs 4 million or Rs 5,700/- household. The number of milk producers increased to 13,242. By July 2001, BASIX was working with over a dozen APDDCF chilling plants in various districts of AP (*ibid.*)

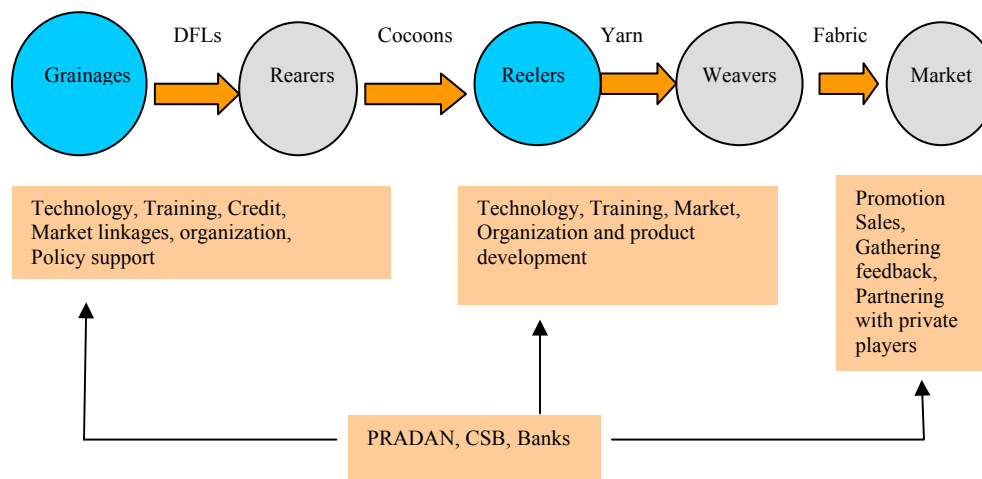
2) *Reconstructing a value chain*

Some times a value chain may have to be drastically modified or reconstructed in order to meet the challenges of a changing market or to accommodate changes in technology or to introduce new actors in the chain. Such changes could include:

³ BASIX a private company with a social objective is charged with the mission to promote a large number of sustainable livelihoods for the rural poor and women through provision of financial and technical services in an integrated manner. BASIX reaches out to those poor households that do not have access to either formal credit or technical guidance for their livelihoods.

- *Addition of a node* or nodes in the value chain
- *Elimination of a node* or nodes in the value chain
- Merging or integration of more than one function in a given node
- *Re-allocation of functions* between different actors
- *Changes in the pathways* or flows of the product as it undergoes transformation
- *Changes in the margins* retained at different nodes as a result of the above changes
- *Changes in overall value produced* by the chain

In the tasar silk value chain intervention in Jharkhand, it was the introduction of new technology by PRADAN⁴ that led to a reconstruction of the value chain. Before the intervention took place there were only three steps viz. cocoon rearing, weaving (including reeling by the weaver’s wives) and marketing of fabric. The intervention saw the introduction of two new steps/ nodes (see Figure 4):



Source: PPT by Satyabhrrata Acharya

Figure 4: Reconstructed Value Chain in Tasar silk sub-sector

- Grainages*: The step of producing disease free layings (DFLs) by “grainage entrepreneurs” prior to the step of cocoon rearing was introduced after CSB and PRADAN collaborated to demystify the science of producing DFLs and successfully trained local youth to produce the same at the village level.
- Reelers*: Introduction of reeling machines and creation of common facilities for reeling by poor rural women replaced the traditional and crude method of reeling practiced by the wives of weavers. The traditional method involved making yarn with bare hands and thighs, which involved drudgery for the women and yielded poor quality of yarn. Hence the weavers were divested of this function and a new exclusive node for reeling emerged (Acharya, in Pastakia and Oza, forthcoming).

⁴ Established in 1983 as an NGO with professional developmental workers, PRADAN works for the uplift of poor and marginalized households in rural India by strengthening their livelihoods. Presently PRADAN professionals work with more than two lakh households spread over eight poorest states of the country.

3) *Leveraging a value chain*

Some social entrepreneurs have adopted the strategy of gaining control over the value chain by outsourcing processing at various stages but retaining the marketing of the outputs. This strategy becomes relevant when the intervention has already worked with primary producers and built a strong base and there is a need to gain a greater control over the value chain right up to the end consumer. However, due to existence of *entry barriers* such as high technology, high capital, large volumes etc. it is not possible to operate in all the nodes of the value chain.

AGROCEL⁵, a social enterprise seeking to create a pro-poor organic cotton value chain for farmers in Kutch has adopted this strategy by outsourcing the task of cotton processing through its various stages to different processing units, usually identified by its customers (see Figure 5). The first consignment of T-shirts produced in this manner was sold through the Fair trade channel to OXFAM, Belgium, which turned out to be a success. Since then the strategy has been fine-tuned to include the stages of ginning, spinning, weaving and tailoring. The profit margin of ginning units is very low (2 – 2.5 %) whereas the margin of spinning units is higher as compared to others in the supply chain. However, it requires very high investment in start-up capital. While outsourcing spinning activity, AGROCEL works on optimum batch size, which helps in keeping the final product price competitive (Pastakia, in Pastakia and Oza, forthcoming).

The organic cotton garments produced through this pro-poor value chain is sold through fair-trade channels by high-end retail chain stores like Marks & Spencer in the U.K. Both, Marks and Spencer as well as other promoters of the fair-trade movement (such as Shell Foundation, Vericott Exchange. etc.) have made considerable investments in developing this value chain and building the capacity of AGROCEL to interact and negotiate with large international customers. AGROCEL on its part was able to leverage the brand value of its partner institutions to influence the entire value chain and get outsourcing work done as per its specifications (ibid.)

B) *Creating a new value chain*

In the present era of globalisation and use of information communication technology (ICT), it is increasingly becoming easier for social entrepreneurs to connect distant consumers of specific value orientation with local marginal and dispersed producers. In the process they end up creating new value chains with entirely new channels of marketing to reach the distant consumers while they themselves work with the producers to build their capacities to produce what the market wants. A new value chain may also be contemplated when the effort involved in reviving an inefficient value chain is far greater than starting a new one, or when new players bring in new technology and applications which cannot be handled by existing value chains.

⁵ AGROCEL Industries Pvt. Ltd. is a company promoted by the Shroff Group of companies. Its Agri-services division is responsible for the creation of the organic cotton value chain.

1) Linking up with distant consumers of specific value orientation

The recent *movement for organic farming* among producers of food and cotton and the demand as well as support from consumers in industrialized countries for organic produce, have provided a unique opportunity for linking the two and creating a new value chain for organic produce. Similar is the case with the *fair-trade movement* where the discerning consumer is willing to support small producers in developing countries and to see that they get a fair deal. Other values that specific groups of consumers in industrialized countries uphold include *hand-crafted* produce as compared to machine-made, *prevention of cruelty to animals*, *bird-friendly* production processes etc.

Rahul Barkataky founded a private company with a social goal, called Consumer Friendly Movement (CFM) in the non-farm sector. CFM used fair-trade channels to link consumers in the USA, willing to purchase 'hand-made artifacts' in developing countries, and thereby get the satisfaction of helping the poor as well. These artisans were located in clusters in different parts of the country. The real challenge was not that of marketing since a demand for the produce existed. The challenge lay in organizing the producers and developing the value chain by introducing new systems of communication, production and quality control, incorporation of new designs with the help of professional designers and providing new systems of incentives to the artisans to ensure their commitment. CFM measures its success by the extent to which artisans are able to get fairer returns for their labour (Barkataky, in Pastakia and Oza, forthcoming).

Another social entrepreneur, Sumita Ghosh, has similarly created a new value chain that links poor, traditional artisan groups in the handloom and textile industry with ethnic fashion conscious consumers in India and abroad. Sumita has a strategic alliance with FabIndia, a leading marketing company in the domestic market with fair trade values. The alliance comprises a joint holding private company called Rangasutra with equity participation of the promoter, FabIndia, as well as artisan groups. Sumita has also facilitated the formation of a producer company with equity participation of artisans, NGOs and other supporters. The role of this company has been to develop artisan groups and coordinate and pool diverse skills in a way that meets the demands of the market. (Sumita Ghose, in Pastakia and Oza, forthcoming).

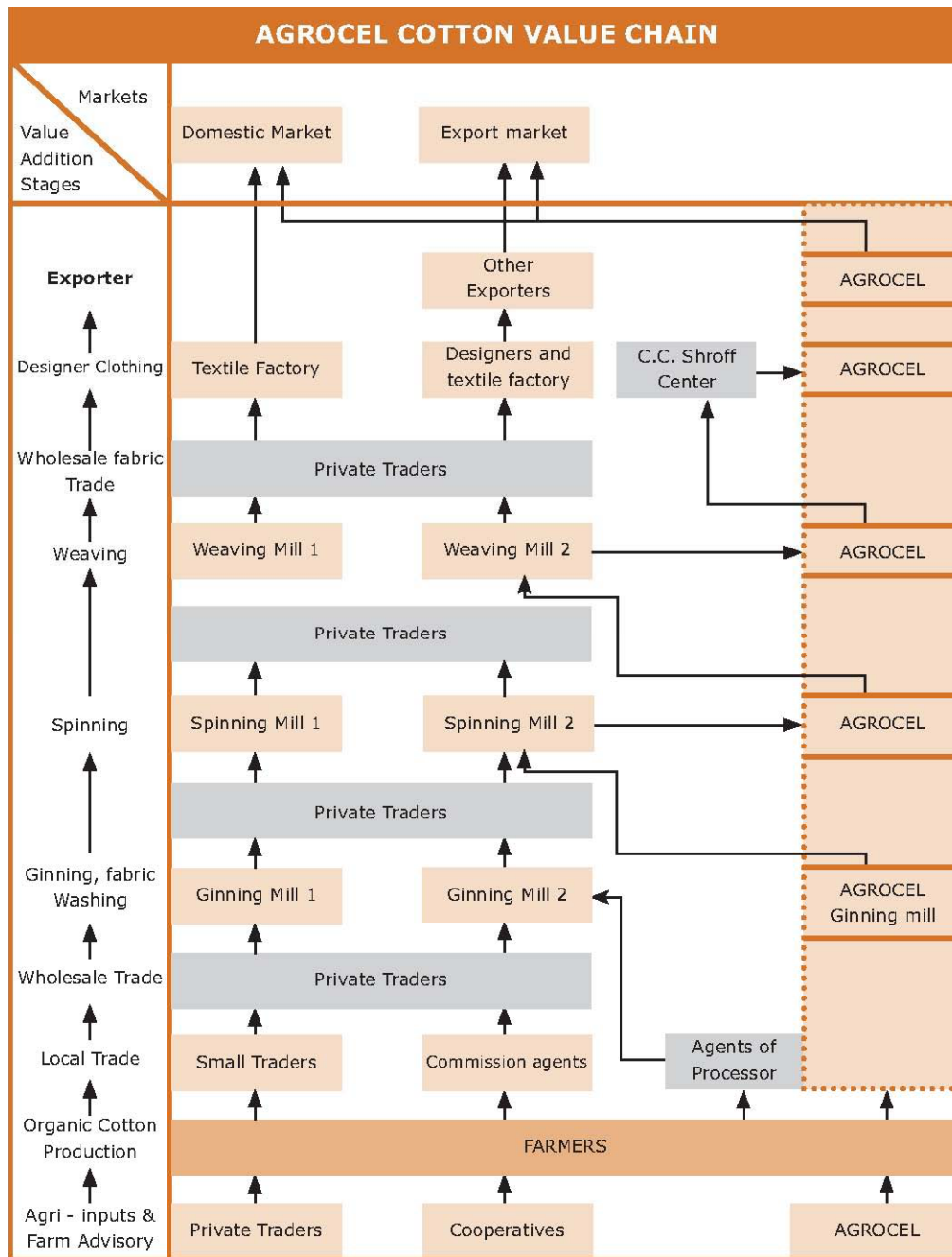


Figure 5: Leveraging an existing chain through outsourcing

2) *Creating a network of decentralized value chains*

The fact that rural producers themselves represent a large market of consumers has not been lost on many a social entrepreneur/ developmental agency. A few agencies have tried to promote decentralized value chains that link the local producer and the local consumer through a process of aggregation, value addition and disaggregation.

Decentralised value chains for supplying processed food commodities to rural and urban consumers have been promoted by Self Employed Women's Organisations (SEWA) under the project "Rudi Bazar". These farmer value chains are networked together and managed by women. RUDI Multi Trading Company Ltd (RMTC) a public limited company primarily owned by the farmers was established by Sewa Gram Mahila Haat (SGMH), the agriculture marketing arm of SEWA. The produce of over 4,000 self-help groups comprising over 3.50 lakh women from 14 districts of Gujarat is procured, graded, sorted, cleaned and packed and sold through the network. *Rudi Bazar*, as the initiative is referred to, follows a simple model. District Associations (DAs), the associations of the producer self-help groups, procure, aggregate and process the commodities. The products are sold by rural sales-women, popularly known as "RUDI Ben". Once the local consumers' need is fulfilled, the enterprise explores urban markets in order to improve profitability. At the beginning of every season DAs and RMTC enter into a sale purchase contract. In this way the company bears all the market risks allowing the DAs to concentrate on improving the efficiency of procurement and processing activities (Business Standard, 2004 and organizational website accessed 2010).

The entire operation of RUDI in one district ensures a stable direct employment to 500 women per month. The sales turnover of the company in 2007-8 was Rs. 5.9 million while the target for the year 2008-09 was Rs.15 million (*ibid*).

3) *Creating ICT based value chains in the service sector*

ICT is opening up new vistas for rural livelihood augmentation in the service sector through creation of knowledge/ information value chains. While many such chains are created by the public and private sectors to reach knowledge/information products to rural clients, the reverse flow of knowledge/ information services is only just beginning and possesses a greater potential for livelihood augmentation.

The emergence of rural business process outsourcing (BPO) companies has shown how this potential can be tapped. As of June 2009 there were about a dozen rural BPO players in India. In terms of size they vary from 20 people BPO of Source for Change to 160 people BPO of RuralShores in Bagepali village, close to Bangalore.

Sai Seva BPO has been set up in a tiny hamlet called Puttaparthi, 140 kms from Bangalore city in Andhra Pradesh. The BPO employs 50 young citizens, who stay within a 10-15 kms radius of the center. There are no night shifts, which makes it convenient for

women to participate. Around 80 percent them are graduates, the remaining having passed class XII. Sai BPO provides free computer training for potential employees and also sponsors them for higher education. Unlike other BPOs, there are no night shifts at Sai Seva BPO and attrition too is non-existent. The BPO provides a host of services to domestic and overseas customers. These include form/image-based data entry, data/format conversion from PDF, back-office transaction processing, application processing, e-mail marketing, data mining, data imaging etc. The customer list includes HDFC, MATRIX, Royal Sundaram and Rea Source, a US-based mortgage firm among others (Nasscom Foundation, 2010).

BPO value chains in India are undergoing substantial re-structuring as Indian IT majors like Infosys (\$ 316 m) and Wipro (\$ 395 m) finalise their plans for entering rural areas and small towns to maintain their competitive edge and cater to the growing domestic market. The move to rural areas for these companies would help cut costs by 60% while retaining gross margins from domestic business at rates similar to those from international business (about 22-24%) (Shelley Singh, June 2009).

5.0 Evaluating VCIs

Given the complex nature of VCI's assessing the progress made in such interventions becomes a challenging task. This section is based on a survey of available tools and methods as well as the authors' initial experiences of studying and evaluating VCIs.

5.1 Choice of sub-sector

In market based interventions best results can be demonstrated when working with *one sub-sector at a time*. Hence one must know how to select a suitable sub-sector. Given the above principle, it becomes important to understand the criteria for selecting a sub-sector for a given target population or geographical area. In general, the choice of the product/service offerings should be guided by the *main strengths of the project area* and the *core competencies of the target producers*. Sub-sectors may be short-listed on the basis of their *suitability for the poor to engage in them* as well as their *employment generation potential*. These sub-sectors may then be subjected to further scrutiny.

BASIX has developed a framework of analysis that helps the practitioner to analyse four key components of the external environment of a sub-sector (Dutta, Mahajan and Thakur, 2005):

- 1) *Factor conditions*: This refers to the available natural, physical, human, financial and social resources in the project area. People should have access to these resources and the capacity to utilize them.
- 2) *Demand conditions*: There should be a demand for the proposed goods/services that are produced in the sub-sector. The extent and nature of the demand, whether local or distant should be assessed.
- 3) *Industry conditions*: This refers to the various players in the sub-sector and the extent of competition involved.

- 4) *Institutional conditions*: Every sub-sector has an institutional context which shapes the sector. Institutions that carry out sector development activities, institutions that play a regulatory role, those that set standards and those that lay down policies etc.

Each criterion is evaluated with the help of selected indicators. Three key informants are asked to rate the criteria on a five-point scale. The average scores of different sub-sectors are compared and the one with the best score is selected for in-depth analysis. The final choice would of course depend also on the organisation's competence and ability to take up the challenges of a given sub-sector.

Hamre (2008) developed a framework for selecting a pro-poor value chains for intervention with three main determinants:

- *Value chain targeting* - includes demographic aspects of the participants in the chain, entry barriers such as human and physical capital etc.
- *Production* – includes the nature of products, opportunities for sourcing, producer firms etc.
- *Governance* – includes characteristics of the lead firm, power distribution within the chain, employment organization and local politics

The evaluator must explore the thinking that has gone through in selecting the sub-sector and/or existing value chain and assess the appropriateness of the choice for the target area or population.

5.2 Appropriateness of VCI strategy

A value chain intervention must be preceded by a thorough study of the sub-sector so as to assess the limitations of existing supply/value chains as well as the potential to generate employment for the poor at different nodes of the proposed value chain. The strategy for VCI as discussed earlier would vary depending on whether the social entrepreneur/agency wants to work with an existing value/ supply chain or to create an entirely new one. In the case of existing value chains, the *ruling constraints* at each node of the value chain would help determine the gaps that need to be covered either through new technology, new institutions, supply of credit or new systems of management and logistics. In the case of new value chains an *assessment of opportunities* to link producers with potential consumers in ways that were earlier not possible or thought of, would help in developing suitable strategies.

The value chain study should have brought out the logic of the chosen VCI strategy including:

- short and long term marketing strategies,
- the stages through which different nodes would be taken up for development in the value chain,
- the decision of whether to intervene or outsource at each node of the value chain,

- the institutional arrangements needed as the intervention moves through these stages,
- the share of terminal price that the primary producers and their institutions can hope to acquire, and
- The potential benefits in terms of employment and income generation for the poor.

The institutional arrangements would include creation of people's institutions to manage one or more collective enterprises as well as strategic alliances with suitable partners.

The evaluator would need to assess the overall soundness of the value chain development plan and evaluate the progress made over the years in moving along this plan. Such progress can be viewed from both the economic as well as socio-political perspectives as discussed in the following sections.

5.3 Economic analysis of VCI

Two tools that are fairly well established in making economic assessment of value chains are a) price spread analysis and b) gross margin analysis. Apart from these, the authors also recommend working out the economic impacts in terms of employment generated at different nodes of the value chain as well as increase in income levels at the family and value chain levels for different stakeholder groups.

Price Spread Analysis

This tool is used to quantify the share of the terminal price at different nodes of the value chain. It shows the proportion of earnings of different functionaries when compared to their contribution in the value chain. Hence it becomes useful to quantify the share of the primary producers and other targeted producers participating in the value chain. Tables 4 and 5 show the price spread and share of primary producers in the tasar silk sub-sector without and with the intervention respectively. The figures show a dramatic increase in target population's share in the terminal price (in this case the prices of silk sarees, stoles, scarves etc.) which has more than doubled from 30.6% to 75%. Such a dramatic increase in control over the value chain was possible because the steps in value addition did not have high entry barriers such as high capital cost, high technology, etc. Innovation in developing and diffusion decentralized and appropriate technology was the key to establishing a pro-poor value chain. Such dramatic increases may not be possible in many other value chains where entry barriers at certain nodes may compel the social entrepreneurs to outsource the work from existing players.

Table 4: Price spread analysis –without intervention

Sl. No.	Name of actor in value chain	Share of terminal Price (Rs.)	Share of terminal Price (%)	Target population's share of terminal price
1	Silkworm rearer	4000/-	22.2	22.2
2	Petty trader	2000/-	11.1	
3	Cocoon hoarder	2500/-	13.9	
4	Weaver	1500/-	8.3	8.3
5	Agent	1500/-	8.3	
6	Fabric wholesaler	2000/-	11.1	
7	Retailer	4500/-	25.0	
	Total	18,000/-	100.0	30.6

Table 5: Price spread analysis –with intervention

Sl. No.	Name of actor in value chain	Share of terminal Price (Rs.)	Share of terminal Price (%)	Target population's share of terminal price
1	Grainage entrepreneur	450/-	2.5	2.5
2	Silkworm rearer	6050/-	33.6	33.6
3	MBT of yarn producers	250/-	1.4	1.4
4	Reeler or yarn prouducer	2513/-	14.0	14.0
5	MASUTA producers company	713/-	4.0	4.0
6	Weaver	2025/-	11.3	11.3
7	Eco Tasar private ltd. company	1500/-	8.3	7.47†
8	Retailer/ Eco Tasar retail outlet	4500/-	25.0	0.73*
	Total	18000/-	100.0	75.0

†MASUTA's share in Eco Tasar Pvt. Ltd. company being 90%.

*Based on proportion of total sales that is retailed.

Source: Case study by Satyabhrrata Acharya in Pastakia and Oza, (forthcoming).

Gross Margin Analysis

Merely looking at the share in terminal price is not enough since business decisions must be made on the basis of profitability. As a first cut, it is convenient to use simplified gross profit calculations to determine where most profits are being made: in the supply of inputs, in production, in wholesale or retail of the product? Gross margin analysis is useful for making decisions on whether to intervene in a particular node of the value/ supply chain or not. From the evaluator's point of view it is useful to compare gross margins at different nodes before and after or with and without the intervention.

Gross profit or margin is simply defined as *sales minus direct costs*. To make a true assessment of profitability one should consider all the indirect costs as well. However, such detailed information is difficult to obtain and therefore as a first cut, including only direct costs, would suffice to get a rough idea of the profitability at different nodes of the supply/ value chain.

Gross margin Percentages:

$$\text{Simplified Gross Margin} = \text{Selling Price} - \text{Direct Costs}$$

Since it is easier to compare results when seen in terms of percentages and not Rupees, we may express everything as a percentage of the selling price.

$$\text{SGM\%} = \text{SGM} / \text{Selling price} \times 100\%$$

Figures 6 and 7 show the gross margins of a cooperative value chain for home-based broiler farming, as compared to industrial broiler value chain. These cooperatives promoted by PRADAN since 1992 in four states provide employment of over 5300 women broiler farmers. The 15 cooperatives had a collective turnover of about Rs 400 million as of April 2008. The figures show that while the share in the terminal price for women broiler farmers was identical to that of the entrepreneur in the industrial value chain (at 67%), the profitability in terms of percentage net margin to total margin was significantly higher (at 44% as compared to 33%). The share in the terminal price actually went up from 67% to 80% if we were to include the share of the cooperative which is owned by the rural poor.

Table 6: Industrial Broiler Value Chain

Transaction Points	Cost of Production	Selling Price	Gross Margin	Transaction Costs	Net Margin	% Return on Investment	% of terminal market price	% Net Margin of Total Margin	Actors
Production End	35.5	38	2.5	0	2.5	7%	76%	33%	Entrepreneur
↓									
Wholesaling	38	40	2	1.5	0.5	1%	80%	7%	Traders
↓									
Distribution	40	43	3	1.5	1.5	4%	86%	20%	Traders
↓									
Terminal Market	43	50	7	4	3	7%	100%	40%	Traders

Source: Case study by Anish Kumar, in Pastakia and Oza (forthcoming)

Table 7: Cooperative value chain for Home-based Broiler Farming

Home-based Broiler Farming								amount in Rs.	
Transaction Points	Cost of Production /Buying	Selling Price	Gross Margin	Transaction Costs	Net Margin	% return	% of terminal market price	% Net Margin of Total Margin	Actors
Production End	34	38	4	0	4	12%	76%	44%	Individual Households
↓									
Primary Bulking	38	40	2	1	1	3%	80%	11%	Cooperative
↓									
Wholesaling	40	43	3	2	1	3%	86%	11%	Traders
↓									
Terminal Market	43	50	7	4	3	7%	100%	33%	Traders

Source: Case study by Anish Kumar, in Pastakia and Oza (forthcoming)

Economic Impacts: Employment and income levels of primary producers

These impacts can be assessed through simple calculations on the additional person days of employment generated in the value chain. Based on estimates of increase in average family income, one can calculate the overall impact of the intervention on the target populations.

The economic benefits to primary producers in the tasar silk value chain promoted by PRADAN are presented in Table 8. For different stages/nodes of the value chain, the table shows:

- a) increase in annual employment per family
- b) increase in annual income per family
- c) Increase in number of people employed

From these figures it is possible to calculate the regional level increases in employment and income of the rural poor on account of the value chain intervention. The following conclusions can be drawn about the benefits to primary producers in the region due to this intervention:

- i) Introduction of new technology resulted in creation of two additional livelihood options along the value chain and increases in annual employment ranging from 30 to 230 person-days per family.

Table 8: Economic Benefits to primary producers

Sl. No	Nature of Benefit	Grainage entrepreneur	Cocoon producer	Yarn producer	Fabric producer	Total
	Annual Employment (person-days)					
1	Without intervention	-	75	-	135	210
2	With intervention	30	75	230	160	495
3	Increase in employment	30	0	230	25	285
4	% Increase	100	0	100	18.51	135.7
	Average annual income / family (Rs.)					
4	Without intervention	-	3500	-	10,125	13,625
5	With intervention	10,500	12,000	14,250	16,000	52,750
6	Increase in income	10,500	8,500	14,250	5875	39,125
	% Increase	100	242.85	100	58.02	287.15
	Active producers (nos.)					
7	Without intervention	-	27,500	-	8250	35,750
8	With intervention	1600	42,500	12,500	8250	64,850
9	Increase in producers	1600	15,000	12,500	0	29,100
	% Increase	100	54.54	100	0	81.4
10	Regional increase in annual employment (million person-days)	0.048	1.125	2.875	0.206	4.254
11	Regional increase in family Income (Rs. million)	0.315	127.500	178.125	48.469	354.409

- ii) Average annual income for all four categories of producers increased substantially ranging from 58% to 242%.
- iii) After the intervention all producers are earning at least 10,000/-annum, with the weavers earning the maximum income at Rs. 16,000/-
- iv) Number of active silkworm rearers increased by 15,000 due to the intervention while there was no increase in the number of weavers.
- v) The total number of people employed in the value chain at primary level increased by 29,100 taking the total to 64,850 and representing an increase of 81.4 percent.
- vi) The total annual increase in employment for the region is estimated at 4.25 million person-days and the total increase in family income for the region is estimated at about Rs. 354 million.

(Acharya, in Pastakia and Oza, forthcoming)

5.4 Socio-political analysis of VCI

Hamre (2008) concluded that pro-poor value chains are to be valued not only for the personal capabilities (such as income, health, security, education) that they generate for the rural poor but also for the societal gains (such as improved institutions, tax revenues, social capital etc.). The USAID initiated studies to assess the social and gender dimensions of value chains, under its programme “Greater Access to Trade Expansion (GATE) between 2004 and 2008. Integral to GATE’s gender and pro-poor value chain analysis approach are the following components:

- *Distributional analysis*: explores the value added generated along the chain and examines the returns to labor and capital and to the different actors that participate in the chain.
- *Segmentation analysis*: assesses how the labor market is segmented by sex throughout the value chain;
- *Analysis of power and governance within the chain*: investigates power within production and exchange relationships across the value chain, including the power to set market prices and bargain as well as indebtedness and sub-optimal contracting; and,
- *Entitlements and capabilities analysis*: considers factors and characteristics that mediate men's and women's entitlements to productive resources, and their capabilities to deploy these resources. Where possible, GATE also examines the poverty rates and livelihood strategies of different actors in the chain.

(Gammage, 2009)

Assessing power relations

The political approach to VCA (Gereffi et. al. 2005) assesses governance by exploring power relations between the different parties involved in any transaction – a critical issue when looking at barriers to entry for poor producers. At the evaluation stage it would be interesting to see how the power relations in the existing supply/ value chain posed problems of entry and how and to what extent these were overcome. In the tasar silk case, PRADAN and Central Silk Board (CSB) helped demystify the technology for producing

DFLs by creating training tribal youth of Jharkhand to become grainage entrepreneurs. By 2009 there were 360 such nano-entrepreneurs. Today the DFLs produced by these entrepreneurs fetch a higher price in the market than those produced by CSB itself! These youth have now acquired the capacity to produce their own basic seed material for which they were still dependent on CSB so far. About 40 grainage entrepreneurs are involved in producing basic seed through nine centers. By 2008 they were producing 1.75 lakh DFLs meeting almost 90 percent of the requirements of the pro-poor value chain (Acharya, in Pastakia and Oza, forthcoming).

Analysis of VCIs from the socio-political angle must assess the extent of empowerment of the rural poor that is taking place. The authors have found the use of *actor-function matrix* very useful in this regard. A comparison of matrixes drawn before and during the intervention is helpful in assessing whether more and more functions and tasks are being taken over by primary producers from the support organization, thereby giving them and their institutions greater autonomy and control. The matrix can also be used as a planning tool to determine future division of roles and future empowerment of primary producers.

Table 9 shows the matrix for Rangasutra's VCI which focuses on building communities of rural artisans to produce fashion garments sold in up-market retail stores such as FabIndia and through fair trade channels abroad. Table 10 provides a projection for the next three years for the intervention. As the table shows, Rangasutra will work directly with artisan groups in future and therefore NGOs may not have much role to play other than taking care of the welfare functions. Rangasutra's producer company may increase its own line of products through its exclusive shops, and explore new markets on its own. It will develop in-house design capabilities and not have to rely on design inputs from clients (Ghosh, in Pastakia and Oza, forthcoming).

Table 9: Actor-Function Matrix of Rangasutra Value Chain Intervention

Functions	Actors					
	Artisan groups	Associated NGOs	Rangasutra private company	Rangasutra Producer Company	Partner Institutions (FabIndia, Aavishkaar)	Fair trade buyers (export)
Design inputs			√	√		√
Production planning	√	√	√	√		
Aggregating and coordinating production			√	√		
Technology inputs to improve processes	√	√	√	√		
Credit and finance		√	√		√	
Quality control	√	√	√	√		
Logistics function		√	√	√		
Marketing functions			√ (HVLM markets)	√ (LVHM markets)	√ (FabIndia) (HVLM markets)	
Customer services			√	√	√ (FabIndia)	
Welfare functions for artisan groups		√		√		

HVLM = High volume Low margin; LVHM = Low volume, high margin

Table 10: Rangasutra Actor-function matrix projected (3 years)

Functions	Actors					
	Artisan groups	Associated NGOs	Rangasutra a private company	Rangasutra Producer Company	Partner Institutions (FabIndia, Aavishkaar)	Fair trade buyers (export)
Design inputs	√		√	√		
Production planning	√					
Aggregating and coordinating production			√	√		
Technology inputs to improve processes	√		√	√		
Credit and finance	√		√	√	√	
Quality control	√		√	√		
Logistics function	√		√	√		
Marketing functions	√		√	√		
Customer services			√	√	√	
Welfare functions for artisan groups		√		√		

6.0 Conclusions

Developing/ facilitating pro-poor value chains is an emerging area in the field of livelihood augmentation and poverty reduction. Given the complex nature of such interventions, suitable methods of evaluation need to be evolved.

Based on a survey of available tools and methods as well as the authors' own initial experience in evaluating VCIs a number of economic and socio-political tools and methods are suggested with illustrations. While economic tools such as price-spread analysis, margin analysis and economic impacts on primary producers are fairly well established, the same cannot be said for assessing the socio-political dimensions. The use of actor-function matrix is demonstrated to fill this gap. The most important part of evaluating VCIs however would be to assess the rigour with which the sub-sector was analysed prior to making interventions at different nodes, the logic of such interventions and the robustness of strategic partnerships forged to create the new value chain.

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