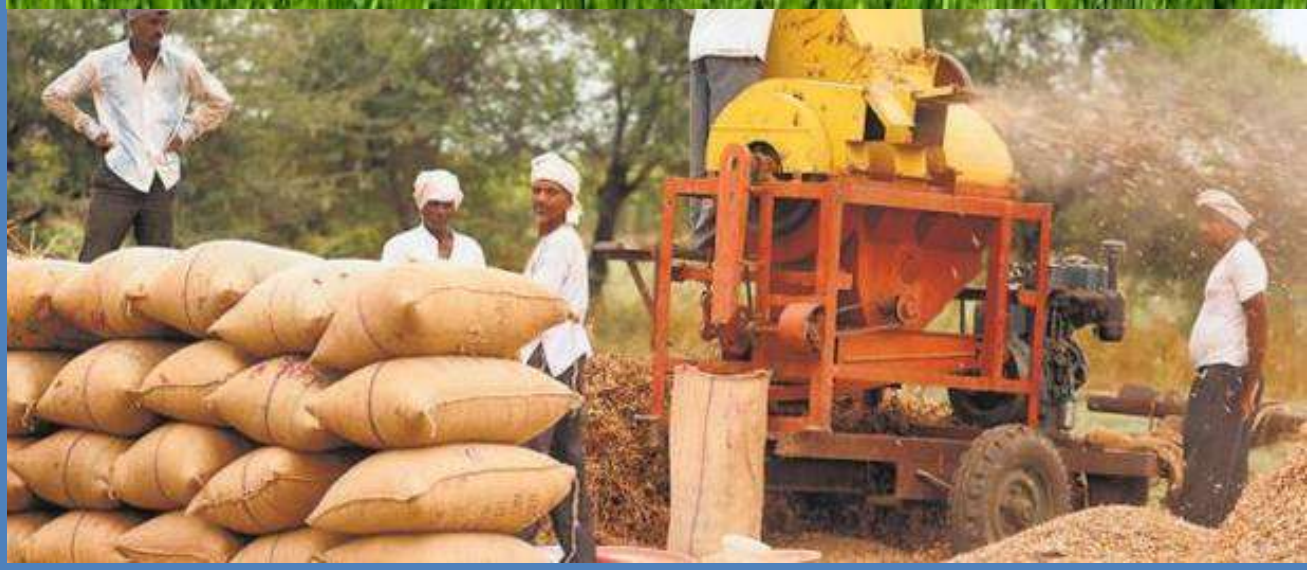
Rural Management - Rural value Chain Management



Rural Management
Rural Value Chain Management

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About the Book

In India, approximately 60% of food quality is lost in the supply chain from the farm to the final consumer. Consumers actually end up paying approximately about 35 percent more than what they could be paying if the supply chain is improved, because of wastage as well as multiple margins in the current supply structure. The farmer in India gets around 30 percent of what the consumer pays at the retail store. Compare this with the situation in developed countries, where farmers may receive up to 70 percent of the final retail price and wastage levels are as low as 4 to 6 percent. One can easily understand the benefits that could be generated from emulating those practices and tapping that expertise for the supply chain in India." Supply Chain Management has to play a key role in rural market of India, contributing to improved relationship with suppliers and customers and income generation. Managing the supply chain has become a way of improving competitiveness by reducing uncertainty and improving service. This paper will seek to highlight the importance of managing the Supply Chain and logistics in Indian rural markets to delivers goods and services in a cost-effective manner.

We chose to write on understanding how Rural Value Chain in various context and imbibing the essence of a transformational supply chain in rural management education. The book written by four rural management graduates sparks from their experience of working with various organizations engaged in managing value chain for various products in rural areas of India. The book further implores to understand the concept of rural value chain through case studies based on field experiences of various rural organizations.

This book aims to simplify the learning of students to develop an in depth understanding of the concepts of rural value chain functioning and its management among students. Though our daily lives are very much intertwined to value chains of varying complexities, we often take them for granted and do not put much thought into the varying aspects encompassed. This book builds on the fundamentals of what a value chain is, how and why one develops a value chain, the current challenges and opportunities ahead.

I thank Ardhra Prakash, Avi Anuj Jain, Manoja KSD, RiteshAmar Singh, IRMA graduates for contributing to this book and for their outstanding insights. Also, I would like to thank MGNCRE Team members for extending their extreme support in completing this text book.

Dr W G Prasanna Kumar
Chairman MGNCRE

Contents

List of Figures

List of Tables

Introduction to the Book

A country with over 70% of the economy centered on the rural parts of the country, logistics players are now seeking ways to address logistics and supply chain market issues as about $100 billion worth potential is latent in the rural parts of India. The average Indian village today well represents an emerging, powerful consumer community. Rising crop prices, sale of land to developers, crop rotation, export orientation and home-coming of the rural youth, government initiatives like NREGA and better wages for farm labor are creating disposable surpluses in the hands of rural and small-town Indians. However rural penetration and distribution challenges remain abundant. The farmer in India gets around 30 percent of what the consumer pays at the retail store, where as in the developed countries farmers get 70%. Hence need of hour is to develop a distribution model which is suited to the rural environment and provides a strategic advantage. This book will seek focus on value chain and supply chain management in Indian rural markets in a cost-effective manner.

Rural Value Chain Management book entails five chapters focusing on the following aspects of the concept:

- Introduction to Rural Value Chain Management
- Value Addition through Value Chain Management
- Role of Cooperative Movement in Value Chain Development
- Financing for Value Chain Management
- Rural Value Chain Business Models

The book aims to provide a progressive learning experience to the students where theywill learn each aspect of rural value chain management through case studies and final project. Moreover, emphasis has been laid on understanding the roots of each concept followed by practical orientation for better retention of concepts. The book further aims to strike a balance between industry experience and academic research by introducing relevant theories and associated examples from the field.

Every chapter has five units which entails a set of related phenomena explained in a correlated fashion. Moreover, every unit has a to-do activity which helps students with on the go learning and experimentation.

The book covers all the fundamental aspects associated with Value Chain management that is required to build a deep-rooted understanding of the topic. The first two chapters focus on understanding what a value chain is and how it may be developed, with a particular stress on the rural context. The third chapter studies the role of cooperative movement in Indian value chains, prospective avenue and challenges. The subsequent chapters cover the various value chain business models as well financing options that need to explored to set up and run a value chain.

Chapter 1 Introduction to Rural Value Chain Management

Introduction

India has usually confronted the venture of developing sustainable rural business, which has a right away effect on poverty and migration to the urban world. The agricultural increase can aid in decreasing the poverty stages in rural India as has passed off in other sectors. Thus, implementation and control of powerful marketplace-connected cost chains could show to be one of the most effective ways of solving socio-economic issues of farmers.

The primary framework of rural cost chains consists of a series of values including activities, starting from manufacturing to final consumption, via steps like processing and market communication. Each phase of the cost chain has one or more backwards and/or ahead linkages. A cost chain in a rural set up identifies the set of activities and actors who deliver a simple rural or farm product from manufacturing in the area to the final client, in which at every level value is added to the product. It is worth mentioning that in a rural set structural shortcoming such as loss of first-class merchandise and bad reliability, insufficient transportation, terrible warehousing facilities and so forth. Our home providers regularly fail to grab the opportunities provided through big agencies/private companies.

A complete understanding of the value chain concept and the effective management of the specific competition within the chain, will to a superb extent facilitate the sustainability of the rural economy, besides, to make the agricultural marketplace extra handy to the out of doors global.

Objectives

- To familiarise the genesis of the Value Chain idea
- To explain how it became a sport-changer in the tremendously aggressive cutting-edge business global.
- To provide insights on Value Chain Analysis
- To provide insights on application of value chain management
- To explain the utility of Value Chain Analysis for the gain of the stake-holders

Chapter Structure

1.1 Introduction to Value Chain Concept

1.2 Value Chain Management

1.3 Value Chain Analysis

1.4 Application of Value Chain Management

1.5 The Rural Value Chain

Introduction to Value Chain Concept

The concept of Value Chain was first postulated with the aid of the famous thought chief of Harvard Business School, Michael Porter who in his epic e-book 'Competitive Advantage' (1985) pointed out business companies gaining an edge over others through green Value Chain Management. As in step with Michael Porter, Value Chain is a set of all such competition that is performed utilizing a business enterprise to create 'value' for its customers. 'Value Creation' manner adding cost which leads to aggressive gain. Ultimately, this introduced value additionally gives an upward push to etter profitability for a firm.

A greater complicated definition turned into given by Kaplinsky (2000) and he says, "a cost chain is the entire variety of activities which might be required to bring services or products from concept, through the middleman levels of production, delivery to very last clients, and final disposal after use." Let us see what may be the numerous competitions that is essential to bringing a product or service from conception to very last intake and disposal.

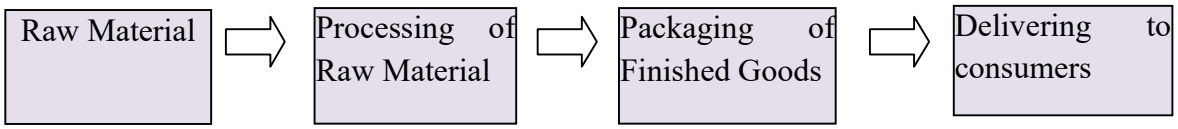

Figure 1.1 Fundamental activities in a manufacturing organization

The concept of Value Chain was first postulated with the aid of Michael Porter who pointed out business companies gaining an edge over others through green Value Chain Management. As in step with Michael Porter, Value Chain is a set of all such competition that is performed utilizing a business enterprise to create 'value' for its customers. 'Value Creation' manner adding cost which leads to aggressive gain. Ultimately, this introduced value additionally gives an upward push to better profitability for a firm.

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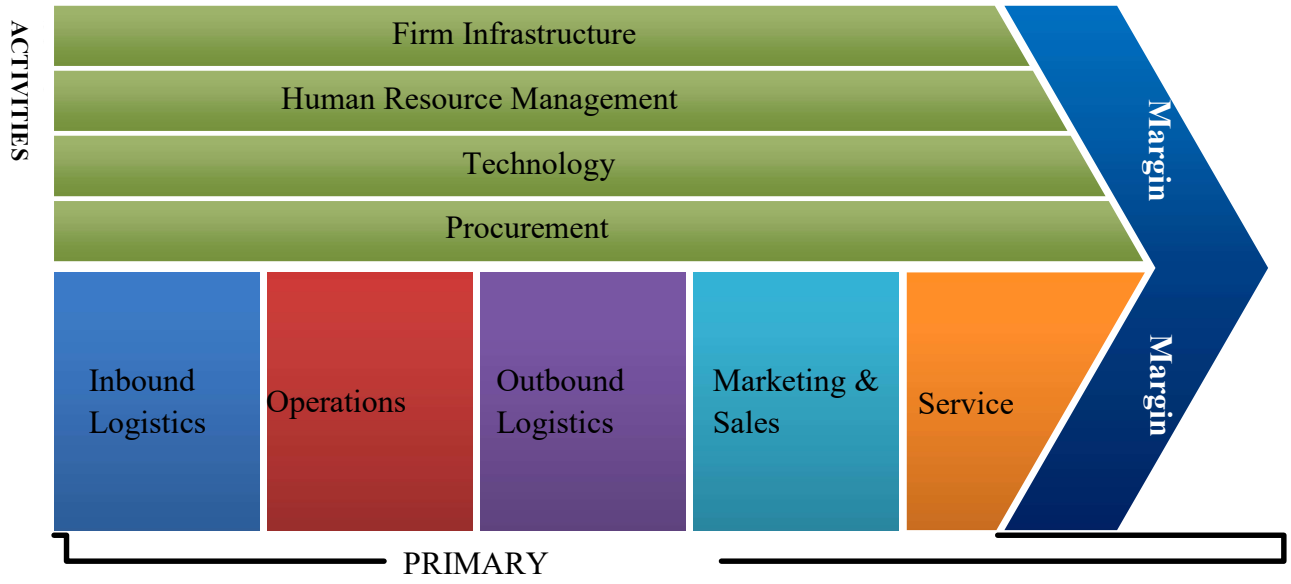

Figure1.2. Porter's Value Chain

Porter says that in any enterprise initiative, the whole gamut of competition can be divided into two wide categories - Primary competition and Support Activities. The effect of 'Primary competition 'is pretty direct at the production, processing, sales, support of the goods or services to be provided, while in case of 'assist activities', they assist the number one competition and shape the basis of any company.

The different type of primary activities undertaken by a firm/organization is highly dependent on inbound logistics. Inbound logistics include the receiving, storing, and inner distribution of the raw substances or basic elements of products or services. For cost introduction in this count, it's miles essential to have robust relationships with the suppliers. Examples transportation, cloth coping with, fabric garage, car scheduling, returns to providers, communications, trying out and others.

Production/Operations: In these activities, the inputs of products and services are converted into semi-completed or finished merchandise. E.G. Manufacturing floor or manufacturing line. Examples: machining, packaging, meeting, system upkeep, testing, printing and facility operations.

Outbound Logistics: All activities associated with the final product and provider delivery to the patron will fall under this category. Examples of garage, distribution (systems) and logistics might fall below this. Examples can be of finished items warehousing, cloth dealing with, delivery automobile operations, and order processing and production/delivery schedule.

Marketing and Sales: All such competition and methods which help put the finished product or service in the marketplace might fall beneath this category. This could consist of dealing with and producing customer relationships. The guiding concepts are fixing goals

which might be one-of-a-kind from the competition and creating additional benefits for the consumer. Channel family members, advertising, income force, quoting, channel selection, advertising and marketing and pricing.

After Sales Service: This would include all activities which contain upkeep of the value of the goods or service for the customers as quickly as a dating develops post ourchaset of products and services. The Service Profit Chain Model is an alternative model, specifically intended for provider management and institutional growth. Spare parts deliver, product adjustment, set up, training and restore.

The different types of secondary activities are undertaken to employ any firm/organization or firm infrastructure. Competitions within the corporation enable the enterprise to hold its routine operations, e.g. Administrative handling, financial and line control, are exact examples of activities that create value for the business enterprise.

Human Resource Management: This pastime encompasses all such activities that goal on the development of the team of workers within a company. For example, competition like recruiting and selecting staff, education and coaching of the body of workers and compensating, motivating and preserving the body of workers.

Technology Development (R & D): All such competition that pertains to the improvement of the products and offerings of the company, both internally and externally may be saved in this class of competition. Examples like IT, technological improvements and improvements and the improvement of recent merchandise based totally on new technology. These activities create value the usage of innovation and optimization.

Procurement: This refers to all of the assist activities related to the procurement of cloth and offerings vital to service the purchaser by using the producer. Activities like tie-sand moving into and coping with relationships with vendors, value negotiations, making product buy agreements with vendors and outsourcing agreements. Firms use primary and support activities as foundations to create value in merchandise, offerings and create the distinctiveness.

To Do Activity

Create a Team of five students and go to the nearest Kirana Store. Then, try to pick up a product and understand where and how it is procured by these shopkeepers. Discover all the aspects of the value chain mentioned below and the below columns. Accordingly draw a Porter's value chain.

Value Chain Management

Value Chain Management (VCM) is the manner of managing and monitoring all of the actors and competition that constitute a commercial enterprise. This could encompass procurement, manufacturing, processing, packaging, high-quality control, advertising, sales and distribution. It has won significance over the last couple of decades because of elevated competition and stress on the bottom line of firms. Another thing which has played a good-sized position in growing Value chain management in India is 'Globalization'. It has invited opposition in the Indian market from foreign corporations thereby forcing locals to implement Value Chain management.

Supply Chain Management Vs. Value Chain Management

Supply Chain Management or SCM is the mixing of all such activities in the procedure of sourcing purchasing material and offerings, conversion of raw material, logistics and warehousing. Whereas, Value Chain Management refers to the collection of enterprise operations through which 'cost addition' is carried out to the goods and offerings offered by the manufacturer to enhance value for the customer.

Supply Chain may be called the interconnected series of all such competition that starts with the conversion of raw fabric into the final finished product, and ends with the product attaining the final person. Value Chain, instead of Supply Chain, is that collection of competition which specializes in creating or including the value to the product or service. Both, Supply Chain and Value Chain help customers avail exceptional services and products at affordable expenses. It is frequently seen that agencies comparison supply chain and value chain.

Table 1.1 Comparison between supply chain and value chain

Basis of Comparison	Supply Chain	Value Chain
Meaning	The integration of all the activities involved in the procurement, conversion and logistics of the product isknown as Supply Chain.	Value Chain is defined as the series of activities, that adds value to the product.
Originated from	Operation Management	Business Management
Concept	Conveyance	Value Addition
Sequence	Product Request - Supply Chain - Customer	Customer Request - Value Chain - Product

Objective	Customer Satisfaction	Gaining competitive advantage

Definition of Supply Chain

Supply Chain may be known as a fixed of connections among numerous actors concerned in marketing or distribution via which a service or product reaches the quit consumer. The actors might be channel companions like actors, suppliers, producers, wholesalers, distributors, outlets, and the consumer. Simply put, Supply Chain encompasses the waft and garage of the uncooked material, semi-finished items and the completed items from the factor of foundation i.e. manufacturing, to its final intake i.e. End customer.

Supply Chain Management is the process which plans and controls the operations of the whole delivery chain. It is a gadget which cuts throughout diverse features that manage the motion of input cloth, within the firm and the motion of finished merchandise out of the firm alongside full client delight aspect by using side. The following techniques or activities are included in the supply chain:

Definition of Value Chain

Those set of activities which help add value at each step of designing, generating, processing and delivering a first-class product to the quit patron may be called Value Chain. Value Chain Analysis is the method of evaluating every hobby within and across the firm, for its ability to offer value for money, goods, and offerings.

Michael Porter in 1985, first used the idea of Value Chain Analysis in his renowned e-book "Competitive Advantage". He said that the 2 fundamental steps worried within the cost chain analysis are:

- Identification of character activities
- Analyzing the value brought in each hobby and concerning it to the company's competitive power.

Value Chains for agro products refers to a business version wherein producers/manufacturers and consumers of farm products shape alliances with other deliver chain actors, like aggregators, logistics & warehousing dealers, processors, vendors, massive shops, and customers, to beautify monetary returns thru product differentiation that advances social or environmental values. Partners recognize in these alliances that maximum value may be created for their products handiest if there is mutual interdependence, collaboration, and mutual aid.

The Food Value Chain model is gaining reputation due to the fact that it responds to agricultural and meals enterprise consolidation that has created severe market pressure on small and mid-sized farmers. It also elucidates the way wherein small and mid-sized farm operators be a part of fingers collectively and respond to the market trends in the food-enterprise market. Such markets additionally include the ever-developing consumer demand for differentiated value-related meals merchandise inclusive of "nearby," "nearby," or "organic food".

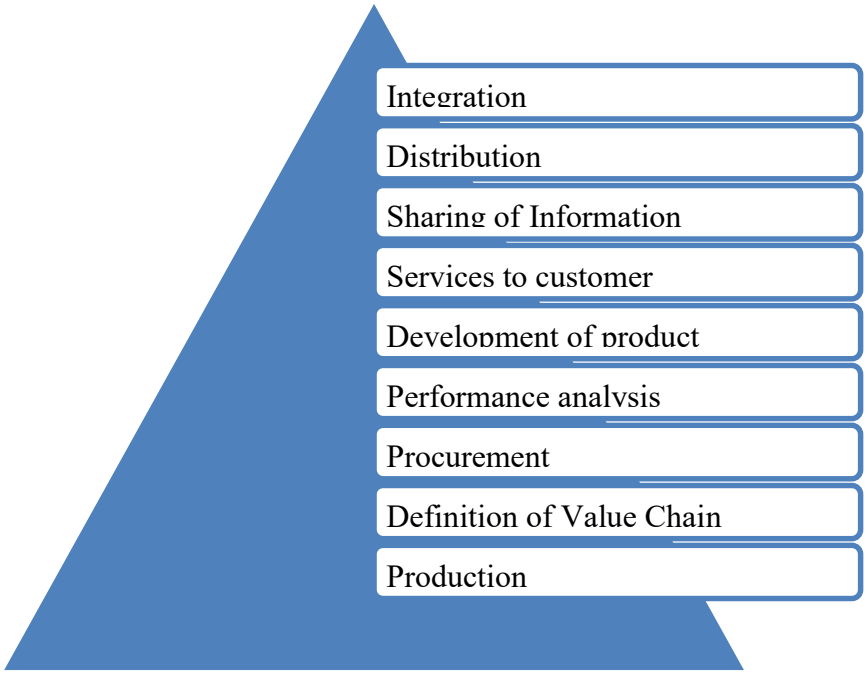

Figure 1.3. Activities of a Supply Chain

The vital idea inside the food cost chain version is the concept that win-win situations can be done via obvious and trusting relationships among deliver-chain companions. Consumers, farmers, sellers, vendors, stores and others in this type of chain version, reap rewards via green planning and planting to processing and selling. The benefits to producers aren't at the value of distributors or outlets, or vice versa, due to the fact the gadget of meals value chain transactions ensures the sale of a greater variety of well-differentiated food merchandise, valued in this type of manner if you want to cope with each social and private advantages, which are extra closely custom designed as according to the possibilities of unique consumer sections. While producing value for companions and the community, such meals cost chain fashions exemplify the concept of 'developing shared value' that become given with the aid of Michael Porter and Mark Kramer. Businesses orient their centre operations to collectively produce business achievement in addition to social benefit. This is a paradigm shift from "social obligation" that's normally for public members of the family functions.

Firms which adopt a 'shared cost' idea normally comply with the underneath noted practices and structural changes

- Re-examine their products and reconceive them and markets by using identifying more modern products and services which can satisfy social desires and/or serve unnoticed customer segments
- Redefining the degree of productivity inside the complete value chain which can suggest new alternatives in areas inclusive of processing, production, selling,

advertising, and distribution and generate a call for device and technology that store strength, defend surroundings, save resources, and help workers

- Ensure local procurement and relying on much less dispersed companions thru building supportive enterprise clusters at the firm's locations. This would cope with the social desires of the locality/geography.

Figure 1.4. A typical supply chain

Examples of Supply Chain Management:

Hindustan Unilever (HUL): Consider a purchaser walks into the Spencer Store to buy Splendour cleaning soap. The supply chain starts evolved with the client and his need for beauty cleaning soap. The subsequent stage of this supply chain is the Spencer retail store in which the client visits. Spencer stocks its shelves the use of inventory that could have been provided from a completed goods warehouse controlled by using Wal-Mart or received from a third party. The vendor, in flip, is stocked by means of the manufacturer

[say Hindustan Uni Lever (HUL)]. The HUL production plant gets raw material from a variety of providers who can also themselves were provided via decrease-tier suppliers. For instance, the packaging cloth may additionally come from Home- foil (an aluminium foil corporation) while Home-foil gets uncooked material to manufacture the packaging fabric from different suppliers. This forms a standard supply chain.

Reliance Industries: In another instance, a patron purchases a wristwatch and travelling bag online from Reliance retail. The deliver chain consists of, among others, the purchaser Reliance Website that accepts the patron's order, the Reliance shop, and all of Reliance's suppliers and their providers. The Reliance Website affords the consumer with information concerning pricing, product capabilities, and product availability. After selecting the product, the consumer clicks on 'order form' and can pay for the product. The customer may later go back to the Website to check the repute of the order.

Is India Ready for a Green Supply Chain?

Corporate deliver chains had been opaque for a long time. This is now changing with extra consciousness coming on traceability. Coupled with groups turning into greater obvious, supply chains are becoming the proper attention. So, what is traceability? Traceability is the capacity to verify the history and location of products and services in the supply chain. This involves constructing supply chains which might be transparent and presenting a clean manner to evaluate wherein contamination is occurring. Traceability improves product sourcing, reduces values and guarantees a healthful output.

This isn't always new. For example, organizations had been tracking agricultural commodities and woodland merchandise for years. With the boom in a generation, newer tools land strategies including sensors and data analytics, are permitting agencies to more without difficulty and cheaply account for the environmental and social influences in their substances and products. Thus, traceability permeates properly from farms, forests and mines to man or woman factories. The increase in third- party verification is another issue. Professionals are quite simply to be had to verify the provenance of merchandise and uncooked substances. This makes it very hard for companies to get away with the aid of feigning lack of knowledge.

Worldwide, many food and beverage corporations are partnering with their growers and other agricultural companions to push for sustainable commercial enterprise practices. Examples include Coca- Cola, General Mills, and Mondelez. So, what's company India up to this region? We studied 214 organizations and based totally on their sustainability reviews/enterprise duty reviews/ annual reviews we found some thrilling styles. Manufacturing is a central system for any business has a considerable effect on both – intake of assets in addition to the Green House Gas(GHG) emissions it generates. Only 38% of India's top corporations divulge information on GHG emissions whilst eighty-three % of them have set targets. Many manufacturing organizations do not have a GHG monitoring

mechanism in the region around their operations and best a handful from the offerings industry e.g. IT & banking seemed to report their oblique emissions like electricity intake, commercial enterprise travel and employee go back and forth. Many low ranked groups are yet to absorb initiatives on this regard.

The normally adopted measures have been the utilization of renewable power, green certification of manufacturing devices/homes, preventing wastage of energy, enhancing the efficiency of electricity through the use of LEDs, etc. Some manufacturing businesses additionally mentioned initiatives such as tree plantation for carbon sequestration. Financial institutions (along with banks) seem to partner their contribution on this regard by providing a budget to firms investing in and/or the usage of renewable energy of their operations at concessionary charges.

To Do Activity

Mapping out a supply chain is one of the critical steps in performing an external analysis in a strategic planning process. The importance of clearly laying out the supply chain is that it helps a company define its own market and decide where it wants to be in the future. In developing corporate-level strategies, a company often needs to make decisions on whether to operate a single line of business or enter into other related or unrelated industries.

Make a team of five students each. Visit the nearest shop selling fertilizers and other farm related equipment. Create a supply chain of one of the products and present it in the class. Consider the following point while studying the product:

- The distributors and producers of the product who sells to the shopkeeper.
- The overall sales and demand for that particular product.
- The season in which the product is sold the most.
- The number of agents or players involved in the whole supply chain.
- Who creates the most value in the supply chain and who gets the major percent of earning?
- The number of brands who are selling the product and their complete product catalogue.
- The pricing of the product according to various brand

Value Chain Analysis

The system of figuring out and dividing exceptional activities of an enterprise into number one and assist competition and evaluating their contribution in the direction of cost introduction to the very last product is known as Value Chain Analysis. This is achieved by means of studying the inputs and the resultant outputs generated, after which identifying cost and increasing differentiation. This device of Value Chain Analysis can assist corporations to assess their aggressive electricity vis-à-vis opposition, via identifying chain

activities, within and across the company and evaluating them with the ones of competition. As we know merchandise passes through the activities in a value chain, and whilst passing gain value at every level. A producer uses this device for strategic value analysis, reading the value viz-a-viz competitor's value.

Specifically, the Value Chain Analysis will no longer pick out activities that are precious each in terms of value as well as differentiation; however, will even identify those which need improvement to provide a competitive advantage. In different words, a cautious look at inner value chain competition can display all such competition which assists the firm benefit aggressive benefit in addition to the entire one's competition which creates disadvantages. A company competes with 'differentiation', because the central idea will try to carry out all its activities better than the competition. And in addition, the company which maintains 'value gain' as its core will attempt at acting all its inner activities at a value lower than the competition. Profits are earned simplest when a company can produce items at a value decrease than the marketplace value or can produce items that are advanced than to be had options within the marketplace.

Value Chain Analysis may be approached in two exclusive approaches depending upon the way the company wants to create aggressive gain

1. Value Chain Analysis for 'Cost Advantage'
2. Value Chain Analysis for 'Differentiation Advantage'

There are 3 tiers in Value Chain Analysis

1. **Activity Analysis**: In the primary level you map the entire value chain and become aware of all of the activities which can be undertaken from entering sourcing to very last transport f the finished goods or provider to the very last purchaser.
2. **Value Analysis**: The 2nd level is whilst you compare every hobby in phrases of the value it's far adding to the product/service and the way it could be more advantageous.
3. **Evaluation and Planning:** In the 1/3 stage you evaluate whether it's far really worth making changes. Depending upon your decision a plan for movement is created.

The step-crafty system under both the procedures is given below. Traditionally the primary competition has been taken into consideration most crucial as they have been those which gave the most aggressive gain. But now more and more the help competition is gaining significance as they are growing actual differentiation. E.G. Technological improvements and generation enabled tactics are supplying aggressive gain to maximum success corporations. Activities like 'information systems', 'preferred management', or 'R&D' are in recent times emerging as most critical and they may be the source of differentiation advantage. Primary competition is commonly the source of value gain and cost may be effortlessly recognized for each hobby through a cost chain analysis and controlled to the gain of the company.

Table 1.2 Steps of Value Chain

Cost-Advantage Approach	Differentiation-Advantage Approach
This approach is used when organizations try to compete on costs and want to understand the sources of their cost advantage or disadvantage and what factors drive those costs. Examples Amazon.com, Walmart, McDonald's, Ford, Toyota	The firms that strive to create superior products or services use the differentiation advantage approach. Examples Apple, Google, Samsung Electronics, Starbucks
Step 1. Identify the firm's primary and support activities. Step 2. Establish the relative importance of each activity in the total cost of the product. Step 3. Identify cost drivers for each activity. Step 4. Identify links between activities. Step 5. Identify opportunities for reducing costs.	Step 1. Identify customers' value-creating activities. Step 2. Evaluate the differentiation strategies for improving customer value. Step 3. Identify the best sustainable differentiation.

Cost Advantage

There is a five (5) step process to Analysis Value Chain for assessing cost advantage. It can be understood as follows:

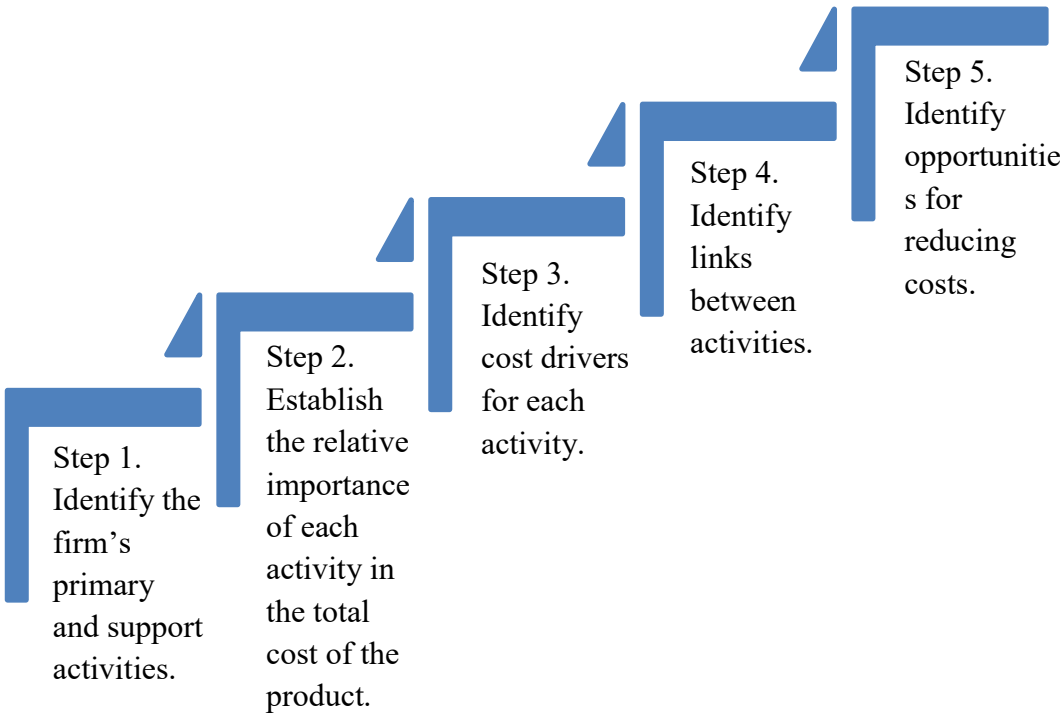

Figure 1.5. Five steps of Cost Advantage VCM

Step 1: Identification of the number one and assist competition of the company. Each hobby, from sourcing, receiving, and storing uncooked material to processing, advertising, selling, and after income activities, are diagnosed and separated from each different. Thorough know-how of the entire operations of the firm is important at this step. It is worth mentioning that value chain activities aren't always prepared in an identical way as the firm itself. It is vital to view each activity and notice what cost for the client is being added and brought.

Step 2: Each pastime has its relevance and, on this step, we want to establish the relative significance of every hobby inside the normal value of the final products or services. In other phrases, the overall cost of manufacturing goods or services ought to be damaged down in keeping with the interest, and the relative significance of everything is established. Now each activity may be benchmarked towards the similar interest of competition, performance or inefficiency installed the use of Activity Based Costing.

Step 3: Cost drivers for each interest are identified, as these drivers on my own will assist the analysts to improve them for better efficiency. For instance, values for labour-intensive competition could be driven with the aid of hours of labour put, speed of work, wages paid, and many others. Different competition could have exclusive value drivers.

Step 4: All activities in a value chain are interlinked. In step 4, we discover the linkages among the activities and each time there may be a value alteration in one hobby there may be certain to be an impact of the linked activities. Generally, the discount in cost at one activity ends inconsequential reduction in subsequent activities. For example, in a firm engaged in manufacturing vehicles, a design alternate can cause fewer requirements of additives within the product which may additionally result in less faulty components and decrease provider costs. In other phrases, identifying linkages among activities will help a firm recognize better, how value upgrades at one interest may have a cascading effect inside the entire value chain. Also, we ought to be cautious of the reality that every so often-cost discount in a single hobby can result in improved expenses for some other activities.

Step 5: Once the linkages are installed between activities, the task is to identify areas in which value reduction may be finished. By now the company is privy to the inefficient competition as benchmarked in opposition to competition and the value drivers. It can effortlessly plan approaches to improve the scenario. Example: If high wages to labour is a value motive force, then the company can attempt a growing speed of production or transfer to an automated manner.

Differentiation Advantage

When the focus of a company, for constructing competitive benefit, isn't always ‘value benefit’ however ‘differentiation’ then the Value Chain Analysis has to be accomplished differently. This turns into all the more important because in maximum cases the

differentiation is enabled via growing advanced merchandise, adding extra capabilities, and catering to diverse customer desires. All this might result in a far better value shape. On the only side, this is crucial to counter market forces, even as on the other side it is important to apprehend whether or not the purchaser will respect the worth of the extra value. A Value Chain Analysis will help to rationalize the competition and thereby assist decision-makers within the firm on upgrades. The steps followed in this case are as follows:

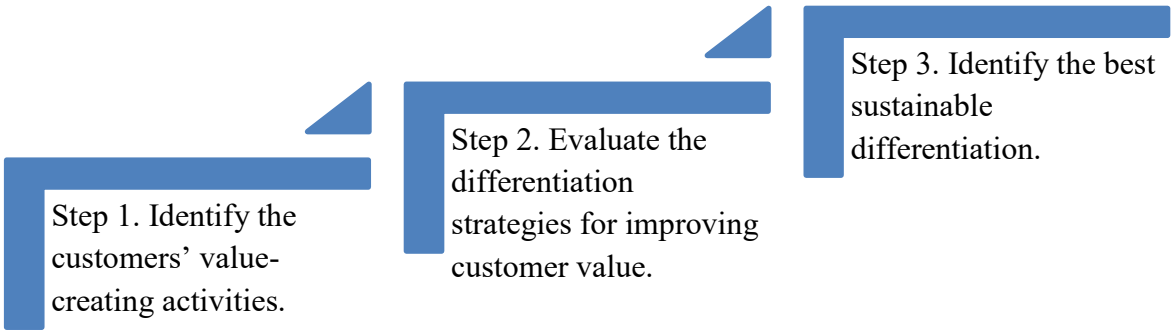

Figure 1.6. Steps of Differentiated Advantage VCM

Step 1: At the outset, the entire value chain needs to be mapped, from input sourcing to in the end turning in the product/service to the customer. Each activity has to be cautiously evaluated and assessed in phrases in their significance in creating a value for the client. All activities create a few of the other value for the patron, however we now recognition on the activities which create the most client cost. For example, the success of Apple products can be attributed extra to their hit advertising activities than the super product features. Similarly, Dairy milk chocolates sell well thanks to its versatile positioning and marketing, making it seem much more than a chocolate bar. Many different agencies have similar high- satisfactory capabilities too however couldn't attain the form of pull Apple has.

Step 2: In this step, the firm has to make a selection on which differentiation method could excellent in shape them to benefit competitive advantage. There are exceptional options for differentiation out of which the company has to choose the only/s they want to put into effect

- Differentiation via added product features;
- Differentiation through increased consciousness on customer support and responsiveness;
- Provide customization to customers;
- Offer complimentary merchandise to clients.

Step 3: The catch is that the firm has to pick out an approach that is lengthy-term in addition to sustainability. In this step, the fine strategy is selected which can help them

gain and preserve the aggressive advantage. Usually, aggressive benefit through better differentiation and stepped forward patron value is an outcome of many interrelated activities and techniques employed. The aggregate giving the exceptional outcomes need to be identified and pursued sustainable differentiation advantage.

To Do Activity

Study the Supply Chain model of Vegetable Segment of Big Basket and Reliance Fresh and follow the above steps to chart the model difference in the same. Break each activity into as many single activities as possible. Now, apply the Vale chain Analysis concept to evaluate the process. Discuss with your friends and come up with suggestions. The point here is to discover the advantage that these value chains have and how they position themselves in the market. Follow the below mentioned template to record your findings

Applications of Value Chain Management

For a successful implementation of Value Chain Management, any agency needs to fulfil the following six requirements, which could help the organization include values and reach nowadays ultra-competitive business surroundings.

Research and Development (R&D): This step is to have a look at the marketplace, survey the clients and examine what your customers sincerely want. A cautious evaluation of the data can offer deep insights into what the consumer expects from corporations and production services can be crafted as in line with feedback collected. On the agricultural commercial enterprise level, this can suggest operating immediately with one of kind actors within the value chain and provide options that fit the clients.

Product Design: Based on the remarks received from the R&D stage, new offerings are diagnosed or current offerings are upgraded to fulfil the predicted call for from the marketplace. Now earlier than complete-scale manufacturing of the new services they need to be tested, and any shortcomings subtle. Firms which are engaged in generating offerings, also comply with a similar making plans technique.

Production Process: One of the principal factors governing the success or failure of a product is the area in which the product is being produced/manufactured. When we analyze from a value chain angle, the region of manufacturing can affect the quality of the product/provider, the value and the value created. Since the time of globalization, a degree playing field has been created thanks to many corporations resorting to worldwide sourcing and worldwide manufacturing.

Marketing and Sales: Competitive gain cannot be gained most effective with the aid of supplying product value. Successful corporations need to provide carrier cost as well as the actual differentiator known as 'WOW Value'. The 'wow' goes past private attention and service guarantees and guarantee. What is that element in a product or service that

creates a 'wow' within the hearts of the patron? There is a lodge chain in the US which allows its managers to "To allow each worker to spend up to $2000 to make any unmarried visitor glad". This turned into suggested in the "Forbes" magazine of Oct. 30, 2009. This gesture from the side of the control becomes instrumental in employees creating 'wow' experience for their customers.

Distribution Management: Distribution management pertains to all those actors and competition in the cost chain that are important for carrying the completed items from the manufacturing point to in the end the stop consumer thru numerous intermediaries. Logistics, warehousing, cloth dealing with, packaging, transportation, stores etc. are crucial linkages in a value chain. In today's digital age while e-commerce is turning into increasingly famous and value green, distribution control becomes a crucial component in any value chain. Also, because the enterprise environment could be very risky these days, way to era, the structures and methods are all subject to check and trade now and then.

Customer Service: Oftentimes lack of awareness about product utilization among customers results in superb merchandise failing within the marketplace. Similarly, loss of proceedings handling, non-availability of spare parts, or lack of trouble capturing mechanisms and so on, maybe a major bottleneck inside the success of any cost chain. To make certain that value receives created thru those support activities, the employees want schooling who in turn can educate the clients. Once the services or products have been sold, the purchaser expects that the company will contend with the troubles related to the product. This final hyperlink within the cost chain is subtle as wished and is utilized by the firm to gather feedback as well as to measure consumer conduct. Though imposing Value Chain Management is encouraged, but firms need to make certain readability on several aspects before jumping into implementation. These aspects are as follows:

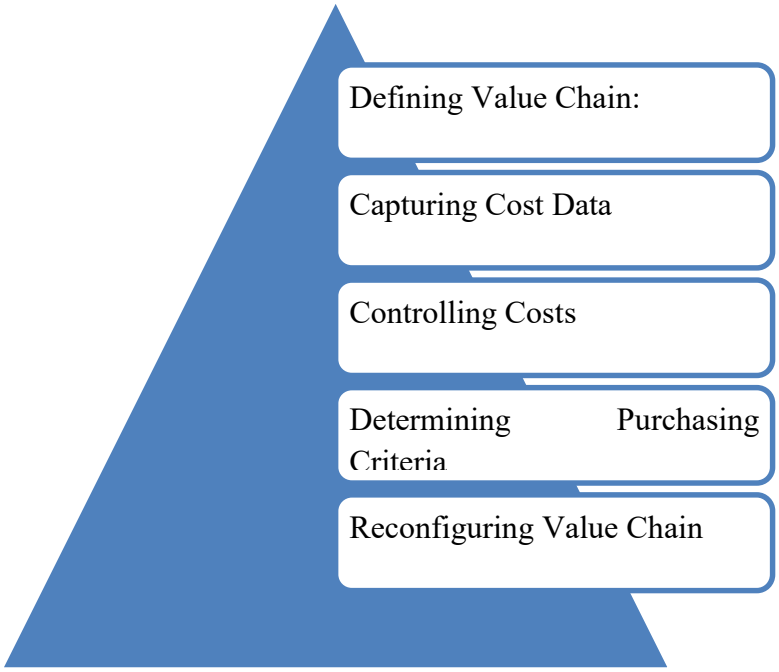

Figure 1.7. Various Aspects of Value Chain Management

1. **Defining Value Chain**: The firm has to first actually perceive the commercial enterprise gadgets/products this is to be taken into consideration for implementing Value chain control, pick out key functions and pick out all applicable activities inside each function

2. **Capturing Cost Data**: The universal value has to be divided amongst features and within each feature; the value must be assigned to diverse activities of the value chain.

Identify competition and investigate their pattern of allocating value to their activities. Identify the gaps and act thus. A company should compare its value with competitors to understand the competitor's strategy.

3. **Controlling Costs**: For every hobby, there may be a value and each of those has a value motive force. Identify the cost drivers for every interest and manage them using a suitable strategy. For example

- For enhancing scale growth product strains and manufacturing centres
- Linkage among actor and competition the dealer scheduling may be controlled, the vicinity of the warehouse may be altered, there could be an evaluation of the charge guidelines
- Timing of purchase of an era or product will be an issue in cost discount. Acquire when the values are low, but not at the value of income.
- Investment Since value chain emphasizes on cost, attention on the generation that helps lessen costs
- Procurement Keep Shelf Keeping Units (SKUs) to the minimal requirement for delivering base for higher volumes.

4. **Cutting Buyer's Cost**: To permit that the purchaser also does no longer grow to be spending extra, the following pointers can be followed; Follow these simple recommendations,

- Ensure decrease setup time and value
- For the client’s searching out finance, lower the financing value
- Rather than to put money into spares and renovation, improve the fine of the product which in turn will lessen the inspection
- Better and stepped forward first-class will automatically lessen upkeep
- The buyer doesn’t need to attend, accelerate the processing time
- If feasible, reduce required tracking and manipulate

5. **Determining Purchasing Criteria:** It usually helps to gauge the customer's behaviour, understand his or her motivation in the back of the purchase. If a company can parent out the key elements which govern the customers’ decision-making procedure then they can offer favourable delivery timing or improve product functions, packaging and look or improve after income/carrier

6. **Reconfiguring Value Chain**: There must be no fixation in terms of the value chain glide. The companies can take a look at changing the manner the activities are being accomplished every so often.

Caselet 1.1. Cafe Coffee Day: A Successful Value Chain Model

The Cafe Coffee Day adventure began with a single store in Seattle inside the 12 months 1971 to come to be one of the maximum identified manufacturers within the world. Cafe Coffee Day mission is "to inspire and nurture the human spirit – one person, one cup and one community at a time.

Beginning from the manner of obtaining raw materials to the very last sale of the product, there are numerous steps concerned in bringing a product to the marketplace and the client. All of those activities upload 'value' to the product. A value chain evaluation affords the groups with a view of the competition in their production method. Managers can find out which elements can be optimized for better performance. This sort of optimization does not simply carry efficiency but can also be a source of competitive gain. Aligning and optimizing the activities within the value chain enables the organization to generate the predicted outcomes by using lowering values and growing operational performance. The hobby-wise spoil-up of Cafe Coffee Day' cost chain is given underneath:

Primary Activities at Cafe Coffee Day:

Inbound Logistics: Company-appointed espresso buyers pick the finest quality Coffee beans from Latin America, Africa and Asia. The green/unroasted beans are bought immediately from the farms by the Cafe Coffee Day shoppers, transported to the garage websites, and then roasted and packaged. The company does not outsource its procurement, making sure excessive fine standards proper from the factor of choice of Coffee beans. They are then dispatched to distribution centres, some of that is agency owned and some of which might be operated by way of different logistic businesses.

Operations: Cafe Coffee Day operates in sixty-five international locations, both inside the form of direct employer-owned stores or licensees. Cafe Coffee Day has extra than 21,000 shops across the world, along with Starbucks Coffee. According to its annual report, the enterprise generated seventy-nine % of its general internet revenue during financial 12 months 2017 from its organization operated stores even as the licensed stores accounted for 10 %.

Outbound Logistics: There could be very little presence of intermediaries in product promoting. The majority of the goods are offered on their own or in certified shops handiest. As a brand new assignment, the employer has launched a number unmarried-starting place Coffees, as a way to be bought thru a few main shops in the U.S.; these are Guatemala Laguna de Ayarza, Rwanda Rift Valley and Timor Mount Ramelau.

Marketing and Sales: Cafe Coffee Day invests greater in superior-high-quality merchandise and a high degree of customer support than in competitive advertising. However, want-based advertising activities are accomplished via the employer at some point of new merchandise launches in the form of sampling in areas around the shops.

Service: Cafe Coffee Day targets at constructing client loyalty through its shops' customer service. The retail objective of Cafe Coffee Day is, because it says in its annual report, "to be the leading store and brand of espresso in each of our goal markets through promoting the best high-quality espresso and related products, and via presenting every purchaser a unique Cafe Coffee Day Experience."

Support Activities at Cafe Coffee Day

Infrastructure: This consists of departments like management, finance, felony, etc., that are required to keep the enterprise's shops operational. CaféCoffee Day' properly-designed and pleasing stores are complemented with top customer service provided through the dedicated crew of employees in inexperienced aprons.

Human Resource Management: The committed staff is taken into consideration a key attribute inside the agency's success and increase through the years. Cafe Coffee Day personnel are motivated thru beneficial advantages and incentives. The corporation is understood for taking care of its workforce, a key motive for an extremely low turnover of employees, which shows brilliant human resource control. There are many schooling programs carried out for employees in a setting of a work tradition which maintains its team of workers inspired and green.

Technology Development: Cafe Coffee Day may be very famous for use of era, not only for espresso-related tactics (to make sure consistency in flavour and first-class in conjunction with value financial savings) but to hook up with its clients. Many clients use Cafe Coffee Day shops as makeshift workplace or meeting region because of the free and unlimited Wi-Fi. Back in 2008, the company released a platform in which customers ought to ask questions, provide recommendations and brazenly express critiques and share stories; the organization has applied a number of the suggestions, which includes for its rewards program, from this forum. Cafe Coffee Day additionally makes use of Apple's iBeacon machine, wherein clients can order a drink via the Cafe Coffee Day cellphone app and get a notification of its readiness when they walk in the store.

To Do Activity

Form teams of four students each. Visit your college canteen and observe the manner in which it is managed. Can you map the entire operations in the canteen? Once mapped can you apply Value Chain Management concept for better efficiency?

Rural Value Chain

As we understand Value Chain is not an object that we can see. It is a useful way of information about how the world of sourcing, generating, shopping for, selling and servicing matters works. In a few or the other way, we're all part of the Value Chain –may be as a customer, producers, processor of goods and offerings, stores, finance vendors, and so on. As customers, we all consume meals, clothes, foot put on, medicines, books and many others which hyperlinks us strongly with the value chains – chains of grain plants, roots and tubers, result and greens, legumes, oils, and textiles and so forth. Such value chains begin from the growers and attain out kitchens, bedrooms and look at. At one cease of the agricultural Value Chain we've got the manufacturers – the farmers who grow plants and raise animals. On the opposite end are the clients who eat, drink, put on and use the very last merchandise. And in among, there are many heaps of people and small and huge businesses. Each person and each business is engaged in one small step within the chain, and everyone provides value alongside the way – by way of developing, buying, selling, processing, transporting, storing, checking, and packaging.

Apart from the humans and groups stated above, numerous greater corporations play a substantial role inside the whole cost chain. E.G. Economic establishments like banks provide financial assistance, governments, as a part of their obligation of governance frame laws and policies, and agricultural research agencies work toward developing approaches for farmers to decorate their productiveness. A simple agricultural value chain can be described as a farm produce accomplishing the stop purchaser via a mess of intermediaries. A simple agricultural product like maize or veggies or cotton from sourcing inputs likes seeds, fertilizers and so forth and production within the field to the customer, via ranges which includes processing, packaging, and distribution.

Even subsistence farmers, who are not huge producers, shape a part of the value chain. The great majority of small maintaining subsistence farmers grows some crops or raises a few animals on the market. Even within the maximum far off areas, many subsistence farmers are related to markets and promote small amounts of their produce in nearby markets or to traders who go to the farm. It may be safely stated that value chains are all approximately human interactions. It is ready linkages among people and companies who switch or alternate products, cash, understanding and facts. In an effective cost chain, humans at special ranges of the chain actively aid each other. The inherent benefit of a value chain is that everyone in the chain supports anybody else, everyone does their job extra efficaciously, and each person's livelihood is gets stepped forward. Each man or woman inside the chain shares the not unusual goal of fulfilling customer desires so one can growth their earnings. The rural cost chain idea has been used normally through those operating in rural development in developing nations. There is no universally time-honored definition of the period; however, it commonly refers to the complete range of products and offerings essential for any rural/farm-based product to transport from the farm to the very last customer or patron.

As cited inside the previous gadgets the number one objective of rural Value Chain Management is to ensure all actors inside the chain cooperate to provide better-best merchandise and generate greater income for all actors alongside the chain. As became discussed previously, Value Chains fluctuate from Supply Chains, which confer with logistics the transport, garage and procedural steps for buying a product from its manufacturing web site to the purchaser.

The functions involved in any value chain can vary from the drift of products to knowledge and records, to finance, bills, as also the social capital needed to prepare manufacturers and communities. Similarly, a rural cost chain may include studies &development of farm inputs like seeds and so on., dissemination of plant and animal genetic cloth, the supply of inputs, farmer organization, farm operations, post-harvest dealing with, processing, provision of technology of production and handling, grading standards and centres, cooling and packing technologies, post-harvest neighborhood processing, industrial processing, garage, shipping, finance, and comments from markets.

Agriculture in our country often has twin value chains running in parallel for the identical product one informal or conventional, and the alternative formal or cutting-edge. Smallholders are often worried about casual chains that deliver products to local middlemen and then to small local stores. Formal cost chains can supply the equal product, usually in better or extra uniform first-rate, from large farms or extra organized agencies of small farmers to greater commercial wholesalers and from there to supermarkets or exporters. This duality has been accentuated by means of the explosive growth of supermarkets in developing international locations. It can restrict many small producers to markets characterized by low-first-class products, and occasional values and Coffee returns for them — consequently a frequent difficulty is to locate ways to combine small manufacturers into greater contemporary value chains, both domestic and export-oriented.

Farmers have the potential to make bigger their returns if solutions have been found for value chain issues along with:

- Poor best of seeds and sorts irrelevant for the numerous makes use of.
- Poor best of product at harvest, with grains of inconsistent size and colour.
- Inadequate threshing techniques and publish-harvest drying and garage, which lessen amount and marketplace first-rate.
- Inadequate grading.
- Insufficient marketplace development and verbal exchange with markets regarding sorts and fine of produce preferred.
- Insufficient education and finance for advanced submit-harvest control.

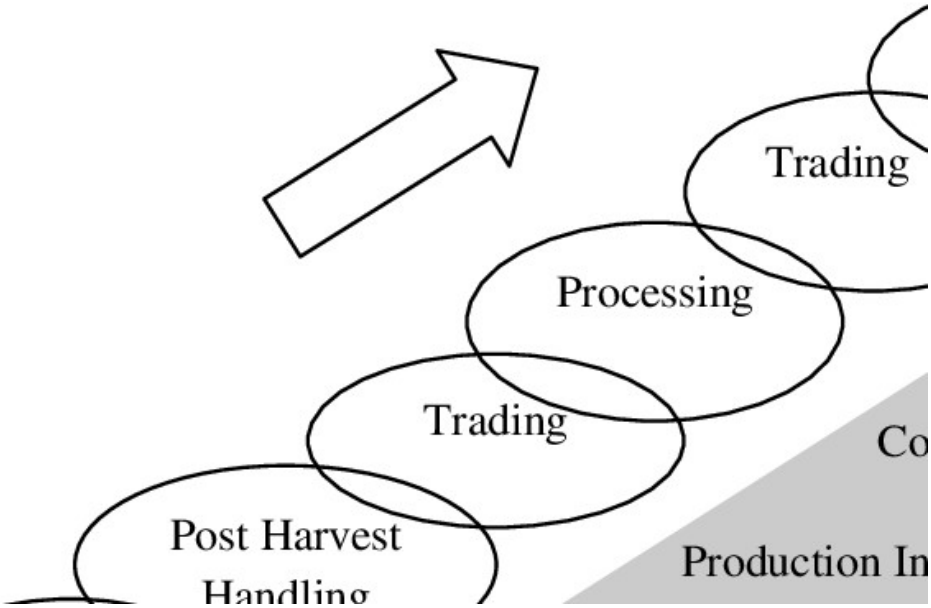

Figure 1.8. Overview of Rural Value Chain

Linking Farmers to Markets

One of the fundamental competitions of rural value chain development is linking manufacturers to groups. Companies like Hindustan Unilever have fully included value chains that do not involve smallholders. Companies like Unilever perform tea estates and tea processing facilities in Kenya, blend and % the tea in Europe, promoting it as Lipton, Brooke Bond or PG Tips brands worldwide. The bulk of rural value chains involve the sale of products to companies from unbiased farmers who will be doing agreement farming for the corporation. Under settlement farming the farmer undertakes to deliver agreed portions of a crop or livestock product, based totally on the first-class standards and shipping requirements of the purchaser, regularly at a rate that is established earlier. Companies frequently additionally comply with the farmer through input supply, land preparation, extension recommendation and transporting produce to their premises.

Rural value chain finance guarantees the flows of value range to and within a Value Chain to satisfy the needs of various actors for finance. It will be too relaxed sales, to shop for seeds, fertilizers, generation, or produce, or to enhance efficiency. Creating this sort of Value Chain involves a holistic method to investigate the chain, the ones running in it and their inter-linkages. The linkages could facilitate financing to waft through the chain. For instance, inputs may be provided to farmers and the value can be repaid at once while the product is introduced, without need for farmers taking a mortgage from a bank or comparable institution. This is common beneath contract farming arrangements (Figure five). Types of rural value chain finance include product financing thru trader and enter

dealer credit score or credit score furnished via an advertising and marketing corporation or a lead firm. Receivables financing is yet some other manner wherein the financial institution advances finances towards a venture of future receivables from the customer and factoring wherein an enterprise sells its accounts receivable at a discount. Also, asset collateralization falls under value chain finance, that's on the idea of warehouse receipts, and threat mitigation, which includes forward contracting, futures and coverage.

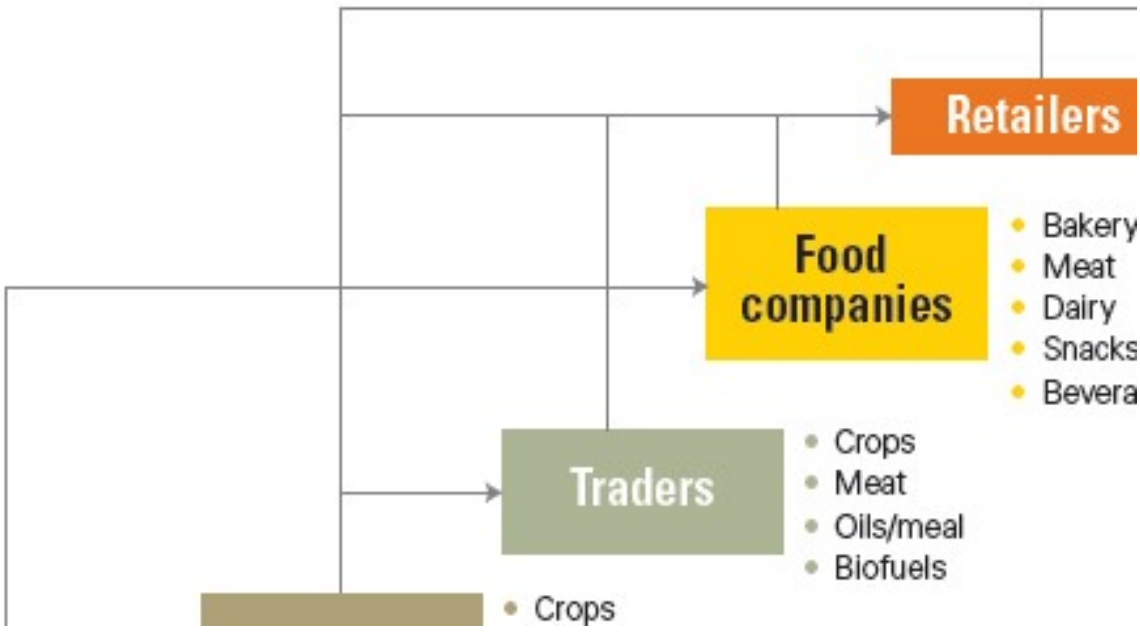

Figure 1.9. Generic Agricultural Value Chain

ICT and Rural Value Chains

Information and Communication Technologies (ICT) have emerged as a critical device in promoting rural value chain efficiency. The increasing affordability of cell generation is playing a first-rate function inside the fast growth of the rural value chain. Applications can aid farmers without delay through SMS messages.

ICTs play a crucial function in agricultural value chains, with distinct kinds of ICT having extraordinary strengths and weaknesses when implemented to precise interventions. While the effective effects of ICT are being catalogued and mentioned, many rural farmers nonetheless do not have to get right of entry to or the capacity to apply ICT. It can be suggested that market information services, especially the ones based on cell phones and drugs, can enhance farmers' potential to get right of entry to markets and match customers' demands thru improving the glide of facts among traders and producers, lowering transaction values, and enabling farmers to purchase required inputs.

As new applications, packages development and as the rate of statistics will increase, the capability of information and communication generation (ICT) also continue to enlarge.

Farmers use mobile phones to construct a network of contacts and draw on this wider information to obtain critical facts greater unexpectedly and make better selections approximately transportation and logistics, rate and area, deliver and call for, diversification of their product base, and access to inputs. By enhancing supply chain control (SCM), ICT gear enhance logistics and reduce transaction expenses through (1) lowering costs of coordination and transportation; (2) increasing transparency in decision making between companions; (3) disseminating market and weather facts; and (four) making sure traceability.

ICTs are also getting used to reinforce the ability of extension officials and NGO area body of workers to reach farmers with well-timed and correct facts and, at the same time, help capture statistics from the sphere. The Grameen Foundation's Community Knowledge Worker (CKW) program is an example. Farmer representatives are skilled to use ICT applications on a telephone to provide agricultural information and extension assist. Most market value facts are now brought to farmers through SMS.

Chapter Summary

The concept of Value Chain was first postulated with the aid of the famous thought chief of Harvard Business School, Michael Porter who in his epic e-book 'Competitive Advantage' (1985) pointed out business companies gaining an edge over others through green Value Chain Management.

As in step with Michael Porter, Value Chain is a set of all such competition that is performed utilizing a business enterprise to create 'value' for its customers. 'Value Creation' manner adding cost which leads to aggressive gain. Ultimately, this introduced value additionally gives an upward push to better profitability for a firm.

A greater complicated definition turned into given by Kaplinsky (2000) and he says, "a cost chain is the entire variety of activities which might be required to bring services or products from concept, through the middleman levels of production, delivery to very last clients, and final disposal after use." Let us see what may be the numerous competition that is essential to bringing a product or service from conception to very last intake and disposal.

ICTs are also getting used to reinforce the ability of extension officials and NGO area body of workers to reach farmers with well-timed and correct facts and, at the same time, help capture statistics from the sphere. The Grameen Foundation's Community Knowledge Worker (CKW) program is an example. Farmer representatives are skilled to use ICT applications on a telephone to provide agricultural information and extension assist. Most market value facts are now brought to farmers through SMS.

Model Questions

1. Describe Porter's Value Chain concept? How is Primary Activities different from Support Activities?
2. What is the difference between Inbound Logistics and Outbound Logistics? Explain with the help of suitable examples.
3. What is the difference between Supply Chain and Value Chain? Give examples to explain.
4. What do you mean by 'actors' in a Value Chain? Explain with the help of examples
5. What are the two approaches to Value Chain Analysis? Explain with the help of examples.
6. What are the different stages of Value Chain Analysis? Explain any one of them
7. What are the key requirements before Value Chain Management can be implemented in a firm?
8. Evaluate the Value Chain Analysis of Star Bucks Coffee and discuss the role of Primary Activities in value creation?
9. How is the Rural Value Chain different from Urban Value Chain? Take one example from each and explain.
10. Technology is playing a major role in Rural Value Chain also. How?

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Chapter 2 Value Addition through Value Chain Management

Introduction

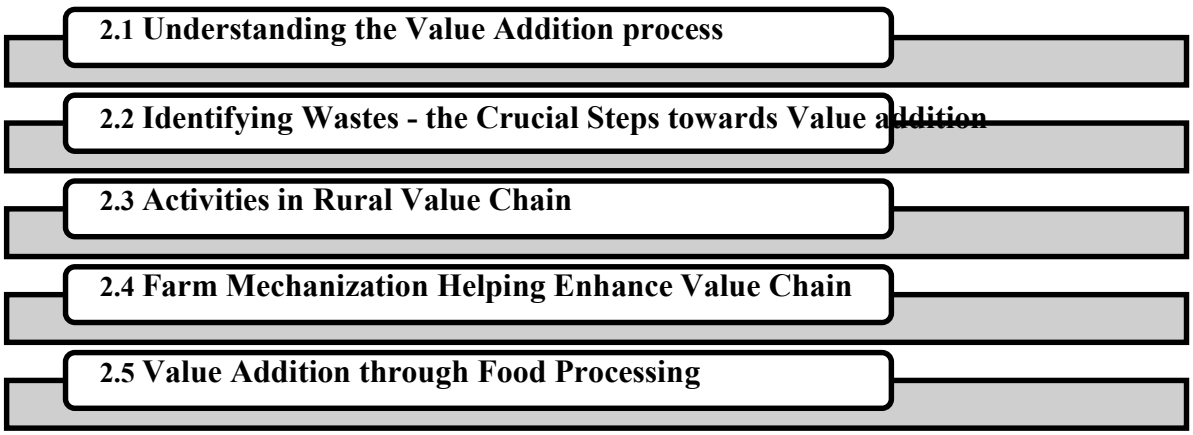
Villages house more than half of the total population of India (World Bank Data) and agriculture remains the most important source of livelihood for most rural households (FAO). Thus, an important way to strengthen our country's economy is by understanding how the rural value chains work and developing them for domestic as well as international markets. This is especially true for Indian farmers whose produce is majorly fresh fruits and vegetables. By providing access to processing facilities, and arranging for proper marketing and distribution, the final product can fetch increased value in the market.

A strong supply chain helps achieve this by making faster delivery of goods or services to the final customer. Businesses constantly try and improve their processes to maintain competitive advantage. This is what helps them stand out in a market that is seeing increased competition every day. These processes may be input processes, operation processes or output processes. We achieve process improvement by simply removing any sort of 'wastes.' A value chain is a supply chain in which all the parties constantly try to add value to their customers, and eliminate wastes to improve the businesses processes.

Objectives

- To develop an understanding of the value addition process
- To analyze how it helps businesses create more value
- To understand how a strong rural value chain may be developed
- To explain farm mechanization
- To familiarize value addition through food processing

Chapter Structure



2.1. Understanding the Value Addition Process

Quite simply put, value addition is the process of creating value for your customers in order to attract or retain them and increase your profit margin. Though the definition may look simple, the process is not. Value addition requires you to understand what the consumers need and how your product can be improved to meet those needs. The customer should feel the product they paid for justifies the price charged. If they feel the product does not provide value for their money, you lose customers. In a competitive market, this is unacceptable. Thus, one must try to

- Understand what the customers want and how much they are willing to pay for it.
- Maintain the level of quality that is promised to the consumer
- Constantly improving on the product as well as processes
- Providing high quality pre and post sales service
- Proactive approach to the opportunities and threats in the market

All the set of activities undertaken to achieve this value addition together form the value chain. For example: an agricultural value chain includes everything from collecting the produce, storing it, and though stages such as processing, packing, marketing, selling and distribution. It does not stop at delivering the final product to the consumer, but goes on to include after sale services as well. Stronger the value chain is, stronger is the competitive force of the company in the market.

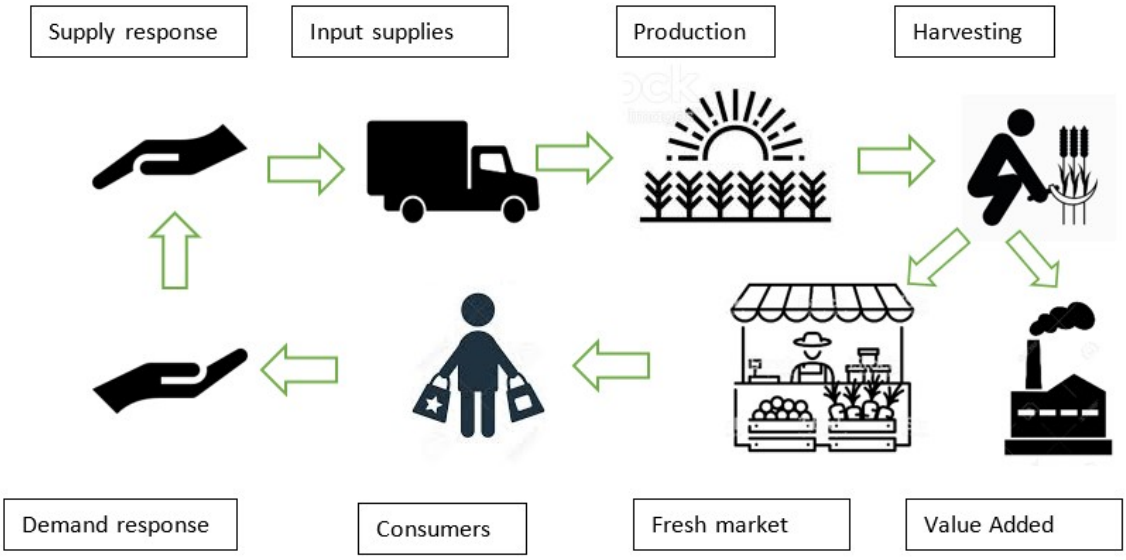


Figure 2.1 Illustration of a typical value chain

As mentioned earlier, a strong value chain is born when value addition happens along with constant improvement in at each step of the business processes. We also observed that process improvement in the organization consists mainly of identifying and removing waste. To understand this in the context of agricultural value chains, we require a good understanding of the nature of agribusiness, the existing supply chain, value addition opportunities and the state of agricultural marketing in the country.

Nature of Agri-Business in India

Goldberg and Davis defined Agri-business as 'the sum total of all operations involved in the production, processing and distribution of farm supplies, production operations on the farm, and storage, processing and distribution of farm commodities or items made from them.' Thus, agriculture is not just simply growing vegetables and crops; it has grown into an industry world-wide that sustains and feeds into a number of other industries.

The industry could largely be categorized into an input supply system, agricultural production system and output marketing system. Thus, it is said to be directly related to Industry, commerce and trade. Industry relates to the production of the produce, whereas commerce and trade includes the marketing and distribution of these produce. Of which on the basis of nature, one could classify industry into extractive, genetic and manufacturing. Extractive industries are those that depend on utilization of natural resources such as fishing, fruit gathering etc. Genetic industries include breeding of plants, cattle, poultry etc. where factors such as skill and climate play a major role. E.g. Agriculture, sericulture, horticulture, and cattle farming. Manufacturing involves further processing, that is, the conversion of raw material into semi-finished or finished products for consumption. E.g.: cotton mills, ketchup factory etc.

The astonishing growth of the manufacturing and service industry, and opening up of the international consumer market post globalization; have resulted in immense opportunities for agribusiness and food industries. This is especially true for developing economies like India where farming or farming based businesses provide livelihood to large sections of the society – directly and indirectly. An agrarian economy such as ours, with varied and favourable agro-climatic conditions and the second largest cultivable land in the world, should be able to take advantage of this by managing our resources efficiently and tapping into the upcoming opportunities in the sector. Agri-business led growth can lead the sustained economic development of many developing countries such as ours.

The agribusiness industry is extremely diverse in India – from very small single proprietorships to large corporate houses. In addition, there are many public sector enterprises as well as cooperatives engaged in the sector. They have access to the growing domestic as well as international market. With rising urbanization, increasing disposable income, and changing consumer patterns and preferences, the Indian agribusiness sector should be flourishing.

But there are a number of challenges faced by the Indian food and agriculture sector. The Indian food and agriculture sector is extremely unorganized. The fragmented landholdings and the undeveloped state of mechanization also negatively affect price competence in the international market. At the same time, with a high population density there is increased pressure to focus on improving domestic food security. Poor transport facilities along with lack of proper cold storage facility, do not just result in inability to find better markets and

price, but also results in spoilage/wastage of the perishable agricultural produce. There is also the lack of clear policy guidelines issued by the government with respect to agriculture.

Among these, farmers with small landholdings are the most disadvantaged. They are troubled by insufficient capital, inability to buy quality input supplies, inability to upgrade from outdated technology and tools, lack of access to markets where they may fetch a better price for their produce. The average landholding decreased from 1.16 hectares in 2012-13 to 1.1 hectares in 2015-16. They have very less left over after keeping aside for self-consumption which makes it unfeasible to transport to markets farther away from the local market where they may get a better price.

Indian agriculture can only be saved by improving the yield enabling production of more from less, and reducing wastage along the supply chain by improving post-harvest infrastructure such as better storage and efficient logistics. The best of international farming practices and technologies should be adapted to suit our farmlands, with the integration of local traditional knowledge and expertise. This requires significant capital investments in infrastructure as well as knowledgeable support.

Supply Chain to Value Chain

Supply Chain consists of all the activities and processes involved in making a product available to the end consumer. Thus, Supply Chain Management or SCM includes management of relationship between all the parties and activities in a supply chain, to facilitate the flow of goods and services. It involves movement and storage of inventory from the point of production to point of consumption.

The concept first emerged in the 1990s in Europe and US as a result of globalization which increased global trade. This was a period of extreme urbanization and dietary changes creating huge global demand for processed agricultural outputs. There was increased focus on quality management and food safety despite deregulation of the sector by the government. To achieve this, businesses constantly merged at various stages and new forms of contract-based relationships emerged among players. Thus, we can say that a number of such factors including government support brought about the development of Supply Chain Management. Through this, businesses managed the relationships between firms and processes within each firm, to create shared value for the customer. This meant meeting the consumer expectations with respect to price, quality, quantity and time requirements.

Most Indian agri supply chains are unorganized and unpredictable. Thus, it becomes difficult to identify and work on the root cause of any problem. Establishing efficient supply chains is the only way to save Indian agriculture from the sad state it finds itself in today. As we discussed earlier, a value chain is born when all the parties in a supply chain constantly try to add value to customers, and eliminate wastes to improve the businesses

processes. This is so that the company gains a competitive edge in the market – i.e., they want to be able to stand out among competitors as the preferred brand among consumers, by offering something that the others don't.

Value addition is not just about further processing of raw material (known as form value). There are many other ways in which value addition can be brought about. Let us briefly examine some.

- Expanding the range of products offered to the consumer.
- Supplying goods to more places, thereby improving the place value. E.g. Nagpur oranges fetch a good price throughout the country. The price difference is what customers are paying for place value addition.
- Delivering goods to retailers in shelf ready packaging - i.e., with price marking, labels, protective packaging and SKUs that are efficient for storage and transport.
- Providing time value by delivering products faster. This is achieved by leveraging technology, infrastructure and a strong logistics network.
- Eliminating unnecessary steps in the supply chain to improve efficiency. At the same time, over dependency on any particular value chain actor should be avoided.
- Keeping track of the changing environment and constantly innovating to meet the changing customer requirements. This requires adequate investment in marketing and product research. A cheap but efficient way to achieve this is by maintaining a strong and open communication with all the players in the supply chain. Businesses may adopt some or all of the above ways to add value and remain competent in the market.

Evolving Food Value Chain Management

Majority of the existing supply chains in the country have been highly fragmented. Even though wholesalers and retailers are the one who are considered intermediaries in the chain, the number of intermediaries who have risen out of the need to fill up infrastructural gaps is huge. This makes a huge difference in the final cost of the product, but not value.

The food value chain is evolving fast on a global level. With rising urbanization and growing incomes, eating habits are changing fast. The demand for fresh fruits, exotic vegetables, animal protein and fortified foods has increased markedly. The government has also brought about many reforms with respect to agricultural infrastructure allowing more private investments. The food value chains in the country have been witnessing drastic changes, especially in terms of consolidation.

There is large scale merging of intermediary players through forward and backward linkages, with the objective of achieving economies of scale, throughout the country. Economies of scale is said to be achieved when there is a proportionate saving in cost with increase in production levels. Forward linkage means acquiring or taking over services provided by intermediaries connecting the business and its end consumer (For example, a

sugarcane farmer undertaking sugar processing as well). Backward linkage is directed towards suppliers/producers. For example, global retail coffee giant Starbucks has its own coffee estates in Brazil. By achieving economies of scale, firms hope to be more competitive during price wars in the market, and achieve a larger market share.

Agricultural Marketing in India

The varied climatic conditions across the country enable the production of diverse crops throughout the year. Marketing is the process of bringing these products to the market, interesting potential consumers in these products, and finally, selling or distributing them to interested buyers. Earlier, this was limited to the local market. But agricultural marketing today has undergone some interesting changes. It is greatly influenced by many factors such as market demand in the time being, market expectations for later, perishability of the product, and availability of adequate storage facilities. The idea is to match demand with supply, by resorting to wholesale or retail in markets. These markets may be primary markets, secondary markets or terminal markets.

- **Primary markets** are situated close to the area where production takes place.
- **Secondary wholesale markets** are also known as **Mandis**. Small traders aggregate goods from the primary markets to sell at the secondary markets. These wholesalers in turn sell the goods to retailers. Mandis are usually situated at the district or taluka headquarters making it inaccessible for small farmers without much surplus produce to sell. Some larger farmers can afford to transport their goods and directly sell at the secondary markets.
- **Terminal markets** are where actual consumers purchase the produce for consumption.

Agricultural marketing is a complex process made up of a number of intermediary services such as sorting, grading, standardization, packing, transporting and storing. These have been broadly classified into

- Assembling
- Preparation for consumption, and
- Distribution

But it is not necessary that a single farmer undertakes all the above steps. He may even choose to sell off his produce to a buyer right after harvest without any further value addition. Each of these processes may be carried out by a different intermediary too. Processing may be done due to consumer demand or to improve keeping quality.

One of the biggest challenges with agricultural marketing in the country is the lack of market information available to farmers – that is, farmers are unaware of what produce has demand in the market, what price could the produce fetch and so on. Correct and on time market information has benefits for all parties involved – farmer, traders, and

policymakers. For example: Accurate information regarding the market prices can help farmers negotiate with traders for fair value for the produce. It can also help reduce the problems of oversupply and undersupply of produce due to farmers blindly choosing crops based on what fetched a higher price during the past harvest cycle.

Agriculture involves high risk as it is drastically affected by external factors such as weather, input quality and market demand – none of which can fully be controlled by an individual party in the supply chain. But these risks may be shared and its impact on a particular member alone may be reduced. This is where concepts such as contract farming comes up. Contracts between the players in supply chain are agreements on how much of the produce would be bought by the supplier, at what price. Different types of contracts followed in the market are – contract for buy back, revenue sharing, quantity flexibility, sales rebate, two-part tariff and quantity discounts.

Contract farming along with tools such as direct marketing, setting up of private markets and processing units were initiated after the Agricultural Produce Marketing Regulation (APMR) Act came into force in various states from 1960s and 70s. This paved the way for acts such as the APMC Act, 2003 in the country.

To Do Activity

Identify the most used primary, secondary and terminal markets in your area. Choose any produce and trace the value addition as well as increase in final cost contributed at each of these markets. Make a detailed list of all the players involved in that product's

2.2 Identifying Wastes: The Crucial Step towards Value Addition

Refreshing what was covered in the above section, a value chain emerges from a supply chain when

a. there is value addition by all parties constantly
b. processes are constantly upgraded to eliminate waste and improve process efficiency

in order to develop or maintain a competitive edge in the market.

In this unit, we shall look at the means of achieving and maintaining process efficiency in supply chain by avoiding waste. Lean manufacturing is one such methodology that aims to minimize waste within manufacturing systems, maximizing efficiency and productivity. Some of important principles of lean manufacturing are: eliminate waste, build in quality, create knowledge, defer commitment, deliver fast, respect people and optimize the whole. Under lean manufacturing, there are seven different types of wastes commonly identified in supply chains. These need to be tackled to upgrade a supply chain to value chain.

- **Over-Production**: One of the main problems with Indian agriculture is that suppliers do not have access to even reasonably accurate market information. That is, they produce first and then experience the demand. Most of the production decisions are also based on what fetched the farmer the best price during the previous harvest and this is highly influenced by the supply cycle. Let us take the case of onion prices to illustrate the situation. Year on year, onion prices undergo very high variation. This is due to the highly volatile supply cycle of the crop. When there is shortage caused due to either the delay of monsoon or untimely monsoon in harvest time, the crop value increases and onion prices increase alarmingly burdening the consumers. The high price encourages many farmers to shift to onions in the next cropping cycle. If weather conditions don't go awry, a surplus reaches the market all at once driving down prices. Such overproduction without understanding demand, hurts not only the farmer, but reduces soil fertility and groundwater resources as well.

  Some ways to address this issue is by practicing Crop Planning and encouraging Contract Farming. Crop planning is deciding in advance what crops to grow and by how much after considering climatic conditions, soil properties, water availability and most importantly, the estimated short term and long-term demand for the produce in domestic as well as international markets. This is practical only with the help of government bodies such as ICAR (Indian Council of Agriculture research). Contract farming occurs when a farmer agrees to produce particular quantities of a produce for the buyer. This rule out the risk of overproduction as demand is determined beforehand, thus eliminating uncertainty in sale.

Did You Know

Inefficiencies in the supply chain cost the country 40% of its total produce in the post production phase. Lack of adequate storage facilities is one of the primary reasons. Proper storage facilities can help farmers fetch better prices, and avoid shortage

- **Over Processing:** Over processing refers to any activity undertaken that does not contribute to the final value of the product or even adding more value than the customer requires. Addition of excess features that may not be used by a consumer is a typical example of over processing. This incurs cost which is in turn borne by the paying customer.
- **Delay between Activities**: Often, lack of proper planning along the supply chain leads to time lag between activities. This wastage of time leads to efficiencies and losses. An example would be unavailability of space in the mandis cause farmers to wait in the open with their produce for days. This increase cost to the farmer as the vehicle rent extends and may even lead to spoilage of the produce before it could be sold.
- **Wastage during Transportation:** This is not just limited to the damage that happens to crops due to unavailability of transport facilities or unsatisfactory conditions of the

roads. This also includes plant situated too far away from raw material source or even the unnecessary movement of goods within a plant due to inefficient layout design.

- **Motion Waste:** Ergonomics is the process of designing or arranging work space, products and systems so that they are convenient for the people who use them. Motion waste refers to unnecessary movements by workers and is the product of poor ergonomics. Some examples of motion waste as unnecessary walking, reaching to higher shelves, or having to turn around too often in the plant or during loading or unloading goods for transportation. Motion waste tires out workers and causes delays.
- **Mismanagement of Inventory:** Inventory management is a key aspect when it comes to maintaining supply chain efficiency as both excess or shortage of inventory can lead to waste. That is, activities that lead to either more inventory stored than needed, or allowing space to remain unutilized due to shortage of inventory, are classified as waste. Underutilization of space is an opportunity cost, i.e., loss of revenue had the space been utilized for something else. This is why unutilized space is also considered a waste. This is tricky to solve even at the planning phase as one also looks at scope of expansion and the fluctuating supply trends when designing storage space. Another common cause of inventory mismanagement is the bull-whip effect which is caused by exaggeration of demand side changes at the supply side. One way to manage this issue is by improving communication quality throughout the supply chain. In general, there are a number of other ways such as practices like Economic Order Quantity (EOQ) and Just in Time (JIT) which will be discussed in detail later on.
- **Defects:** Errors, be it human or machine related, lead to waste. Error is any deviation from what was decided by the management for how a product/service actually is or process should be. Error can result in damaged/defective products, rework, mislabelling of products, expensive returns or refunds, billing errors etc all of which affect the profitability as well as smooth functioning of the supply chain. Organizations should identify errors by looking at certain parameters known as supply chain metrics, determine the root cause of the error, fix it and continue looking out for other errors.

Some of the common ways to avoid wastage and improve supply chain efficiency are:

- **Increase Supply Chain Visibility:** Supply chain visibility is the ability of the organization to constantly track each component of a product as it moves along the supply chain, from supplier to plant store to consumer. This ensures that all players along the chain have access to adequate, reliable data that will help take better planning decisions. For example: By giving suppliers continuous visibility into your inventory, they can plan in advance on how much to produce to meet your future demand.
- **Improving Communication** along the supply chain: Face to face meetings among partners are the most advised to avoid miscommunication, but is not always

practical due to time constraints. As mentioned earlier, communication is the key to avoiding phenomena such as bull whip effect. This is where we should make use of emerging technology. Most developed value chains have made use of information technology brilliantly so that any changes along the chain are picked up and adequate measures are undertaken to manage them. Big data analytics is a tool that can identify patterns in data collected along the supply chain to offer insights about inefficiencies in the system.

- **Proper Training of Staff:** Each person who contributes to the value chain plays a specific role which if not executed properly, may lead to supply chain inefficiencies. Proper training can help bring down errors, reduce mishandling of equipment and avoid accidents. A well-trained employee may even be able to identify and bring attention to problems early on and help solve them before they cause huge loss for the firm.
- **Implement Automation:** There are tremendous changes happening in science and technology with every passing day. Automation or Automatic control is one such innovation that lets the use of technology to operate equipment and processes with minimum human requirements. Examples are robots, driverless cars, and automated assembly chains. But implementation of automation should only be after ensuring practical use and cost benefit analysis. This could be done after consulting with workers and the middle management who are more aware of the ground realities in the plant floor.
- **Machine to Machine Communication –** This involves enabling complete traceability of items in transit by enabling machine to machine communication by using GPS monitoring, RFID, barcodes, temperature and humidity sensors and much more. This could be enabled for not just the items in transit or storage, but can also include shelf monitoring, that is real time data collection about the stock levels in retail stores. Thus, there is decreased uncertainty with respect to what is happening in the field in real time, enabling better decision making in combination with available enterprise data.

To Do Activity

Pick any product and identify its supply chain components. List all the processes involved, any waste that happens and how to address the same.

Caselet 2.1: Lean Manufacturing in Dakota Bodies

Dakota Bodies is a custom truck body manufacturer based in South Dakota, USA with customers in the US as well Canada. As the company grew steadily post its inception in 1997, the challenges it faced increased too. They faced difficulty in meeting market demand despite expanding its plant size by another 45000 square feet. The company decided to implement Lean Manufacturing.

An external consultancy was hired for the same who started by defining the strategic goals of the company and assessing the existing operations. As a first step, 40 Dakota Bodies employees including managers, supervisor and workers, were provided a one-day training in lean management and further dispatched to see live implementation in other organizations. They also established a *Kanban system* that stocks and orders parts based on market demand. Production area was organized keeping in mind the 5S methodology that includes sorting, setting in order, shining (keeping the area clean), standardizing and sustaining. They also cleared further space by introducing tool carts. These changes were made sustainable by instituting weekly audits.

Within no time, benefits started to show. Productivity and Revenue increased significantly. Standardized work practices, reduced training time, decreased clutter and confusion, consistency and quality in work were the immediate results.

On seeing results, company has plans to train more employees and implement more lean manufacturing tools such as *Kaizen* and *Value Stream Mapping* in the organization processes.

2.3. Activities in the Rural Value Chain

Relationships within a supply chain influence the behaviour of individual partners and in turn, the performance of the whole chain. Developing a better understanding of these relationships can help identify the bottlenecks, limitations and opportunities available not limited to the supply chain, but also the wider market.

A Netchain analysis is a tool used to uncover and study these relationships that make up a netchain – which is a combination of the vertical linkages within a supply chain and horizontal linkages among companies. Vertical linkages connect all the players across a

single value chain and are responsible for moving a product along the chain encompassing value addition to deliver to the end consumer. Horizontal linkages, on the other hand, link distinct value chains and show interdependencies and cooperative arrangements among firms. For ease of understanding, let us take the case of the sugar value chain. A sugar cane farmer and a sugar processing unit that purchases raw material from the farmer, is considered to be connected by vertical linkage, whereas two sugar cane processing units sharing their resources to achieve efficiency and economies of scale is horizontal linkage. Hence, when parties along a single value chain consolidate, it is known as vertical integration and when firms operating at the same level in the value chain merge, it is known as horizontal integration.

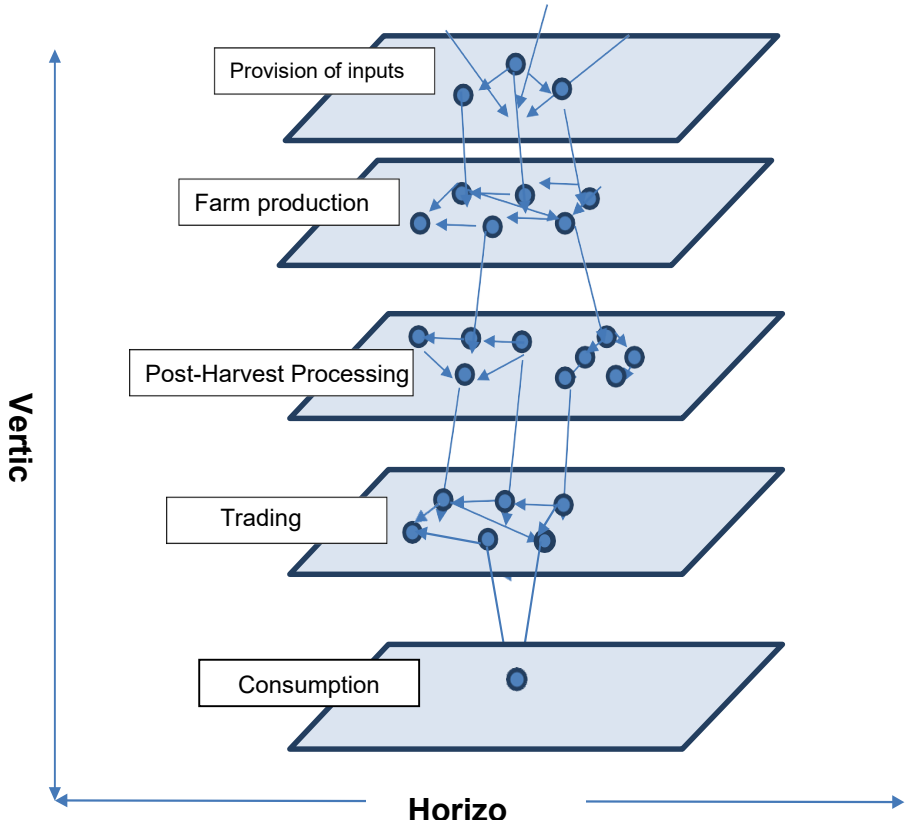


Figure 2.2 A generic net chain model (Source: Lazzarini et al, 2001)

To understand these relationships better, one should understand the various activities in the rural value chain. Most activities may be categorized under seven categories as follows.

- **Input provision** – this includes all supply inputs required to undertake production including water, seeds, fertilizers, pesticides, insecticides etc.
- **Cultivation of the crop** – This includes land preparation, sowing, growing, irrigating, harvesting, drying, and threshing the crop.
- **Collection** – The harvest is collected, sorted, graded, and stored for future processing or transported to other destinations for sale.

- **Production** - This involves any sort of further processing such as drying, weaving, moulding, treating and storing the final product.
- **Export** – Collection, package, storage and transportation of products to be sold in international markets.
- **Import** – Quality control, storage and transportation of the products that are sourced from international markets.
- **Retail consumer**– This involves making the produce available for sale to consumer.

Generally, one could say that a typical agri value chain starts from soil preparation for cultivation, sowing, adding fertilizers and manure, pest and insect control, harvesting, post-harvest processing, packaging, marketing, distribution and consumption by end user. There could be a number of other processes too such as financing, insurance, knowledge dissemination et cetera along the way.

To Do Activity

Choose any two products of varying perishability. List and compare all the activities involved in their value chains. Critically analyze the reason behind the observed differences.

2.4. Farm Mechanization to Enhance Rural Value Chain

More than 70% of the total rural households depend on agriculture as primary source of livelihood (FAO, 2020). More than 50% of the total workforce in the country has been employed agriculture (Financial Express, 2018). But the sad truth is that agriculture as a sector is the least contributor to the GDP of the country at just 14.6%. This points to an alarming fact about the extent of disguised unemployment in Indian agriculture.

Disguised unemployment or hidden unemployment is a situation where more people are employed to do a particular job than that is required. That is, a job that could be finished by a few have many involved, leading to a misconception that all are employed productively. Indian agriculture is particularly affected by this for the following reasons:

- Lack of other employment opportunities in the rural area
- Lack of skill to qualify for the existing employment options
- Poverty and lack of capital for self-employment in other occupations
- Availability of cheap, surplus labour
- Family having been employed in agriculture for generations
- Very low level of mechanization in rural farms

The problem of low mechanization is of particular interest to us. Generally, Farm Mechanization can be explained as introduction of technology to replace human and animal effort on farm. It may be partial or complete. When human and animal requirements are fully met my mechanization, it is called complete mechanization, and if not, partial. Farm mechanization is said to improve yields, production efficiency, and profit. It also reduces the labour requirement and post production loss.

Implementation of mechanization requires the purchase of certain machines and equipment which are usually capital intensive in nature. This is one of the reasons why farm mechanization has not been adopted widely in India. Access to cheap capital and finance is low. Additionally, small, fragmented land holdings make buying of these equipment uneconomical. We shall look at some of the ways in which mechanization may be adopted to suit Indian agriculture. Before that, let us go through the common farm machines in use, followed by the benefits and challenges of implementing mechanization in farms.

Table 2.1 Types of farm equipment popularly used in different farming activities

Type of farming activity	Types of farm equipment
Seed bed preparation	Tractors, Levellers, Ploughs, Dozers
Sowing and planting	Drill, Seeder, Planter, Dibbler
Weeding, inter cultivation, plant protection	Harrow, Tiller, Sprayer, Duster
Harvesting and Threshing	Harvester, Thresher, Digger, Reaper
Post-harvest agro processing	Seed extractor, De-husker, Huller, Dehuller, Cleaner, Grader

The dealers dealing in farm equipment are usually based at the district level. The primary product sold by the dealers is tractors, while other machines may also be sold alongside.

Figure 10.3 Figure showing the distribution of farm equipment

(Source: Grant Thornton FICCI Report)

Table 2.2 Extent of mechanization at various levels of supply chain

(source: Grant Thornton FICCI Report)

Type of farming activity	Extend of mechanization adopted
Soil working and seedbed preparation	40%
Seeding and planting	29%
Plant protection	34%
Irrigation	37%
Harvesting and threshing	60-70%

There are many proven social and economic benefits to implementing farm mechanization. Let us take a look at some.

- **Improved Yields -** It has been proven that there exists a linear relationship between farm power availability and yield of the farm.[1] This is one of the most important economic benefit of farm mechanization. This was achieved due to better tilling, sowing and all year-round irrigation that was not rain dependent anymore.

[1] https://m.economictimes.com/news/economy/agriculture/focus-on-farm-mechanization-to-cope-up-with-increasing-food-demand/articleshow/73814116.cms

- **Input Savings -** NABARD data shows that considerable input savings have been observed on various fronts post the implementation of farm mechanization. The said savings are to the tune of 15-20% on seeds, 15-20% on Fertilizers and benefits due to increased cropping intensity (about 5-20%).

- **Increased Efficiency –** Farm mechanization decreases task time (by approximately 15-20%) and workload per farmer (by 20-30%). This improves labour morale and efficiency. This visibly reduces the problem of disguised unemployment in the rural areas, even though it may not address the root cause.

- **Addresses the Problems of Rising Cost of Labour:** The figure below shows the increasing trend associated with daily wages in agriculture over the years. Farm mechanization is the only alternative that could address this issue.

Figure 2.4 11Graph illustrating the upward trend of agricultural daily wages

(Source: NABARD Sectoral Paper on Farm Mechanization, 2018)

- **Social Benefits:** Apart from the economic benefits listed above, there are also a number of social benefits associated with farm mechanization. It helps convert uncultivable land to agricultural land with the help of advanced tilling and irrigation techniques. Decrease in workload on women who usually help out in the family farm after toiling the whole day for other chores assigned by traditional gender roles such as cooking, cleaning, collection of water etc. Farm mechanization improves worker safety as the worker is not as much involved in labour intensive, accident prone tasks. The scope and profitability associated with farming after the implementation of mechanization attracts young people from rural as well as urban areas to settle and work in rural areas, contributing to the growth of agricultural sector as well as the overall development of the village.

Now that we have a clear picture on why farm mechanization benefits the value chain, let us take a look at the reasons why farm mechanization has been facing difficulty spreading

across India. More than 20 crore farmers in India do not have access to any sort of mechanization tools.

- **Economies of scale** – The average landholding size of an Indian farmer is 1.08 hectares according to 2016 data and has been shrinking over the years. In comparison, an average US farmer cultivates on close to 180 hectares of land with a trend of constant increase since 2012. The fragmented land holding pattern among Indian farmers is because of land being scattered in different localities, inheritance-based division among children, rising requirement for residential land etc. This means that buying capital intensive machines do not pay off for small and marginal farmers.
- **Credit procedure**: Farm mechanization is a costly system to implement. Most farmers who would want to adopt the system will have to opt for debt to gather money for the required investment. But credit services are inefficient in rural areas. Either the farmer has to depend on private money lenders who charge very high interest rates or on banks, where the process is long and tiring.
- **Rate of interest** – Crop loans have interest subsidies and other supporting schemes by state and central governments, but not the loans undertaken for farm mechanization activities. Additionally, all existing subsidies are fund allocation based and is not based on the requirements of the people. This drives up interest charges, discouraging farmers from obtaining loan financing for mechanization project.
- **Uninsured market** – India is a supply driven market. That is, there is production that happens irrespective of the demand. This rests the bargaining power with the buyers and sellers. Price fluctuations and low income for the farmer are very common in such a situation. This uncertainty, on whether the investment would pay back early enough, discourages farmers from investing in expensive equipment.
- **Low awareness:** Most Indian farmers follow traditional farming methods that have been passed down from one generation to another. They are not updated about the innovations happening in agriculture that could be of use to them.

Farm mechanization can greatly improve supply chain efficiency, as we detailed above. Analyzing the unique requirements of Indian villages and designing mechanization schemes specific to these villages may be the first step towards wide spread implementation of farm mechanization in the country. Here are some ways we could go about it.

- Collective ownership among a group of farmers thereby dividing the cost
- Hiring equipment for use at the specific time of need. E.g. Harvester is required only during harvest period.
- Manufacturing and marketing small scale farm equipment custom made for Indian farmers.
- Extend interest subsidies to farm mechanization loan. This subsidy system should not be based on budget allocation alone, but the requirement of the same.
- Awareness building programs and demonstrations, by equipment manufacturers to make people aware of the benefits of purchasing equipment.

To Do Activity

Visit the farmlands of one small, medium and large farmer each. List down all the mechanization that has been undertaken in each category. Compare this data among them. List all observations and compare with that of friends.

Caselet 2.2 - Custom Hiring Revolution in Indian Farms

Shakti Singh Tomar from Vidisha Madhya Pradesh was like any other average Indian farmer with endless stories of losses he incurred from the unpredictability associated with Indian farming which is largely rain dependent and labour intensive. But the stars seem to have changed for him. He is now one among the more than twelve hundred farmers across Madhya Pradesh running Custom Hiring Centres or CHCs. CHCs rent out farm machinery to small and medium farmers who cannot afford to buy them. Not only does this solve a major challenge associated with the implementation of farm mechanization in highly fragmented farm landholdings in India, it also employs many rural youths per centre. Farm labour shortage had sharply increased farming cost. With the availability of farm machines for rent, labour requirements have come down, reducing the total cultivation cost for the farmer. And more importantly, farming yields have been reported to improve yields by as high as 20%. The cost of opening up a centre is approximately Rs. 25 lakhs which receives a government subsidy of Rs. 10 lakhs. The rest is financed by banks loans. The cost may seem high but farmers like Tomar certify that business is profitable.

Any rural youth who is under 40 years of age and is an undergraduate degree holder can apply to establish a centre. Candidates, who are selected through a lottery, then undergo a week long training which is mandatory if one is to qualify for bank loans. There is also a list of mandatory equipment that needs to be purchased. A single centre covers 200-300 farmers on an average, within a radius of 10 km. As of 2016, there were 612 centres working in the state of Madhya Pradesh. Similar centres have been opening up across the country, either run by informal farmer collectives or registered farming cooperatives. Private sector farm equipment manufacturers such as Mahindra and Mahindra, TAFE, Escorts and John Deere are also trying to be a part of this market by introducing their own models of custom hiring.

Such infrastructural changes in Indian agriculture have been speeding up the process of value chain formations across rural India. For instance, Tomar is in the process of purchasing a seed grading machine from Haryana to collaborate with a group of local farmers and start production of certified seeds that could be sold at a premium. Many more possibilities of value additive processes such as this exist, which will empower farmers and improve their income.

2.5. Value Addition through Food Processing

One of the most important ways to add value to agricultural produce is by processing it further. Thus, it is considered a key step in the agricultural value chain. In this unit, we shall take a deeper look at what is considered food processing, and what are the benefits and scope. Food and Agricultural Organization defines food processing as “any change made to food to alter its eating quality or shelf life.” It involves the application of technology to preserve, as well as to improve the eating quality of foods in a controlled and predictable manner. Food processing activities may generally be categorized into:

- **Primary processing -** This involves transforming raw agricultural produce to something that is ready to use. For example: raw wheat kernels will need to be dried, threshed,

winnowed and milled before it turns to wheat flour. Other examples are shelling nuts, butchering and cutting animals for meat, oil extraction, and pasteurizing milk. This is a stage that possesses high risk of contamination if the materials are not handled with care. This is especially true for animal proteins such as milk and meat.

- **Secondary processing –** This involves turning ingredients into food. Examples are baking, boiling, pickling etc. That is, no further processing is required for human consumption. Example: Baking bread from wheat flour.
- **Tertiary processing** – This is the commercial production of ready to eat or heat and serve foods. Some examples are: instant noodles, chips etc.

Table 2.3 Key segments in Indian food processing industry and its components

Food Processing Industry in India		
Segment	**Components**	**Levels of Processing**
Dairy	Whole milk powder, skimmed milk powder, condensed milk, ice-cream, butter and ghee, cheese	35%
Meat and poultry	Frozen and packed (mainly in fresh form), egg	Buffalo meat – 20% Poultry – 6%
Fisheries	Frozen and canned products (mainly in fresh form)	8%
Fruits and vegetable processing	Beverages, juices, concentrates, pulps, slices, frozen and dehydrated products, potato chips and similar products	2%
Consumer foods	Packaged food, aerated soft drinks, packaged drinking water, and alcoholic beverages.	Not Available
Grains and cereals	Flour, bakeries, starch, glucose, cornflour, malted foods, vermicelli, beer and malted extracts, grain-based alcohol.	Not Available

(Source: Ministry of Food Processing Industry)

There are many reasons as to why such an agriculturally diverse country such as ours, who is both a large producer and consumer of food, should invest further in food processing industry.

- **Reduction in Spoilage:** We had earlier discussed how wastage of fresh produce is very common in the country resulting in huge losses for the players at each stage of the value chain, particularly the producers. In 2018, Ministry of Food Processing Industry (MoFPI) reported annual post-harvest losses at Rs. 92000 crores. This is because of inadequate investment in infrastructure for packaging facilities, storage, transport, cold chain and food processing. Food processing improves the keeping quality of the food by thermo processing, freezing, packaging, or canning. This not only reduces the occurrence of food borne diseases, but also makes it better suitable for long distance transportation, opening up opportunities that are not limited to local markets for farmers.

- **Value Addition for Consumers:** Value chain is about constantly creating more value for the consumer. Many processed food items are preferred not just for the convenience they provide, but also the enhanced taste and texture that processing provides. There is a general belief that processed foods are always unhealthy. This is not true. There are a number of examples where processed foods may even be healthier than foods that have not undergone any processing. This is because fresh food starts losing its nutritional qualities from the moment it is harvested, which can be delayed with the help of adequate processing and packing. Also, fortification is a common processing technique by which certain micronutrients which are otherwise not associated with the product are infused to it. A common example is iodized salt. Iodine was added to salt to address the problems associated with iodine deficiency such as goitre and thyroid.

- **Increased Farmer Income and Employment Generation:** If the farmer is able to engage is the most rudimentary form of processing, it can fetch him/her a better price than selling the fresh quantity. Additionally, the increasing demand by consumers for processed food will require the industries to buy large quantities of raw materials from the farmers. Example: Mere sorting of coconuts is welcomed by the buyers of different markets. The bigger uniform shaped coconuts fetch more price than the middle and small ones. The advantage of getting the maximum price for the best quality can be used. This could hardly take one labourer to grade 5000 – 6000 nuts per day. But cumulatively, the employment generated via the industry is already significant and increasing.

- **Improvement in Food Security:** Preserving and storing food helps avoid spoilage, thereby saving huge quantities of food items annually. This increases the buying capacity of manufacturers creating a bigger market for raw produce. The realization that there will be demand for the produce, in turn encourages farmers to scale up production. This helps drive down cost. This combined with the processing industry's ability to make even food available all year round, reduces food insecurity in the country.

One reason why the food processing industry has been expanding slowly as compared to developed countries are that it requires high capital investment in the form of plant and equipment. There is also the general mindset that processed foods are always unhealthy whereas unprocessed is not. For these reasons, less than 10% of the total food produced in the country is further processed to value added products. This is too less in comparison with countries such as the US or even other developing countries such as Thailand, Philippines and Brazil who process 65, 30, 78 and 70 percent of their total produce into value added goods.

But things have been changing thanks to the rising urbanization and consumerism in tier 2 and tier 3 cities, development of organized retail and rapid change in consumer behaviour.

Food processing is a now 'sunrise sector' in India. One third of the total food market in the country comprises of processed food. This sector also contributes to 14% of the total manufacturing GDP of the nation. Many corporate giants such as PepsiCo, Nestle, Parle, Frito-Lay and Haldirams have made heavy investments in the country and have been largely successful in capturing the growing market. Higher investments along with adequate policy initiatives can do wonder to agri value chain capabilities in the country.

Caselet 2.3. A case study on Amrutham Nutrimix by Kudumbashree

Kerala has the lowest infant mortality rates in the country at 10 under five deaths per 1000 births. This is a significant achievement in a country where the national average is 34. This result could be attributed to various nutritional schemes implemented by successive state governments over the past decade. One that should particularly be noted is the production and marketing of Amrutham Nutrimix by Kudumbashree, the poverty eradication and women empowerment program implemented under State Poverty Eradication Mission in 1998.

The Amrutham Nutrimix is a health supplement manufactured by Kudumbashree aimed at satisfying the nutritional requirements of children aged between 6 months and 3 years. This was developed with special attention to requirements of tribal children who were found to lack in protein due to lessened intake of traditional foods such as jowar, cereals, pulses, ragi, horse gram and maize. The project took off in 2005 and processing units were set up to process easily available grains and pulses such as wheat, groundnut, dal, soya and sugar. The initial capital investment made by the Kudumbashree per unit was Rs. 2.5 lakhs from a bank, one-fifth of which was which was then subsidized by the government. This included purchase of processing equipment such as wheat cleaning machine, wheat roasting machine, ground nut peeler, pulveriser, swifter, blender and cooling tray. Packaging was also mechanized with the help of batch coding machine and packaging sealers.

Maintaining quality is one of the key goals of the units. The measures adopted for the same were instituting a Nutrimix grading process to evaluate the functioning of the unit and the products, where aspects such as infrastructural capabilities, cleanliness of the building, machinery and surroundings, efficiency, record maintenance and much more are periodically evaluated.

The produced mix was subsequently distributed to mothers with children below three years of age via 33000 Anganwadis in the state as take-home ration, irrespective of whether they belonged to Below Poverty Line or Above Poverty Line category. The initiative has helped the state achieve remarkable improvements in eradicating infant malnutrition in the state which is one of the main contributing factors to infant mortality across India. Thus, this is a very good example of the socioeconomic benefits of investing in food processing.

Chapter Summary

As a majorly agrarian population, India must understand the benefits it could derive from a well-developed value chain. A value chain is a supply chain in which all parties constantly add more value to customers and eliminate wastes to improve business processes. Such improvements help the farmers fetch a better price, provide better service, and maintain competitiveness in the evolving market.

The existing supply chains in India are highly fragmented and unorganized. Exposure of one individual member to certain risks due to the weather-dependent nature of Indian agriculture could be shared using innovative mechanisms such as collective farming and contract farming. Value addition through better storage (time value), transportation (place value), and processing (form value) should be imparted to achieve better returns. Additionally, the agricultural marketing system should evolve to meet the changing domestic and international market requirements.

Lean manufacturing is a concept that aims to identify and minimize wastes within manufacturing systems. The seven types of wastes according to this are overproduction, over-processing, delay, wastage during transportation, motion waste, inventory mismanagement, and defects. Each of these needs to be addressed to achieve efficiency in the manufacturing process.

A Net chain is a combination of vertical linkages along a supply chain and horizontal linkages across an industry. Net chain analysis helps understand these relationships which play an important role in value chain building.

With rising labour shortage affecting profitability and efficiency, the way forward is farm mechanization. This helps bring down cultivation cost while improving yield in addition to a plethora of other social and economic benefits. Some of the major barriers to widespread adoption of mechanization in Indian farms are – high capital requirement, fragmented farm landholdings, unavailability of subsidies, cumbersome credit procedure, and low awareness. One way to address this is by enabling shared buying or custom hiring as is being practiced increasingly across the country.

Rising urbanization, consumer income, and changing consumer preferences have aided the growth of the food processing industry. Primary, secondary and tertiary processing are various stages in processing that a value-added product undergoes before it reaches the final consumer. Apart from increased consumer satisfaction, other benefits include a reduction in spoilage, increased income to farmers, employment generation, possible fortification of nutrient content, and improved national food security. Some barriers to the establishment of processing units to aid value addition are again the capital-intensive nature and the public mindset that processed foods are all necessarily unhealthy. There is increased private investment in the sector due to the immense possibilities for diverse Indian products in the domestic and international food market.

Model Questions

1. What is a Value Chain? How does it differ from a supply chain?
2. What are the means of achieving value addition? Why is this important?
3. Comment on the nature of agri business in rural India. What are the factors that pose difficulty in implementing large scale value chains?
4. What are the most common types of waste according to Lean manufacturing principle? Explain briefly with examples. How does lean manufacturing address this problem?
5. Pick any equipment to justify the role of farm mechanization along the value chain in the Indian context.
6. Why is farm mechanization slow to pick up pace in the Indian context? How do you think we can overcome these barriers?
7. How can value addition through food processing bring about socio economic change in the country?
8. What is a netchain? How do you analyse a netchain?
9. Why are consumers reluctant to try processed food in India? Suggest some ways in which a firm may influence consumer behaviour in favour of processed foods.
10. Pick any agricultural product. List at least 5 levels that could be a part of this value chain. Explain with a neat diagram.

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Chapter 3 Role of Cooperative Movement in Value Chain Development

Introduction

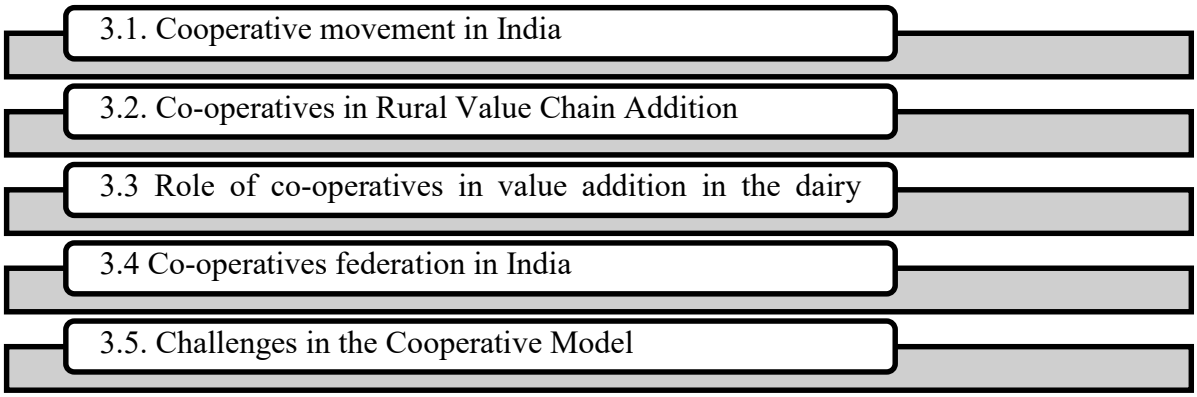
India has been a primarily agrarian economy since ages and today, almost 70% of the population is engaged in agriculture related activities. However, despite these many people involved in this occupation, the contribution of India in GDP is barely around 18% of our national GDP, as compared to more than 57% post-independence in 1950-51. Whereas a lot of emphasis was and is being given to industrialization and urbanization, the agricultural sector faces maximum neglect even today. It was always felt that most of the challenges were because of lack of proper knowledge and awareness about best practices in this sector. Most of the 'knowledge' resources were cornered by the middlemen who exploited the ignorant farmers forcing them to lead a difficult life. The farmers of India were not an organized lot, and due to low education levels and lack of leadership they could rarely unite. The middlemen took advantage of this weakness of the farmers and exploited them in multiple ways. The money lender would lend money at exorbitant interest rates, so if the farmer could not afford to pay, his land would be usurped. The producer could secure a very low price due to the lack of storage facilities in the mandis. Especially for perishables like milk, the farmer always faced losses due to absence of cold-storage facilities.

The cooperative movement in the country, in spite of its few shortcomings, helped consolidate the farmers, specially the marginal small ones, giving them the bargaining power for not just better prices but also providing access to potential markets. We have seen remarkable changes in the dairy sector, sugar sector, fruits & vegetables, fisheries, poultry etc.

Objectives

- To understand the beginning of the cooperative movement in India
- To analyze the role of co-operatives in the rural value chain at each stage
- To examine the synthesis of the Successful Dairy Co-operative movement of India
- To evaluate the role of various Co-operative federations in India
- To assess the challenges faced by the Indian Co-operative model

Chapter Structure



3.1 The Co-operative Movement in India

Co-operatives have played a major role in the progress of agricultural and dairy sectors in India with some major success stories like the White Revolution. In this unit we will try to understand the basic definition of a co-operative, the origin of co-operative movement in India and some basic functions of agricultural co-operatives.

According to the International Co-operative Alliance, a cooperative is defined as a group of people working together to meet the common interests and needs of its members, by sharing ownership and taking democratic decisions. Co-operatives are owned and operated by the members, for the benefit of the members. The heart of the cooperative movement mainly lies in cooperation and shared values. The main objective of a co-operative is to build value for its members rather than making huge profits. A few basic characteristics of co-operatives can be listed as follows:

- Cooperatives are collective associations under the governance of their members. Leaders set out their priorities and make decisions. Each member shall have equal rights, in particular the right to vote during the General Assembly.
- Cooperatives obtain initial capital from members who contribute the share equitably and democratically. Every member of the society has equal opportunity to buy and receive the same equity amount of the co-operative.
- A cooperative is a fully member-owned, member-run and member-serving business organization
- Cooperatives, through policies accepted by their members, aim at the sustainable development of their societies.

In 2013, over 500,000 cooperatives were estimated to exist worldwide with a membership of around 7 million people. All these thousands of cooperatives play a multi-functional role in both rural and urban areas, such as providing services, running economic operations and producing dividends for its members, supporting the vulnerable and creating a favorable atmosphere for members to engage in business projects.

The History of Co-operative Movement in India

The roots of co-operative movement in India are closely related to agriculture. Since the beginning of British Rule, India has been greatly deprived of its economic status and wealth. India was primarily an agrarian economy since centuries and due to this, the majority farming community faced the plight of a weak economy. Adding to this, the then British Government demanded hefty taxes from peasants and during the late 19th and early 20th centuries, India faced frequent famines. Farmers had to often borrow money to purchase their farm inputs, seeds and fertilizers and banks would not grant loans to the farmers to meet their expenses. The only way forward was to seek help from middlemen and intermediaries. These middlemen would often exploit the farmers' weak negotiating power and charge exorbitantly high rates of interest. During this period, the farmers of Pune and Ahmednagar in Maharashtra started organizing themselves into large groups and began protesting against the government. Three acts viz. the Deccan Agriculture Relief Act

(1879), the Land Improvement Loan Act (1883) and the Agriculturists Loan Act (1884) were subsequently passed by the Government to tackle this situation.

Few years later, it was deemed necessary by the government to have credit societies through which farmers could borrow money for agriculture after observing the village banks in Germany. In the year 1904, the Co-operative Society Act was passed by the erstwhile Government. It marked the beginning of the cooperative movement and was a turning point in the economic and social history of former India, as stated by Mr. Henry W.Wolff. The aim of the Act was to encourage self-help and co-operation among farmers, craftsmen, landowners and people of limited means.

The main features of the Co-operative Society Act of 1904 were as follows:

- There could be two categories of cooperative societies – Rural and Urban.
- Rural cooperative societies were to be organized on the basis of the Raiffeisen model. Under this model, the liability of the farmer was unlimited and the loans were to be extended to members of the company were for productive purposes only. Urban cooperative societies are to be organized on the basis of the Shulze-Delitizsch model. Under this model, the liability of the lender was limited and the company also has the right to perform certain non-credit functions.
- The Societies were organized and controlled by a government designated by the Registrar.
- Credit or loan was to be extended only to members of the company against personal security or real immovable security.
- Voting rights as set out in the Act were based on 'One-man, one vote' policy.

In the initial stages non-credit cooperative societies were fairly uncommon. Non-credit co-operative societies refer to the co-operative societies formed for various purposes other than lending credit, such as for collectively procuring farm inputs, collective marketing etc. However, in the years that followed, several changes were made to the Co-operative Society Act and non-credit co-operative societies were formed in the country on a large scale for other non-credit activities.

After India gained Independence in 1947, the first Prime Minister, Pt. Jawaharlal Nehru made a mandatory inclusion of the co-operative societies in the Five-Year Plans. In the year 1958, the National Development Council was set up, which recommended a National Co-operatives Policy. This suggested the training and educating of the members regarding the co-operative rules and practices for the first time and also suggested the establishing of

Co-operative Marketing Societies. Later in 1984, the Multi-State Cooperative Societies Act was brought by the government which helped simplify the different laws governing the same types of societies in different states.

Agricultural Co-operatives and their Functions

The presence of cooperatives has a significant influence on the general nature of agricultural production. They include job growth, business development, increasing rural incomes and enhancing access to social services. Cooperatives have been responsible for developing modern markets in rural areas, providing ready markets for farmers' harvest and at the same time absorb transaction costs. The six main functions of most agricultural co-operatives can be listed as follows:

- Distribution of Seeds and Machinery
- Distribution of Fertilizers
- Grading of Produced Goods
- Undertaking Processing Activities
- Providing Storage Facilities
- Marketing of Produced and Processed Goods

There are many advantages for farmers to join the cooperative movement. Few of them are achieving economies of scale, entering new markets, obtaining professional resources, having increased bargaining power due to collectivity and maintaining existing markets. Farmers may benefit from economies of scale by combining their efforts in the production, logistics and marketing of goods. The economies of scale allow the supplier to produce more agricultural inputs and the associated cost. For example, it is cheaper for a group of farmers to buy in bulk agricultural inputs such as seeds, fertilizers and pesticides than to buy in small quantities individually. Apart from agricultural co-operatives, credit co-operatives also play a crucial role in lending money to farmers at low rates of interest and thereby facilitating better means of production.

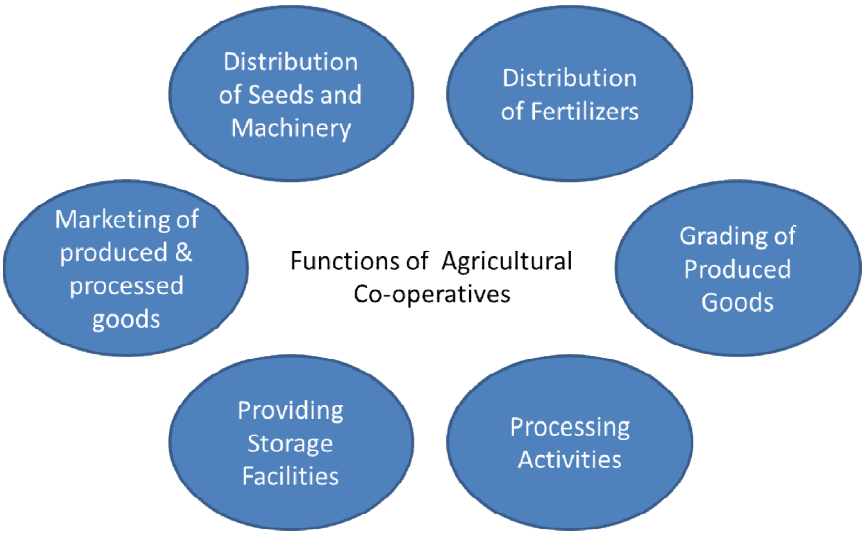


Figure 3.1 Common functions of Agricultural cooperatives

In this unit, we have discussed the definition and functions of co-operatives, the history of co-operative movement in India and its association with agriculture and the advantages and functions of agricultural co-operatives in general. In the next unit, we will try and understand how co-operatives help in the value chain enhancement.

Caselet 3.1 The Mountain View Harvest Co-operative

The Mountain View Harvest Cooperative was formed in a desperate attempt to provide a better market for the producers' wheat after the local wheat producing farmers of Mountain View City in California started going bankrupt. All of the farmers produce was sold to a single company leaving the farmers almost no marketing alternative. The co-operative adopted an entirely new approach to marketing.

The members of Mountain View Harvest Cooperative came together, pooled money and became owners of the nation's first farmer-owned bakery. The group purchased an existing successful bakery without making any management changes in the bakery. They rapidly expanded the facility as the demand for the bakery products increased. The advantage of purchasing an existing bakery allowed the cooperative to move rapidly into the production stage rather than struggling with construction of a new facility. Plus, the expertise of the existing employees aided in the prosperity of the products. Thus the Mountain View wheat farmers started yielding huge profits and became successful without having to be dependent on the corporates and local markets for selling their produce.

To Do Activity

Form teams of four students and take up the following tasks:

Find out information about any two agricultural co-operatives in India from the internet. List down the key functions performed by these co-operatives in relevance to our above discussion and present in to your class.

Find out information about any credit lending co-operative (village/district/state level) present in your area. Try obtaining information from the members who visit the co-operative regarding the interest rate they used to borrow earlier before they started borrowing from the co-operative. Also try asking about their membership details in the co-operative and how it has benefitted them.

3.2 Co-operatives in Rural Value Chain Addition

We have seen the basic functions of an agricultural co-operative in the previous unit. A rural value chain, as we have seen mainly consists of agricultural activities, especially in India. Hence in this unit we try to analyze and understand the role of co-operatives at different stages of the agricultural value chain.

The aim of the agricultural value chain is to ensure the effective and rapid delivery of agricultural products from producers to consumers. Co-operatives also serve as intermediary organizations and establish a more competitive supply chain for agricultural products. In addition, as we have seen from the features of co-operatives, any income produced will only be returned to the farmers, creating additional value for them.

Role of Co-operatives in Rural Value Chain

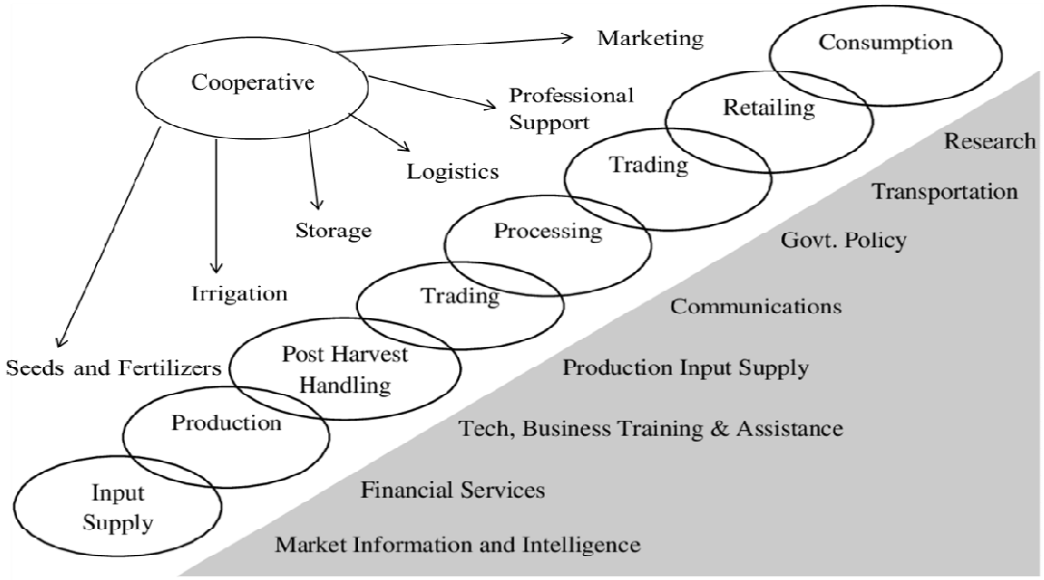


Figure 3.2 12Roles of Cooperatives in various stages of the supply chain

The overview of a rural value chain presented in Chapter 1 has been presented again in the above diagram along with the intermediary role that can be played by co-operative at each stage of the supply chain. The various functions performed by co-operatives in these stages are discussed below:

- **Input Supply:** The input supply refers to the seeds, fertilizers, pesticides and other farm machinery required for farming. Instead of individual farmers buying these inputs, co-operative gives them an opportunity to act as the suppliers of inputs to all the member farmers of the co-operative. Many agriculture co-operatives in India and the world have formed with the aim of procuring inputs at subsidized rates. Indian Farmers' Fertilizer Cooperative Limited (IFFCO) was set up with this aim of manufacturing and marketing fertilizers to the farmers. More about IFFCO has been discussed in a later unit.
- **Production:** Production activity involves irrigation, fertilizers, pesticides and various miscellaneous activities for a smooth harvest of crop. Often in arid regions, small farmers have do not have their own irrigation sources and need to purchase water from middle and large farmers. For irrigation and several other production costs, farmers require regular financial assistance. Credit co-operatives play a key role to support the farmers by providing loans at low interest rates.
- **Post-Harvest Handling:** Post-Harvest activities include handling, storage, processing, packaging etc. Many farmers throughout the country face an issue of storing their crop and often incur losses since they are forced to sell their produce during off-season being unable to preserve them. Also we regularly see the plight of farmers who simply dispose their produce without selling in the markets since they do not have adequate storage facilities. Co-operatives can pool together the resources of members and hire or buy storage facilities for their produce which enables them to sell it when the markets provide a good price to the crop.
- **Trading:** Farmers are usually exploited by middlemen who pay them a very low price for their produce compared to what they receive in the market. Co-operatives provide farmers with better collective bargaining power to seek a better price for their crop. Also, co-operatives can strike deals with large corporate for selling the seasonal produce. This function is one of the major advantages that farmers obtain through co-operatives since it provides value to the individual farmer member.
- **Processing:** Processing activities can be carried out by co-operatives by functioning as small-scale industries or micro enterprises. Amul is one such example where milk collected from dairy farmers is processed into dairy products at the factory located in Anand, Gujarat. These activities are carried out by the Gujarat Co-operative Milk Marketing Federation Limited which has by far been the most successful co-operative of India. GCMMF model is discussed in detail in the next unit.
- **Retailing:** Co-operatives can also create retail outlets for their processed and manufactured goods. Efficient Marketing techniques will better equip co-operatives to undertake retailing activities.
- **Consumption:** By creating linkages to local markets from rural areas through transport and logistics, and relevant marketing activities, co-operatives aid in reaching the produce to end consumers.

Table 3.1 Cooperatives and their services in the value chain

Intermediary (Middlemen) functions in Traditional Supply Chain	Functions of Cooperative	Role performed by co-operatives	Services Rendered
Money lender	Banking/Credit	Financial services	Loan/mortgage
	Supplier	Input supplier	Seeds & Fertilizers
Logistics and transportation	Logistics and transportation	Logistics and transporting products	Storage and transportation services
Producer	Agricultural Production	Producing agricultural products	Fresh and processed products
Collector	Services	Commission agents	Collection and distribution
Processor	Industrial	Processing agricultural products	Agricultural Production
Wholesaler	Agricultural marketing	Marketing agricultural products	Agricultural Production
Retailer	Agricultural marketing	Marketing agricultural products	Agricultural Production
Local market	Consumers	Marketing agricultural products	Agricultural Production

Co-operatives can specialize on all above-mentioned functions and thus enable on enhancing overall performance in the same way that traditional intermediaries or middlemen have done. The role of co-operatives in relevance to the traditional middlemen system, their scope of activities and the services that they perform has been summarized in the Table 3.1.

ICT in Co-operatives

Integration of business activities among cooperatives will reduce the intermediary costs. Service cooperatives such as that are ICT organizations and Credit Cooperatives offer technical support and loan services to other cooperatives, allowing horizontal convergence. Each cooperative contributes to the management of the supply chain and promotes the cooperative concepts of benefit sharing.

Information can be communicated and disseminated easily and effectively by the implementation of ITC-based e-government where both farmers and the agricultural business sector can openly, rapidly and reliably evaluate the information. Details can be obtained from computers or handsets anywhere in the world or abroad. The elements of agricultural knowledge systems are suggested as

- The development of agricultural knowledge and correspondence

- The improvement of the IT infrastructure in agriculture and cooperation among countries
- agricultural data management network
- The IT infrastructure at the Headquarters of the Department and its field offices.

Coordination between joint activities should be carried out at national, regional and global level under the oversight of national, regional and international authorities. Coordination would allow for greater strategic planning, including which markets should be given for which places, targeted inventories, scheduling and brand promotion. Better cooperation between these joint activities will lead to a stronger coalition and supply chain partnership, which, in effect, will lead to effective commodity and knowledge flow.

Optimizing the whole supply chain thus requires a degree of knowledge exchange, coordination, communication and partnership between the involved organizations. Given the scenario of interdependence between cooperatives, the quick sharing of production and operation data between cooperatives in the supply chain would minimize transaction costs. The use of advanced technologies for market value-added operations has provided the below listed advantages to cooperatives and their members:

For cooperatives:

- A larger membership base
- The potential to produce higher surpluses
- Increased surplus to offset the expense of extension personnel
- Surplus to offer extension services
- Surplus for set up technology conversion facilities at farm level
- Surplus capital for rural growth, including social and cultural events
- Maximum use of member crops / products and, as a result, higher returns.

For Members:

- Higher income levels
- Higher efficiency and production
- Crop / product / animal protection via integrated crop / animal care systems
- Incentives for social and cultural involvement
- Overall social development and maintenance of infrastructure such as road, banks, transport services, schools etc.

Caselet 3.2. The Assam Cooperative Jute Mills Ltd

Jute is a natural fiber which has ample strength for industrial use and is used in the manufacture of bags, twines, packaging materials and various other diversified products. It is biodegradable and environmentally sustainable. Assam Co-operative Jute Mills Ltd. is situated on the south side of the Brahmaputra River in Silghat, in the Nagaon district of Assam, approximately 8 km from Jakhalabandha. This is the only Co-operative model Jute Mill in the in the region. It was registered in 1959 under the Assam Co-operative Societies

Act and was commissioned in 1970 with an initial expenditure of Rs. 150 lakhs after a long struggle. In March 1984, however, the Mill had to shut down after 14 years due to severe financial crisis. The Mill was reopened again on 1st January 1986, under the terms of the historic Assam Agreement, with financial support from the Central Government and the Assam State Government. Even with the support of the governments, the financial crisis has re-emerged due to revenue and expenditure imbalances. Nevertheless, after recurring attempts, the Mill started to boost the economy from 1992 to 1993, and since then has made continuous positive net profits. The Mill is now absolutely free from all debt and obligations and is now in a stable economic position. The Mill introduces a program for the renovation / modernization of its plant and machinery from its own capital, with the goal of increasing the facility utilization and enhancing the quality of itsoutput.

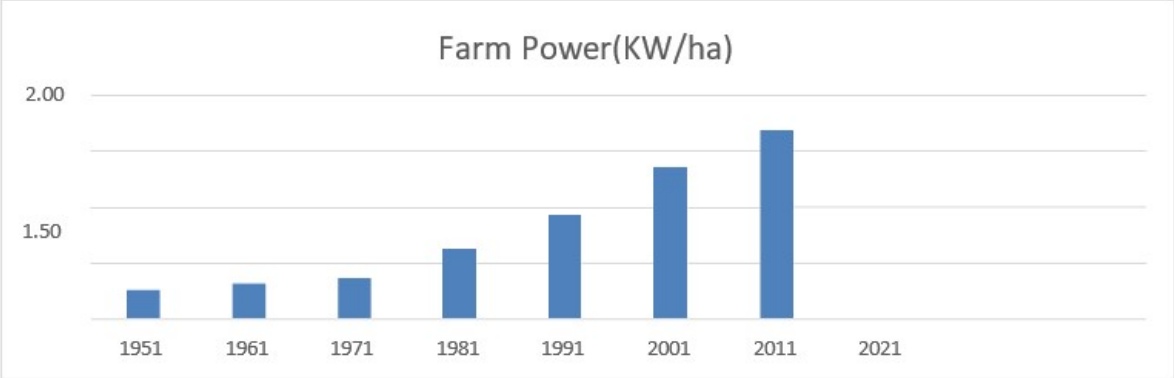


Figure 3.4 13Sales of jute over the years at Assam cooperative jute mills ltd

To Do Activity

Form groups of 6 members and find out one credit co-operative and one non-credit co-operative functioning in your area. Talk to the members of the co-operatives about how the situation was before setting up the co-operative and what changed with the setup of cooperatives. Also ask the members about what suggestions they have to improve the working of the co-operative. Present your findings to your class.

3.3. Role of Cooperatives in Value Addition in the Dairy Sector

The story of the dairy sector in India has amazingly advanced with the emergence of the cooperative movement in India. India stands to be the world's largest producer of milk with 22 percent of the world's production. It is also the birthplace of the White Revolution, a hugely successful movement initiated in the state of Gujarat by Dr. Verghese Kurien, famously known as the Father of White Revolution. In this unit we take a look at this story followed by analyzing the role of co-operatives in the dairy value chain.

The Bombay Municipal Corporation Milk Supply Scheme

The British began their first effort to improve the standard of milk in Bombay. The government launched the Municipal Corporation Milk Supply Scheme in November 1945. The Bombay Municipal Corporation would purchase milk from the Kaira district of Gujarat, approximately 400 km from Bombay City. This milk would then been sold at a subsidized rate to the people of Bombay. Polson Limited was a private company in Anand which would purchase milk from farmers and sell it to the Municipal Corporation of Bombay. Thanks to its strong network, Polson was able to buy milk at a very low rate and sold the same to the Municipality of Bombay at a very high rate. They just maximized their profits, while the farmers suffered the most. The steps followed in this supply chain were:

- Polson Limited based in Anand, (Kaira district) would purchase milk from farmers
- Polson Limited would sell a fixed quantity to Bombay Municipal Corporation
- This milk has been sold at a subsidized rate to the people of Bombay

Initially under this Milk Supply Scheme, Bombay Municipal Corporation faced severe financial challenges. Then, in 1946, the management of the scheme was taken over by the government of the Bombay State and a statutory body, the Bombay Milk Scheme, was set up. Polson was granted exclusive rights to collect milk from the district of Kaira. This decision led to a strong political opposition, as the advantage of having a relatively higher price from the Municipality of Bombay would not reach the farmer. With the exception of farmers, everyone else benefited from this decision. It was deemed profitable by the government, and Polson had a decent margin. Some intermediary dairy contractors obtained high margins. Nobody bothered about setting a standard price for milk to be paid to the farmers. Thus, under the new law, the farmers of the Kaira district were no better off than they were before. Milk companies were also extensively exploiting the farmers. When discontent among farmers increased, they reached out to Sardar Vallabhai Patel, who had been a cooperative farmer advocate since 1942. Patel began the process of organizing the dairy cooperative, which finally took the form of the development of the AMUL milk model in India.

The Anand Pattern

The cooperative movement in the dairy sector came around in the year 1946. The first integrated dairy cooperative was founded this year in the town of Anand, in the Gujarat district of Kaira. The cooperative is popularly known as AMUL - Anand Milk Union Limited. The primary objective of the cooperative was to counter private dairy traders and to shield farmers from exploitation by private traders and money lenders. AMUL has become nationally prominent and can be said to have emerged as a result of a strong socio-economic movement. Subsequently, this revolt shook the British government in that part of the country.

The setting up of AMUL was initiated in the in the remote villages of Gujarat. At first two village-level cooperatives were set up in June 1946. Soon, five other co-operatives joined together and AMUL was registered in December 1946. Several Anand pattern cooperatives began to emerge with the establishment of local milk producer unions throughout Gujarat.

The AMUL Supply Chain

Figure 3.5 Anand pattern direct link from producer to consumer

The most significant unit of the Anand model cooperatives is the cooperative society of village-level milk producers. This is a regional organization of dairy producers. The Village Level Dairy Cooperatives are all affiliated with the main body, the Union of District Cooperative Milk Producers. Milk collected at the village cooperative level shall be sold to the District Milk Producers' Union, which shall be processed for the marketing of liquid milk and milk products. In addition to paying farmers for the milk they purchased, these dairy cooperatives provide inputs to increase the productivity of the animals. The link from producer to consumer in the Anand Model is shown in Figure 3.3. Anand Model dairy cooperatives have a number of differentiating features:

- Milk farmers have been given access to the milk market throughout the year
- The cooperative, even at the village level, has maintained strict and effective governance through the elected members of the dairy farmers
- The operations of the cooperative are managed by highly skilled staff
- The income of the cooperative is distributed on an equitable basis between the members
- The cooperatives provide inputs to increase the milk output of the milk animals of the members

The popularity of AMUL soon spread through all the districts of Gujarat. The positive evolution of GCMMF led to the government's establishment of the National Dairy Development Board (NDDB) in 1965, with the primary objective of making dairy farming a promising venture for millions of grassroots milk producers. Eventually in 1973, the Gujarat Cooperative Milk Marketing Federation (GCMMF) was founded which was the apex marketing agency for AMUL ever since.

From the Katra Dairy Cooperative Society in Allahabad in 1907, to the powerful and successful AMUL brand, the journey of the dairy cooperatives is filled with devoted milk producers, committed professionals and selfless leaders who made untiring efforts, who

wanted to make it happen. Today, we are proud to say that we are the world's largest producer of milk. As an apex body, the NDDB aims to improve the working of dairy cooperatives by providing financial assistance and technological skills to enhance milk production, halt migration by work creation, increase the availability of liquid milk for children, generates foreign exchange by savings and increase farmers' access to milk.

As of today, liquid milk production and distribution is carried out by more than 170 Milk Farmers' Cooperative Unions and marketing by 16 National Cooperative Milk Marketing Federations throughout India. As a result, the majority share of liquid milk in the nation is taken over by the cooperative sector. AMUL has become the ninth largest and fastest growing dairy company in the world, according to reports published by GCMMF Ltd. With a view to the success of the Gujarat Dairy Cooperative, several other States have formed their own State Cooperatives with District Unions which aid in the milk procurement process. Many brands have gained popularity and some of them have become synonymous with quality and value. Amul-GCMMF-Gujarat, Vijaya Dairy- Andhra Pradesh, Verka Dairy -Punjab, Nandini-Karnataka, Milma Dairy-Kerala, Saras Dairy- Rajasthan, and Gokul Dairy-Kolhapur are among some popular co-operative dairy brand in states across India.

Caselet 3.3. The Case of New Zealand Dairy Cooperatives

New Zealand Dairy Cooperative Companies (CCs) are well established and produce a wide variety of dairy products and have a market share of 100 per cent of milk products. Similarly, they have a market share of 70% in the liquid milk industry. A comprehensive and advantageous regulatory scheme guarantees a shared monopoly of milk products. There is no pressure between the CCs to add new participants. We recruit new customers on the promise of a cheaper quality and support, but a member is required to fund the CC for the whole season. The supreme entity, the New Zealand Dairy Board, although a regulatory body, is governed by the elected representatives of the producer CCs. It serves as a control hub for the CCs. However, it is essentially an export federation of cooperatives with a single-seller position. Within the Dairy Cooperative Company Act, only a manufacturer can become a member of the CC. Shares are given to them as a proportion of the milk supplied. Only the successful user will have possession of the CC. The Act carries out model articles of association.

The CCs are governed by the Board of Directors, of which larger cooperatives send members on a stand-by basis. Suppliers are eligible to earn all revenue profits after paying for the cost of production and transition to cash assets. Members do not earn a dividend from their equity capital and the equity stands at face value. Withdrawing members shall be refunded with a set share value and new members may acquire their shares from them. Shares are not, however, the primary source of cooperative financing. The CCs mainly collect capital through the retention of surplus funds, depreciation arrangements, bank overdrafts and term loans from trading banks, in particular through the Dairy Industry Loan Council, formed under the Law of the Dairy Board. It raises mutual funds through bond issues and syndicated loans throughout New Zealand. The Government exempts from taxes income allocated to manufacturers or converted to reserves. However, income from other outlets, such as banking, transportation, etc., is taxable. CCs are, by nature, a collective non-profit entity and thus the occurrence of taxes is at the expense of individual companies. As a result of this tax reform, savings are the most important source of cooperative financing.

To Do Activity

Form groups of 4 members. Visit your nearest dairy outlet and find out if it's a co-operative which sells this brand. Discuss with the shopkeeper about the supply chain of this brand and how the milk reaches this store.

- From the internet, try to find out more information about the same dairy brand/co-operative and its initiation story. Create a supply chain diagram for this brand and list out all the villages/towns the milk passes through before it reaches your place.
- Find out information about any other country's dairy brand and compare the working of an Indian dairy brand and international dairy brand

3.4. Co-operative Federations in India

The Co-operatives in post independent India have been spearheaded by multiple events as discussed in the previous units. As the co-operative movement gained momentum post-independence, apex bodies at the central government level, known as co-operative federations were set up. These federations usually are several state level cooperatives that come together and perform activities like fertilizer manufacturing and selling, marketing, crop procurement together for the benefit of the individual co-operatives. These federations can be looked at as co-operative of co-operatives. Few of them are the Indian Farmers' fertilizer Co-operative Limited (IFFCO), National Agricultural Cooperative Marketing Federation of India Ltd. (NAFED) and the Primary Agricultural Credit Societies-leading the credit lending to farmers. These institutions play a major role in providing strong systemic supports for the development of co-operatives in India by enabling ease of access for improved value chain activities in agriculture, thereby ensuring value addition. Though there are many co-operative federations existing, these three shall be discussed in detail in this unit due to the important role played by them.

IFFCO - Indian Farmers' Fertilizer Cooperative Limited

The Indian Farmers' Fertilizer Cooperative Limited was set up as a multi-state co-operative with the aim of manufacturing and marketing fertilizers. IFFCO was founded in 1967 and with over 40,000 cooperative societies as members, the organization focused on the production and redistribution of fertilizers among farmers in different states. IFFCO promotes its products through around 40,000 cooperative societies and administrative agencies in over 28 Indian states and union territories. It accounts for around 20% of the country's nitrogen and 30% of the country's phosphorus output.

The first two IFFCO manufacturing facilities were built in Kalol and Kandla in 1975. Kalol was commissioned for ammonia – urea and Kandla for NPK / DAP, both in the state of Gujarat. Next, ammonia – urea complex was developed in Phulpur, Uttar Pradesh, in 1981. An ammonia-urea was developed at Aonlain in 1988. IFFCO also acquired NPK / DAP and Phosphoric Acid Fertilizer Unit at Paradeep in Orissa in September 2005 to increase their

production. IFFCO also recently opened its online store iffcobazar.in to enable ease of buying access to farmers.

The National Agricultural Cooperative Marketing Federation of India Limited was founded in 1958 with the primary purpose of promoting the cooperative marketing of agricultural products and forest produce. It functions under the purview of Ministry of Agriculture, Government of India. A broad range of products such as grains, pulses, oilseeds, spices, cotton, tribal products, jute products, eggs, fresh fruit and vegetables are bought from farmers through their cooperative network in selected areas. The function has been enhanced whenever farmers have had problems marketing their goods. This program has helped to improve farmers' negotiating power, establish direct communication with customers, have easy availability of credit, cheaper transport, storage, grading and processing facilities and better access to market intelligence. The number of co-operatives associated with NAFED is listed in the table below.

Table 3.2 Cooperatives associated with NAFED

S No.	Category of Members	Number of Members as on 01/04/2017	Number of Members as on 31/03/2018
1.	State Level Marketing Federations	25	25
2.	Apex Level Marketing Federations	03	03
3.	State Level Commodity and Tribal Federations	24	24
4.	Primary Marketing or Processing Societies	800	804
5.	Other National Level Coop. Organizations	02	02
	Total	854	858

PACS - Primary Agricultural Credit Society

The Primary Agricultural Credit Society (PACS) is the most basic unit of the structure of co-operative lending in India, which functions at the village level. The primary mission of the Primary Agricultural Cooperative Credit Society is to ensure the flow of loans to the agricultural sector in India. The main mandate was: short-term and long-term cooperative credit schemes. The short-term cooperative credit system has a three-tiered scheme –

- Primary Agricultural Credit Societies - village level
- Central Cooperative Banks - district level
- State Cooperative Banks - state level

PACS was deliberately held outside the control of the Banking Regulation Act, 1949. The Reserve Bank of India is therefore not the regulatory authority for them. The State and District Cooperative Banks were registered under the provisions of the State Cooperative

Societies Act of the respective States and governed by the Reserve Bank. The foundation was therefore established by the Primary Agricultural Credit Societies (PACS) which occupies a predominant position in the co-operative credit system. The PACS works at a village level, or represented a group of small villages were joined together, and acted as the final link between the final lenders on the one side and the higher financing agencies, state and district cooperative banks, and the RBI / NABARD on the other.

There have been cooperative land development banks offering long-term loans to farmers for land growth and capital investment. The Village-level Primary Agricultural Cooperative Credit Society is the basis for all of these operations. They are federated at the district level with the Central Cooperative Bank and at the state level with the apex bank. PACS aim at the agricultural production through the provision of credit to agricultural producers, agricultural workers, craftsmen, the supply of agricultural inputs, the organization of the storage, marketing and processing of agricultural products, the organization of raw materials for industry and the provision of technical guidance while promoting social and economic welfare.

It was felt that the progress of the cooperative credit movement depended crucially on the health and of these village, district and state-level societies. But, sadly, despite much official support and significant expansion of the PACS in terms of membership, working capital, loans and other activities, their health and functioning did not meet expectations.

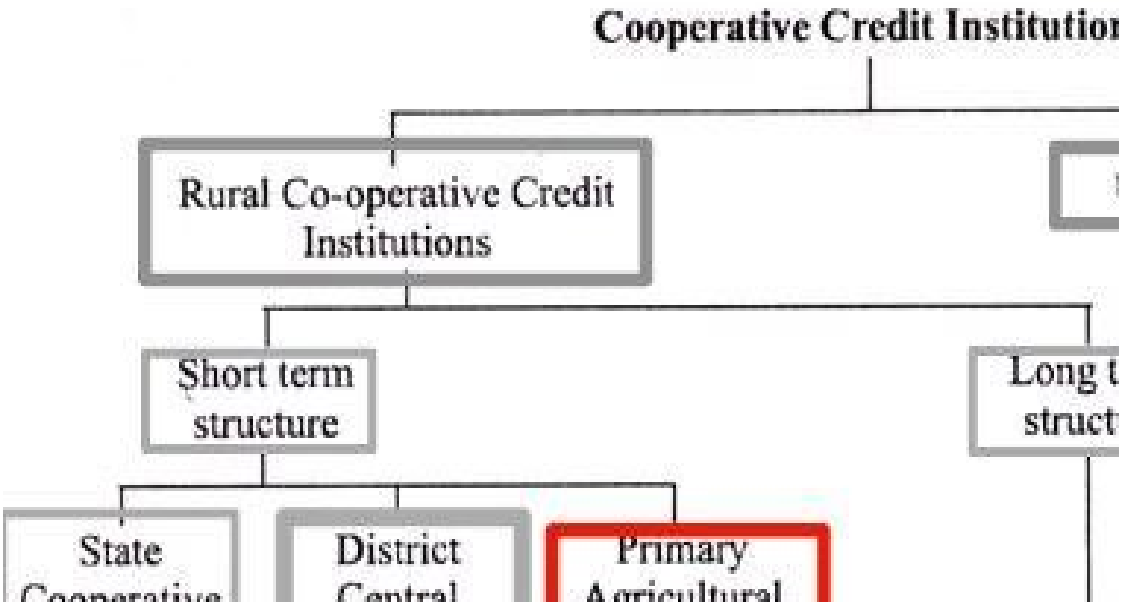


Figure 3.6 PACS in the structure of cooperative credit institutions

NFCSF - Sugar Sector National Federation of Cooperative Sugar Factories Limited

NFCSF was established on 2nd of December, 1960, under the Bombay Cooperatives Societies Act 1925. It was a registered as a Multi-Cooperative Society and subsequently, first under the Delhi Cooperative Societies Act 1972 and later under the Multi State Cooperative Societies Act 1984.

Once NFCSF was formed, not only did the capacity of the exiting cooperatives increased NFCSF, new cooperative societies were set up, yield of sugar cane increased, which resulted in higher sugar production. The share of sugar cooperatives in the total sugar production of the country jumped to 48%. On 2 December 1960, the National Federation of Cooperative Sugar Factories Ltd (NFCSF) was registered and founded under the Bombay Cooperative Societies Act 1925. It was registered as a multi-cooperative society, first under the Delhi Cooperative Societies Act 1972 and then under the Multi-State Cooperative Societies Act 1984.

The NFCSF has been regulated by the Multi-State Cooperative Societies Act since 2002. When NFCSF was founded, there were only 30 sugar cooperative factories and their combined output was only 14.9% of the total national output. The NFCSF set up its Technical Cell in 1977 with the primary objective of providing technical assistance to the sugar sector – both farmers and processors. The remarkable increase in sugar production in our country can be attributed to the NFCSF Technical Cell. Over 130 new sugar mills with capacities ranging from 1250 TCD to 10,000 TCD have provided professional and technical assistance from NFCSF. More than 70 existing mills benefited from help provided in the areas of technical improvements, modernization, expansion, etc. Support was also given for rehabilitation programs and events for the growth of the cane, etc. The concept behind the creation of NFCSF was to protect and promote the overall economic growth of cane growers and the mutual interest of cooperative sugar factories. The main roles can be set out as follows:

- Effective Project Management
- Engineering support
- Sugarcane Management
- Up-gradation
- Financial Management
- Manpower Management

India is now the second largest sugar producer in the world with 316 sugar factories in the cooperative sector alone. The share of the cooperative sector in total sugar production is now 48 per cent, compared to 14.9 per cent before the establishment of the NFCSF. The cascading impact of this value chain can be calculated by the jobs it has generated – the industry has an annual turnover of Rs 55,000 crores and provides livelihoods to more than 50 million cane growers and farm workers. As of now, 7.5% of the rural population relies directly or indirectly on the sugar industry.

To Do Activity

Form groups of six students and carry out the following activities:

- Find out from the internet about any two co-operative federations apart from the three listed in this unit. Try and understand how the scale and reach of operations of these federations differ from the individual co-operatives.
- Try to refer back to the credit lending society you have visited as the part of To Do Activity in Unit 1. Is this credit lending society a PACS? If not analyze which stage it falls in the structure of co-operative credit institutions.
- Find out if any fertilizer co-operative exists in your area and find out from the members if it has any tie-up with NAFED. Compare the rates of fertilizers and inputs sold through this co-operative with the rates of same fertilizers sold by other retailers

3.5 Challenges in the Cooperative Model

Globalization has posed a threat to many village level economies in India, especially the agricultural sector. A stable cooperative structure has the strength and the ability to neutralize the detrimental effects of the globalization process. Post-economic liberalization, in a modern global setting, cooperatives at all levels are seeking to coordinate their roles and obligations in compliance with the market.

Co-operatives are also considered to have a significant impact to provide goods and services in regions where both the government and private sector could not make interference. In a number of contexts, the deterioration of the public sector is a troubling trend. However, the general success of the Co-operative Movement in the past 100 years has not been very effective. There are many reasons attributed for the overall collapse of the cooperative movement in the Indian context. We examine few of these reasons in this unit and shall also try to have a basic understanding of FPOs or Farmer Producer Companies which are a rising trend in current scenario in the field of agriculture.

Limitations of the Co-operative Model

The limitations of the cooperative model in an Indian farming context can be summed up as follows:

- **Lack of Spontaneity**: The co-operative movement in India lacks spontaneity and motivation many times, the main reason being it isn't organized by the people themselves. Typically, they will not come out to coordinate co-operators of their own. On the other hand, the farming population views cooperative societies and banks as official lending institutions. They are only interested in deriving profits from them instead of doing something in return.
- **Lack of Funds**: Cooperatives have financial limitations, because their own finances rarely make up a significant pool of operating capital. With a low capital base, the borrowing of the cooperatives from the Central Funding Agency is considerably

affected. It comes in the way of satisfying the payment standards of both current and prospective members in an acceptable manner.

- **Loans for Economic Uses Only:** Cooperative Credit Societies do not satisfy all the credit criteria of farmers. They just issue loans for agricultural operations. Farmers continue to reach out to money-lenders to satisfy their agricultural necessities. This split loyalty to the cooperative society and the money lender hinders the development of the cooperative movement.
- **Negligence in Non-Credit Dimensions:** By and wide, the main Agricultural Cooperative Societies still disburse cash and have not yet arisen as genuine multipurpose bodies, serving diversified roles in addition to credit.
- **Regional Disparities:** There have been strong geographical gaps in the quality of credit. The image of credit quality in the eastern states, tribal and hilly regions is clearly dark.
- **Lack of Co-Operation on the Part of the People:** In the Indian background, most people are in the grip of illiteracy, poverty and conservatism. Especially difference in caste, class, religion and other social factor contribute to it. The lack of active participation on their part hinders the development of the cooperative movement. Horizontal and vertical linkages, though structurally defined, have not yet been operationally efficient.
- **Exploitation:** In the absence of adequate marketing arrangements and functions at the level of the Primary Agricultural Cooperative Societies, rural poor people are at the hands of middlemen who manipulate the situation.
- **Defective Management:** Large farmers and landowners, with their superior economic and social strength, are able to get a larger grip over these cooperatives. They have a lion's share of rewards. In this way, the cooperatives benefit from nepotism, favoritism and racism. As a result, the development of the cooperative movement is badly impaired.

In India, the only exceptions to the failure of cooperative movement have been the sugar and milk co-operatives, mainly in the states of Maharashtra and Gujarat. Gujarat is also known for its very vibrant sugar co-operatives in southern Gujarat, which run as companies and informally trade in shares and tube well companies in northern Gujarat, which have resolved irrigation issues. However, even in Gujarat, there are as many instances of failure as there are of effective collaboration, including failed attempts of chicory, tobacco, wheat, potatoes, grains and canal irrigation co-operatives.

In this context, there has been a constant quest for alternate ways of collectivization or cooperation to achieve the goals of developing poor people, although some scholars often distinguish between collectivization and cooperation in the sense that, while the former relates to organizing to prevent oppression in markets, and the latter to organize in situations of lost markets. While attempts have been made in India to encourage co-operative farming or agricultural production in the form of better farming societies, tenant farming societies, joint farming societies and collective farming societies since the 1950s, but more joint farming societies have been established and have been non-starters, and more collaboration has taken place in higher stages of the value chains of agricultural

commodities. Linking small producers to consumers is an important topic in common policy and practice. Aggregation is expected to benefit from economies of scale. Organized processes are often required for the exchange of resources, such as information supply, production control, storage, transport, etc., and for the absorption of price risks that primary products are often subject to.

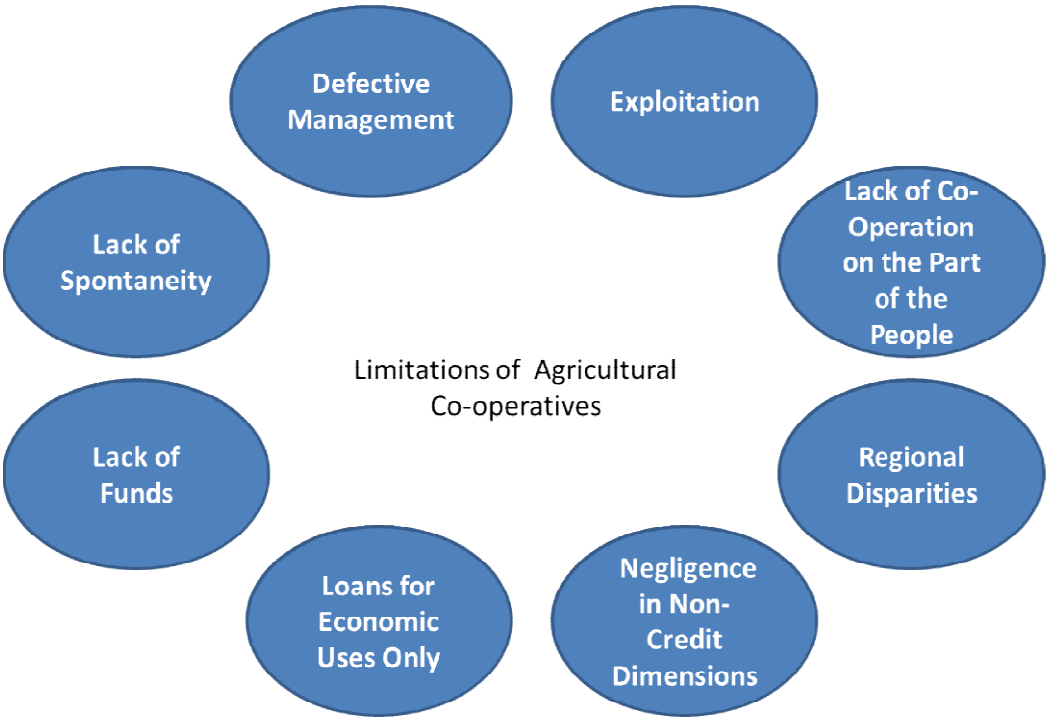


Figure 3.7 Limitations of Agricultural cooperatives

Farmer Producer Organizations

Farmer Producers Organizations (FPOs) is another solution to creating collective farmer organizations to resolve some of the problems faced by cooperatives. Two of the main aspects that give the FPOs a strategic advantage over cooperatives are:

- First, the FPO interface has more authenticity and prestige in the immediate market climate since it's a 'company' and not a co-operative. This sets the producer association away from the welfare-oriented and social organization perception of the cooperatives.
- Second, FPO requires licensed and non-registered entities, such as self-help organizations or consumer groups, to become equity holders in the company. This enabling clause is a major change from the previous law on cooperatives, which only requires individual farmers to be involved.
- Third, the FPO Act requires for such groups of individuals to share in the possession of the producer companies, i.e. participants must actually be "main suppliers" – people engaging in practices connected to or relevant to main goods. This means that competitors will not gain ownership of the business and

allows money to be generated from other companies in the supply chain.

- Ultimately, unlike cooperatives, FPOs have stricter legislation forcing the company to provide proper transparency and reporting. This empowers representatives to include organizational and fiscal restraint.

To Do Activity

Form groups of three and take up the following activities:

- From the internet, find out about the formation principles of co-operatives and FPOs and prepare a table showing these differences.
- Find out more information about Sahayadri Farmers Producer Co. Ltd. which is a successful FPO in Maharashtra and prepare a two-page report on its formation and working using information from the internet.
- Find out if any co-operatives have been shut down/dysfunctional from the past 3-4 years and try to understand reasons for the same by discussing with locals.

Summary of the Chapter

In this chapter, we tried to understand the idea behind the formation of a cooperative and the purpose it serves in a rural scenario. We began with having a look at the origin of co-operative movement in India, followed by the different roles it plays in the agriculture sector. Then in the second unit we understood more deeply about the different activities taken up by co-operatives which can replace the traditional intermediary institutions in the supply chain. We have seen that apart from providing credit, the co-operative can act as farm inputs supplier, provide support for irrigation activities and also provide various post-harvest facilities like transport, storage, marketing, retailing and so on.

In the third unit, we learnt about the industry that benefited and advanced the most through the co-operative movement, the dairy sector. We understood the formation of the Anand milk co-operative model and eventually how it led to the formation of AMUL. Next, we looked at the various co-operative federations in India that are acting as a backbone to many co-operatives in India and also about PACS, which is the basic unit of co-operative credit institutions structure. Finally, we understood the various challenges faced by cooperatives in India, few being lack of funds, lack of cooperation from people and the exploitation by the affluent in villages. We also had a glance at FPOs and how they can overcome the shortcomings of co-operatives to some extent.

Model Questions

1. What is a co-operative? What are its basic features?
2. Describe the history of co-operative movement in India.
3. What are the primary six functions of an agricultural co-operative?
4. What roles do co-operatives play in value chain addition? Briefly explain each

stage with the help of a diagram.

5. Explain the role of ICT in co-operative movement.
6. How did the dairy co-operative movement begin in India?
7. Discuss the Anand pattern of dairy farming and the emergence of AMUL as a brand.
8. Briefly describe the functions of IFFCO and NAFED co-operative federations.
9. Explain the co-operative credit structure in India and the positioning and role of PACS.
10. What are the challenges in a co-operative in the Indian context? How do FPOs help in overcoming these challenges?

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Chapter 4 Financing for Value Chain Management

Introduction

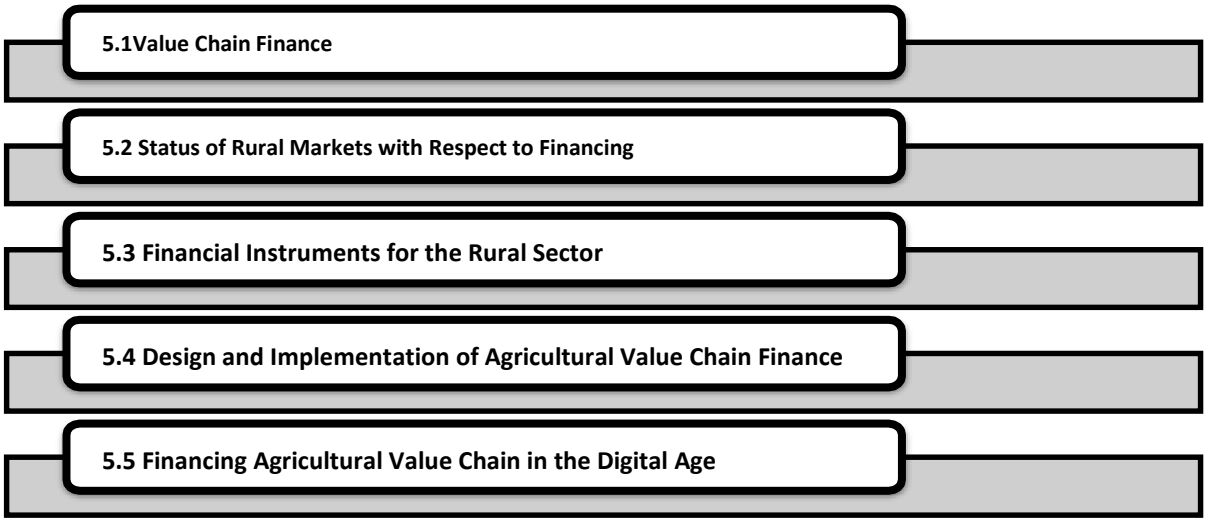
Majority of Indian population lives by agriculture, cultivating small landholdings that measure less than or equal to one hectare in two-thirds of the cases. To top it off, farm-based livelihoods face severe challenges due to the increased strength of many biotic and abiotic pressures and the steadily decreasing landholding scale and farm's inaccessibility to drug and financial markets. Small landowners' financial requirements are low, but commercial banks and other financial institutions are shying away from funding them due to higher transaction costs, higher development risks and lack of collateral. It prevents farmers' ability to implement income-enhancing strategies, market-driven crop patterns, land improvements programs, irrigation practices, mechanization and warehousing facilities. As a result, because of their higher transaction costs, smallholders can neither scale-up nor participate in the remunerative markets. As a result, most smallholder farmers rely on local traders to purchase their produce. The increasing occurrence of volatile environment-such as droughts, floods, and heatwaves raise their price risk even further. Since production, procurement, transport, storage, and distribution activities are interconnected; any shock to production will impact the whole value chain.

The constraints faced by farmers in upgrading their agricultural practices can be tackled through the implementation of the value chain approach. Under this strategy, various actors such as farmers, aggregators, retailers, manufacturers, and financial institutions are brought together and gain control over production, marketing, processing and distribution processes to help increase economies of scale, reduce transaction costs along with reducing supply uncertainty and input, performance, and service quality. Approaching the value chain will resolve the apprehensions of commercial banks and financial institutions regarding the creditworthiness of the farmer or any other supply chain member. Value chain participants know other participant's business practices and this knowledge can be used to help determine borrower's risk and creditworthiness.

Objectives

- To understand how the availability and non-availability of finance affects rural businesses, especially agriculture.
- To become aware of the different agencies that fund the rural business
- To provide insights on funding mechanisms
- To establish how value chain management can play an important role in facilitating the financing of rural businesses

Structure



4.1 . Value Chain Finance

We refer to it as Value Chain Finance when financial goods and services flow to actors in a value chain enabling them to increase their returns and growth and helping them boost their competitiveness in the market. Financing has always been present in every chain of operations, but when financing one or more of the actors leads to increased competition of the entire value chain and allows the actors to expand their company individually and collectively, we call it Value Chain Finance. Financing may take place at different points in the chain, involving several players to leverage the relationships to reduce the risk. A value chain strategy means weighing the financer's risks and returns along with the risk and returns of the value chain participant who needs the funds. Value chain actors, commercial banks, microfinance institutions, or a combination of these actors may provide or encourage funding to a value chain for different reasons that decide how they can facilitate funding for an investment upgrading value chain. Better the relationship amongst actors, more open will they be to rely on the value chain to facilitate access to finance. Popular ways in which value chain actors facilitate financing are

- **Screening Borrowers** Actors in the Value Chain can provide useful information about potential lenders that can help test the financial institution for greater reliability and reduce default risk.

- **Disbursement/Repayment of Loans:** Any of the players in the value chain can play a very important role in disbursing loans and receiving repayments on behalf of financial institutions. This reduces transaction cost and default chances**.**

- **Default Risk/Collateral:** The availability of 'hard' collaterals with the loan seeker is one of the major hurdles in conventional finance. Some actors may provide a form of 'soft' collateral acceptable to the financial institution in Value Chain financing. Such collateral maybe likes direct (formal or informal) warranties or co-signing, assigning interest to a warehouse inventory etc. The financial institution will determine the 'soft' collateral and approve it in certain situations where there is no legal collateral. Also 'soft' collateral such as purchase orders, buyer's contracts etc. can be an acceptable guarantee as long as the traditional conditions are waived. Such 'soft' collaterals, though not legally admissible, are a positive indication of the credit-worthiness of the borrower. This helps reduce the risk of default.

Demand for Finance within Value Chains

Rural and agricultural enterprises face the greatest difficulties in accessing finance from traditional financial institutions for the above-mentioned reasons and this contributes to production-level demands and can have an impact on the development and growth of the value chain. Innovations in financial services, such as 'value chain finance,' have emerged primarily to fill this gap and ensure that the genuine borrowers receive the funding for their development and growth. In some cases where a household is a unit of output, there are also financial demands outside the value chain enterprise. These demand effect on liquidity in the household. Cash resources are usually allocated across interconnected production and consumption needs. Under these conditions, value chain competitiveness can be indirectly related to the household's ability to obtain funding to manage household needs along with other investment and purchases.

Financial demands may be linked to both consumption and expenditure in a household as a production unit. Households have obligations for both daily and irregular expenses which includes food, school/college tuition, medical care and social expenses, such as marriage, funeral etc. That would require additional sources of money. To meet these immediate cash needs, cash is most frequently diverted by the household from their enterprise. And

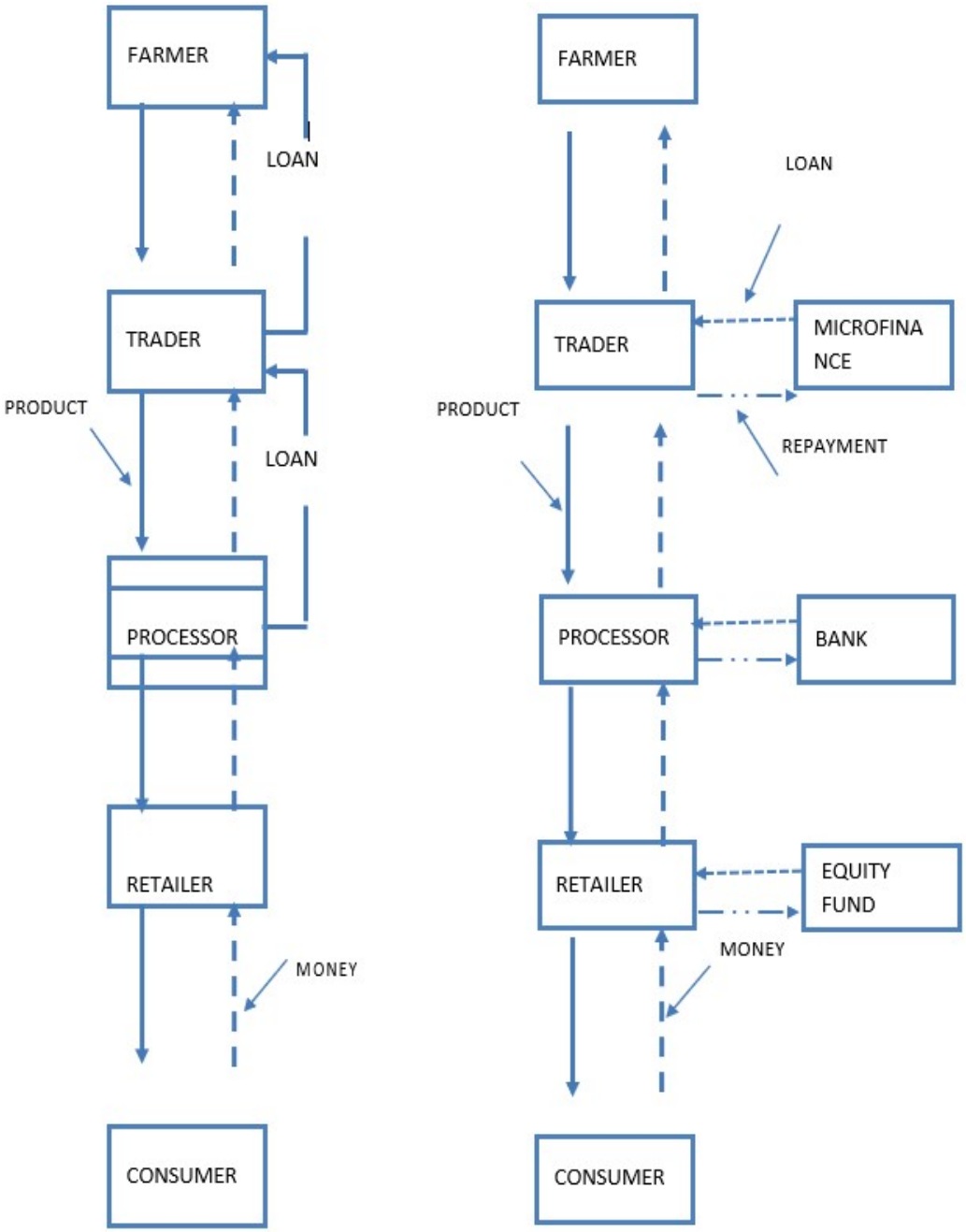
this is all the truer during lean times when the household income is at its lowest. Their consumption habits depict how rural households manage their farm and non-farm productive activities. It is more or less a straightforward representation of how rural households control their productive farms and non-farm activities. Trading, agro-processing, supplying household goods & services are some non-farm enterprises which are significant providers of rural household income. Often there would be a dispute between demands for investment and agricultural development, and the actors need to make decisions. An option between the two will in all probability limit a potential return and also affect their competitiveness in the value chain.

4.2. Status of Rural Markets concerning Financing

The agricultural marketing systems and activities were not keeping up with the sector's evolving opportunities. The agricultural markets did not expand in the manner in which production and the marketable surplus increased. And the situation differs in India from region to region. The rural markets are fragmented and can be labelled with:

- A long chain of intermediaries,
- High market costs and margins,
- Low-value addition and
- The low share of the farmers in the final price that consumers pay

The product changes hands at least four times from the producer to the end customer, with no real value added at each stage. Value chains are absent, or still to be established. The critical problem is an acute lack of awareness among farmers. Knowledge of 'grading' or 'standards' for farm produce is absent, resulting in barely 7 per cent of farm-level graded products being passed on to the next actor in the chain. Storage facility shortages – both dry and cold storage complicates the handling of marketable surpluses. Approximately 30 per cent of the marketable grain surplus and 10 per cent of the marketable fruit and vegetable surplus can be stored in existing storage facilities.



a) S Agricultural Finance Supply Chain Liquidity

Figure 4.1 Traditional financing model

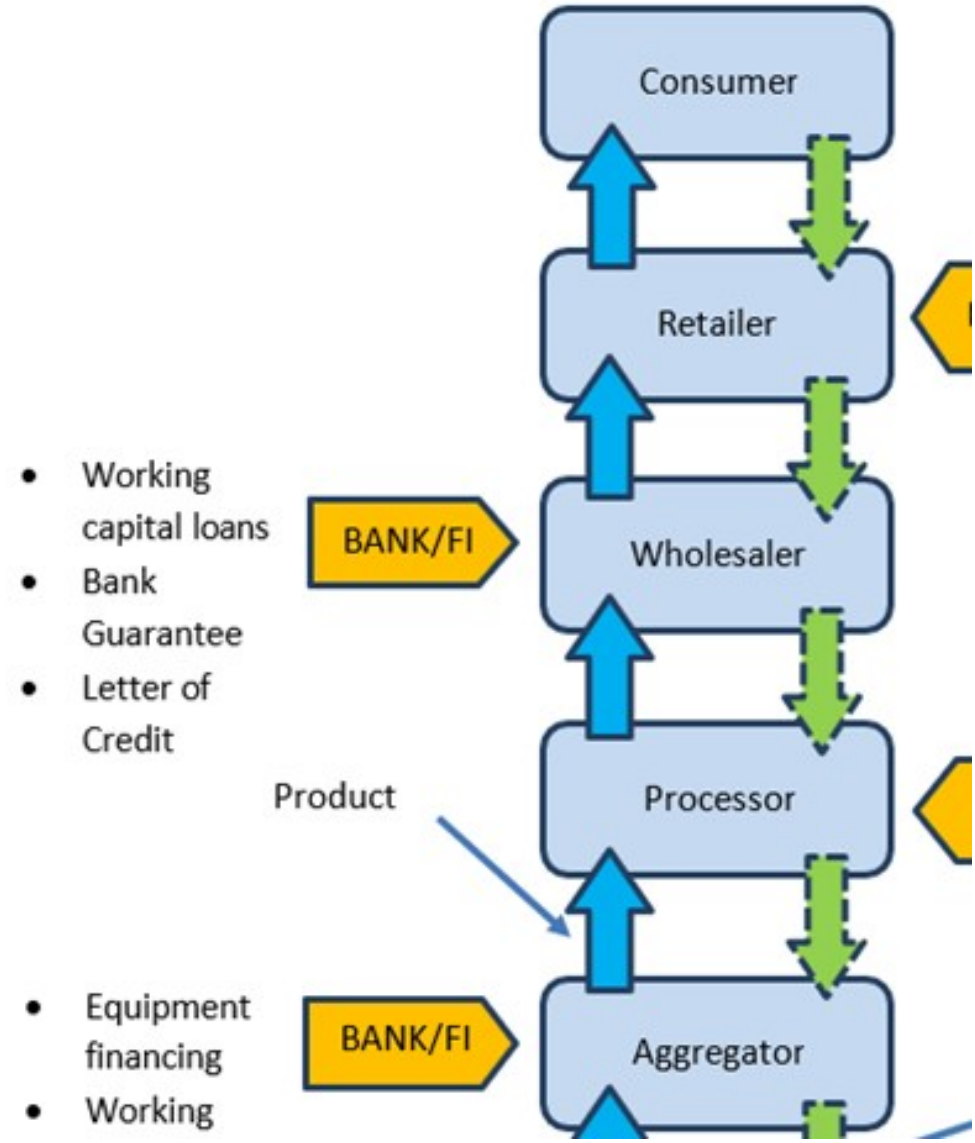


Fig 4.2 Value Chain

The formal financial institutions frequently neglect small farmers with landholdings of less than or equal to 2 hectares. Smallholding farmers constitute 85 per cent of the country's total farmers, but they have a mere 42 per cent share in funding. This small share is largely due to higher interest rates, higher default risk and the lack of collateral to fund the loan.

Financial institutions provide funding for various value chain operations like processing, warehousing, cold storage, refrigerated logistics, and so on. To give an indication, the food processing industry's institutional credit rose from INR 37 billion in 1996-97 to more than INR 1500 billion in 2015-16, according to government record. Our apex agricultural bank - National Bank for Agriculture and Rural Development (NABARD) has sponsored the processing and marketing of commodities through 'farmer producer organizations' to improve the agricultural value chain. We are all aware of our country's horrific trend of farmer suicides... This indicates that the situation is precarious and can lead to suicides. One of the primary reasons behind this is the poor credit services and rural banks of India.

Who Needs Finance in Rural India?

From small- farmers with small landholdings to agro-processing units to infrastructure projects and research & development, all activities in the rural sector need finances. Therefore, rural financing has been categorized into four broad types –

- **The Needs of Producers/Farmers/Entrepreneurs**

The primary reason for the need for finance is to expand production and/or diversify the range of products. They are mostly small farmers or village entrepreneurs who need finances for purchasing farm inputs like seeds, fertilizers, farm equipment, machinery for processing, packaging, transport etc.

- **The Transactions between the Value Chain Actors**

Here the focus is on the relationships and associations between different value chain actors. Farming essentially means a sequence of interlinked activities, starting from inputs like seeds, fertilizers to mechanization requirement, processing & storage to finally the dining table of the consumer. Financial institutions have crafted specific financial instruments to strengthen these linkages between the actors of the value chain.

- **Rural Infrastructure/Projects**

An efficient Value Chain would have a fair bit of infrastructure involved – like warehousing, cold storage, rural transport systems, irrigation systems, sanitation, water supply, electricity etc. All such infrastructure projects require investment. Often the value chain actors would require large amounts of financing to fund these costly infrastructure projects.

- **Research and Development (R&D)**

For a competitive edge and development of the business, continuous research & development work must be undertaken. This helps in new knowledge creation and technology development which would help improve efficiency and productivity. But these research and knowledge creation activities can be long drawn and costly. Financial institutions come forward to support such initiatives by providing finances.

Problems of Agricultural Credit in India

Most Indian farmers operate on an uneconomic land holding, using traditional cultivation methods. They are continuously exposed to the risks of various forms such as low agricultural productivity, lack of irrigation, the uncertainty of rains, pests, seeds of poor quality, etc. For these reasons almost always, an average Indian farmer is in debt. Invariably he becomes a perennial debtor.

There are several cases where the farmer, once stuck in a debt trap, finds it hard to get out of it. He has to either sell his valuables, cattle or land or commit suicide at its worst. The main cause of debt is either crop failure or poor harvest support rates, or moneylender's malpractice. Several times a substantial proportion of farmers' liabilities is 'ancestral debt.' Thus, he passes his debt on to the next generation along with his landed lands.

Top four reasons behind rural indebtedness in India

- Low earning potential of the borrower,
- Use of loan for unproductive social & cultural purposes,
- The very high rate of interest charged by the private moneylenders
- Manipulation of accounts by the private moneylenders.

Need for Finance

Finance plays an essential part as a lubricant in the Agri-value chain. From land tilling to the procurement of seeds and fertilizers, to irrigation, harvesting, marketing, processing, etc., wherever financing is necessary. Incidents such as a bad monsoon, a poor harvest, an accident or illness in the family cause a farmer to approach the moneylender for a loan and get caught in their trap. Such 'distress' or non-entrepreneurial loans are very common in our country. Agricultural finance in India is not only an agricultural sector necessity but a symptom of the distress prevailing among the majority of farmers.

Rural loans are extended not only to farmers but also to village artisans, small traders, transportation owners etc. Two rural credit sources are-private companies and public institutions. The former includes private moneylenders, dealers, commission companies, relatives and estate owners.

Rural cooperatives, commercial banks, especially the State Bank of India (SBI) are the sources of institutional credit. And, the Agricultural Refinance and Development Company (ARDC) has ceased to exist, with the creation of a new institution called the National Bank for Agricultural and Rural Development (NABARD). Until 1982, it was responsible under the guidance of the Reserve Bank of India for the expansion of agricultural finance.

It may also be noted that indigenous bankers or village moneylenders, cooperative credit societies, and commercial banks meet the farmers' short- and medium-term credit requirements. Land development banks and NABARD address long-term funding needs. Institutional credit's main purpose is to replace the existing money-lending at a very high-interest rate. Data available indicate that rural credit institutions have been able to accomplish this goal to a significant extent.

Key Defects in the Private Credit System

It is highly exploitative in character because of the inherent profit motive.

- Since such credit is provided largely for unproductive purposes the rate of interest charged is very high.
- Such credit is not necessarily directed toward needy persons or desired channels.
- Such credit is provided for short periods and at high rates of interest and cannot, therefore, be utilized for land development or long- term improvement of agriculture.
- Institutional credit is not linked with other non-farm services such as marketing and processing and warehousing.

Institutional Credit Structure

In comparison, the character of institutional credit is essentially non-exploitable. It is aimed primarily at increasing agricultural productivity such that the farmer's income rises enough and he is self-sufficient. Interest rates are not only small but also differ from case to case. For different types of loans and different groups of farmers, different interest rates are paid.

Often, government entities make a strong distinction between short-term loans and long-term loans. Besides, they understand the organic connection between farmers' credit and other needs and strive to achieve credit integration with those needs.

Farmers need not only credit but help in implementing improved cultivation methods as well. Therefore, along with a credit, it is important to provide required guidance and extension services. They need to be taught how to use quality seeds, fertilizers, pesticides and so on, and how to grow crops too.

They do need to be given marketing assistance so they can get the best return from their products. Only institutions such as cooperative societies, commercial banks, and so on will provide these instructions, not the moneylenders and greedy commission officers. So now it's important to do a quick analysis of various rural credit institutional agencies.

To Do Activity

Visit a public sector bank, a private sector bank, a cooperative bank and an NBFC in your locality, compare and contrast the various rural credit instruments offered by them. Also check whether these loans are in accordance with the RBI. Can you identify which instruments are for which 'actor' in the value chain? Discuss your findings in small groups with your peers.

Team Activity

The students are required to visit a nearby village and interview at least 10 farmers and rural artisans and do the following

Understand their Business Model – where do they get raw material from, what do they produce, where do they store, what is the processing requirement, who does the processing, and where do they sell the produce.

Financing the Business – Understand how the farmer/artisan is financing the business. Is it through self-financing or is there an agency involved? If there is an agency, is it a formal financial institution or is it a non-formal financing institution.

Conditions Entailing Financing – the student should study the terms and conditions of the financing agency.

Repayment – the student should study the manner in which the farmer/artisan is planning to repay the loan taken.

Evaluate the Value Addition – with additional finance, how is the farmer/artisan going to benefit? Will his business grow? Will he develop competitive advantage after the financing?

4.3. Financial Instruments for the Rural Sector

Financial instruments in the rural sector differ according to the borrower's need. To a large extent, the financial instrument provided by the funder depends on the level of sophistication of the financial systems in that particular area, and the financier's risk-bearing capability, in addition to regulatory norms and knowledge among farmers/artisans. The individual in need of funding approach local financial institutions, commercial banks, development banks, instruments

Direct Finance

In the traditional approach, the financing is given to the individual actors in a sector. Those actors may be suppliers, processors, farmers, traders etc. Most common financial instruments are:

1. **Savings**

Individual or community savings considered as an informal financial sector is a widely used source of financing in various parts of the world. It is common practice in India also wherein joint families and extended families support their social groups through savings.

2. **Inclusive Finance (or micro-finance)**

Micro-finance is considered similar to the informal financial sector wherein the ticket size of the loan is small considered as micro-credit. SHGs plays a crucial role in Microfinance in rural areas by identifying the actors, disbursing the finance and ensuring repayment.

3. **Traditional Finance.**

Traditional financial instruments from organizations like – commercial banks, agricultural development banks, NGOs, cooperatives etc. can be in the form of loans, lease or equity finance. Often the finances can come from government agencies and international bodies like the World Bank etc.

4. **Leasing and Factoring**

They are complex and innovative financial instruments generally used by farmers and other entrepreneurs. Leasing is used for purchasing farm equipment, automobile, machinery etc. And factoring is when the actor sells its invoices at a discount to improve cash flow. Borrowers who have limited availability of collateral but sound credit history generally used these instruments.

5. **Weather-Based Insurance.**

In our country agriculture is majorly dependent on weather. Some financial institutions find it easier to provide finance based on insurance against bad weather. The assessment becomes quite easier as compared to insurance against production losses.

6. Credit Guarantee Schemes

One of the ways to improve the chances to receive finance is Credit Guarantee schemes wherein the financial institution takes partial guarantee of the losses due to default.

7. Kisan Credit Card (KCC)

The Kisan Credit Card (KCC) scheme aims to provide adequate and timely institutional credit to farmers with simplified and flexible procedures. The scheme is implemented by SCBs, RRBs and co-operative banks. It comprises both short-term crop loan and term loan components. The progress on the scheme for the last two years is presented in Table 4.2.

Table 4.1 Agricultural credit progress in India

(Source: NABARD)

Targets and Achievements for Agricultural Credit (₹billion)								
Year	**Commercial Banks**		**Co-operative Banks**		**RRBs**		**Total**	
	Target	**Achievement**	**Target**	**Achievement**	**Target**	**Achievement**	**Target**	**Achievement**
2016-17	6,250	7,998	1,500	1,428	1,250	1,232	9,000	10,658
2017-18 *	7,040	8,772	1,560	1,504	1,400	1,410	10,000	11,685
* Provisional. **Note**: Figures might not add up to the total due to rounding off of numbers.								

Table 4.2 Kisan Credit Card Scheme Progress

Kisan Credit Card (KCC) Scheme			
(Number in million, Amount in ₹ billion)			
Year	**Number of Operative KCCs**	**Outstanding Crop Loan**	**Outstanding Term Loan**
2016-17	23.37	3,851.89	498.13
2017-18*	23.53	3,911.34	419.80
* Provisional.			

Table 4.3 Financial instruments used in Agricultural Value Chain Financing

Financial Instruments used in Agricultural Value Chain Finance	
Category	**Category**
A) Product Financing	• Trader credit • Input supplier finance • Marketing & wholesale company finance • Lead firm financing
B) Receivables financing	• Trade receivables finance • Factoring • Forfaiting
C) Physical asset collateralization	• Warehouse receipts finance • Repurchase agreements (Repos) • Financial leasing (lease-purchase)
D) Risk mitigation products	• Insurance • Forward contracts • Futures
E) Financial enhancements	• Securitization instruments • Loan guarantees • Joint venture finance

To Do Activity

Visit one transporter and one village artisan in a nearby rural area. Have an informal discussion with him about the financial credit system that he is aware of. Is he aware about the facilities offered by the banks? Assess the situation and suggest a proper strategy for banks to educate these people. Discuss your findings in small groups with your peers.

4.4. Design and implementation of Agricultural Value Chain Finance

There could be many challenges for the development institutions to design a proper Program for getting the desired outcomes for the beneficiaries. There are multiple development priorities, concerns of governments, financial institutions, beneficiaries etc. There are issues of sustainability, income, employment generation and profit. The ensure the programs deliver what they are meant to, there a few recommendations.

- **Clear development Goals -**Identify all the stakeholders in the value chain, list down their developmental needs, and understand with clarity on which of the

developmental needs has to be addressed. Once this is done the target group, region, sector etc. can be specified.

- **Use a Development Approach -** Attempt to optimize returns to society as a whole, and especially to the priority target groups and regions. When designing value chains and value chain finance interventions, therefore, important considerations include governance, power relationships among actors in the chain, chain control and sustainability, and the main beneficiaries of the intervention. Including smallholder producers and poorer households in integrated value chains needs targeted efforts.

- **Identify Initiatives with a Strong Business Case -** If initiatives are to be successful, the underlying business sector needs to be competitive. The most dynamic value chains and niches have to be established within a competitive industry or subsector. Avoid approaches where long-term sustainability prospects cannot be demonstrated.

- **Acquire Knowledge about the Value Chain -**To design successful strategies includes an understanding of the target value chain structure and dynamics. Ensure that an analysis of the value chain is carried out and that the research includes an analysis of the value-added potential within the chain. This will show how primary producers will benefit from the more efficient organization of the chain and whether the costs of managing the chain and financial services can be recovered from the product margins. Carry out a segmentation study to determine how the labor market is segmented by gender through the value chain. Consider factors and characteristics influencing men and women's access to productive resources and their capacity to employ those resources.

- **Before Considering Financial Interventions, Consider Non-Financial Alternatives -** Financial Institutions should consider providing direct financial support to (commercial) chain actors only in the absence of other alternatives. Possible alternatives to direct financial support include
    - Brokering contacts with microfinance institutions (MFIs) and other financial institutions.
    - Holding workshops, bringing stakeholders together to investigate whether
    - solutions can be found within ordinary business relationships (e.g. supplier finance).
    - Providing technical assistance to producer organizations or lead actors in the chain to help them meet the requirements of viable, sustainable chain operations (including related financial services).

- Facilitation of linkages with exporters (or importers in target market countries) that would demonstrate the availability of well-established market outlets to financiers and provide sufficient value-added potential at the local level.

Each of these would create an environment in which commercial financial operators could enter the market to provide value chain actors with the financing they need to improve the operation of the chain. Donors should finance only gaps and then only as a temporary, start-up measure instead of funding activities that they are already financing through debt financing. Subsidies should be channeled to parties and projects that are not currently supported by existing market actors (including local MFIs and other financial service providers [FSPs]) and where prospects for sustainable long-term value chain finance look promising.

- **Use a Step-Wise Approach** -Grant funding may be used to finance the creation of value chain operations during the start-up process, but ultimately, VCF must progress towards a sustainable form of local debt financing. To be viable, continuing services to chain actors must be compensated out of value-added revenue within the chain. The project/program will prepare the transition from donor assistance to commercially-funded programs, with identified milestones and a consistent timeline.

- **Create Conditions for Synergy between the grant and Debt Finance** -To ensure that the system invests in attractive value chains and subsectors and with stakeholders that FSPs consider as creditworthy, consult with local financial institutions early in the chain growth process. Efforts should be made to include them in the value chain and the plan to grow the VCF. The best way to stability is via local financial delivery. Develop a mechanism to move towards local funding; this offers an alternative route for grant program contributors, which is the best guarantee of meaningful social and economic returns.

- **AVC to strengthen the actor's Creditworthiness** -With its relationships between participants in the value chain, AVCF may contribute to the creditworthiness of the

participants and thus support the development goals of increasing financial access and inclusiveness. It can begin with integrated finance (e.g. processors financing operations for farmers), allowing stakeholders to build a track record of financial responsibility and profitability, which in effect creates opportunities for external financing.

Financing by a processing firm (integrated finance) for farmers can be a very good option in a situation where there is no external funding available. However, when isolated and left to specialist financial institutions, funding can be easier. Therefore, it is important to consider the advantages and drawbacks of integrated finance, as well as the possible evolution over time of these structures.

Institutional Framework of Agricultural Value Chain Finance in India

The institutional structure for the financing of the agricultural value chain includes various ministries, government departments, banks, financial institutions and apex entities such as Reserve Bank of India (RBI) and National Bank for Agriculture and Rural Development (NABARD). The system suggests a large network of national funding institutions. Figure 1 below provides a diagrammatic illustration of India's institutional funding system for agriculture. The system has a tiered structure in which the apex bodies such as RBI and NABARD are at the top while the Main Agricultural Credit Societies (PACS) are at the village level.

In addition to the aforementioned institutional structure, other informal and conventional value chain financing structures exist locally. These may be in traders' forms, input financers mainly at the farm gate. Agricultural financing policy in the financial sector has always centered on getting more and more farmers into the formal banking system as the conventional financial structures were exploitative in nature. For commercial banks, value chain financing in agriculture is a financing method that uses production knowledge, value-added processes, and marketing processes to better assess financial needs as to how better to fund those involved. By recognizing the agricultural chain, the lender can make more informed decisions on how to arrange financing to minimize costs and the short- and long-term risks to make financing attractive. Funding may be done at several chain rates or

may join the chain at one stage, and then flow up and/or down to others through the chain.

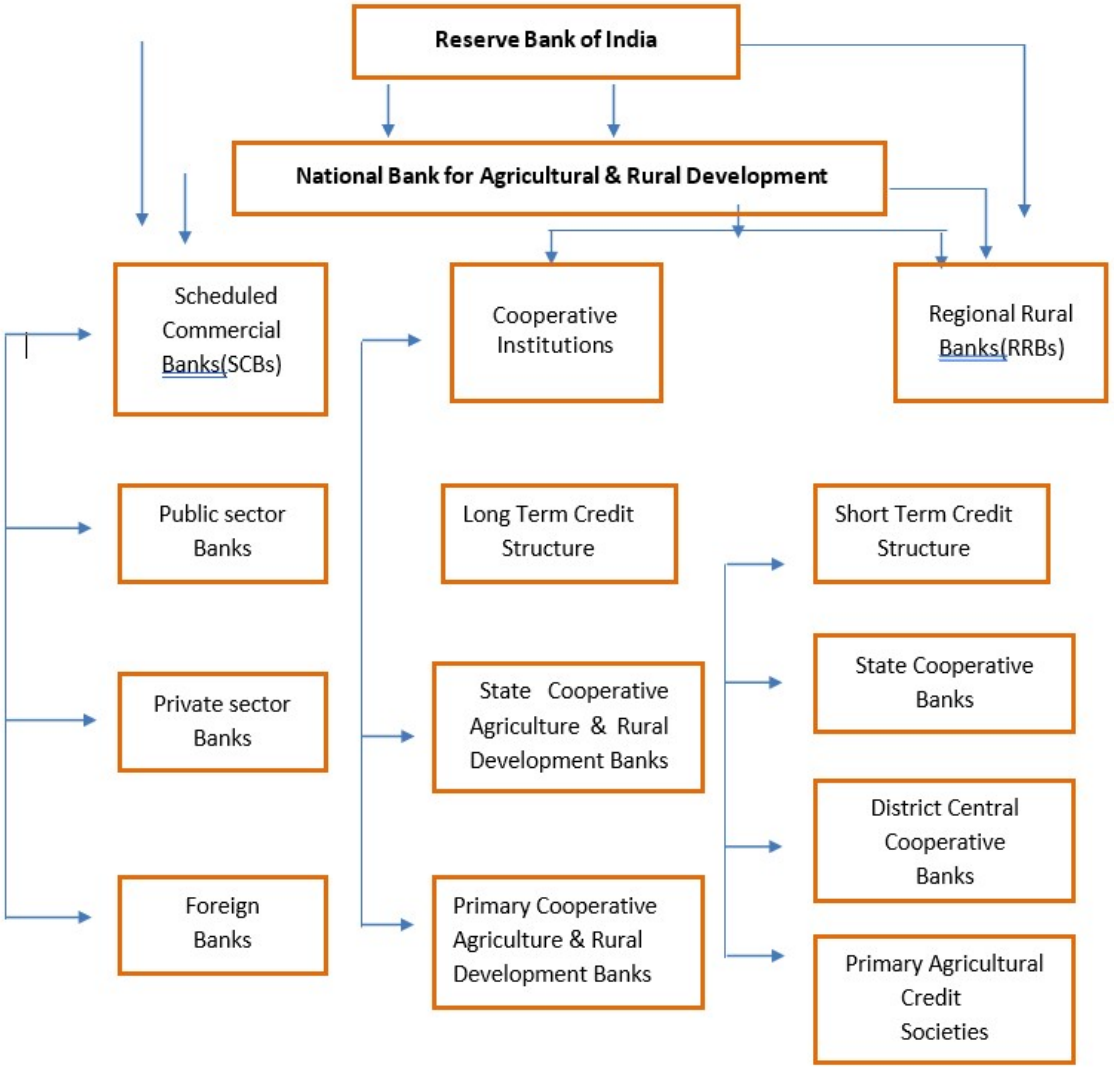


Figure 4.3 Institutional framework for agricultural finance in India

Key Challenges

With the substantial increase of in agricultural credit increase unlike that of in agriculture itself, there is a high possibility that growth may come from very large institutional credit disbursement gap. The possibility of not filling up the gaps along with further absorption of credit for using in non-agricultural activities Credit seekers and highly diverse set including semi-subsistent households to micro and small enterprises engaged in agricultural and non-agricultural activities, and medium/large enterprises engaged in production,

processing, trade and services. Financial needs for them differs based on parameters of amount, terms and conditions as well as the degree of sop hesitation of financial services. The key challenges identified in this regard are as follow

- **Longer majority periods and erratic repayment schedule:** Rural economic activities are mostly dependent on the seasonality and varying gestation periods (of business activities) in India. Hence, the slow rotation of capital can be seen in the cash flows of rural entrepreneurs. It can be seen in farming and other agricultural-related activities like agro-processing, service provision, Agri-input supply.
- **Uncertainty of external factors:** Profitability of agricultural activities depends upon various external factors like weather, major pest and disease outbreaks or prices of inputs/outputs. These factors are beyond the scope of control by any agriculturist. Other external shocks are unannounced risks of sudden illness or death of a family member, theft of assets, social activities etc. which he has to address even at the cost of starving his enterprise.
- **Ad hoc measures by the government:** Agriculture in India is a highly politically sensitive sector and prone to disproportionate government intervention as the majority of the population is employed in this sector. Decisions on ad hoc basis like sudden announcements of loan rescheduling due to natural calamities, loan waivers, and preferential lending programs are made before the elections. These decisions disturb the repayment cycle in financial institutions and hence create a sense of uncertainty.

Inherent risky nature of the agricultural sector, especially for small-scale farmers, makes financing the value chains in the system more challenging as transaction costs in rural areas are also very high maximize benefits, minimize costs and risks are the primary goals of stakeholders in the agricultural value chain. From the development point of view, promoting equitable distribution of benefits can be added as another dimension of chain performance in which promotion of competitiveness and market efficiency within the chain is there.

Innovative financial services/products are the need of the hour to address the diverse needs of various stakeholders in the value chain. There is a strong need to sustainably modernize agriculture in India, combined with increased value addition in the processes following primary production. All this would, however, require a heavy demand for investment capital.

To Do Activity

Through the internet and other secondary sources, study the Institutional Framework of Agricultural Finance in two other developing countries – Brazil and South Africa. Compare them with the Indian Framework. In your opinion which framework is more effective and creating long lasting impact? Discuss this with your peer group and faculty.

4.5. Financing Agriculture Value Chains in the Digital Age

Demand for agricultural commodities is increasing along with the surge in world population. Therefore, it is imperative to look for ways to boost agriculture productivity nationally and globally which can be achieved while focusing on the productivity of smallholder farmers as they contribute to 70% of global food needs.

Agriculture value chains can provide opportunities for smallholders to access high-value markets, advanced technology, and networks of various value chain actors such as processors, traders, and service providers, as well as reduce the cost of doing business. However, poor access to finance is a critical pain point for smallholder farmers as it makes it hard for them to survive and grow, and impedes their participation in a value chain.

Bridging the Financing Gap and Integrating the Small-Scale Farmer

There can be a credit gap in the demand by farm producers and credit provided by the financial institutions. For instance, credit demand in the Philippines in 2014 for priority commodities such as rice, corn, coconut, and sugarcane reached $11.3 billion, while the bank credit disbursed for producing these commodities was only $3.4 billion, leaving a credit gap of $7.9 billion.

Marginal farmers face specific challenges in accessing finance owing to lack of formal contracts, credit histories, and their unstable production and income. Financial institutions identify these risks associated with smallholders. Also, servicing the smallholder farmers involves high transaction cost for financial institutions as they are located in fragmentation across the country. Hence, filling the supply-demand gap in financing for smallholders to integrate them into a value chain and vitalize the agriculture sector is the need of the hour.

Figure 4.4 Financing options for farmers

Financing Options

Agriculture value chain finance provides a set of financial instruments that can be applied for agribusinesses at different stages, which helps smallholders access the financing they need to expand. There are several financing options besides bank and nonbank credit.

- **Asset-based finance:** A good example is asset-based financing, by using valuable assets such as receivable accounts, inventory, machinery, and equipment as collateral, or by selling or leasing, while not relying on securities and third-party guarantees. Asset-based lending offers subsidized cash-in-advance, usually quicker than conventional bank loans. It offers different types of financing, such as invoice discounting, purchase order financing, factoring, and warehouse receipt finance; but in practice, these tools are not available to smallholders since they are not well established in value chains.
- **Digital Finance:** Digital finance, specifically through internet banking and mobile banking, would offer more opportunities for timely and low-cost access to finance for smallholders and other value chain actors. Business intelligence company GSMA's 2017 study reports that out of more than 750 million farmers in 69 countries, 295 million have a cell phone and 13 million have a mobile money account in 2016. The report sees a significant share of the projected 350 million farmers who will have a cell phone in 2020 as a possible business-to-person (B2P) market.

A balanced creation of 4 main products (payment, credit, savings, and insurance) through online and mobile phones will be required to integrate smallholder farmers into value chains, along with online trading platforms. Online payment is a critical tool amongst these items for expanding digital financial services to smallholders. In rural areas cash is usually king. Many smallholders don't know what digital payment is and how to do it and are thus reluctant to digitalize.

Smallholders Benefits

Trust in digital services can be build one the smallholder farmers can experience them and find these services as fast, easy and safe. This also facilitates a shift from cash payment to digital. Asset-based finance can benefit from digital technology. For instance, digital production records can fill the information gap between suppliers and financial institutions. Other benefits are:

- **Digitizing warehouse receipts:** It is another promising way to help smallholders raise funds, backed by transparent and traceable data on quality and quantity of crops. This system can allow smallholders to access post-harvest loans.
- **Digital savings:** They can be an important tool for smallholders. Given smallholder farmers' unpredictable cash flow, a digital platform enables them to save ahead for input purchases and prepare for unexpected and urgent expenses, through branchless transactions via mobile networks.
- **Digital Insurance:** It offers reasonably low-cost crop insurance for smallholders. Users can register online and pay their premiums with their mobile phones. Weather-index insurance enables smallholders to effectively manage crop loss risks through automated weather stations and satellites.
- **Online trading platforms:** They facilitate business connections between smallholder farmers and others on the value chain, and further promote trade and supply chain finance. The above are just some of the benefits for smallholders of using digital financial services so they can better participate in value chains.

Relevant infrastructure and agent's network play a crucial role in the whole system which requires a large upfront investment. Developing relevant digital infrastructure and agent networks need relatively large upfront investment. To encourage safe digital financial services, there should also be robust policy and regulatory structures in place and digital finance literacy among smallholders is a must. By overcoming these obstacles, we will unlock digital finance's ability to help smallholders in agricultural value chains.

To Do Activity

Study the digitally enabled financing practices in developed countries like the US and EU. Discuss the impact of some of the digital initiatives that the government of India has taken in the last decade. Discuss your findings in small groups with your peers.

Summary of the Chapter

This Chapter will help students to understand how the rural businesses, especially agriculture, gets impacted by availability and non-availability of finance. Unit 1 will give the

students an idea about the reasons why financial institutions are apprehensive about financing rural farmers and artisans. In Value Chain Finance, financial goods and services flow to actors in a value chain. Nature of demand within the value chain related to consumption and expenditure in the smallholder farmer's household and various sources of funding to fulfil the demand. Unit 2 gives the current status of financing in rural markets and what are the challenges with agricultural credit along with various types of needs by stakeholders in the value chain. Institutional credit structure is aimed primarily at increasing agricultural productivity such that the farmer's income rises enough and he is self-sufficient.

Unit 3 discusses various financial instruments for the rural sector like savings, micro-finance, traditional finance, leasing, Kisan credit card etc. and the institutions providing various financial instruments to the stakeholders in the value chain. Unit 4 gives study of design and implementation of Agri Value Chain Finance for getting the desired outcomes for the beneficiaries. There are multiple development priorities, concerns of governments, financial institutions, beneficiaries etc. Key challenges in the Agri rural credit like long majority period, uncertain external factors like weather, pest control etc. In Unit 5, we will study how the internet will help to access high value markets, advanced technology, and networks of various value chain actors such as processors, traders, and service providers, as well as reduce the cost of doing business in the digital age and the benefits to the various stakeholders in the value chain.

Model Questions

1. What is Rural Value Chain Financing? How is it different from urban financing? Give examples.
2. Describe the roles and responsibilities of different actors in rural Value Chain Financing?
3. What is the existing structure of rural financing in India? What are the pitfalls of this structure? Explain with examples.
4. What are the key reasons for rural indebtedness in India? Suggest means in which these challenges can be tackled.
5. What are the direct finance options available to the farmer? Describe in detail one of them. Give examples.
6. What are the different financial credit instruments currently used by the farmers in India? What should be the way forward?
7. What do you mean by non-financial alternatives to support small-holders? How are they better from direct financial assistance through financial institutions? Explain with examples.
8. What are the key challenges faced in the present Institutional Framework of Agricultural finances? Can you suggest means in which these challenges can be tackled?
9. Why is there a financing gap in the Agricultural Value Chain in India? How do you

think the Digital age services can bridge this gap? Explain with examples.

10. What are the specific benefits that a small-scale farmer can expect through a digital age financing option?

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Chapter 5 Value Chain Business Models

Introduction

Business model is a kind of system in which a business creates value and captures it within a market network of stakeholders like producers, suppliers and consumers. Business model is what an organization does and how it leads to revenue generation (Varley, 2008). In value chain management, business model refers to the participants or actors in the value chain, who may be the drivers of enterprise / company engaged in industry, processes, and capital. The value chain needs to be seen as a 'common layer' for financial stability and this provides the basis for further study. System analysis helps to reduce the financials' uncertainties and apprehensions when lending to rural sector. Figure 5.1 illustrates the various dynamics of the value chain and the relationship between the two main stakeholders-buyer and seller. Stakeholders can be both buyers and sellers in the value chain.

The buyer and the seller, the two stakeholders, have linkages which can be categorized in the following five types

- **The Spot Market**: Producers can sell their produce almost instantaneously. The prices here fluctuate and it is highly risky in terms of setting the market price.
- **Contract Farming**: The buyers enter into an advance contract to buy the product of the seller. It is common among the MNCs and corporate companies involved in agribusiness.
- **Informal long-term relationship** based on mutual trust
- **Capital investment**-based relationship characterized by producer/farmer credibility and dependence
- Full **vertical integration**

Financers are nervous and apprehensive in financing when the 'spot market' drives production and marketing. The price is variable, and unpredictable. Financial institutions are looking to models where risk controls such as contract business models or

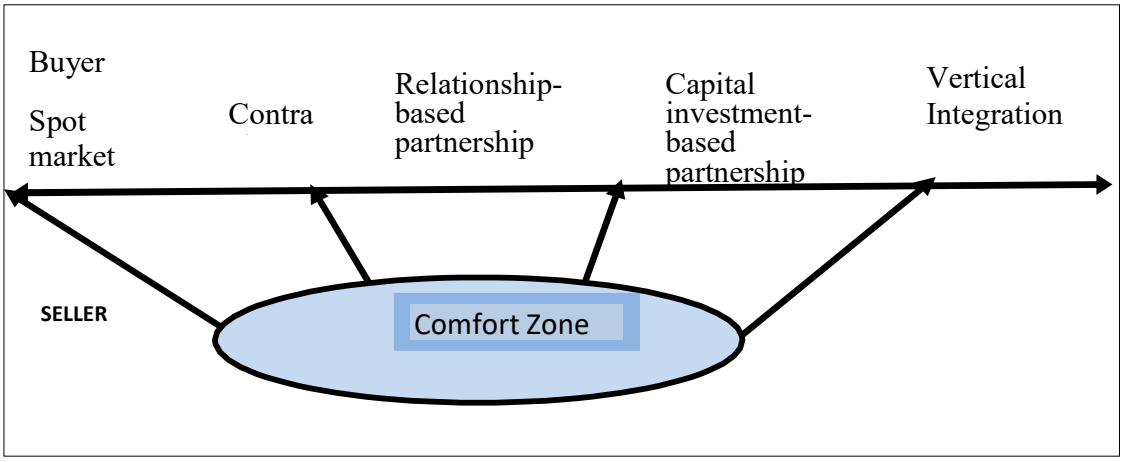

Figure 5.1 Different ways to coordinate and structure the value chain (Wenner, 2006)

alliances between value chain actors are better managed. It is considered their 'area of comfort.'

Rural Value chain finance caters to all the stakeholders engaged in wide range of agribusinesses activities. It is most useful in helping linking small farmers and agribusinesses into effective market systems. For developing economies of scale among smallholder farmers and supporting the agribusiness, Value chain finance benefits the system by reducing the risks for the lenders and buyers. The business models allowing greater participation in value chain can be categorized into four types as mentioned in Table 5.1. Drivers of the organization and the rationale/objective are also included in the table.

Objectives

- To familiarize the various business models
- To provide insights on business model formation and how it has benefitted the rural
- To explain the benefits of these models
- To comprehend on the role of technology in value chain

Chapter Structure

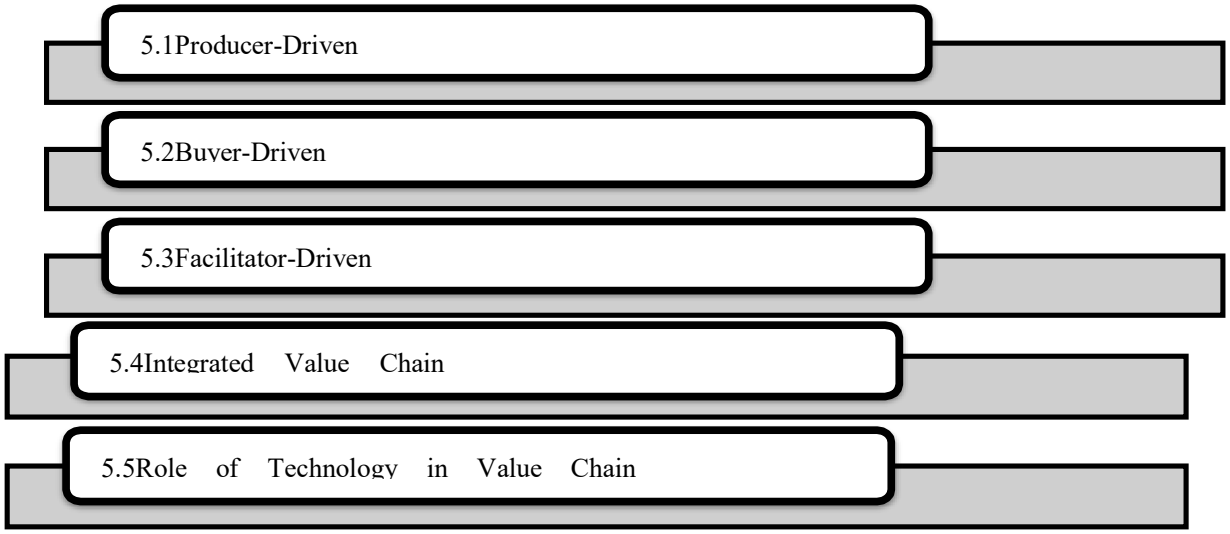

Table 3 Typical Organizational models of smallholder production (Vorley, 2008)

Model	Driver of organization	Rationale
Producer-driven	• Small-scale producers, especially when formed into groups such as associations or cooperatives • Large-scale farmers	• Access new markets • Obtain higher market price • Stabilize and secure market position
Buyer-driven	• Processors, Exporters, Retailers, Traders, wholesalers and other traditional market factors.	• Assure supply • Increase supply volumes • Supply more discerning customers – meeting market niches and interests
Facilitator-driven	• NGOs and other support agencies • National and local governments	• 'Make markets work for the poor' • Regional and local development
Vertically Integrated	• Leadfirms	• New and higher valuemarkets

5.1. Producer-Driven Value Chain

Producer-driven associations play pivotal part in many value chains and it becomes the driver for value chain development by providing required infrastructure, input and linkages to financial instruments and also helps in market linkage through sales and distribution support. They are driven from the bottom end of the chain. These value chain face two major challenges:

1 **Awareness of market needs:** Producers may not be aware of the market needs as well as needs of those in the chain that are closer to the end consumer.

2 **Reliable source of Finance:** Producers often struggle to get finances and associations with strong partners are required which can help get financing and fore-linking to reliable and competitive/remunerative markets and partners.

Though initial phase is particularly difficult for producers, with time and support producer models can become strong and begin to access financing based upon the strength of their transaction flows and market partners.

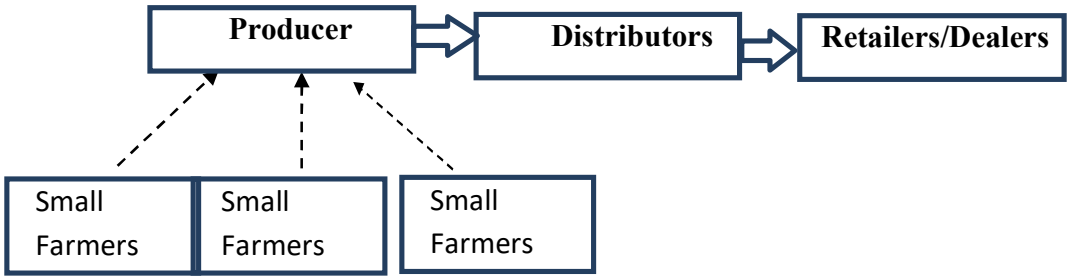

Figure 5.2 Producer driven value chain business model

To do Activity

"My Egg, My Price, My Life" National Egg Coordination Committee

Around the year 1981, the Indian poultry industry was hit by an unprecedented crisis. Over 40 percent of all poultry farmers had stopped operations because the business had become economically unviable. Middlemen had forced down prices and farmers were being paid less than their production cost, a result of speculative trading, since the existing market and distribution network was working against the interest of the farmers. Feed costs had risen by 250 percent in the past 5 years, whereas egg prices were static at an average of 35 paise. Consumption of eggs was low and the future looked anything but healthy.

With no help coming from any quarter, a group of farmers motivated by Dr. B.V. Rao traveled across the country, organizing over 300 meetings with groups, individuals, and traders. Their objective - unite poultry farmers from all over India, and take control of their own destiny. Dr. Rao's call "My Egg, My Price, My Life" consequently brought farmers onto a united platform and realized this objective. NECC was formally registered under the Societies Registration Act. In line with its democratic principles, it was registered as a trust and on May 14th 1982 NECC started declaring egg prices.

Students are expected to collect information about NECC and draw the Value Chain of this organization. Also it attempts at listing out the value creation and benefit that the various actors in the value chain derived from this model.

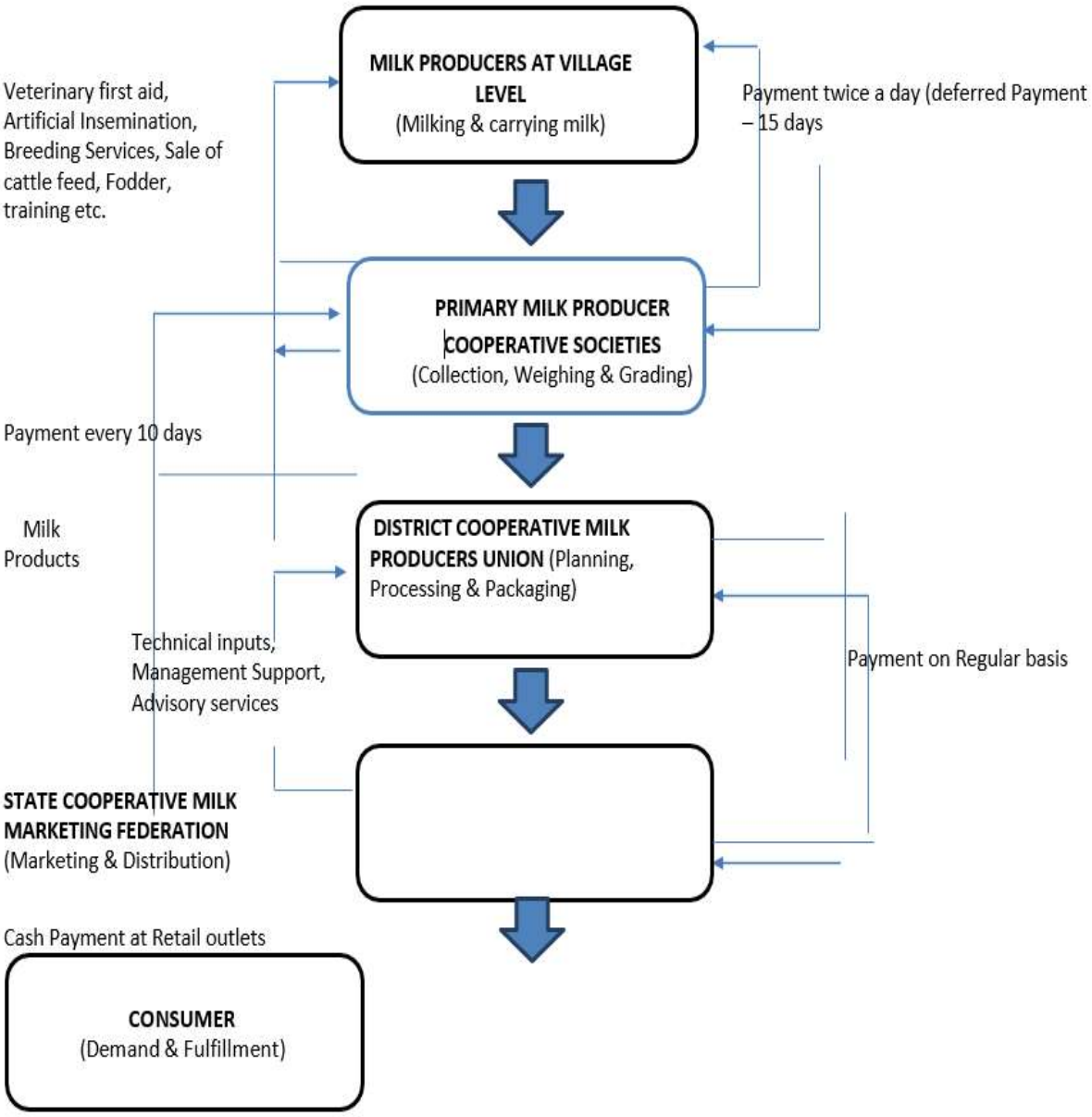

Figure 5.3 Producer driven Value Chain business model of AMUL (GCMMFL)

To Do Activity

Study the website of AMUL and understand the entire value chain that is being followed. Identify the actors, their roles and responsibilities. What are the risks involved at each stage of the value chain?

5.2. Buyer driven Value Chain Model

Buyer-driven value chain business model is when the buyer(s) ensures proper flow of products and services, collaborate with and take on commitments from producers, processors and others. In this case, the buyer / s use financing as a way to promote this relationship. Where financing is involved there is frequently a contract that guarantees engagement from the value chain's collaborating actors. Such contracts can be used for the recovery of loans in case of default, irrespective of whether they are officially registered or not.

'Contract farming' is one of the most popular buyer-driven models. This involves contracts at the farmer-association level but is initiated in the value chain at one or more stages. Such agreements are binding and can be legally accepted or informal. Coordination of the agro-food chain can be practiced in many ways, starting from tight vertically integrated operations with complete ownership and control by a single organization, to more decentralized coordination structures where there are no structured but rather ad hoc agreements between producers and their buyers.

Contract farming is a value chain management process whereby transactions between producers and other participants in the chain are regulated by more or less structured terms that may be pre-negotiated. There are other types of contract farming in which we see outsourced production, also called out-grower schemes, usually resorted to a group of producers by an estate, processor, exporter or another chain agent. The terms of the contract may include the provision/facilitation of supplies, funds and/or technical assistance or may be limited to conditions of product sales, such as costs, quantities and delivery dates. The success of contract farming as a strategy for the governance of the value chain, possibly due to the evolving patterns affecting the agri-food industry, which lead to more closely connected supply chains. This evolving scenario has resulted in the emergence of expanded incentives and scopes to promote contract farming arrangements as platforms for exploiting access to finance across the agro-food supply chain.

There are stricter terms in contract farming in which the type of production, acceptable quality, minimum or maximum quantity and product/service delivery schedule is specified. Finance and technical support provision can also be part of such kind of agreements. This gives financial institutions confidence when there is the presence of formal or verbal commitments from the chain partners which can be the big risk-mitigating mechanism. Direct funding to farmers can be provided by agribusiness companies or other financial institutions like banks. Operational risks are reduced for the agribusiness companies as their supply chain is secured for the required quality as well as quantity. This is owing to the access to raw materials is safeguarded by the contracts established with producers.

This increases credit rating for a firm and allows it to have improved access to finance. The funds the firm obtains are then channelled to farmers, often in the form of agricultural inputs and technical assistance. In the second case, banks tend to see producers as more creditworthy when producers have a guaranteed demand for their produce, involvement in a contractual relationship may serve as a form of virtual collateral. The acceptance or not of these collaterals depends on the lending organization and also on each country's lending requirements. In any case, however, contract farming is also an effective method for financing the value chain.

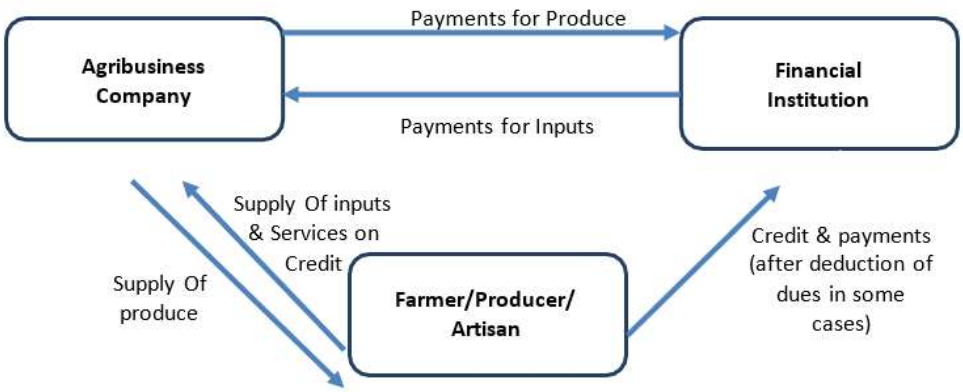

Figure 5.4 Tripartite model in contract farming

Contracts or agreements can be purely legal or formal, or not. Additionally, verbal and informal contracts are appropriate. For the other situations where contracts are more narrowly formalized, they usually include binding legal agreements outlining the roles and obligations of both the farmer / producer and the buyer. There are specific words for the seller / producer concerning the timing, quantity, and price of the goods. Commitments on the buyer side include supplies, technological assistance, ordering, and financing. For financing, the value of contracts between producers / sellers and buyers is clear, as contracts minimize the unknown's ambiguity and risk.

- What is the value to each party involved?
- What is the negotiating power and equity of each, especially between smallholders and large companies?
- What is the commitment and what is the risk of not honoring contracts, through side-selling (selling to others rather than the contracted party) or buyer refusal to buy under specified conditions, especially when market conditions change?
- In what sectors are contract farming models most common and why?
- How does a model work when there are a large number of producers?

It has been observed that contract farming interactions have been mainly with small number of producers. One of the reasons for low acceptance is that a majority of farmers are not prepared to meet the needs. What experts suggest is that government and development organizations should promote the growth of producer capacity by increasing technological capacity, organizational ability and commitment. It is important to research its advantages and limitations in order to better understand the potential for increased adoption of contract farming as a model for promoting the funding.

Benefits of Contract Farming

- Access to secure markets and prices for producers.
- Access to appropriate input supplies in timely fashion.
- Increased access and reliability in procurement of product of desired quality for agribusiness buyers.
- Opportunity for lower input costs due to improved planning and economies of scale.
- Enhanced access to credit despite a lack of collateral.
- Support in the development and achievement of quality standards and certification.
- Provision of market-focused technical training and assistance that outlives contracts.
- Potential advancement of positive relationships and increase in trust.

Challenges and Risks

- Reliance on a single buyer that could fail or lose interest in the relationship (loss of their buyer, market changes, bankruptcy).
- Side-selling by farmers, particularly if prices go up.
- Cost of management for buyer.
- Enforcement of contracts by either party.
- Regulatory environment for contracts and their enforcement.
- Tendency to favor larger farmers, at the expense of small farmers, due to lower transaction costs and a stronger initial asset base.
- Lack of technical capacity to understand and intentionally develop viable value chains, especially those involving small farmers.

Though there are potential benefits to the participants of a contract farming agreement, not all agreements can be successful as the risks of failure are associated with a number of well- known reasons, chief of which is the opportunistic behavior that might arise when pre-established conditions change. If there is better market price available, then participant farmer may opt for side selling and sell the produce to the highest bidder while dissolving the contractual obligations.

Contract farming is observed to be best in sectors and market niches where side sale is less of an option. For example, there are few alternatives for side-selling by producers of sugar cane, where the cost of a sugar mill and transport are too high. It also holds true for market niches, particularly if the price premium is high compared to alternative markets. Development agencies can be instrumental not only in fostering capacity building and improving legislation but also in encouraging the creation of open, inclusive and well-functioning value chains in order to minimize risks in contract farming.

Caselet 5.1. Contract Farming Success Story Appachi Cotton Company, Tamil Nadu

Every story has to start somewhere. Appachi's started on 12th June 1946 when Mr. Mariappa, with his wife Mrs. UraiyurNachiar set up a Cotton Ginning factory with just 6 Platt Brother double roller gins in Pollachi, Tamilnadu, India and named it Sri Santhalakshmi Mills. Today, with over 65 years of cotton experience and expertise under their belts they have the respect and trust of all those they have worked with along the way. This has been possible only because they continued the tradition started by the founder - 'Quality above all else'. Experts in the ginning of high quality extra-long staple cotton, they have now expanded our operation into an ultra-modern facility with customized 22 double roller gins and 2 hydraulic presses while preserving the Cotton Legacy that is three generationsold.

Innovative Approach to Sourcing Quality Cotton

Appachi's formula for Cotton contract farming is an innovative initiative in the annals of Indian agriculture in general and the country's cotton cultivation, in particular. This backward integration initiative helps them in ethical sourcing of high-quality cotton that satisfies the requirements of our quality discerning clients. Collecting cotton at source brings in a high degree of transparency & traceability right up to the farmer who produced it. Further it has an ethical & holistic approach that can be replicatedseason-after-season.

(Sourcehttp//www.appachicotton.com)

To Do Activity

Just like Appachi Cotton Company, scan the internet and find out at least three more Buyer Driven Value Chain models. Compare the value chain in terms of the 'actors 'involved. Can you suggest some changes in these value chains? Discuss in your peer circle about the models.

5.3. Facilitated Value Chain Models

Dual agricultural system exists in many regions wherein developed agro-industry coexists alongside marginalized farmers living at subsistence levels. External support by development agencies like NGOs, government can provide various opportunities for marginalized farmers with the help of value chain integration and financing. Smallholder farmers face various challenges as larger buyers prefer large scale producers. It is due to:

- Smallholder farmers may not be well organized.
- They have not demonstrated commitment in previous transactions.
- They require higher transaction costs to be served.
- They often pose increased risks such as side-selling.
- Lack both technical capacity and the technologies to reliably produce the high quality and quantity required in a consistent manner.
- Tend to lack organizational capacity and resources to deliver the required products in a timely fashion.

The costs of coordinating and preparing small producers may therefore be considered to be too high for a large company to take on. Development organizations and others with a social agenda can provide support to promote the incorporation into commercial value chains of small famers and agro-enterprises. Efficient facilitation models have been built around the globe for value chain growth.0 Profit can be enhanced with good planning, preparation and implementation. Many contract farming models and other value chain linkages are successful owing to the facilitation and support provided by not-for - profit organizations and government agencies. In some cases, the agencies facilitate relationships including those between producers and financial institutions. In others, the agencies themselves enter into contractual arrangements (including guarantees) and provide direct technical services and finance.

Techno Serve, a non-profit development organization that works in agricultural value chains around the world, demonstrates how an external entity, operating as a market promoter, can promote the growth of a chain through multi-level interventions. In all of its growth activities, a guiding principle of Techno Serve facilitation is to implement a business model based on the private sector as a means of creating sustainability. This involves issues like direct participation of banks, institutional investors and private equity funds for the needs of asset finance in financing. Financing from banks and consumers may be used for working capital requirements, if personalized technical assistance is used. This is especially the case for start-ups and early stage expansion of agribusinesses.

Challenges

A pending issue to be resolved on facilitation of the value chain is that of sustainability and service payment, especially when dealing with small producers and processors. The private sector does not appear to be willing and/or able to take full responsibility for building that power. The facilitation needs a public good, as are many of the universities in developing countries that will need government and development organizations support.

Caselet 5.2. Self Help Group – Bank Linkage Program (SHG-BLP) – NABARD's Micro Credit Innovation

NABARD, through its' Micro Credit Innovations Department has continued its role as the facilitator and mentor of microfinance initiatives in the country. The overall vision of the department is to facilitate sustained access to financial services for the unreached poor in rural areas through various microfinance innovations in a cost effective and sustainable manner.

NABARD has been continuously focusing on bringing in various stakeholders on a common platform and building their capacities to take the initiatives forward. This has resulted in tremendous growth of microfinance sector in India through different approaches like

Based on the observations of various research studies and an action research project carried out by NABARD, the model of 'SHG-BLP' has evolved as a cost-effective mechanism for providing financial services to the unreached and underserved poor households. What started as a pilot to link around 500 SHGs of poor to the formal financial institutions during the year 1992-93 has now become the largest microfinance programme in the world, in terms of the client base and outreach. The SHGs which follow 'Punchcutters' viz. conduct of regular group meetings, regular savings within the group, internal lending based on the demand of members, timely repayment of loan and maintenance of proper books of

accounts are considered to be of good quality and over years have proved themselves to be good customers of Banks.

The NGO sector has played a prominent role of working as a Self-Help Group Promoting Institution (SHPI) by organizing, nurturing and enabling credit linkage of SHGs with banks. NABARD later co-opted many others as SHPIs including the rural financial institutions (RRBs, DCCBs, PACS), Farmers' Clubs (FCs), SHG Federations, Individual Rural Volunteers (IRVs) etc. These stakeholders were encouraged to take up promotion of SHGs by way of promotional grant assistance from NABARD. This savings led microfinance model has now become the largest coordinated financial inclusion programme in the world covering almost 100 million households in the country. With more than 84% of the groups being exclusively women groups, the programme has provided the much-needed push to empowerment of women in the country.

Other than championing the movement and providing promotional support, NABARD has enabled an entire ecosystem of support through policy advocacy at Bank and Government level, organizing and sponsoring a large number of training & capacity building programmes, seminars & workshops for the benefit of all the stakeholders viz. the bankers, the Government agencies, the NGO partners and more importantly the SHG members themselves. Banks are also provided 100% refinance support by NABARD for financing of SHGs.

Product level changes like allowing voluntary savings in the group, sanction of cash credit/ overdraft system of lending to SHGs, allowing formation of JLGs within SHGs, improving risk mitigation systems, building second tier institutions of SHGs, etc. were brought subsequently to address operational issues emerging from time to time. Further, to enable SHG Members to take up livelihood activities, NABARD has been supporting Micro Enterprise Development Programmes (MEDPs) and Livelihood and Enterprise Development Programmes (LEDPs) forSHGs.

NABARD is implementing and supporting implementation of various Schemes announced by Govt. of India viz. Promotion of Women SHGs (WSHGs) in backward and Left-Wing extremism affected districts of Ministry of Finance, National Rural Livelihoods Mission (NRLM) of Ministry of Rural Development.

(Source http//www.nabard.org)

Caselet 5.3. DrumNet, Kenya

In western Kenya, DrumNet provides an example of a creative value chain mediated by multiple stakeholders that connects farmers, input suppliers, buyers and banks via a fee-based facilitator platform that is organized by text messages from cell phones. As facilitator, DrumNet provides the coordination and capacity building of the farmers' associations, as well as the partnership and internet links between the various interested parties (Campaigne, 2007). In addition to capacity building, productive facilitator models

involve three main elements, as demonstrated by Odo (2007) from his extensive experience in the field of organizing farmers and improving the agricultural chain. Three main elements are:

i. Start with the market and workbackwards.

ii. Aggregate producers and theirgoods.

iii. Use the value chain for obtaining finance, such as buyer credit secured by salescontracts.

Marangu (2007) offers a word of warning about facilitation, noting that because value chains are dynamic and complex, a facilitator must carefully prioritize initiatives at key leverage points around the chain. Therefore, facilitators must stay outside the supply chain to prevent the direct delivery of financial services or the subsidizing of business costs. These acts distort trade signals. Models of facilitation should be constructive in the identification and creation of values chains.

For example, USAID's technical assistance through the Peru Poverty Reduction Assistance (PRA) project recognizes and supports value chain opportunities for smallholder farmers in the Peruvian highlands, such as artichoke growing. PRA defined business opportunities, provided input and put producers, processors and purchasers together to meet consumer needs. In the past 20 years the global market for processed artichokes has more than doubled. Peru has sought to win part of the broad European market and is well placed to do so, despite its benefits in terms of labor costs. As noted above, support for the export artichokes is both to and across the value chain. There were no financial flows within the chain in the less organized local wholesale market and the supermarkets. In the artichoke value chain, a complete service package is enabled which includes: inputs, secured markets, financing, as well as technical assistance enabled smallholder farmers to enter the market. Finance alone will never lead to higher production and revenue. For small producers, there is often a lack of technological assistance and information about how to invest in a way that will maximize the production of high-quality goods and command higher prices. By addressing this issue and with the demonstrated success with artichokes, the sources of finance expanded from financing from within the chain by suppliers and buyers to access from financial institutions for those producers

To Do Activity

ICCO is an organization (http//iccoindia.org/agriculture-value-chain-development/) which helps farmers in India. Study the website and enumerate the different types of facilitations it is providing to the farmers. Do you think this is beneficial for the farmers? How? Discuss your analysis with your teacher and your peer circle.

5.4. Integrated Value Chain Models

In this model, producers are connected to other stakeholders like input suppliers, intermediaries, processors, retailers and service providers including finance through the ownership and /or formal contractual relationships. Several features like strong links with multi-party arrangements, technical guidance and strict compliance are there in this model along with incorporation of an amalgamated structure of value chain flows and services.

One such model is **vertical integration model** within the value chain wherein integration is sought by the large retailer or a wholesaler/importer. This stakeholder keeps in mind the consumer demands and ensures the inputs, production and post-harvest handling across the value chain to aligned with the consumer acceptability in the market. Overall degree of vertical integration (even for horizontal integration) depends upon how the stakeholders in the value chain are tightly linked- from control of production to retail. This is often done by means of contract farming or any other contract buyer models.

Vertically integrated retail value chains are a prime example of this model in which supermarkets work closely with domestic wholesalers to send information on suitable product requirements such as variety, price, quantity, and safety, traceability, and residue standards. Information and services are distributed to producers along the chain, often followed by quality control, technical training, correct inputs, record-keeping and finance. These vertical integrations apply especially to fresh vegetables and fruits. Horticultural value chains are preferred in this model for the integration of smallholder farmers as for many of the products intensive labor, manual cultivation and harvesting are necessary to deliver the required output. Coffee is a specific agricultural output that often involves vertical integration wherein finer Arabica coffee type relies on inputs, climatic conditions and cultivation techniques. Starbucks Coffee Company offers a model of tight integration from production toretail. A second integrated model applied to value chains is that of an integrated services model. One type of services model is led by a financial conglomerate and another type is led by a facilitating entity which combines ownership structures with their facilitation. The latter type could be led by a strong NGO, such as BRAC in Bangladesh, or agribusiness service centers such as are being developed in India.

Examples: BRAC, LAFISE, and RABOBANK

BRAC offers an important example as a financial institution that makes direct strategic investments in the chain when it sees the financing of its clients requires this. For example, BRAC set up and owned chicken hatcheries needed for poultry production of its clients. It also offers the required technical assistance and can facilitate marketing channels as needed. It has also done this for the artisan craft sector, including wholesale and retail of the crafts. Through financial services and strategic investments directly into the value chain, it generates employment in rural and peri-urban areas and raises the value-add of

the produce of its clients. While not widespread, integrated agricultural value chain service models are growing in importance.

LAFISE in Latin Americadescribes a commercial integrated banking and agricultural service model as illustrated below.

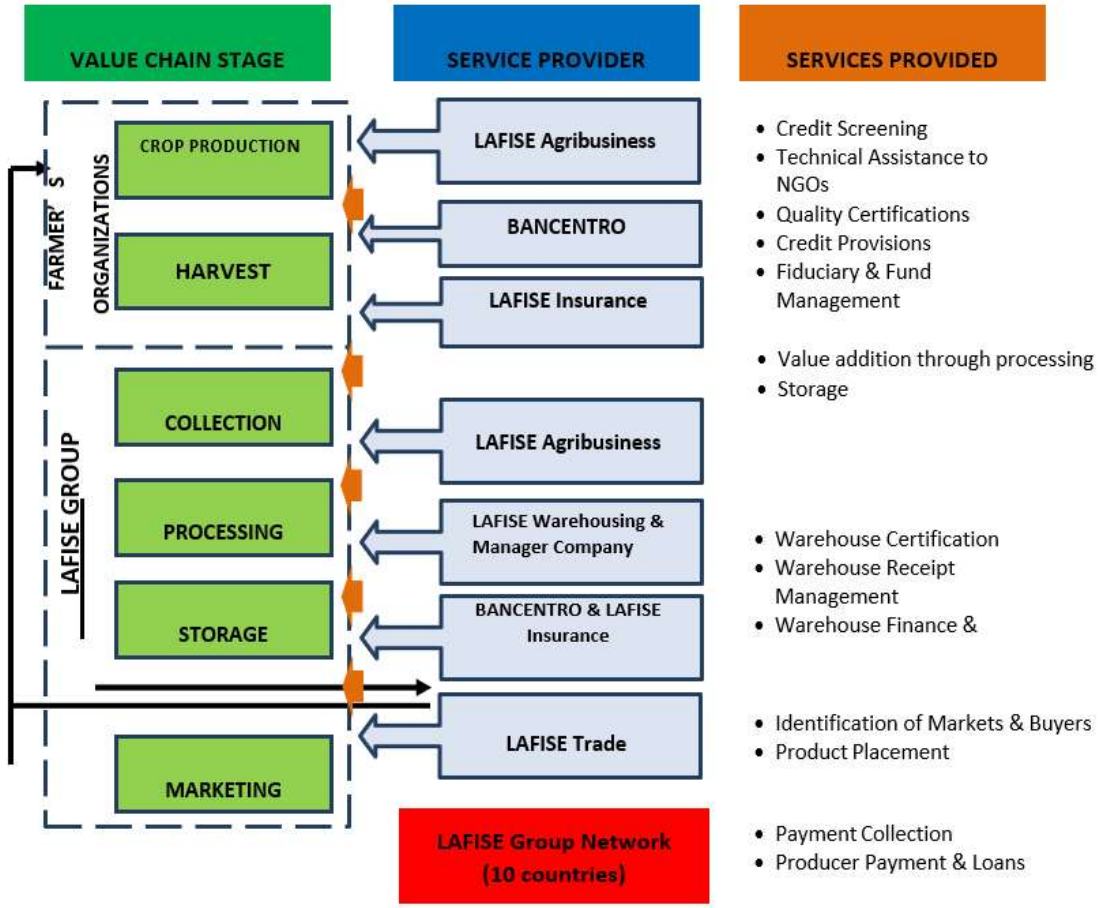

Figure 5.5 LAFISE Group Integrated Service Model (Source: FAO, 2010)

A Rabobank example from India https/www.rabobank.com/en/home/index.html#worldmap) is also being adapted and incorporated in other parts of the world to fit into countries. Rabobank plays a key role in the value chain in the chain offering financial and value-chain support services. It knows the business sector and those involved by playing such a key role as a part of its business model. In this way, it will ensure that the linkages are successful and that any gaps between the partners are resolved so as not to create issues in the chain for others.

Since the money still passes through the bank, it can minimize costs by crediting certain accounts directly and debiting them in the value chain. Marketing or processor credit advances are often directly linked to a single value chain because most businesses, particularly private ones, operate in only one or a few value chains. Nonetheless, they that operate within a complex network of interrelated agribusiness services that provide comprehensive financial and non-financial services for multiple value chains.

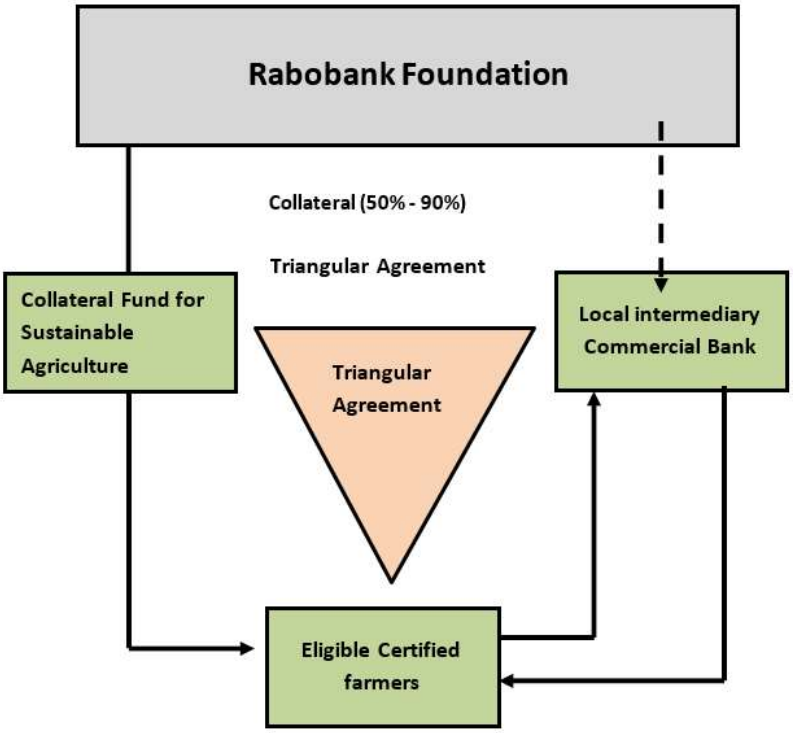

Figure 5.6. Rabobank's Contract based Financing Model (Sources: Patil et al, 2016)

In Korea, one agricultural entity, established under a cooperative structure, has an enormous presence in the entire agricultural sector which enables it to provide integrated value chain services in multiple value chains. In Korea the NACF model and Rabobank's cooperative banking model are both popular models. Although Rabobank focuses on the integration of financial services along the chain and ties with the chain partners, NACF may also be directly involved in the chain. In other words, the multiple value chain services vary from those provided by Rabobank, as NACF itself functions as a manufacturer, distributor, processor and marketer for its member farmers and not just as a financial service provider.For example, farmers can buy their farm machines from NACF with NACF loans guaranteed by the Agricultural Guarantee Fund, and they can sell their goods through their local cooperatives to operating NACF markets. Similarly, money from the farmers is transferred to their savings account at the NACF, and later the money can be used to repay

their loans. Personal, non-cooperative models and integrated governmental models have proved effective in some cases. They are nevertheless dynamic and much caution needs to be noted – their performance also depends heavily on the superb management ability and the social and economic climate in which they were created.However, those conditions are not present more often than not. For example, large integrated agricultural value chains were often established in Eastern Europe and Central Asia, with embedded financing, and were not sustainable over time (Winn, 2009). In Kenya, as noted earlier, the Agricultural Finance Corporation's broad integrated model along with the Kenya Farmers Association and the National Cereals Produce Board failed as well.

To Do Activity

Study the model followed by the Agricultural Finance Corporation in Kenya, in partnership with Kenya Farmers Association. Discuss the reasons behind its failure. What would be your suggestions for the organization going forward? Brain storm with your peers in the class and give the findings to the faculty.

5.5. Role of Technology in the Value Chain

In agricultural value chains ICT (Information & Communications Technology) plays an significant role. ICT impacts are diverse with their varied effects, and they affect competition on the market. Technology, however, is not felt to overshadow human beings and the institutions involved. It should be noted that while ICT has a positive impact, many rural farmers still do not have access or the capacity to use ICT.

The role of ICT in Agriculture Value Chains is complex and has a multi-faceted effect on market competitiveness. In this section, we will review a broad range of materials that explore the key opportunities and challenges of ICT interventions in the agricultural value chain, with a specific emphasis on the most beneficial interventions in rural areas.

ICT and its Ramifications for Rural Economies

ICT has made it possible in bridging the gap for getting information, gaining access to new markets and customers, or referring expert advice from distant experts. ICT – particularly the mobile phone – has made it possible for many people, given their remoteness, to get the right information on demand. The effect on production can be calculated in terms of improved farmers returns, through improvements in crop patterns, rises in yields, and better input and export prices. Also crucial to growing efficiency are non-price variables such as knowledge on input supply, seed quality and the implementation of modern techniques.

Before the 1990s, ICT in agriculture mainly included the use of radio and television, especially radio in Africa and some parts of Asia, to transmit information to farmers in a

static and standard format. However, now many countries, including India, Indonesia, Thailand and Vietnam, have simple short message services (SMS) for market prices of agricultural commodities through cellular telephones. These work for a number of customers from producers to business intermediaries. Applications to exchange many more forms of timely and appropriate information in ways that are personalized to individual needs are just a few steps away, and a number of new approaches are already under development.

Potential Impact

There are several instances that demonstrate the different ways in which ICT is implemented that improve the cost-effectiveness of public and private initiatives aimed at creating inclusive agricultural value chains. An increasing amount of literature is estimating the effect of these interventions. One example of this is a 2007 research study carried out with fishermen in Kerala, India. This study examined the effect of cell phone use by fishermen on how they were doing business and, eventually, on their incomes.

The study showed that the introduction of cell phones decreased the market dispersion and spoilage of catch (typically 5 to 8 percent before mobile phone use) by encouraging the distribution of information about which ports had the greatest need for fish, and thus the highest prices. The mobile phones allowed the fishermen to call in just before they docked their boats, get timely information about prices and decide on the best place to land and sell their regular catches. Fishermen's prices increased by around 8%, while consumers' prices actually fell by 4% (Economist, 2007).The most convincing aspect of this case is that it has not been sponsored by an external body such as an NGO or government department and no pricing service has been developed. When mobile network coverage reached across the world, the fishermen quickly began adopting cell phones, and making calls to prospective customers on their own.

Other examples include the case in Bangladesh where cell phone usage by agricultural extension agents reduced livestock mortality rates; the Internet kiosks developed by the Indian public sector to provide market price information and cropping techniques have been shown to reduce regional market price volatility and increase average yields. Overall, the evidence indicates that the key effects of ICT use on rural and agricultural markets are linked to improved price negotiation performance and lower market power concentration across value chain segments. This in turn will lead to greater supply from producer groups to increasing markets, reduced transport dependence.

Advantages of and Opportunities for ICT Information Services

Ease of use: The most persuasive feature of these programs is that they will deliver accurate and timely information in such a way as to be quickly understood and acted upon.

In general, the programs are both easy to understand and easy to subscribe to and use, making them a compelling entry point for additional information programs, such as education and long-term extension. ICT information services can also be an ideal entry point for farmers who haven't had access to accurate and timely information beforehand. Within the provision of these services there is also a level of innovation to satisfy the needs of end users, such as the use of voice messages and voice boxes.

Cost of Delivery: Data collection for short-term efficiency programs can be costly, and usually requires public funding. Yet with the introduction and availability of cell phones, particularly in the developing world, the delivery of these services has become much easier and less costly. Simple apps may be installed or downloaded on the handset, but many companies prefer the much simpler and less costly way to send text messages.

Provider Sustainability: Some short-term productivity services, such as radio stations or cell phone networks, are leveraged on existing infrastructures. Because these service providers have already expended the main costs on the fixed costs of their companies, any new service effectively entails added value at relatively low incremental costs. Therefore, the suppliers have an opportunity to add services as long as the demand and ability to pay is high enough. Therefore, since most providers are pre-existing companies, they are not entirely dependent on this one revenue stream to continue operating, particularly in the early periods.

Tailored Services: In addition to a few of the listed services, such as radio, different types of information can be easily added to or removed from the information services – particularly for telephone-based interventions – depending on users' demands. It will optimize the benefits for farmers of various crops / animals and, for example, in different regions (with different weather patterns).

Top 5 Best Android Apps for Indian Farmers/Agriculture – 2018

1. AgriApp

Agri App is one of the most liked apps by farmers. It has a rating of 4.3 out of 5 in play store. It is an online farming marketplace bringing Kisan, farming input/output, government service on an online platform. It also provides chat option for farmers. Kisan can easily chat with an expert of agriculture using this app. This mobile application provides diversified videos of agriculture work. Approximately 0.1 million users downloaded this farming app

2. IffcoKisanApp

IffcoKisan is the best app in out of almost Agri apps for Kisan. It is a small Android app in terms of memory with an easy interface to use. This android application provides information about the latest agriculture advice, latest mandi prices, and various farming tips. It also provides weather forecast information. It also provides agriculture alerts to farmers in 10 Indian languages. The farmers can easily take help of agriculture experts using this app. Approximately 50 thousand users downloaded this app.

3. Agri Media VideoApp

Agri Media Video App is one of the most popular in mobile apps for farmers in the video category. It has a rating of 4.8 out of 5. It is an online marketplace bringing farmers, agriculture input/output, farming retail and fulfillment service on an online platform. It also provides chat service for farmers to solve their query related to agriculture with the option of upload images of infected crops. Farmers can easily chat with agriculture expert and discuss their problems. This smartphone application also provides various videos related to agriculture practice, new technologies, successful farmers, rural development, agriculture news, new govt. schemes related to agriculture etc. Approximately 10 thousand users downloaded this app.

2. FarmBee – RML App

It is marvelous in the list of agriculture android apps which has a rating of 4.3 out of 5. It is a small app in terms of memory with an easy user interface. It is available in 10 different Indian languages. It provides fertile agriculture content and information at every stage of the crop life cycle. A farmer can choose from 450 crop varieties, 1300 markets, 3500 weather locations. It also provides mandi price and weather forecast based on the user location. Approximately 0.5 million users downloaded this app till now.

3. Kisan Yojana

Kisan Yojanais is another popular Android agriculture app available for free. It provides information about all Government schemes to Kisan. It commutes the

information gap between the rural people and Government. It also provides the schemes of the different relative states government. This mobile application also saves the time and travel expense of Kisan to reach the state Govt office is saved. Approximately 50 thousand users downloaded this app

To Do Activity

Now you have understood how mobile applications have become a handy tool for farmers. Find out five more mobile apps/websites which help farmers in following services - warehousing, demand generation, pricing, financing and best farming practices. Study the apps/websites and discuss with your classmates.

Summary of the Chapter

In this chapter, we studied about types of business models driven by the various stakeholders in the value chain and how these stakeholders support the business activities through financing and other resources. Various business models discussed in this chapter are producer driven model, Buyer driven model, Facilitator driven model, integrated value chain.

Unit 1 discussed about the producer driven value chain model in which producer-driven associations plays pivotal part in many value chains and it becomes the driver for value chain development by providing required infrastructure, input and linkages to financial instruments and also helps in market linkage through sales and distribution support. In Unit 2, we talked about the Buyer-driven value chain business model where the buyer ensures proper flow of products and services, collaborates with and takes on commitments from producers, processors and others.'Contract farming' as one of the most popular buyer-driven models is being discussed with its advantages and the challenges producers face in this mode of value chain.

Facilitated value chain model in Unit 3 is driven by the external support by development agencies like NGOs, government can provide various opportunities for marginalized farmers with the help of value chain integration and financing. Smallholder farmers face various challenges as larger buyers prefer large scale producers. In Integrated Value chain business model, producers are connected to other stakeholders like input suppliers, intermediaries, processors, retailers and service providers including finance through the ownership and /or formal contractual relationships. One such model is vertical integration model within the value chain wherein integration is sought by the large retailer or a wholesaler/importer.

In unit 5, we learned that Agricultural value chains ICT (Information & Communications Technology) plays a significant role. ICT impacts are diverse with their varied effects, and they affect competition on the market. ICT have various advantages in connecting the stakeholders in value chain and providing the required resources for business operations.

Model Questions

1 What is a producer driven value chain? Can you explain with a suitable example?
2 What are the key reasons for rural indebtedness in India? Suggest means in which these challenges can be tackled.
3 What is a buyer-driven value chain? Can you explain with a suitable example?
4 What do you understand by contract farming? What are the advantages and disadvantages of contract farming? Can you give examples of contract farming that is being done in India?
5 What is a facilitator-driven value chain? Can you explain with a suitable example?
6 What do you mean by a Self-Help Group (SHG)? How do you think SHGs can help build facilitator driven value chains, especially in rural areas?
7 What is an integrated value chain model and how is it different from a facilitator-driven Value Chain Model? Explain with suitable examples?
8 How is the Rabobank model different from the NACF model? Explain the two in detail.
9 How do you think technology will impact the rural economy as a whole? Explain with suitable examples.
10 What are the advantages & opportunities of ICT Information Services?

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Editors' Profile

Dr W G Prasanna Kumar

Dr. W G Prasanna Kumar, Chairman, Mahatma Gandhi National Council of Rural Education (MGNCRE) prides in calling himself a Public Servant working for Climate Change. His expertise in Disaster Management has him in the advisory panels of several state and national level departments. He is also an expert advisor for the government of Telangana in its Disaster Response Force endeavour. A master trainer for Civil Services candidates, he conducts intensive training programs periodically at the behest of nationally recognized training institutes. He is currently actively involved in promoting higher education curriculum addressing rural concerns in India. **"Villagers to be producers not just consumers"** is his conviction that drives him to work for rural challenges. He aspires for an adaptive disaster risk resilient and eco-responsible India. The Curriculum on MBA in Waste Management and Social Entrepreneurship, and BBA and MBA in Rural Management are his major academic achievements dedicated to India's rural concerns. This has culminated in several collaboration MOUs for introduction of MBA/BBA Rural Management in Higher Education Institutions across India.

Dr. Prasanna Kumar excels in taking a vision and making it a reality and a plan into action, driven by a strong motive to achieve. He has translated positive intentions into tangible results. Being clear on the vision, defining a pathway, setting of the track with a clear destination point and quickly taking corrective actions as and when needed – are his prime qualities that make him an Achiever.

Under Dr. W G Prasanna Kumar's leadership MGNCRE has done nationally recognized instrumental work in building rural resilience including rural community engagement and Nai Talim - Experiential Learning. He has guided and helped MGNCRE in making key decisions and implementing agenda in several areas including Nai Talim (Experiential Learning), Community Engagement, Rural Immersion Programmes, Swachhta Action Plan activities, Industry-Academia Meets and Exhibitions on Waste Management, Comprehensive Sanitation Management in villages by working with Higher Educational Institutions, making curricular interventions in Waste Management and Rural Management, compiling Text Books on Waste Management and Rural Management, UNICEF (WASH) activities and several other related impactful activities. MGNCRE has become an interface for Government of India for promoting academic activity focusing on the rural concerns, being an advisor and a curriculum development agency for the Government of India. The Council is also now an RCI for Unnat Bharat Abhiyan.

Another pathbreaking achievement has been the formation of Cells through online workshops for institutionalising the efforts of MGNCRE. Vocational Education-Nai Talim-Experiential Learning (VENTEL) discuss MGNCRE's interventions in HEIs and making Vocational Education as a Teaching Methodology; Workshops on Social Entrepreneurship,

Swachhta and Rural Engagement related activities in Higher Education Institutions has paid dividends and the key roles of the HEIs is highly appreciated by the Ministry. Building continuity and sustainability is being done through Social Entrepreneurship, Swachhta & Rural Engagement Cells (SES REC). Institutional level Rural Entrepreneurship Development Cells (REDC) Workshops/ FPO/FPC-Business Schools Connect Cells (FBSC) are organized with the objectives of Functionality of RED Cell; Preparation and Implementation of Business Plan and grooming students to be Rural Entrepreneurs.

A man with many firsts to his credit, and an incredible record of accomplishments, Dr. W G Prasanna Kumar is currently guiding MGNCRE in building a resilient rural India.

Dr K N Rekha

Dr K N Rekha, is a PhD Graduate from IIT Madras. She has 14 years of experience in training and education Industry. She works at Mahatma Gandhi National Council of Rural Education (MGNCRE), Hyderabad as Senior Faculty. She is involved in curriculum development on Rural Management and Waste Management. Prior to this, she worked as a researcher at Indian School of Business, Hyderabad, a short stint at Centre for Organisation Development (COD), Hyderabad. She has co-authored a book on "Introduction to Mentoring", written book chapters, peer reviewed research papers, book reviews, Case studies, and caselets in the area of HR/OB. She also presented papers in various national and international conferences. Her research areas include Mentoring, Leadership, Change Management, and Coaching. She was also invited as a guest speaker at prominent institutions like IIT Hyderabad.

Authors' Profile

Ardhra Prakash

Ardhra Prakash is a PGDRM participant at the Institute of Rural Management, Anand. She believes in the immense possibilities of the rural consumer market and is building a career in this space. She has worked with companies belonging to various levels in the food value chain, after completing her undergraduation in Hospitality Management from the Institute of Hotel Management, Mumbai.

Avi Anuj Jain

Avi Anuj Jain is currently engaged in Post Graduate Diploma in Rural Management at Institute of Rural Management Anand (IRMA). He is medaled with a diverse set of experience in multidimensional Development Sector. He has been a Gurukul Programme Dalai Lama Fellow, Microsoft C2I fellow, Stanford Venture Studio fellow where he has worked on various aspects of individual, community and household development interventions in predominantly rural areas. He has conducted his research work on displaced communities, unorganized sector, smart education, refugees and rural arts and handicrafts. He has worked on multidimensional development interventions in collaboration with organization like SEWA, Kala Raksha Trust, TIDE, FURRHDL and MGNCRE

to name a few. His current research area focuses on bringing sustainable and community led development interventions in the rural areas of India.

Manoja K S D

Manoja K S D is pursuing her Post Graduate Diploma in Rural Management from the Institute of Rural Management, Anand (IRMA). Earlier she completed her Electronics and Communication Engineering. Manoja is passionate about working with rural communities from her undergraduate days during which she was a part of the National Service Scheme. She has actively organized career guidance sessions for government school students in and around Hyderabad when she was a member of NSS. She initiated programs and competitions that acted as platforms for school students to showcase their science skills. Currently she is inspired by her village visits through IRMA and is trying to understand different aspects of rurality like farming, health and education in depth.

Ritesh Amar Singh

Ritesh Amar Singh has just completed his PGDRM from Institute of Rural Management Anand and will be joining ADM agro as a Management Trainee. He wants to build his career in Agribusiness domain. His previous experience was in e-kart working as a Talent Acquisition executive. His did his under graduation in BE Mechanical from Lokmanya Tilak College of Engineering, University of Mumbai. His other interests are reading, playing soccer and running.

सत्यमेव जयते

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