Value Chain Management Practices in Marine Fisheries: A Special Reference to Coastal Andhra Pradesh

V. V. Devi Prasad Kotni

Abstract

There is huge demand for the Indian fish products in International Markets. Japan, USA, Europe, Australia etc are major importers of Indian Fish. Among coastal states of India, Andhra Pradesh is occupying a dominating position with has nine coastal districts covering 974 km of coastline from Srikakulam to Nellore and owning rich marine resources, a good number of fishing vessels, freezing plants and peeling sheds. The Value is something for which a customer is paying money. Any company must have to deliver value in order to sustain in this competitive market. Value Chain Analysis is a process of creating a value in each phase right from processing of material, production, marketing, distribution and retailing. Application of Value Chain Analysis in Export Fisheries is an integrated process where several stake holders of the Fisheries sector such as fisherman, agent, retailer, processor, exporter and government work together to plan, coordinate and control fisheries, processing and final products from domestic fisherman to overseas consumers. The primary objective of this study is to find out different Value Chain Management Practices adopted by various fish exporters in coastal Andhra Pradesh. The secondary objectives include reviewing the literature of Value Chain Management, its application in Export fisheries and to offer recommendations for maximizing profits through Value Chain Analysis practices in export fisheries.

Key Words: Value Chain Management, Value Chain Analysis, Logistic Management, Fish Exports, Fish Processing, Value Addition

Introduction

Fish is considered as a commercial product worldwide. Fish as a food item is relished by more than sixty percent of the people of India. It is just not a food item for internal consumption but also it is a commodity that can earn foreign exchange. Marine fisheries generate good employment and incomes for a large section of backward and economically weaker sections of the coastal community. Human body uses the protein to make lots of specialized protein molecules that have specific jobs. Protein builds up, maintains, and replaces the tissues in body. Muscles, Organs, and Immune system are made up mostly of protein. Since proteins cannot be stored in body, food-containing protein has to be taken daily for our body's requirement. As a human food item, fish is considered very valuable from the nutritional point as it contains a high percentage of easily digestible animal proteins. The problem of protein deficiency is more in India and malnutrition is a serious problem. The development of marine fisheries resources offers a solution and with low costs, high protein food can be supplied to a large section of population.

Statement of problem

The Value is something for which a customer is paying money. Any company must have to deliver value in

order to sustain in this competitive market. Value Chain Management is a process of creating a value in each phase right from processing of material, production, marketing, distribution and retailing. Application of Value Chain Management in Export Fisheries will help the producers to offer great value with minimum costs. Hence it was proposed to study the application of Value Chain Management in Marine Fisheries. Against an estimated fishery potential of 3.9 million tonnes from marine sector, only 3.1 million tones are tapped. It has direct impact on Indian exports, which is losing its market to its neighboring countries like Srilanka. There is a need for improvement in infrastructure and adoption of new management practices. Value Chain Analysis is one of the Management Strategies that can reduce various costs associated with processing and can improve the quality and productivity/processing of the product, also reduces distribution cost.

Literature review

Porter has offered a definition of value chain in 1985 in his book "Competitive Advantage". He stated, "The basic tool for diagnosing competitive advantage and finding ways to enhance it is the value chain, which divides a firm into the discrete activities it performs in designing, producing, marketing, and distributing its

products" (Porter, 1985, p.26). "The value chain disaggregates a firm into its strategically relevant activities in order to understand the behavior of costs and the existing and potential sources of differentiation." (Porter, 1985, p.33). The Value Chain framework of Porter (1990) is "an interdependent system or network of activities, connected by linkages". When the system is managed carefully, the linkages can be a vital source of competitive advantage (Pathania-Jain, 2001). The Value Chain analysis essentially entails the linkage of two areas. Firstly, the value chain links the value of the organisations' activities with its main functional parts. Then the assessment of the contribution of each part in the overall added value of the business is made (Lynch, 2003). The Value Chain describes the full range of activities, which are required to bring a product or service from conception, through the intermediary phases of production (involving a combination of physical transformation and the input of various producer services), delivery to final consumers, and final disposal after use.

Basic Model of Value Chain Analysis

Porter suggested that activities within the organization add value to the service and products that the organization produces, and all these activities should be run at optimum level if the organization is to gain any real competitive advantage. If they are run efficiently the value obtained should exceed the costs of running them i.e. customers should return to the organization and transact freely and willingly. Michael Porter suggested that the organization is split into 'primary activities' and 'support activities'.

Figure 1: The Generic Value Chain
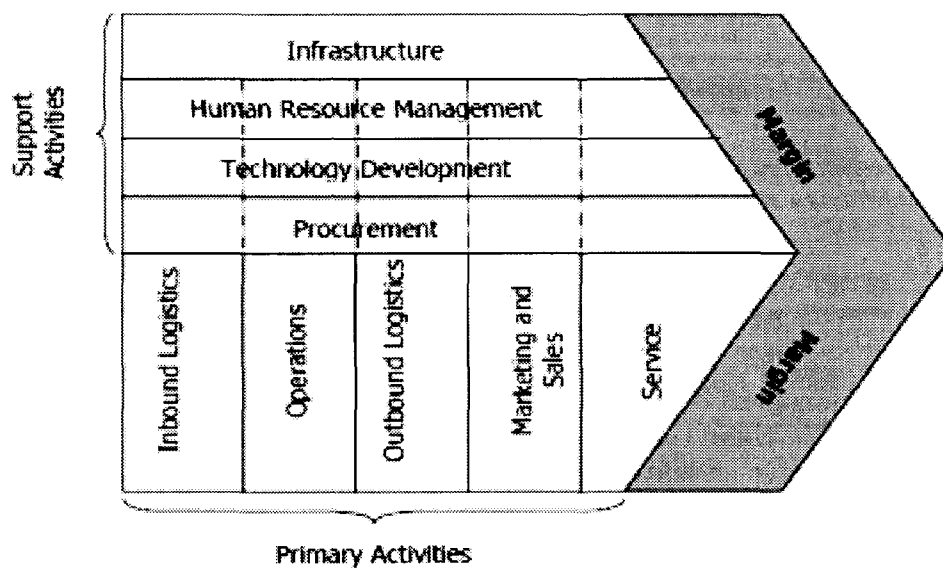
Basic Model of Value Chain (Michael Porter (1985))

Source: Michael E. Porter (1985, p.37)

These activities can be classified generally as either primary or support activities that all businesses must undertake in some forms. The basic idea is that a firm's activities can be divided into nine generic types, which are linked to each other and to the activities of its suppliers, channels and buyers. Five activities are the primary activities, which are directly concerned with the activities that create the products, market them deliver them and service, each of these primary activities has a linkage with support activities that can be useful to raise their effectiveness or efficiency. Porter (1985) hints the term "Margin" means that firms realize a profit margin that depends on their ability to manage the linkage between all activities in the value chain. In other words, the organization is able to deliver a product / service for which the customer is willing to pay more than the sum of the costs of all activities in the value chain.

Primary Activities

According to Porter (1985, p.39), the primary activities are:

1. Inbound Logistics - Relationships with suppliers and include all the activities required to receive, store, and disseminate inputs.

2. Operations - Are all the activities of the manufacture of products and services - the way in which resource inputs (e.g. materials) are converted to outputs (e.g. products).

3. Outbound Logistics - Include all the activities required to collect, store, and distribute the output.

4. Marketing and Sales - Essentially an information activity -activities inform buyers about products and services induce buyers to purchase them, and facilitate their purchase.

5. Service - Includes all the activities required to keep the product or service working effectively for the buyer after it is sold and delivered.

Secondary Activities

Support value activities involved in competing in any industry can be divided into four generic categories. As with primary activities, each category of support activities is divisible into a number of distinct value activities that are specific to a given industry (Porter, 1985, p.40).

1. Procurement - Is the acquisition of inputs, or resources, for the firm.

2. Human Resource management - Consists of all activities involved in recruiting, hiring, training, developing, compensating and (if necessary) dismissing or laying off personnel.

3. Technological Development - Pertains to the equipment, hardware, software, procedures and technical knowledge brought to bear in the firm's transformation of inputs into outputs.

4. Infrastructure - Serves the company's needs and ties its various parts together, it consists of functions or departments such as accounting, legal, finance, planning, public affairs, government relations, quality assurance and general management.

Types of Value Chains

Depending on size of operations Value Chains can be classified in to three types.

1. Simple Value Chain

2. Extended Value Chain

3. One or Many Value Chains

1. Simple Value Chain: The value chain describes the full range of activities, which are required to bring a product or service from conception, through the different phases of production delivery to final consumers, and final disposal after use. Moreover, there are ranges of activities within each link of the chain.

2. Extended Value Chain: These value chains are much more complex for one thing, there tend to be many more links in the chain.

3. One or Many Value Chains: In addition to the manifold links in a value chain, typically intermediary producers in a particular value chain may feed into a number of different value chains.

Significance of Value Chain Analysis

The application of the value chain can divide a firm's activities into different items, and this makes it possible that firms see clearly the important variance of effecting costs and compare differences in the unit costs of competing firms in the chain.

- Value Chain Management makes the production process and distribution process systematic and qualitative so that the final consumer gets value in terms of right product, right price at right place and right delivery.

- Value Chain Management not only delivers value in terms of quality production but it also delivers valuable information about customer satisfaction levels, market, prices, new needs and wants.

- Value Chain Management enables the consumers to get much value with fewer prices.

- Value Chain Management enables the producers where to cut down the costs, deliver much value and increase in the profit margin.

- Efficiency in production is only a necessary condition for successfully penetrating global markets.

- Entry into global markets, which allows for sustained income growth, requires an understanding of dynamic factors within the whole value chain.

- With the growing division of labour and the global dispersion of the production of components, systemic competitiveness has become increasingly important.

Process of Value Chain Analysis:

Value Chain Analysis is a three-step process:

1. *Activity Analysis*: First, identify the activities that should be undertaken to deliver the product or service.

2. *Value Analysis*: Second, for each activity, through which value should be added to the greatest extent for the customer.

3. *Evaluation and Planning*: Thirdly, evaluate whether it is worth making changes, and then plan for action.

Indian Marine Fisheries Export Infrastructure

Sea foods endowed with high nutritional value and being renowned delicious food products have been showing a tremendous increase in their consumption and demand not only in India but all over the world. Most of the varieties of seafood need tropical climate. In India, the Export Capacity, state wide, as follows:

Table 1: Indian Fish Exporting Capacity State wise

Name of The state	No. of exporters	No. of processing plants	Freezing capacity (ton p/d)	No. of Cold Storages	Storage capacity	No. of Fishing vessels
Kerala	287	124	1,585.77	169	23,086.50	2963
Tamilnadu	286	48	524.55	67	5,900.00	1562
Karnataka	43	14	186.40	26	3,540.00	3226
Andhra Pradesh	95	52	779.50	53	7,200.00	717
Goa	9	7	104.00	9	1,275.00	420
Gujarath	64	55	2,216.03	57	22,925.00	426
Orissa	30	21	220.00	20	2,460.00	414
Maharastra	268	41	1,327.11	39	19,372.00	2932
West Bengal	99	37	340.00	30	3,500.00	N.A.

Source: Reports, Department of Fisheries, Government of India

There has been significant growth in fish production in the country in the recent years. India is now the third largest producer of marine fish and the second largest producer of freshwater fish in the world. Fish production during the year 2004-05 was 63.04 lakh tonnes comprising 27.78 lakh tones of marine fish and 35.26 lakh tonnes of inland fish. Indian Fish Storage Infrastructure is also equipping with latest technology to cater the changing needs of Indian Seafood sector. By 2008, the details of various fish processing and storage plants as follows:

Table 2: Indian Infrastructure For Export Production Of Marine Products

Category	Number	Capacity ton p/d (Tonnes per day)
Freezing plants	399	2715.90
I.Q.F (Individual Quick Freezing) plants	52	200.32
Canning plants	23	81.50
Fish meal plants	20	350.50
Cold storage (18^0 c)	320	490.00
Dried fish storage	374	2250.00
Pre-processing units	919	3320.00
Insulated/refrigerated conveyances	515	N.A.

Source: Reports, Department of Fisheries, Government of India

Andhra Pradesh Fish Exports: Infrastructure

India exports more than Rs. 8000 crore worth of seafood every year, of which Andhra Pradesh accounts for 25% to 30%. Japan and the US are the major importers, especially of tiger shrimp and scampi (fresh water prawn) from Andhra Pradesh. In Andhra Pradesh, Aquaculture is currently considered the sunrise industry in the state. The state not only lends itself naturally towards the growth of the industry, but some of the phenomenal successes of the early players in this area has also contributed in large measure in attracting growing number of entrepreneurs to the industry. Big business houses of Food Processing Industry like Tata, ITC, Liberty, HLL, ECMP and many other existing companies and 30 prospective companies are making good money in this very promising industry. This seems very bright where the established names are already operating in Andhra Pradesh and there are so many others, not known so well, are also coming up fast. This rush of companies going into Aqua because today foreign markets are evincing keen interest in importing seafood from India. One of the major reasons for this seems to be new ultra modern processing units that are coming up in Andhra Pradesh that match the international standards in hygiene and other areas. Earlier Andhra Pradesh was only into commodity marketing where the shrimp was frozen into blocks and exported with prompt attention being paid to other parameters like fungal, infection in not only have the standards in exporting raw material improve but also the processed export quality is going up.

Scope

This study will concentrate on Value Chain Management practices and various processes followed by the exporters to increase the value of the fish. The proposed study will examine the different value addition processes at each stage, cost incurred to add value, price improvement after value added process and total value added through various processes. The study also concentrates on various problems faced by marine fish exporters, various roles

Table3: Processing And Preservation Plants in Andhra Pradesh

Name of the district	Ice plants		Freezing plants		Cold storage		Processing plants	
	No. of Plants	Capacity	No. of Plants	Capacity	No. of Plants	Capacity	No. of Plants	Capacity
Srikakulam	2	27	0	0	0	0	0	0
Vizianagaram	1	2	0	0	0	0	1	2
Visakhapatnam	21	445	21	207	21	207	28	357
(A) Kakinada	5	20.5	3	14.5	0	0	13	48
(B) Rajahmundry	22	95	0	0	2	1005	0	0
West Godavari	63	771	49	225	15	3330	0	0
Krishna	53	817	2	50	1	65	70	10007
Guntur	18	25	1	0	1	10	1	1825
Prakasam	12	135	2	23	3	335	2	6000
Nellore	28	325	11	30600	0	0	6	17500
TOTAL	225	2662.5	89	31119.5	43	4952	121	35739

Source: MPEDA, Visakhapatnam

played by different value chain actors like fisherman, middleman, agent, exporter and retailer.

Objectives

The study is designed to map the key processes and flows in the value chain of Marine Fisheries in respect to the local market, regional markets and the international market. It also gives a detail description of the various players involved, their roles and responsibilities, the cost of operation and value addition at each stage. The primary objective of this study is to find out different Value Chain Management Practices adopted by various fish exporters in coastal Andhra Pradesh. The secondary objectives include reviewing the literature of Value Chain Management, its application in Export fisheries and to offer

recommendations for maximizing profits through Value Chain Analysis practices in export fisheries. Finally, to offer suggestions for better performance through Value Chain Management Practices.

Research methodology

The methodology of the study was designed in such a way that the key value addition processes would be found out. The primary data for identifying value chain actors and processes was colleted from interviews and discussions. The primary data for collecting various costs associated with processing and distribution was collected with a structured questionnaire. A sample of 30 exporters was selected out of 95 exporters in Andhra Pradesh. The secondary data was colleted from various news bulletins and reports of different institutions in fisheries sector like CMFRI (Central Marine Fisheries Research Institute), CIFT (Central Institute of Fisheries Technology), CIFRI (Central Inland Fisheries Research Institute), NIO (National Institute of Oceanography), MPEDA (Marine Products Export Development Authority), Bureau of Economics and Statistics etc.

Sample Size: 30 of Total Population 95

Sample Frame: Coastal Area of Andhra Pradesh

Sampling Technique: Quota Sampling where one quota represents one coastal district

Mathematical Model: Regression Analysis

Mathematical Model of Value Chain of Fish Exporting Company

$$Y = a + \sum_1^{12} b_i X_i + \sum_1^{12} z_i c_i + e_i$$

Y be the dependent variable, x_i (i=1,2,..12), Z_I (i=1,2,..9) are independent variables, a, b_i, c_i are the constants, e_i be the error term, a is the intercept or overall increment. b_i represents the unit change of amount of Y, in X_i.

Results and Discussion

Applying Value Chain Management practices In Export Fisheries Sector

A perishable item like fish may not be able to be exported as fisherman found it. Some processing has to be followed so that it remains fresh and an eatable one. The Value Chain in fishery is distinct for the product segments and market segments. These segments can be associated to the specific species. But if, the general pratice i.e. followed by most of the exporters are taken into consideration.

Figure 2: Export Fisheries Value Chain
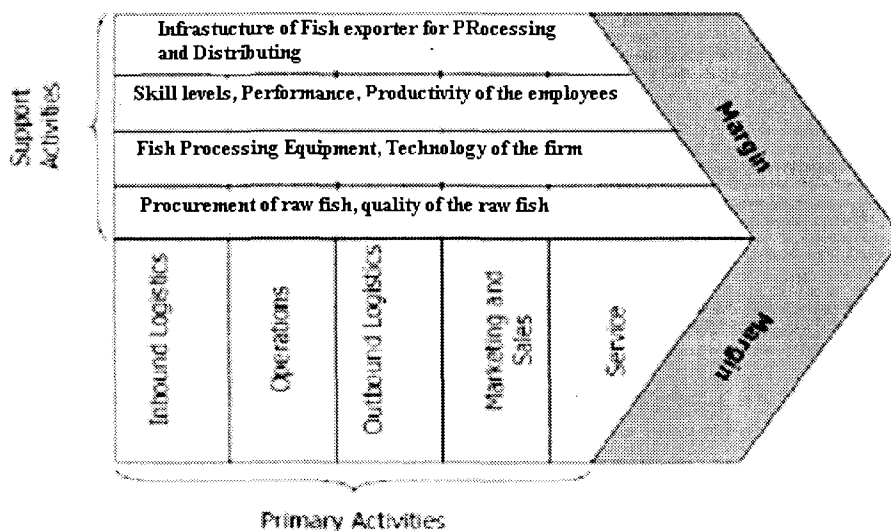
Source: Field Study

Different tasks in export fisheries processing:

**Table 4: Various Value Addition Processes**

Task	Description
Sources of raw material	Fresh shrimp purchased from local players
Product species	Frozen shrimp - Black Tiger - Scampi - White
Variety	Frozen Shrimp whole
Packing	2 Kg/5lbs/4lbs (1.8 Kg) or as agreed by the buyer. Packing in Duplex cartons 6.8.10 Slabs are arranged and packed in a 5 ply master cartons
Preservation method	Block frozen at -40° C within 70 minutes in contact plate freezer. Packed cases are stored in –18° C or below
Additives used	Nil
Distribution	Shipped by refrigerated containers
Intended customer	Wholesalers and general public
Intended use	To be consumed after cooking

Source: Field Study

Value addition for fishery products: general techniques:

- Breading and battering
- Composite fillets
- Canning
- Cook – chill processing
- Extrusion cooking
- Fermentation

- High pressure Treatment
- Individual Quick Freezing (IQF)
- Marination
- Modified atmosphere packaging
- Smoking
- Sous – vide processing
- Surimi and restricted products
- Retortable pouch packing

Figure 3: Different processes of fish in Value Chain Analysis
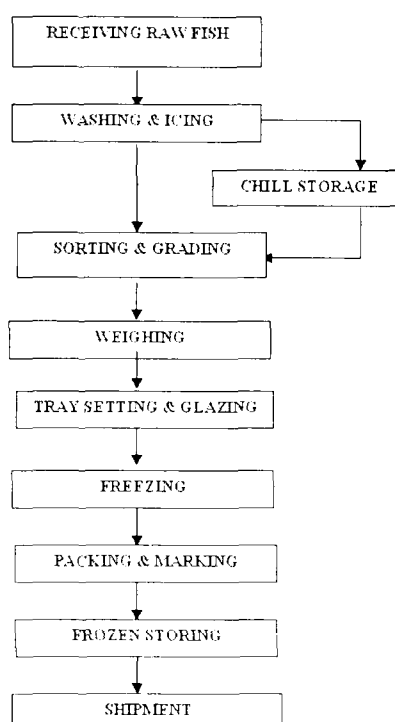
Source: Field Study

Marine Fisheries Value Chain Actors: Roles and Responsibilities

Transaction costs between the fisherman and the commission agent, such as labour expenses on lifting, cleaning, etc., are borne by the agent. Those between the agent and the supplier are borne by the supplier, while those between the supplier and exporter are borne by the supplier. The level of sophistication increases up the value chain, implying that at each stage, a better and more sophisticated grading system need to be build an effective value chain.

Table 5: Value Chain Actors: Roles and Responsibilities

S.No	Fisherman	Commission Agent	Supplier	Exporter
1	Input procurement: diesel, ice, food,	Receive fish from boat	Receive fish from agent	Receive fish as raw material
2	Undertake 4–8 days fish fishing trip	Weigh fish	Stock fish in crates filled with ice	Wash with potable water
3	Classify caught fish as per fish category	Grade fish as per defective and non defective	Sort fish in four grades as per quality standards of exporter	Process using Hazard Analysis and Critical Control Point procedures
4	Store fish in ice	Negotiate price with fishermen and supplier	Transfer fish to pre-processing unit	Pack processed fish
5	Unload fish on docks after preliminary wash		Clean fish	Perform export procedures and dispatch
6	Negotiate with agent and receive money		Negotiate price with exporter and agent	Negotiate price with importer and with supplier

Source: Field Study

Value Addition Cost and Price Improvement:

The following table shows Value Chain process in fishery and Value Addition in form of Price Improvement also shown in the table.

Table 6: Value Addition Cost and Price Improvement

VALUE ADDITON IN ENTIRE PROCESS LIFE CYCLE (Rs/KG)		SUB TOTAL	GRAND TOTAL
BEFORE PROCESSING			
Product Cost		350	
Transport Cost		0.18	
HR Cost		0.08	350.26
DURING PROCESSING			
Process	Processing Cost (rs/kg)	Price improvement (rs/kg)	
Washing & icing	4	0.5	
Sorting & grading	7.428	4.071	
Freezing	12.714	5.5	
Glazing & hardening	4.214	2.5	
Weighing & packing	8.357	4	
Metal detecting	1	1	
Packing & marking	9.428	5.071	
Frozen storage	10.785	5.285	
Shipment	18.928	25	57.92
TOTAL			427.1

Source: Field Study

Statistical Analysis of Value Chain by adopting Regression Equation:

An attempt has been made to identify different value addition processes for price improvement to the final product. It is very important to find out the variables, which can give significant price improvement to the final product so that the manufacturer can lay emphasis on that particular value addition process. The Value addition is measured in India Rupees. The Sale Price (Y) of the final product is considered as dependent variable of relevance of the model. The other Variables like Product Cost, Transport Cost, HR Cost, Washing & Icing, Sorting & Grading, Freezing, Glazing & Hardening, Weighing & Packing, Metal Detecting, Packing & Marking, Frozen Storage and Shipment are identified as independent variables which have influence on deciding the final sale price in the value chain.

Model

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \beta_8 X_8 + \beta_9 X_9 + \beta_{10} X_{10} + \beta_{11} X_{11} + \beta_{12} X_{12} + \upsilon_1$$

Table 7: Variable Description of Regression Equation

Variables In Rupees	Value Addition Variable Description
Y	Sale Price
X1	Product Cost
X2	Transport Cost
X3	HR Cost
X4	Washing and Icing
X5	Sorting and Grading
X6	Freezing
X7	Glazing & Hardening
X8	Weighing and Packing
X9	Metal Detecting
X10	Packing and Marking
X11	Frozen Storage
X12	Shipment

Results of the Model: Using SPSS 13.0 – statistical package for social sciences, the results have been estimated. Sale Price as dependent variable and all other value addition processes as considered as independent variables so as to suggest the best value chain model for exporters. The variables Product Cost, Freezing, Weighing & Packing, Frozen Storage and Shipment are turned out to be statistically significant at different levels of significant. The variables Packing & Marking, Metal Detecting, Glazing & Hardening, Sorting & Grading, Washing & Icing, HR Cost and Transport Cost are left out by the package, as they are not significant even at 10% significance level.

$$Y = 350 + 0.8831\ X_1 + 0.9617\ X_6 + 0.9318\ X_8 + 0.6758\ X_{11} + 0.9838\ X_{12}$$

Summary of findings and conclusions

The final summary of the exporter value chain is the Exporter buys the raw fish at the rate i.e. the Average product (fish) cost per KG is Rs.350/-. The Average Transportation cost per KG is Rs. 0.18/-. The Average Labour cost per KG is Rs.0.08/-. Now, the product is available in Export Processing Plant. Now a fish has to be undergone various Value Addition (Price Improvement) Processing Stages like Washing & Icing (Rs 0.5/-), Sorting & Grading (Rs 4.07/-), Freezing (Rs 5.5/-), Glazing & Hardening (Rs 2.5/-), Weighing & Packing (Rs 4/-), Metal Detecting (Rs 1/-), Packing & Marking (Rs 5.07/-), Frozen Storage (Rs 5.28/-) and finally Shipment (Rs 25/-). A raw fish Average Cost per KG is Rs.350.26/-. After Value Chain Management process, the product will be selling at Average Price of Rs. 427 / KG.

The Regression results indicates that exporters are much concerned about Packing and Marking, Metal Detecting, Glazing & Hardening, Sorting & Grading, Washing & Icing. These value addition processes are significant for the raw product purification but in terms of price addition to the final product these processes are failed show significant impact on value addition.

The Appropriate Regression Equation is formed with five significant variables, which have great impact on deciding the final sale price of the product. The variables Product Cost, Freezing, Weighing and Packing, Frozen Storage and Shipment are the value addition processes with significant price improvement.

The study suggests that exporter can adopt the regression equation with the values mentioned to build an effective value chain that gives better returns by reducing the costs of unnecessary processes. An ideal exporter has to pay much concentration on the significant value addition processes and other

mandatory processes with less value addition have to be processed with less cost in terms of money, time and human efforts.

Based on the study findings, for an intervention in the fishery Value chain, the following suggestions are recommended.

- The export license procedure must be simplified and there should be proper coordination and communication between concerned authorities so that the perishable products can be exported in time.

- Seafood sector needs to invest and train the fishermen on quality assurance practices mainly on hygiene and sanitation issue, which have a strong linage to the quality of the product. This would not only ensure better quality of the product but also increased shelf life.

- The exporters has to educate overseas customers in terms of usage, providing feedback, informing about their needs, wants and expectations from the providers so that new product and marketing strategies need to be adopted.

- Fisheries sector can leverage its national and international presence for establishing marketing tie-ups in these markets.

- On a contract basis, exporter can hire a trained marketer who would initially establish the market linkages and supervise the trade on behalf of entire seafood sector.

- The Government has to create proper infrastructure in terms of good transport from beach to processing unit location, creation of extension services like storage units at beach, at port etc.

- Establishment of transparent and streamlined auction mechanism under supervision of a committee consisting of fishermen representative, trade representative and government officials can improve the business performance of the fisheries sector.

- The exporters have to build a good supply chain right from the fisherman transporters, shipment, distributors and retailers at abroad. A good supply chain can deliver products, money, and information from various stakeholders in the chain.

- Strengthening the infrastructure facilities in existing market yards can result in increased customer delivered value specially basic amenities for women players.

- Exporters have to educate fisherman in areas like temporary storage of fish, the fish in much demand, usage of materials like get, bait etc.

- Seafood sector needs to explore opportunities with movement under its various schemes, donors – national and international, NABARD etc to work out a mechanism of soft loans cum grant for setting up of village level cold chains within coastal area.

Conclusion

The Value Chain Management is an emerging concept i.e. following by most of the organized sectors like Valve Chain in Pharmaceuticals, Oil & Natural Gas, Iron & Steel etc. This Value Chain practice is not only in organized sectors but also in Unorganized Sectors like Agriculture, Fisheries etc. Sea Food Sector is an important sector of the Indian as well as Andhra Pradesh economy. India is now the third largest producer of marine fish and second largest producer of fresh water fish in the world. Such an important sector is facing lot many problems for various reasons. All the stakeholders of this sector like fishermen, consumers, exporters, employees, government, traders, distributors, retailers has to play their role in creating a healthy business environment for human healthy product fish.

Limitations

The study limits to export fisheries and not extended to inland fisheries. It is not extended to traditional fish processing by the fisherman. The study covered only export markets and Value addition processes are generalized for all exporters. The study limits to export fisheries in Andhra Pradesh only.

Scope for further research

- The study can be organised in entire coastal India.

- Apart from Marine Fisheries, the study can also be extended to inland fisheries also.

- Value Chain Analysis can be done not only in unorganized sectors like fish, agriculture etc but also for organised sectors like steel, aluminum, automobiles, blue chip industries etc.

- Value Chain Analysis is not limited to Manufacturing Sector but it can be applied to Service Sector also.

References

Andrea Macdonald, Managing a Global vs. Domestic Supply Chain - Feature Article World Trade, July 6, 2006.

Bose K S, Devi Prasad Kotni V V, " Knowledge Management Practices in Unorganised Sector: A Special reference to Fisheries", Knowledge Management in Indian Organizations: Challenges and the Road Ahead, edited by S.F.Chandra Sekhar, M.Kamalakar, B.S.Rao, C.Sudhakar, pp 28-35, published by Siva Sivani Press, Hyderabad, 2010.

Bose, K.S., Devi Prasad Kotni V.V., 'Government Policies on Marine Fisheries Sector: A Review', Journal of Fisheries Economics and Development, Vol XI, Jan-June 2010, No.1, pp 11-23.

Chalam.K.S, Andhra Pradesh Newsletter, fishing chimes, Visakhapatnam. Nov-2003, pp.56-59.

Costanza, D., Cumberland, J., Daly, H., Goodland, R. AND Norgaard, R. (1997) "An Introduction to Ecological Economics", International Society for Ecological Economics.

Devi Prasad Kotni V V, Bose K S, Hema Sundar M, "Andhra Pradesh Marine Fish Exports: Prospects and Problems", Fishing Chimes, Vol.30, No.12, March 2011, pp 65 - 68.

Devi Prasad Kotni V V, "Value Chain Management", HRD Times, Vol. 12, No. 11, November 2010, pp 44-45.

Devi Prasad Kotni V V, Bose K S, Hema Sundar M, "Andhra Pradesh: Royyalu Chepalu, Egumathi Samarthyam, Samasyalu", Chepalasandhadi, Vol.1, No.3, March-April 2010, pp 29-35. [In Telugu].

Handfield and Nichols, (2002), 'Supply Chain Redesign', Financial Time Management, pp. 11-12.

Kaplinsky, Raphael and Morris, Mike, "A Handbook for Value Chain Research", International Development Research Center.

Menon, K.K.P, "Protein from the sea", Seafood export Journal, 2(7), 1970: pp.37-34.

Michael e. Porter (1985) "Competitive Advantage: Creating and Sustaining Superior Performance" Free Press, 1998 USA.

Porter, M. E. (1990), The competitive advantage of nations, New York: Free Press.

Qasim, S.Z., "Production of living matter in the sea", Mahasagar, 5(2) 1972: pp. 59-69.

Rajesh Ravi (2008), 'Shrimp loses glamour due to rise in production and availability', The Financial Express, June 2nd 2008, pp. 4.

Raphael Kaplinsky, Mike Morris, "A handbook for value chain Research", Prepared for the IDRC.

Raikes P., M. Friis-Jensen and S. Ponte (2000), "Global Commodity Chain Analysis and the French Filière Approach", Economy and Society.

Qasim, S.Z., "Production of living matter in the sea", Mahasagar, 5(2) 1972: pp. 59-69.

Womack, James P. and Daniel T Jones (1996), Lean Thinking: Banish Waste and Create Wealth in Your Corporation, N. York: Simon & Schuster.

Wood, A. (2001), "Value Chains: An Economist's Perspective", in G. Gereffi and R.Kaplinsky (eds.), IDS Bulletin Special Issue on The Value of Value Chains, Vol. 32, No. 3, pp. 41-6.

Reports, Fisheries Department, Govt. of Andhra Pradesh, Govt. of India.

Reports, Marine Product Export Development Authority (MPEDA), Visakhapatnam, India.

About the Author:

V. V. Devi Prasad Kotni is an Assistant Professor in the Department of Management Studies at GVP College, Visakhapatnam. The author can be reached at devi_kvv@yahoo.com.