Chapter 3

Methodology

3.1 Introduction

The study is methodologically comprehensive to cater to the managerial implications at the two levels at which the analysis is done. Following the survey of literature, the strategic nature of exports is studied at the macro or the country level as well as the micro or the firm level. The methodology adopted, therefore, helps in recommending appropriate measures based on the findings of the study at the firm as well as the government policy level.

This chapter describes the research methodology adopted for the study at two levels

1. Macro level involving the study of cashew exports in the international cashew market

2. Micro or the firm level involving the manufacturer exporters of Karnataka

Definitions of terms used

The following are the operational definitions of the terms used in the macro environmental analysis used in the study:

1. Sub sector is the individual independent sector in the value adding chain of activities in a commodity value chain

2. Compounded annual growth rate is the annualised rate of growth on a compounding basis calculated based on the yearly data

3. Productivity is defined as production in metric tonnes per unit area in hectares

4. Average unit value realisation is the average realisation in rupee/dollar terms for a unit quantity of cashew kernels
5. Market share is the proportionate percentage share of the total market for the various commodities in the cashew value chain in quantity terms.

6. Raw cashew nut is the cashew along with the hard shell and covering around the cashew kernel before processing for extraction of cashew kernels.

7. Cashew apple is the 'false fruit' to which the raw cashew nut is attached in the cashew tree.

8. Cashew nut shell liquid is a by product of the processing of the shells of raw cashew nut after raw cashew nuts are processed for obtaining cashew kernels.

9. Competing countries refer to the major producers and exporters of cashew kernels in the world.

10. States refer to the political divisions of Indian administrative units.

11. Zones represent the grouping of countries that import cashew kernels from across the world. For example.

12. Brokens (cashew kernels) refer to the splits, pieces and bits of processed cashew kernels.

13. Wholes (cashew kernels) refer to cashew kernels without any damage but for scorching during processing.

3.2 Macro level analysis

There are two components of value chain analysis:

- the industry value chain and
- the company's internal value chain.

The industry value chain is composed of all the value-creating activities within the industry, beginning with the basic raw material and ending with delivery of the product to the final consumer. Industry analysis helps a company evaluate external,
environmentally determined factors, providing a view of the company's position in the industry. Internal value chain analysis provides a resource-based view of the internal operations of the company.

The first part of the study analyses the position of Indian cashew in the international market. This provides the situation audit for the country and the firms as per the earlier literature in order to devise appropriate strategies. In order to study this aspect, literature survey was done to understand the agricultural market situation as prevailing in similar crops in the international context. This was accomplished through an extensive reading of the material available at the UN depository at the Karnataka University Dharwad.

In order to understand the cashew market at the international level, extensive contacts were made with leading exporters from the country and detailed discussions were held. Visits were made to three leading organisations involved in the development of cashew in the country namely The Directorate Of Cashew Development (Now Directorate Of Cashew And Cocoa Development) Cochin, The National Research Center For Cashew Puttur And The Cashew Export Promotion Council Cochin. Discussions were held with the Directors, senior scientists and officials in each of these organisations in order to help understand the position of India in the international cashew market. The discussions centered on the three aspects (of any agricultural product) namely the production, processing and marketing of the various cashew products.

The macro level analysis was split into two components namely

1. Cashew production sector analysis
2. Cashew processing and marketing sector analysis

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The data for both the components of the macro level analysis were obtained from secondary statistics available at the three leading organisations concerning the cashew industry as mentioned above. The objective of the macro level analysis was to compare the India's position across the value chain in the cashew industry.

Sub sector assessment is a systems approach to the study of economic activity which helps analysts better understand the dynamics of the sub sector. The objective of sub sector assessment is to analyze all of the participants, their linkages, and influential factors in the agribusiness system in order to identify constraints and opportunities for growth. Subsector assessment is a powerful tool for project designers and decision-makers because it clearly illustrates where change can have the most significant impact on the sub sector. Since cashew is one of the significant export commodities, a sub sector sector assessment of the cashew industry would throw light on the macro decisions that need to be taken at the sub sector level.

A Sub sector is defined as a vertical grouping of enterprises involved in the production and marketing of one well-defined product or several closely related products (David Wilcok 1991). A commodity sub sector does not necessarily lie strictly within one particular sector; it can cut across other sectors. For example, cotton is grown in the agriculture sector, shipped to factory by the transport sector, processed in the manufacturing sector, and so on. The key is the network, which is based around a common raw material or a common output. The key issues discussed are the vertical perspective, competition, coordination and leverage.

Sub sector mapping helps to identify the flow of products from producer to consumer in as well as the inter-relationship among participants in the Subsector.
There are several components like the markets, functions and the participants that are represented in the map. The use of sub sector approach and comparative advantage analysis allows for a more holistic approach to understanding relevant issues in the agricultural sector. It looks not only at on-farm production, but incorporates downstream collection, processing, and wholesaling activities. It thus provides an analysis of the entire commodity chain, incorporating the perspectives of producers, market agents, processors, sellers, and even consumers. The sub sector mapping an study for the cashew industry from a marketers perspective would enhance quality of industry level policy decisions.

Sub sector study from a marketing perspective needs a look at the historical data of the industry. Several researchers have advocated using historical or longitudinal approaches to study marketing phenomena (Aaker and Day 1986; Lieberman and Montgomery 1988; Prahalad 1995; Zaltman 1997). In marketing, most proponents of historical method come from an interpretivist or relativist perspective (Hudson and Ozanne 1988; Smith and Lux 1993; Sherry 1991). Others have argued for its use to provide a better understanding of marketing’s past (Fullerton 1987; Pollay 1985; Savitt 1980). Still others, representing a more traditional research perspective, have recognized that historical analysis could be useful for studying strategic issues (e.g., Aaker and Day 1986; Day and Wensley 1983; Prahalad 1995). Historical method has several strengths that make it appropriate for studying marketing phenomena. First, the method is helpful in collecting and evaluating data for longitudinal analysis. This type of analysis is useful for understanding strategic issues and could help restore marketing’s influence in the strategy literature (Day 1992).
In view of the above the historical data on the various sub sectors of the cashew economy were used for the analysis at the macro level.

The two sub sectors in the cashew industry taken up for assessment are

1. The cashew production sub sector
2. The cashew processing and marketing sub sector

The cashew processing and marketing sub sectors are combined, as these sub sectors are not independent in the Indian context. As regards production sub sector, in most of the growing countries, it exists as a separate entity as in India, which is the largest processor and exporter of cashew kernels.

Cashew production sector analysis

The cashew production sector was analysed using the data on the production of raw cashew nut and the position of India. The data as obtained from various trade delegation reports of the nature of raw cashew nut production in the competing countries was compared and contrasted with the India’s position. The analysis concentrated on the nature of primary marketing, the spread of production and the various institutional arrangements for the development of cashew in the competing countries.

The cashew production sector in India was analysed for the growth in the area, production, and productivity across the various states as well as the agencies involved. The nature of utilisation of the cashew apple was also analysed. The compounded average growth rate, average unit value realization, changes in the markets share and productivity were the measures used in comparing across states within India and across counties in the international cashew market.
Cashew Processing And Marketing Sector Analysis

This is the crucial part of the analysis as the processing and marketing sector is the focus of the study. In this part of the macro level analysis, the position of India was analysed in the cashew kernel and cashew nut shell liquid market. Descriptive comparisons and contrasts of the markets in the importing countries and the processing and marketing by the competing countries were made.

The exports from India were discussed by utilizing the changes in the following measures

1. Compounded annual Growth rate
2. Average Unit value realization
3. Market share in percentage

These measures were compared and contrasted across the following dimensions

1. Competing export countries
2. Key importing countries
3. Zones in the world
4. Brokens and wholes of cashew kernels

In the case of cashew nut shell liquid, market share of India and average unit value realisation are contrasted with the competing countries.

3.3 Micro Environmental Analysis

The presence of a strategic orientation at the firm level complements the strategies followed at the country or the macro level in any industry. In order to study the strategic orientation of the firms in the cashew industry the Karnataka cashew processor exporters were chosen for the study.

The state of Karnataka was chosen for the study for the following reasons
1. There has been little interference from the state government in Karnataka in the raw cashew nut production, processing and marketing. This is unlike the largest producing and processing state in the country namely Kerala where the monopoly procurement scheme for raw nuts and the public sector run processing unit and the decision of the government for the allocation of the raw nuts operate.

2. Karnataka is the leading exporter of cashew nut shell liquid for several years in view of the steam roasting processing system. The cashew nut shell liquid is extracted and clarified for exports thus representing an additional income for the cashew processors. This represents a strategic utilization of the by products of processing.

3. Cashew as a product had been exported from Mangalore even before independence and this prompted the government to locate the national research center on cashew at Puttur in Karnataka. There is a great scope of Karnataka getting benefits from this research center due to it strategic proximity.

Operating in an almost free market mechanism, with the possibility of importing nuts from other key growing states like Kerala, Tamilnadu and Goa, the possibility of the strategic nature of decision-making at the firm level was only a matter of choice and implementation. Therefore it was thought fit to study the cashew exporters in Karnataka.

The analytical survey method was adopted was used for the purpose of this part of the study. Primary data was collected from 47 cashew processor exporters based in Karnataka with the help of a questionnaire. The data consisted of response from
these exporters (at least with one year's experience in exports and indicated continuance in exports) based on a pre-tested questionnaire.

Definition of the terms used

The following are the operational definitions of the various terms used in the micro environmental analysis:

1. Planning activity was defined as the activity that ensures the strategic underpinning of export marketing decision.

2. Problem perception was defined as the subjective feeling of problems related to exporting.

3. Perceived impact was defined as the subjective feeling of exporters on impact of export marketing decisions on export performance.

4. Export processor was defined as a firm involved in processing of raw cashew nuts to produce cashew kernels for exports.

5. Export profitability was defined as the Management's perceptions of the profitability of exporting their firm's products relative to selling those same products in the home country.

6. Involvement of exports was defined by the percentage of the exports of the export processor.

Dimensions studied

The three dimensions that were studied for understanding the strategic nature of exporting at the firm level as discussed in the literature survey were:

1. Planning activity of the export processors.

2. Problem perception of exporters.
3. Perceived impact of export marketing strategy on performance

In the case of first two dimensions, it was decided to analyse statistically significant differences between high and low involvement exporters. This required the operationalisation of the term involvement.

Export involvement was operationalised as the proportion of total sales accounted for by exports referred to generally as export intensity. It represents the dependence of the firm on its export activity for the business (Diamantopoulos and Inglis 1988). This operationalisation is consistent with prior empirical studies on exporting (Cavusgil 1984, Malekzadeh and Rabino 1986). Accordingly, an export to domestic market sales ratio of 50% was adopted to distinguish high and low involvement firms. A total of 30 out of the 47 Karnataka based cashew processor exporters were low involvement firms.

Export planning

Lorange and Vancil (1977) distinguish three levels of planning— the strategic level, the functional level and the budgeting. At the strategic level planning is involved the establishment of corporate goals, and defining the export business in terms of markets and customers served. Functional planning concerns planning at the operational levels in the various functional areas like production and marketing. Budgeting involves the resource, sales and financial implications of the firm’s export policy. The formality with which planning varies from firm to firm. The components identified in this study are key components of the planning process and should provide a good indicator for the methodology.

The following were the statements used to identify the planning behaviour.
1. Our export customer base has been clearly defined
2. Development of competitive export strategies
3. Establishment of exporting goals
4. Existence of an export product policy
5. Existence of an export promotion policy
6. Existence of an export distribution policy
7. Existence of an export pricing policy
8. Export markets to be sourced
9. Export production policy
10. R&D for export markets
11. Export financing plans

A likert scale with ratings of 1 = strongly agree to 5 = strongly disagree was used for responses. The two-group t test was used to test the hypothesis formulated

Export problems

Several items representing perceived export problems were identified initially from export marketing empirical literature (Bauerschmidt et.al 1985, Kedia and Chokar 1986). On the basis of in depth discussion with export managers, export marketing specialists and academics involved in export research, 24 export problem items were selected for the study. Each of the following items was measured along two dimensions on a Likert type scale.

1. Insufficient information about overseas markets
2. Inadequate promotion in export markets
3. Lack of export marketing research
4. Difficulty in identifying capable overseas distributors
5. Lack of information on overseas distributors
6. Ineffective communication with overseas customers
7. Poor quality in export packaging
8. Difficulty in meeting importer's product quality standards
9. High cost of capital to finance exports
10. Inability to self-finance exports
11. Lack of competitive prices
12. Strong international competition
13. Poor organization of firm's export department
14. Lack of personnel qualified in exporting
15. Lack of 'experts' in export consulting
16. High transportation costs
17. Difficulties in transporting the product(s) exported
18. Payment delays from overseas distributors
19. Lack of government assistance in overcoming export barriers
20. Ineffective national export promotion programs
21. Complexity of export documentation requirements
22. Red tape in public institutions
23. Insufficient devaluation of the domestic currency
24. Absence of genuine information on agro climatic conditions in India and abroad

The first dimension involved the respondents to indicate how frequently each problem item listed was encountered during the exporting activities. Responses were
measured by a five-point scale ranging from always being a problem (score 5) to never being a problem (score 1). Because some of the problems could be more important than others (Czinkota and Ricks 1983, Katsikeas 1991), respondents were also asked to weight (second dimension) each problem item. The response to the extent of negative effect on export due to the problem was expressed in a scale of 1-9 where 9 = very negative, 5 = somewhat negative and 1 = no effect. Weighted mean values pertaining to the individual export problem items were based on the frequency responses multiplied by the relative importance ratings.

Principal component analysis, reliability of arriving at the broad export problems and the item total correlation were used as methods to arrive at the export problem as identifying the factors studied. Later the t test was done to check if the export problem perception differed significantly between high and low involvement exporters.

**Perceived Impact of Marketing Strategy on Profitability**

The variables used in this part of the study were drawn from a study on export marketing (Cavusgil, Bilkey and Tesar 1979). The perceived impact of 10 export marketing strategy variables on export profitability was examined in the study. These related to the product price, distribution and promotion aspects of marketing. The details are given below:

a) Level of product modification (whether the firm exported the same product line as the domestic product, less variety than the domestic lines, product made primarily for the export market, or domestic product modified for the export market)

b) Export pricing relative to the price of the same product sold in the Indian market
(lower, equal, or higher)
c) Export currency strategy (Indian, buyer, or third country)
d) Determination of export price strategy (Indian price list, cost-plus basis, or separate costing/competitive pricing)
e) Frequency of face-to-face contact with overseas dealer/distributor (never, once every 2-5 years, once to twice a year, or at least quarterly)
f) Labeling of brand name (own brand name or not own brand name)
g) Direct buyer strategy (final foreign end-users, foreign middleman, or Indian export agent/merchant)
h) Export channel strategy (separate export department/unit, own domestic marketing department or Indian export agent/merchant)
i) Export price quotation (free on board/free along side or cost, insurance and freight/cost and freight basis)

The respondents were asked to respond to categorically scaled marketing variables. The criterion variable was defined as “management’s perception of the profitability of exporting the firm’s product relative to domestic marketing”. The details are as given below.

Management's perceptions of the profitability of exporting their firm's products relative to selling those same products in the home country.

5 = exporting the product to that country is much more profitable (larger by 8% or more) than selling it within the India.

4 = exporting the product to that country is slightly more profitable (larger by about 3-7%) than selling it within the India.

3 = exporting the product to that country is about equally profitable (approximately within + 2%).
2 = exporting the product to that country is slightly less profitable (smaller by about 3-7%) than selling it within the India.

1 = exporting the product to that country is much less profitable (smaller by about 8% or more) than selling it within the India.

This helped in delineating the effect of exporting alone compared to other aspects influencing the evaluation of the factors like the managerial competency etc. The impact was analysed using the univariate analysis of variance. In testing the hypotheses the null hypotheses were rejected at \( p < 0.05 \).

3.4 Hypotheses

The following were the hypotheses that were tested as part of the microenvironment analysis part of the study.

1. No significant difference exists between high and low involvement exporters in undertaking systematic planning
2. Perception of export problem is not significantly different between high and low involvement exporters
3. Export profitability is independent of level of export product modification
4. Export profitability is unaffected by the difference between export and domestic price
5. Export profitability is independent of the export currency used for transaction
6. Export profitability is independent of the export price determination efforts
7. Export profitability is independent of frequency of face to face contact with buyer overseas
8. Export profitability is independent of brand name labeling
9. Export profitability is independent of level of dealer and distributor support
10. Export profitability is independent of type of direct buyer

11. Export profitability is independent of type of export channel

12. Export profitability is independent of method of export price quotation

The following figure gives an idea of the relationship between the hypotheses:

![Figure showing the relationship between hypotheses]

3.5 Questionnaire Formulation and Data Collection

The process of questionnaire formulation involved three phases. First, a preliminary draft of the research instrument was generated by reviewing the export marketing literature. In the next phase, the list of questionnaire items were finalized with the help of four professional managers and two academicians familiar with the research on export marketing. In the final phase, the research instrument was pre-tested by personal interviews with five export executives to ensure that the questions were relevant and phrased in a meaningful manner. As a result, the questionnaire (refer annexure1) was refined on the basis of all the problems and issues raised.

Personally administered interviews were employed as the method of data collection for the purpose of higher respondent participation and better quality data. During the data collection emphasis was placed on the identification and selection of the most appropriate individual in each of the firms to provide the information needed. Most knowledgeable individuals or the key informants required for the study were found to be either the export manager in large firms or the managing director mainly in small firms.
All the interviews were conducted by the author. Special attention was given to minimising chance of interviewer bias by designing and implementing a structured questionnaire, which was based on the scale format for easy response by the participants.

Collecting data from a single key informant may introduce a considerable source of measurement error. In an attempt to evaluate the extent of this limitation it was decided to gather data from two other informants namely the second and third most knowledgeable individuals as perceived by the key informant. In order to check for the possible single informant error, tests were performed to assess the equivalence of information provided by each informant based on the data collected from 20 firms. Parametric and non-parametric tests were conducted to test the hypothesis that there were no significant differences among the three groups of respondents with respect to each variable studied. The two techniques produced consistent results, which suggested that all the variables showed insignificant difference across respondents. This confirmed the use of the key-informant data collection approach adopted in the study.

3.6 Limitations of the Study

The study is exploratory in nature. Cashew is an edible tree nut and therefore the conclusions may be extended to all the agricultural crops with caution. As in most developing and underdeveloped countries, data limitations may make the study not very comprehensive. This is manifested in terms of data at the country level as well as the firm level not being available for all the comparable years. There has been no attempt made in this study to look at the relative merits of cashew versus other competing crops in terms of cost of production and the benefits that may restrict the development of the area under cashew. The exporters in the state of Kerala who contribute to the maximum cashew exports of the country have not been studied at the firm level as they underwent
several stages in their growth that had mainly to do with state intervention. The state intervention was in the form of monopoly procurement and allocation of raw cashew nut available to all the processing firms on bases like the number of workers and capacity. This was the overriding factor in their strategy.

The study assumes importance in the light of the (future) lesser intervention of the government in the affairs of the business (especially after the liberalisation measures) but acting as a facilitator. Therefore the cashew exporters in Karnataka who were unaffected by state level intervention in this industry were studied.

3.7 Summary of the Methodology

Strategy in the context of agricultural export marketing in India was sought to be studied in this research. The cashew (an edible nut) industry was chosen as it was a key contributor to agricultural exports from India. Since any agricultural commodity for exports require study of the entire value chain, the macro level analysis of the cashew industry was done by analysing the various subsectors of the industry. The key criteria used for macro level analysis were the market share and the unit value realisation at different levels. In the case of the firm level analysis, the reasoning for choosing Karnataka exporters for the study and the description of the various dimensions studied has been discussed thoroughly in the methodology.