

CHAPTER 1: INTRODUCTION

Technology has become one of the key factors and also plays a major role in every sector with regard to current development scenario. It has become so vital with out technology, achieving development or growth objectives which have become a dream in most of the fields in this highly competitive world. As such it is very important to discuss the issues pertaining to technology if we wish to study any areas to provide a compressive total solution. The study has chosen one of the plantation sector topics, (Coconut Industry), which has given greater contribution to Sri Lanka's economy for many decades. As any other sector identifying issues with regard to the technology is a timely important factor, if it is needed to be developed as an industry for future progress. By identifying technological issues is purely not enough, if the country has a genuine intention to upgrade the industry. Finding most appropriate practical solution which could be implemented in the real term is also equally important to support the industry to overcome present crisis and to contribute in a substantial manner to Sri Lankan GDP.

Emphasizing in marketing has also become equally important not only to get the competitive edge but also to maintain the market share in a consistent manner in the global market. This is one key area that is noticed but not focused in the industry in an appropriate manner. That leads the researcher to give special emphasis to Marketing and Sales promotion aspects to take the industry to a more profitable oriented manner. This is believed as an indeed requirement in the current context.

1.1 Back ground of the study

Coconut is the tree, that one can use all the parts for different types of uses. Mostly it could be for a domestic use or also could be converted to a commercial purpose. It is not revealed from which country it has been originated but way back in some early centuries some West Indian countries called this plant "coco". Information revealed later Englishman added the "nut" into this useful tree. The name is due to the hard shell inside and so it came to be called "Coconut" (*Cocous nusifera*) which we currently used.

When western countries started to colonize the tree gradually spread into other countries on a large scale. It doesn't mean there weren't any coconut trees in those countries, but it has tempted them to cultivate in a very much mass scale to achieve commercial objectives. Most of the South East Asian countries (Philippines, Indonesia, Thailand, Vietnam, Cambodia, and Malaysia). Also to some South Asian countries, such as Sri Lanka, India and Pakistan. Some Pacific islands namely Tonga, Fiji, Hawaii and also Samoa island fall into this category. One main reason the tree has spread fast in these countries is because of the availability of ideal soil & climatic conditions. Such as grade-1 sand-loam soil, suitable rain fall and right heat conditions with the correct humidity. This which leads to provide good nut production within the required time frame.

Sri Lanka too has a great history to the Coconut tree. History books state that in King Dutugamunu's time there was a giant called Gotiyimbera (one of the 10 giants in his war force- *dasamaha yoddy*) who shake the tree for nuts to fall on to the ground.

Mahawansa states that King Kashyapa (who built Sigiriya) gave milk rice by using king coconut (*Thambili*). It also revealed that King Agbo had 48 miles length coconut cultivation land from Weligama to Devinuwera and also a coconut plantation called "kurandan aru" in the Mulativu district. Those stories have provided that Sri Lanka not only has a good history but also the people use the tree for many domestic purposes.

Meeting of right environmental, weather and climatic conditions play a major role in the coconut cultivation. Such as grade 1 sand-loam soil, annual rain fall of less than 1500mm, temperature 27 C and a humidity condition of 85% are believed to be ideal conditions which have spread in most parts of Sri Lanka. As a result not only in the coast line around the island but also in many parts of the country supported with the above requirements to cultivate coconut in a large scale. In Sri Lanka the Coconut triangle (Puttlam, Kurunegala & Gampaha) has 56% of the plantation. The balance has spread as follows. Coast line (Colombo to Hambanthota) 17%, inside the country (mainly Ratnapura, Monaragala and Kegalle district) 11% and the balance part of the country which consist of 16%. (Source: Sri Lanka Coconut Statistics 2008).

The tree is one of the influential factors of the day-to-day Sri Lankan domestic life. It has led importance to grow and spread island wide the uses of the tree for many centuries. It has become not only part of the day to day life style activities and consumption purposes but also become a strong supporter in social life style. One of Sri Lankan favourite dishes is Polsambol & Kirihoddi made out of scraped Coconut kernel. Coconut milk (scraped from coconut kernel) has become an essential input to improve the quality and taste of many curries dishes in Sri Lankan meals. At the same time Coconut oil also gave a substantial contribution to Sri Lankan curries for frying and making different varieties of curries. As a result an average Sri Lankan's consumption (as scraped coconut powder & as a coconut oil) is 120 nuts per year.

Domestically it is used strictly not only in their meals; but it also had been extended to so many activities in day to day life. When they want to sweep the floor in side the house and outside in the garden they use the coconut broom is made out of coir fiber or eekels. Coconut leaves are used to cover the roof and the shell pieces are used to light the fire. They crushed extracted fiber materials are used to make ropes & it is also used as a fertilizer for plants and also use eekel & shell as a material to make beautiful ornaments. They also make use of coconut water to be converted into vinegar. These are some out of a range of uses. The other important factor is components of the tree support in many ways their social life style. Especially at weddings people decorate with coconut flower and coconut leaves to design beautiful decorations to make the ceremony colourful, as Sri Lankans believe it is the tree that provides every thing (called as *kapruka*).

However after the country became a colony especially under Englishman the tree and its production received very much commercial value. The production was converted and reconverted in to many various forms to satisfy different types of commercial needs. This leads to generate more income and revenue to the coconut land owners and as a result the cultivation began to be grown into an industrial form. Due to the fact this change not is not only for the social class that has come up as coconut estate owners but also there are different entities that begin their commercial operation by focusing this new sector.

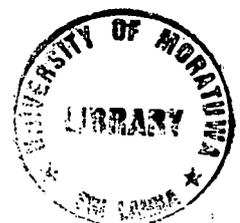
They do have a chain of activities with regard to the operation such as coconut plantation & cultivation, collecting sectors, processing operations, brokers, export and marketing oriented companies and finally shipping and freight forwarding companies.

All these activities and operations like other plantation industries gave greater impact to change the lifestyle of the society. Because of this coconut plantation industry people not only to get employment and increase their buying power but also overall society is benefited by improving road, transport and infrastructure facilities as side effects of this new venture. This has further developed to extend such as by getting an opportunity to expose to deal with international community and to change according to export market need. However this has become a continuous trend for a period of time to produce many value added products to earn the best return.

Some of the different forms exporting at present are Desiccated Coconut, Copra, Coconut oil, Coconut cream, Coconut milk, Ponac, Coconut Vinigar, Kernel based products, Coconut with out husk and with husk, different types of fiber forms(Mattress, Bristol & Twisted), different types of coir yarn products (Coir Yarn, Coir Twine, Geo Textile & Molded Coir products; brushes & Rubberized Coir) and different types of shell products (Coconut shell, pieces, powder, charcoal, eekels & activated carbon).

Though these range of products are traditionally positioned to the western countries (namely Netherlands, Italy, Sweden, UK & Germany) with the expansion of the global market and due to competitiveness of the market. It began to reach other parts of the world such as Middle East countries, USA, Russia, China, Japan & South Korea have fallen as potential regular buyers to purchase these value added products. Finally it arrives at a situation which has become a greater contributor to Sri Lankan economy by adding 1.8% GDP. According to 2009 statistics from the total plantation sector (contributed 2.8%) 1.8% contributed from Coconut exports. (Source: Dept: of Census & Statistics)

However economic dimensions have always revealed that the country has done better in the early era due to lack of concentrations in the industry it had fallen into a saturated position. It also revealed that due to lack of international marketing activities allow a competitive country gradually fall into a better position compared with Sri Lanka in the global market. By considering these views it has become indeed a need to strengthen the coconut industry not only to support economy but also the fact remains it is the industry which could stand and generate revenue with minimum effort.

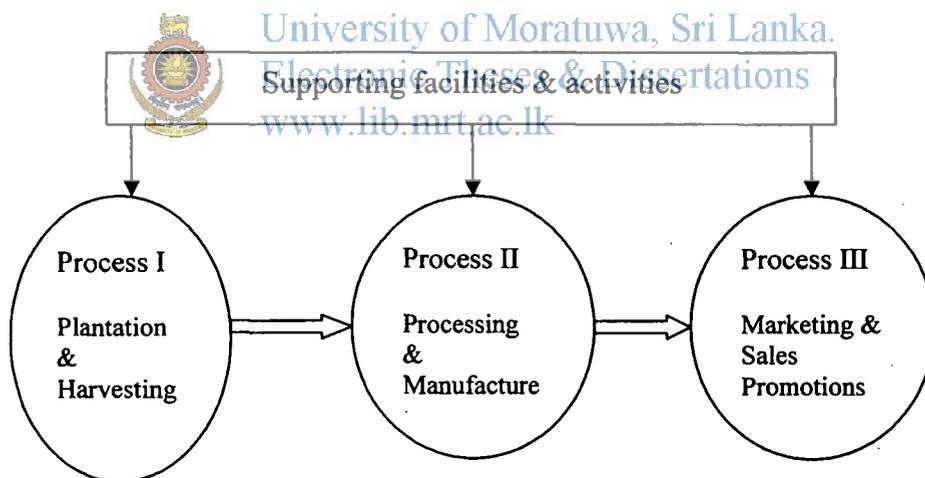


1.2 Research Problem

As any other plantation sector, glamour of Sri Lankan Coconut industry too has fallen into a deteriorated stage. After implementing an open economy policy and as a result to flourish with substitute low cost products. At the same time high attention to other exports are some leading influences for the industry's failure. It was not purely due to the open economic policies but also had many reasons which led to give a negative impact to the industry. Some of these are lack of concentration due to poor returns, lack of new technological applications, variation of the international market demand & stiff competition in the global market etc:

For the purpose of identifying all these issues in a more methodical manner, is to get the assistance of Porter's Value Chain Model and put the whole industry in to a one interconnected chain. This will provide greater assistance to identify most of the relevant issues in a more logical manner.

Figure 1.1: Coconut Industry Processes; Adopted from Michel Porter Value Chain Model



One of the major problems starts from the plantation sector. That is the scarcity of suitable land to cultivate the Coconut. The problem has become worse after starting to block and sell to the property owners. This gives substantial impact to all the other processes (processing & marketing). Especially with out the nuts kernel and non kernel products couldn't be made. As a result of nut shortage any processing and also simultaneously marketing couldn't be done. Other issues such as increasing the cost of production and poor management of the irrigation systems in the drought seasons always give a negative impact to the final outcome.

This had further been affected by not having to plant high breed of coconut and also by getting used to traditional plantation methods. Finding the required labour at the required time and other practical issues such as not been able to supply nuts at a right price to the right place are some of the remaining issues in the industry. However when we look at the overall point of the plantation it shows there are certain types of ineffective methods and practices which lead to reduce the productivity (net production) of the land. It shows that it is a necessity to use new methods or efficient mechanism to improve the yield to overcome this issue.

The processing sector too is having many issues with regard to the industry. One big issue is still using old traditional methods to process the coconut and to convert to end products. This will lead not only as wastage but also reduce the productivity and increase the cost of production, which will give a negative impact to the bottom line. Social and cultural attitudes and barriers are some other external factors which will cause a bottle neck to implement new methods. High cost of new applications, lack of knowledge & poor confidence of return of the investment are some other problems needed to be discussed. However the fact remains of novel methods or new technological applications are indeed requirements to improve the processing division of the industry.



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The final processor in marketing is playing a very much greater role to any industry and not different to the Coconut industry. Final turnover or bottom line is the most crucial factor to make or break the industry. In the coconut industry the main marketing issue that leads not to penetrate the international market by not having the ability to provide value added coconut products in a cost effective manner to meet international market needs. At the same time by not having a proper system is to identify a new or niche market and other related marketing problems. They are lack of marketing communication and sales promotion activities and also not building a brand image to provide uniqueness to Sri Lankan entity their some of the key marketing issues in the global market faced by coconut as a product. Like other processes due to the fact by not using novel methods especially for promotional activities with the support of new technology applications (to provide attractive packing and to use novel methods of distribution systems) are some of the key issues in the marketing process.

As a result it is clearly significant that by not using technological applications to the right place at the required time is one major cause for the industry's performance to decline. As such to provide right solutions, it is a necessity to identify technological issues in the coconut industry.

Having the knowledge of the industry and providing the right solution domestically is certainly is not enough to sustain it as a product, to compete in the international market. Therefore the product has to identify its correct position in the market and industry. It has to identify where the industry stands compared to the global situation. If technological applications are obsolete or do not satisfy export market requirements, this will lead to an ineffective implementation which will waste money and time both respectively. Hence to identify the best technological applications is a must to take the industry in to the international market. It is not only a profitable but also provides some consistency in the long term. To implement the most suitable technology to the industry's need is to identify the current technology status of the industry. That will result to identify the gap between Sri Lanka with global technology and meet the requirement in an appropriate manner.

In summarizing most of the problem in the industry around the use of the right type of technological application is to improve the productivity in a market oriented manner. Finding over all issues by giving special emphasis to the technological aspect and also crafting exact application to satisfy global requirement has become a vital need in the current context if we want to take the industry in a continuous growth path in the long run.

1.3 Research Objectives

Primary objective reveals is to identify Technological issues in the industry. It has become a prime concern for the purpose of improving the productivity in all three processes (Planting, Processing & Marketing) to get the competitive edge. It will give a new face to the industry to take the direction in a more optimistic manner. But that would not be fulfilling the global need fully if it has to identify Sri Lankan industrial standard especially in a technological point of view which will try to achieve through a second objective. It is a current need if the industry has an intention to par with the competitive marketing environment. Final objective will explore with right recommendation and policy strategies not only to drive industry to a profitable venture but also to open the eyes in the relevant way for the purpose of waking up this industry and to contribute it in an intensive manner to Sri Lankan economy.

Objective 1: What are the major technology problems encountered by the Coconut sector with special emphasis on Marketing & Sales Promotions

Objective 2: What is the current technology status of the Sri Lankan Coconut sector

Objective 3: Recommend policies and strategies to promote the coconut sector as a viable sector in Sri Lankan economy by overcoming technological issues

1.4 Scope of the Study

The main focus of this study is to identify the real cause effects/issues with regard to technological applications (with special emphasis to Marketing) in the Sri Lankan Coconut industry. By keeping this main scope for the purpose of convenience of studying the industry must be divided in to 3 processes according to Michel Porter Value Chain Model, namely Plantation, Processing & Marketing. By doing a detail studying & capturing data from all three processes with special emphasis to the Marketing sector is to identify relevant issues of these processes & technological (process development) connectivity.

For the purpose of supporting the main focus in a more constructive manner is to identify the current coconut industry standard in Sri Lanka. This will be done by benchmarking another country with applied technological application in a successful manner in the global coconut industry. That will provide some assistance to identify where Sri Lankan coconut industry stand especially with regard to technological status.

After fulfilling the above (capturing and analyzing the relevant data) will be able to get a detail idea about industry and relevant technological issues, which will be a great tool to design the most appropriate recommendations and necessary solutions for the industry's sustainability.

1.5 Significance of the Study

Empirical significance

Globalization is the current economical trend in the world which has been originated under market economy immaterial to any country whether they have to accept it or not. As such it is not different for a country like Sri Lanka to take the greatest effort when the economy mainly depends on exports & imports. It has become further important when competition become stiff in the international market.

For many decades the plantation sector in Sri Lanka is not doing so well compared with the early era. It has been significant mainly in the Coconut industry by reducing coconut contribution to GDP's fall from 3-4 % in the nineteen seven tees to 1-2% in the years 2005-2008 (Sources: Statistics from Coconut Research Institute) The main reason for this decline is that the people who owns the coconut plantations (small holders – owned by 90% of the total sector) income deteriorates. At the same time they tempt to focus more income generated avenues, which could easily be found under open economy.



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For the decline of the industry's income it has many variable factors. Out of those reasons, is lack of technological application at the right time in an appropriate manner which plays a major role. It has been shown especially in the past statistical figures, when compared with countries like Philippines, Indonesia, and some of other South Asian countries that applied technology in a successive manner. That is the mere reason of empirical significance of the research. It could get an opportunity to identify right technological issues in all three sectors in the industry, namely Plantation, Processing and especially marketing could provide greater assistance to find the required technological solutions. The positive result will not only assist the country's GDP but also the country's employment and improve the life style of people who are involved in the industry. On the other hand it allows people to consider the fundamental point of view of technological impotents to the plantation sector to take the strategies in to a more optimistic direction.

This will be an eye opening activity for coconut planters to realize with the assistance from technology up to what greater extend that they could improve the yields and also improve the bottom line by using cost effective implementations.

This will become further significant especially to the processing sector to reconsider their traditional processing & operational methods because of poor productivity. Applications of new methods giving not only quantitative volume increases but also improve the right qualitative standard which is indeed a need in the international market.

The other important empirical significance of this research is to give special emphasis to Marketing and sales promotion exercise. This has become a timely requirement to improve the industry in a consistent manner in the long run. Technological application in marketing activity is very much vital to any industry; not different to the coconut industry due to competitiveness of the international market. As a result with the assistance of technology to provide greater value to the product, (not only for a consuming purpose but also packaging & merchandising purpose), pricing (by supporting to manufacture low cost quality product), by using novel types of advertising & sales promotion (to create awareness) and lead to positioning the right product in the right place in the market by maintaining a high brand image in the market.

Theoretical Significance

The importance of Theoretical significance is finding to seek the possibility of building a conceptual model which could be used in the industry for the future purpose to improve the productivity in a more methodical manner. This would provide greater advantage to the industry to use it as a strategical tool to achieve objective profitability, (by improving product & process effectiveness and also cost efficiency) and also to gain the competitive advantage at the time of practical implementations globally. These types of models also play an important role in an academic point of view not only to make use of it in future references to identify industrial behaviour but also give greater assistance to carry out future research studies in the same industry in a successful manner.

1.6 Organization of the Study

Studying the area of “Technology Issues in Sri Lankan Coconut Industry with Special Emphasis on Marketing & Sales Promotion”. The study is outlined in to eight chapters, namely Introduction, Literature Review, Methodology, Situational Analysis of Coconut industry technology issues & technology status, Data Analysis & Discussion, Conclusions & Recommendations, Limitations & Future research through Managerial & Theoretical directions.

The chapters are organized as follows;

Chapter 2 deals with Literature Review. It is for the review of existing literature and any other related fields of exploring with greater knowledge of the studying area.

Chapter 3 presents Methodology which discusses the design of the study, identification of the gap between the literatures that were reviewed in chapter 2 and the objectives what were designed. Also try to fill the gap, according to the relevant objectives sampling techniques & sampling frame selections, data collection methods & methods of data analysis and building hypothesis or proposition. (Tentative relation statement)

Chapter 4 is Situation analysis of the coconut industry in Sri Lanka would be done under three categories, such as Coconut plantation & cultivation, Coconut processing & manufacturing and Coconut marketing & sales promotions. This chapter discusses the findings from the semi structured questionnaire as a discussion guide which will be done through in-depth interviews. This will be conducted by selecting large, medium and small sections from the each process. Situation analysis of the second objective would be done after gathering information from a bench mark country mainly through secondary data and try to identify any relationship or based on those two country findings.

Chapter 5 explains Data analysis and the discussion. It includes two different analysis methods based on two different objective requirements. Prime objective would be done through a partial inductive method and try to identify technological issues or variables of the issues.

Second objective is expected to be done mainly through a quantitative data analysis by comparing the two countries positive & negative coconut industry related factors with special emphasis to the Marketing aspects.

Chapter 6 emphasizes Conclusions, Policy Recommendations & Future Research Directions. Conclusions will be arrived through previous findings and analysis, which will be done through mainly inductive & also through deductive methods. Those conclusions will give the outcome of the study, and also provide the current situation of the industry.

Recommendations will be given as a policy to the industry and to the relevant authorities as appropriate guide lines or decision making criteria tool for them to use the guide necessarily. Here mainly the researcher is not expecting to test any Hypothesis but wish to build the Hypothesis or proposition (tentative relation statement) from the study.

Future Research Direction explores wishes to highlight future research opportunities which could be available, since there are very few plantation studies that had been done specially with regard to the marketing aspect. The direction will be shown in two paths to carry out future findings, such as empirical and theoretical directions. These types of research become further important as it is a great need in the current competitive environment, which provide substantial impact to Sri Lankan economy.

1.7 Limitations of the Study

Every research conducted has limitations of its own nature because of resource limitations, time considerations and much more. This study also has certain limitations of its own, first of all limiting the population into the Coconut triangle and Colombo limits where the Coconut commercial operation is happening and data collected from selected categories are some of the limitations we have put upon with considering the time factor involving the study.

Considering the sample with regard to answering the questionnaire based on the capacity of knowledge and the understanding, which is not in an expected level in some of the sectors in the industry. Since the questionnaire, perception and operational aspects differ from the margin, there are situations confused in both aspects.

Due to some of the past experience of coconut research findings (could not be practically implemented) convincing them to explore the ideas or collect data has become difficult faced by the researcher.

Since some of the plantations and also processing sectors located at a substantial distance (specially with in the coconut triangle) organizing itinerary and travelling in those locations could be explained as some of the bottle necks research had gone through at the time of collecting quantitative and qualitative data. For the reason of protecting security of industry's secrets and not to disclose their unauthorized practices in some places had restrictions (specially in the DC & Oil processing centers) to observe actual operations.

Reliability of some data in some sources become a question because of indicating different figures in their journals and the web sites. Researcher had a greater difficulty to identify and gather information (hard data) from a bench marked country due to high competitiveness of the industry in the global market.

At present the total industry is facing a huge nut shortage and impact to the industry (Plantation, Processing and Export sector) is substantial. The fact revealed most of the issues are rising around this main co issue. As a result of this nut shortage resists as a bottle neck in the inception of some of the discussions and not allowed to a carry out the discussion to a certain depth and to get some of the industrial related issues in detail.