Export Performance of Coconut Sector of Sri Lanka

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Author's contribution

The sole author designed, analysed, interpreted and prepared the manuscript.

Original Research Article	

ABSTRACT

Aims: The study aims to identify the coconut export market of Sri Lanka based on market share and market growth and to classify coconut-importing countries using BCG matrix in order to facilitate potential strategic marketing decisions.
Study Design: This is a quantitative study based on secondary data.
Place and Duration of Study: This study is based on Sri Lanka's coconut exporting sector. The secondary data were collected from 2009 to 2019 from the various annual report of Central Bank of Sri Lanka, export performance report of Export Development Board of Sri Lanka and TRADEMAP.
Methodology: The data were first tabulated and then generated as graphs to display market share and growth. The Boston Consulting Group (BCG) matrix was used to classify coconut export market into four groups, namely stars, cash cows, question marks and dogs.
Results: Export performance of coconut sector increased based on the export value. Similarly, the percentage share of coconut exports to the total exports increased from 3.5% to 5.5% over the last decade. United States of America (USA), Germany and the United Kingdom (UK) are significant importers of Sri Lankan coconut and coconut-based products. India, Mexico and Australia showed a growing trend in the growth of market share for coconut and coconut-based products. According to the BCG matrix, the USA is categorised under the star market, and no countries fall in the cash cow market. Sri Lankan coconut market with India, Mexico, Australia, Germany, France, Netherlands, United Arab Emirates (UAE), UK, South Korea, Italy, Canada, Japan, China, Spain and Russia fall into question mark markets. Turkey, Pakistan, Egypt and Iran are grouped into dogs market category.

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Conclusion: By identifying the position of the country at the BCG matrix, the coconut industry would carry out activities and projects to earn additional income and capture more world market share for coconut and coconut-based products. Policymakers should consider the position of the country while implementing related policies.

1. INTRODUCTION

Sri Lankan agriculture sector has continuously performed as a key economic force in Sri Lanka, providing a significant contribution to the national economy through food security and employment. Sri Lanka exports a variety of agricultural products to the rest of the world. Agriculture exports contribute to 22% to the national exports in 2018 [1]. The principal crops are tea, rubber, coconut and minor crops, especially spice crops such as cinnamon, cardamom, nutmeg and pepper. Coconut sector is the third essential sector, followed by tea and rubber. Coconut is one of the major plantation crops in Sri Lanka, which accounts for approximately 12% of all agricultural produce in Sri Lanka with the total land area under cultivation covering 409,244 hectares and about 2,500 – 3,000 million nuts produced per year in 2017 [2]. The coconut tree benefits the people of Sri Lanka in several ways due to its multiple uses. Sri Lanka is the fourth-largest exporter of coconut products to the world [3]. Sri Lanka exports a variety of coconut and coconut-based products such as desiccated coconut, virgin coconut oil, fresh coconut, copra, coconut milk powder, coconut cream, coconut water, and fibre products to the world. Sri Lanka is very popular in the world market for desiccated coconut and brown fibre. Due to its different white colour and a characteristic taste, Sri Lankan desiccated coconut ranks the fourth position in the world export market for all kernel products [2]. Sri Lanka holds the number one position for the exports of brown fibre because of its unique drum system used to extract fibre, and produces long pure fibre, which is more appropriate for the brush industry. Overall, Sri Lanka's coconut products are preferred by the world due to unique art of agriculture technology, favourable climate, excellent quality, eco-friendly cultivation and manufacturing process, social compliance practices, deep expertise in the industry and continuous product innovation [3].

Sri Lanka's coconut export performance has increased continuously in terms of export quantity, export earnings and the number of new unique products. BCG matrix is one of the most widespread tools. There is a challenge to establish and maintain the country's coconut in the international market effectively and efficiently. The marketing system keeps up with these challenges in the dynamic global market, for great rivalry among significant competitors. Therefore, this study was aimed to analyse coconut export marketing using the BCG matrix. The objectives of the study are (1) to identify the coconut export market based on market share and market growth and (2) to classify coconut-importing countries using BCG matrix and determine potential strategic marketing decisions.

2. REVIEW OF LITERATURE

In the last two decades, Sri Lanka's coconut production has increased with frequent fluctuation due to lousy weather. Export volume has continuously improved with new additional diversity of export products. By understanding the importance of coconut production and export earnings from coconut and coconut-based products, Sri Lankan government has imposed several policies to support the coconut sector. Strategic management of the country's coconut niche market remains unexplored.

Strategic planning is the base for decision-making in any business [4] and several strategic planning tools have been established. One of the most popular tools to do strategic planning is BCG matrix [5] which classifies markets by positioning and evaluating the business according to relative market share and growth rate [6,7]. In strategic management, BCG matrix has been used for several purposes such as an analytical tool, manage the portfolio, branding, management of products, decision-making of investment and choice marketing decisions [5,8]. The BCG matrix categorises positions of products or business along with two dimensions. First is the attractiveness of the market measured by the market growth rate, in the vertical axis and second is the ability of the product to compete by its relative market share, in the horizontal axis [9,10]. Each axis is represented in 'High' and 'Low' categories [11].

Developing a thorough export strategy comforts to define export aims and match the available resources. Three aspects such as market, competitors and competitive advantage provide concise strategic management. Multi-national companies use diverse strategic management models to face their competition in the market by using competitive advantages. Generally used models are the BCG matrix and General Electric (GE) model. The BCG and GE-matrix operate fields with lots of similarities and have different advantages [12]. Nevertheless, both analyses have their right to exist and systematically analyse markets using various parameters such as market size, market growth, level of competition, norms and values of the target market. This study concerned of analysing coconut export marketing using the BCG matrix, an analytical tool that has been widely used in strategic management.

The following are the classifications of BCG analysis:

Quadrant I(stars): Denotes countries with high export share and high export growth.

Quadrant II(cash cows): Denotes countries with high export share but low export growth.

Quadrant III(question marks): Denotes countries with low export share but high export growth.

Quadrant IV(dogs): Denotes countries with low export share and low export growth.

The output of this research is useful in assisting the policymakers on strategic management issues and would enhance exports of coconut by identifying the market categories, which could be classified as stars, cash cows, question marks and dogs.

3. METHODOLOGY

3.1 Study Area

Sri Lanka is an island in South Asia, located southwest of the Bay of Bengal and southeast of the Arabian Sea in the Indian Ocean. The agriculture sector is considered to be the backbone of the Sri Lankan economy. Even though its contribution to the gross domestic product (GDP) declined substantially during the past three decades (from 30 percent in 1970 to 7 percent in 2018), it is the most important source of employment for the majority of the Sri Lankan workforce. Approximately 25 percent of the total labour force was engaged in agriculture in 2018 [1].

3.2 Data Collection and Data Analysis

The study used the secondary data, which were collected from various issues of annual reports of Central Bank of Sri Lanka, export performance report of the Export Development Board [3] and TRADEMAP [13]. First, the data were tabulated and then generated as graphs to identify market share and growth. The BCG matrix was used to classify coconut export market into four cells, namely stars, cash cows, question marks and dogs. The BCG matrix provides simple two-dimensional analysis on management of Strategic Business Units (SBU) where the industry growth rate was marked on the vertical axis and relative market share on the horizontal axis [14]. The revenue was used as the third dimension in the z-axis. The revenue was expressed by the size of the bubble in the BCG matrix. BCG matrix may assist the company, in this case, country to allocate resource efficiently and used to supply branded products and develop the quality of the products. The secondary data were analysed using the excel program. The two parameters, such as the rate of market growth and relative market share, were used to classify the export market. The rate of the market growth was measured using the following formulae.

$$G = \frac{(P1 - P0)}{P0}$$

Where P_1 is the value of coconut exported in a particular year (Year 1) in million US dollars and, P_0 is the value of coconut exported in the previous year (Year 0) in million US dollars. G represents the rate of market growth between the particular years as a percentage. The average rate of market growth for five years, *AG* can be measured as follows.

$$GA = \frac{1}{5}\left\{ \frac{(P1 - P0)}{P0} + \frac{(P2 - P1)}{P1} + \frac{(P3 - P2)}{P2} + \frac{(P4 - P3)}{P3} + \frac{(P5 - P4)}{P4} \right\}$$

The relative market share for a given destination was calculated using the following formula.

$$MS = \frac{VD}{VL}$$

Where MS is the relative market share, *VD* is the value of coconut exported to a given destination at a given period, *VL* is the value of exported coconut by the market leader in the same period.

4. RESULTS AND DISCUSSION

The coconut industry is one of the major sectors that contribute to Sri Lanka's exports sector. The value of coconut export continuously increased from 2009 to 2017, and export value stagnated at 590 million US dollars in the year 2017 and 2018. Finally, it decreased to 424 million US dollars in 2019 (Fig. 1). The reduction could be due to reduced production of coconut nuts which was caused by unfavourable weather in the previous year. The overall export value showed an increasing trend over the years. The export share of coconut products out of total exports showed an increasing trend with recurrent fluctuation, as shown in Fig. 2. Currently, coconut exports contribute to approximately 5.5% of the total exports of Sri Lanka. Various reasons can be extended to explain this development. Firstly, the Sri Lankan coconut sector acquired more land area under cultivation and several policies implemented in favour that could be the reasons for increased production. Secondly, the demand for Sri Lankan products has been increased due to its excellent quality and eco-friendly cultivation and manufacturing process.
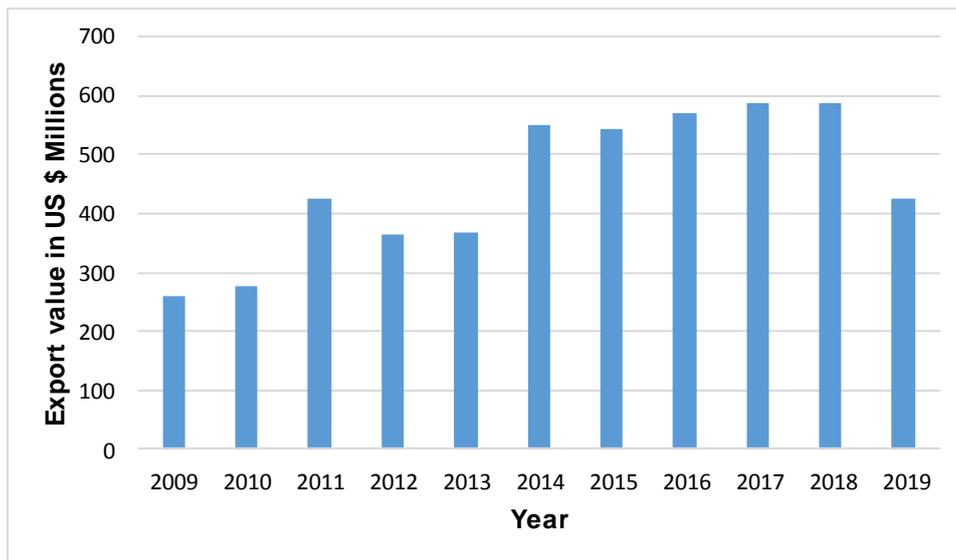

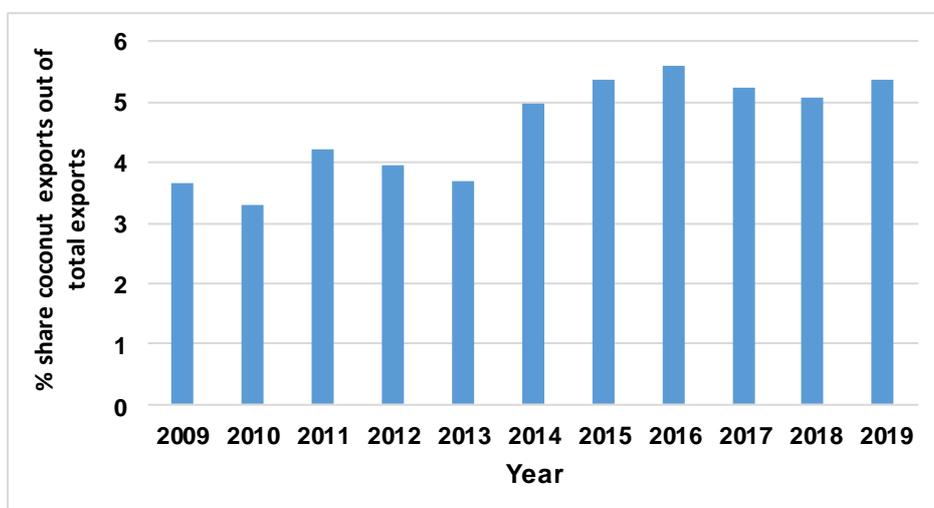**Fig. 1. Export value of coconut export from Sri Lanka**

Fig. 2. Share of coconut export to the total exports from Sri Lanka

The composition of coconut exports can be categorised as coconut kernel products, which contributed to nearly 50% of total exports followed by coconut fibre products (32%) and coconut shell products and others (18%). The market concentration index is a statistical parameter, which provides a measurement of the market concentration of a certain product, a product sector or of all products of a country as a whole [2]. Market concentration index of coconut and coconut-based products continuously increased from 14.29 in 2000 to 18.54 in 2018. It indicates that risk for the exports due to market failure slightly increased to coconut and coconut-based products over the last two decades. This risk may be due to high exports from the competitive exporting countries of coconut. Fig. 3 shows the trade balance of the desiccated coconut, the dominant kernel coconut product. Colour of the bubble expresses the sign of the trade balance where blue colour expresses a positive trade balance, while yellow colour expresses the negative trade balance. The size of the bubble is proportional to the exported value of the countries for the desiccated coconut. According to the trade balance, Phillippines is ranked first, followed by Indonesia, Sri Lanka, Vietnam,

Singapore, Malaysia, Dominican Republic and Ghana.

The following Table 1 shows the export value of coconut and coconut-based products and its percentage to the total coconut exports to the importing countries. Sri Lanka's primary importer of coconut and coconut-based products is the USA, accounted for 19.31% followed by Germany (7.8%), the UK (6.53%), China (5.35%), Japan (4.87%), Netherlands (4.76%) and Australia (4.56%).

4.1 Market Growth Rate

Even though the export market share is high, it does not necessarily have a positive growth rate. Fig. 4 depicts the average growth rate of the market share of significant importers of coconut and coconut-based products over the last five years from 2014-2018. The exports of these products continuously increased in the increasing rate for the countries such as India, Mexico and Australia [15]. Other countries such as France, Germany, Netherlands, USA and the UK showed a positive growth rate. On the other hand, exports to Iran, Egypt, Pakistan and Turkey displayed a negative growth rate.
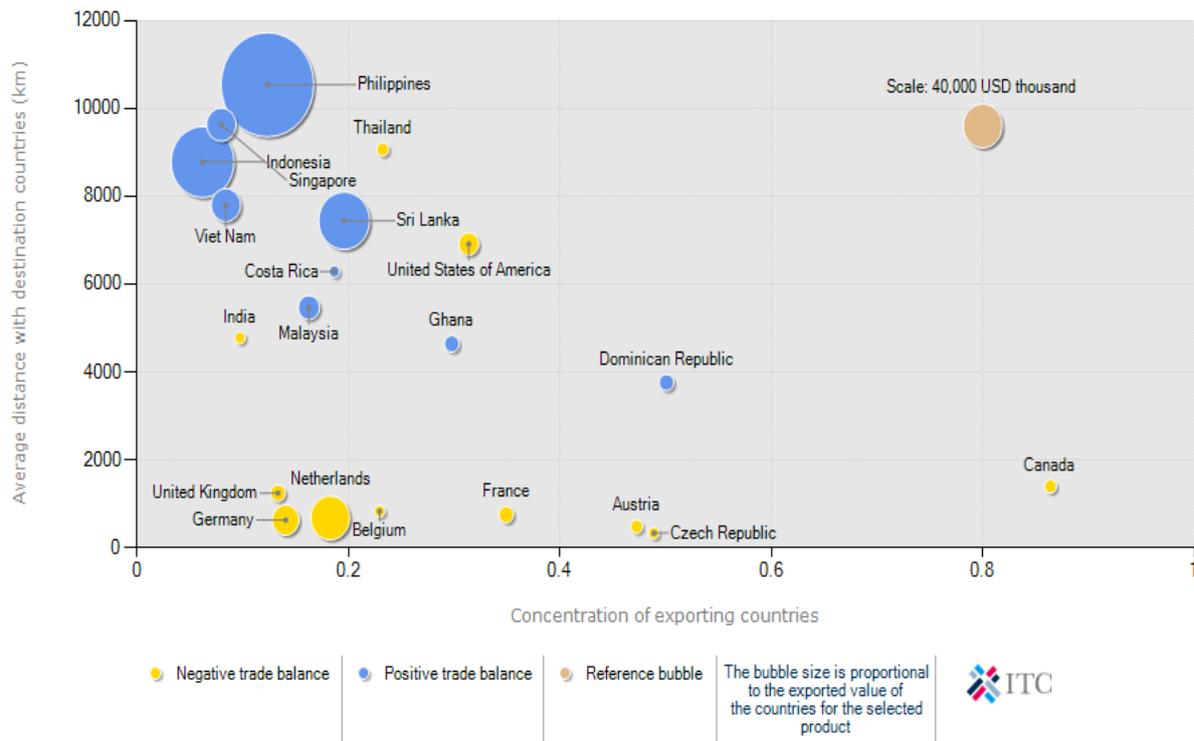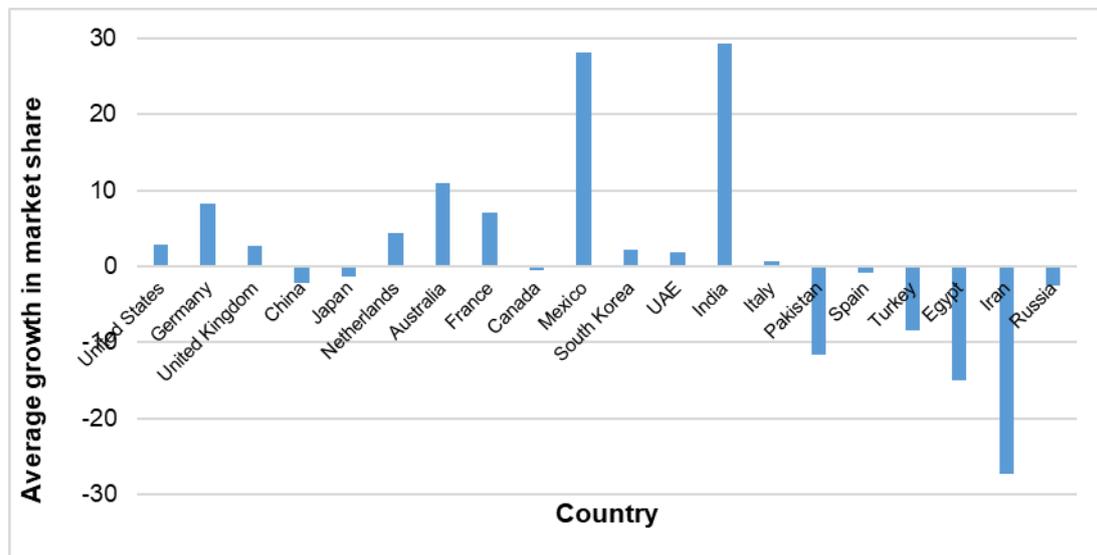

Fig. 3. The concentration of exporting countries and average distance with their destination for desiccated coconut product in 2019
Source: TRADEMAP, 2019

Table 1. Value of exported coconut and coconut-based product by destination in 2018

Country	Export value in 2018 (US $ Millions)	Percentage of exports in 2018 (%)
United States of America (USA)	113.20	19.31
Germany	45.90	7.80
United Kingdom	38.43	6.53
China	31.47	5.35
Japan	28.64	4.87
Netherlands	28.00	4.76
Australia	26.85	4.56
France	20.70	3.41
Canada	19.54	3.32
Mexico	18.61	3.16
South Korea	15.78	2.68
Unites Arab Emirates (UAE)	14.90	2.53
India	14.09	2.39
Italy	11.24	1.91
Pakistan	10.22	1.74
Spain	9.28	1.58
Turkey	8.86	1.51
Egypt	8.79	1.49
Iran	5.59	0.95
Russia	5.50	0.93

Fig. 4. The average growth rate of the market share of coconut and coconut-based products against its importing countries

4.2 Relative Market Share

In general, exports of coconut and coconut-based products from Sri Lanka account for a large proportion of 11.8% in international coconut trade [13]. Sri Lanka has been ranked third next to the Philippines with 41.7% and Indonesia with 19% [13]. It has been identified that the USA, Germany, the UK, China, Japan, Netherlands and Australia are the key markets for coconut products (Table 2). This observation could be related to the fact that most of Sri Lanka's export coconut has been marketed to the USA, Germany and the UK in the last few years (Table 2). Relative market share is very low for the countries, namely Egypt, Iran and Russia, and this market share may be captured by other competitive countries such as the Philippines and Indonesia.

Table 2. The relative market share of coconut and coconut-based products export

Country	Relative Market Share (%)
United States of America (USA)	45.41
Germany	18.41
United Kingdom	15.42
China	12.63
Japan	11.49
Netherlands	11.23
Australia	10.77
France	8.30
Canada	7.84
Mexico	7.47
South Korea	6.33
Unites Arab Emirates (UAE)	5.98
India	5.65
Italy	4.51
Pakistan	4.10
Spain	3.72
Turkey	3.55
Egypt	3.53
Iran	2.24
Russia	2.21

4.3 Classification of Coconut Market Employing the BCG Matrix Approach

In the BCG matrix, strategies were developed based on markets' relative position. The four-quadrant of the matrix, derived by categorising the two variables relative market share and market growth into "high" and "low" areas, allow the units to be grouped into four categories such as stars, cash cows, question marks and dogs. There are four strategic decisions such as to invest, divest, maintain and competitive related to the four cells of the BCG matrix [16]. Stars are divisions that have high market share in markets that are growing speedily. These markets generate enthusiasm as they create heaps of cash due to their high market share. Simultaneously, they require substantial cash to fuel their sustained growth in the rapidly expanding market and to keep away competitors who wish to take away their market share. When the rate of market growth and relative market share is considered, the USA emerges as the star market for export coconut (Fig. 5), and thus it should be maintained.

Cash cows have a dominant market share in markets that are not growing significantly. No market can be categorised under the cash cow category for Sri Lankan coconut market. Question marks are the category of markets with low market share and high average market growth rate that overgrow. As a result, question marks markets consume large amounts of cash, because they have low market shares, and they do not generate much cash. Sri Lankan coconut market with India, Mexico, Australia, Germany, France, Netherlands, UAE, the UK, South Korea, Italy, Canada, Japan, China, Spain and Russia could be grouped into question mark markets (Fig. 5). The increasing market prospects for Sri Lankan coconut in the world, principally in these countries necessitate further investment in marketing of the product to guarantee that the market is turned into either a star or cash cow. The final group of markets are known as dogs that have a low market share and a low growth rate, and neither produce nor consume a large amount of cash. Countries such as Turkey, Pakistan, Egypt, and Iran possibly clustered into dogs market (Fig. 5). There is a need for further exploration of market opportunities for coconut market in these countries to provide suitable coconut products in dog markets by diverting from these markets. In addition to these relative market shares, average market growth and revenue from exports, there are a broader array of variables that needs to be considered. PESTEL factors such as political, economic, social, technical, environmental and legal additionally are used to analyse and map how the external environment influences an industry [17].
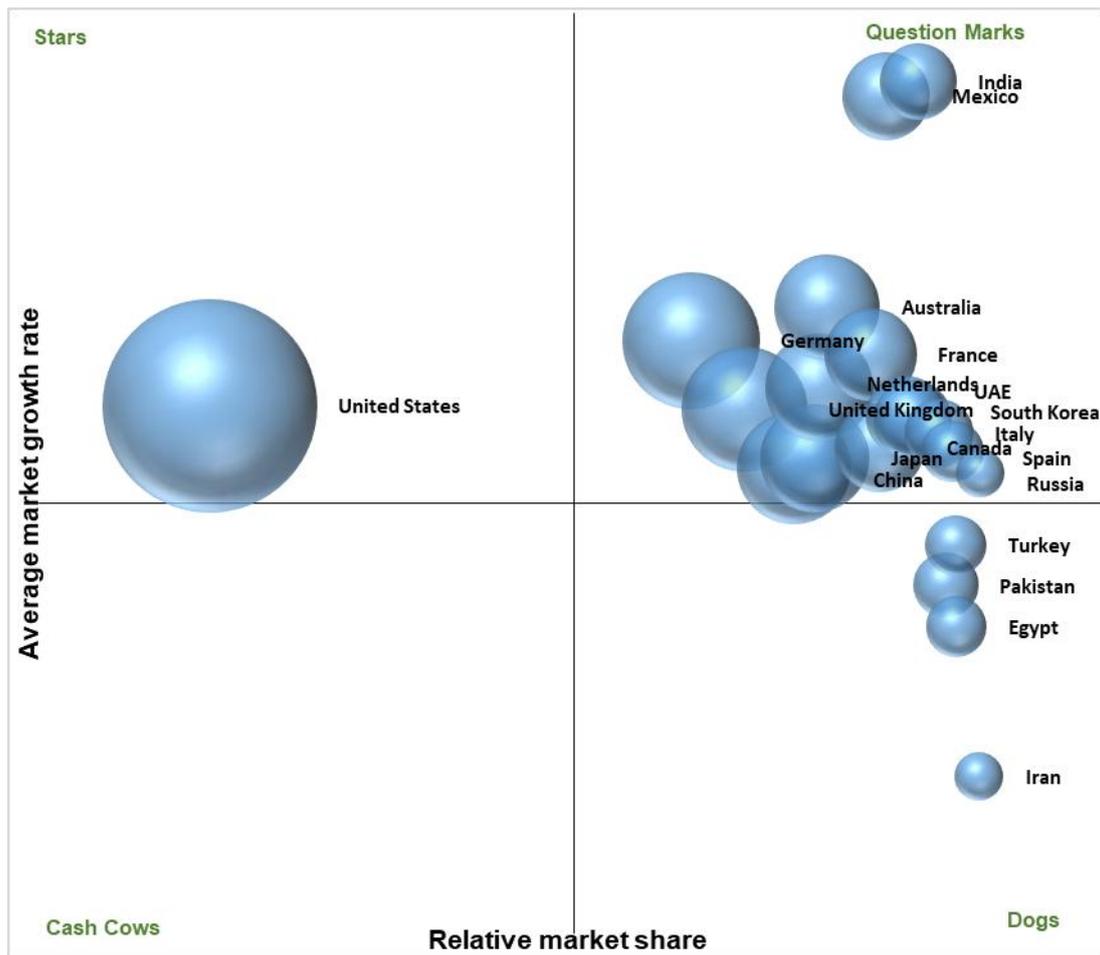
Fig. 5. BCG matrix of coconut export market of Sri Lanka

5. CONCLUSION

According to the recorded data by the Export Development Board, Sri Lanka, coconut export share out of total export has increased during the last ten years. Export value of coconut and coconut product has increased from 2009 to 2018. However, in 2019, export value reduced compared to the previous year. The major importers of Sri Lanka's coconut and coconut-based product are the USA, Germany, United Kingdom, China, Japan, Netherlands and Australia. The USA consumes approximately 20% of coconut exports. Over the last five years, the growth rate of market share was increased in increasing rates for India, Mexico and Australia. BCG matrix was used to categorise coconut market of Sri Lanka using main two parameters namely relative market share and rate of market growth to express the position in the matrix and the third parameter; revenue was used to show the size of the market in the matrix. The USA was the only country that was classified under the star market, which has higher relative market share and growth rate. Most of the countries fall under the question mark and more attention should be given to bring those countries to star or cash cow categories. Participation in regional and international events should be encouraged as a way of improving the quality aspects of the country's coconut products and further to promote marketing.

Sri Lanka should look for the potentials of international agreements to regulate export availability of coconut and to raise the market price. Therefore, policymakers should consider the position of the export market of coconut when implementing policies related to the coconut sector.

COMPETING INTERESTS

The author has declared that no competing interests exist.

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