

# Comparison of the Cultivated Area and the Production Trends of Ceylon Cinnamon with the Main Competitors in the Worlds' Total Cinnamon Market

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**Abstract-** Ceylon Cinnamon, which is popularly termed as 'True Cinnamon' is a derivative from the bark of an indigenous to Sri Lanka plant *Cinnamomum zeylanicum* Blume. The competition pertaining to Ceylon Cinnamon in world trade has already become significant, as the worlds' total Cinnamon market is comprised not only of True Cinnamon, but of Cassia; the closest substitute and a spice inferior to True Cinnamon as well. Sri Lanka has to compete with three Cassia producing countries in the total Cinnamon market, as China, Indonesia and Viet Nam; the three major Cassia producers are the major producers of the total Cinnamon market as well. According to the experts, lack of productivity of Ceylon Cinnamon cultivated lands and insufficient production to fulfill the worlds' demand for Cinnamon is one of the major issues and, which have to be immediately addressed to be cope up with and to withstand the competition in the total Cinnamon market. In this context this research aimed to identify the cultivated area and production trends of Ceylon Cinnamon comparing them with those of major cassia producers. The FAOSTAT (Food and Agricultural Organization Statistics) database was used as the data source. Results revealed that Ceylon Cinnamon cultivated area has expanded in a minute pace and Ceylon Cinnamon production remains almost constant throughout the years compared to the major Cassia producers. The average annual productivity of 'Ceylon Cinnamon' have remained constant at about 500 kg/ha, throughout the past thirteen years, in which China and Indonesia have shown an average productivity of about 1350 kg/ha and 1000 kg/ha respectively.

**Index Terms-** Cassia, Ceylon cinnamon, production trends, productivity

## I. INTRODUCTION

Cinnamon is the most important tree spice produces from Sri Lanka. The Cinnamon produced from Sri Lanka; Ceylon Cinnamon (*Cinnamomum zeylanicum* Blume) stands out from the rest of the spices produced in Sri Lanka with its distinctive taste and aroma and popularly termed as 'True Cinnamon'. The total Cinnamon market comprises not only with True Cinnamon; which is *Cinnamomum zeylanicum* or *Cinnamomum verum*, but also with Cassia. Sri Lanka, Madagascar and Seychelles are the producers of True Cinnamon, where Sri Lanka holds a monopoly having 90% share of the international market for True Cinnamon (Ravindran *et al*, 2003). Cassia (a collective term for *Cinnamomum cassia*, *Cinnamomum burmannii* and *Cinnamomum loureirii*) is inferior to Ceylon (True) Cinnamon, and it is the closest substitute for Ceylon (True) Cinnamon in the world market. Cassia is mainly produced and exported from the East Asian region making China, Indonesia and Viet Nam, the leading producers and exporters. Even though Sri Lanka drives the production of Cinnamon within the True Cinnamon category, China, Indonesia and Viet Nam are the major producers and exporters as well the major competitors to Sri Lanka, when considered the world's total Cinnamon market.

To Sri Lanka, Cinnamon industry is not only important as an export agricultural trade, but its role in rural economy for providing revenue and employment to people. Most of the Cinnamon cultivated lands are owned by small holder plantations. There are about 250,000 Cinnamon cultivators and 400,000 Cinnamon sector employees (commonly known as peelers) in Sri Lanka and 60,000 family units are dependent directly on the Cinnamon industry being the main source of income (Rupasinghe 2011). According to Department of Agriculture, as of 2012 total cultivated land extent of Cinnamon was 30,432 ha, where Galle district is the main Cinnamon cultivation area with 41% of share in the total cultivated extent, followed by Matara and Ratnapura districts with 21% and 14% of shares respectively. The remaining 55% of the cultivated land are mainly in Hambantota, Badulla and Kalutara.

The True Cinnamon market has lost about 5% of its share in both volume and value in the world market during the past five years. In other words for each year during the recent five years the True Cinnamon market has declined 1% of its global trade. Despite holding a monopoly in the world market for True Cinnamon, (having more than 85% of the production and exports) Sri Lanka has faced to the threat to dominate a rapidly shrinking market. As far as only Sri Lanka's world trade of Cinnamon is considered, Sri Lanka has lost about 10% of its share in the value-wise world Cinnamon market and about 5% of its share in the volume-wise world Cinnamon market during the last decade. Indonesia and China, the major producers of Cassia have together captured almost 80% of the volume-wise Cinnamon world market and almost 60% of the value-wise Cinnamon world market. There has been an increasing trend in export of cassia products from Indonesia, China and Vietnam, while the true cinnamon export could not keep up the pace. (Piyasiri, 2014).

According to the experts in the field, one of the major reasons for the loss of market share is the reduced production and/or productivity of Cinnamon plantations, which has led to an insufficient Cinnamon supply for the exportation to fulfill the market

demand, which is then fulfilled by Cassia; inferior, but the closest substitute for Cinnamon. Sri Lanka typically exports between 65% and 75% of its annual production (Johnaton, 2003). Thus, increasing the country's Cinnamon production, via enhancing the productivity of the Cinnamon cultivated lands is one of the major recommendations to maintain the competitive position of Ceylon Cinnamon in the total Cinnamon market which comprises not only True Cinnamon, but with Cassia, mainly produced by China, Indonesia and Viet Nam. In this context, it is important to identify the cultivated area and production trends of Ceylon Cinnamon and to compare them with those of major cassia producers.

## II. METHODOLOGY

The research problem of the study was identified through the review of the records and articles available in the Department of Export Agriculture on Cinnamon production. Secondary data and information were collected through a review of literature and statistical data were collected via the FAOSTAT (Food and Agricultural Organization Statistics) database. The fluctuations of production, Cultivated area, and productivity of Ceylon Cinnamon were compared with those of the major cassia producers; China, Indonesia and Viet Nam using descriptive statistical tools.

## III. RESULTS AND DISCUSSION

According to the estimations of the Department of Export Agriculture, the Ceylon Cinnamon cultivated land extent was 31,278 ha in 2013. During the last two decades, a distinctive increment in Cinnamon cultivated land has shown only within the period of 1990-1993, which was remained almost constant for about a decade thereafter. Subsequently the land extent has gained some accelerated growth by mid- year 2003, but was not able to exceed the growth achieved during the 1990-1993 period. During the most recent five years Cinnamon cultivated land extent has increased only by 1792 ha, which is only a percentage of 6. Ceylon Cinnamon cultivated extent shows a very slight rising trend compared to that of Indonesian and Vietnamese cassia.

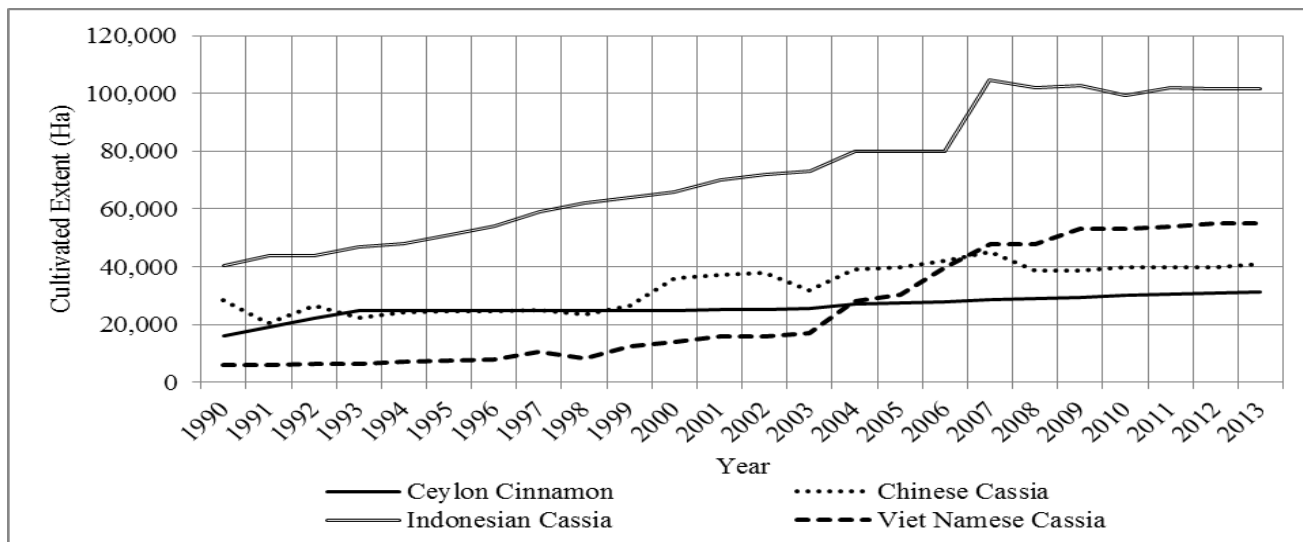


Figure 1: Comparison of the cultivated area of Ceylon Cinnamon with major Cassia producers

Data Source: FAOSTAT, 2013

Even though Indonesia has the highest Cassia cultivated land extent, compared to other two major producers, Viet Nam outperforms both Indonesia and China when considering the expansion of Cassia cultivated area. Viet Nameese Cassia cultivated extent was lower than the Ceylon Cinnamon cultivated extent before 2004, and after that Viet Nam has shown a distinctive rise in cultivated extent outperforming both Sri Lanka, and the second largest producer in the total Cinnamon market, China. Chinese cassia cultivated extent has fluctuated than the other three major producers in the total Cinnamon market, during the 1998-2009 period. Since 2009, Chinas' cultivated extent has remained almost constant.

Table I: World production of cinnamon during 1971–2012

Countries	Period I (1971-1980)	Period II (1981-1990)	Period III (1991-2000)	Period IV (2001-2012)

	Area (ha)	Prod. (Mt)	Area (ha)	Prod. (Mt)	Area (ha)	Prod. (Mt)	Area (ha)	Prod. (Mt)
Sri Lanka	21,628 (43.3%)	10,334 (39.3%)	21,088 (23.1%)	10,318 (19.7%)	23,292 (18.5%)	12,010 (15.0%)	30,106 (15.8%)	13,920 (8.2%)
Indonesia	18,790 (37.6%)	8076 (30.7%)	41,873 (45.8%)	21,100 (40.3%)	56,603 (44.2%)	35,742 (44.5%)	78,078 (41.0%)	85,886 (50.65%)
China	-	5700 (21.7%)	35,000 (38.2%)	17,200 (32.9%)	35,000 (27.7%)	26,350 (32.8%)	41,307 (21.7%)	53,700 (31.7%)
Viet Nam	1500 (3%)	425 (1.6%)	3295 (3.6%)	1700 (3.3%)	7640 (6.1%)	4210 (5.2%)	36,986 (10.4%)	14,055 (8.2%)
World	49,937	26,281	91,421	52,338	126,207	80,361	190,477	169,561

Data Source: FAOSTAT, 2013

(Notes: Production figures are in decadal average)

Country-wise contribution to the world production over the period as presented in Table I indicates that Sri Lanka, the traditional producer of True cinnamon, contributed about 39.3% of the total world production in the 1970s (period I). Its share came down to 19.7% during period II (1980–90), to 15% during period III (1991–2000) and to 8.2% during period IV (2001–2012) showing distinctive declining trend. Sri Lanka has lost its contribution to the world's total Cinnamon production from about 30% compared to the 1971–1980 time period. Countries like Indonesia and China have improved their contribution from 30.7% and 21.7%, respectively, in period I to 40.3% and 32.9% in the period II. Indonesia have shown a distinctive rise in the portion of contribution to the world's total Cinnamon production by contributing 44.5% in period III and 50.65% in period IV. Vietnam is the other country which has contributed considerably to world production of cassia cinnamon with an annual production of more than 10,000 t in the recent past. In period IV, Vietnamese cassia production has increased by about 233% compared to period III.

The world's total Cinnamon cultivated area has increased from 49,937 ha to 169,561 ha from period I to period IV, showing about 280% increment. By the period IV (2001–2012) cultivated area of Ceylon Cinnamon has increased from about 39% compared to the 1970–1980 period, while showing a 29.2% increment compared to the 1991–2000 time period. Cultivated areas of three cassia producing countries have increased dramatically from period I to period IV. In Indonesia it has increased from 18,790 ha in 1971–1980 period to 78,078 ha during 2001–2012 period. In China, the cultivated area has increased from 35,000 ha in 1981–1990 period to 41,307 ha during 2001–2012 period, and in Viet Nam, the cultivated area has increased from 1500 ha in 1971–1980 period, to 36,986 ha during 2001–2012 period, showing the highest percentage growth in cultivated area compared to other cassia producing countries. Indonesia and China have achieved an increase of 38% and 19% in cultivated area respectively, by the period of 2001–2012.

The production of Ceylon Cinnamon remains almost constant despite showing a very slight rising trend over the years while the other Cassia producing countries especially Indonesia and China shows a rapid rising trend. The production of those two countries is more than five folds of Ceylon Cinnamon production. Although during the period of 1993–2009 the Ceylon Cinnamon production showed a stagnancy between 12,000–13,000 metric tonnes, it has gained a slight increment in production after 2009 (Figure 2). According to the latest estimations the Cinnamon production has exceeded 16,000 metric tonnes in 2013.

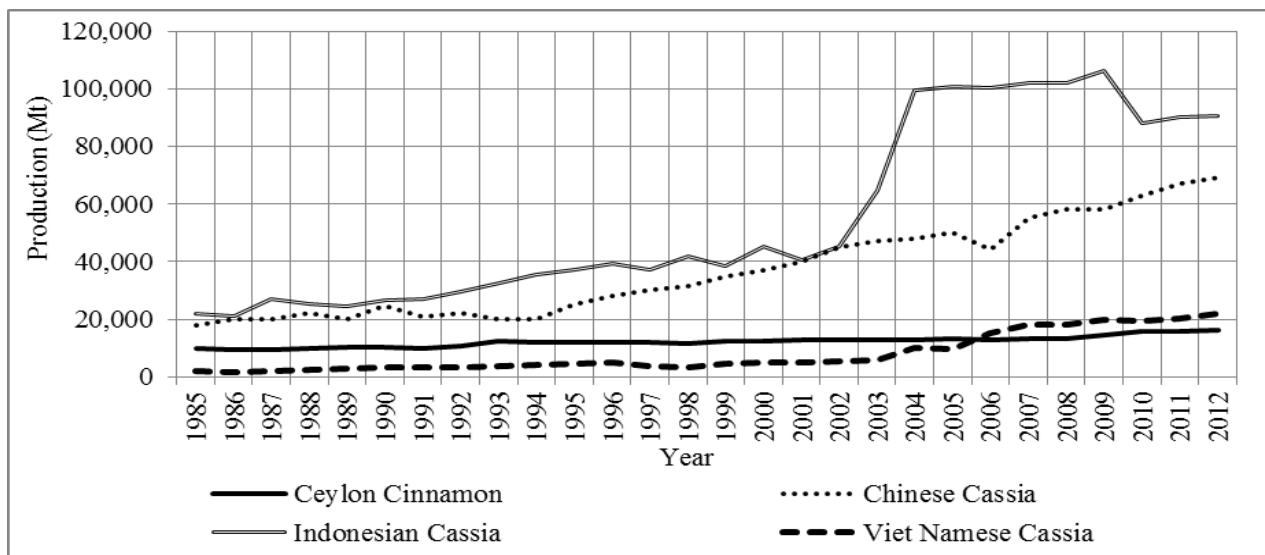


Figure 2: Comparison of production of Ceylon Cinnamon with major Cassia producers  
 Data Source: FAOSTAT, 2013

In the year 2012, Ceylon Cinnamon production was 16,090 Metric tonnes while China producing 69,000 Metric tonnes and Indonesia producing over 90,000 Metric tonnes (Figure 2).

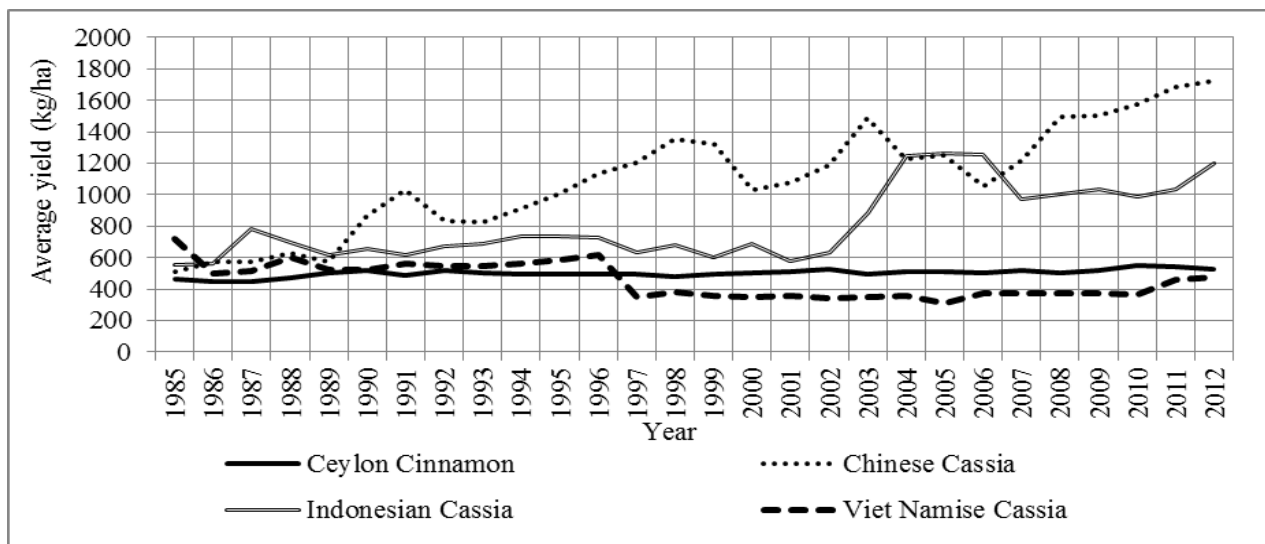


Figure 3: Comparison of the productivity of Ceylon Cinnamon with major Cassia Producers  
 Data Source: FAOSTAT, 2013

The average annual productivity is around 500 kg of ‘Sri Lankan Cinnamon’ per hectare. In the year 2012, the productivity was about 528.8 kg/ha (Figure 3) which showed a decrease of about 18 kg/ha compared to the previous year. In China the mean productivity was around 1350 kg/ha during the past thirteen years. Indonesia have shown an average productivity of about 1000 kg/ha during the previous thirteen years. After 2012, the highest recorded yield of above 1600 kg/ha is from China in Chinese cassia and the lowest productivity is been recorded from Viet Nam.

#### IV. CONCLUSION

Ceylon Cinnamon cultivated area has only shown a slight expansion over the past two decades, while Viet Nam and Indonesia have expanded their Cassia cultivated lands aggressively. Even though presently Ceylon Cinnamon cultivations are concentrated in Southern, Western, Uva and Sabaragamuwa provinces, now Sri Lanka has the potential and is expedient to extend the Cinnamon cultivation in to the North and Eastern Provinces, after the end of thirty years of war.

The production of Ceylon Cinnamon remains almost constant despite showing a very slight rising trend over the years while the other Cassia producing countries especially Indonesia and China show a rapid rising trend. The average annual productivity of 'Ceylon Cinnamon' has remained constant at about 500 kg/ha, throughout the past thirteen years, in which China and Indonesia have shown an average productivity of about 1350 kg/ha and 1000 kg/ha respectively.

Opinion of the experts in the field is that making Ceylon Cinnamon production a raise would contribute for some extent to safeguard the position of Ceylon Cinnamon in the worlds' total Cinnamon market. In order to withstand the strong competition in the worlds' total Cinnamon market, from the inferior Cinnamon variety; cassia which is immensely produced by the East-Asian countries such as China, Indonesia and Viet Nam, necessary measures should be implemented to improve the Ceylon Cinnamon cultivation, and the productivity of Ceylon Cinnamon cultivated lands.

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