

# DECLINE IN RUBBER PRICES IN KERALA : A CASE STUDY OF VALLICODE PANCHAYATH IN PATHANAMTHITTA DISTRICT

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*Production of natural rubber played a crucial role in the development of Kerala economy as the state being the most predominant contributor to the total production of natural rubber in India. Over the last two decades there is a shift in production towards natural rubber in the state from food crops and from other commercial crops. But the sharp decline in market price of natural rubber has some negative effect over the profitability of small scale rubber growers. The paper examines the present position of natural rubber in Kerala, the trend in its import and export, production and consumption pattern of synthetic rubber and the effect of the decline in rubber prices on small scale rubber cultivators. The primary data was collected from 120 rubber cultivator households of Vallicode Panchayath of Pathanamthitta district through pre-tested schedules using random sampling technique. The recent price decline may be due to India's high import rate than its export. The enormous increase in the consumption of imported synthetic rubber in India in recent years further worsened the situation. It is observed that the profitability of rubber depend on the extent of its cultivation. The crisis of recent price decline prevailing in the sector is forcing a large number of small scale rubber growers to abandon cultivation due to high tapping charges and low prices. In the context of rapid hike in imports, the national policy should have to be reviewed to address the livelihood concerns of over a million rubber growers.*

**Key words:** Natural Rubber, Price decline, Import and export, Profitability of rubber, Small scale cultivators

## INTRODUCTION

Natural rubber is a stretchy, flexible and waterproof hydro-carbon polymer, which is extracted from the milky fluid latex, and is refined into usable rubber. It has been used by man for various purposes over the past, but the exact commencement of its use is still unknown. The development of natural rubber cultivation in India has given an impetus to the Indian economy through the setting up of infrastructure facilities and ensuring employment opportunities to the unemployed millions, particularly in Kerala. Moreover, rubber tree constitutes the major raw material for the manufacture of more than fifty thousand various products which are indispensable to modern life. Thus natural rubber is an industrially and strategically important raw material having a wide variety of usage, being the base material for an incredible amount of products as already noted above. Rubber industry has become the second largest in the world, next to iron and steel. It is mainly cultivated and produced in Thailand, Indonesia, Malaysia, India and Vietnam.

India stands fourth in production and in consumption of natural rubber in the world. Kerala state continues to be the largest producer of natural rubber accounting nearly 90 percent of the total national output, maintaining production, processing and quality of natural rubber. The impact of foreign trade in natural rubber on the economy of Kerala has to be investigated as the state accounts a lion share of the total rubber production in the country.

Natural rubber is a vital industry in the world and is an important ingredient for the manufacture of several products. Its strategic and industrial significance for a developing nation like India is very high. Production of natural rubber played a crucial role in the development of Kerala economy as the state being the most predominant contributor to national production of natural rubber. The state accounts nearly three quarters of the total area of rubber cultivation in India. The main rubber producing districts in Kerala are Kottayam, Pathanamthitta and Ernakulam. Over the last two decades, a shift in production towards natural rubber from food crops and from other commercial crops is observed in the state. But the current market price of natural rubber has a decreasing trend which has some negative effect on the profitability of small scale rubber growers. This paper examines the present position of natural rubber in Kerala, the trend in its import and export, production and consumption pattern of synthetic rubber and the effect of the decline in rubber prices on small scale rubber cultivators. The main objectives of the study are listed below

1. To analyse the trends in market price of natural rubber over the past four decades.
2. To examine the profile of sample rubber cultivators in Vallicodu Panchayath of Pathanamthitta district.
3. To examine the profitability of the rubber cultivators in the context of declining rubber prices.

## **METHODOLOGY**

Both primary and secondary data have been utilised for the study. Secondary data was collected from books, published reports, journals and various websites. The collection of primary data was through the pre-tested schedules using random sampling technique. Vallicode Grama Panchayath of Pathanamthitta district has been selected for the study and out of 15 wards, 4 wards were randomly selected. From each ward 30 households of the rubber cultivators are identified, the total sample size being 120. Discussions were also made with development officers and officials of the Rubber Board.

## **REVIEW OF LITERATURE**

An overview of a few important studies on natural rubber, the trend in its market prices, import and export in India are examined. Budiman, A.F.S (2002) has studied the global trend in respect of the price of natural rubber. It has been pointed that the price of natural rubber is the most significant issue of the global rubber industry and trade, as natural rubber has become more of a social commodity affecting the livelihood of over 30 million small holders worldwide. A comprehensive study on the development of rubber cultivation in India, capital structure, marketing of rubber, area under small holdings and labour has been carried out by the Plantation Enquiry Commission appointed by the Government of India in 1956 (Madhava Menon, 1956).

A study on the problems of the rubber plantation sector, specially focusing on the conditions of the small holders was carried out by Small Holding Economics Enquiry Committee appointed by the Government of India on 27<sup>th</sup> September 1967. The committee has made an in-depth study of the economics of small holdings and suggested some measures to improve the existing situation in its report (1968). Jacob Mani Mannothe (1995) has stressed the utmost significance in India of farm research, technological advancement and scientific methods of tapping system for achieving higher level of productivity and better yield from natural rubber, by way of scientific methods of cultivation and tapping. According to Mani (1994) rubber plantations are in the declining stage. The study has proved that even though cultivation of rubber is viable for the time being, its future needs a careful watch due to the entry of synthetic rubber and other substitutes. Ushadevi (1999) has analyzed the institutional and organizational arrangements in the development of technology,

rate of technical adoption in rubber cultivation in Kerala, effect of technical adoption in yield and cost and evolution of natural rubber marketing, its structure and implications in technical adoptions. The study concluded that the diffusion and adoption of modern technology in rubber cultivation has played a significant role in the development of the Kerala economy, especially simplifying the problems of small growers.

## **Rubber Board In India**

The Indian Rubber Board was constituted under the Rubber (production and Marketing) Act, 1947 to promote the development of rubber industry. The Rubber production and marketing (Amendment) Act of 1954 made certain change in the constitution of the Board and amended its name as 'The Rubber Board'. The rubber production department of the Rubber Board has been implementing a variety of schemes aimed at the overall development of the rubber plantation sector. As a result of the impact of various schemes, implemented on a need based manner with appropriate extension and development strategies, the rubber plantation sector in India achieved commendable progress as evidenced by the growth rates achieved in expansion of area, production and productivity during the last five decades.

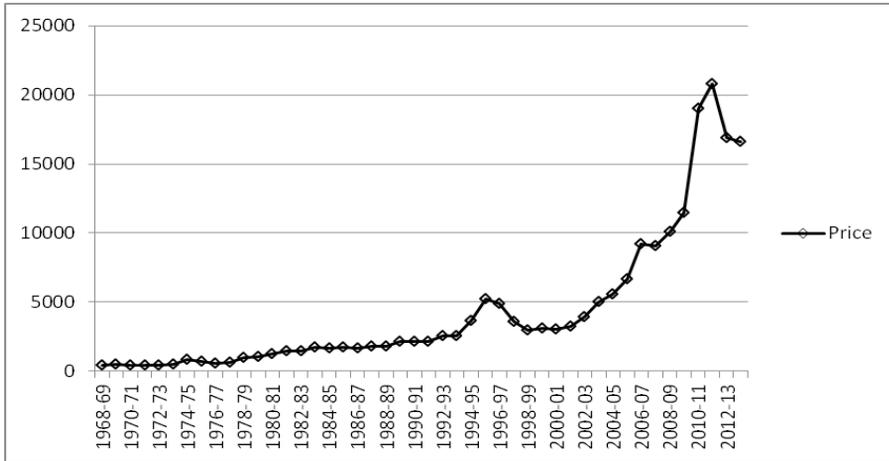
As the natural rubber has become a vital industrial raw material in the country, rubber board established Rubber Research Institute of India (RRII) in 1955 to encourage natural rubber plantation and production. The growth and development of rubber is possible only when proper researches and experiments are carried out in this field. RRII concentrates on the improvement of production, productivity, the development of new type of cloned rubber plants, and to improve high yield potential from the existing area of plantation on a timely basis.

The rubber plantation sector in India is dominated by small holdings which accounts for 93 percent of the production and 90 percent of the area of rubber cultivation in the country. The number of small growers in the country is about 1.19 million. For the effective transfer of technology and for empowerment of the sector, institution building is necessary. The rubber marketing co-operatives formed from 1960s are mostly confined to either district or taluk headquarters far removed from the rubber plantations which are mostly scattered in villages. The co-operatives have not been able to bring in a vast majority of the rubber growers into their fold permitting them to derive benefits. To tackle this issue the Board promoted formation of grass root level organizations at the village level and it was decided that small voluntary organization registered as charitable societies, to be specifically known as Rubber Producers' Societies (RPS) be formed based on a model bylaw drawn and circulated by the Board. In order to strengthen participatory extension among marginal rubber growers, the rubber board has also encouraged formation of Rubber Swasraya Sangham (SHGs), affiliated with RPS.

## **TREND IN MARKET PRICE OF NATURAL RUBBER**

Figure 1 shown below depicts the trend line of market price of Ribbed Smoke Sheet (RSS) of natural rubber in India for the last 45 years. The price of natural rubber shows an upward movement from ₹465 in the year 1968-69 to reach ₹5204 in 1995-96 during a span of 27 years even though slight decreasing trend are also found in the interim.

**Fig.1 Market Price of RSS 4 Grade Natural Rubber in ₹/100Kg**

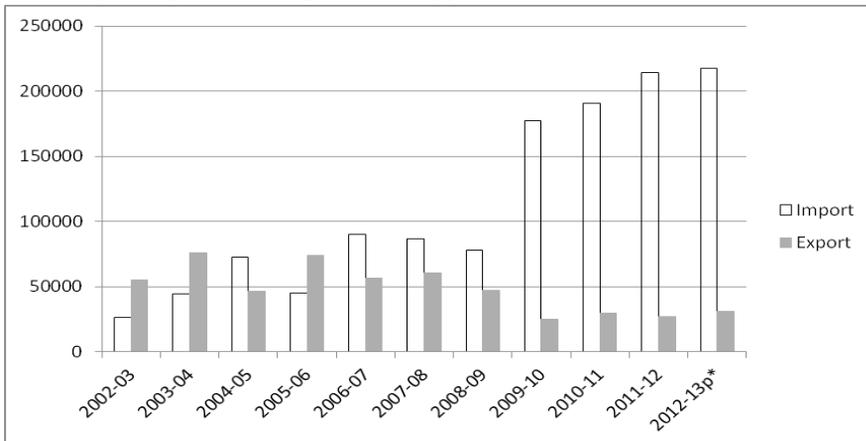


Source: Rubber Board Statistics.

After the year 1995-96 the market prices show a fall for the next 5 years to reach ₹3036 in 2000-01. For the next decade sharp hike in rubber prices are noticed till it reaches an all-time high at ₹20805 during the year 2011-12. A steep fall from the all-time high is observed during 2012-13 and comparatively a lesser fall in 2013-14 to reach the price at ₹16602. The market price on RSS 4 natural rubber on 26<sup>th</sup> May 2015 is only ₹12250, which shows that price decline is considerable for the past three years. Since the market price of the natural rubber produced in India is related to the price of the same in the international markets, the trends in imports and exports of natural rubber in the country are to be examined.

Figure 2 depicted below shows the trends in the quantities of import and export of natural rubber for the past 10 years. It is seen that the import of natural rubber increased considerably from the year 2009-10 and the same is nearly seven to eight times higher than the quantity exported in the corresponding year.

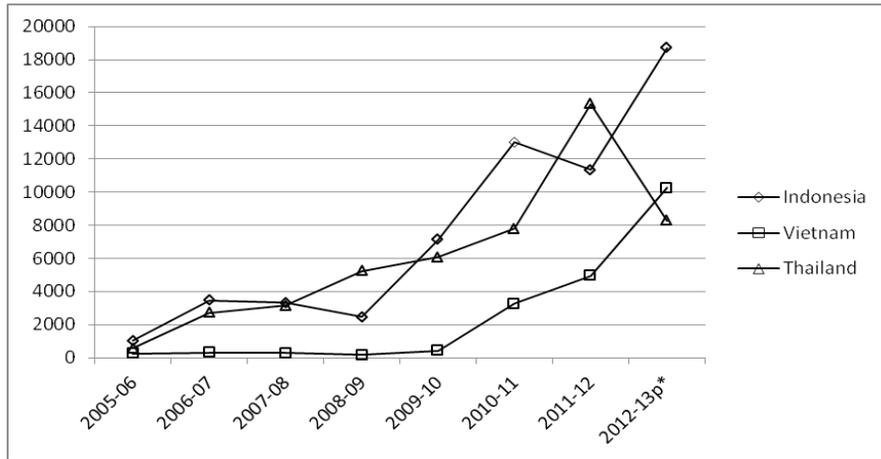
**Fig 2, Import and Export of all types of Natural Rubber in Tonnes**



Source: Indian Rubber Statistics, Vol.36, 2013 \* Provisional figures

Up to the year 2008-09, the import and export quantities are lesser and are comparable. Since the import of natural rubber is increased rapidly after the year 2008-09, the trend in import of the natural rubber from various countries also needs to be explored. The figure 3 shown below depicts the value of natural rubber imported from the top three importers of natural rubber. After the year 2008-09 the imports from Indonesia and Vietnam considerably increased when compared with the imports from Thailand. From the trend curve of market price of natural rubber, it is clear that the imports increased considerably when the price in India is increasing sharply to reach the all-time high.

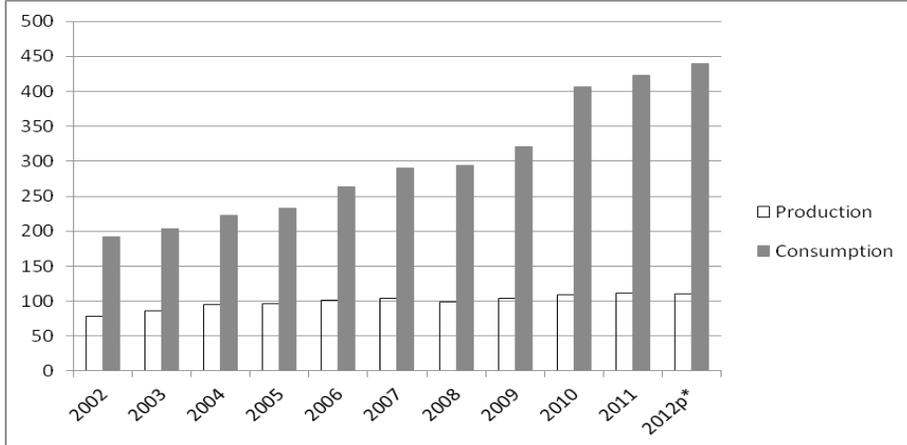
**Fig 3, Value of Natural Rubber Imported from top three Importers (₹ in Million)**



Source: Indian Rubber Statistics, Vol.36, 2013 \* Provisional figures

Another reason for the fall in prices of natural rubber may be the production and consumption patterns of synthetic rubber in the country. Figure 4 given below shows the trend in the production and consumption of synthetic rubber in India. The production of synthetic rubber is almost unaltered from the year 2002 to 2012. But the consumption of the synthetic rubber increases rapidly and it reaches even four times the production in the year 2012. This shows a tremendous increase in the import of synthetic rubber to the country resulted in fall of prices of natural rubber in recent years.

**Fig 4, Production and Consumption of Synthetic Rubber in India (in 1000 Tonnes )**



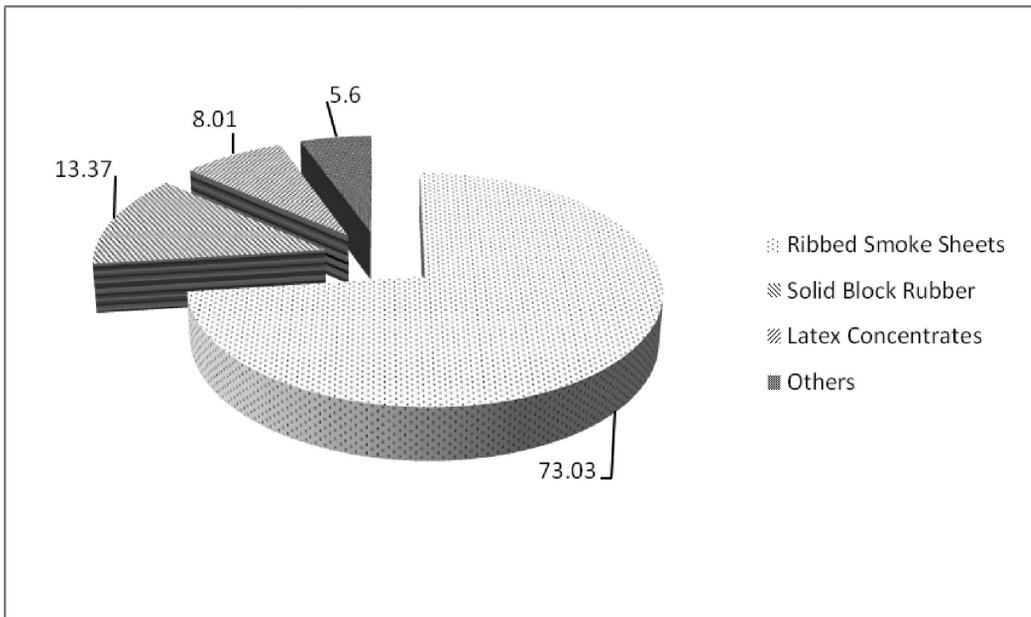
Source: Indian Rubber Statistics, Vol.36, 2013 \* Provisional figures

**PRODUCTION OF NATURAL RUBBER IN KERELA**

The recent decline in price of natural rubber affected the Kerala economy as more than three quarters of the total area under rubber cultivation is within the state. The state also accounts for more than 90 percent of the total production of natural rubber in the country with a highest yield of 1931Kg per hectare in the year 2011-12. Further Kottayam, Ernakulam and Pathanamthitta districts accounts for nearly half of the natural rubber produced within the state. Records from the Rubber Board reveal that natural rubber growers in the country with a cultivation area of 2 hectares and below are about 86 percent of the total area under rubber cultivation with an overall average holding of only 0.50 hectares per unit.

The pie-diagram shown below gives the percentages of various types of natural rubber produced in the country in the year 2012-13. The Ribbed Smoke Sheets (RSS) constitutes nearly three quarters of the total production of natural rubber. The natural rubber in the form of different grades of RSS is the most common variety in Kerala and Indian markets.

**Fig 5 Type-wise production of Natural Rubber in 2012-13 (in percent)**

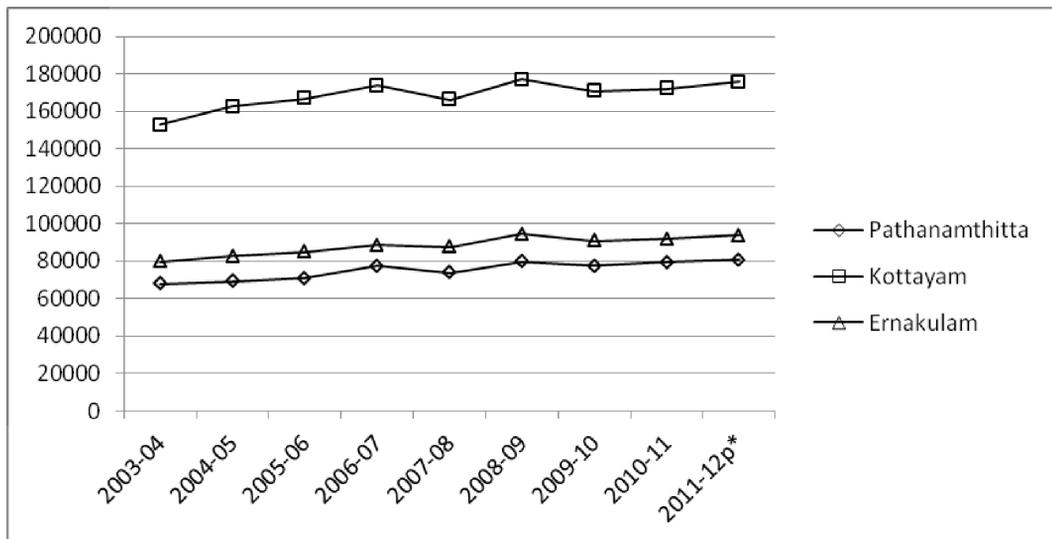


*Source: Indian Rubber Statistics, Vol.36, 2013*

Pathanamthitta district of the Kerala state is selected for the collection primary data to study the effect of decline in rubber prices on small scale rubber growers as the district is one among the top three rubber producing districts in the state. Figure 6 shown below depicts the trend in production of the top three rubber producing districts in the state including Pathanamthitta district. From the figure the production of natural rubber shows an upward trend for all the major rubber producing districts in Kerala. However the production shows slight fall for all the displayed districts in 2007-08 and 2009-10. As per the rubber statistical news of May 2014, the total production of natural rubber in India during 2013-14 show a decline of 7.6 percent when compared with the previous year. At the same time the production of synthetic rubber show an increase of 3.9 percent for the corresponding

year. Even though the district wise production statistics is not available from the secondary data, it can be ascertained that the production of natural rubber in the displayed districts of the state should also follow the national pattern. According to the rubber board, the low rubber prices and high wages have compelled small scale rubber growers to reduce application of inputs and adoption of recommended farm-management practices which in turn resulted in a decline in rubber production. In order to study the effects of the recent decline in rubber prices on the livelihood of small scale rubber growers in Kerala, primary data is collected from 120 rubber grower households in Vallicode Panchayath of Pathanamthitta district.

**Fig 6 Trend in production of NR of major rubber producing districts (in Tonnes)**



Source: Indian Rubber Statistics, Vol.36, 2013 (Compiled by the author)

### Profile of the Sample Rubber Cultivators

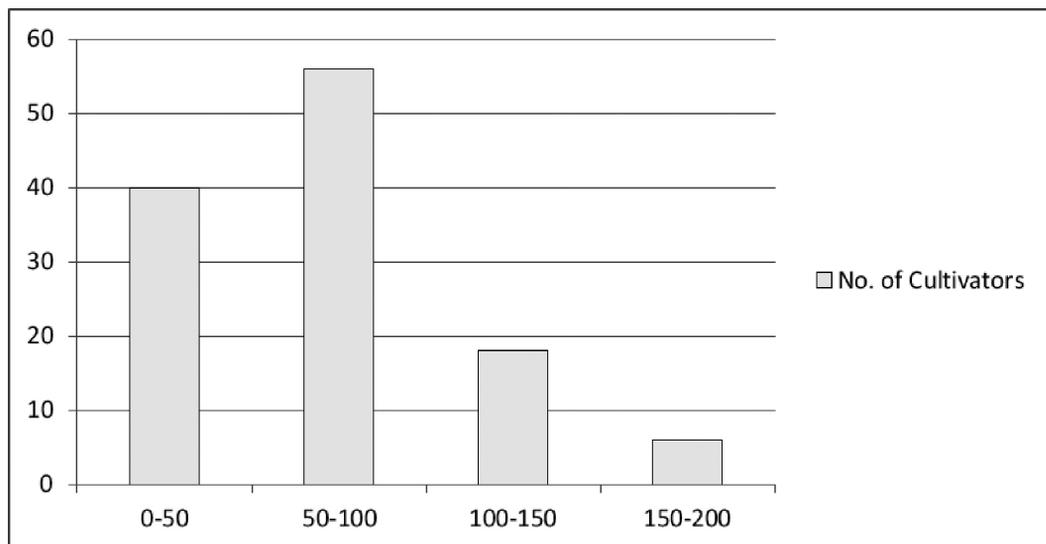
Out of the 15 wards of Vallicode Panchayath of Pathanamthitta district, 4 wards are randomly selected to identify 120 rubber cultivator households, 30 from each ward. The age composition of rubber cultivators show that nearly one-third of them are in between 50 and 60 years. Nearly another one-third of them are in a higher age group of 60 to 70. Hence it is evident that the cultivators in the younger ages are much low.

It is observed that a quarter of the cultivators have an educational qualification below X<sup>th</sup> standard. Further, half of the sample cultivators have completed higher secondary education. But, among the rubber cultivators in the sample survey, post-graduates or professionals are only a few. Hence the educational level for a vast majority of rubber cultivators are higher secondary or higher. The occupational structure of the sample cultivators reveals that nearly half of them have agriculture activities as their occupation. Another one-third of them are engaged in private job or business.

The distribution of sample cultivators according to the area of cultivation is depicted in the following bar diagram. From the figure 7, it is clear that nearly half of the rubber cultivators have an area of cultivation of 0.50 to 1 acre. Another one-third of them have less than 0.50 acres for rubber cultivation. The sample cultivators have small land holdings for rubber cultivation and such

categories are contributing a vast majority of rubber production in India. However, they seem to be affected by the decline in rubber prices to a great extent. Moreover, more than half of the sample cultivators have 150 or lesser number of productive rubber trees.

**Fig 7 Distribution of Rubber Cultivators According to Area of Cultivation (in cents)**



Source: Primary data

Table 1 shows the number of RSS produced daily by the cultivators. Nearly half of the cultivators produce 10-20 rubber sheets per day and another one-third of them have a daily output of only less than 10 sheets.

**Table 1 Daily Output of Sample Rubber Cultivators as Number of RSS**

Number of RSS (daily)	Number of cultivators	Percentage	Cumulative Percentage
0-10	44	36.67	36.67
10-20	58	48.33	85.00
20-30	14	11.67	96.67
30-40	4	3.33	100.00
Total	120	100	

Source: Primary data

Table 2 given below is a cross-tabulation of the area of cultivation and profitability of rubber production in the context of decreasing rubber prices. The responses of the sample cultivators regarding the profitability of rubber production are recorded on a four point scale. It is clear that more than half of the cultivators are of the opinion that they have no profit in rubber cultivation. Nearly another one-third of them disclosed their low level of profit. The number of cultivators

getting medium or high profit from rubber is found to be very small.

**Table 2 Area of Rubber Cultivation and Profitability**

Area (in cents) \ Profit	Not profitable	Low profit	Medium Profit	High profit
0-50	40	0	0	0
50-100	28	25	3	0
100-150	5	9	4	0
150-200	0	3	2	1
Total	73	37	9	1

Source: Primary data

Further, on examining the cross table given above, it is seen that profitability of rubber depends on the extent of cultivation. All the cultivators below 0.50 acres of land for rubber cultivation opined that production of natural rubber is not at all profitable in the present situation. When the cultivation area is doubled, only half of cultivators belong to such category have no profit and nearly the other half gets low profit. Cultivators with no profit in the category of cultivation area 1 to 1.50 acres further reduced to a quarter, while another half get low profit. Finally, among the cultivators with rubber planted in between 1.50 and 2 acres nobody opined that rubber is not profitable.

When the area of rubber cultivation becomes lower, labour charges for tapping trees and processing the natural rubber becomes higher. Decrease in productivity of natural rubber due to rain may also affect the profitability of small scale rubber cultivators to a greater extent. However the daily output collected from the sample cultivators show rubber cultivation is still marginally profitable for a majority of them. A slightly different response from the cultivators may be due to the inconsistency in the daily production due to adverse climatic conditions in the past two years in Kerala. Increase in labour charges and shortage of labour for tapping rubber trees especially for smaller areas also resulted in the decrease in natural rubber production in the state. The presence of family labour for rubber production in some sample households shows that the profitability of rubber is considerably decreased.

## CONCLUSION

The main reason for the domestic price decline is the large scale import of natural rubber, mainly from Thailand, Indonesia and Vietnam. The current import and export of rubber in India reveals that India's import rate is much higher than its export. The pattern of imports had also undergone significant changes over recent years, as the imports mainly from Thailand in earlier years were overtaken by Indonesia and Vietnam. The enormous increase in the consumption of imported synthetic rubber during the last three years further worsened the issue of price fall. The huge increase in imports led to decline in prices, adversely affecting the sector, especially the small scale rubber growers.

The relation between area of land and profitability reveals that most of the rubber growers with below one acre of cultivation have no profit from the rubber at the present market price. At the

same time, rubber growers with 1.50 acres or more opined that they get a reasonable profit. But in the case of cultivators with below 0.50 acres of cultivation the net earning per month from rubber is even insufficient to meet the food needs of a family of five due to inclement weather and low prices. The sector has been reeling under crisis for the past three years, forcing a large number of the rubber growers to abandon cultivation due to high tapping charges and low prices. In this context of surging imports, the national policy should seriously address the livelihood concerns of over a million rubber growers and protect them from price fall.

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