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PRICE VOLATILITY IN NATURAL RUBBER AND IMPACT ON SMALLHOLDERS WITH SPECIAL REFERANCE TO MALAPPATTAM GRAMAPANCHAYATH, KERALA

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ABSTRACT

India occupies the sixth position in terms of natural rubber production. Price of natural rubber is a matter of concern for both producers and consumers. The price of natural rubber is showing a declining trend in India for the last couple of years irrespective of various policy measures taken by central and state Government. Instability in price has serious impact on production, consumption, export and even land use pattern in agriculture Sector in India. High volatility in natural rubber prices is The result of international trade policies, fluctuations in demand and Supply of natural rubber, fluctuations in oil prices and political changes. 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. Falling price of rubber affected the life and livelihood of the farmers in different ways. Further, the problems such as changing weather condition, high cost of fertilisers, high cost of rubber tapping, higher transportation cost etc. Also affected the farmers adversely.

Keywords: Natural rubber, synthetic rubber, Price volatility, Tapping, Ecosystem, Sustainability.

1. Introduction

Natural rubber plays an important role in the industrial and economic development of any country as it is used as the basic raw material for a variety of industries. Presently, India occupies the sixth position in terms of natural rubber production. Price of natural rubber is a matter of concern for both producers and consumers. The price of natural rubber is a function of several factors like demand, supply, export, import, stock, international price, crude oil price, synthetic rubber Price, global consumption etc. The price of natural rubber is showing a declining trend in India for the last couple of years irrespective of various policy measures taken by central and state Government. The Indian rubber industry is a key donor to the country's manufacturing GDP

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and national economy that include earning of significant foreign exchange through rubber export products.

Rubber is supplement to all sectors of the economy such as aviation, textiles, railways, road transport, engineering goods, etc. At the world market level the India's share of natural rubber has been increased. Some of state such as Kerala, Tamil Nadu and Karnataka supply adequate natural rubber production in India. Natural rubber production is the god's gift of nature. Around 0.4% of the gross cropped area is occupied by rubber and it contributes to 0.19% to the national GDP. Rubber plantation sector in India is dominated from Kerala based cultivation and which is about 92 percent of the total rubber Production in the nation. Out of the total contribution from Kerala A large share is from the small cultivators from different areas throughout the state. The most suitable places for rubber plantation Are hilly areas where many families are engaged in to this and they Are also part of the process of development of the country. Small Rubber cultivators are having a lot of problems related to their field Like lack of awareness, lack of support from the government, lack of capital, lack of trained labour force and lack of stable price and Market.

Even though nationally the roles and responsibilities of the Rubber plantation sub sector provide a large income contribution to The state's foreign exchange, the development of the rubber Agribusiness still does not seem to provide an adequate income and Welfare for the people. Its great economic potential and strengths Have not been able to be managed properly by contributing to National development and improving the standard of living and welfare of the people, especially rubber farmers who are Predominantly managed by the people itself. Recently rubber price In the international market is very fluctuating. For farmers, the price of rubber is an economic factor which determines their decision-Making to produce. The Indian rubber industry serving industries Produces a wide range of rubber products. The rubber business guardians the beginning of a wide scope of items like stationeries, auto tires and tubes, cycle parts footwear, belts, cables and wires, sports goods, surgical and pharmaceutical products etc.

2. Review of literature

Some of the studies related to the present study are:

Kurien, P.K. (2001) makes an effort to examine the livelihood Issues of the beneficiaries particularly the poor and was to extend a helping hand to the smallest landholders to cultivate rubber and earn an additional income and to help him to develop in social and Economic status. Economic development of the beneficiaries was The immediate aim of the project. It was expected to provide a common and united platform for sharing of experience and ideas.

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A.R.Anuja,AmithKar, V.C.Mathur, GK Jha and Pramod Kumar (2012) reported Kerala is the nearly monopolistic Contributor to natural rubber production in India with 90% in total Production and 78% of area under cultivation in the country. The Productivity in Kerala was found to be less compared to the national Average. In Kerala around 40% of area as well as 45% of production of rubber comes from 3 districts Kottayam, Ernakulam, Pathanamthitta and small holders contributed 92.53% to the total production. The area under rubber and its productivity increased to an extent of 46% and 135 respectively and resulted in 244% rise in natural rubber production in Kerala.

Shankar Meti, DVKN Rao, N Usha Nair and James Jacob(2014) expressed in India, the state of Kerala and kanyakumari District of Tamil Nadu state are the traditional rubber growing areas Accounting for 90% off rubber production. Rubber Research Institute of India initiated a project on developing rubber Information system using remote sensing and GIS for the Traditional rubber growing areas. About 11% of Rubber area is Distributed on marginally suitable land heavy limitation with the Expected to shallow soil depth high gravel content, Nutrient toxicity iur deficiency and steep slope. It is essential to take up appropriate Agronomic and cultural Measures in the areas having limitation for Proper growth and yield of rubber.

Thanyaratkoomkanad (2015) examined what is the main Motivation that keep the rubber farmers still planting the rubber Tree, even though, the price has been dropped significantly for the Past five years and the government doesn't guarantee that the price Is going to increase anytime soon. The Education Attainment of the Farmers does play a big-role toward a decision-making of future prospects in rubber farming business. The farmers with lower education tend to rely on and stick with the rubber cultivation both in short-run and long-run. Unlike the farmers with higher education that are more flexible, they more likely to stay in the business just for a short period of time which lead to when their rubber tree won't reproduce anymore, they willingly to crop something else instead.

Raju, K.V. (2016) opined that Commodity prices are susceptible to Instability in the international as well as in the domestic markets of The countries. Natural rubber prices have shown high volatility in The last twenty years. Decline in oil prices and the subsequent Decline in the prices of synthetic rubber were some of the factors That have contributed to the volatility and instability in natural Rubber prices.

Karunakaran N (2017) stated Kerala state holds a dominant Position in both area and production. It is the main source of income For majority of farmers. Any volatility in price of rubber put them In a miserable situation. Recent years witnessed unprecedented Volatility in rubber price. Declining trend in the price of rubber has pushed the natural rubber production the lowest in the country. The study reveals that prices were so low that the rubber cultivators cannot

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even pay workers wages and the unprecedented volatility in prices declined rubber production leads the falling standard of living of the rubber farmers in Kerala.

A Muthusamy, S Sundararajan, (2019) assess the performance Both rubber exports during the period of 2010 to 2011 still 2017 to 18. Indian rubber is an export promoter by the board since 2011 With an objective of distinguishing Indian rubber in international Market. The board is promoting export as market intervention Strategy to imports of rubber. Exports during this peak production Period are at high level from 2013. The surge in international rubber Prices was due to amplified demand for rubber from China.

Neil Wagner (2020) expressed the rubber industry in both global And diverse, providing important materials not just for the Automotive industry, but also materials that are widely used in Consumer product, construction and industrial applications. Natural rubber is an agricultural good primarily produced in East Asia and accounts Thought approximately 25% of rubber is used in industrial production. The origin of synthetic rubber as a substitute for Natural rubber And its extensive, market leading news in industrial Manufacturing would lead one to believe that these products are Substitutable; Or even that synthetic rubber has superior Proportions. Looking at the average producer price changes for Synthetic and natural rubber from 2016 to 2018 would further this belief, because over this. Prices for both products fluctuated Similarly.

Beryl T Theoslin Deepa, Rohini, Prahadeeswaran & Kavitha PS (2024): tje study examined that the marketing dynamics of natural rubber in Kanyakumari District, Tamil Nadu, a traditional region for rubber cultivation in India. rubber producer societies, collection agents and processing units. However, intermediaries achieved higher margins in the latter. Key constraints identified include adverse weather conditions, fragmented landholdings, high production costs, lack of government subsidies and inadequate access to technology. Marketing challenges such as poor standardization and grading practices exacerbate price volatility and reduce farmers' earnings.

Hiralal Jana1 and Debabrata Bas(2025). Rubber trees are among the essential plants cultivated and have contributed to India's economy growth for many decades.. Kerala is the largest producer of Natural rubber in India. India is the fourth largest producer of rubber in the world. Rubber is Harvested mainly in the form of the latex from the rubber tree or others. Rubber is cultivated in 16 States of India. States like Kerala and Tamil Nadu are traditionally rubber-growing regions in India. Nilgiri, Madurai, Kanyakumari, Coimbatore and Salem are the chief rubber producing districts of Tamil Nadu. Indian rubber industry is characterized by the co-existence of a well-Established rubber production sector and a fast-growing rubber products manufacturing. Rubber Plantation is a real threat for the tropical forest. It is harmful for watersheds and destroys forest ecosystems.

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3. Objectives

- To analyze the trend in production, productivity and the Market price of natural rubber in India.
- To list out the factors affecting the price of natural rubber.
- To explore the socio economic conditions and the impact of Price fluctuations on small rubber cultivators of Malappattam Panchayat in Kannur district.

4. Methodology

a. **Sources of Data**: The study used both primary and secondary Data. The primary data were collected through sample survey from The selected rubber growers in Malappattam Grama Panchayat of Kannur District.

The secondary data were collected from official website of Rubber Board, various publication on rubber published by Rubber board And other related agencies. Further, the secondary data required for The study has also been collected from different sources such as Books, journals, newspaper reports, magazines. The secondary data Covers a period of 20 years from 2000-01 to 2025.

b. **Sample size**: Malappattam panchayat from Kannur District Was selected on a random basis. From Malappattam panchayat two Wards (3 & 4) has been selected. A total of 50 rubber growers were Interviewed by using a structured interview schedule to elicit the information about rubber cultivation and the present problems that They confront and the impact of price fluctuations on rubber Convenient sampling method was used to select the respondents.

c. **Statistical tools** : Common statistical tools like, growth rate, graphs, tables, Percentage etc. Have been used for data analysis and interpretation Of data.

d. **Period of the study** : The primary data required for the study has been collected during The period of January 10, 2024to January 20, 2025

5. Production and Consumption of Natural Rubber and Synthetic Rubber

Production and Consumption of natural rubber in world Global demand and supply of natural rubber and synthetic rubber Has significantly increased in the last 20 years. Decline in the oil Prices has boosted the production of synthetic rubber. Synthetic Rubber is the by-product of the oil industry. The producing and consuming industries are in general closely related and

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dominated by large and global enterprises. Natural rubber is an agricultural commodity and is used as an industrial raw material. More than 80% of the production of natural rubber is by small and marginal farmers. Natural rubber is a social commodity where more than 30 million small farmers are at state worldwide. Increase in production of natural rubber has also influenced the prices of natural rubber. One of the fundamental factors influenced the natural rubber price, is stock of natural rubber.

India is the 6th largest producer of natural rubber in the world. However the production of natural rubber in India has significantly reduced in the last couple of years. The major reason for drastic decline in production is the reduction in prices of natural rubber.

Today, china is by far largest consumer of natural rubber, at 5.5 Million metric tons in 2019. India came in a distant second place That year. The majority of natural rubber and synthetic rubber are Consumed by the global automotive industry to produce tires and Tubes for vehicles. In 2020, some 12.7 million metric tonnes of Natural rubber and 14.2 million metric tonnes of synthetic rubber Were consumed worldwide.

Table. 5.1 World production and consumption of natural and Synthetic rubber 2025

Year	Production and Consumption of Rubber			
	Natural Rubber	Synthetic Rubber	Total Production	Total consumption
2000	6811	10870	17681(--)	17938(--)
2001	6913	10483	17396(-1.6)	17292(-3.6)
2002	7317	10906	18223(4.7)	18194(5.2)
2003	7986	11414	19400(6.5)	18973(4.2)
2004	8726	11979	20705(3.4)	120255(6.8)
2005	8921	12025	20705(6.7)	20780(2.6)
2006	9850	12700	20946(1.1)	21974(5.7
2007	10057	12829	22550(7.7)	22714(3.3)
2008	10098	12885	22886(1.5)	22360(-1.5)

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2009	9723	11488	22383(-2.5)	20517(-8.2)
2010	10403	13277	21210(-5.2)	24017(17.1)
2011	11339	14091	23680(11.6)	24853(3.4)
2012	11658	14042	25310(6.8)	24727(0.3)
2013	12281	14214	25700(1.5)	25566(2.6)
2014	12103	14205	26495(3.1)	26377(3.2)
2015	12262	14305	26308(-0.7)	26597(0.8)
2016	12598	15543	26567(0.9)	27475(3.4)
2017	13450	15675	27141(7.6)	29106(2.4)
2018	13905	15845	29215(1.8)	28795(-1.1)
2019	13701	15712	29416(-1.1)	26952(-6.4)
2020	12945	14543	27488(-6.5)	27567(2.3)
2021	14156	15496	29652(7.8)	28678(4.3)
2022	14860	15600	30460(5.7)	28987(1.2)
2023	15026	15345	30371(-0.7)	30450(3.5)
2024	15089	16267	32352(4.8)	31650(5.4)
2025	14960	15935	30915(-3.9)	30435(-2.1)

Source. International rubber study Group 2015

Analysis of natural rubber production for the last 25 years Has shown that natural rubber production increased significantly. From the table we can see that both natural rubber and the synthetic Rubber is close substitute for the natural rubber are increased which Are used to produce the desired properties needed in rubber end Products and tires. From 68.1 lakh tones in 2000 global natural Rubber production has increased to 134.4 lakh in 2025. Synthetic Rubber also increased from 108.70 lakh tones in 2000 to 156.43 Tonnes in 2025

The global consumption of rubber also has increased Considerably in the last 25 years. From 17.908 lakh tonnes in 2000,Global consumption of natural rubber has increased to 30.435 lakh Tonnes in 2025. World consumption of synthetic rubber also Increased substantially in last 25

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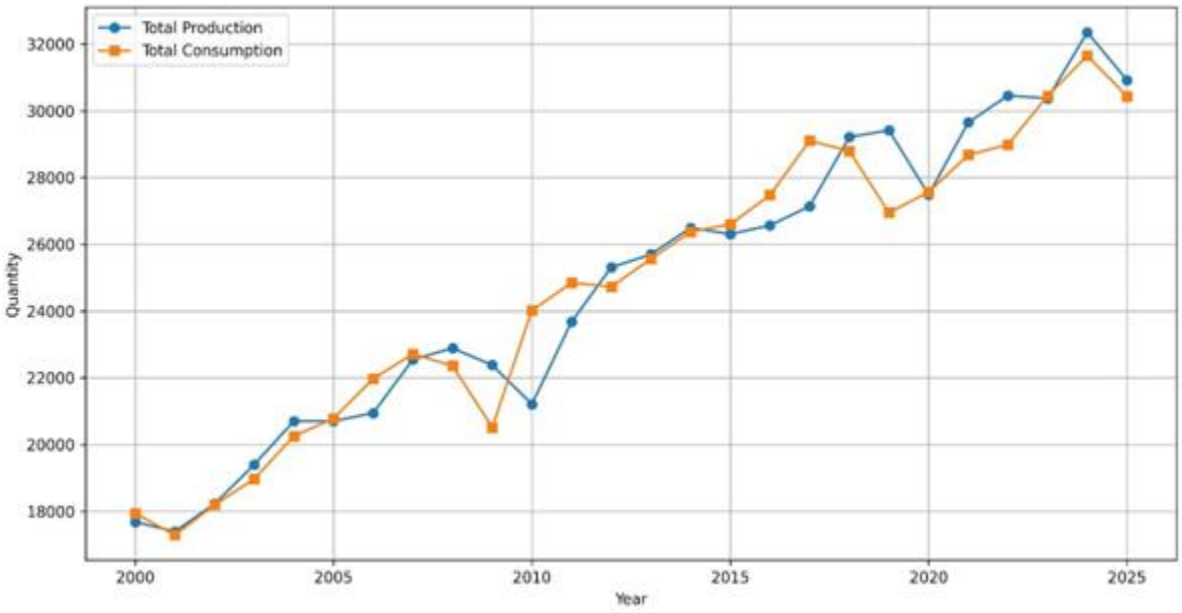
years. From 108.30 lakh tonnes in 2000 synthetic rubber consumption have increased to 142.23 lakh Tonnes in 2020. The year 2009 witnessed a low demand due to Slowdown in world economy.

Figure. 5.1 Production and consumption of Natural and Synthetic Rubber 2000-2025



Source: Compiled from secondary data

6. Indian Scenario

6.1 Production and consumption of Natural rubber in India

The Rubber Industry is a key sector in the Indian economy. India is The third largest producer and fourth largest consumer of natural Rubber in the world and also the fifth largest consumer of natural Rubber and synthetic rubber put together. Indian rubber industry is Characterized by the co-existence of a well-established rubber Production sector and a fast growing rubber products Manufacturing and consuming sector. Historically, NR was a Regulated commodity with strong tariff protection and domestic Market regulations. The key factors which have contributed to the Growth of Indian rubber industry are positive intervention of Institutional agencies aiming at self-sufficiency and import Substitution. The consumption was forecast to be around 12 million Metric tons in 2030. Natural rubber production had a drop of over Seven percent in fiscal year 2019. The production was nevertheless Projected to meet about 75 percent of the natural rubber Requirement in 2030. Table 2.3 gives the area, production and Productivity of natural rubber in India during the period 2000-01 to 2015-16.

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Table 6.1 Production and Productivity of Natural Rubber in India During 2000-01 to 2015-16.

Year	Production (in tonnes)	Productivity (tonnes)	Consumption (tonnes)
2001	630405	1576	811.42
2002	631400	1576	861.46
2003	649435	1592	671.72
2004	711650	1663	930.57
2005	749665	1705	947.72
2006	802625	1796	964.42
2007	852895	1879	972.72
2008	825345	1799	981.52
2009	864500	1867	1020
2010	831400	1784	944.42
2011	861950	1806	1044.88
2012	903700	1841	1112.21
2013	844000	1813	1211.31
2014	774000	1629	1211.94
2015	645000	1443	1234.56
2016	562000	1437	1134.12

Source : rubber statistical bulletin (April – June) international rubber study group

India's natural rubber production has increased steadily Over the past decade. The production grew at the rate of 4.8% in 2011-12. The production of natural rubber in 2011-12 was 903700 tones. India stands first in productivity of natural rubber In the world. The productivity of natural rubber during 2011-12 Was 1841 kg/hectares when compared to 1806 kg/hectares in 2010-11.Rubber production of the country is contributed mainly By the smallholders. There are more than one million Smallholdings accounting for 88 per cent of the total area and 92.5 per cent of the total rubber production.

However since 2012, there has been a significant Reduction in the production of natural rubber in India in the last Couple of years. Production declined from 903700 tons in 2011-12 to 844000 and further to 645,000 tons of NR from 774000. The production has again reduced to 562,000 in 2015-16. Thus it Shows a continuous declining trend in the total production of Natural rubber from 2012. Among the reasons for the drastic Decline in production, the reduction in prices of natural rubber is The major one. Adverse weather, high wages, lack of skilled Labourers etc. Are the other reasons. India is the 2nd largest consumer of NR globally with current Consumption of

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around 1.1 million tonnes. Sheet rubber, block Rubber and latex account for 47%, 43% and 8% respectively in NR Consumption. Around 40% of the total NR consumption in India is At present met from import of rubber. 68% of NR consumption in India is in the automotive tyre sector.

6.2. Volatility in Natural Rubber Prices

Production of natural rubber in the last couple of years Especially from 2012 has reduced considerably. Volatility of Price is a major reason for this shar decline in production. Rubber grower's unwillingness in harvesting or maintaining Trees in response to falling price, adverse weather, lack of skilled Labors etc. Have aggravated the problem. In case of natural rubber, one of the important factors that Affect the replanting decisions of farmers is the price of natural Rubber. Natural rubber has been experiencing high volatility and Instability in prices after the integration of the domestic and International market. The volatility and instability has particularly Affected the small and marginal farmers. The demand and supply Volatility in both market also affect the prices. It is to be noted that low instability and volatility in natural rubber price is important for the sustained production of natural rubber. Natural and synthetic rubber is interchanged for various usages. When price of natural rubber rises automatically the demand for synthetic will increase.

In addition, petro-chemical products used for making synthetic rubber also have an indirect effect on natural rubber price. The marketing and export of rubber is commonly adopted through different channels. The leading export markets are China, Malaysia, Indonesia, Turkey, Sri Lanka, Spain and Nepal. More than 90 per cent of the rubber produced in India is from Kerala. 80 per cent of the area under rubber in Kerala is accounted by small holdings and is generally grown in the midlands and highlands. The small holding under rubber in Kerala is mainly homestead planting and is lying adjacent to each other. Table given below depicts the volatility in rubber price of Kerala in terms of growth rate during the period from 2000 to 2025.

Table 6.2.1 Average form harvest price in Kerala

Year	Price (Rs/q)	Annual growth rate
2000-01	3036	--
2001-02	3228	1.92
2002-03	3919	6.91
2003-04	5040	11.21
2004-05	5570	5.30
2005-06	6699	11.29
2006-07	9204	25.05
2007-08	9390	1.86
2008-09	10112	7.22

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2009-10	19003	13.86
2010-11	20805	75.05
2011-12	17682	18.02
2012-13	16002	-31.23
2013-14	13287	-10.80
2014-15	15930	-33.45
2015-16	20015	16.39
2016-17	20490	29.71
2017-18	17765	2.37
2018-19	18860	-13.29
2019-20	17600	3.49
2020-21	18565	-4.45
2021-22	17658	-2.4
2022-23	18456	8.6
2023-24	24567	30.4
2024-25	22457	-9.3

Source : Computed from rubber board office, Kottayam

It is evident from the table and figure that there has been decline in natural rubber Prices since 2012. Price of rubber was just 30 rupees during 2000-2001.Till 2012 there Was continuous increase in the rubber prices and reached at Rs. 208 in Kottayam market. Since then it fell drastically during the subsequent years and came down to Rs.132 per kg In 2015 and the trend still persists except in the years from 2016 to 2018. A variety of Factors have contributed to the instability in prices. The economic slowdown in the Developed and developing countries, sharp decline in crude oil prices and subsequent Decline in synthetic rubber price and depreciation in the currencies in natural rubber Exporting countries have all contributed to the decline in natural rubber price in the Producing countries. During the period of 2019-2020 natural rubber price came down to An average 183.60. In 2017 -18 the average rubber price was 204.90. In 2016-17 the Natural rubber price was increased by 29.71% as compared to 16.39% in 2015-16. But in 2024-025 the rubber price was decreased by -9.3%

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6.3. Factors Affecting the Price of Natural Rubber

The volatility in the price of natural rubber is because of several factors like Demand and supply conditions, export and import, currency fluctuations, stock of rubber, Crude oil price, synthetic rubber price etc.

6.3.1.Demand and Supply for Natural Rubber

Market forces are the major factors that determine the price of natural rubber. Thailand, Malaysia and Vietnam are the major suppliers of natural rubber in the International market and China, India, USA and Japan are among the major consumers Of rubber in the world. Demand and supply are the fundamental factors influencing NR Prices while all other factors have indirect effects through variations in the fundamentals Of demand and supply. The global market is currently in its fourth year of surplus of Natural rubber. The excess supply situation has caused stocks to move high and prices Are falling steadily. At the same time it can be seen that, the prices of natural rubber are Increasingly influenced by factors other than demand and supply in sharp deviation from Conventional belief. There are a number of non-fundamental factors that influence the Price of natural rubber in the world market. Physical prices of NR are increasingly controlled by sentiments in Shanghai and TOCOM futures which are exposed to fluctuations in currencies, crude oil prices and geo-political developments.

6.3.2. Currency Movements

US Dollar is the base of international trading of NR. Hence, fluctuations in the Currencies of NR exporting countries, against the Dollar, have a strong influence on NR Prices. Appreciation of currencies in NR exporting countries against the Dollar helps NR Prices to increase in terms of the Dollar. Thus variations in the exchange rate control the Import and export decisions of importing and exporting countries directly and indirectly. The direct effect comes from the fact that NR is normally purchased from one country in A given currency for use or resale in another country with a different currency Any Change in the value of the exchange rates can affect the price in the purchasing country Without any change in prices in producing countries taking place. The indirect effect Comes from arbitrage activity and speculative demand, which can be either commodity Speculative or foreign exchange speculative. (Budiman, A.F.S. and Fortucci, P. 2003).

6.3.3. Oil Price

The development of modern industry and economy is assured by the oil and hence oil price fluctuation is considered as the barometer of worldwide economy. Oil price can influence NR prices by way of substitution between natural and synthetic rubbers. Synthetic rubber, a close

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substitute of natural rubber is produced using the raw materials derived from crude oil and natural gas. A fall in crude oil price makes the production of synthetic rubber cheap. Availability of synthetic rubber at a lower price than natural rubber cause a shift in demand towards synthetic rubber which result a decrease in demand and a consequent falling price for natural rubber. Thus, the price of natural rubber is determined to a very large extent by the global crude oil price.

6.4. Covid19 and Rubber Production in Kerala

In January 2020, production of natural rubber was 10 percent higher compared With a year earlier. But in April, output dropped by 53 percent largely on account of the Lockdown. Though the prices of natural rubber witnessed a slight fall in the latter half of 2019, they continued to remain high till March 2020. The lockdown may result in a shortage Of rubber for medical products like gloves, catheters, sanitation masks etc. With input prices And cost of living maintaining their upward trend, the plight of about nine lakh natural Rubber growers and four lakh workers engaged in rubber cultivation needs no elaboration. According to a conservative estimate the accumulated loss suffered by the growers during The last one year would be around Rs. 800 crore. Most of this would have been borne by The small holders who account for nearly 85 percent of the area as well as production. The Small holders, seasonal workers and their families are some of the most vulnerable people Within the natural rubber sector, living in poverty and without adequate access to social Services. Poor dissatisfaction of farmer's income means that farmers are solely dependent On tapping rubber trees to make a living. When a pandemic occurs and global demand for Natural rubber falls, it comes as no surprise that smallholders are the hardest hit. In June 2020, the Association of Natural Rubber Producing Countries projected that The sector's global supply and demand would fall by 4.7 % and 6% respectively for the Year, a sharp reversal from its forecast at the start of the year of a rise of 3.8% and 2.7% Respectively. With the rubber sector affected by quarantine and other restriction, some Sustainability initiatives have also been put on hold.

7. Socio -Economic Conditions and Impact of Price Fluctuations on the Smallholder Rubber Farmers- An Analysis

Price volatility has long run impact on the income of rubber producers Creating a difficulty in obtaining a reasonable price every year. Uncertain prices have a Negative impact on the investment decisions of the farmers and it has been continuously Affecting the natural rubber sector along with increasing wage rate, lack of skilled labors. In this backdrop the present chapter makes an attempt to analyze the socio economic Conditions of the small rubber farmers and the impact of price volatility on the rubber Production with the help of primary data collected from 50 rubber cultivators located in Malappattam panchayath of kannur district. The

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data collected has been analyzed with help Of simple statistical tools like tables, charts, percentage etc.

Table.7.1 Demographic profile of Respondents

	Category	No. Of respondents	Percentage
Gender wise classification	Male	36	76
	Female	12	24
	Total	50	100
Religious classification	Hindu	49	98
	Muslim	0	0
	Christian	1	2
	Total	50	100
Educational qualification	Primary	19	38
	SSLC	21	42
	Plustwo	5	10
	Graduated	5	10

Source of data : Primary data

The table shows the gender wise classification of respondents. Majority of the cultivators are male. Out of the 50 respondents 76 percent of cultivators are male and 24 percent are females. Age wise classification of cultivators shows that majority of them Was in the age group of 60 to 70 (36 percent), following it with 50 to 60 age group cultivators, i.e., 32 percent. 18 percent of the cultivators belong to the age group of 70-80.One cultivator is above the age of 80 plus and one below the age group of 40 percent Respectively. Educational qualification of the cultivators shows42 percent of Farmers are having the SSLC level qualification. 38 have either lower primary or upper Primary education. 10 % have qualified plus two and another 10 percent are graduated.

Table 7.2 Economic profile of respondents

	Category	**No. Of respondents**	**Percentage**
Economic status of family	APL	39	78
	BPL	11	22
	Total	50	100
Annual income	10000-1lakh	1	2
	1lakh-2 lakh	7	14
	2lakh-3lakh	11	22
	3 lakh -4 lakh	9	18
	4lakh- 5 lakh	9	18
	Above 5 lakh	13	26

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Income from rubber cultivation	Total	50	100
	5000-15000	18	36
	15000-25000	16	32
	25000-35000	5	10
	35000-45000	6	12
	45000-55000	3	6
	Above 55000	2	4
	Total	50	100
Rubber tapping methods	Own	15	30
	Family member	15	30
	Paid labour	20	40
	Total	50	100
Expense of respondents	1000-2000	6	12
	2000-3000	11	22
	3000-4000	17	34
	4000-5000	9	18
	5000 and above	7	14

Source of data : Primary data

In this table Larger number of cultivators belongs to APL category and a Smaller number of people belong to BPL category. That is, 78 percent and 22 percent Respectively. Majority (36 percent) of the respondents are having income level of 3 lakh to 5 lakh. 26 percent have annual income above 5 lakhs. 36 percent have income between 1 lkh and 3 lakhs. Only one respondent have income below one lakh.36 percent of farmers gets Income between 5000 to 15,000 and 32 percent are getting income between the range of 15,000 to 25,000. 28 percent gets income between the ranges of 25000 to 55000. Only 4 Percent of the rubber growers get income above 55,000. Among the respondents, 30 Per cent of growers depend on hired labours for tapping. 70 per cent of the respondents do Not hire labours for tapping. They tap either with the help of family members or by themselves. Respondents who are mainly dependent on rubber cultivation tap rubber themselves. Their response reveals that those who are utilizing own labours are able to maintain and continue the rubber cultivation. It was also reported by the farmers the tapping charges for 100 tree is around Rs 200 i.e. Rs 2 per trees. They also expressed their feeling regarding the expense of tapping and other charges especially when the rubber prices are falling down. Themselves. Respondents who are mainly dependent on rubber cultivation tap rubber 34 Percent of the Rubber growers spend 3000 to 4000 rupees in an year for meeting the cost of fertilizers in Addition to other costs. 14 percent are incurring cost above 5000 and 56 percent 2000 to 4000. Only 12 % are having the cost of fertilisers of 1000 to 2000.

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Table. 7.3 Problems faced by rubber growers

Sl. No	Problems	No. Of respondents	Percentage
1	Higher cost of fertiliser	9	18
2	Higher cost of rubber tapping	6	13
3	Higher cost of transportation	5	10
4	Changing weather condition	10	20
	Declining prices	20	40
	Total	50	100

Source of data: primary data

The above table shows the problems faced by the rubber cultivators. Majority of the Cultivators (40 percent) responded declining price and volatile nature were the main Problem. This phenomenon existed in the market for the last few years and its intensity was Very high especially after 2012. Falling price of rubber affected the life and livelihood of The farmers in different ways. The sharp fall in natural rubber price caused deep concern in Kerala as the state accounted for over 80 percent of the domestic production of the Commodity. Another serious problem affecting the rubber cultivation is weather condition. Other problems are high cost of fertilisers, high cost of rubber tapping, higher transportation Cost etc.

Table. 7.4 Opinion of rubber farmers regarding the impact of falling prices of rubber

Sl. No.	Particulars	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	Weighted score
1	Price fall leads to indebtedness in banks	3	2	5	15	25	207
2	Price fall forced to cut trees and start other crops	2	3	2	23	20	206
3	Constant price fluctuations affected my standard of	1	2	2	24	21	212

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	living						
4	Planning to quit cultivation, being unviable	4	4	2	28	12	190
5	Forced to reduce the tapping days	2	2	1	29	16	205

Source of data: Primary data

The opinion regarding the impact of market price of rubber on rubber growers Revealed their concerns and their expectations. To know the impact of falling prices of Rubber on farmers a five point Likert scale (ranging from strongly agree to strongly Disagree) has been used and calculated the weighted scores for the respective statements. It was noted that the falling trend in prices have adversely affected the rubber cultivation As with most of the statements farmers gave higher score to either agree or strongly. The Declining price of rubber had its worst impact on the lively hood of cultivators as it records The highest score. Further falling price increased their indebtedness. Today, the falling Rubber price affected the automobile industry, supermarkets, luxury hotels, and even the Retail shops.

Discussion

- Larger number of the farmers facing the problem of changes in rubber prices.
- The significant observation from all the findings of the study is that the small rubber Cultivators are having an important role in economic development and they were Facing lots of problems like higher labour cost, transportation cost etc.
- The market price they get recently was between Rs.150/- to Rs.224/-
- The market price they get during covid19 was about Rs.100/- to Rs.150/-.
- The covid19 affected the rubber cultivation; they faced the problems of lower Prices, shortage of labours and inaccessibility in market condition and unavailability of transportation facility. Majority of them faced the problem of lower prices (40%).

Suggestions

- Government should take various steps to provide assistance to encourage the rubber Cultivators especially the small cultivators.

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- Government should fix a reasonable price time to time and list it through the Cooperative societies by considering the efforts and cost incurred by the small Cultivators and this will a great extent encourage the natural rubber production and Social development of nation is as possible.

- The farmers in Kerala are facing many problems due to volatility in prices; so a Scheme that guarantees minimum price of 250/- for natural rubber sheets produced Was implemented by state government.

Conclusions

The opinion regarding the impact of market price of rubber on rubber growers revealed their concerns and their expectations. To know the impact of falling prices of rubber on farmers a five point Likert scale (ranging from strongly agree to strongly disagree) has been used and calculated the weighted scores for the respective statements. It was noted that the falling trend in prices have adversely affected the rubber cultivation as with most of the statements farmers gave higher score to either agree or strongly. The declining price of rubber had its worst impact on the lively hood of cultivators as it records the highest score. Further falling price increased their indebtedness. Today, the falling rubber price affected the automobile industry, supermarkets, luxury hotels, and even the retail shops. tapping, higher transportation cost etc. also affected the farmers adversely. They opined that rubber cultivation would become profitable when the rubber price come up to the range of Rs.250.

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