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Constraints faced by rubber famers in Niuland, Nagaland

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Abstract: *The Amazonian rubber tree, scientifically known as Hevea brasiliensis, belongs to the Euphorbiaceae family and is renowned for its unique properties. Rubber, derived from the white milky latex extracted from its bark, exhibits exceptional elasticity, strength, pliability, and water resistance, making it highly valuable in various industries. The study was conducted in Nagaland, focusing specifically on Niuland district, which was purposively selected from among the state's 16 districts. Within Niuland district, both Niuland and Kuhuboto blocks were chosen for the study, encompassing three villages each. A total of 120 respondents participated, with 20 selected from each village. Demographically, majority of respondents were in the middle-age group (61.7%) and had attained a high school level of education (66.7%). The study revealed that the majority of respondents belonged to nuclear families (95.83%), with medium-sized families (84.16%) and land holdings (93.33%). Additionally, 56.7% of respondents reported an annual income ranging between Rs. 3,02,872 and Rs. 4,42,878. The primary challenge identified by the study was pest and disease infestation, which affected all surveyed rubber cultivators (100%). Addressing these constraints is crucial for enhancing the sustainability and productivity of rubber cultivation in Niuland, Nagaland, ensuring the livelihood security of its farmers.*

Keywords*: Constraints, rubber, Nagaland, livelihood, income, farmers.*

1. INTRODUCTION:

Amazonian rubber tree (Hevea Brasilliensis) is a flowering plant belonging to family Euphorbiaceae and genus Hevea.For commercial production natural rubber is available in Manihot glaziovii (cera rubber), Fiscus elastica (Indian rubber) Castiollaelastica (Panama rubber), Hevea Brasilliensis etc., and among them Hevea Brasilliensis is the most important commercial source of rubber. It is a native of Brazil and was introduced in Asia in 1876. It is a fast-growing tall tree acquiring 20-30 metre height and starts to yield latex in 5-7 years after planting. The tree requires hot and humid climate with temperature of 25-35 ⁰ C and annual rainfall of over 200 cm for better growth. Though rubber naturally grows in equatorial monsoon type climate, the crop is successfully grown in the tropics and subtropics with adequate rainfall (Vijaykumar et al., 2010). The rubber trees generally grow 32 years of economic life and the plantation start its harvesting from 6th year onwards.

Rubber extracts a white milky liquid called ‘latex’ from the bark of the para rubber tree -*Hevea Brasilliensis*. The latex is a sticky, milky and white colloid drawn off by making incisions in bark and collecting the fluid in vessels in a process called ‘tapping’. Rubber is a strange material, elastic, strong, pliable, water resistant and it has a unique form of many useful characteristics. Because of the unique attribution of rubber, it enables to have high utility in domestic and industrial applications and is found in numerous objects used throughout daily lives, from car tyres to clothing. It is used extensively in many applications and products either alone or in combination with other materials. In most of its useful forms, it has a large stretch ratio and high resilience and is also found to be water-proof. We rely more than ever on rubber products.

Commercial cultivation of rubber was introduced in India by the British. Although the experimental efforts to grow rubber on a commercial scale in India were initiated as early as1873 at Botanical Gardens, the first commercial Hevea plantation in India was established at Thattekadu in Kerala in 1902 (Anonymous, 2016). Rubber plantation manufacturing industry was started later in 1921with the establishment of Dixie Aye rubber factory in Kolkata. But wide cultivation of rubber started after 1940. Rubber sector not only in northeast India, but across the entire rubber growing belt of the country is dominated by small growers, who grow rubber in their own land outside forest areas only (Majumdar, 2018).

In the North-eastern states Tripura is considered as the second rubber capital of India after Kerala. Rubber plantation was introduced in Tripura in 1963 by the farmers department as means to manage and stabilize shifting cultivation(Ghosh, 2018). As rubber is gaining popularity over the years and Nagaland being identified as potential rubber producing state. The total area under rubber plantation in Nagaland stands at 19,132.5 hectare as of 2021.Currently 4,989 hectare have been brought under tapping producing about 15,700 million tonnes of latex.

2. LITERATURE REVIEW :

A.R Anuja (2012) points out that the small rubber growers suffer from problems like low productivity, poor quality of processing and weak marketing system. The prevalence of smallholdings makes the sector vulnerable to fluctuations in price, exploitation by middleman etc.

Viswanathan (2015) in a report on “More Women Need to Enter Plantation Jobs” assessed that women participation in rubber smallholding sector is very low and says that more women should get into rubber plantation jobs after skill development in tapping, latex collection, processing and sheet making so that the plantation can overcome the present labour shortage problems

Sinumon T.G and Dr. K. Mahalakshmi (2021) shows the challenges facing small scale rubber industries sector in new environment are mainly in area of Finance, technology and management. Small entrepreneurs cannot afford to spend large amounts on advertising and sales promotion

Yogesh Tiwari and PK Awasthi (2021) found that ten major constraints were faced by farmers in crop production. Low investment capacity was the major constraints faced by farmers. This is because most of the farmers considered for the study were of small and marginal. Small and marginal farmers were unable to get proper trainings due to additional fact that they are reluctant to adopt and experience new techniques and methods in their farms.

3. RESEARCH METHODOLOGY :

The study was conducted in the state of Nagaland. The total geographical area of Nagaland is 16,579 sq. km (2011 census). There are 16 districts in Nagaland and from which majority of rubber plantations is concentrated in Dimapur, Wokha, Mokokchung, Peren, Mon, Longleng, Zunheboto and Tuensang districts.Out of the total 16 districts Niuland district was purposively selected for the present study. There are four blocks under Niuland district viz., Niuland block, Khaghaboto block, Kuhuboto block and Agahuto block. Out of these blocks, Niuland block and Kuhuboto block were selected purposively as it had a good number of farmers engaged in rubber plantations.There are 32 villages under Niuland district and out of these, three villages each were selected from Niuland and Kuhuboto blocks,as rubber cultivation played a major role in their livelihood and generated income employment. A total of 120 respondents were randomly selected for the study, 20 respondents from village.The data collected from the respondents were scored, tabulated and analysed using frequency, percentage, mean, standard deviation and correlation.

4. RESULTS AND DISCUSSION:

4.1 Socio-economic characteristics of the respondents.

Table 1 Distribution of socio-economic characteristics of the respondents N=120

Sl. No.	Variables	Category	Frequency	Percentage	Mean	SD
1.	Age	Young (<32)	26	21.7		
		Middle age (32-52)	74	61.7	41.6	9.89
		Old (> 52)	20	16.6		
2.	Education	Illiterate	0	0.00		
		Primary	24	20.00		
		High school	80	66.7		
		Matriculate and above	13	11.7		

		Graduate and above	2	1.6		
3.	Family type	Nuclear	115	95.83		
		Joint	5	4.17		
4.	Family size	Small (<4)	8	6.7		
		Medium (4-6)	101	84.16	5.13	1.14
		Large (> 6)	11	9.14		
5.	Total land holding under rubber cultivation	<2 ha	8	6.66		
		2-4 ha	112	93.33	2.79	0.80
		>4 ha	0	0.00		
6.	Total annual income from rubber cultivation	< ₹ 2,82,132	26	21.7		
		₹2,82,132-₹4,10,367	75	62.5	346250.00	64117.31
		>₹4,10,367	19	15.8		

Table 1 reveals that Majority (61.7%) of the respondents belonged to middle age group (Ushadevi et al, 2001), followed by 21.7 per cent belonged to young age and 16.6 percent belonged to old age group. Majority (66.7%) of the respondents had high school level of education, (20%) had primary level of education, (11.7%) were matriculate & above and only (1.6%) had graduate level of education and none of the respondents were illiterate. Majority (95.83%) belonged to nuclear type and only few of the respondents (4.17%) were of joint family type. Majority (84.16%) of respondents had medium sized family followed by large family size with (9.14%) and low sized family (6.66%) respectively. Majority (93.33%) of the respondents had medium sized land holding followed by low land holding (6.66%) and none of them had large land under rubber cultivation. Majority (56.7%) of the respondents had total annual income (between Rs. 3,02,872-4,42,878) while 25 per cent of the respondents had total annual income (more than Rs. 4,42,878) and 18.3 per cent had income, earning (less than Rs. 3,02,872).

4.2 Constraints faced by rubber cultivators.

Table 2 Distribution of constraints faced by the respondents in rubber cultivation. N=120

Sl. no	Category	Frequency	Percentage	Rank
1	Labour cost	63	52.5	VII
2	Price fluctuation	116	96.7	II
3	Storage facilities	110	91.7	III
4	Lack of standardization tools	100	83.4	IV
5	Lack of proper training	79	65.8	V
6	Transportation	75	62.5	VI
7	Pests and disease	120	100	I
8	Lack of support from government	54	45	VIII
9	Lack of infrastructure	100	83.4	IV

Table 2 shows that pest and disease infestation (100%) was the most important constraint faced by rubber cultivators in the study area, followed by price fluctuation (96.7%), storage facilities (91.7%), lack of standardization tools (83.4%), lack of infrastructure (83.4%), lack of proper training (65.8%), transportation (62.5%), labour cost (52.5%) and lack of support from government (45%).

5. CONCLUSION:

Challenges confronting rubber farmers encompass diverse issues such as insufficient infrastructure, price volatility, and limited access to modern farming practices. Addressing these short comings is crucial for improving their economic stability and sustainability in the industry.

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