

RESEARCH ARTICLE

Status of tea cultivation in Nagaland, India

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Abstract

The small tea growers of Nagaland produce both orthodox tea and CTC tea. Nagaland tea is known for its unique taste and aroma. Over the years tea cultivation has gained a particularly healthy popularity among farmers of Tuli block, Mokokchung. The research was conducted in the year 2023 to understand the trend of tea production over the last 10 years from 2013 to 2023. A structured interview schedule was employed to collect primary data from a total of 120 tea cultivators from 4 villages (Merangkong, Anaki, Kangtsung Yimsen and Wamaken). A study found that the majority of the respondents were middle-aged and male. The majority acquired education till secondary level, married, medium-sized land holding with a medium level of income from tea. Most of the respondents had training exposure and active social participation. With regards to tea production trends, the study concluded a non-significant linear trend of production under tea over the study period and the area under tea was expected to increase in the coming years. The highest production over the past 10 years was in the year 2014 with 12571.07 kg/ha and the lowest was in the years 2020 and 2021 with 5412.50 kg/ha.

Keywords: Small tea growers, Area, Production, Socio-economic, Nagaland.

Introduction

Tea or *Camellia sinensis* which is often referred to as the "Queen of beverages" (Biswas 2016), is the world's second most popular non-alcoholic beverage after water. Due to the presence of caffeine tea, it is a highly addictive and stimulating beverage that has various health benefits. There are two forms of tea, i.e., Orthodox tea and crush tear and curl (CTC) tea. In general, there are three types of tea namely black tea (fermented tea), oolong tea (semi-fermented tea), and green tea (unfermented tea). "Today China leads the production of tea with about 2,414,802 metric tons per annum followed by India with 1,252,174 metric tons" (Atlas Big, 2023). "India enjoys an ace position in the production of black tea. The growth and production of tea have been reported higher than other plantation crops in the country. After water, the most sought and consumed drink is tea. Over the past decades, the production and consumption of tea have increased steadily and its production has become one of the economic pillars of countries like China, India, Sri Lanka, and Kenya (Kumar *et al.* 2021). Tea holds a special place in the heart of the Nagas. Tea cultivation in Nagaland was first started in Longsa village in Mokokchung district and then it was followed by Tuli block of Mokokchung and later in Tizit, Mon district (Anonymous, 2021). The black tea which according to (Roots and Leasure 2016) is commonly known in Nagamese as 'pik A cha' is an integral part of the entire household in Nagaland. Nagaland has a huge scope for tea cultivation as it can be grown on different altitudes on a commercial basis both in the hills and the foothills areas of the state. Although the exact figures on tea yield

in Nagaland are not readily available, reports indicate that the state has significant potential for tea cultivation with increasing numbers of farmers taking up tea production and given the right impetus, tea plantation in the State could develop into a major economic sector" (Anonymous, 2020). The popularity of small tea cultivation is ever-increasing in Tuli as it provides the farmers with a steady flow of income and with the setting up of new privately owned tea manufacturing factories in Tuli itself like the Anudok tea factory and Chuba tea factory it is providing the local people with more employment opportunities and helps the farmers fetch a better price for the tea leaves. Therefore in many ways, tea cultivation is seen as a very attractive and lucrative occupation as tea provides assured and sustainable income for a long period with comparatively less investment and

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also gives long-term employment opportunities. Against this backdrop, the study was conducted to assess the current state of tea cultivation in the Mokokchung district.

Materials and Methods

Nagaland is organic by default, the climate and soil are ideal for growing tea, and since more people are turning towards the consumption of organic foods, there is a growing demand for Nagaland tea. For this study, Tuli block of Mokokchung district was purposively selected because the farmers have been very successful in the tea cultivation enterprise attaining self-reliance up to the extent of having their factories and reaching their finished product in some markets of Nagaland. A structured interview schedule (age, sex, educational qualification, marital status, land holding size, annual income from tea, training exposure, market availability, and social participation) was prepared to collect primary data from a total of 120 tea cultivators from 4 villages (Merangkong, Anaki, Kangtsung yimsen and women) of the RD block Tuli in Mokokchung district. Trend analysis is the process of gathering data and analyzing it to identify recurring patterns, which represent patterns. The trend in this study was used to examine and predict the movement of area, production, and productivity based on the data of the last ten years. In order to demonstrate the link between two or more variables, regression analysis was employed. The method evaluates the relationship between a dependent variable and independent factors and is frequently presented as a graph. Appropriate statistical tools were used to analyze the data.

Results and Discussion

Socio-economic profile of the respondents

The findings in Table 1 revealed that a majority of the respondents fell in the category of the middle-aged group, which constitutes 70% of the respondent's similar findings were reported by (Debasish and Chandra 2013) in their study of small tea growers in the North Bengal region of West

Bengal which concluded that 70% of the growers belonged to the middle age group. 92.50% of respondents were men folks the reason being that tea production is highly labor intensive so more preference for tea cultivation was shown by the male counterparts because of their unique physical advantage where, usually males exhibit more vigor and activeness in field-related activities. The majority (34.17%) of the respondents had a secondary level of education, It was observed that the respondents were responsive, they were open to accepting the change in agricultural practices and other lifestyles and this educational qualification is one factor that is contributing towards this positive attitude of the respondents. This result was in line with the findings of Das (2019). The majority of the respondents (95.83%) were 'married' Tea cultivation being labor intensive it was found that married respondents got more support from the family in terms of physical help as well as moral support so the married respondents were more optimistic and motivated to work in the tea farm. Similar findings can be seen from the study done by Mohan (2016) where a majority of the growers were married with 67% nuclear and 33% joint families.

The majority of the respondents (50%) had medium-sized land holding ranging from (4–10 ha) Even though the results have shown that the majority of the respondents belong to the medium-sized land holding which is 4.0 to 10.0 hectares this is because of the standardized classification given by the ICAR otherwise majority had a total land holding of 4 to 5 hectares. The majority of the respondents had a medium level of income from tea cultivation ranging from ₹ 162524 to 378375 annually. Similar findings can be seen in the study made by Kumar(2018) where the average monthly income was found to be moderate. 67.50% of the respondents had attended training on tea cultivation. In 100% of respondents sold their green leaves through agents only and there was no other market *a*lternative. The majority (61.67 %) of the respondents did not take part in any social groups, however, all the respondents were actively attending meetings and gatherings in the village even though they were not a part of any social groups.

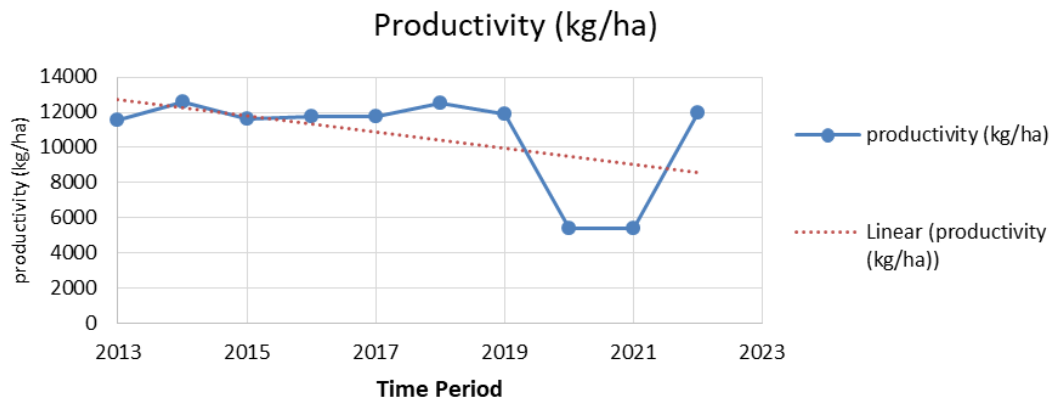
Table 1: Socio-economic profile of the respondents

Sl. No.	Variable	Categoryc (Majority)	Number	Percentage
1	Age	Middle	84	70.00
2	Sex	Male	111	92.50
		Female	9	7.50
3	Educational qualification	Secondary	41	34.17
4	Marital status	Married	115	95.83
5	Total land holding size	Medium (4.0-10.0 ha)	60	50.00
6	Annual income from tea	Medium	85	70.83
7	Training exposure	Attended	81	67.50
8	Market availability	Selling through agents	120	100.00
9	Social participation	Member at present	74	61.67

Table 2: Trend in production of tea

Simple regression	Regression equation	b	SE(b)	t value	p-value	R ²
Production	$Y=0.0093x + 1.9729$	0.009	0.003	3.730	0.006	0.6349

Note: y = Production
x = Time Period

**Figure 1:** Trend in productivity of tea

Production trend of tea in the study area

In this study, production trend was used to analyze and predict production variance using data from the year 2013-2023. From Table 2 we can observe a non-significant linear trend of the production of tea over the period of study. Nearly 17% of the variation in production under tea can be captured by the trend model considered. It is observed from the graph that production peaked in 2022 with a production of 24493.33 kg and a slight decrease in production can be seen in the year 2015 (22603.33 kg) the production of tea, like all agricultural crops, is highly dependent on climatic conditions as well as the prevalence of various pests and diseases, this could be the cause of the slight decrease in production in the year 2015. Production then increased steadily from 2016 (22940.83 kg) to 2018 (24893.33 kg) before declining slightly in 2019 (24213.33 kg) and drastically in 2020 and 2021 (11039.17). This is owing to the fact that in 2020 and 2021, processing factories were shut down for several consecutive months due to the pandemic, and there was also a labor shortage. As a result, despite the growth of tea leaves, the bushes were left un-harvested, leading to a steep decrease in production.

Conclusion

The study concluded that the majority of the respondents were middle-aged and male. The majority acquired education till secondary level, married with medium-sized land holdings, and with a medium level of income from tea

cultivation. Most of the respondents had attended training on tea cultivation and although not officially a member of various social groups, the majority of the respondents were active in their social life. Following the trend of tea production, we can observe a significant linear trend in the area of tea throughout the study. Nearly 63% of the variation in area under tea can be captured by the trend model considered. A non-significant linear trend of the production of tea over the period of study. Nearly 25% of the variation in productivity under tea can be captured by the trend model considered. From the regression coefficient and figure the area under tea can be expected to increase in the coming years.

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