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**INDIAN TEA PRODUCTION: AN ANALYSIS**

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**ABSTRACT**

*The origin of tea, and whether a truly 'wild' plant still exists, is not clear. Camellia sinensis var. sinensis is probably native to western Yunnan, while Camellia sinensis var. assamica is native to the warmer parts of Assam (India), Burma, Thailand, Laos, Cambodia, Vietnam and southern China. 'Wild' tea plants can be found growing in forests, but these may be relics of past cultivation. The cultivation and brewing of tea in India has a long history of applications in traditional systems of medicine and for consumption. Research shows that tea is indigenous to eastern and northern India, and was cultivated and consumed there for thousands of years. However, commercial production of tea in India did not begin until the arrival of the British East India Company, at which point large tracts of land were converted for mass tea production. The credit for creating India's vast tea empire goes to the British, who discovered tea in India and cultivated and consumed it in enormous quantities between the early 1800s and India's independence in 1947. Major Robert Bruce discovered tea plants growing wild in the jungles of Assam in the 1820s. At this time, no one thought that tea exist in India; and it took some time to convince the pioneers that the native plant was real tea. Ironically, the native plants flourished, while the Chinese seedlings struggled to survive in the intense Assam heat and it was decided to make subsequent plantings with seedlings from the native tea bush. The first 12 chests of manufacture tea from Assam leaf were shipped to London in 1838 and were sold at the London auctions on 10 January 1839. This paved the way for the formation of 'Bengal Tea Association' in Calcutta and a first Joint Stock Company, the 'Assam Company' in London. On success of Assam Company several other Company was formed to take up the tea cultivation. India has the unique distinction of being one of the world's largest producers of tea. Also acclaimed as the world's second most popular beverage, tea gives morning the world over, their distinctive feel.*

**KEYWORDS**

Tea area and production in India, Kerala, Idukki.

**INTRODUCTION**

The cultivation and brewing of tea in India has a long history. However, commercial production of tea in India did not begin until the arrival of the British East India Company, at which point large tracts of land were converted for mass tea production. At present India is the second largest producer of tea, the largest consumer and fourth largest exporter in the World. The major tea growing areas of India are West Bengal, Assam, Tamil Nadu and Kerala. Tea is also produced in smaller volumes in the states of Tripura, Arunachal Pradesh, Himachal Pradesh, Karnataka, Bihar, Nagaland Uttaranchal, Manipuri, Mizoram, Meghalaya, Orissa and Sikkim.

Tamil Nadu is the major tea growing state in South India with 76, 000 hectares under cultivation. Kerala has 37,000 hectares while Karnataka is a much smaller tea growing state with just 2000 hectares. The cultivation and marketing of tea involve greater amount of manpower and hence play a vital role in the economic activities of these regions. Even though India is the largest producer of Tea in the world, yield of tea in India is the lowest among the other Tea producing countries.

In Kerala, Idukki District is the largest producer of tea followed by Wayanad District. Congenial climate and suitability of soil are the main reasons for such concentration. Besides generating lucrative revenue to both Government and owners of the tea plantations, the industry provides large scale employment opportunities to the people of the district. However, in recent years, the owners of the tea plantations were unable to obtain optimum yield and return. Large scale deforestation in the area followed by irregular monsoon, sporadic rainfall and frequent drought in recent years have severely affected the production of tea. The mounting cost of inputs such as labour, manures, fertilizers and other plant protection materials on the one hand and the spiraling marketing cost, increasing marketing margin, widening price spread and temporal variation in the price on the other hand have eroded the profitability of the tea plantations. Therefore a scientific study to identify the problems associated with production of tea in order to enlighten the people concerned about its inherent strength and weakness, opportunities and threat becomes relevant and socially significant.

The main objective of the study is to highlight the growth of tea production from 1990-91 to 2009-10 in India, Kerala, and Idukki District. For the present study secondary data were collected from the tea board statistics published by Tea Board of India, Kolkata, and Tea Research Institute, Delhi.

**AREA AND PRODUCTION OF TEA IN INDIA**

Area, production and Yield per hectare in India, Kerala and Idukki District are shown in Table 1. The yield has been calculated by using a simple formula of dividing total production by total area and multiplying the result by 1000 during a given year. This has been the practice of Tea Board also. The tea industry in India has small and big growers and Government plantations. Though the major plantations of tea production in India are highly concentrated in some specific region, they are scattered in different states. The area under Tea cultivation in India rose from 4,16,269 hectares in 1990-91 to 5,78,391 hectares in 2009-10 the increase being 28.03 per cent.

It is seen from the above table that Indian tea production had been fallen in 1999-2001 due to closing down of estates and the neglect of the existing plantations. No plucking was done in many of the small/medium gardens due to low profit. The unequal cost-profit ratio also lead the producers to neglect production. However, the tea industry in India overcame sluggishness in production and has been increasing production since 2002. Many tea gardens have also reopened. From the year 2003-2010 the cultivation and production of tea increased gradually over the years. India has mainly been known to produce black tea. However, there is shift in the trend now as many tea estate have started producing Green, White and Oolong teas. The considerable increase in the total area under tea production in India during the period of study may be attributed to the entry of large number of non-traditional growing regions like, Sikkim, Orissa, Meghalaya, and Mizoram. The average annual increase amounted to 8,10,031 Metric tonnes in 1997- 98 and annual production exceeded the average production and the highest quantity was recorded in the year 2007-08.

TABLE 1: AREA, PRODUCTION AND YIELD PER HECTARE OF TEA IN INDIA, KERALA AND IDUKKI DISTRICT FROM 1990-91 TO 2009-10

YEAR	INDIA			KERALA STATE			IDUKKI DISTRICT		
	Area (in Hectare)	Production (in Metric Tonnes)	Yield per Hectare in Kilogram	Area (in Hectare)	Production (in Metric Tonnes)	Yield per Hectare in Kilogram	Area (in Hectare)	Production (in Metric Tonnes)	Yield per Hectare in Kilogram
1990-91	416269	720338	1730	34612	66803	1926	23571	51507	2185
1991-92	420470	754192	1794	34708	54627	1582	23592	40023	1714
1992-93	420289	732322	1742	34525	62003	1788	23357	46370	1980
1993-94	418363	760826	1819	34688	63127	1715	23440	47641	1774
1994-95	425966	752895	1768	36817	64778	1761	26855	49473	1852
1995-96	427065	756016	1770	36775	61581	1675	26710	46434	1737
1996-97	431245	780140	1809	36762	69776	1895	26729	46434	1958
1997-98	434294	810031	1865	36817	65943	1794	26764	52394	1814
1998-99	474027	874108	1844	36752	66833	1814	26610	48254	1838
1999-00	490200	825935	1685	36762	68947	1866	26615	49042	1922
2000-01	504366	846922	1679	36940	65151	1764	26748	51406	1736
2001-02	509806	853923	1675	36967	57772	1563	26753	46439	1503
2002-03	515832	838474	1625	36967	58012	1569	26753	40207	1564
2003-04	519598	878129	1690	37107	62146	1675	26893	41848	1668
2004-05	521403	892965	1713	36772	58502	1591	27100	44861	1547
2005-06	555611	945974	1703	36236	59462	1641	27122	41932	1609
2006-07	567020	981805	1732	37137	55966	1507	27692	43639	1390
2007-08	578458	986427	1705	37137	70287	1893	27692	38484	1391
2008-09	579353	980818	1693	36785	61155	1662	24596	46415	1887
2009-10	578391	966403	1693	36964	57106	1545	24647	44192	1793
<b>Constant (SE)</b>	<b>12.88 (0.013)</b>	<b>13.46 (0.013)</b>	<b>7.49 (0.014)</b>	<b>10.470 (0.009)</b>	<b>11.073 (0.035)</b>	<b>7.501 (0.032)</b>	<b>10.113 (0.025)</b>	<b>10.797 (0.038)</b>	<b>7.581 (0.045)</b>
<b>Trend Co-efficient (SE)</b>	<b>0.021 (0.001)</b>	<b>0.017 (0.001)</b>	<b>-0.003 (0.001)</b>	<b>0.003 (0.001)</b>	<b>-0.003 (0.003)</b>	<b>-0.006 (0.003)</b>	<b>0.005 (0.002)</b>	<b>0.006 (0.003)</b>	<b>-0.012 (0.004)</b>
<b>R<sup>2</sup></b>	<b>0.953</b>	<b>0.933</b>	<b>0.307</b>	<b>0.502</b>	<b>0.058</b>	<b>0.192</b>	<b>0.244</b>	<b>0.189</b>	<b>0.353</b>
<b>Adjusted R<sup>2</sup></b>	<b>0.950</b>	<b>0.929</b>	<b>0.307</b>	<b>0.476</b>	<b>0.006</b>	<b>0.147</b>	<b>0.202</b>	<b>0.144</b>	<b>0.318</b>
<b>CGR</b>	<b>2.95</b>	<b>1.73</b>	<b>-0.340</b>	<b>0.312</b>	<b>-0.308</b>	<b>-0.558</b>	<b>0.496</b>	<b>-0.645</b>	<b>-1.177</b>
<b>Co-efficient of Variation</b>	<b>12.59</b>	<b>10.56</b>	<b>3.65</b>	<b>2.562</b>	<b>7.535</b>	<b>7.562</b>	<b>5.77</b>	<b>8.66</b>	<b>11.63</b>

Source: Area and Production of Tea in India 2010-11, Tea Statistics, Tea Board of India, Kolkata.

Figures in brackets denote the Standard Error.

An analysis of yield per hectare revealed that there was an increase throughout the period except in 1994-95, 2002-03 and 2008-09. The reasons for such a low yield are continuous cultivation of poor yielding plants, existence of senile and unproductive plants, losses due to pest and disease attack and drought, non-adoption of appropriate agronomic practice and poor working conditions of workers and lack of training. Further Lack of health care facilities made workers incompetent and affected their yield as well. Unavailability of skilled labour and inefficient working conditions had a major role in the low production and yield in small tea segments as a whole. Incompetence of workers and low yield are the main challenges that the small tea sector face in competing at international standards and participating in fair trade and so on. The percentage analysis of changes in yield reveals that the increase was not significant during 1999-00 to 2003-04. Considering area, production and yield it appears that while there had been increase in area and total production there was not proportionate increase in the yield per hectare.

It is observed from the above table that the trend co-efficient is positive and significant at one per cent level indicating an increasing trend in the area, production and decrease in the yield of tea in India during the study period. The decadal analysis of data shows that the area and production was improving. There had been an increase in the production of tea by 1.73 per cent per annum, increase in area by 2.95 per cent per annum and decrease of yield by -0.34 per cent per annum due to high production cost, lack of infrastructure, unpredictable climatical conditions, lack of land for expansion, high labour cost, poor transport facilities in estates and frequent political agitation. The coefficient of variations in tea production recorded 10.56 per cent. This wide variation was accompanied by variations in area and yield, which were 12.59 per cent and 3.65 per cent respectively.

## AREA AND PRODUCTION OF TEA IN KERALA

Kerala is the most suitable region in the country having the requisite agro-climatic conditions for tea cultivation. Tea is the important bush crop in Kerala. Idukki and Wayanad are the major districts for tea production in Kerala. The salient feature of the tea plantation in Kerala is the preponderance of the small and marginal holdings. The area under cultivation of tea in Kerala was 34,612 hectares in 1990-91 which increased to 36,964 hectares in 2009-10. However the increase was not constant throughout the period. There were annual fluctuations. Further there were also decreases in 4 years 1992-93, 1998-99, 2005-06 and 2009-10. The average annual increase works out to 117.6 hectares only. While at the national level there was an increasing trend throughout the study period the data for Kerala reveal a different picture indicating that additional area brought under cultivation was small.

An analysis of production of tea in Kerala reveals that the total production increased from 66,803 tonnes in 1990-91 to 70,287 tonnes in 2007-08 and then decreased to 57,106 tonnes in 2009-10. Compared to the changes in area the production figures reveal a better trend. The yield of Tea in Kerala decreased from 1926 tonnes in 1990-91 to 1545 tonnes in 2009-10. The reasons for decrease in yield were the majority of the workers in small tea gardens were temporary and casual workers and most of them were migrants. So they were not properly trained. The wage rate was below the official minimum wage rate in all states except Kerala. However, in some regions of Kerala, the wage is fixed according to the weight of green leaves which workers collect each day rather than regular daily wage. It is reported that very often, they are paid less than the official minimum wage. In addition, payment is also irregular in many small tea gardens in India. Since the workers do not have any other alternative, they are forced to stay back in tea gardens. In many regions, workers are appointed only during the peak season and family labour replaces hired labour in the off season or when the price of green leaf is low. Further the yield was very low due to the small size of large number of holdings which made the application of advanced techniques not possible. Other reasons attributed to are the existence of old age plants, the use of uneconomic variety of plants and uneven climate.

It is seen that the trend co-efficient for production and yield of tea in Kerala are negative and not significant. The production of tea decreased by -0.31 per cent per annum from 1991-92 to 2009-10. There was also increase in area by 0.31 per cent and decrease in yield by -0.56 per cent per annum during the study period. Thus, the continued increase in area as well as yield contributed to the increase in production. Kerala recorded a variation of 7.53 per cent in tea production. This wide variation was accompanied by variations in area and yield, which were 2.56 per cent and 7.56 per cent respectively.



**AREA AND PRODUCTION OF TEA IN IDUKKI DISTRICT**

Idukki District is situated in the southern part of Kerala state. The district has the agro climatic conditions suitable for the cultivation of plantation crops and these includes tea, coffee, rubber, coconut, cardamom, and pepper. In this district tea gardens are in the north while major hilly areas have cardamom plantation. A major portion of the available land is unsuitable for cultivation because of hilly terrain, lack of proper irrigation facilities and accessibility. Out of the total area of about 5,10,522 hectare, 2,17,005 hectares comes under cultivation of tea, coffee, rubber, coconut, cardamom and pepper. Tea was cultivated 24,647 hectares in 2009-10. Idukki District is comprised of four taluks, namely Devikulam, Udumbanchola, Thodupuzha and Peermade produce tea. Larger part of the area under tea consist of small holdings.

The area under cultivation of tea in Idukki District in 1990-91 which was 23,571 hectares increased to 24,647 hectares in 2009-10. The unsustainable and highly fluctuating price and international market of tea forced planters to go for alternative crops in their gardens. The tea industry finds alternative cropping as a new business model within the existing plantation model. The recent move in different tea growing region is to diversify their focus on tea cultivation. Major tea plantations had decided to start cultivation of horticulture, floriculture, and cultivation of medicinal and aromatic plants and tea-based tourism. Most of the planters are of the opinion that relying on tea production alone cannot sustain in this uncertain tea market. They consider multi-crops system be an alternative factor to cope with price oscillation in the industry. The considerable increase in the total area under tea cultivation in Idukki District during the period of study may be attributed to new planting or replanting.

An analysis of yield per hectare revealed that there was a decrease throughout the period except 1992-93, 1996-97 and 1999-2000. The analysis shows that the increase was not significant during 1992-93. The incidence of pest and disease, fluctuations in price and unfavorable climatic conditions led the tea cultivators to switch over to other remunerative crops. Considering area, production and yield per hectare it appears that while there has been increase in area and total production there was not proportionate increase in the yield per hectare.

It is observed from the above that the trend co-efficient is positive and significant indicating an increasing trend in area, production and negative in yield of tea in the district. The area under tea increased by 0.47 per cent per annum and yield decreased by -1.18 per cent per annum contributing to an decrease in production by -0.65 per cent per annum. It is also observed that tea production experienced considerable variation of 8.66 per cent. For the same period, the rate of variation in yield and area were 5.77 and 11.63 per cent respectively.

**CONCLUSION**

Both in terms of average area of tea cultivation and production, India occupies the second place. But from the point of view of yield per hectare, India occupies the last position among the tea producing countries. The average tea yield among the major tea producing countries is 2235 Kg/ha, where as it is 1693 Kg/ha in India. India's exceptional geo-agro-climate situation has created unique conditions that are very suitable for growing a super fine quality of tea that cannot be replicated elsewhere. However, various constrains and weakness may jeopardize the future prospectus of the tea plantations unless due attention is paid and appropriate measures are taken in time.

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