

CHAPTER – II

History and Growth of Indian Tea Industry with Special Reference to Terai Region of West Bengal

2.1: An Introduction to the History of Tea Cultivation in India

In the late 1830s, long before the commercial production of tea started in India, the tea plants were growing wild in the jungles of North-East Assam. Jan Huyghen Van Linschoten, a Dutch traveller, in 1598, illustrated in his book about his adventures and opined that the Indians used to eat the tea leaves as a vegetable with garlic and oil and used to boil the leaves to make the brew.

A British botanist in 1788, Joseph Banks, conveyed his observation to British East India Company that the climate in certain parts of North-East India which were British controlled, was ideal for tea growing. But he missed the fact that the plants were native to Bengal; that's why he suggested transplanting tea bushes from China. But afterwards, his idea was disregarded. Robert Bruce and his brother Charles, employees of the East India Company, in 1823 and 1831, truly identified that the tea plants were indeed native of the Assam area and sent specimen plants and seeds to officials at the newly established Botanical Gardens in Calcutta. Unexpectedly, no action was taken probably because of the monopoly of the East India Company on the trading of tea from China which they were doing very efficiently; that's why they were not interested to spend money and time elsewhere.

From 1833 onwards, everything started changing. The company, with the fleeting of time, lost its monopoly and this situation forced them to rethink about alternatives. Suddenly their concentration went on the previous suggestions and started thinking that, India might prove a profitable substitute. To verify the plan, a committee was set up where the task of establishing the first nurseries was given to Charles Bruce, and on the other hand, to collect 80,000 tea seeds, the secretary of the committee was sent off to China as they were still in confusion whether the plants were really indigenous to India. In 1834, to investigate the scope of tea cultivation in India, the then Governor General of India Lord Bentick appointed

a committee which was known as the Tea Committee. Kumayan district- which is the foothills of Himalayas was selected by the committee for tea cultivation.

Unfortunately, the committee's first attempt was not successful because of heavy rainfall which did not let the bushes to grow up. It actually made the bushes loose; as a result, the bushes died. Fortunately, the second attempt which was made on the terraces of hills was a successful one. After this successful attempt, a commission was appointed by Lord William Bentinck to explore the possibility of tea cultivation in Assam. As per the recommendation of that commission, in 1835 and in 1837 (Sharma, 1999), two districts of Assam were selected respectively to test indigenous tea production- one area was Sadiya in the Lakhimpur district of Assam and another area was at Chabuya.

The first consignment of Indian tea, in 1838, containing eight chests were exported to England and on 10th January in 1839, it was sold in the London market. The East India Company received very good complement from the customers as the customers explained it as "excellent" product.

Later, the Assam Tea Company began to expand into other districts of Northeast India after the establishment of a successful industry in Assam's Brahmaputra Valley. In the mid-1850s, cultivation started in the foothills of the Himalayas around the town of Darjeeling. In Chittagong also, in about 1840, tea cultivation started. Afterwards, one by one tea was introduced in about 1855 in Sylhet and Cachar, in 1862 in Terai and in 1874 in Dooars (Sarkar, 1986). By the year 1857, around 60 and 70 acres of land came under tea. The company started giving emphasis on Terai and Dooars region and even on remote Kangra Valley which is 800 miles west of Darjeeling. In the year 1835, experimental plantation effort had been made in the southwestern part of the country. It was assumed that the climate of the Nilgiri Hills or the Blue Mountains will be suited for the tea production.

India exported 183.4 tons of tea in the year 1853 whereas by 1870, the figure had increased to 6,700 tons and by 1885, the figure had again increased to 35,274 tons. Today, India is one of the World's largest producers, after China of tea with 13,000 gardens and a workforce of more than 2 million people (Indian Express, 1999).

Figure: 2.1

Tea Map of India



Source: Tea Board of India

2.2: Common Features of Tea Plantation

Even after 69 years of independence, the colonial characteristics – isolation, coercion and exploitation of workers, still exist in the modern tea plantations industry. Tea plantation requires large labour force and large tracts of land and is largely dependent on migrant labourers, whose migration often has to be arranged by the tea planters. In these regions, low-

caste and tribal people basically come under oppressed labour class. In fact, still in tea plantations, social deprivation along with geographical isolation is maintained which ultimately makes the exploitation of tea workers perpetuate. However, some common characteristics of tea plantation are as follows.

- i) It is cultivated in the outsized estates.
- ii) It is cultivated in the tropical and sub-tropical geographical areas.
- iii) The workers are either a migrant or hired; they are treated like slaves.
- iv) They are basically unskilled or semi-skilled.
- v) There is an existence of vertical hierarchy in the tea plantation industries.
- vi) The production is done on a large scale and produced primarily for commercial purposes mainly export.
- vii) Coercion is another integral part of tea plantation.
- viii) Wages are kept low to maintain the profit margin (Dasgupta, 1986).

2.3: Organization of Work

The hierarchy of power varies from estates to estates in the tea plantation industry. Mainly, the organization of work in a tea garden follows a vertical hierarchy, with the managers at the top of the hierarchy and the daily rated worker at the bottom of the same.

Basically, the plantation is a combination of agriculture and industry; because two integral parts are there namely cultivation and processing. So, obviously, there is an existence of two types of work - field work and that factory work. Those who are employed for cultivation of tea are called field labour and they perform all the work keeping their feet on the soil.

There are three categories of workers, from the aspect of age groups, who are engaged in the tea plantations. The categories are adult, adolescents and child. The first group workers are above the age of 18 years. Adolescent workers are the workers between the ages of 16 to 18 years; children are those who fall under the age group of 14 to 16 years. But the most pathetic scenario is- a huge number of adolescents and child labourers are found in the tea plantations of North India, particularly in West Bengal and Assam than in South India (Bhadra, 2004). On the other hand, on the basis of the assigned task, status, and wage structure, employees in the tea estates can be divided into four categories- Manager, staff, sub-staff and worker.

i. Manager

Manager resides at the top level of the hierarchy in tea estates. In a tea estate, for all types of work, the manager is responsible and he is all in all. He is also the legal representative of the employer or the company.

Few Assistant Managers come next in this hierarchy and the numbers of Assistant Managers depend on the size of the gardens. In a large tea estate, two types of Assistant Managers are there who assist the managers - (i) Assistant Managers, Garden & (ii) Assistant Managers, Factory. An Assistant Manager, Garden is generally an in-charge of the divisions of a garden. They are supposed to supervise day to day works of the labourers of their divisions. On the other hand, the Assistant Manager, Factory is actually an engineer whose responsibility is to look after the manufacturing part of the tea production.

ii. Staff

In the organizational hierarchy of a tea estate, the staff category comes just below the management category. Clerks, factory assistants, and garden assistants fall under this

category. Where factory assistants assist the Assistant Manager, Factory, the garden assistants assist the Assistant Manager, Garden.

In the office of a tea estate, a number of clerks work under a head clerk. The main responsibility of a head clerk is to supervise all the works in the office including handling of cash. Different categories of clerks, like a store clerk, provident fund clerk, etc., assigned with specific official jobs, assist the head clerk in the matter of handling of cash.

iii. Sub-Staff

The sub-staff category comes below the staff category. Generally promoted from workers rank, the sub-staffs are mainly supervisory staff, whose wages are to some extent higher than that of the daily rated workers and are paid on a monthly basis. In the category of sub-staff, in the garden and factory, the highest designations are Munshi and Sardar and the rank of Chaprasi comes next to Munshi in a tea garden.

The existence of the ranks depends on the size of the tea estate. In the smaller estates, generally, there is an existence of either of these two posts, either Munshi or Chaprasi, to supervise the works of the daily rated workers.

The rank of Baidar comes next to rank after Chaprasi in the gardens whose responsibility is to keep attendance of sub-staffs and workers in the field.

After Baidar, the Dafader comes who is given the charge of a group of workers. He is like a gang leader and supervises the works of this group. Dafader is another important post in a tea garden because he directly supervises and guides the workers with direct interaction with them.

After Dafader, Chowkider and Paniwala are the next two posts; and in the gardens, there is a number of Chowkidars and Paniwalas. The chowkidars are the guards or watchman of the tea estates. Line chowkidars also are there who guard the labour lines and convey the orders of the manger to the workers. Carrying drinking water to the workers while the workers are working - is the paniwalas' duty. The sub-staff category is not so broad in the factory, like that of the garden. Beside the factory sardar, there are fitters and electricians also in the factory.

Another category of sub-staff is Dawawala or Pharmacist who helps the doctor. Vehicle cleaners, drivers, gardeners, office peons, etc. are some other sub -staff in tea estates.

vi. Worker

Workers are the fourth or the last category in the hierarchy of the tea estates. Garden workers and factory workers come under this category and they are directly related to cultivation and production. Adolescents and adult workers are paid almost equal wages in the tea estates in West Bengal; whereas half of the wages of the former is paid to the children.

Tea processing is done by factory workers. From preparation of soil to plucking, - these things are done by the garden workers. Naturally, the male workers are assigned with heavier works like pruning the bushes in the winter, hoeing and clearing the soil of undergrowth, chopping down the shade trees, when required and so on. Children workers are given lighter works like leaf-plucking, removing parasites and creepers from bushes, etc.

In the tea estates, little scope of promotion is there, except a worker getting promoted to a sub-staff. A staff or sub-staff is getting promoted to management category - it is a very rare picture because of the indifferent attitude of the management. The workers and the sub-staffs in these tea estates are usually either Tribal or Nepali origin. The staffs are generally Bengali and management people are either Bengali or non-Bengali.

2.3.1: Organization Structure in a Tea Garden

As Mintzberg opined “The structure of an organization is the sum total of the ways in which it divides it’s labour into distinct tasks and then achieves coordination among them” (Mintzberg, 1979). Organization structure, in the tea garden, consists of management, staff, sub-staff and workers. The organization structure is presented below.

Management:

- Manager
- Assistant Manager, Garden
- Assistant Manager, Factory

Staff:

- Head Clerk, Store Clerk, P.F. Clerk
- Garden Assistant
- Factory Assistant

Sub-staff:

- Factory Sarder Boider
- Munshi
- Dafadar
- Chaprasi
- Chowkider & Paniwala

Workers:

- Adult Male
- Adult Female
- Adolescent
- Children

2.4: History, Growth, and Development of Tea Industry in General in India and West Bengal in Particular, with special reference to Terai Region

In the organized manufacturing sector, the tea industry has been the single largest employer for many decades and it is one of the oldest industries in India. In the organised manufacturing sector, the total number of workers is 7.3 million (Datt, 1997) and a little more than a million permanent workers are employed in tea plantation industry. In other words, according to the statistics one out of seven workers in this sector is a tea plantation worker (Bhowmik, 1960). Though they are isolated in their plantations, forced to work in poor working conditions bound by low wages and but they are the largest in number in the manufacturing industry.

The total production of tea in the financial year 2018 was 1325.05 million kg; as compared to 2016-17 it was an increase of 74.56 million kg; which makes India as the second largest tea producer in the world after China. If we look back, the year 2015-16 was the unprecedented year for Indian tea industry as in this year the industry experienced a record-breaking production and export.

Table: 2.1**Production and Export of Tea (in million kg)**

Financial year	Production (in mn. kg)	Increase/ Decrease (in percent)	Exports (in mn. kg)	Increase/ Decrease (in percent)
2011-12	1095	13.32	214	0.26
2012-2013	1135	3.60	216	0.88
2013-2014	1209	6.50	226	4.40
2014-2015	1197	-0.96	199	-11.82
2015-2016	1233	3.00	233	17.00

Source: Tea Statistics 2016, published by Tea Board

Graph: 2.1**Production and Export of Tea (in million kg)**

Source: Tea Statistics 2016, published by Tea Board of India

If we give a look at the table- 2.1 and graph- 2.1, we can see that where, in 2011-2012 the total production in India was 1095 million kg., in the year 2015-16, the total production was 1233 million. kg. breaking all the previous records. From the year 2011-12 to 2015-16, the production got increased by 12.60 %. Similarly, on the other hand, export was also increased along with the production. In the year 2011-2012, where export was 214 mn. Kg.; in the year 2015-16, increased by about 8.88 %, the total export went up to 233 mn. Kg., which was the highest amount of export the Indian tea industry ever experienced till that year. Now let's focus on the contributory states, because of which it was possible to achieve the milestone.

Assam, West-Bengal, Tamil Nadu, and Kerala- these four are the major tea producing states in our country. In Assam, almost in all the districts tea is produced. Jalpaiguri and Darjeeling – these are the main tea producing districts in West Bengal. In South India, tea is mainly produced in Idduki and Wynad in Kerala, Nilgiris and Coimbatore in Tamil Nadu. Besides these four major tea producing states, in Bihar, Tripura, Sikkim, Manipur, Himachal Pradesh, Karnataka, Uttaranchal Pradesh, Meghalaya, and Orissa also tea is produced. The state-wise production of tea in India is presented in table 2.2.

Table: 2.2

Production of Tea in India (State and Year Wise) (Figures in Thousand Kgs.)

State	1951	1961	1971	1981	1994	2001	2007	2014	2015	2016
Assam	400732	402617	423965	425115	400732	453587	487487	610970	614570	652920
West Bengal	158825	157522	164768	170158	162669	186840	236344	329460	323380	32970
Tamil Nadu	117520	117915	115840	130179	117520	132401	160531	169790	162940	161490
Kerala	63125	64778	61581	69776	63125	65151	55966	65580	58010	56630
Karnataka	12690	13184	13871	14803	12690	5564	5188	6740	6520	6460
India	752895	756016	780140	810031	752895	853923	986427	1207310	1191100	1233140

Source: Tea Statistics 2016, published by Tea Board of India

Graph: 2.2



Source: Tea Statistics 2016, published by Tea Board of India

From the table- 2.2 and graph- 2.2, it can be observed that in Assam, the production of tea is the highest i.e. around 50% of the total production. West Bengal is the second largest tea producer which produces about 24 per cent of the country's tea. With the yielding about 16

per cent tea production, Tamil Nadu is the third largest tea producer in the country. Whereas Kerala yields about 6% of the total production. 4% of the country's production comes from the other tea producing states collectively.

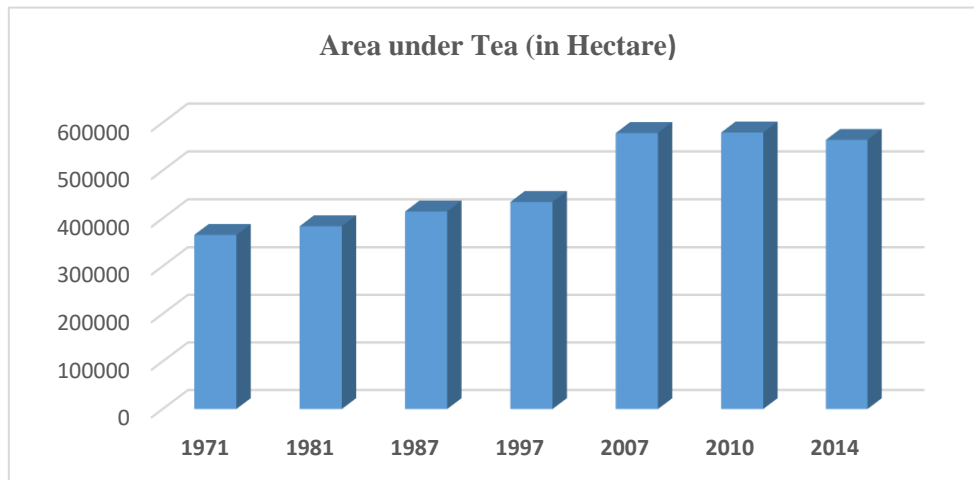
The common perception is that production can be enhanced only by the means of higher labour productivity as tea is still a labour intensive industry (TBI, 1990). At the same time, there are a number of other factors that affect total production in the tea sector. These include expansion of the area under tea cultivation, replenishing of ageing bushes, etc. State wise area under tea in different states is shown in table 2.3.

Table: 2.3

Area under Tea in Hectares

State	1971	1981	1987	1997	2007	2010	2014
Assam	182325	203038	226883	229843	321319	322214	304400
West-Bengal	88409	93971	100971	103008	115095	115095	140440
Tamil Nadu	36646	37039	38108	49671	80462	-----	69620
Kerala	37271	35039	34688	36817	37137	-----	35010
Other States	20865	14542	13731	14955	24445	-----	14510
India	365516	383629	414381	434294	578458	579353	563980

Source: Report published by Tea Board of India, 2015

Graph: 2.3

Source: Report published by Tea Board of India, 2015

From the table-2.3 and graph- 2.3, it is very clear to us that the total area under tea in India got increased from 365516 hectares in 1971 to 563980 hectares in 2014 which is an increase of 54.30 per cent.

If we look at the tea producing states separately then we see that the increase in area under tea in Assam, between 1971 and 2007 was 76.23 per cent but after 2007 it fell down. So if we calculate the area from 1971 to 2014, the increase is only 66.95 per cent.

In West Bengal, the increase of area over the period 1971-2014 is about 58.85 per cent which is lower than Assam. Tamil Nadu shows a positive picture in this regard. During the period 1971 to 2014, the total increase is about 89.97 per cent, though, after 2007, the total area fell down. The fourth state, Kerala, presents a negative picture. From 1971 to 2014, in Kerala, the decrease in the total area under tea is about 6.06 per cent. However, if we talk about the whole India, the increase in area from the year 1971 to 2014 is 54.29 per cent.

The irony is, on one hand, table no 2.2 is showing an ever-increasing trend of production of tea in India but on the other hand, table 2.3 is showing a decreasing trend in total area under

tea in India after 2010; which means yield per hectare must have notably increased; otherwise this production would not have been achieved. So, let us concentrate on yield per hector of tea over the years.

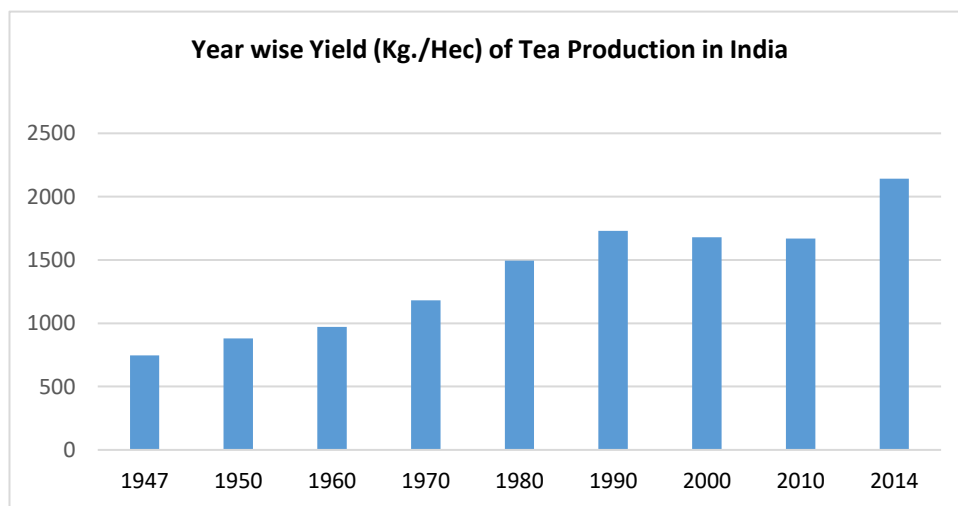
Table: 2.4

Year wise Yield (Kg./Hec.) of Tea Production in India

Year	Yield (Kg./Hec)
1947	746
1950	881
1960	971
1970	1182
1980	1494
1990	1730
2000	1679
2010	1668
2014	2141

Source: Report published by Indian Tea Association (ITA), 2015

Graph: 2.4



Source: Report published by Indian Tea Association (ITA), 2015

Table- 2.4 and graph- 2.4 clearly show us the trend of yield (Kg/ Hec.) over the year, from the year of independence in 1947 to 2014. Here we can see an increasing trend from the year

1947 to 1990 but suddenly it decreased in the year 2000. But again in 2014, the yield has increased unexpectedly; probably because of technological advancement in the twentieth century. More specifically state wise yield per hectare of tea over the years will give us a more clear picture; it is presented below.

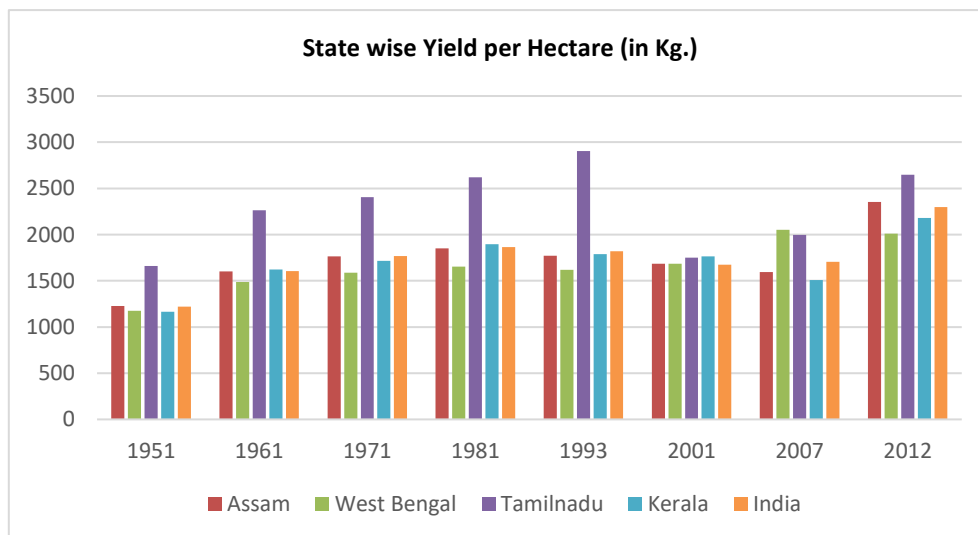
Table: 2.5

State wise Yield per Hectare (in Kg.)

State	1951	1961	1971	1981	1993	2001	2007	2012
Assam	1227	1603	1764	1850	1770	1685	1593	2354
West Bengal	1176	1488	1589	1652	1619	1686	2053	2009
Tamil Nadu	1661	2262	2406	2621	2906	1751	1995	2647
Kerala	1164	1622	1715	1895	1788	1764	1507	2180
India	1221	1605	1768	1865	1819	1675	1705	2297

Source: Report published by Tea Board of India, 2014

Graph: 2.5



Source: Report published by Tea Board of India, 2014

From the table 2.5 and graph 2.5, we can see that, in the case of West Bengal, the average yield per hectare was the highest in 2007. On the other hand, during the period 1951 to 2001,

we can see that the average yield per hectare in West Bengal was comparatively lower than other major tea producing states in India. Though it increased in 2007 but again it went down in 2012. Fortunately, increase in yield per hectare in other states has boosted the composite yield per hectare in India.

However, production does not depend solely on yield but also on the total number of workers working in that industry. The Employment in various Plantations during 1998 to 2009 is presented below in table 2.6.

Table: 2.6

Employment Status of Plantation Industry over the Years

Year	Tea	Coffee	Rubber	Other Plantations	Total
1998	8,94,932	28,333	22,092	5,649	9,51,006
1999	8,52,675	26,137	18,831	4,488	9,02,131
2000	9,03,024	29,249	26,556	6,784	9,65,613
2001	3,22,004	31,237	28,164	7,557	3,88,962
2002	6,65,554	22,769	29,329	2,534	7,20,186
2003	6,15,195	21,872	30,789	5,524	6,73,830
2004	6,91,026	14,712	23,934	3,797	7,33,469
2005	6,26,093	21,641	25,804	3,834	6,77,372
2006	4,21,582	18,282	25,997	3,195	4,69,056
2007	6,10,115	18,640	18,433	6,387	6,53,575
2008	7,13,931	21,741	17,143	5,268	7,58,083
2009	7,20,315	19,975	19,534	5,262	7,65,086

Source: Annual returns received under the Plantations Labour Act.

Graph: 2.6

Source: Annual returns received under the Plantations Labour Act.

Table- 2.6 and graph- 2.6 reveal the clear picture of the employment status of the Indian plantation industry over the years. Here it is visible that over the years, the plantation sector has been experiencing a downward trend with respect to employment. From the year 1998 to 2009, employment in tea industry got reduced by 19.51%; employment in the coffee industry was reduced by 29.5%, employment in rubber industry got reduced by 11.6, and for other plantation industries, it was reduced by 6.85%. If we give a look at the last column of the table, the total employment got reduced by 19.55%, taking into consideration all plantation industries, which is not a good sign. The trend of employment in the tea industry is clearly understood in graph 2.6.

If we talk about employment status state wise, 50 per cent of the total labour force employed in the tea industry are employed in Assam. West Bengal employs about 21 per cent of the total labour force and Tamil Nadu and Kerala employ about 21 per cent and 7 per cent respectively. The other tea producing states collectively contribute to 1 per cent of the total labour force employed in the tea sector of India.

However, if we take production aspect into consideration, it can be said candidly that it was not a far cry from the optimistic projection which was made in 1980 that our country would produce one billion Kg. of tea by the end of the twentieth century; as the country has already crossed the milestone of 1.25 billion productions as per the latest report of Tea Board of India where it has been proudly announced that tea industry has experienced a record-breaking production of 1.25049 billion in 2016-17.

Let us now concentrate on the area of export of tea. In spite of record-breaking production in the era of liberalization, a new threat is the price of tea as Sri-Lankan and Bangladeshi tea are cheaper than domestically produced tea and because of this, the export of tea gets hampered in international markets.

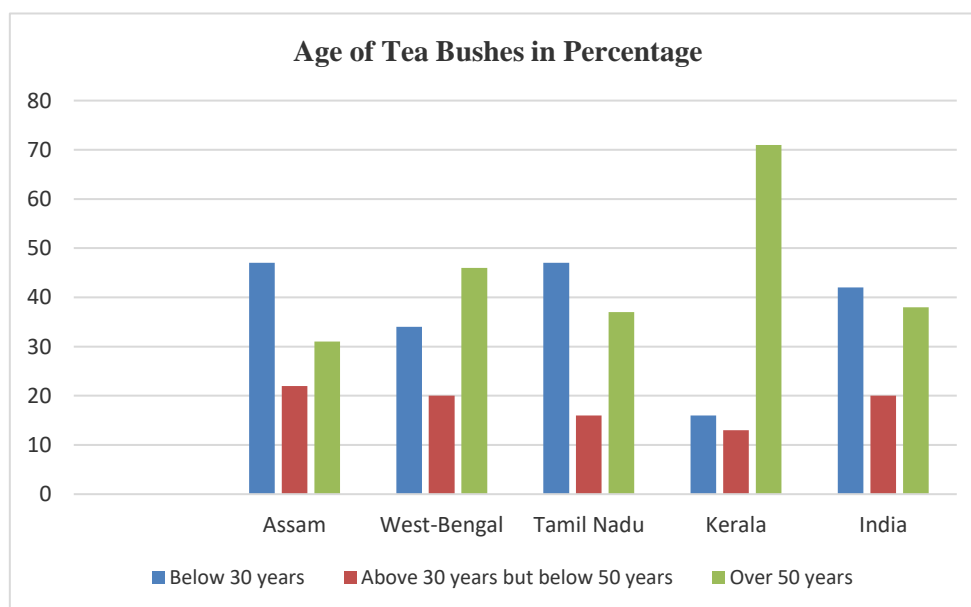
Another major constraint to increase exports is the sluggish augmentation in production with the rapid growth of internal consumption. As, tea is one of the most mass consumed items in India, hence stabilization of its price in the domestic market is necessary. Increase in production can stabilize the market price of tea in the domestic market but at the same time, curtailment of tea exports is essential so that enough tea is available for domestic consumption (Tea talk, 2015) and this thing was truly realized which was reflected through Government's restriction on export of tea in 1984. It was then felt that if tea export increases beyond a certain level, prices of tea in the domestic market would rise to high levels.

The age of the tea bush is another important factor for tea production. Normally, the tea bush achieves its prime growth from the age of five years to thirty years. Table 2.4 represents a break-up of the age of tea bushes in the different states.

Table: 2.7**Age of Tea Bushes as Percentage**

State	Below 30 years	Above 30 years but below 50 years	Over 50 years
Assam	47	22	31
West-Bengal	34	20	46
Tamil Nadu	47	16	37
Kerala	16	13	71
India	42	20	38

Source: Report published by Tea Board of India

Graph: 2.7

Source: Report published by Tea Board of India

Table 2.7 and Graph 2.7 give us a vivid idea about the age of the tea bushes in major tea producing states and India as a whole. In India, only 42 % tea bushes are below 30 years;

whereas 20% of tea bushes are of 30 to 50 years and 38 % tea bushes are over 50 years. Which indicates that 42 % of tea bushes are in the economic phase and 58 % are uneconomic and responsible for lower productivity.

Except for Assam, and Tamil Nadu, in West Bengal, and Kerala the situation is bitter. In West Bengal, only 34 % of tea bushes fall under the economic age group whereas 20 % are in the age group of 30-50 years and the rest 46% are above 50 years.

In Kerala, the situation is worst. Here more than 70 per cent tea bushes are over 50 years and only 16 per cent tea bushes are less than 30 years. On the other hand, in Assam and Tamil Nadu, the picture is more or less equal. In Tamil Nadu- about 37 per cent and in Assam- 31 per cent tea bushes are over 50 years. At the same time, the percentage of younger tea bushes (below 30 years) in Assam and in Tamil Nadu shows exactly the same picture. In these states, 47 percent tea bushes are in the young age group.

Generally, we find that the tea bushes in our country are on the older side, which reflects that adequate attention is not given on replantation and replacement of the older tea bushes.

Early from the nineteenth century, considering total production of tea, West Bengal has been maintaining the second position. With nearly 450 tea estates, it is now the second largest tea-growing state in the country, next only to Assam. The following table reveals West Bengal's recent position in the tea industry in the national context.

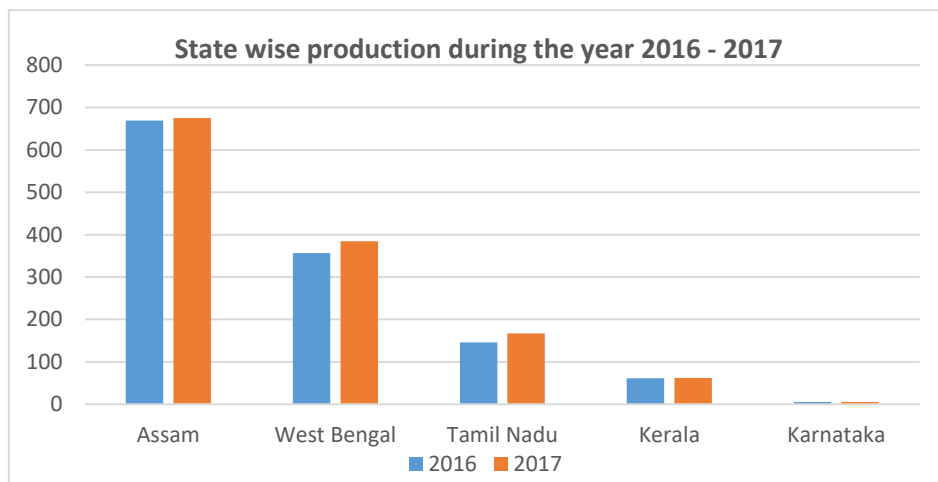
Table: 2.8

State Wise Production during the Year 2016 – 2017 (in M. Kg.)

State	During December		up to December		Increase or Decrease in 2018 over 2017		January to December	
	2018	2017	2018	2017	During	Up to	2017	2016
Assam	15.58	29.05	676.98	675.17	-13.47	1.81	675.17	669.52
West Bengal	17.99	24.57	385.87	384.51	-6.58	1.36	384.51	356.3
Tamil Nadu	12.89	10.89	155.32	166.9	2	-11.58	166.9	146.04
Kerala	5.79	5.05	58.02	62.35	0.74	-4.33	62.35	61.4
Karnataka	0.5	0.48	5.19	5.4	0.02	-0.21	5.4	5.41
All India	53.96	71.39	1,311.63	1,321.76	-17.43	-10.13	1,321.76	1,267.36

Source: Report of Indian Tea Association (ITA), 2017

Graph: 2.8



Source: Report of Indian Tea Association (ITA), 2017

From table 2.8 and graph 2.8 it is very clear that still in recent years, West Bengal has been successfully maintaining the second position in producing tea, followed only by the state Assam.

Darjeeling, Terai, and Dooars are the three tea growing regions in West Bengal. The finest tea in India is produced in Darjeeling. The Lowland region in southern Nepal and Northern India that lies south of the outer foothills of the Himalayas, the Siwalik Hills, and north of the Indo-Gangetic Plain is called Terai region (Wikipedia, 2019). The Duars or Dooars are the alluvial floodplains in northeastern India. This region lies from north of the Brahmaputra River basin to the south of the outer foothills of the Himalayas (Wikipedia, 2019).

If we go back to history, the cultivation of tea first started in Darjeeling among the three tea growing zones in West Bengal viz. Darjeeling, Terai, and Dooars. Around the end of the 1835 China plants reached Darjeeling and were later added by indigenous Assam plants. In 1852, Mr. Jackson reported that the first experiments were going well (Awasthi, 1975). The tea industry moved towards a more extensive and commercial stage from the experimental stage by the year 1856. After the successful establishment of tea estates in Darjeeling in the first phase, in the second phase, few other estates were established. Pandam, Makaibari, and Steinthal – these tea estates were the other the gardens which were inaugurated during that period and all these estates were in the hill area. But the planters, later on, began to shift their attention to the Terai Zone, where experimental plantations had already been started. In the year 1862, Mr. James White opened the first garden in this region at Champta, near Khaprail. More gardens were inaugurated by the end of 1866, at the Terai region of West Bengal.

The size wise classification of tea gardens in different regions of West Bengal during the period 1951 to 1999 is presented in following Table 2.9.

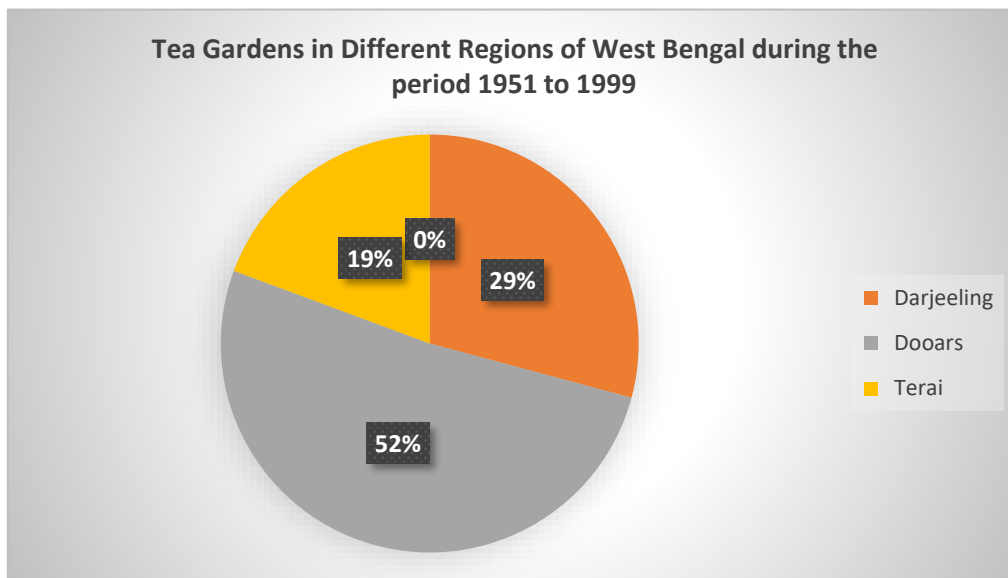
Table: 2.9

**Size-Wise Classification of Tea Gardens in
Different Regions of West Bengal (Figures in Hectares)**

Region/ State	Up to 50 Hec.	Above 50 & Up to 100 Hec.	Above 100 & Up to 200 Hec.	Above 200 & Up to 400 Hec.	Above 400 Hec.	Total
Darjeeling	3	12	36	31	7	89
Dooars	10	4	13	47	83	157
Terai	12	5	13	18	11	59
West Bengal	25	21	62	96	101	305

Source: Tea Statistics 1990-91, Published by Tea Board of India

Graph: 2.9



Source: Tea Statistics 1990-91, Published by Tea Board of India

It can be seen from table 2.9 and Graph 2.9 that during the period of 1951 to 1999, in West Bengal, from the perspective of the number of tea gardens, the share of Darjeeling, Terai, and Dooars were 19%, 29%, and 52% respectively. In the Darjeeling region, only about 8% of tea

gardens were of above 400 hectares. In the Terai region, out of 59 gardens, 11 gardens which mean 18.64% of the tea gardens in Terai region, were of above 400 hectares. But in the Dooars region, about 53% of tea gardens were of above 400 hectares. During the year 1951 to 1999, one-third of tea gardens in West Bengal were of above 400 hectares. Now let us see the status of growth in the area of different tea growing regions in West Bengal.

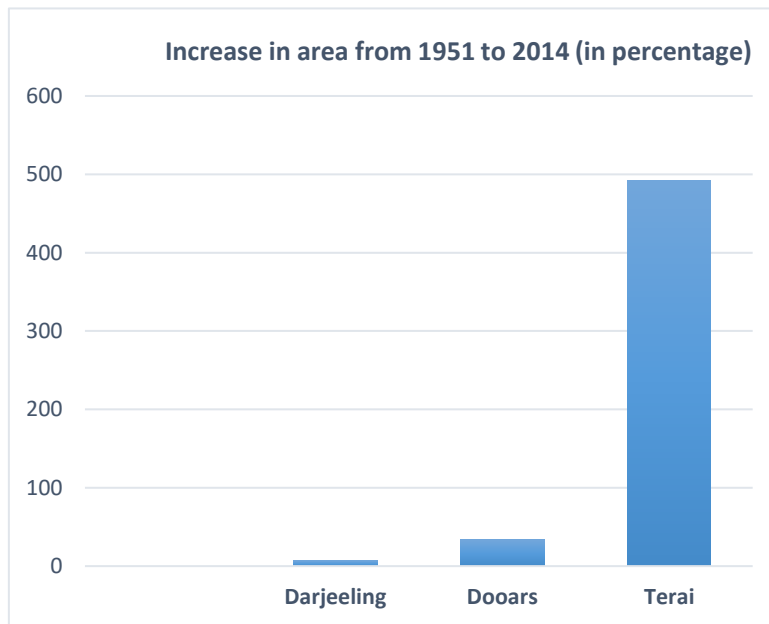
The area wise classification in different tea growing regions of West Bengal over the past 63 years that is (1951-2014) with 1951 as a base year is presented in table 2.10.

Table: 2.10

Area Wise Classification of Tea Garden in West Bengal (Figures in Hectares)

Region /State	1951	1961	1971	1981	1990	2000	2007	2014	% increase over 1951
Darjeeling	16569	18605	18245	19239	20065	17228	17818	17820	7.55
Dooars	54609	54756	59485	63418	67760	69703	72918	72920	33.53
Terai	8402	9344	10769	11314	13345	20548	24359	49700	492.52
West Bengal	79580	82705	88499	93971	101170	107479	115095	140440	76.47

Source: Tea Statistics 2014-2015, published by Tea Board of India

Graph: 2.10

Source: Tea Statistics 2014-2015, published by Tea Board of India

From table 2.10 and graph 2.10, it is apparent that the accumulated area under cultivation of tea in West Bengal has raised by 76.47% over the period of 63 years (1951 to 2014); whereas in Darjeeling region, the area under tea cultivation has raised by 7.55% and in the Dooars region, it raised by 33.53%. But if we give a look at the Terai region it has raised by 492.52% over the same period of time which is beyond the expectations.

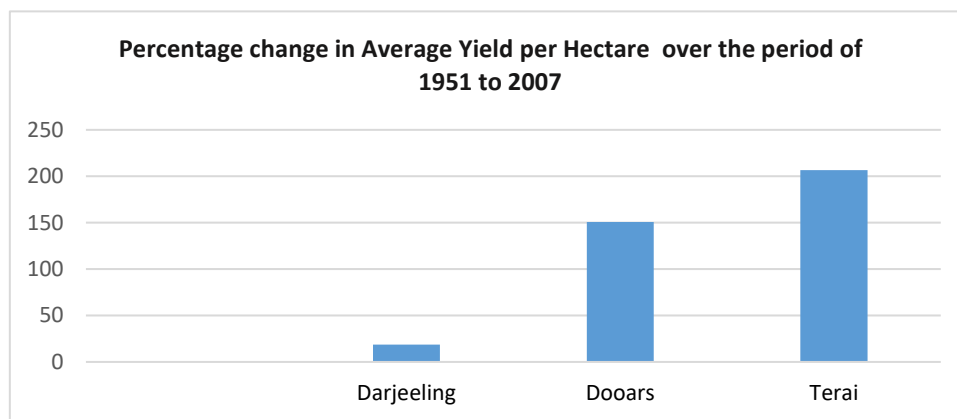
West Bengal Estate Acquisition Act, 1953 may be one of the important reasons for this expansion. Under sec. 6(3) of the Act., about 29% of the total area under tea cultivation, more specifically, about 29000 hectares of land belonging to tea states was vested with the State Government.

The movement of the yield per hectare in three tea growing regions of West Bengal is presented in table 2.11.

Table: 2.11**Average Yield per Hectare of Three Tea Growing Regions of West Bengal (in K.G.)**

Region	1951	1961	1971	1981	1990	2000	2007	% change over 1951
Darjeeling	473	543	564	635	723	539	562	18.81
Dooars	759	990	1203	1395	1583	1850	1904	150.85
Terai	1172	1222	1354	1581	1684	2107	3592	206.48
W.B	982	1043	1176	1365	1480	1689	2053	109.06

Source: Tea Statistics 2007-2008, published by Tea Board of India

Graph: 2.11

Source: Tea Statistics 2007-2008, published by Tea Board of India

It can be seen from table 3.11 that in the Terai region, the percentage change in average yield per hectare over the period of 1951 to 2007 is the highest i.e. 206.48% in comparison with Darjeeling, Dooars. However, we should also concentrate on the status of production of tea in different tea growing regions of West Bengal.

The growth of production of tea in different tea growing regions of West Bengal over the past 63 years, 1951 to 2014 is presented in table 2.12.

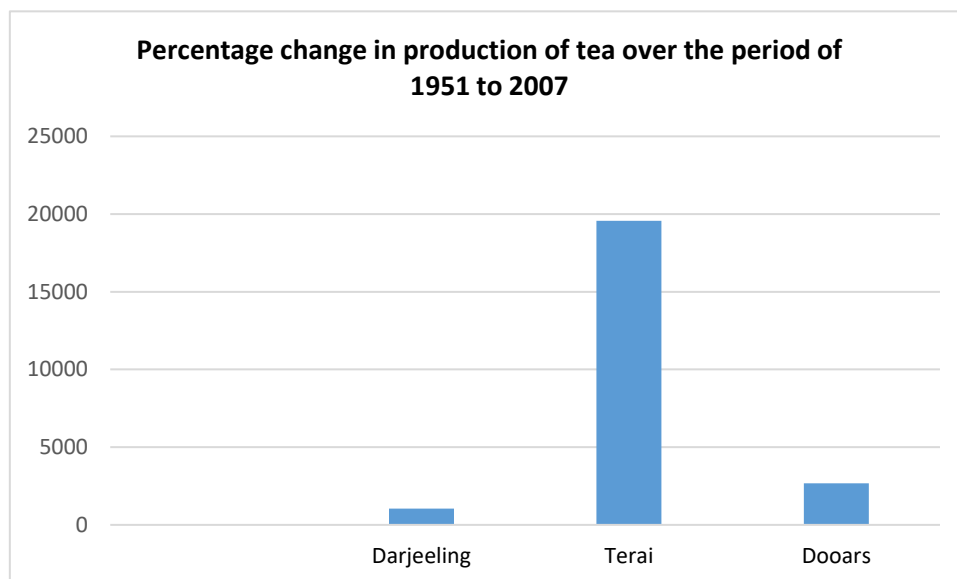
Table: 2.12

Production of Tea in the Three Regions of West Bengal (Figures in '000 K.G.)

Region/ State	1951	1961	1971	1981	1990	2001	2007	2014	%increase over 1951
Darjeeling	7839	10107	10293	12226	14499	9841	10007	89100	1036.62
Terai	6376	9253	12954	15782	21130	49388	87502	1253400	19558.09
Doors	63994	66898	80840	100251	114124	127611	138835	1778500	2679.17
West Bengal	78158	86258	104087	128259	149735	186840	236344	3121000	3893.19

Source: Tea Statistics 2013-14, published by Tea Board of India

Graph: 2.12



Source: Tea Statistics 2013-14, published by Tea Board

It is clear from table 2.12 and graph 2.12 that in West Bengal the total production of tea has raised by 3893.19% over the last 63 years period i.e. from 1951 to 2014. The growth rate in the Darjeeling region is 1036.62% and in the Dooars region, it is 2679.17%. On the other hand, the Terai region is much ahead of the Darjeeling, and Dooars region in this concern. The growth rate is 19558.09% over the period of 1951 to 2014. This is obviously due to the higher yield rate in the Terai region. But, to get a more specific scenario, we should concentrate on state and district wise production of tea in recent years.

The status of production of tea in recent years, i.e. in 2016 and 2017 in major states and districts is presented in table 2.13.

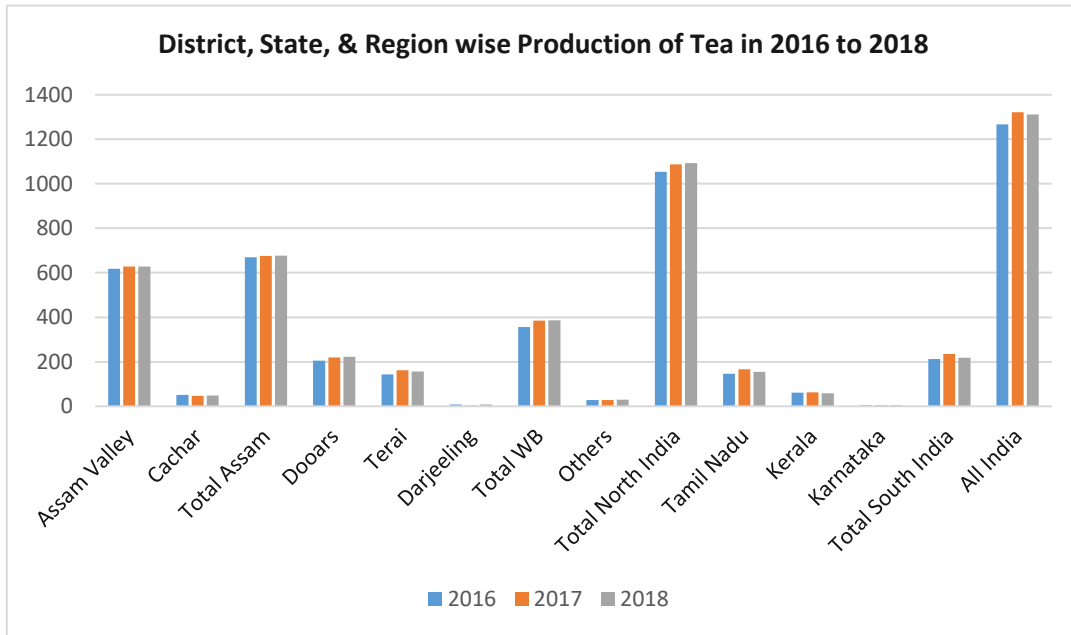
Table: 2.13

District, State, and Region-wise Production of Tea (M. Kg)

District/State	During December		Up to December		Increase or Decrease in 2018 over 2017		January to December	
	2018	2017	2018	2017	During	Upto	2017	2016
Assam Valley	13.57	25.94	628.2	627.98	-12.37	0.22	627.98	618.34
Cachar	2.01	3.11	48.78	47.19	-1.1	1.59	47.19	51.18
Total Assam	15.58	29.05	676.98	675.17	-13.47	1.81	675.17	669.52
Dooars	9.93	12.85	222.63	219.58	-2.92	3.05	219.58	204.47
Terai	7.95	11.6	155.52	161.72	-3.65	-6.2	161.72	143.7
Darjeeling	0.11	0.12	7.72	3.21	-0.01	4.51	3.21	8.13
Total WB	17.99	24.57	385.87	384.51	-6.58	1.36	384.51	356.3
Others	1.21	1.35	30.25	27.43	-0.14	2.82	27.43	28.69
Total North India	34.78	54.97	1093.10	1087.11	-20.19	5.99	1087.11	1054.51
Tamil Nadu	12.89	10.89	155.32	166.9	2	-11.58	166.9	146.04
Kerala	5.79	5.05	58.02	62.35	0.74	-4.33	62.35	61.4
Karnataka	0.5	0.48	5.19	5.4	0.02	-0.21	5.4	5.41
Total South India	19.18	16.42	218.53	234.65	2.76	-16.12	234.65	212.85
All India	53.96	71.39	1311.63	1321.76	-17.43	-10.13	1321.76	1267.36

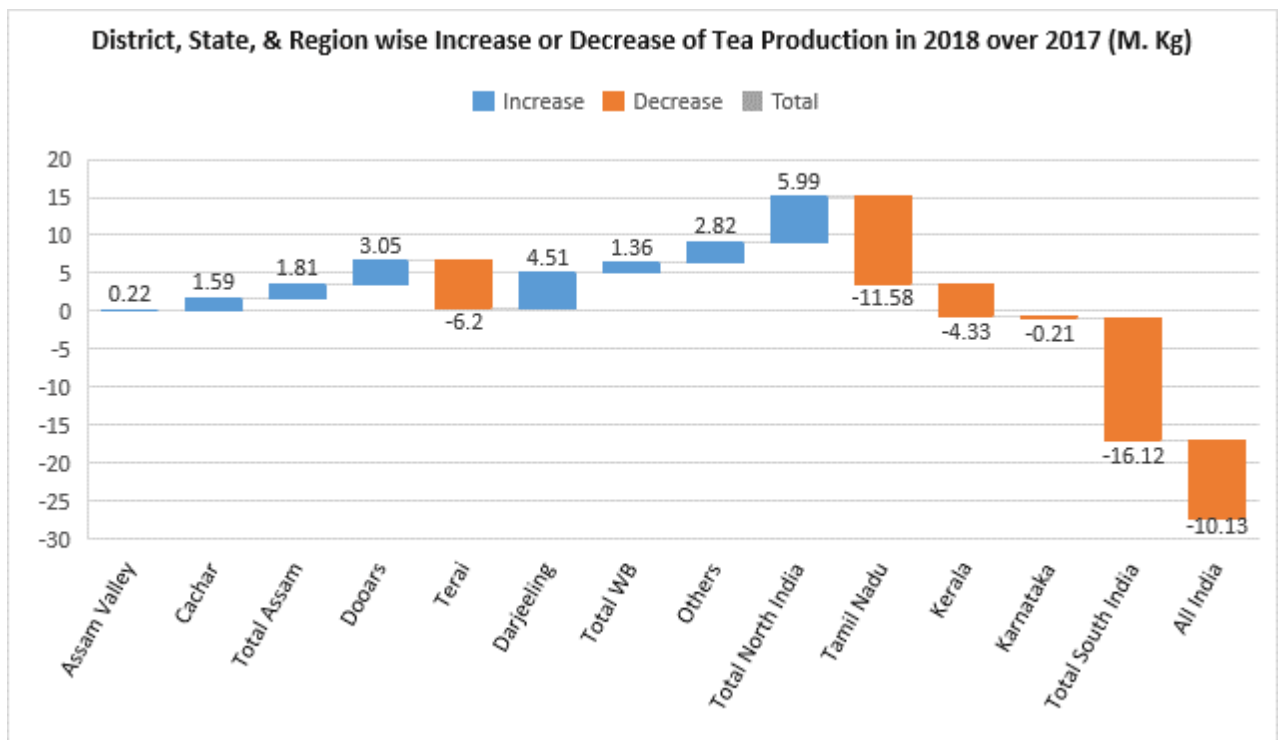
Source: Indian Tea Association Report, 2018

Graph: 2.13



Source: Indian Tea Association Report, 2018

Graph: 2.14



Source: Indian Tea Association Report, 2018

Table 2.13 reveals a clear picture of the status of tea production in recent years in major states and districts. From Graph 2.13 it is clear that, as far as total production is concerned, North India is still maintaining its dominating position over South India in recent years, as it has been. If we talk about the states, Assam is in a far better position than the state West Bengal which is followed by Tamil Nadu, Kerala, and Karnataka respectively. Now, if we concentrate on only West Bengal, we can see that as usual Dooars region is in the leading position, followed by Terai, and Darjeeling region. But unfortunately, though Assam, and West Bengal could maintain an upward trend in production over the years from 2016 to 2018, the scenario is pathetic in case of the states- Tamil Nadu, Karnataka, and Kerala; and because of these three states the total production of Tea in India went down in the year 2018.

The pathetic situation is more clearly explored by graph 2.14, where we can see the district, state, & region wise increasing or decreasing trend of tea production in the year 2018 over the year 2017. Here we can see that though the total production in North India in the year 2018, went up by 5.99 million kg, in South India it got decreased by 16.12 million kg; for which India experienced a massive decrease of 10.13 million kg in production in the year 2018 over 2017. On the other hand, if we talk about North East India, in 2018, every major district experienced a good increase in production of tea, except our undertaken region- Terai, which unfortunately experienced a substantial decline. Here lies the irony. According to statistics, the region- Terai, which experienced a positive growth till 2014 from every aspect, in 2018 the production scenario got reversed! It signifies that some factors are obviously responsible and these are continuously affecting the whole scenario. So, there is an urge to recognise the factors.

2.5: Challenges before the Indian Tea Industry

India, the second largest tea producer in the world, is facing a number of challenges, which ultimately prevents the country to expand its horizon in the field of tea production. Under different heads, these challenges are discussed below.

- i. High Cost of Production:** 60 per cent of the total production cost goes behind the wage component. On the other hand, additional costs of fuel, electricity, irrigation, agro-chemicals, and pesticides, etc. make the Indian tea industry non-competitive in the international market. Altogether about 80 per cent of the total cost of production cannot be reduced in tea production. So, for cost reduction, sometimes longer picking cycles of 15-18 days are adopted; which again has an adverse effect. This method makes made tea poorer, which lessen the price and ultimately it leads to loss to the Industry. Jeopardizing long-term viability, some planters try to reduce costs by adjourning the uprooting, replantation, and garden modernization. For the tea industry, fickle investment is not good. Most of the labourers come from far away from their native place and belong to economically and socially weaker sections; and that is why they remain dependent on different welfare facilities like water, house, etc.; which again fetch additional costs.
- ii. Low Labour Productivity:** In 1950, almost 65 years back, about 0.95 million people were engaged in tea industry; but in the present scenario, more than 1.2 million people are directly and 10 million people are indirectly engaged in the tea industry. Not only that, but temporary workers are also engaged during the peak plucking season. Even then the labour deficiency is a common challenge in the South as well as in North India. On the other hand, another issue is that plucking efficiency varies from labour to labour. Dependency on labour, in the tea

industry, is very high as tea is plucked commonly by hands; and because of it, labour cost is relatively high in tea cultivation and production procedure. So, in this sector, the present situation has given sufficient reasons for a further rethink (Hazarika, 2011).

- iii. Change in the Climate with Seasonal Effect:** Tea is much more sensitive to climate change, compared to other plants. Specific precipitation and temperature play a great role in tea cultivation. Therefore, for tea production, frequent change in climate comes with a great threat. In most of the tea gardens, increasing temperature, prolonged dry spell, low or no rainfall, untimely rainfall, flood-like situations etc. are major challenges. From 9-10 months, the annual operation cycle is reduced to 8-9 months or even lower. Both quality and quantity of produced tea get affected by climate change because it is also responsible for the loss of soil fertility, insect attack, various types of diseases, and also improper growth of new buds. In North India, in winter months productivity goes down because tea bushes go in the dormant stage during these months. In South India, the climate condition is comparatively stable. The impact of climate change on tea cultivation can also be understood from another way also; during the auction, the tea prices are basically decided on the basis of its month of plucking.
- iv. Pest and Disease:** Due to pest and disease, tea industry experiences a loss of 10-15 per cent. In most of the estates, integrated pest management practice is not followed. For the purpose of controlling pest and disease in tea cultivation, chemical pesticides are mostly used. Sometimes knowingly or unknowingly, application of pesticides become overdose which ultimately proves to be dangerous for environmental and ecological balance. Therefore, tea cultivation

suffers because of poor pesticide management and poor monitoring over the interval between the spray.

- v. **Imprudent Nutrient Management:** Without knowing species and age of tea bushes, fertilizers are applied in many tea estates. Sufficient knowledge of soil nutrient supplying capacity is also required while applying fertilizers. Soil pH must be below 5.5 for better tea cultivation; for that continuous effort should be made to maintain soil pH in this acidic range. On the other hand, most of the areas under tea consist of low fertile soil. Therefore, the key focus should be on efficient and balanced fertilizer management practice otherwise it may prove to be dangerous not only for soil health but also for the biological ecosystem. Along with microorganisms like phosphorus solubilizing bacteria, application of rock phosphate is a better option as soils are acidic in nature. Use of organic manures is also another good option.
- vi. **Quality:** Because of the poor green leaf, the quality of tea goes down. Purchased green leaf contributes about 33 per cent of produced tea in Assam. Due to the unavailability of sufficient workers, most of the tea growers use sickles to harvest tea leaves which is responsible for the poor quality of green leaf. Instead of sickles, using shears is a better option.
- vii. **Government Support:** The tea industry which already has crossed the turnover of Rs. 10,000 crores, has been experiencing many ups and down over the years. Indian tea producers are facing many critical issues in the post WTO period. The cost of inputs is in ever increasing trend year after year. In this scenario Government support is very much needed to keep the existence of the Industry alive; otherwise increasing financial burden will pave the way of the closure of the tea estates in the long run.

2.6: Opportunities to Indian Tea Industry

It is not that the Indian tea industry only faces challenges in front of it, also it poses potential to grow. The opportunities under different heads are discussed below.

- i. Huge Domestic Market:** In the international market, the Indian tea is practically out of the competition; because Kenyan tea is comparatively cheaper but is almost of the same quality. In India, in all the states, across all communities and religion, across all the age groups, tea is widely consumed; it does not matter that they are rich or poor, men or women. India, which is the largest black tea producer in the world, should achieve a huge domestic market as 1,000 million kg or 80 per cent of tea produced tea is consumed annually in the domestic market. Where in 2009, the percentage of expansion of the Indian tea industry was 2.4, in 2013 the expansion reached 6.6 per cent after the achievement of the total production of 1 million tonnes. As per the projection of FOA, by the year 2021, for black tea, Indian domestic market will grow by 2.2 per cent and will touch 1.03 million tonnes of tea consumption. It also can be said from another aspect that the Indian tea industry has more potential to grow because, in comparison with other countries, per capita consumption of tea is still lower (Wal, 2008).
- ii. Scientific Tea Production:** The quantity and quality of tea production are greatly affected by the macro and micro- climate. By maintaining proper drainage system and the required shades, by keeping the soil pH in the suggested acidic range and with the help of other suggested scientific methods, the required micro-climate can be maintained; which ultimately help to minimize the risk of dangerous diseases and pest. Small tea growers are not properly equipped with scientific management practices to keep micro-environment under control. So, there is a

great importance of training small tea growers for the purpose of scientific tea production. To condense dependency on chemical fertilizers, some ways are- mulching, bio fertilizers, green manuring, in-house composting, etc. Different types of tea plants have their own resistance power to different pest and disease; that is why scientists recommend planting 4 to 5 varieties of tea. Under Integrated Pest Management, some effective ways to control pest are neem based formulations, pheromone traps, predators, etc. There must be a gap of 4 to 5 days between the plucking and spraying to have better control over diseases and for avoiding pesticide residues in tea. Simultaneously, periodical testing and monitoring are required to track pesticide level.

- iii. **Smart Way of Tea Production:** There are smarter ways to counteract with frequent climate change for efficient tea cultivation. Better resource management is one of the ways. Tea can be produced by adopting the method of rainwater harvesting, using drought and flood-resistant planting materials, and with the help of irrigation and drip irrigation.
- iv. **Mechanization of Plucking:** In the areas where there is an acute shortage of labour, the usage of machines is a better option. It is estimated that one-third of dependency on the labours can be reduced by using mechanical plucking method. Spontaneous oxidation process for plucked tea leaves, speedy transportation to factory, speedy weighing is needed to minimize the loss in the tea quality and maximize profit.
- v. **Reducing the Cost of Production by Using Renewable Energy:** By adopting renewable energy on a large scale, the overall cost of production in the tea industry can be reduced; as we know that frequent power cut is common in India. To obtain energy, apart from the existing source, using biomass gasifier is a good

option as in the vicinity of tea gardens plenty of biomass exist; and for medium-sized and small-sized tea gardens this process is much more suitable. The alternate source of energy can be used for supplying the electricity in households, gardens, factory for charging sprayers and pumps, mechanical plucking machines, etc.

- vi. Co-operative Brought Leaf Tea Factories:** Over a period of time, many structural changes have been witnessed by the Indian tea industry. Bought leaf factories and small tea growers are the new models in the Indian tea industry, which have the potentiality to minimize the cost of production. In the cooperative sector, brought leaf tea factories should be promoted by the government. Especially in non-traditional area, this would be helpful in increasing the tea area.
- vii. Organic and Value-added Tea:** With the passing of time, consumers are becoming more health conscious because of increasing awareness, which pushes the need for producing a tea which is free from pesticides; though organic tea fetch higher prices in the market. Considering health benefits, among all age groups, green tea is becoming popular. On the other hand, a new horizon is opening in front of the tea industry as gradually from health and refreshment drink, tea is becoming a lifestyle drink also. Youngsters have already started liking iced tea. Chewable tea added with vitamins, calcium and folic acid, tea blended with lemon and ginger, and fruit flavoured tea have a huge scope of growth in coming days.
- viii. Government Support:** Underdeveloped or less developed gardens should be provided with suitable packages for the purpose of enhancement of productivity with cost-effectiveness. Ageing and senile bushes have become one of the major causes of low productivity in the Indian tea industry due to an inconsistent inflow of money in garden management. If the Government takes such kind of initiatives

like giving incentive to the closed gardens and providing low-interest loans so that they can revamp, then the situation will be under control. The Government can take more initiatives like- giving emphasis on the tea plantation in the non-traditional area and promoting the cooperative sector to come in the tea industry, for future betterment.

- ix. Use of Information and Communications Technology:** As a quick medium for sharing information regarding weather updates, government schemes, the latest development in the world, etc. ICT tools are very effective. By using ICT tools, to the medium and small size tea growers, adequate technical support should be made available. Research institutes should come forward to set up dedicated extension service focusing on medium and small tea growers. It would be very much helpful for the tea growers to have better control on the market backed by better resource management.
- x. Tea Tourism:** Few places in India where tea is grown, like Darjeeling, Upper Assam, Nilgiri, Cachar, etc. are gaining popularity in tourism. Tea Tourism is a relatively new concept not only in India but also in the world. This concept is still in the infancy stage and has huge potential to grow. Darjeeling is practically showing the way in this regard. High on the hills with the cool breeze and misty weather, Darjeeling becomes the wonderland to the tourists. Tourists can enjoy their holiday in a sprawling tea garden, they can stay in a Bungalow which was typically the residence of a British tea planter. Apart from the beautiful scenario, tourists also can also enjoy a cup of the finest aromatic tea that was just plucked fresh from the gardens. Not only that tourists can have a look and learn about tea processing in the factory. However, there are more regions and a number of tea gardens where tea tourism can be promoted. If the inflow of tourists increases,

then revenue will automatically be generated and the producers or sellers will be able to sell value-added tea at a premium price. Thus, the brand of tea gardens will automatically be established directly to the consumers by holding the hand of tea tourism.

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