

**Chapter -1**  
**Introduction**

# Chapter-1

## Introduction

### 1.1 Introduction:

Tea is considered as one of the most widely consumed non alcoholic traditional beverages in the world. The tea has been gaining popularity as an important health drink due to its pleasant taste and medicinal value. There is an old story about the discovery of tea in China. It is said that Emperor Shen Nung discovered tea accidentally in the year back 2737 BC (Laloi, 1997). He was relaxing in the garden with a cup of boiled water, at that time some leaves from the garden fell into the cup which he consumed unintentionally. He enjoyed the taste of the drink and felt relaxed after consuming the boiled water. These were leaf of tea which he consumed and felt relieved in pain at that time. In this way the habit of drinking of tea started. Chinese people were the pioneers in using tea for medicinal purpose. The word tea came from the Chinese word “Tay” and similarly the word “Cha” came from the Chinese word “Chah” (Encyclopedia, 1960). By the end of the sixth century, the Chinese began to consider tea as a beverage and now tea become the world’s most widely used second largest drink after water and ahead of coffee, beer, wine and carbonated soft drinks (Costa, 2002) . It is taken as a common drink by nearly 2/3 of the world population daily (Bolton, 2016). There are thirty five countries in the world produce tea with a total estimated annual production of 5306 Million Kg and total annual estimated export 1801 Million Kg as in the year 2015 while 4999 Million Kg consumed by the tea producing countries by themselves in the same year (ITC, 2016). Principal tea producing countries are China, India, Sri Lanka, Kenya and Indonesia. These five countries account for 79 percent of the world tea production and 72 percent of world tea export.

In India tea plant was discovered in North East Assam during the early eighteenth century. Before commercial cultivation of tea in India, tea plants were growing in the jungles of Assam. The credit for creating India’s vast tea empire goes to the British, who discovered tea in India. Robert Bruce, an employee of East India Company, first discovered tea plant in India at Upper Assam district (Pettigrew, 2000). Bruce was

commanded a division of gunboats in Upper Assam during the first Burmese war, and who appeared to have brought down with him some shrubs and seeds of the indigenous plant in 1826. He found the wild indigenous tea plant growing in the upper Assam district and send the seeds and specimen plants to the officials of Botanical Garden in Calcutta (Baruah, 1994). In 1834, the East India Company had taken up tea cultivation in India after losing its monopoly in China. The first tea garden in India was opened by British at Lakhimpur district of Assam in 1835. Commercial batch of tea ever produced outside China arrived at England in 1838 from India. Subsequently tea gardens were opened for cultivation of tea plants in the different parts of India (Roy, 2011). The oldest tea company in India “The Assam Company” was formed in England by the British parliament in 1839 (Sharma, 2006). This company is in operation till now and managing several tea gardens. Commercial tea cultivation in India was started in the state Assam during British colonial period and most of the tea estates were controlled by the British companies. After independence, many Indian entrepreneurs started tea plantation due to departure of British planters (Sharma et al, 2017). Now tea is commercially cultivated in 16 states in India viz, Assam , West Bengal , Tamil Nadu , Kerala, Karnataka, Tripura, Uttarakhand, Himachal Pradesh, Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim, Odisha and Bihar . Out of these states, Assam , West Bengal, Tamil Nadu and Kerala are accounted for more than 95% of the total tea production of India. About 78% of the country’s total area under plantation is located in North East India. The tea originating from Darjeeling, Assam and Nilgiris are well known for their distinctive quality worldwide. Tea exports contribute significant amount of foreign exchange to the nation. States which contributing through small production are Karnataka, Tripura, Uttarakhand, Himachal Pradesh, Arunachal Pradesh, Manipur Sikkim, Nagaland, Meghalaya, Mizoram, Bihar and Orissa. The tea production in India includes small and big growers. In India, small tea growers are economically and socially susceptible as they are mostly marginal farmers.

India is the world's second largest tea producing country and one of the largest tea consuming nation. In the year 2016, India produced 1239.15 million kg of tea from total plantation area of 564 thousand hectare with an average yield of 2197 kg per hectare. India earned foreign exchange of Rs 4327 crores in the year 2016 by exporting 216.79 million kg of tea with an average price of Rs 197 per kg. In the same year, India imported 20.98 million kg of tea having cost of Rs 286 crores with an average import price of Rs 197 per kg (TBI, 2017). Annual production of tea in India contributes 1percent of the GDP of the country. Tea industry provides direct employment of 1.27 million workers mainly drawn from the backward and socially weaker section of the society out of which around 50 percent are women worker being the second largest employer in the organized sector after Indian Railway. Besides, as an agro-based industry, the development of plantation industry has contributed greatly towards rural development and urbanization of remote hilly areas by optimum use of land, opening up road and other communication network in those areas. Among the various plantation crops, tea is considered to be the most important crop in our country. It is the second biggest foreign exchange earner and is exported to around 80 countries of the world. It also contributes a sizeable amount to the national income of the country. Moreover, it provides direct gainful employment to a large number of people and helps in providing indirect employment in various sectors like road construction, transportation, building of warehouses, manufacture of plywood, tea chest, aluminium foil, tinsplate, metal fittings, paper, card board, fertilizers, insecticides, pesticides, coal, iron, steel, etc. Apart from its contribution to the economy of India, tea provides to the common man a pleasant and stimulating non-alcoholic beverage.

Commercial production of tea in Assam was started in the year 1835 and first batch of tea produced in Assam was sent to Calcutta in the year 1836 ( Mann, 1918). Since then, tea has been cultivated in the most of the parts of Assam and turned as single largest industry in terms of employment. Assam occupied unique place in India by producing around more than 50 percent of the national production having plantation

area of about 3.22 Lakh hectares which is more than half of the country's total area under tea. Assam tea is popular in foreign countries due to their strong brisk and full bodied liquor. Tea industry has been extending largest support by generating highest employment opportunities in Assam. It is the single largest industry in Assam that provides average daily employment to more than 6.86 lakhs persons in the State, which is around 50 percent of the total average daily waged employee in the country. There are about 87500 small tea growers in Assam where around 9,00,000 people are directly involved in the small tea growing business (GOA, 2016). This Industry also helps in providing indirect employment in different sectors like road construction, transportation, warehouses, manufacture of plywood, tea chest, paper, card board, aluminium foil, tinsplate, metal fittings, fertilizers, insecticides, pesticides, iron, steel, coal, etc. The Tea Industry comprises with a large network of tea producers, retailers, distributors, auctioneers, exporters and employees.

**Table: 1.1: Snap Shot of Tea ( As on the year 2015)**

SI No.	Description	Remarks
01	Tea Production in world	5304MKg
02	Tea export in world	1801Mkg
03	Highest tea producing country	China ( 2278 Mkg)
04	Highest tea exporter country	Kenya ( 450 Mkg)
05	Tea Production in India	1207 Mkg
06	Tea Consumption in India	948Mkg
	Tea Export from India	234Mkg
07	No. of tea producing states in India	16
08	No. of big tea estates in India ( size more than 10.12 Ha)	1686
09	No. of Small Tea Growers in India ( size less than 10.12 Ha)	157504
10	Highest tea producing state in India	Assam
11	Tea Production in Assam	653Mkg
12	No. of big Tea Estates in Assam	761
13	No. of Small Tea Growers in Assam	83880

Source: ITC report 2016 and Tea Board of India report 2016

## **1.2: Brief history of tea industry of Assam:**

Robert Bruce, who commanded a division of gun boats in Upper Assam during the first Burmese war, first discovered tea in Assam, and who appears to have brought down with him some shrubs and seeds of the indigenous plant in 1826. In the year 1834, Government of India formed a tea committee consisting of 12 members to explore possibilities of tea cultivation in Assam and in the next year an experimental plantation was done in the Lakhimpur district. However, the experiment failed and the plants were shifted to Jaipur, where a tea garden was established which was sold to Assam Company in 1840. In 1838, 12 boxes of tea from India had been reached to London and this was followed in the next year by another lot of 95 chests. It was found that tea from India shipped to London was equally good like China (Roy, 2011).

Tea gardens in Assam are located in two valleys namely Brahmaputra valley and Barak valley. In 1855, a native discovered some indigenous tea plants specimen in the jungles of the district of Cachar (Dey, 2007) in Barak Valley. The native informed G. Verner, the then superintendent of Cachar about the discovery. The fact was ultimately reported to the Government in July 1855 and in that month Williamson of Assam Company applied for forest land for the purpose of cultivating tea in Cachar. Considering Williamson's enthusiasm Government ordered that Williamson could get the lands free of rent for one year, which was longer period than mentioned in the Assam Rules. The first tea garden in Barak Valley was opened in the cold weather of 1856 in the mauza Barsangan. Mr. Williamson had started the cultivation of tea with great spirit. Tea has been cultivated regularly in that Valley of Assam since 1869.

Many of the people who came to Assam to work on the tea gardens as coolies afterwards settled down there as cultivators. The coolies though they had a multilingual, heterogeneous society, formed the new emerging working class of Assam. Various strike and violent mass attack took place as a result of absconding and litigation both in Brahmaputra and Barak Valley between 1884 and 1893. Oppression and exploitation of the coolies were going on from the side of the planters. Their low

wages, rising prices of commodities, excessive toil, unhealthy environment and exploitation of the planters worsened their living in the gardens.

### **1.3: Growth and development of tea industry in Assam:**

Assam is located in the North Eastern part of India, the total geographical area of the state is 78,438 sq kms which is about 2.4 per cent of the total geographical area of the country. Assam is bordered by seven states viz. West Bengal, Tripura, Mizoram, Meghalaya, Manipur, Nagaland and Arunachal Pradesh. It also shares its boundary with two countries viz. Bhutan and Bangladesh. According to 2011 census, the population of Assam stands at 3, 11, 69,272 of which 1, 59, 54,927 are males and 1, 52, 14,345 females. The economy of the state is primary producing i.e. agriculture and more that fifty percent population depend on agriculture for their livelihood and this sector shares around twenty five percent to the State Domestic Product (GOA, 2010). The major industries in the state (Assam) are petroleum and natural gas, coal, tourism, limestone, granite and tea industry, some other industries are fertilizers, sugar, paper, rice mills food processing and sericulture. Some traditional industries are brass-metal works, bamboo and cane works, spinning of endi, muga silk, pat silk, black smith, wood carving, village carpentry, gold smith, pottery, weaving etc. ( GOA,2016).

The teas produced in Assam are among the finest across the globe. The tea produced here accounts for about half of the total tea production of India and 1/6th of the world production. The climate of the region helps in producing sweet and tasty tea. The tea from Assam is largely exported to Middle Eastern countries and Europe and also to Israel, Japan, Egypt, Pakistan etc. Tea is produced both in the Barak plains and Brahmaputra Valley in Assam. Tea gardens are located in Dibrugarh, Tinsukia, Sibsagar, Jorhat, Golaghat, Darrang , Sonitpur and Cachar districts in Assam. Guwahati Tea Auction Centre (GTC) in Assam is one of the largest CTC auction centre in the world. 139 Mkg tea sold through Guwahati Tea Auction centre with average price of Rs 138.36 per kg in the year 2014-15. Though Assam plantation generally produces black tea, the state also produces lesser amount of green and white teas.

Assam tea has to retain its global standard and commands important share in the international market. In 2014-2015, India exported around 207 million kg of tea estimated at around Rs 4054 crore. Though tea production in the south is much lower than the north, the proportion of exports to the total output is significantly higher. Tea exports from the south were pegged at around 87 million kg in 2014 while production was about 241.36 million kg. North India exported only 111.59 million kg from a production of 955.82 million kg during the period, Tea Board of India data showed.

The emergence of small tea growers over the last 15-20 years and their contribution to the total tea production is extremely significant particularly in NE states, West Bengal and Bihar. Even though there are more than 65 thousand small tea growers in Assam, however, they are facing indecisive future due to some independent decisions taken by the state government, imposition of surcharge on green tea leaves at the rate of 20 paisa per kg in addition to a fine of Rs 200 per Bigha, with effect from July 1, 2003.

Table below shows the trend of production of tea. It has been found that the production tea has been decreases during 2001 to 2004, and gradually increased in 2005 to 2007. The figures of tea production, started to increase during 2010-11 onwards.

**Table 1.2. : Tea Production of Assam Since 2001**

<b>Year</b>	<b>Production in (Million Kg)</b>	<b>%age of share of production Assam w.r.t India</b>
2001	453.58	53.11%
2002	433.33	51.68%
2003	434.76	49.50%
2004	435.65	48.79%
2005	484.48	51.21%
2006	502.04	51.13%
2007	511.88	51.84%
2008	487.48	49.70%
2009	499.88	51.00%
2010	480.28	49.70%
2011	508.74	51.40%
2012	588.14	51.80%
2013	629.05	52.00%
2014	606.8	50.68%
2015	652.95	53.00%

Source: Compiled by researcher from Tea Board of India Report

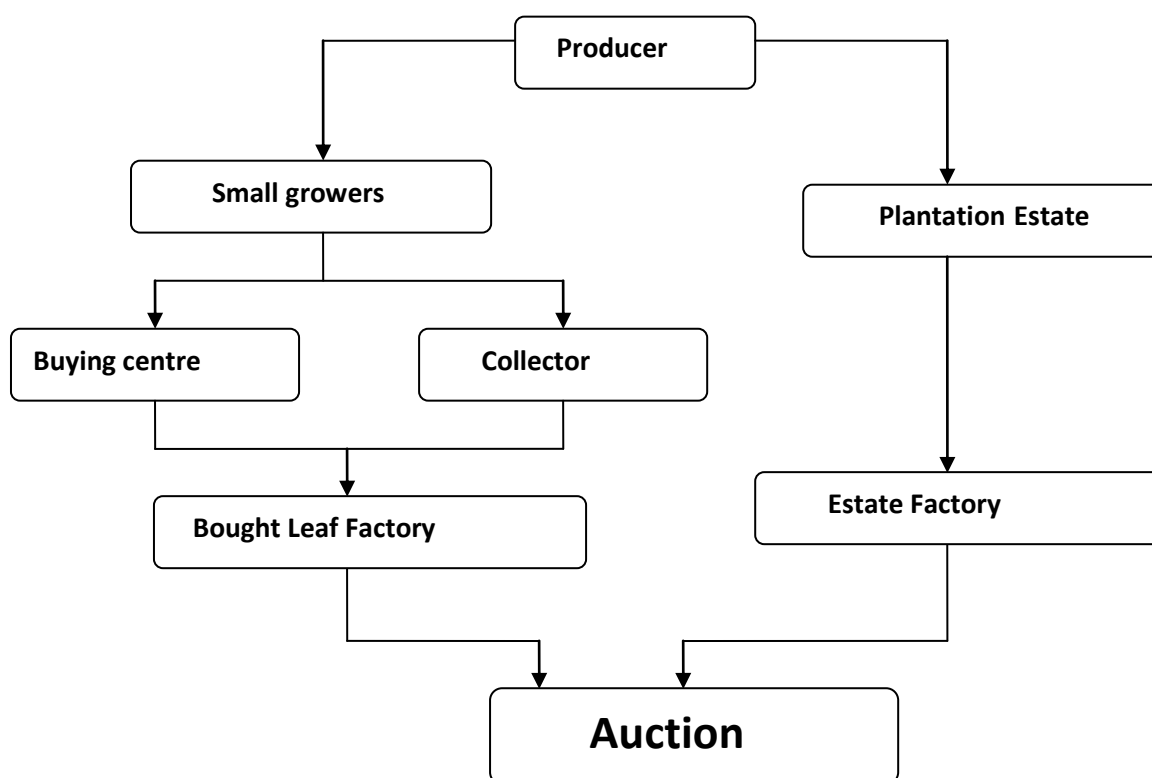


#### **1.4: Marketing of Tea**

The development of marketing is one of the outstanding achievements of human civilization. Marketing is essentially about marshalling the resources of an organization so that they meet the changing needs of the customer on whom the organization depends. Tea is one of the most important agricultural as well as manufacturing products, like other products it also needs a proper marketing channel for disposal. The three main modes preferred for the disposal of tea are: (a) through auction (b) ex-factory or ex-garden sale and (c) forward contract. In India, marketing process of tea can be divided into two parts, i.e., primary and secondary markets. Primary marketing channels help in moving made-tea from the grower (tea estates) to the bulk tea buyers. It also explains the movement of tea directly from producers to national or international buyers. This channel used to carry tea from producer to auction centers where it changes hands from the producers to the large buyers through brokers. Secondary marketing channel includes the movement of bulk tea (which is purchased in bulk in primary market) through auction trading to ultimate consumers. In this chain tea passes through wholesalers, commission agents, blenders, packers and retailers. Till 2001, it was mandatory for the producers to sell 75 percent of their tea through auction, following the Tea (marketing) Control Order 1984. After the abolition of Tea (marketing) Control Order 1984 in 2001, producers were given the freedom to sell their tea through the channel they prefer. But till date, the auction trading has remained most important marketing channel for the tea growers (Hazarika, 2009). Producers of tea may be (a) small growers or (b) big tea estates (according to Tea Board, producers having up to 10.12 hector of area under tea cultivation are treated as small growers and beyond that they are called big tea estates). Small tea growers use to sell their tea leaves to the collectors or the buying centers. They give it to Bought Leaf Factory (BLF) for further processing as small tea growers are not equipped with processing factory, on the other hand most of the big tea estates have their own factory. Tea generally moves directly from factory either to auction center for sale or to direct sale to national or international buyers.

Tea producers are either big estates or small tea growers. Small tea growers do not have their own factory. They used to sell their green leaves to nearby big tea estates having own factory or Bought Leaf Factory (BLF) for further processing. From this whole production, a portion of made tea moves to ex-factory or international buyers and major portion of the made tea move to auction sale. At the auction platform the registered brokers sell tea to the registered buyers after proper tasting and grading.

**Figure 1.1: Primary Marketing Chain of Tea**



These auction buyers are mostly the big tea companies who have their own blending, packaging and trading network all over the world. Finally branded tea moves directly to the hands of ultimate consumers through retailers.

**Table 1.3.: The Auction Centers in India**

<b>Sl. No.</b>	<b>Auction Centre</b>	<b>Auction Organizer</b>	<b>Year of starting</b>	<b>Auction held on</b>
1	Kolkata	Kolkata Tea Traders Association	1861	Monday & Tuesday
2	Guwahati	Guwahati Tea Auction Committee	1970	Tuesday & Wednesday
3	Siliguri	Siliguri Tea Auction Committee	1976	Thursday & Friday
4	Jalpaiguri	North Bengal Tea Auction Committee	2005	Initially weekly, presently fortnightly
5	Amritsar	Kangra Tea Planters Society	1964	Fortnightly
6	Cochin	Tea Trade Association of Cochin	1947	Tuesday & Wednesday
7	Coonoor	Coonoor Tea Trade Association	1963	Thursday & Friday
8	Coonoor	Tea Serve	2003	Wednesdays
9	Coimbatore	Tea Trade Association of Coimbatore	1980	Fridays

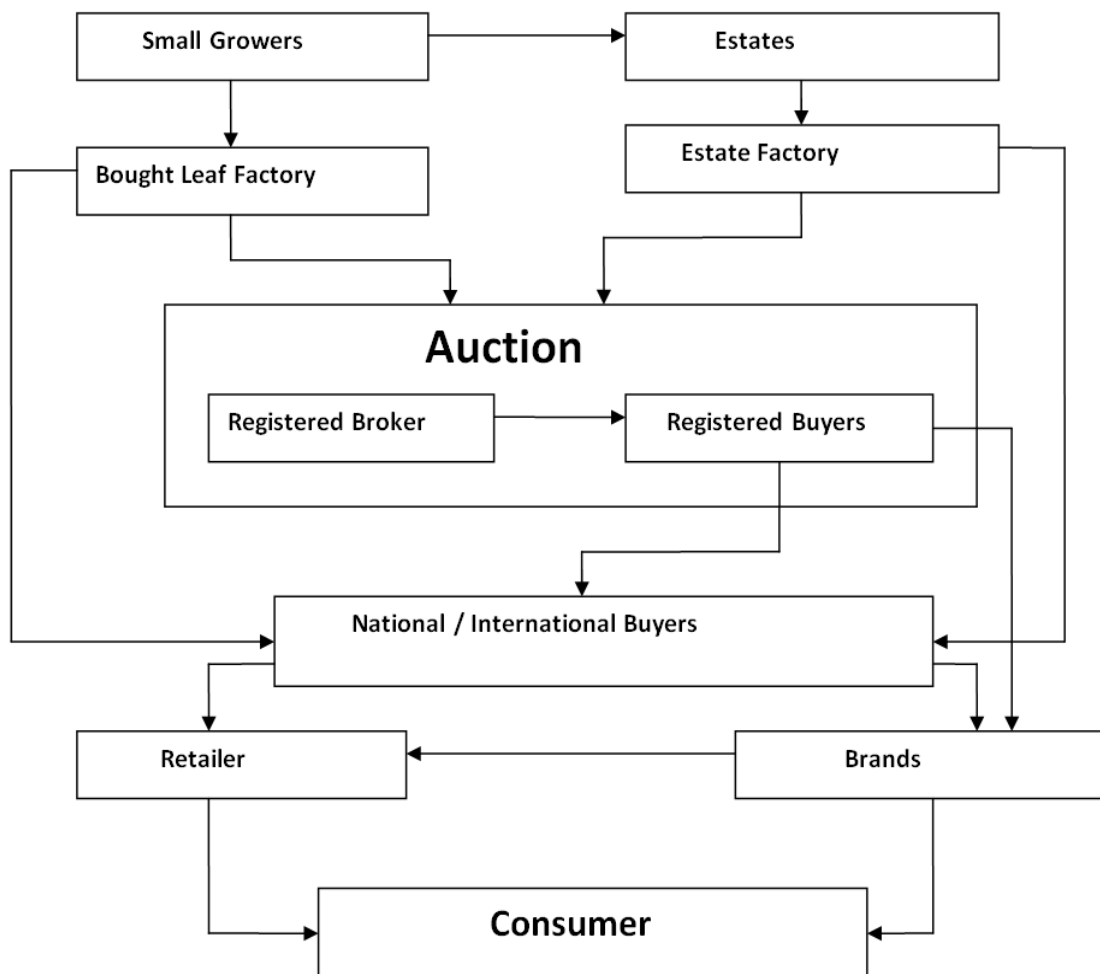
Source: Tea Board of India

Thus tea passes through various stages while moving from actual producer to ultimate consumer. In every movement of this marketing chain value is added to tea. Like every agricultural product, in case of tea also, most value addition is taken place at the last parts of the marketing channel ( Hazarika, 2012).

Only registered seller, buyer, broker and warehouses can participate in a particular auction. The function of a warehouse is just like a bank. A producer can keep his product in a warehouse giving a fixed sum of money as security for using it. When the tea of this producer is sold in auction, the buyers can collect the particular amount of tea directly from that warehouse showing a permission receipt from concern broker. Auction organizers monitor the whole auction system. They also publish statistical reports on auction. The most important feature of auction sale is that the producers do not directly take part in sale of their own tea. They keep their tea in warehouses approved by concern auction organizers. After receiving tea from a seller, warehouse management sends report of arrival and weighing of tea to concern broker. Warehouses are visited by brokers for inspection and they collect samples of tea which will be sent to eligible buyers. Brokers use to do valuation of tea after tasting and they publish this report considering the market trend and quality of tea.

Depending on public outcry at the floor of the auction, tea is sold to the highest bidder. Delivery order of tea from a warehouse to a particular buyer is given by concerned broker. In North India, there are two types of buyer--cash buyer and credit buyer. A credit buyer has the permission to collect tea from warehouse before prompt date and without payment.

**Figure 1.2. Marketing chain of tea through Auction**



On the other hand a cash buyer can take delivery of tea only after paying cash. Broker gives the payment to the seller or manufacturer after deducting his own commission, warehouse charges and taxes. One broker can sell tea of more than 100 gardens on behalf of the producers. So through the whole auction system brokers play very crucial

role from tasting to delivering tea. Sellers or manufacturers do not have direct contact with buyers. The whole system is operated by limited number of brokers.

Electronic bidding or shortly e-auction system of tea is recently developed with wide connectivity of computer networks. The world's first electronic auction of tea organized jointly by Calcutta Tea Traders Association and Tea Board was held at Nilhat house which is the headquarters of the country's largest tea auction firm J. Thomas & Co. on 19<sup>th</sup> Nov 2008. It is expected that this electronic platform will bring more transparency in auction system so that tea producers get a fair price.

The present auction system has some beneficial effects to the producers giving them a large marketing platform. Buyers are benefited in the sense that they are able to purchase tea of a much broader variety than they would otherwise be able by moving from garden to garden individually. Also in auction they can watch the operation of their competitors. As brokers are the major driving force in auction they have enormous power to run the system according to their will. Again the whole system is controlled by some big buyers like Hindustan Lever; Tata Tea etc in case of Indian auctions, who have enormous control over the price of tea. These buyers have a vast network of production, blending, packing and selling all over the world. It is seen that brokers are given all the power from tasting to delivering. The whole system is operated by limited number of brokers. Producers which are the caretaker of tea do not have any active role in auction system. Many industry insiders believe that the large buyers have co-operated with the brokers on the auction floor to keep tea price low. Hence actual growers can do nothing regarding the price of their tea. They cannot hold on to their stocks for a long time and so have to be satisfied with the price fixed by the big buyers. Longer transaction time (about 34 days) and higher transaction costs are other hurdles of this system. For new comers auction is not effective marketing channel. Brokers generally do not accept bids from unknown buyers and hence new producers face a strong competition with already established sellers.

Among the various modes of disposal, auction is most preferred mode for selling of tea till date. In its 180<sup>th</sup> year (since the first auction sale in 1837 at London) the auction

system has been the most preferable way of disposing bulk tea. The participants of auction system are auction organizers, seller or producers, brokers, buyers and warehouse keepers. Here producers send tea for auction. On arrival of this tea, it is stored at registered warehouses which in turn forward “arrival and weighment report” to the brokers concerned. Once the tea has been catalogued, the brokers collect samples from each lot for distribution to the buyers. Brokers also draw samples for their own tasting and valuation of tea. These valuations are distributed to the different buyers and form a guide line for price levels at which the tea is expected to sell.

Usually auctioned held in the early in the morning of the day of auction. Bidding starts once the auctioneer announces the lot number to be sold. Each lot is sold or “knocked down” to the highest bidder. After sale, brokers issue “Delivery order” of tea purchased by the buyer. On presentation of these documents, buyers are able to take delivery of tea from warehouse. In order to place all the teas of various qualities on a single forum and yet retain the capacity to sell large quantities at the right prices, the auction system has been found to be the most useful method.

People think that selling and marketing are same, but it is not true. Selling is one activity of marketing process where customers are influenced to buy a product. But marketing involves a longer process of building a brand and pursuing the customer to buy it even if they do not need it. In tea industry, marketing part is done by the auction buyers i.e. big tea companies like Hindustan Lever Ltd, Tata tea, Brook Bond etc. These big companies have very few gardens of their own or most of them have not. Even they are market leaders of tea. Actual marketing of tea starts after auction. This process involves blending, packaging, advertising, wholesaling and retailing of tea. Tea Board of India started marketing of tea through Tea Council. Tea Board has been enforcing the Tea (Distribution & Export) Control Order, 2005 and The Tea (Marketing) Control Order, 2003 to ensure the quality of tea meant for export and import are as per prescribed national and international standards. In line with this, the Tea Council of India, an Advisory body was set up by the Tea Board of India during the FY 2012-13, to monitor specifically the Import and Export of Tea. The main aim

was to ensure and maintain the authenticity and compliance of the tea as per the standards stipulated by FSSAI and Tea Board. The stakeholders of Tea Council are- Exporter, Importer, Inspection Agency and Customs. Tea Council acts as administrator. To track and monitor the standard of the tea meant for export or import throughout India the Board constituted two Committees- (a) Tea Council of North India (TCNI) and (b) Tea Council of South India (TCSI). The system is operational since 1st June, 2013. Before exporting or importing of teas into the country, the concerned exporter or importer has to mandatorily submit details of his consignment in the Tea Council portal ([www.teaauction.gov.in/teacouncil](http://www.teaauction.gov.in/teacouncil)) and obtain a clearance certificate. The applications of exporters so logged in are randomly selected by the system for sampling as per predefined logic. The importers submitting applications with net weight of teas more than 1000 kgs are subjected to testing. The randomly selected applications are analysed as per standards prescribed by FSSAI and any other notifications issued by the Board from time to time.

#### **1.5. Revenue generation through tea industry to the economy of Assam:**

The Indian tea industry has a significant presence in the domestic as well as international economy. Its contribution to the Indian economy is manifested in terms of its production, employment generation and foreign exchange earnings. The study of the tea industry is particularly important that, in a number of industrializing countries, the tea industry was one among the earliest to be established. Since it satisfies a basic human need, in many of the countries, the industry has subsequently come to occupy an important position in the economy in terms of its contribution to national output, employment and exports. The tea industry has a unique place in the economy of India. It contributes to the industrial production, employment and earning sources of the livelihood of millions of people. Its exports contribute to a part of India's earning from foreign countries. The healthy development and rapid growth of this industry has always been very important for the Indian economy. According to the CMIE (Centre for Monitoring Indian Economy), the tea industry has a significant presence in the economic life of India. It plays a pivotal role through its contribution to industrial output, employment generation and export earnings of the country. The Indian tea

industry is extremely varied with major sectors such as production, processing, marketing sector and so on. The tea is contributing around 5000 crores annually as agricultural income and it has significant contribution to the state economy (Arya, 2012).

### **1.6. Statement of Problem**

Tea production plays a major role in the Indian economy. India is the second largest tea producing country in the world which accounts for around twenty three percent of world total tea production. India is also one of the largest tea consuming countries in the world. Total quantity of tea exported in the year 2017-18 was 256.57 million kg having value of rupees 5064.88 crores (Ghosal, 2018). Due to the increase in demand of India tea in the global market, tea exports of India is increased by 12.71 percent and corresponding value also increased by 13.78 percent compare to the year 2016-17.

India was the largest tea producing country in the world till 2005, but due to steady growth of production of China since 2001 at a rate of 8.8 percent cumulative annual growth, India's position has been pushed to 2<sup>nd</sup> place in 2006. The growth of production as well as export of tea has shown a disappointing trend with respect to other leading tea producing countries namely China in the recent years .India produces 945.97 million kgs in 2005 contributing 27.36 percent of world production share in that year 2005 and maintains leading tea producing country in the World. After slipping the position to second in the year 2006, the production increases to 1208 million kg in the year 2015 with 23 percent share of world tea production and still remain in the 2<sup>nd</sup> position. Now China became the leading producer of tea beating India and Kenya is the leading exporting country in the world. In the world population scenario India rated as the second highest populated country and so market potentiality of tea are very huge within India itself. So far out of total production of tea by India more than 80 percent are consumed in India for which India is rated as a most tea consuming country in the world.

Growth of Tea production in India is much lagging behind as compared to global scenario. One of the major concerns for the tea industry is required to uprooting the



aged old tea plant. The exchange rate volatility and emerging new players in the international arena is one of the major concerns for the tea industry. India's tea market is facing another paradox which could be explained in terms of the price received by producer and the price charged by dealers and retailers. The common consumer in the market is confused of the fact that while the producers are facing the crisis for decline in prices created by broker, the benefit of low price does not come to the common consumers. The reason perhaps lies in non-conformity with regulated market behavior of producers among whom many are found to be selling out their product directly without routing it through auction centers.

Tea Industry of Assam is the major driving force behind the country's tea sector growth which not only produces around fifty two percent of the country's total production, but also employs more than ten percent of the state's work force. However, the share of Assam, in the country's tea production was fifty three percent in 2006, fifty percent in 2010 and fifty two percent in 2015. During last two decades, number of tea gardens increased sharply and reached to 86,640 in the year 2015. Sudden rise in the number of tea gardens of Assam and its area under tea is due to the unemployed youths taking to small scale tea production as their profession. As per the report of the Government of Assam (GOA, 2015), small tea growers contributed around 28 percent of total annual tea production in Assam in the year 2015-16. This is certainly a positive sign for tea industry of Assam. But, since they grow in small scale, they cannot go for factory manufacturing and, hence, have to sell out only green leaves to the large estates. Most of the small tea growers do not have land patta and hence they get any financial benefit from different government agencies. The tea board of India issued biometric card to 53,200 small tea growers of Assam (Economic Times, 2017). The government of Assam has taken the initiative to allot land patta in the name of such tea growers which is a welcome move. More initiative to be taken by stake holders to boost these unorganized tea growers of Assam.

The tea industry of Assam which is one of the major income sources for people of the state of Assam is facing multiple problems. Lack of capital and modern machinery,

lower market value of tea in comparison to increasing production cost, lower yield per hectare etc are forcing back the tea entrepreneurs. Besides increasing domestic need and lack of modern techniques for measuring, the quality of tea is also the major problem. There is also lack of perennial water source for irrigation during dry season or during prolonged drought. Further, some tea garden owners are not using government prescription for improvement of the quality. Some of the constraints in the tea industry of the state are, security problems of the executives, deteriorating law and order situation of the tea estates namely log stealing, political or outsider influence on their internal arrangements, illegal occupation of land by the outsiders, and lack of proper infrastructure. There are, however, a number of problems of tea industries of Assam. A considerable number of tea gardens of the state have gone sick over the period due to lack of infrastructure, modernization, financial problems and efficient management. Although the tea of Assam is earning foreign exchange, its demand is in recession due to better quality-tea supplied by countries like Sri Lanka, Cuba etc at comparatively lower prices.

Tea Industry is a labour oriented industry where huge man power required for running plantation and factories activity. Almost 250,000 hectares of land is covered for such plantations around twenty percent of the total population of Assam belong to the tea garden employee that is one of the biggest organized work force and is the biggest contributors to the economy of Assam . Tea plantation area in Assam is mainly divided in to two regions, Brahmaputra Valley and Barak Valley. Out of about seven hundred sixty organized big tea garden of Assam, six hundred sixty such tea gardens are located in Bhramputra Valley and about one hundred tea gardens are located in Barak Valley. Most of these registered large size gardens are owned by national and multinational companies. But the small tea growers having cultivation land area is less than three acres accounted for thirty percent of the total tea produced in the State, which is fourteen percent of the total tea production of India. Most of the unemployed youth of Assam are engaged in this business as small tea growers. It is important to revive this industry where about twenty five percent of total population of Assam is directly and indirectly engaged. A strong initiative should be taken to increase tea

production in Assam as it was before 2001 and to get back its pride in international market. With this backdrop, a detailed analytical study of tea production of Assam is undertaken to examine the factors effecting the production of tea and to develop a productivity model for the tea industry of Assam.

The production, productivity, financing, marketing, sales, profitability function in the tea industry differs from the other industries. Even-though many studies in this direction have been conducted, the present one will be of great significance to many. It will help in understanding the factors which affect the production of tea in Assam. Hence the research problem for the study concentrated on “an analytical study of tea production in Assam”.

In the present global complexities of tea production in India and abroad, the researcher posed with the following research queries:

- 1) What is the current status of the Tea Production in Assam in the national context?
- 2) What are the issues and challenges associated with the production of Tea in Assam?
- 3) Do the small tea growers have any impact on the production of tea in Assam?
- 4) How the policies Tea Board of India are being implemented by Tea Estates of Assam?

### **1.7. Objectives of the Study:**

The main aim of the study is to examine tea production in Assam. The researcher set the following objectives for purpose of the study:

- 1) To examine the current scenario of Tea Production in Assam in the context of India.
- 2) To examine the implication of Small Tea Growers on tea production in Assam.
- 3) To examine the policies of Tea Board of India implemented by Tea Estates of Assam.
- 4) To identify the factors affecting Tea Production in Assam.

5) To develop productivity measurement model for Tea Production in Assam.

### **1.8. Research Hypotheses:**

1. H<sub>0</sub>: Tea Production in Assam is not at par with the tea production in India.  
H<sub>1</sub>: Tea Production in Assam is at par with the tea production in India.
2. H<sub>0</sub>: There is no significant relation between production by Small Tea Growers and total Tea Production of Assam.  
H<sub>1</sub>: There is a significant relation between production by Small Tea Growers and total Tea Production of Assam.
3. H<sub>0</sub>: Policies of Tea Board of India are not being implemented by Tea Estates of Assam.  
H<sub>1</sub>: Policies of Tea Board of India are being implemented by Tea Estates of Assam.

### **1.9. Conceptual Framework of Productivity:**

In Economics, Productivity is the output of any aspect of production per unit of input. It is a measure of the output of a worker, machine in the creation of goods and services to produce wealth. Output can be measured in output per acre of land, per hour for labour, or as a yearly percentage of capital. A high national productivity typically indicates efficient production of goods and services and competitive economy. In a business or industrial context, the ratio of output production to input effort. Productivity can also be increased by producing the same output with fewer inputs. One problem with trying to measure the productivity is that a decision must be made in terms of identifying the inputs and outputs. Government and company officials use three types of productivity namely Partial Productivity, Total Factor Productivity and Total Productivity. Partial Productivity is a productivity measure where a single type of input is selected for the productivity ratio. The company or organization selects an input factor that it monitors in daily operation. The inputs

could be grouped in various categories as long as they determine the total inputs required to produce an output.

Broadly speaking, productivity is the ratio of output to input in a specific production situation. There are various types of productivity measures. The choice between them depends on the purpose of productivity measurement and in many instances, on the availability of data. Productivity measures can be classified as single factor productivity measures or partial productivity measures (relating a measure of output to a single measure of input) and multifactor productivity (MFP) measures (relating a measure of output to a bundle of inputs). When multifactor productivity measures takes into account all the inputs of production it is termed as Total factor productivity (TFP). Another distinction, of particular relevance at the industry or firm level is between productivity measures that relate some measure of gross output to one or several inputs and those which use a value-added concept to capture movements of output. When the intermediate inputs or the endogenous inputs are deducted from the gross output it results in value added.

Productivity is a relative term which refers to the production with respect to production factors. According to Longman (2017) dictionary, the productivity is the rate at which goods are produced, and the amount produced, especially in relation to the work, time, and money needed to produce them. Usually this ratio is in the form of an average, expressing the total output of some category of goods divided by the total input. For example, in present case, tea production in relation to land, labour and capital are the factors of production. The measurement of production with respect to its each factor is made separately which indicates the relative importance of one factor over the other. In general, productivity of a certain combined inputs to determine the productivity of labour and capital together, or the productivity of all factors combined shows a production function (Kudrik, 1961).

## **1.10. Research Methodology and Design**

### **1.10.1 Research Approach:**

The study is descriptive, explorative, and analytical and survey based in nature. The study is based on both primary and secondary data.

**1.10.2. Data Collection:** Both primary and secondary data have been collected for the purpose of the study. Primary data were collected through structured questionnaire. To get personal views and in depth details, interview with managers of sample tea estates, officials of the tea garden and representatives from Tea Board of India have been done. Secondary data were collected from related literature published in books, journals, reports, statesman, bulletins, tea statistics, internet and the reports of respective sample tea estates.

### **1.10.3. Data Collection Method:**

a) **Universe of the study:** Exhaustive list of Tea Estates/Gardens of Assam registered with Tea Board of India having a size of more than 10.12 hectare taken as the universe of the study. The total number of tea estates as per aforesaid criteria i.e. plantation size above 10.12 hectare in Assam registered with Tea Board of India is 761. Hence, the universe of the present study is 761 estates (GOA, 2015).

### **b) Sampling Method:**

Universe for this study is spread in different geographical location of Assam. Most of the tea estates are located in the far flanged area. Considering these facts, convenience sampling method is used for the present study.

c) **Sample Size:** The selection of the sample size is based on the following:

i) 10 percent of sampled Tea estates selected through judgment sampling method to meet the objectives of the study. Hence, total sample size is 76 tea estates. Two respondents taken from each sampled tea estates namely one as General Manager/Manager/ Asst. Manager/Deputy Manager wherever is applicable and another as factory manager. Hence, total size of respondents is 152 (76 estates × 2). Data collected through structured questionnaires in five point Likert scale indicated most important to not important indicating the intensity of the variables.

ii) Data related to objective number 5 is financial in nature. Most of the respondents are reluctant to provide financial data related to the organization. Considering this fact, researcher had taken 5 percent sampled tea estates from the universe to meet this objective. Hence, total sample tea estates are 38. Financial data collected from officials of sampled tea estates through structured questionnaires in tabular form.

#### **1.10.4. Variables Considered:**

The variables considered for the purpose of the study are area under tea, number of tea estates, total export, total productions, number of small tea growers, number of big tea growers, etc. To find out the implication of tea policies, the indentified variables are irrigation facility, drainage facility, transportation facility, new plantation in hill area, leaf collection centre, purchase of weighing carrying bags, purchase of leaf carrying bags, purchase of transportation vehicles, purchase of field inputs, product diversification subsidy, modernization of buildings, modernization packaging unit, certification grant, modernisation of factory, upgradation of machineries, subsidy for production of orthodox tea and subsidy for production of CTC tea. In order to examine the factors affecting tea production, 27 variables were considered which are presented in the table 1.4.

**Table1.4: List of variables**

Sl. No.	Name of Variables	Sl. No.	Name of Variables
1	Rainfall	15	Technology of Plucking
2	Temperature	16	Technology of Processing Green Leaf
3	Humidity	17	Technology of Packaging
4	Windflaw	18	Pesticides
5	Pressure	19	Fertilizer
6	Soil Condition	20	Cultivating Material
7	Verity of Tea Leaf	21	Irrigation Material
8	Road Connectivity	22	Packaging Material
9	Irrigation	23	Worker Cost;
10	Drainage	24	Material Cost
11	Electricity;	25	Capital Cost
12	Fuel	26	Welfare Cost
13	Coal	27	Subsidized ration
14	Technology of Plantation		

In order to measure the total productivity and partial productivity, the variables are worker productivity, energy productivity, material productivity, capital productivity, welfare productivity, subsidized ration productivity and miscellaneous productivity. The aforesaid variables were selected on the basis of the literature review and observation of the researcher.

#### **1.10.5. Analytical Techniques:**

The collected data were modified and analyzed by using Charts, Bar-Diagram, Tables, and Percentage along with the statistical tools. Following statistical tools were used by the researcher to analyse the collected data in the study:

- a) Linear Growth Rate Analysis
- b) Time Series Analysis
- c) Regression Analysis
- d) Factor Analysis
- e) Trend Analysis
- f) Correlation Analysis

The analyses have been done by using the statistical software like SPSS -16 and MINITAB-18.



#### **1.10.5.1. Linear Growth Rate Analysis:**

The growth trend of the area, output and yield was calculated by employing linear growth rate (LGR).

The formula for calculating Linear *Growth Rate* is follows:

$$\text{LGR} = \frac{b}{Y} \times 100$$

where,

b = the slope coefficient of the linear regression function of the form:  
 $Y_t = a + bt$

#### **1.10.5.2. Time Series Analysis:**

A time series is a set of data on a variable measured at consecutive time period or over consecutive period of time. Time series analysis comprises methods to discover a pattern in the historical data and then extrapolate the pattern into the future. Time series includes components like trend, cyclical, seasonal and irregular.

The long run success of the industry is closely related to how well the future can be predicted so that the proper strategy can be developed. It is important to know the trend of production of tea so that future can be predicted. Therefore trend projection method was utilized to examine consistent increase and decrease in production of tea.

#### **1.10.5.3. Multiple Regression Analysis**

Multiple regression analysis is a statistical technique by which several independent variables are included to predict the dependent variables. It is a functional relationship between a dependent variable and more than one independent variables, where the effect of the independent variables on the dependent variables (Total Productivity) is found out through analysis. This analysis had been applied by the current study in order to lookout for a different combination of variables that explain the variations in the productivity. Multiple regression model was fitted by taking total productivity as dependent variable and partial productivities are independent variables. A multiple

regression model has been used with the help of SPSS package. The mathematical form of the equations is

$$Y = a + b_1X_1 + b_2X_2 + \dots + b_nX_n$$

Where Y = total productivity (dependent variable)

$X_n$  = Partial productivities (independent variables)

$b_1, b_2, \dots, b_n$  are co-efficient

a = a constant

#### **1.10.5.4. Trend Analysis**

Trend analysis helped in understanding the changes in an item over a period of time easily and to draw conclusions regarding the changes in data. For analyzing the trend, the data related to the production of tea was considered over the period under consideration. This method involved the interpretation of the percentage relationship that each item in the selected years bear the same item in the 'base year' which was the first year of the study period.

The method of least square is most widely used in practice to predict the future trend. This method was used in the present study either to fit a straight line trend or a parabolic trend by using the following formulae.

$$Y_c = a + bx \quad a = \frac{\sum y}{N} \quad b = \frac{\sum xy}{\sum X^2}$$

$Y_c$  = Trend Value

a = Constant

N = Number of the years

b = Rate of change

x = Unit of time

If  $Y_t$  consists of random errors which follow the usual classical assumptions, B can be estimated by the least square method i.e.,  $Y_c = a + bx$ .

#### **1.10.5.5. Correlation Analysis**

Correlation analysis is a method of statistical estimation used to study the strength of a relationship between two, numerically measured, continuous variables. In this study, correlation co-efficient of the selected independent variables with the partial

productivity was worked out in order to identify the most important variable, which had a higher association with the dependent variable. Also, the correlation co-efficient among the different variables had been worked out so as to arrive at a correlation matrix, which incorporated correlation co-efficient of all the selected variables with the dependent variable, as well as correlation coefficient among different independent variables. The test of significance was also applied in order to identify the variables having significant correlation.

#### **1.10.6. Model used:**

The following are the different productivity models:

##### **a) Kendrick Creamer Model**

Kendrick and Creamer (1965) introduced productivity indices at the company level in their book “Measuring company productivity”. Their indices are basically two types; total productivity and partial productivity. It can be calculated as below.

Total productivity index for given period = (Measured period output in base period price) / (Measured period input in base period price) and partial productivity such as labour, capital or material productivity index can be calculated as; partial productivity = (Output in base period price) / (Any one input in base period price).

##### **b) Craig-Harris Model**

Craig and Harris (1973) defined total productivity as

$$P_t = Q_t / (L + C + R + Q)$$

Where  $P_t$  = total productivity,  $L$  = labour input,  $C$  = capital input,  $R$  = raw material input and  $Q$  = miscellaneous input and  $Q_t$  = total output.

##### **c) American Productivity Center Model**

American Productivity Center (1981) has measured that productivity relates profitability and price factor.

The measure is given by Profitability = Sales / cost

$$= [(output\ quantity) (price)] \div [(Input\ quantity) (unit\ cost)]$$

$$= [(output\ quantity) \div (Input\ quantity)] \times [(price) \div (unit\ cost)]$$

= (Productivity) (Price recovery factor)

Where productivity = Output / Input

Price recovery factor = A factor which captures the effect of inflation.

#### **d) Productivity Accounting Model**

H. S. Davis (1955) introduced this model which fulfills almost all the requirements of accounting for productivity.

This model takes into account all possible outputs and inputs used, keep out external factors such as price rise etc. The model includes both total productivity and partial productivity which can be calculated as follows:

Total Productivity = (Monetary value of Production)/ Monetary value of all inputs required for production

Partial Productivity: = (Monetary value of Production)/Monetary value of any input required for production

#### **e) Productivity Model for a Tea Industry**

This model has been published by R. Gupta and S.K. Dey (2010).

This model is shown below

$$P_t = Q_t / (L+C+R+E+S+Q)$$

In this modified model, all values relating to output and input are in monetary equivalent deflated to a base year using a suitable price index or an average inflation rate so as to take care of quality.

Researcher used *productivity accounting model* to establish the relationship between total productivity and partial productivity as it is satisfied and considered all the inputs related to tea production.

**1.10.7: Period of study:** The period of study considered was 2006-2016. In certain cases, years prior to the period were considered in order to make comparison of data.

### **1.11. Chapter Plan:**

The thesis has been divided in to six chapters. The chapter plan of the study is as follows-

Chapter 1: Introduction

Chapter 2: Review of Literature

Chapter 3: Present Scenario of Tea Production in Assam

Chapter 4: Implication of Small Tea Growers on Tea Production in Assam

Chapter 5: Analysis of Data

Chapter 6: Findings and Recommendations

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Appendices

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