

CHAPTER – V

TEA INDUSTRY IN INDIA

5.1 Introduction

The discovery of indigenous tea in Assam in 1823 led to the origin of the tea industry in India. However, the Kolkata Agricultural Society differs from the above opinion. It has consistently held that in the early 1700's, the ships of the East India Company frequently brought the tea plants in the country by way of curiosity. Col. Kyol, a resident of Kolkata and a famous botanist, saw tea plants growing in his garden in 1780. This information was sent to Sir Joseph Bank and in 1782 his garden was handed over to Botanical Garden of Kolkata. In 1788, Sir Joseph Bank recorded the existence of indigenous tea growing wild in Coochbehar and Rangpur districts of Bengal and suggested the cultivation of this plant. The wild teas of Coochbehar confirmed the first discovery of indigenous tea in India.

Birth of Indian Tea Industry

The birth of Indian tea industry was marked by the discovery of indigenous tea plant in Assam in 1823 by Robert Bush. This received momentum when the East India Company in 1833 lost the tea trading monopoly in China. In 1835, a scientific deputation was sent to Assam to report on prospects of the tea industry and the team saw tea plants in many parts in the hills between Assam and Burma. In 1836, C.A. Bruce was made the superintendent of Tea Forests. Among others, he formed the Bengal Tea Company at Kolkata with the objective of purchasing the produce from the East India Company's tea plantations in India. A similar company was also established in the same year in London with the same objectives.

In 1839 the first consignment of tea from India (eight chests) was shipped to London and it was auctioned at a price ranging from six to thirty four shillings per pound. In 1840, two thirds

of experimental teas were handed over to new company. In 1852, the first tea company in India paid its final dividends. The second limited company in 1859 was formed in Assam called Jorhat Company. During 1862-67, tea cultivation started in Chittagong and Chotta Nagpur. Ultimately tea cultivation was commissioned in many districts in India wherever there was some hope of a success. Within a few months, India along with Sri Lanka dominated the world tea trade/ market.

Birth of Tea Trade in India

In 1874 the land located in the east of Teesta river was explored with the foreign liability of growing tea plants. By 1876 as many as 13 gardens had started cultivating tea. In 1878 the first two Indian tea gardens by name Megalkeet Tea Estate and Indian Tea Company Ltd. were established though the company actually received a grant of 741 acres on 19 March 1981. The first tea auction started on May 26, 1841 in London under the pioneering leadership of Lyal & Co., Mincing Lane, London was the centre of world tea activities prior to world war II. The first tea auction in Kolkata in December 27, 1861 and the second in Cochin in 1947 for South Indian teas were held. Subsequent many tea auction centres were opened in Coonoor, Guwahati, Amritsar and Siliguri.

5.2 Types of Tea

The following are the important types of tea

5.2.1 Black Tea

Green tea leaf is crushed, torn and (CTC) or rolled before being fermented and dried into black tea.

Black tea can be of two types:

- Orthodox
- CTC

Orthodox black tea is manufactured in the traditional manner, while 'CTC' was born after the invention of the 'cut-Tear-curl' machine.

5.2.2 Green Tea

Green Tea is the least processed of all tea types. As soon as the leaves are plucked from the plant they are steamed or pan fired in order to arrest the active enzymes that cause oxidation from occurring. As a result of this process the leaves maintain a soft and supple texture that ultimately get rolled into the desired shape. Once rolled, the leaves continue through another rolling, pan firing, or heating process until the tea reaches 4 percent or less of moisture.

5.2.3 Oolong Tea

Oolong tea is an intermediate type between black and green tea and undergoes semi-fermentation.

5.3 Other Varieties of Tea

5.3.1 Fruit Tea

- Fruit flavoured and scented teas, also referred to as "fruit teas", are black teas or green teas (*Camellia sinensis*) flavoured with a fruit essence, fruit oil / zest, dried fruit or both.
- Juiced teas contain actual fruit juice / concentrate.
- Tisanes are made from herbs or herb blends and are flavoured with fruit essence and pieces of dried fruit.
- Flower teas blend flowers with fruit flavours and / or dried fruit. Popular teas include Hibiscus and Jasmine and Chamomile.
- Dried fruit blend teas contain various blends of dried berries and other fruits.

5.3.2 Juiced Tea

Teas containing fruit juices are gaining ground, mainly in Italy.

5.3.3 Functional (or) Medicinal Tea

With news report praising and supporting teas' health benefits, functional / medicinal teas seem a natural beverage. Rich in antioxidants, tea may help protect against oral, digestive, lung and colon cancers and may reduce the risk of heart disease and stroke. Tea contains one-third to one half the caffeine of an equivalent serving of coffee, but even among decaffeinated tea, the antioxidants level remains high. Tea is a major source of flavonoids. Armed with such information, consumers are more open to teas that promote healthful benefits. Teas including herbs and fruits with medicinal value are growing.

5.3.4 Masala Tea

An aromatic spiced tea, has been the Indian drink of choice for hundreds of years. It is the perfect blend of freshly ground spices (masala) like cloves, Cinnamon, nutmeg, ginger, cardamom and pepper, added to a boiling pot of loose leaf tea and milk to make a delicious, satisfying and healthy beverage.

5.4 Process of Tea Production

The plucked leaves from the fields are collected in rattan baskets or nylon bags with large perforations so that the leaf is aerated. These are then transported in lorries or trucks and sent to the factory for processing. Medium to large plantations normally have their own factories.

The main processes involved in tea manufacture are:

Withering; Processing; Fermentation; Drying

Sorting; Grading; Packing

5.4.1 Withering

Withering is the process of removing part of the intrinsic moisture content of the leaf so as to render same flaccid i.e., the leaf is twistable without breaking. The leaf entering the factory

is spread evenly on troughs, commonly called withering troughs. During that time, dry air is blown through the spread leaf. Warm air is induced sparingly when there is surface moisture on the leaf. Withering varies with the material and an even wither is directly related to the style and plucking standard. Withering takes about 8 hrs to 15 hours depending upon the condition of the leaf in relation to the prevailing weather conditions.

5.4.2 Processing

There are different means of processing the leaf but the most common one is the Rotorvance – CTC. The withered leaf is fed into a Rotorvance, which crushes the leaf by building pressure in itself. The crushed leaf is then fed through a bank of CTC machine (Cut, Tear and Curl). During this process, as the name of the machine indicates, the crushed leaf coming out from the Rotorvance are cut into small sizes, the cells in the leaf are ruptured and exposed by the tearing effect and the cut pieces are curled to give a grainy make of tea. When the leaves are ruptured during rolling, the polyphenols and oxidase mix and oxidation starts if oxygen is present.

5.4.3 Fermentation

Fermentation is a process of oxidation. There are different methods to carry out the fermentation process but the most common one is of the continuous fermenting table. The crushed leaf coming out from the CTC process is spread evenly over a continuous moving table. The essential factor in fermenting is that sufficient air must be made available to the crushed leaf for the purpose of oxidation and the removal of carbon dioxide. During fermentation there are various enzymatic actions taking place and heat is generated. If the temperature is too high, oxidation is uncontrollable and if the temperature is too low, fermentation does not take occurs. During fermentation ‘Theaflavins’ and ‘Thearubigins’ develop which contribute to the

golden yellow colour of fermented leaf. This process, is depending upon several other parameters, generally takes about 60 minutes. It is during this important process that certain characteristics of the tea such as briskness, brightness, colour and hardness is developed.

5.4.4 Drying

Firing is commonly known as Drying. The main purpose of drying is to arrest fermentation and to reduce the moisture content to a level which gives a keeping quality to the dried tea. Special equipments called Dryers are used to fire the teas. A thin even layer of the fermented leaf is continuously fed into the dryers. Controlled hot air is blown into the dryers and in turn passes through the fermented leaf. Depending upon several other factors, generally, the drying process takes about 20 minutes.

5.4.5 Sorting

Sorting is a process of cleaning and grading the fired teas by passing them over electrostatic fibre extractors and wire meshes of different apertures. The graded teas are then stored in airtight bins for packing.

5.4.6 Grading

After manufacturing, teas are graded-some for quality (cup test). Some for style (size and age of leaf) and some for both quality and style.

The simplest form of grading classifies whole leaves according to age and size, ranging from the tenderest orange pekoe through pekoe and pekoe souchoug to souchoug. Most of these grades are separated by means of a series of oscillating sieves or revolving cylindrical sieves. Grading is only for style classification. The market value of the tea must be determined by the tea taster.

5.4.7 Packing

Depending upon market demand the stored teas are packed in either paper sacks for export or small packets and tea bags mainly for the local market.

5.5 Types of Tea Manufactured

There are four primary types of tea:

1. Black Tea
2. Green Tea
3. Oolong Tea
4. Instant Tea

Though any of the varieties of tea can be used to produce the four types, certain varieties are better suited for making one (or) more of them.

5.6 Chemical Components of Tea

A tea shoot consisting of two leaves and a terminal shoot which constitutes the normal and best material for tea manufacture. It contains 74 to 77 per cent moisture (surface dry shoot) and 23 to 26 per cent matter. About half the solid matter is insoluble in water and it is made up of crude fibre, cellulose, proteins and fats. The soluble part includes about some 30 polyphenolic bodies, over 20 amino acids, caffeine, sugars and organic acids. There are traces of a number of substances which may be connected with what is known as the essential oil, responsible for the aroma of tea. The following table which gives an idea of the fresh shoots of Assam Tea has been quoted from Harler¹ by the F.A.O.².

1. Harler, C.R., Tea Manufacture, Oxford Tropical Handbooks (1963), p:66

2. Food and Agricultural Organisations of the United Nations, Tea Processing, Rome 1974, P. 5.

Composition of Fresh Tea Shoots (percent)

Crude Fibre, Cellulose, Lignin etc.	22
Proteins	16
Fats	08
Chlorophyl and Pigments	1.5
Pectin	04
Starches	0.5
Insoluble in water, total	52
Fermentable polyphenols	20
Other polyphenols	10
Caffeins	04
Sugars and Gummy matter	03
Amino Acids	07
Minerals (ash)	04
Soluble in water, total	48

5.7 Benefits of Tea

Although tea is cultivated in a small number of countries, it is consumed all over the world. Tea has a large following and is a light stimulant without any side effects. In fact, scientists have been espousing the health-promoting benefits of regular tea drinking.

Some of the more important benefits of tea are as follows³:

- Tea aids in digestion and lowers cholesterol levels. It can also reduce the chances of paralytic strokes. The polyphenols and antioxidants in it could reduce incidence of many skin, lung, liver, stomach, and other types of cancer.
- Tea helps to fight colds by doubling mucous flow, which flushes out germs from the body.

3. Sage Group (1996): US Tea is “Hot” Report, Seattle WA, Second Edition, PP. 14-16.

- Green tea has many additional uses. It is used as a skin soother for sunburn and natural anti-bacterial agent.
- Naturally occurring fluorides in tea (particularly in green tea) promote healthy teeth and gums.
- Minerals in tea, including potassium, zinc, and manganese (in addition to tannins), are said to boost vitamin C retention.
- Tea is an ideal weight management drink and a mild stimulant without any side effects. Tea has fewer or no calories and much less caffeine per serving than coffee. Tea provides improved concentration, greater alertness, and stimulation of the body's own anti-depressant chemicals than caffeine. The caffeine in tea when consumed in the form of a brew does not cause any harmful effect. On the contrary, it could create beneficial effects as a diuretic. Thus tea is considered to be one of the healthiest drinks. It is not a drug; it is a kind of functional food with the activity of moderating the physiological function of human beings.

Scientists of the world over have recommended an intake of 4-5 cups of tea a day for an adult. Researchers have even overruled the age-old restriction that children should not be allowed to drink tea. Now they say that children may be encouraged to take tea without any harmful effect.

Studies have repeatedly established the relationship between tea and blood pressure. Two studies showed an inverse but non-significant trend towards lower systolic pressures with increasing tea consumption.

5.8 Problems of Indian Tea Industry

The main problems of India's tea industry centre are as follows:

1. Quality
2. Costs
3. Replantation and replacements
4. Uneconomic gardens
5. Finance
6. Expansion of consumption
7. Variable external demand
8. Traditional structure and concentration

5.9 Marketing System of Tea

Tea being a perishable product should be disposed of as quickly as possible. The economic viability of tea industry depends crucially on profitable disposal of its products. The marketing system of India is related with marketing channels and Government regulations on tea disposal. It refers to the complex system of institutions and operations, which intervene between the producer of tea on one hand and ultimate consumer on the other hand. Among the alternative means of disposal, the producer chooses the channel, which brings the best price to him within the purview of Government regulations. The marketing channel in tea is the pathway of movement of teas through intermediaries from production in the garden to the hands of the ultimate consumers within or outside the country. Das committee in its study early in 1974 found that marketing of Indian tea was done by a two stage process in which the first stage was the passage of Indian tea as a primary product via the various channels to (i) Indian blender packers (ii) Indian loose tea wholesalers (iii) U.K. importers, (iv) rupee country importers, and (v) non-rupee-non-U.K. importers overseas. In the domestic market, the second

stage of tea marketing was two compartment affairs, one of which was the marketing of packets in India by Indian blender packers and the other was the loose tea marketing system.

5.9.1 Modes of Disposal

Tea is marketed and made available to the consumers in two different forms through loose and packaged. Loose tea is not subjected to any further major processing after it is purchased at auction. It is sold to the consumer rather in the same condition or in blended form. It is generally not packed in convenient sizes before it is sold. In packet tea trade, on the other hand, tea undergoes further processing and different types of tea are blended and sold to the consumers in packets of conventional sizes. There are mainly three modes of disposal of tea through auction, ex-factory or ex-garden and forward contract. Among these the public auction system plays the most important role as Tea (marketing) Control Order (1984) specifies that 75 percent of the total output of tea estates should be sold through it. The interlinked modes of disposal of Indian tea are (a) Direct consignment to London auction, (b) Direct sale by forward contract to overseas buyers, (c) Consignment to Indian auctions, (d) Direct ex-factory sale to Indian buyers (e) Direct sale by forward contract to Indian buyers, (f) Direct Marketing (loose tea) in wholesale markets and (g) Self-packeting and exports of packets overseas. Over and above, there are some sales of Indian packaged tea abroad and small scale attempts to sell packaged tea in home market by Indian producers.

5.9.1 Marketing Modes of Tea

The seven marketing modes are discussed below

5.9.1.1 Direct Consignment to London Auction

London auction is the oldest and pioneer of institutional marketing of tea in the world. Though over the years, the quantity of Indian tea sent directly for auction to London is coming down, still a good quantity of quality Indian tea is shipped directly to London for sale.

5.9.1.2 Direct Sale by Forward Contract to Overseas Buyers

This practice was very common in the first quarter of the present century. Large buyers in the United Kingdom or the East negotiated forward for the purchase of the whole output of an estate, or for a part thereof, over a period of one year or more. The eventual disposal might take many forms. It might be shipped direct to the buyers for general trade distribution; it might be transported in varying quantities to different parts of the world, some of it might find its way to London auction; it might be retained at the port of shipment to be blended and possibly packed there and reshipped to various consuming countries.

5.9.1.3 Consignment to Indian Auctions

Most of the tea produced in India is sold through the seven auction centres situated in different parts of the country. Here tea is sold to buyers through brokers, a middleman, who sells tea on behalf of the growers. The tea is sold to highest bidder under the usual rules of sale governing such auction. The seven auction centres of the country are Guwahati, Kolkata, Siliguri, Cochin, Coonoor, Coimbatore, and Amritsar.

5.9.1.4 Direct Ex-Factory Sale to Indian Buyer

By this system tea is sold in the garden itself. This applies to sales from bought leaf factory. Tea produced in such factories is more regularly sold ex-factory to local collectors or dealers through whom it passes to merchants, from whom it may be sold in auction or by private treaty or be shipped. Some estates located on the main road sell tea rather loose or in packets to retail buyers at the factory door, although the amount is less. This gives a quick return to the garden.

5.9.1.5. Direct Sale by Forward Contract to Indian Buyers

Buyers and sellers make a contract even before tea is produced to sell it at a fixed price later. This producer has to sell the teas to the buyers at the agreed price, irrespective of the price of tea later.

5.9.1.6 Direct Marketing (loose tea) in Wholesale Markets

Growers are selling tea directly in wholesale outlet in the market.

5.9.1.7 Self – Packeting and Export of Packets Overseas

Tea is exported in packet forms from the garden to different countries of the world in company's name.

5.9.2 Development of Auction Market in the World

The first organized sale of tea through auction took place at mixing lane in London. The East India Company sold its tea in India House, privately till 1838 but after it lost its monopoly of the Indian trade, all tea was sold in the commercial sale-room at mixing lane. For the first five years after 1834 tea sold at mixing lane was exclusively from China. On 10th January 1839 the first commercial consignment of Indian Tea was sold in the commercial sale-room by the East India Company, which was an event of great importance in the history of Indian tea. As Sir Percival Griffiths in The History of the Indian Tea Industry said, “The first import of tea from the British territories in Assam, consisting of eight chests, containing about 350 pounds, was put up by the East Indian company in public sale in the commercial sale rooms, Mixing Lane , on the 10th January, 1839 and excited much curiosity”. This was the first auction of Indian Tea. The first Indian Tea Auction center was established in Kolkata on 27th December 1861. Kolkata Tea Broker's Association at first conducted the auction. Since 1947, auctions have been held in Kolkata under the auspices at the Calcutta Tea Traders Association (CTTA). There are 13

auction centers in the world at present out of which seven are in India. Table 5.1 shows the dates of establishment of the tea auction centers of India.

Table. 5.1

Tea Auction Centers of India

Sl. No.	Name of the auction center	Date of establishment
1	Amritsar	30 th April, 1964
2	Calcutta	27 th December, 1861
3	Cochin	4 th July, 1947
4	Coimbatore	22 nd November, 1980
5	Coonoor	23 rd March, 1963
6	Guwahati	25 th September, 1970
7	Siliguri	26 th October, 1976

Source: www.teaboard.gov.in

It is clear from Table 5.1 that seven auction centers are established for the purpose of development of tea industry in India. In Tamilnadu, two auction centers are established as one at Coimbatore and another one at Coonoor.

5.9.3 Auction Centres of Abroad

Auction market in Colombo started on 30th July 1883 for Sri Lanka tea. Chittagong auction center was established on 16 July 1949 to deal in teas of then East Pakistan, now Bangladesh. Nairobi auction market began sale on 7 November 1956 for the sale of African teas. Nairobi auction market has since moved to Mombassa on 14 July 1959. Before the war, Amsterdam was an important auction center for Indonesian tea. Sale ceased in that auction center in April 1940 but was resumed in January 1949 and then again suspended in July 1958. Auction sale was inaugurated in Antwerp in 1959 and later suspended in 1966. In 1960 auction started in

Hamburg, and suspended in 1965. These two auction centers handled Indonesian tea. Limbo auction market started operation in February 1970 and Djakarta auction on 11 December 1972. Thus, while London auction market is “cosmopolitan” in nature, other markets handle tea of the local producers.

5.9.4 Tea Auction Facilities

The auction facilitates distribution of the largest quantities of the product in the shortest possible time, increases competition among buyers and sellers because of the concentration of the factors of supply and demand under one roof, improves grading and packing, offers advantages to the buyers in finding quickly the type and quantity he wants and extension of credit to buyers by financial institutions. The auction serves the buyers by enabling them to purchase tea of a much broader variety than they would otherwise be able to, moving from garden to garden individually. The consumer demands certain standardization in tea blends. This is an extremely delicate operation as the quality of tea manufactured day to day of different tea estates vary greatly. To achieve this standardization the auctions allow the blenders to match teas from all over India with their blends. Buyers are afforded the widest choice to fulfill their particular requirements, be they for exports, wholesale, retail or blending, while the sellers are provided a platform for attracting the widest range of market through numerous buyers, both internal and export. No other commodity of such a varied quality can be disposed of in so short a time.

5.9.5 Tea Auction System

It has often been claimed that the tea auction system has withstood the test of time. The auctions have been found acceptance by both sellers and buyers and have the approval of the Government as well. The auctions provide the producers a ready and reliable means of selling

their produce. A new entrant, thanks to the auction system, does not have to necessarily worry about marketing his production. This is not the case with other products where marketing is an essential input. The tea industry has attracted many investors because it is in business straight away, without searching for markets. The producers receive the sale proceeds timely, 14 days after the sale, through a well established system of 'prompts'. The buyers have found the auctions beneficial as they cannot only buy at a central point but can watch the operation of their competitors. They do not have to go from door to door for their requirements. Even for private transactions auctions are the barometer. The brokers have been able to evolve an effective system whereby services are efficiently provided to both buyers and sellers. They have been providing market intelligence; manufacturing and agricultural advice to the producers and have regularly compiled useful data for the tea industry, including statistical information. However, as the countdown to the 21st century begins, there appear to be some cracks in the system. More and more producers are going in for direct marketing, by passing the auction system. This trend is likely to continue, as producers would like to exercise personal control over their production. The major buyers have supported the auction system in past. The former USSR bought the bulk of its quantity through the auctions but the disintegration of the former Russia has meant a change in their buying policies and purchases for the Russian Federation and CIS countries today are being done substantially through private sales. Similarly other buyers, to secure quantities, are buying teas privately. In fact, the main supporters of Darjeeling tea have shown a clear preference for private sales during quality periods. The Tea Marketing Control Order of 1984 prescribes that the producers must sell 75 per cent of their production through seven recognized auction centers of India – Guwahati, Siliguri, Cochin, Coonoor, Coimbatore and Amritsar. This order, however, has no teeth and, in any case, it is withdrawn as India moved towards a free economy.

5.9.6 Advantage of Auction Sale

Tea auction center collects supplies of teas from a large number of go-downs and canalizes them into many areas of the highest demand spread all over the world. As a mechanism of sale, the outstanding virtue of the auction is integrity- the selling and buying are done publicly. The auction is economic gaps of money to the seller. As Goradia observes, the auction center is a meeting place, where up to 1000 gardens meet some 1000 buyers to trade 3000 to 5000 lots of tea every week, in the course of only 20 hours. The present system of selling tea in auctions through brokers, are selling samples to buyers and printing information catalogue originated from London. The same system, therefore, have been adopted in other auctions centers also. The auction mechanism has some defined advantages: (i) the producers is assured of the fair price on prevailing market. (ii) assurance of continual flow of sale to producers without fear of a buildup in unsold stocks which happen in case of other selling modes in times of recession. (iii) problem of bid collection as payment is automatically collected the 14th day. (iv) the pushing nature of bidding in tea auction improves price and helps in maintaining a similar price level to comparable lots of tea. (v) free sampling which costs less than per cent, is a vehicle of sales promotion ideal for a commodity of such variety. (vi) as the auction takes place publicly, the integrity sale is implicit to a producer regardless of his situation from auction center or unfamiliarity with mechanics of trading.

5.9.7 Tandon Committee on Marketing

The system of tea auctions, which is more than a century in spite of views occasionally expressed to the contrary committees and commissions set up in India and abroad recommended the continuation of the auction system as the efficient method of disposal of bulk commodity like tea. The committee to examine the auction system in India was the Tandon committee, which

submitted its report in November 1978. After careful examination of all aspects of the matter the committee confirmed the need to allow auctions to progress freely.

5.9.8 Ex-Garden Sale

The Tea Board constituted a committee to examine the role of auction and recommended that experiments to be watched modus – oparandi and their impact on tea trade should be carefully examined to decide the advantages and disadvantages. Committee clearly envisaged the possibility of Mini Auction assume bigger role in coming years. The Tea Marketing Control Order 1984 stated that 70 per cent of crop in 1984 and 75 per cent of crop in 1985 onwards should be sold through public auctions in India has been causing serious financial problems for the products apart from reducing the prices realized at auctions. Stipulation of minimum of crop for sale through auctions in India was held good for two years 1985 and 1986 but from 1987 onwards, the proportion started declining. This was due to considerable delay in sale through auctions on the one hand and reduction in prices as a result of too much tea being available at auctions, on the other. The existing auctions will also find it extremely difficult to handle the largely increased volume of tea smoothly and promptly unless their facilities are augmented. It is, therefore, proved that other method of disposal of tea should be allowed to play a growing role.

5.9.9 Mini Auction

Tata, which organized mini auction, filled the gap to some extent. It should be encouraged. Simultaneously ex-garden sale, which in 1995 and 2004 accounted for 38.93 per cent and 42.04 per cent to total production should be allowed to continue and if necessary to increase depending on circumstances so that producers may receive the best possible prices for their produce and sale proceeds may also be received as early as possible which is essential in

view of their tight cash-flow position. The quantity sold through auction in 2004 constituted 53.13 per cent of total crop. Over the years, the sale through public auction in percentage terms started fluctuating and it could be able to handle 45 per cent of the crop in immediate future and still lower proportion in the following years. As a result, a bigger role will be played by mini-auctions, London auctions, ex-garden sales as well as C and F Export. Any dogmatic insistence on increasing sales through public auctions in India without considering the capacity of the auction centers on the one hand and effects of such a policy on tea prices and financial position of tea producers, on the other hand, will only create utter confusion in the tea industry and trade and an inevitable slump in tea prices. Mini auctions in particular have a big role to play as a method, which lies in between public auction and ex-garden sale. Tea Board had drawn up a set of model rules to govern, these mini-auction so as to remove the scope for under invoicing and evils associated with public auctions.

5.9.10 Auction for Blended and Packet Tea

There is a need for other innovative approaches. Auctioning of blended teas and packeted teas would be one such approach. It should cover not only teas blended and or packeted by tea producers but also teas blended and or packeted by buyers of loose tea. In fact traders rather than producers may take the lead in organizing auctions of blended and packeted teas, which may be purchased by second stage traders for either domestic consumption or export. On immediate beneficiary effect of this approach would be elimination of the oligopolistic held on the matter for packed teas enjoyed by few packers with consequent reduction in prices for the ultimate consumers who have to pay exorbitant prices for the teas purchased by them because of high profit margin enjoyed by traders at different levels of distribution channels and do not get any relief even when auction prices decline.

The Tea Market Control Order came into force from 19th April 1984. It will be seen from the data that quantity of offerings went up to 1991. It however, showed steady decline, except 2004. With the over expending middle class in India, packets branded goods are becoming more and more popular. The number of producer packet, the sale of which privately permitted under the tea marketing control order, has increased. The poly pouch with the “garden fresh” slogan is popularizing pocket teas in India. The consumer packets, packed at the gardens, are sold directly and do not go through the auctions. Improved communications have also helped expanding the private sale market.

5.10 Marketing Structure of Tea

The principal difference in selling loose and packeted tea is that while packeted tea is handled by relatively a few well organised agencies, loose tea distribution is undertaken by a large number of institutions and individuals. A tea planter has the following four options to dispose the output through sale.

- ex-garden,
- forward contract,
- Indian auctions, and
- London auctions

5.10.1 Channels of Loose Tea Trade

There exists a two-tier set of wholesalers and retailers through which tea produced by planters reaches the final consumer. Wholesale traders operating in different cities buy tea from planters employing one or more of the following methods of purchase from

- the garden directly – ex-garden sale by the planter to the wholesaler.

- the garden directly through forward contract-contract between wholesaler and the planter,
- mini-auctions hold at some places, and
- Indian auctions through brokers.

In the first three methods, the wholesaler buys from planters, either direct or through an intermediary. In the last method, the planter invariably utilizes the services of a tea broker and the wholesaler the services of a buying agent in transacting the tea sales or purchases. The more important services rendered by the broker, for which he charges the planter, are to

- catalogue tea stocks and make samples,
- pass on the sample to prospective buyers in advance of the date of auction,
- value tea by tasting of samples, and
- hold auctions at regular intervals and arrange for payments.

The more important functions of the buying agent are to

- apprise the clients of information on price and bidding at the auction on behalf of the clients, and
- clear tea, after purchase in the auction from the warehouses, and arrange to forward and transport it to the wholesale traders.

For these functions, the buying agents charge a fee from the wholesalers which are usually up-to Two percent of the value of tea purchased at the auction.

After purchasing tea through one or more of the methods the wholesaler receives the stocks in the city and arranges to dispose them off to semi-wholesalers, tea retailers or grocers. Generally, this operation is confined to a city and the expenses incurred are mainly on storage, handling and local transport. In this process of sale between wholesaler and tea retailer

or grocer, the services of a broker are also utilized if the retailers are not known to the wholesaler. Wherever their services are used in arranging and negotiating the sale, the brokers are paid by the wholesaler.

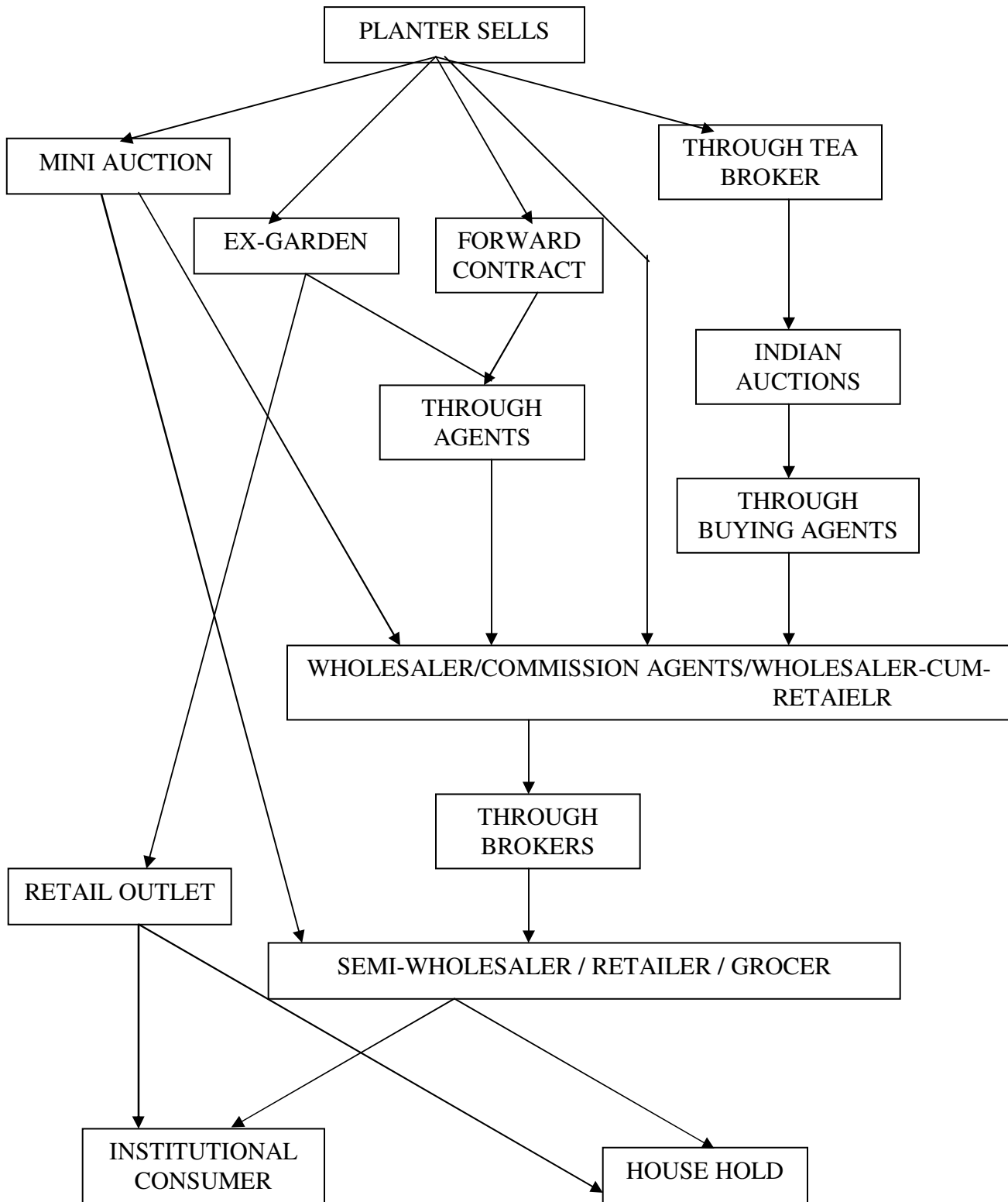
The last stage of marketing in a city is at the level of tea retailers or grocers. The functions performed by them are the same, in that both purchase stocks from the wholesaler in chest-loads and sell them in smaller quantities to the consumers, households and institutions such as tea shops in their respective areas. Although the product does not undergo any change at this stage, it is common practice among tea retailers or grocers to mix various graders and varieties of tea and prepare table-blends to cater to the specific demands of the customers. The only difference between a tea retailer and a grocer in the distribution system is that the former deals exclusively with tea trade while the latter sells tea as one among many other grocery items. The operations of tea retailers or grocers are confined to the cities in which they are located and their marketing costs are minimal consisting of handling and establishment charges only.

A wholesaler may undertake the functions of a tea retailer as well; he may buy tea in bulk and sell to consumers directly after preparing special blends. The tea retailer or grocer may bypass the wholesaler and purchase it in the mini-auction conducted in the cities by Duncans, a leading planter of Assam. Similarly, the consumer has the choice to buy loose tea either from the grocer or the tea retailer, the wholesaler-cum-retailer, or even direct from the garden if the garden has its own retail outlet. Bypassing of any tier of distribution leads to some price advantage.

The following Chart 5.1 shows the channels of distribution of loose tea.

Chart 5.1

Channels of Distribution of Loose Tea



5.10.2 Channels of Packed Tea Trade

The organizations engaged in the distribution of packed tea trade in India are: Brooke Bond India Ltd., Lipton (India) Limited, Tata – Finaly Limited, Spencer and Company Limited, Jay Shree Tea and Industries and the Tea Trading Corporation of India. Among these the Brooke Bond and Lipton are the most important ones accounting for 98 percent of the total volume of packed tea sold in the country in 1977. Tea is generally purchased by these companies at the auction centres and with the tea bought from their own gardens, is blended in their factories to prepare conventional grades of tea which are packed in convenient sizes.

As in the case of the loose tea trade, there is a two-tier distribution set up between the producers and consumers of packeted tea. Leading companies such as Brooke Bond and Lipton have their marketing network consisting of regional sales offices and godowns in different parts of the country from where tea packets are supplied to retailers and grocers for further sale to the consumers. Other packeters have appointed stockists in different cities, through whom packeted tea is sold. The tea retailers and the stockists work on the basis of an agreed commission.

5.11 Number of Tea Estates in India

The sizes of tea plantations in different parts of India vary. The main tea plantation in India include (i) The Brahmaputra valley and the Cachar districts in Assam (ii) The Duar area, Darjeeling and Jalpaiguri district in the Sub Himalayas tracts of West Bengal (iii) Kangra and Mandi in Himachal Pradesh and (iv) Nilgiri Hills in Tamilnadu.

The following Table 5.2 reveals the total number of tea estates in India from 1970 to 2007

Table 5.2
Number of Tea Estates in India

Year	No. of Tea Estates	Index of Growth
1970	12015	100.00
1975	13166	109.58
1980	13410	111.60
1985	13625	113.40
1990	13873	115.46
1995	35126	292.35
1998	98867	822.86
1999	98867	822.86
2000	112010	932.25
2001	116659	970.95
2002	127801	1063.67
2003	129027	1073.88
2004	129027	1073.88
2005	140713	1171.15
2006	143217	1191.98
2007	159190	1324.92

Source: Statistical Report of Tea Board

It is clear from Table 5.2 that there are 12015 tea estates in 1970. It increased remarkably to 18867 tea estates in 1998. It further increased to 112010 estates in 2000 and it increased to 116659 estates in 2001. It increased to 127801 estates in 2002 and further increased to 143217 estates in 2006 and it increased to 159190 estates in 2007. It is clear from the table that tea estates in India are increasing remarkably every year.

5.12. Tea cultivation Area in India

Area is the important factor for tea cultivation. The following Table 5.3 reveals the tea cultivation area in India.

Table 5.3
Tea Cultivation Area in India

Year	Area (in Hectares)	Index of Growth
1970	3,54,133	100.00
1975	3,63,303	102.58
1980	3,81,086	107.61
1985	3,99,936	112.94
1990	4,16,269	117.55
1995	4,27,065	120.60
1998	4,74,027	133.85
1999	4,90,200	138.42
2000	5,04,366	142.42
2001	5,09,770	143.95
2002	5,11,940	144.56
2003	5,19,598	146.72
2004	5,21,403	147.23
2005	5,55,611	156.89
2006	5,67,020	160.12
2007	5,78,458	163.35

Source: Statistical Report of Tea Board

It is clear from Table 5.3 that the tea cultivation area in 1970 was 354133 hectares. In 1980 it increased to 381086 hectares and then it increased to 416269 hectares in 1990. It assumes a gradual increase and reached to 578458 hectares in 2007.

The growth rate of tea cultivation area is analysed through trend analysis and the details of it are stated in Table 5.3.1 as follows:

Table 5.3.1

Trend in Tea Cultivation Area in India (in Hectares)

Year	Areas (in hectare) y	Deviation x (2002.5)	x ²	xy	Trend Value (yc)
1998	474027	-4.	20.50	-2133121.50	475083.90
1999	490200	-3.5	12.25	-1715700.00	485785.10
2000	504366	-2.5	06.25	-1266915.00	496486.30
2001	509770	-1.5	02.25	-764655.00	507187.50
2002	511940	-0.5	00.25	-255970.00	517888.70
2003	519598	0.5	00.25	259799.00	528589.90
2004	521403	1.5	02.25	782104.50	539291.10
2005	555611	2.5	06.25	1389027.50	549992.30
2006	567020	3.5	12.25	1984570.00	560693.50
2007	578458	4.5	20.50	2603061.00	571394.70
	Σy=5232393		Σx² = 83	Σxy = 888200	

$$a = \frac{\sum y}{N} = \frac{5232393}{10} = 523239.3$$

$$b = \frac{\sum xy}{\sum x^2} = \frac{888200}{83} = 10701.20$$

Trend equation $Y_c = a + b(x)$

Hence $Y_c = 523239.3 + 10701.20(x)$

$$Y_c = 2015 = 523239.3 + 10701.20(12.5) = 657004.3$$

According to the trend analysis, the tea cultivation area in 2015 would be 657004.3 hectares.

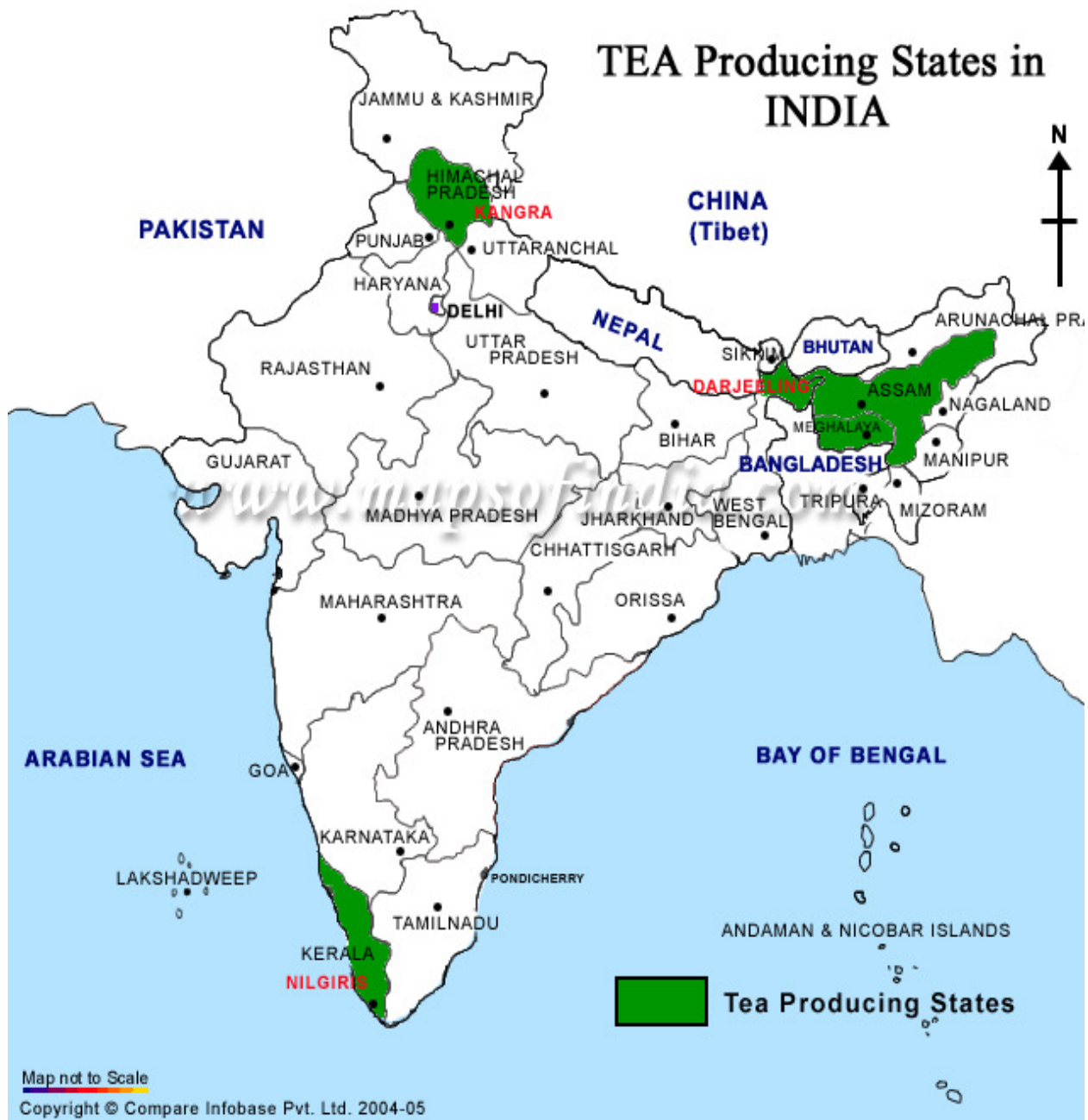
Trend values are shown in Graph 5.1 as follows:

It is clear from Graph 5.1 that Trend Values are increasing every year.

The tea producing areas in India can be known through Map 5.1

Map 5.1

Tea Producing Area in India



It is known from the Map 5.1 that the important tea producing areas in India are Assam, West Bengal, Tamilnadu and Kerala.

5.13 Tea Production in India

The details of tea production in India are shown in the following Table 5.4

Table 5.4
Tea Production in India

Year	Production (m.kgs)	Index of Growth
1970	418.517	100.00
1975	487.137	116.40
1980	569.172	135.99
1985	656.162	156.78
1990	720.338	172.12
1995	756.016	180.65
1998	874.108	208.85
1999	825.935	197.34
2000	846.922	202.36
2001	853.923	204.03
2002	826.165	197.40
2003	857.055	204.78
2004	892.970	213.36
2005	945.970	226.02
2006	981.800	234.59
2007	986.430	235.69

Source: Statistical Report of Tea Board

It is clear from Table 5.4 that in 1970 the tea production in India was 418.517 m.kgs, and 1980 it increased to 569.172 m.kgs. It further increased to 720.338 m.kgs in 1990 and in 1998 the tea production increased to 874.108 m.kgs. It decreased to 825.935 m.kgs in 1999 and then

increased to 846.922 in 2000. In 2001 tea production was 853.923 m.kgs and then it assumed an increasing trend and reached to 986.430 m.kgs in 2007.

The Table 5.4.1 shows the annual changes in production of tea in India from 1970.

Table 5.4.1
Annual Changes in Production of Tea in India

Year	Production (m.kgs)	Annual Change	Percentage of change
1970	418.517	-	-
1975	487.137	68.620	14.086
1980	569.172	82.035	14.413
1985	656.162	86.990	13.257
1990	720.338	64.176	08.909
1995	756.016	35.678	04.719
1998	874.108	118.092	13.510
1999	825.935	-48.173	-05.832
2000	846.922	20.987	02.478
2001	853.923	07.001	00.819
2002	826.165	-27.758	-03.359
2003	857.055	30.890	03.604
2004	892.970	35.915	04.022
2005	945.970	53.000	05.603
2006	981.800	35.830	03.649
2007	986.430	04.630	00.469

Source: calculated value

It is clear from Table 5.4.1 that in most of the years the change in tea production is positive. The change is very prominent in the year 2005 with an increase of 53 compared to previous year. The changes are high for years from 1970 to 1998 than what was in 2005 since they were calculated for a span of 5 years and 3 years.

5.14 Tea Yield in India

The Table 5.5 shows the average yield of tea in India.

Table 5.5
Average Yield of Tea in India

Year	Average Yield (kgs per hectare)	Index of Growth
1970	1174	100.00
1975	1340	114.13
1980	1450	123.50
1985	1640	139.69
1990	1730	147.35
1995	1770	150.76
1998	1844	157.06
1999	1685	143.52
2000	1679	143.01
2001	1675	142.67
2002	1625	138.41
2003	1690	143.95
2004	1713	145.91
2005	1703	145.05
2006	1732	147.52
2007	1705	145.23

Source: Statistical Report of Tea Board

It is clear from Table 5.5 that the average yield of tea in India, in 1998 was 1844 kgs., and it decreased to 1685 kgs in 1999. It marginally decreased to 1679 kgs, in 2000 and the average yield was 1675 kgs. in 2001. It gradually increased to 1732 kgs, in 2006 and it decreased to 1705 kgs in 2007.

5.15 Comparative Analysis of Tea Cultivation Area, Tea Production and Average Yield of Tea in India

The following Table 5.6 describes the area of tea cultivation, production of tea and yield of tea in India from 1970 to 2007.

Table 5.6
Comparative analysis of Tea Cultivation Area, Tea Production and Average Yield of Tea in India

Year	Area (in Hectares)	Production (m.kgs)	Yield (Kg. per hectare)
1970	3,54,133	418.517	1174
1975	3,63,303	487.137	1340
1980	3,81,086	569.172	1450
1985	3,99,936	656.162	1640
1990	4,16,269	720.338	1730
1995	4,27,065	756.016	1770
1998	4,74,027	874.108	1844
1999	4,90,200	825.935	1685
2000	5,04,366	846.922	1679
2001	5,09,770	853.923	1675
2002	5,11,940	826.165	1625
2003	5,19,598	857.055	1690
2004	5,21,403	892.970	1713
2005	5,55,611	945.970	1703
2006	5,67,020	981.800	1732
2007	5,78,458	986.430	1705

Source: Statistical Report of Tea Board

It is clear from Table 5.6 that area, production and yield of Tea in India are gradually increasing every year from 1970.

Region-wise Analysis of Tea Cultivation in India

Tea cultivation and manufacturing in India are done by two regions that is North and South region. North region includes Assam, West Bengal and Tiribura. South region includes Tamilnadu, Kerala and Karnataka. This part analyses the region wise tea cultivation area, production and yield.

5.16 Region wise Tea Cultivation Area in India

Tea Board classifies India as the two regions as North region and South region with respect to tea cultivation. The details of the region wise tea cultivation area in India are stated in Table 5.7 as follows:

Table 5.7
Region wise tea cultivation area in India

Year	North Region		South Region		All India	
	Area (in hectares)	Index of Growth	Area (in Hectares)	Index of Growth	Area (in hectares)	Index of Growth
1998	365000	100.00	109027	100.00	474027	100.00
1999	377454	103.42	112746	103.41	490200	103.41
2000	390906	107.10	113460	104.06	504366	106.40
2001	395113	108.25	114657	105.16	509770	107.54
2002	399626	109.48	113314	103.93	511940	107.99
2003	404884	110.92	114714	105.21	519598	109.62
2004	406190	111.28	115213	105.67	521403	109.99
2005	435788	119.39	119823	109.90	555611	117.21
2006	447371	122.56	119649	109.74	567020	119.61
2007	458718	125.67	119740	109.83	578458	122.03

Source: Statistical Report of Tea Board

It is clear from Table 5.7 that in North region tea cultivation area was 365000 hectares in 1998. It assumed an increasing trend and reached to 458718 hectares in 2007. The growth index

is 125.67 percent over a period of 10 years from 1998. In south region tea cultivation area was not increasing remarkably. It is evident from the tea cultivation area of 109027 hectares in 1998 and the increase to 119740 hectares in 2007. The growth index is only 109.83 percent over a period of 10 years from 1998. Hence, tea cultivation area and the rate of growth are low for south region compared to north region.

Region-wise tea cultivation area is analysed through correlation analysis and the result of it is stated in Table 5.7.1 as follows:

Table 5.7.1
Region wise tea cultivation area in India (Correlation analysis)

Region	Correlations Marked correlations are significant at $p < .05000$ (N=10)			
	Means	S. D.	North India	South India
North India	408105.0	30217.55	1.000000	0.963248
South India	115234.3	3543.53	0.963248	1.000000

It is clear from Table 5.7.1 that there exists high positive correlation between North region and South region as for as the area under tea cultivation in different periods.

It is further analysed related to t test of independent variable to know the comparative consistently in the growth over a period of time. The result of the analysis is stated in Table 5.7.2 as follows:

Table 5.7.2
Region wise tea cultivation area in India (t test Analysis)

Region	Test of means against reference constant (value)							
	Mean	S. D.	N	S. E.	Reference	t-value	df	p
North India	408105.0	30217.55	10	9555.627	0.00	42.7083	9	0.000000
South India	115234.3	3543.53	10	1120.562	0.00	102.8361	9	0.000000

It is clear from the table that t value is low for North India and it shows that there is comparatively high consistency with respect to areas of tea production for different periods of the study.

5.17 Region-wise Production of Tea in India

The following Table 5.8 shows the region-wise tea production in India.

Table 5.8
Region-wise Production of Tea in India

Year	North Region		South Region		All India	
	Production (m.kgs)	Index of Growth	Production (m.kgs)	Index of Growth	Production (m.kgs)	Index of Growth
1998	670.658	100.00	203.450	100.00	874.108	100.00
1999	623.259	092.93	202.676	099.62	825.935	094.48
2000	640.756	095.54	206.166	101.33	846.922	096.88
2001	650.807	097.04	203.116	099.84	853.923	097.69
2002	631.755	094.19	194.410	095.55	826.165	094.52
2003	663.586	098.95	193.469	095.09	857.055	098.04
2004	662.184	098.74	231.092	113.58	892.97	102.15
2005	718.416	107.12	227.554	11.85	945.97	108.22
2006	753.238	112.31	228.562	112.34	981.80	112.32
2007	764.745	114.03	221.685	108.79	986.43	112.85

Source: Statistical Report of Tea Board

It is clear from Table 5.8 that in 1998 North India produced 670.658 m.kgs and it reached to 764.745 m.kgs in 2007. The growth index is 114.03 percent over a period of 10 years from 1998. South India produced 203.45 m.kgs in 1998 and it reached to 221.685 m.kgs in 2007. The growth index is only 108.79 percent over a period of 10 years from 1998. Hence, tea production and the rate of growth are low for south region compared to north region.

Region-wise tea production is analysed through correlation analysis and the result of it is stated in Table 5.8.1 as follows:

Table 5.8.1
Region-wise Tea Production in India (Correlation Analysis)

Region	Correlations Marked correlations are significant at $p < .05000$ (N=10)			
	Means	S. D.	North Region	South Region
North Region	677.9404	50.10260	1.000000	0.691709
South Region	211.2180	14.50755	0.691709	1.000000

It is clear from Table 5.8.1 that there exists high positive correlation between North region and South region as for as the tea production in different periods.

It is further analysed related to t test of independent variable to know the comparative consistency in the growth over a period of time. The result of the analysis is stated in Table 5.8.2 as follows:

Table 5.8.1
Region-wise Tea Production in India (t test Analysis)

Region	Test of means against reference constant (value)							
	Mean	S. D.	N	S. E.	Reference	t-value	df	p
North Region	677.9404	50.10260	10	15.84383	0.00	42.78891	9	0.000000
South Region	211.2180	14.50755	10	4.58769	0.00	46.04015	9	0.000000

It is clear from the table that t value is low for North India and it shows that there is comparatively high consistency with respect to production for different periods of the study.

5.18 Region-wise Average Yield of Tea in India

The following table shows that the region wise yield of tea in India from 1998 to 2007.

Table 5.9
Region-wise Average Yield of Tea in India

Year	North Region		South Region		All India	
	Yield (kg per hec.)	Index of Growth	Yield (kg per hec.)	Index of Growth	Yield (kg per hec.)	Index of Growth
1998	1805	100.00	1987	100.00	1844	100.00
1999	1631	090.36	1875	094.36	1685	091.37
2000	1639	090.80	1817	091.44	1679	091.05
2001	1647	091.24	1771	089.13	1675	090.84
2002	1575	087.25	1802	090.68	1625	088.12
2003	1601	088.69	2004	100.85	1690	091.65
2004	1630	090.30	2003	100.80	1713	092.90
2005	1649	091.35	1899	095.57	1703	092.35
2006	1684	093.29	1910	096.12	1732	093.93
2007	1667	092.35	1851	093.15	1705	092.46

Source: Statistical Report of Tea Board

It is clear from Table 5.9 that yield rate of tea in north region and south region are varying for all the years. Yield for south region is comparatively high than the north region though the area and total production in north region is very high than the south region. The yield for both the regions are in an decreasing trend. For north region it decreased from 1805 kgs in 1998 to 1667 kgs in 2007. The index decreased as 92.35 percent over a period of 10 years from 1998. For south region it decreased from 1987 kgs in 1998 to 1851 kgs in 2007. The index decreased as 93.15 percent over a period of 10 years from 1998.

Region-wise tea yield are analysed through correlation analysis and the result of it is stated in Table 5.9.1 as follows:

Table 5.9.1

Region-wise Yield of Tea in India (Correlation Analysis)

Region	Correlations Marked correlations are significant at $p < .05000$ (N=10)			
	Means	S. D.	North Region	South Region
North Region	1652.800	61.74284	1.000000	0.322629
South Region	1891.900	84.72105	0.322629	1.000000

It is clear from Table 5.9.1 that there exists high positive correlation between North region and South region as for as the tea yield in different periods.

It is further analysed related to t test of independent variable to know the comparative consistency in the growth over a period of time. The result of the analysis is stated in Table 5.9.2 as follows:

Table 5.9.1

Region-wise Yield of Tea in India (t test Analysis)

Region	Test of means against reference constant (value)							
	Mean	S. D.	N	S. E.	Reference	t-value	df	p
North Region	1652.800	61.74284	10	19.52480	0.00	84.65132	9	0.000000
South Region	1891.900	84.72105	10	26.79115	0.00	70.61661	9	0.000000

It is clear from the table that t value is low for North India and it shows that there is comparatively high consistency with respect to production for different periods of the study.

5.19 Comparative Analysis of Region-wise Tea Cultivation Area, Tea Production and Average Yield of Tea in India

The following Table 5.10 shows the comparative analysis of tea cultivation area, production and yield in India for north and south region.

Table 5.10**Comparative Analysis of Region-wise Tea Cultivation Area, Tea Production and Average Yield of Tea in India**

Year	North Region			South Region			All India		
	Area (Hec.)	Production (m.kgs)	Yield (per Hec.)	Area (Hect.)	Production (m.kgs)	Yield (per Hec.)	Area (Hect.)	Production (m.kgs)	Yield (per Hec.)
1998	365000	670.658	1805	109027	203.45	1987	474027	874.108	1844
1999	377454	623.259	1631	112746	202.676	1875	490200	825.935	1685
2000	390906	640.756	1639	113460	206.166	1817	504366	846.922	1679
2001	395113	650.807	1647	114657	203.116	1771	509770	853.923	1675
2002	399626	631.755	1575	113314	194.41	1802	511940	826.165	1625
2003	404884	663.586	1601	114714	193.469	2004	519598	857.055	1690
2004	406190	662.184	1630	115213	231.092	2003	521403	892.97	1713
2005	435788	718.416	1649	119823	227.554	1899	555611	945.97	1703
2006	447371	753.238	1684	119649	228.562	1910	567020	981.80	1732
2007	458718	764.745	1667	119740	221.685	1851	578458	986.43	1705

Source: Statistical Report of Tea Board

It is clear from Table 5.10 that tea cultivation area and production are increasing every year but the tea yield was decreasing from year to year.

State-wise Analysis of Tea Cultivation in India

This part analyses the state-wise tea cultivation area, production and yield for different states in India. Assam, West Bengal, Tripura, Himachal Pradesh, Tamilnadu, Kerala and Karnataka are the important states of tea cultivation in India.

5.20 State-wise Tea Cultivation Area in India

The following Table 5.11 shows the state wise tea cultivation area in India.

Table 5.11
State-wise Tea Cultivation Area in India (in hectares)

Year	Tamilnadu	Kerala	Karnataka	South India	Assam	West Bengal	Others	North India	All India
1998	63,543	37596	7888	109027	259865	97556	07579	365000	474027
1999	69,103	38845	4798	112746	258455	99967	19032	377454	490200
2000	74,398	36940	2122	113460	266512	107479	16915	390906	504366
2001	75,625	36940	2128	114657	269154	110820	15139	395113	509770
2002	75,619	36967	2128	113314	270683	113113	15830	399626	511940
2003	75,619	36967	2128	114714	271589	113351	19944	404884	519598
2004	75,978	37107	2128	115213	271768	114003	20419	406190	521403
2005	80,939	36772	2112	119823	300502	114525	20761	435788	555611
2006	81,276	36236	2137	119649	311822	114788	20761	447371	567020
2007	80,462	37137	2141	119740	321319	115095	22304	458718	578458

Source: Statistical Report of Tea Board

It is clear from Table 5.11 Assam stands first as for as tea production area is concerned. The area under tea cultivation in Assam is 259865 hectares in 1998 and it increased to 321319 hectares in 2007. West Bengal stands second with 99967 hectares in 1998 and it increased to 115095 hectares in 2007. Tamilnadu stands third with 63543 hectares in 1998 and it increased to 80462 hectares in 2007. Kerala got fourth place with 37596 hectares in 1998 and it decreased to 37137 hectares in 2007. Karnataka and other states are with almost same area under tea cultivation.

State-wise tea cultivation area is analysed through correlation analysis and the result of it is stated in Table 5.11.1 as follows:

It is clear from Table 5.11.1 that there exists high positive correlation between Karnataka and West Bengal as for as tea cultivation area in different periods.

It is further analysed related to t test of independent variable to know the comparative consistency in the growth over a period of time. The result of the analysis is stated in Table 5.11.2 as follows:

Table 5.11.2
State-wise Tea Cultivation Area in India (t test Analysis)

States	Test of means against reference constant (value)							
	Mean	S. D.	N	S. E.	Reference	t-value	df	p
Tamilnadu	75256.2	5501.01	10	1739.573	0.00	43.2613	9	0.000000
Kerala	37150.7	683.73	10	216.215	0.00	171.8228	9	0.000000
Karnataka	2971.0	1920.66	10	607.367	0.00	4.8916	9	0.000858
Assam	280166.9	22446.08	10	7098.073	0.00	39.4708	9	0.000000
W.Bengal	110069.7	6401.36	10	2024.289	0.00	54.3745	9	0.000000
Others	17868.4	4307.12	10	1362.032	0.00	13.1189	9	0.000000

It is clear from the table that t value is low for Kerakla and it shows that there is comparatively high consistency with respect to tea cultivation area for different periods of the study.

5.21 State-wise Tea Production in India

The following Table 5.12 shows the state wise tea production in India from 1998 to 2007.

Table 5.12**State-wise Tea Production in India (m.kgs)**

Year	Tamilnadu	Kerala	Karnataka	South India	Assam	West Bengal	Others	North India	All India
1970	55.557	42.764	2.848	101.169	212.027	101.197	4.124	317.348	418.517
1975	60.452	43.215	2.892	106.559	263.055	111.86	5.663	380.578	487.137
1980	74.006	53.614	3.745	131.095	300.700	133.185	4.192	438.077	569.172
1985	84.853	53.104	3.911	141.867	352.538	157.371	4.386	514.295	656.162
1990	110.576	60.665	3.991	175.232	388.181	149.753	7.172	545.106	720.338
1995	117.915	64.778	4.692	187.385	402.617	157.522	8.492	568.631	756.016
1998	132.046	65.943	5.461	203.45	467.046	193.789	9.823	670.658	874.108
1999	130.462	66.833	5.381	202.676	437.324	175.975	9.96	623.259	825.935
2000	131.812	68.947	5.407	206.166	449.219	181.536	10.001	640.756	846.922
2001	132.401	65.151	5.564	203.116	453.936	186.876	9.995	650.807	853.923
2002	128.963	59.679	5.768	194.41	432.511	189.841	9.403	631.755	826.165
2003	131.712	56.622	5.135	193.469	453.438	200.595	9.553	663.586	857.055
2004	163.056	62.416	5.620	231.092	435.649	214.541	11.994	662.184	892.97
2005	158.837	63.341	5.376	227.554	487.487	217.546	13.383	718.416	945.97
2006	163.656	59.452	5.444	228.562	502.041	237.106	14.091	753.238	981.80
2007	160.531	55.966	5.188	221.685	511.885	236.344	16.516	764.745	986.43
2008	170.500	70.300	6.100	246.900	495.338	226.258	12.304	733.900	980.80
2009	169.400	68.900	5.800	244.100	495.001	224.213	15.686	734.900	979.00
2010	170.700	66.800	5.900	243.400	489.984	221.880	11.136	723.000	966.40

Source: Statistical Report of Tea Board

It is clear from Table 5.12 Assam stands first as for as tea production in India is concerned. The tea production in Assam is 212.027 million kilograms in 1998 and it increased to 498.984 million kilograms in 2007. West Bengal stands second with 101.197 million kilograms in 1998 and it increased to 221.88 million kilograms in 2007. Tamilnadu stands third with 55.557 million kilograms in 1998 and it increased to 170.7 million kilograms in 2007. Kerala got fourth place with 42.764 million kilograms in 1998 and it increased to 66.8 million kilograms in 2007. Other states got fifth place with 4.124 million kilograms in 1998 and it increased to 11.136 million kilograms in 2007. Karnataka got last place with 2.848 million kilograms in 1998 and it increased to 5.9 million kilograms in 2007.

State-wise tea production area is analysed through correlation analysis and the result of it is stated in Table 5.12.1 as follows:

Table 5.12.1
State-wise Tea Production in India (Correlation Analysis)

State	Correlations Marked correlations are significant at $p < .05000$ (N=19)							
	Means	S. D.	Tamilnadu	Kerala	Karnat.	Assam	W.Beg.	Otheres
Tamilnadu	128.8124	37.19655	1.000000	0.779772	0.925608	0.952840	0.966504	0.915688
Kerala	60.4468	7.99947	0.779772	1.000000	0.864362	0.801732	0.665600	0.589570
Karnataka	4.9591	0.99400	0.925608	0.864362	1.000000	0.927419	0.892067	0.783160
Assam	422.6304	84.92364	0.952840	0.801732	0.927419	1.000000	0.953259	0.879628
West Bengal	185.1257	40.92111	0.966504	0.665600	0.892067	0.953259	1.000000	0.914103
Others	9.8881	3.67238	0.915688	0.589570	0.783160	0.879628	0.914103	1.000000

It is clear from Table 5.12.1 that there exists high positive correlation between Karnataka and West Bengal as for as tea production in different periods are concerned.

It is further analysed related to t test of independent variable to know the comparative consistency in the growth over a period of time. The result of the analysis is stated in Table 5.12.2 as follows:

Table 5.12.2
State-wise Tea Production in India (t test Analysis)

State	Test of means against reference constant (value)							
	Mean	S. D.	N	S. E.	Reference	t-value	df	p
Tamilnadu	128.8124	37.19655	19	8.53347	0.00	15.09495	18	0.000000
Kerala	60.4468	7.99947	19	1.83520	0.00	32.93740	18	0.000000
Karnataka	4.9591	0.99400	19	0.22804	0.00	21.74674	18	0.000000
Assam	422.6304	84.92364	19	19.48282	0.00	21.69247	18	0.000000
West Bengal	185.1257	40.92111	19	9.38795	0.00	19.71951	18	0.000000
Others	9.8881	3.67238	19	0.84250	0.00	11.73660	18	0.000000

It is clear from the Table 5.12.2 that t value is low for other states and it shows that there is comparatively high consistency with respect to production for different periods of the study.

5.22 State-wise Average Yield of Tea in India

The following Table 5.13 shows that state wise average yield of tea in India.

Table 5.13**State-wise Average Yield of Tea in India (kgs per hectare)**

Year	Tamilnadu	Kerala	Karnataka	South India	Assam	West Bengal	Others	North India	All India
1998	1890	1753	2366	1987	1668	1629	1296	1805	1844
1999	1888	1814	2536	1875	1692	1638	1211	1631	1685
2000	1772	1866	2548	1817	1686	1689	1209	1639	1679
2001	1751	1764	2615	1771	1685	1686	1156	1647	1675
2002	1893	1563	2741	1802	1601	1662	1152	1575	1625
2003	2203	1569	2476	2004	1601	1770	1106	1601	1690
2004	2146	1675	2641	2003	1603	1882	1189	1630	1713
2005	2022	1591	2545	1899	1622	1900	1211	1649	1703
2006	2014	1641	2547	1910	1610	2066	1152	1684	1732
2007	1995	1507	2423	1851	1593	2053	1045	1667	1705

Source: Statistical Report of Tea Board

It is clear from Table 5.13 Karnataka stands first as for as yield of tea in India is concerned. The yield of tea in Karnataka is 2366 kgs per hectare in 1998 and it increased to 2423 kgs per hectare in 2007. Tamilnadu stands second with 1890 kgs per hectare in 1998 and it increased to 1995 kgs per hectare in 2007. Kerala stands third with 1753 kgs per hectare in 1998 and it decreased to 1507 kgs per hectare in 2007. West Bengal stands fourth with 1629 kgs per hectare in 1998 and it increased to 2053 kgs per hectare in 2007. Hence, it overtakes Kerala in

recent years. Assam got fifth place with 1668 kgs per hectare in 1998 and it decreased to 1593 kgs per hectare in 2007. Though the yield is above West Bengal in the beginning it is significantly very low in the following years and hence Assam is ranked in fifth place. Other states got the last place with 1296 kgs per hectare in 1998 and it decreased to 1045 kgs per hectare in 2007.

State-wise tea yield were analysed through correlation analysis and the result of it is stated in Table 5.13.1 as follows:

Table 5.13.1
State-wise Average Yield of Tea in India (Correlation Analysis)

State	Correlations Marked correlations are significant at $p < .05000$ (N=10)							
	Means	S. D.	Tamiln.	Kerala	Karnat.	Assam	W.Beng.	Others
Tamilnadu	1957.400	147.2565	1.000000	-0.635137	-0.127933	-0.767822	0.517890	-0.329848
Kerala	1674.300	120.1934	-0.635137	1.000000	-0.022571	0.920997	-0.599389	0.662320
Karnataka	2543.800	107.6505	-0.127933	-0.022571	1.000000	-0.126827	-0.146236	-0.088459
Assam	1636.100	41.2592	-0.767822	0.920997	-0.126827	1.000000	-0.670856	0.598084
West Bengal	1797.500	167.3893	0.517890	-0.599389	-0.146236	-0.670856	1.000000	-0.558434
Others	1172.700	67.9968	-0.329848	0.662320	-0.088459	0.598084	-0.558434	1.000000

It is clear from Table 5.13.1 that there exists high positive correlation between Karnataka and West Bengal as for as tea yield in different periods.

It is further analysed related to t test of independent variable to know the comparative consistency in the growth over a period of time. The result of the analysis is stated in Table 5.13.2 as follows:

Table 5.13.2

State-wise Average Yield of Tea in India (t test Analysis)

State	Test of means against reference constant (value)							
	Mean	S. D.	N	S. E.	Reference	t-value	df	p
Tamilnadu	1957.400	147.2565	10	46.56661	0.00	42.0344	9	0.000000
Kerala	1674.300	120.1934	10	38.00849	0.00	44.0507	9	0.000000
Karnataka	2543.800	107.6505	10	34.04207	0.00	74.7252	9	0.000000
Assam	1636.100	41.2592	10	13.04731	0.00	125.3975	9	0.000000
W.Bengal	1797.500	167.3893	10	52.93313	0.00	33.9579	9	0.000000
Others	1172.700	67.9968	10	21.50248	0.00	54.5379	9	0.000000

It is clear from the table that t value is low for West Bengal and it shows that there is comparatively high consistency with respect to production for different periods of the study.

The researcher further analysed the state wise average yield of tea in India with the help of hypothesis analysis (t test). In this regard the following hypothesis are framed

Ho₁: Average yields of Tea in Tamilnadu and Kerala are significantly same.

Ho₂: Average yields of Tea in Tamilnadu and Karnataka are significantly same.

Ho₃: Average yields of Tea in Tamilnadu and Assam are significantly same.

Ho₄: Average yields of Tea in Tamilnadu and West Bengal are significantly same.

Result

Since the calculated value of t (3.25) is same with the table value (3.25) for the average yields of tea in Tamilnadu and West Bengal, the fourth hypothesis (H_{04}) is accepted. The first hypothesis (H_{01}) related to average yields of tea in Tamilnadu and Kerala has t be rejected due to the marginal difference between the calculated value (3.69) and the table value (3.25) of t . The calculated value of t is high for the remaining two hypothesis (H_{02} and H_{03}) hence they are rejected.

5.23 Production of Tea in India by Different Method of Manufacturers

The following Table 5.14 shows the tea production in India by different methods of Manufacturers.

It is clear from Table 5.14 that in North India Orthodox tea, green tea, CTC tea and Darjeeling tea are produced and in South India orthodox tea, green tea and CTC tea are produced.

5.24 Production and Sales of Tea in India

Production and sales of tea leaf is done through auctions around India. The following Table 5.15 shows the production and sale of tea in India

Table 5.15
Production and Sales of Tea

Year	Production (m.kgs)	Index of Growth	Sold through auctions (m.kgs)	Index of Growth	Percentage of sold in auctions
1970	418.517	100.00	241.32	100.00	57.66
1975	487.137	116.40	287.17	118.99	58.95
1980	569.172	135.99	306.95	127.19	53.93
1985	656.162	156.78	505.24	209.36	77.00
1990	720.338	172.12	473.98	196.41	65.80
1995	756.016	180.65	485.02	200.98	56.66
1998	874.108	208.85	456.63	189.22	52.24
1999	825.935	197.34	436.02	180.68	52.79
2000	846.922	202.36	477.94	198.05	52.89
2001	853.923	204.03	459.84	190.55	53.85
2002	826.165	197.40	446.21	184.90	54.01
2003	857.055	204.78	467.44	193.70	54.54
2004	892.970	213.36	474.44	196.60	53.13
2005	945.970	226.02	582.25	241.27	61.55
2006	981.800	234.59	584.96	242.40	59.58
2007	986.430	235.69	687.63	284.94	69.85
2008	980.800	234.35	530.02	219.63	54.04
2009	979.000	233.92	501.47	207.80	51.22
2010	966.400	230.91	506.00	209.68	52.36

Source: Statistical Report of Tea Board

It is clear from Table 5.15 that in 1970 the total production of tea in India was 418.517 m.kgs and sold through Indian auctions was 241.32 m.kgs (57.66 percent of the total production). In 1975 the total production was 487.137 m.kgs and at the same time the sale of tea through Indian Auctions was 287.17 m.kgs (58.95 percent of the total production). Tea production assumes an increasing trend and reached to 966.4 m.kgs and the sale of tea through Indian auctions reached to 506 m.kgs (52.36 percent of the total production). It is also clear that the growth index is 230.91 percent for the production and 209.68 percent for the sales through auction.

It is clear that more than 50 percent of tea was marketed through Indian auctions and the remaining tea was marketed through open market.

5.25 Average Selling Price of Tea in India

Selling price is playing very important role in tea marketing in India. The following Table 5.16 shows the average sale price of tea in India.

Table 5.16
Average Selling Price of Tea in India

YEAR	PRICE (Kg/Rs.)	Index of Growth
1998	69.50	100.00
1999	65.55	094.31
2000	61.71	088.79
2001	61.66	088.71
2002	55.96	080.51
2003	56.27	080.96
2004	64.54	092.86
2005	58.05	083.52
2006	66.01	094.97
2007	67.40	096.46
2008	86.99	125.16
2009	105.60	151.94
2010	103.55	148.99

Source: Statistical Report of Tea Board

It is clear from Table 5.16 that average selling price of tea in India in 1998 the was Rs.69.50 per kg, it decreased to Rs.65.55 per kg. in 1999, it again decreased to Rs.61.71 per kg in 2000. In 2006 the average selling price was Rs.66.01 per kg. and in 2007 it marginally increased to Rs.67.40 per k.g. In 2008 the average price of tea in India was Rs.86.99 per kg. and in 2009 it considerably increased to Rs.105.60 per kg. It slightly decreased to Rs.103.55 per kg in 2010.

It was clear that the average price of Indian tea was normally increasing every year.

5.26 Consumption and Per Capita Consumption of Tea in India

The following Table 5.17 shows the consumption and per capita consumption of tea in India.

Table 5.17
Consumption and per capita consumption of Tea in India

YEAR	Domestic Consumption (m.kgs)	Index of Growth	Average per capita Consumption (Grammes Per Head)	Index of Growth
1975	221	100.00	403	100.00
1980	320	144.79	527	130.76
1985	452	204.52	574	142.43
1990	511	231.22	600	148.88
1995	585	264.70	615	152.60
1998	615	278.28	633	157.07
1999	633	286.42	642	159.30
2000	653	295.47	652	161.78
2001	673	304.52	654	162.28
2002	693	313.57	663	164.51
2003	714	323.07	672	166.75
2004	735	332.57	681	168.98
2005	757	342.53	691	171.46
2006	771	348.86	693	171.96
2007	786	355.656	696	172.70
2008	802	362.89	701	173.95

Source: Statistical Report of Tea Board

It is clear from Table 5.17 that domestic consumption of tea and per capita consumption in India are increasing every year. In 1975 the domestic consumption of tea was 221 million kgs and the average per capita consumption was 403 gm. per head. It increased to 653 million kgs in 2000 for domestic consumption and to 652 gm. per head for the average per capita consumption. The increasing trend continued every year after that and reached to 802 million kgs in 2008 for domestic consumption and to 701 gm. per head for the average per capita consumption. The growth index for domestic consumption was 362. percent and for the average per capita consumption was 173.95 percent. It is clear that the average domestic consumption and average per capita consumption was increasing every year.

5.27 Export of Tea from India

Export is the important factor for the development of tea industry in India. India is the major tea exporter compared to other tea producing countries. The Table 5.18 shows the export of tea for India from 1980 to 2007.

It is clear from Table 5.18 that both non instant and instant tea are exported from India. In 1980 the total tea exported from India was 224.78 million kgs with the value of Rs.4325461 thousand. It represents non instant tea of 224.064 million kgs with the value of Rs.4325461 thousand and instant tea of 224.78 million kgs with the value of Rs.4325461 thousand. In 1985 total tea exported decreased to 214.937 m.kgs of tea with value of Rs.11133510 thousand. In 1990 it further decreased to 210.024 m.kgs and in 1995 it still decreased to 167.996 m.kgs with value of Rs.12080156 thousand. In 2000 it increased to 206.816 m.kgs with value of Rs.18986119 thousand. In 2005 it then decreased to 199.050 m.kgs with value of Rs.18309786 thousand. In 2008 it marginally increased to 203.117 m.kgs with value of Rs.23929136 thousand.

Table 5.18
Export of Non-Instant and Instant tea from India

YEAR	Non-Instant tea (Excluding Instant Tea)		Instant Tea		Total Tea	
	Qty.	Value	Qty.	Value	Qty.	Value
	(M.Kgs)	(Th.Rs.)	(M.Kgs)	(Th.Rs)	(M.Kgs)	(Th.Rs)
1980	224.064	4290277	0.754	35184	224.780	4325461
1985	214.021	6952996	0.916	82908	214.937	7035904
1990	209.085	11041507	0.939	92003	210.024	11133510
1995	167.143	11908077	0.853	172079	167.996	12080156
1998	207.639	22383087	2.699	711273	210.338	23094360
1999	189.092	19024360	2.627	634315	191.719	19658684
2000	204.353	18270324	2.463	715795	206.816	18986119
2001	189.857	16022060	2.731	799055	182.588	16821115
2002	198.087	16697757	2.915	836147	201.002	17533898
2003	170.277	14939096	3.407	963032	173.684	15902128
2004	193.908	17281350	3.760	1130066	197.668	18411416
2005	195.228	17305107	3.822	1004679	199.050	18309786
2006	215.672	19031168	3.062	1034092	218.734	20065260
2007	175.841	17186408	2.913	914687	178.754	18101095
2008	200.070	22963978	3.047	965158	203.117	23929136

Source: Statistical Report of Tea Board

Export value of Non-Instant and Instant are analysed through correlation analysis and the result of it is stated in Table 5.18.1 as follows:

Table 5.18.1
Export Value of Non-Instant and Instant tea from India (Correlation Analysis)

Export Value	Correlations Marked correlations are significant at $p < .05000$ (N=15)			
	Means	S. D.	Non-Instant Tea	Instant Tea
Non-Instant tea	15686503	5195587	1.000000	0.794258
Instant tea	672698	384335	0.794258	1.000000

It is clear from Table 5.18.1 that there exists high positive correlation between export value of non-instant tea and instant tea as for as tea export in different periods.

It is further analysed related to t test of independent variable to know the comparative consistency in the growth over a period of time. The result of the analysis is stated in Table 5.18.2 as follows:

Table 5.18.2
Export Value of Non-Instant and Instant tea from India (t test Analysis)

Export Value	Test of means against reference constant (value)							
	Mean	S. D.	N	S. E.	Reference	t-value	df	p
Non-Instant Tea	15686503	5195587	15	1341495	0.00	11.69330	14	0.000000
Instant Tea	672698	384335	15	99235	0.00	6.77884	14	0.000009

It is clear from the table that t value is low for export of instant tea than the export value of non-instant tea from India which shows that there is comparatively high consistency for export of instant tea for different periods of the study.

5.28 Export of Value-Added Tea from India

The following table shows the export of value added tea from India from 1990 to 2007

Table 5.19
Export of Value-added tea from India

YEAR	PACKET TEA		TEA BAGS		INSTANT TEA		TOTAL VALUE-ADDED TEA	
	Qty. (M.Kgs)	Value (Th.Rs.)	Qty. (M.Kgs)	Value (Th.Rs.)	Qty. (M.Kgs)	Value (Th.Rs.)	Qty. (M.Kgs)	Value (Th.Rs.)
1990	71.139	3836831	0.564	53194	0.940	92003	72.643	3982028
1995	81.699	5725354	0.723	108031	0.853	172079	83.275	6005464
1998	81.423	9008811	2.066	433523	2.698	711273	86.187	10153607
1999	74.087	7612962	2.756	614091	2.627	634315	79.470	8861368
2000	70.774	7194474	1.808	363930	2.463	715795	75.045	8274199
2001	45.866	5606397	2.516	566238	2.731	799055	51.113	6971690
2002	32.790	3991579	2.642	591087	2.915	836141	38.347	5418807
2003	35.352	4268509	4.277	826767	3.407	963032	43.036	6058308
2004	27.506	3156194	7.010	1388996	3.760	1130066	38.276	5675256
2005	37.091	3352079	8.578	1792816	3.822	1004679	49.491	6149574
2006	20.902	2185764	6.952	1543179	3.062	1034092	30.916	4763035
2007	09.377	1197836	8.303	1901099	2.913	914687	20.593	4013622
2008	11.798	1714483	8.878	2302280	3.047	965158	23.632	4981921

Source: Statistical Report of Tea Board

It is clear from Table 5.19 that exports of value added tea from India are classified as packet tea, tea bags and instant tea. In 1990 the total export of value added tea from India was 72.643 m.kgs with value of Rs.3982028. It includes, 71.139 m.kgs (Rs.3836831) of Packet tea, 0.564 m.kgs (Rs.53194) of Tea bags and 0.940 m.kgs (Rs.92003) of Instant tea. In 1995 the total export of value added tea from India was 83.275 m.kgs (Rs.6005464) which includes, 81.699 m.kgs (Rs.5725354) of Packet tea, 0.723 m.kgs (Rs.108031) of Tea Bags and 0.853 m.kgs (Rs.172079) of Instant Tea. In 2000 the total export of value added tea from India was 75.045 m.kgs (Rs.8274199) which includes, 70.774 m.kgs (Rs.7194474) of Packet Tea, 1.808 m.kgs

(Rs.363930) of Tea Bags and 2.463 m.kgs (Rs.715795) of Instant Tea. In 2005 the total export of value added tea from India decreased to 49.491 m.kgs (Rs.6149574) which includes, 37.091 m.kgs (Rs.3352079) of Packet Tea, 8.578 m.kgs (Rs.1792816) of Tea Bags and 3.822 m.kgs (Rs.1004679) of Instant Tea. In 2008 the total export of value added tea from India decreased significantly to 23.632 m.kgs (Rs.4981921) which includes, 11.798 m.kgs (Rs.1714483) of Packet tea, 8.878 m.kgs (Rs.2302280) of Tea Bags and 3.047 m.kgs (Rs.965158) of Instant Tea.

It is clear that export of value added tea from India was decreasing every year but the value of tea was increasing every year due to increase in price of tea.

Export value of value added tea from India is analysed through correlation analysis and the result of it is stated in Table 5.19.1 as follows:

Table 5.19.1
Export of Value-added tea from India (Correlation Analysis)

Types	Correlations Marked correlations are significant at $p < .05000$ (N=13)				
	Means	S. D.	Packet Tea	Tea Bag	Instant Tea
Packet Tea	4527021	2378562	1.000000	-0.734447	-0.393354
Tea Bag	960402	736788	-0.734447	1.000000	0.742781
Instant Tea	767106	315944	-0.393354	0.742781	1.000000

It is clear from Table 5.19.1 that there exists high positive correlation between export of Tea Bag and Instant tea as for as tea export in different periods.

It is further analysed related to t test of independent variable to know the comparative consistency in the growth over a period of time. The result of the analysis is stated in Table 5.19.2 as follows:

Table 5.19.2**Export of Value-added tea from India (t test Analysis)**

Types	Test of means against reference constant (value)							
	Mean	S. D.	N	S. E.	Reference	t-value	df	p
Packet Tea	4527021	2378562	13	659694.5	0.00	6.862299	12	0.000017
Tea Bag	960402	736788	13	204348.1	0.00	4.699834	12	0.000514
Instant Tea	767106	315944	13	87627.0	0.00	8.754214	12	0.000001

It is clear from the table that t value is low for export of packet tea than the export of tea bag and instant tea from India which shows that there is comparatively high consistency with respect to export of packet tea for different periods of the study.

5.29 Import of Tea into India

Import is the important factor to tea industry in India. The following Table 5.20 shows the import of tea into India from 1998 to 2007.

Table 5.20**Import of Tea into India**

YEAR	Quantity (M.Kgs)	CIF Value (Rs.Crores)	Unit Price (Rs/Kg)
1998	10.55	57.90	58.55
1999	09.99	57.40	57.49
2000	13.43	084.56	62.96
2001	17.18	095.40	55.50
2002	24.80	114.83	46.30
2003	09.86	057.51	58.33
2004	30.80	141.32	45.88
2005	16.76	098.51	58.79
2006	23.81	119.41	50.15
2007	15.99	104.60	65.43

Source: Statistical Report of Tea Board

It is clear from Table 5.20 that India is importing very low quantity of tea. In 1998 the tea imported from various countries was 10.55 m.kgs with value of Rs.57.90 crores for an import price of Rs.58.55 per kg. In 1999 the tea imported from various countries was 09.99 m.kgs, its CIF value was Rs.57.40 crores and the import price of tea was Rs.57.49 per kg. In 2000 the tea imported from various countries was 13.43 m.kgs, its CIF value was Rs.84.56 crores and the import price of tea was Rs.62.96 per kg. In 2005 the tea imported from various countries was 16.76 m.kgs, its CIF value was Rs.98.51 crores and the import price of tea was Rs.58.79 per kg. In 2007 the tea imported from various countries was 15.99 m.kgs, its CIF value was Rs.104.60 crores and the import price was Rs.65.43 per kg.

It is clear that the import quantity of tea was remaining almost same for all the years.

5.30 Conclusion

This chapter shows that tea production and marketing in India are significantly in an increasing trend. It is due to the effort of the Government of India through the Tea Board. It also explained about the different varieties of tea produced and marketed in India and Foreign countries.