

## Current Status and Future Development of Global Tea Production and Tea Products\*

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### *Abstract*

*Tea is globally one of the most popular and lowest cost beverages, next only to water. Tea is consumed by a wide range of age groups in all levels of society. More than three billion cups of tea are consumed daily worldwide. Tea is considered to be a part of the huge beverage market, not to be seen in isolation just as a 'commodity'. Tea active ingredients are of interest to functional foods markets. Africa, South America, the Near East and especially the Asian region produces a varied range of teas, this, together with a reputation in the international markets for high quality, has resulted in Asia enjoying a share of every importing market in the world. Huge populations in Asia, Middle East, Africa, UK, EU, and countries of the CIS consume tea regularly and throughout the day. The main tea producing countries globally are: in Africa: Burundi, Kenya, Malawi, Rwanda, Tanzania, Uganda, Zimbabwe and others. In South America: Argentina, Brazil and others; In Near East: Iran and Turkey. In Asia: Bangladesh, China, India, Indonesia, Sri Lanka, Viet Nam and others. In addition, the Russian Federation and CIS countries produce quantities of tea. Numerous types of teas are produced in the countries listed above. In China, for example, the country with the largest planting of tea and second in output, green tea is around half of the total export, black tea around one third and other teas one fifth. Depending on the manufacturing technique it may be described as green, black, oolong, white, yellow and even compressed tea. Many other teas and tea products continue to be developed by those active tea producing and consuming countries. The Intergovernmental Group on Tea monitors market conditions and provides an update of potential market prospects for tea over the medium term. The data in this paper is compiled essentially from their published data (FAO 2008) which examines the current situation and medium term prospects for production, consumption and trade of tea, and its impact on the world tea market.*

*In summary, tea is considered as having a share of the global beverage market, a highly competitive field. A wide range of tea products continue to be developed, through product and process development for added-value, as market shares become more sophisticated and competitive. The tea industry must rise to these challenges, facing the future with confidence.*

**Keywords:** *Tea producing countries, tea varieties, tea consumption, tea exports, tea added-value.*

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## Introduction

The Asian region produces a varied range of teas and this, together with a reputation in the international markets for high quality, has resulted in Asia enjoying a share of every importing market in the world. Africa, South America and the Near East also produce quantities of tea. Huge populations of Asia, UK, EU, Middle East, Africa and countries of the CIS consume tea regularly and throughout the day (Hicks 2001).

The common tea plant is the evergreen shrub, *Camellia sinensis*. There are several varieties of this species of plant, a well known one being the Indian Assam tea (*C. sinensis* var. *assamica* Kitamura). Traditionally, tea is prepared from its dried young leaves and leaf buds, made into a beverage by steeping the leaves in boiling water. China is credited with introducing tea to the world, though the evergreen tea plant is in fact native to Southern China, North India, Myanmar and Cambodia (Hicks 2001).

Low-grown teas are produced from 0 to 600 m., mid-grown from 600 to 1200 m., while the high-grown teas are cultivated between 1,200-2,000 m. The mid-grown and the high-grown in some areas can be divided into "western" and "eastern" according to the location of the estates. High-grown teas have a bright liquor and superb flavour. This superior quality is caused by the cooler temperatures at these altitudes which induce slower growth than in the hot, moist, low country. The seasonal monsoons, of course, also greatly affect the quality of tea (Anon. 1996; Hicks 2001).

Although there are a growing number of countries that produce teas in a multiplicity of blends, there are essentially three main types of *Camellia* tea, which are Green, 'Oolong' and Black. The difference lies in the 'fermentation', which actually refers to oxidative and enzymatic changes within the tea leaves, during processing. Green tea is essentially unfermented, Oolong tea is partially fermented and Black tea is fully fermented. Black tea, which represents the majority of international trade, yields an amber coloured, full-flavour liquid without bitterness (Hicks 2001).

For example, both Orange Pekoe and Pekoe are black teas. The term "Pek-ho" is Chinese for 'white hair' or 'down' and refers to the silver-tipped Assam teas. Orange Pekoe is made from the very young top leaves and traditionally comes from India or Sri Lanka. Pekoe tea comes from India, Indonesia or Sri Lanka and is made from leaves even smaller than those characteristically used for Orange Pekoe (Antol 1996; Hicks 2001).

In addition to these conventional teas, many countries of Asia have a number of herbal teas, made from brewing plant leaves, or other plant parts including flowers. For example, *Gymnema sylvestre*, a member of the botanical family Asclepiadaceae, found mainly in India, has been used as a healthy and nutritive herbal tea which claims to have a number of medicinal properties. Numerous other herbal teas are gaining more popularity recently (Chomchalow 1996; Hicks 2001).

## Composition, Production and Processing of Tea

### Composition

A brewed cup of tea contains a moderate amount of caffeine, volatile oils, tannin and several B-complex vitamins. The flavor of tea is produced by these volatile oils, while astringency and color come from tannin. A cup of tea can contain as low as four calories, a low-energy beverage. With sugar and milk this rises to 40 calories. Six cups of tea with sugar and milk will add only 240 calories to the diet but also 10% of the Recommended Daily Allowance (RDA) for B-complex vitamins. Black tea can yield an amber-coloured, full-flavoured liquid without bitterness. The majority of the international trade consists of black tea, as illustrated by the innumerable varieties and blends of black tea seen on the market. Green teas are growing steadily in popularity in Asia and beyond (Hicks 2001).

Anecdotally, Egyptians are said to like their strong teas with dark liquoring. These teas are fired longer and come from the lower elevations. Tea drinkers of the Persian Gulf are said to enjoy an even stronger and more darkly

liquored tea. They also relish the velvety flavor of the luxurious and expensive silver tip and golden tip teas. Tea drinkers in UK tend to prefer the milder, light-liquored teas which come from higher elevations. Sri Lankans often choose the dark-liquored broken orange pekoe, while Arab customers are said to be fonder of the pungent, sweetish 'dust' grades (Hicks 2001).

Tea bags are very popular with Australians, closely followed by Saudi Arabia and Egypt. One favourite tea blend, popular in the US and in the UK where it originated, is 'Earl Grey tea' a blend of three black teas. The perfume and distinctive taste comes from added bergamot (*Citrus bergamia*) - a small citrus fruit whose rind yields the well known essence (Hicks 2001).

### **Production and Processing**

In the fields, plucking is done on a ten-day basis from 0-1,200m and every three weeks from 1,200m to over 2,000m. Tea is either 'fine plucked', only the flush (two leaves and the bud) or 'coarse plucked' (a sprig with more than two leaves). Weighing is done after each tea plucker has picked between 20-30 kg of leaves, depositing them in wicker baskets or gunny sacks which are transported to the factory. The various stages of black tea manufacture are (Hicks 2001):

- Withering;
- Rolling;
- Roll-breaking (or green leaf sifting);
- Fermentation (oxidation);
- Drying (firing);
- Sorting (grading);
- Packing and marking for sale or shipment.

### **Processing of Black Tea**

After the harvest, the leaves are first withered by blowing air over them. Then black teas are processed in either of two ways, CTC (Crush, Tear, Curl) or Orthodox. The CTC method is used for lower quality leaves that end up in tea bags and are processed by machines, producing a reasonable quality product. Orthodox processing is done either by machines or by hand processing, used for high

quality loose teas, for connoisseurs. Next, the leaves are oxidized (also called "fermentation") under controlled temperature and humidity. Since oxidation begins at the rolling stage itself, the time between these stages is a crucial factor as the level of oxidation determines the quality of the tea. Then the leaves are dried with hot air to arrest the oxidation process. Finally, the leaves are sorted into grades according their sizes (whole leaf, broken, fannings and dust), using sieves. The tea can be further sub-graded according to other criteria, and is then ready for packaging.

### **Tea Grading**

Black tea is commonly graded on one of four scales of quality. Whole leaf teas are highest quality followed by broken leaves, fannings, and dusts. Whole leaf teas are produced with little or no alteration to the tea leaf; this results in a finished product with a coarser texture than bagged teas, but whole leaf teas are considered the most valuable, especially if they contain leaf tips. Broken leaves are commonly sold as medium grade loose teas, smaller broken varieties may be included in tea bags. Fannings are usually small particles of tea leftover from the production of larger tea varieties, but can be manufactured for use in bagged teas. Dusts are the finest particles of tea leftover from production of the above varieties, and are used for tea bags with very fast harsh brews, as the greater surface area of the many particles allows for a complete diffusion of the tea into the water. Fannings and dusts have a darker colour, stronger flavor when brewed but lack sweetness.

### **Tea Brewing**

2.25 grams of tea per 180 ml of water, or about a teaspoon of black tea per 6 oz. cup, may be used. Unlike green teas, which turn bitter when brewed at higher temperatures, black tea should be steeped in freshly boiled water. The more delicate black teas, such as Darjeeling, should be steeped for 3 to 4 minutes. The same holds for broken leaf teas, which have more surface area and need less

brewing time than whole leaves. Whole leaf black teas, those that may be served with milk or lemon, should be steeped 4 to 5 min.

### **Major Producers of Black Tea**

Some large commercial traders of black tea globally are:

- Unilever - Lipton, PG Tips (Multinational);
- Associated British Foods - Twinings (UK);
- Tata Tea - Tetley (India);
- Teekanne Group (Germany).

### **International Production of Tea**

The main tea producing countries are: Asia: Bangladesh, China, India, Indonesia, Sri Lanka, Viet Nam and others. Africa: Burundi, Kenya, Malawi, Rwanda, Tanzania, Uganda, Zimbabwe and others. South America: Argentina, Brazil and others (Hicks 2001). Near East: Iran and Turkey. In addition, Russia and a number of CIS countries also produce quantities of tea.

As part of its regular activities, the Intergovernmental Group on tea monitors market conditions and provides an update of potential market prospects for tea over the medium term. This document examines both the current situation and medium term prospects for production, consumption and trade of tea, and their likely impact on the world tea market. Data used in the analysis were from the returns of the FAO questionnaire and, where necessary, supplemented by data from the International Tea Committee (ITC). (FAO 2008).

### **Current Situation**

The global tea production growth rate in 2006 was more than 3% to reach an estimated 3.6 million t. (Table 1). The expansion was mainly due to record crops in China, Viet Nam and India. Production in China increased 9.5% over the record in 2005, to 1.05 million t. in 2006, through Government policies to increase rural household incomes. Expansion of 28 percent in Viet Nam gave an output of 133,000 t as tea bushes reached optimum yields. India had a 3% increase in harvest output of 945,000

t for the year. This growth offset other major countries, Kenya and Sri Lanka, where output declined by 6 and 1.6%, respectively.

### **Exports**

Exports in 2006 reached 1.55 million t. compared to 1.53 million t. in 2005 (Table 2). Increased shipments from Sri Lanka, India and Viet Nam offset major declines in Kenya and Indonesia, down by 12.4 and 7%. Tea exports from Sri Lanka reached 314,900 in 2006, a gain of 5.4%, while exports from Viet Nam and India expanded by 24 and 14%. The increase was due to expansion in trade to the Near East, with their growth and strength of the economies in the region. Significant growth was also achieved by Rwanda, and Tanzania, while shipments from China were relatively unchanged.

Decline in exports from Kenya were affected by political uncertainty in Pakistan, its major market, though some was offset by a larger shipment to Egypt. Pakistan's uncertainty also affected shipments from Indonesia and Bangladesh where exports declined, and structural problems plague the industry (FAO 2008).

### **Imports**

World net imports of tea declined by 1.7% to 1.57 million t. in 2006 (Table 3), reflecting reduced tea imports by Pakistan, the Russian Federation, and the Netherlands. Increased imports by traditional markets such as the United Kingdom, United States, Egypt and Germany, did not offset these declines. Imports by Pakistan declined by 3%, Russian Federation by 2%, and Netherlands by 25%, imports increasing by 7% in United Kingdom, United States, and Egypt. In Germany a 9 percent increase was recorded.

### **Consumption**

World tea consumption grew by 1% in 2006, reaching 3.64 million t., but less than the annual average of 2.7% over the previous decade (Table 4). The biggest influence has been the growth in agricultural products consumption, tea included, in China and India,

as their economies expanded dramatically. In 2006, China recorded a spectacular annual increase of 13.6% in total consumption, which reached 776,900 t., whilst annual growth in tea consumption in India was less, it was higher than the previous decade. Income gains in India, China, other developing countries, translate to more demand, for higher value-added items.

### **Medium-Term Tea Outlook to 2017**

Medium term projections are by the FAO World Tea Model, a dynamic time series model for key market relationships on production, trade, and prices. These were based on normal weather conditions, a continuation of the past trends in yields, planted areas, population and income growth. Adjustments reflect current policies and future market prospects.

### **Projected Tea Production**

Projections for the next decade indicate that world black tea production will grow at a slower rate reflecting the slowing down of production growth in Africa. Black tea production is projected to grow at 1.9% annually to reach 3.1 million t. by 2017 (Table 5). India continues to be the largest producer of black tea with a projected growth rate of 2% annually and an output of 1.2 million t. by 2017, followed by Kenya and Sri Lanka each with growth rates of 1%, projected production of 344,000 t., 341,000 t., China with 312,000 t.

World green tea production should grow faster than black tea, 4.5% annually compared to 1.9% for black tea. Projections reflect the growth in China where production expansion through rehabilitation, replanting and conversion, is expected to continue to 2017, reaching 1.35 million t. (Table 6). Halving in annual growth rate for Viet Nam after a rehabilitation and expansion program, peaking in 2006, as tea bushes reached optimum yields. (FAO 2008).

### **Projected tea consumption**

World tea consumption is divided into net imports for non-tea producing and domestic

consumption for producing countries. Data on green tea consumption are not complete thus projections could not be carried out. For black tea, consumption may grow at an annual rate of 1.7% to reach 2.8 million t. in 2017 (Table 8), as stronger growth in consumption in producing countries might not offset declines in traditional markets.

### **Projected Imports of Tea**

Black teas, proxy for consumption in importing countries, are projected to increase annually by 0.5%, reflecting the near saturation in traditional tea markets (Table 8). The largest growth is expected in the Russian Federation, where imports are expected to grow by 2.6% annually compared to 4.0% over the last decade, followed by Pakistan, at a marginal rate of 0.3%, similarly in the US and Canada. Declining growth rates in other countries of the EU, except the Netherlands, may remain at the same level as in the previous decade.

### **Projected Exports of Tea**

Volumes in Asia will continue to be larger than in Africa, by 2017 export volumes for Asia are projected to reach 806,000 t. compared to 478,000 t. for Africa. Major exporting countries may remain the same, Sri Lanka being the largest with a projected export volume of 395,000 t., Kenya with 325,000 t., India with 265,000 t, then Indonesia, Malawi, Uganda and Tanzania.

World green tea exports may grow at a much slower rate of 3.8% annually to reach 397,100 t. by 2017 (Table 6), compared to the last decade of more than 14%, due to the larger share of consumption in the producing countries. China should dominate with an export volume of 379,700 t., followed by Viet Nam at a distant second with 33,500 t., Indonesia with 13,300 t., and Japan at 2,400 t. (FAO 2008).

### **Commercial Importance of Tea**

#### **Improvements to the Minimum Export Standards for Tea**

In discussions on tea quality preferences, a system of establishing a minimum standard, where the first judgment is made by the traditional tea taster, and the tea is subjected to chemical analysis only if the taster is in doubt, would not be a practicable system for international trade. For instance, if a tea taster approved the tea in the country of origin, whilst in the importing country the tea might fail to meet the ISO standard. Thus a minimum standard for international trade in tea still needs to be based upon objective and scientific criteria as per the ISO Standard 3720 which already has a certain degree of acceptance. Essential tests for minimum export standards include water extract percentage, crude fibre percentage, and moisture content (FAO 1995; Hicks 2001).

### Range and Types of Teas

Teas are considered to be a part of the huge beverage market, not in isolation. However, 50-60% of the production cost is in the labour cost. Generally, the age of plantation workers is increasing, as the younger generations do not wish to work in plantations. Mechanization of teas is thus inevitable, along with imported labor. There is potential for agro/eco tourism in tea plantations and producers should become market-oriented and added-value conscious (Hicks 2001).

There are numerous types of teas produced in many tea-producing countries. In China, for example, the country with the largest planting of tea and second in output, green tea is around 50% of the total export, black tea around 30% and other teas 20% (Hicks 2001). A number of popular teas are described below:

### Black Teas

Generally, unblended black teas are named after the region in which they are produced. Often, different regions are known for producing teas with characteristic flavors.

#### *Chinese black teas:*

•*Lapsang Souchong*: originally from Mount Wuyi, Fujian Province, China; a black

tea dried over burning pine, developing a strong smoky flavor.

•*Keemun*: from Qimen, Anhui Province, China, a Chinese famous tea.

•*Dian Hong*: from Yunnan Province, China; dark malty, golden bud teas.

•*Ying De Hong*: from Guangdong Province, China.

•*Ju Qiu Mei Hong*: from Hangzhou City, Zhejiang Province, China.

#### *Indian and Sri Lankan black teas:*

•*Assam*: from Assam, India; full bodied, strong malty tea from lowlands.

•*Darjeeling*: from West Bengal, India; thin bodied, floral, fruity tea from Darjeeling with defining muscatel tones.

•*Munnar*: from Kerala, India.

•*Kangra*: from Himachal Pradesh, India.

•*Nilgiri*: from India; aromatic, strong, fragrant tea from Nilgiri Hills of Kerala and Tamil Nadu.

•*Ceylon*: from Sri Lanka; strong yet light with tones of crisp citrus.

#### *Other black teas:*

•*Kenyan*: from Africa, similar to Assam.

•*Vietnamese*: from Vietnam, similar to some cheaper Yunnan teas, with a pleasant and sweet aroma but a more bodied and darker brew; unlike teas from Nepal or Darjeeling.

•*Nepalese*: from uplands of Nepal; somewhat similar to lower grades of Darjeeling.

•*Rize Tea (Çay)*: from Rize Province on the eastern Black Sea coast of Turkey, that is crystal clear and mahogany in color.

•*Thai tea*: from Thailand.

•*Azerbaijani tea*; *Georgian tea*; from these countries.

•*Krasnodar tea*: from Caucasus in Russia.

•*Java tea*; *Sumatra tea*; a nutty aroma, different from Chinese and Indian teas.

***Blends of black tea:*** Black tea is blended, mixed with other plants in order to obtain a beverage.

•*Earl Grey*: black tea with bergamot oil.

•*English Breakfast*: full-bodied, robust, rich, blended with milk and sugar.

•Irish Breakfast: it is a blend of several black teas: often Assam teas and other types of black tea.

•In the US, citrus fruits such as orange or lemon, or their respective rinds, are often used to create flavored black teas, sometimes in conjunction with spices (such as cinnamon). These products can be confused with citrus-based herbal teas, but the herbal products will be labeled as having no caffeine; whereas, the tea-based products do contain caffeine.

### **Green Tea (Hicks 2001)**

There are many kinds of Chinese green teas; these include 'Meecha', a striped shape, 'Gunpowder' in round shape and 'Longing' in flat shape.

*Oolong Tea:* Originating in the 18th century, this tea's special aroma is characteristic. Various degrees of fermentation give tea called 'Pouchong', lightly fermented, or 'Tie-Qian Yin', heavily fermented. Their non-caloric and weight-suppression make them popular with men and women alike.

*White and Yellow Teas:* These are characterized by the respective color of the hair on the bud and slender leaves under surface.

*Compressed Tea:* This tea is mainly supplied to the minority areas of China and is manufactured by compressing crude tea.

*Reprocessed Teas:* These are those such as scented tea from Arabian jasmine (*Jasminum sambac*), Zhulan (*Choranthus spicatus*), Tai-tai (*Citrus aurantium* var. *amara*) and rose (*Rosa rugosa*) with scent added, make the respective teas: jasmine tea, Zhulan tea, Tai-tai tea and rose black tea.

*Famous Tea (Quality Tea):* It has a beautiful, well twisted shape, 'joyful' color, flavorsome and fresh taste. There are some 500 variations of this ancient form of tea.

### **Tea Added Value Product and Process Development**

Traditional loose tea has been largely replaced by bagged tea in many forms, for convenience. There are a range of preferences for tea styles and drinking habits among different consumers in various countries (Hicks

2001). Product and process development has added-value to tea products such as:

- Iced-teas – USA;
- Fruit flavored teas – Europe;
- 'Foamy' tea – Taiwan;
- Herbal teas – USA, China, Japan, Thailand;
- Ready to drink tea (in cans) – Japan, USA, Taiwan;
- Roasted teas – Korea.

Green and black tea will remain as major forms of tea, however, instant tea, flavored tea, decaffeinated tea, organically grown tea, 'foamy' tea, roasted tea, herbal tea, ready-to-drink tea (canned and bottled) are developing into the market. Food products being developed are tea-rice, tea-noodles, tea-cake, tea-biscuits, tea-wine, tea-candy, tea-ice cream. (Hicks 2001).

In particular new types of herbal, fruit-flavor and decaffeinated teas, as well as ready-to-drink teas are becoming popular. The organically grown and healthful image of tea can be exploited, as can the utilization of active-ingredients of tea as their functional properties and nature become better known. Ready-to-drink tea is cheaper than coca-cola derivatives and this is perceived as a main competitor. There is a risk that tea consumption may drop as other drinks come on the market, from e.g. rice, potatoes, mulberry leaves. Diversified products such as tea chewing gum have been developed (Hicks 2001).

### **Tea Active Components**

Extraction from low grade teas of active components, mainly polyphenols, are claimed to have therapeutic properties in tonics in China, Japan and Korea. Tea polysaccharides are claimed to depress blood-glucose. Tea pigments and caffeine can be extracted as natural food additives. Tea saponins form surfactants and are applied in industry (Zhongmao 1996).

Green tea is said to contain over four times the concentration of antioxidant catechins than black tea, about 70 mg catechins per 100 mL compared to 15 mg per 100 mL for

black tea. Consumer awareness of the benefits of green tea and green tea extracts continues to rise, with growing numbers of studies, from 430 papers in 2000 to almost 1,500 in 2003, reporting benefits of the main compounds, catechins. This has seen European demand surge, having reached 500 t. in 2003. Companies such as DSM, with its Teavigo boasting 95% purity of epigallocatechin gallate (EGCG), and Taiyo International, with its Sunphenon claiming more than 90% purity, position themselves firmly in specific catechin markets. (Tanaka *et al.* 2008).

### Some Conclusions

The review of the world tea market indicates some improvement in the fundamental oversupply situation in the world market which has persisted in recent years. However, in the medium term, projections suggest that although supply will continue to outstrip demand, the gap could be closer to equilibrium, if consumption improves in traditional markets. Strategies must be devised to continue the improvement in demand. Opportunities for an expansion in consumption and improvement in prices exist in producing countries themselves, as per capita consumption levels are relatively low. E.g. per capita consumption level in the major importing countries, such as the Russian Federation is 1.26 kg and for the UK, is 2.20 kg, whilst per capita consumption levels in India is 0.65 kg and for Kenya is 0.40 kg.

The results of research into the health benefits of tea consumption should also be used more extensively in promoting consumption in both producing and importing countries. In addition, strategies to exploit demand in value-added market segments, including specialty and organic teas, should also be more aggressively pursued. In targeting potential growth markets, recognition of and compliance with food safety and quality standards is essential. Even the impact of imposing a minimum quality standard as a means of improving the quality of tea traded internationally, would by default, reduce the quantity of tea in the world market and

improve prices, at least in the short to medium term (FAO 2008).

In summary, tea can be considered as having a share of the soft drink/beverages market, (Hicks 2001) as well as having functional food potential. A wide range of tea products will continue to be developed through product and process development for added-value as the market shares become more sophisticated and competitive. The industry must rise to these challenges and face the future with confidence (Hicks 2001).

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Table 1. World tea production 2001-2006 (' 000 t.).

Countries/Regions	2001-02	2003	2004	2005	2006
<b>WORLD</b>	<b>2981.4</b>	<b>3035.6</b>	<b>3370.1</b>	<b>3526.3</b>	<b>3645.2</b>
<b>Africa</b>	<b>470.0</b>	<b>478.3</b>	<b>510.9</b>	<b>506.1</b>	<b>487.4</b>
Burundi	7.7	7.5	7.5	7.0	6.3
Kenya	293.4	295.9	328.8	332.7	313.0
Malawi	40.2	41.7	50.1	46.9	45.0
Rwanda	16.1	15.6	15.6	16.5	17.6
Tanzania United Rep	27.2	29.5	30.7	30.4	31.4
Uganda	34.5	36.5	37.0	37.7	36.7
Zimbabwe	22.3	22.0	18.7	14.9	15.7
Others	28.5	29.6	22.5	20.1	21.6
<b>Latin America</b>	<b>85.5</b>	<b>85.3</b>	<b>82.4</b>	<b>88.8</b>	<b>92.9</b>
Argentina	67.1	67.3	69.0	73.0	76.3
Brazil	8.1	8.3	8.3	8.3	8.4
Others	10.3	9.7	5.1	7.5	8.2
<b>Near East</b>	<b>204.8</b>	<b>213.1</b>	<b>245.0</b>	<b>233.4</b>	<b>222.4</b>
Iran Islamic Rep. of	55.5	58.1	40.0	27.8	22.3
Turkey	149.3	155.0	205.0	205.6	200.1
<b>Far East</b>	<b>2109.3</b>	<b>2148.1</b>	<b>2408.9</b>	<b>2573.1</b>	<b>2725.3</b>
Bangladesh	55.8	57.0	55.6	56.0	53.4
China	605.7	631.0	854.0	956.3	1047.4
India	848.2	859.5	895.9	919.4	945.3
Indonesia	169.6	163.0	139.0	165.9	187.9
Sri Lanka	303.9	304.8	309.1	317.2	312.0
Viet Nam	83.7	88.6	93.9	104.0	133.0
Others	42.6	44.2	61.4	54.3	46.3
<b>Oceania</b>	<b>10.1</b>	<b>9.3</b>	<b>9.3</b>	<b>9.4</b>	<b>9.5</b>
Japan	87.0	87.0	100.7	100.0	91.8
<b>CIS</b>	<b>14.6</b>	<b>14.5</b>	<b>12.9</b>	<b>15.4</b>	<b>15.8</b>
<b>Developing</b>	<b>2866.7</b>	<b>2920.5</b>	<b>3249.3</b>	<b>3407.4</b>	<b>3531.8</b>
<b>Developed</b>	<b>114.7</b>	<b>115.1</b>	<b>120.8</b>	<b>118.9</b>	<b>113.4</b>

Source: FAO, 2008. Committee on Commodity Problems – Intergovernmental Group on Tea, 18<sup>th</sup> Session, Hangzhou, China, 14-16 May 2008.

Table 2. World tea exports (' 000 t.).

Countries/ Regions	2001-03	2003	2004	2005	2006
<b>WORLD</b>	<b>1360.6</b>	<b>1370.1</b>	<b>1416.6</b>	<b>1533.4</b>	<b>1551.0</b>
<b>Africa</b>	<b>413.0</b>	<b>419.7</b>	<b>442.8</b>	<b>445.5</b>	<b>408.4</b>
Kenya	267.9	270.7	294.2	310.4	272.0
Malawi	39.4	42.0	46.6	43.0	42.0
Rwanda	11.5	11.5	11.5	11.7	13.3
Tanzania United Rep	21.7	20.4	24.2	23.3	24.1
Uganda	31.9	34.1	29.7	33.1	32.7
Zimbabwe	17.3	17.1	14.9	8.5	11.4
Others	23.5	23.9	21.8	15.6	12.8
<b>Far East</b>	<b>866.9</b>	<b>870.5</b>	<b>886.2</b>	<b>999.6</b>	<b>1048.2</b>
Bangladesh	12.9	12.2	12.2	9.0	4.8
China (Mainland)	211.4	219.0	193.1	286.6	286.6
China (Taiwan Pr.)	2.6	2.7	2.4	1.7	2.0
India	185.8	175.5	197.7	191.9	218.7
Indonesia	96.0	88.2	98.6	102.3	95.3
Sri Lanka	291.8	298.3	290.8	298.8	314.9
Viet Nam	52.1	56.8	73.4	85.4	105.6
Others	14.2	17.8	18.2	24.0	20.2
<b>Latin America</b>	<b>63.0</b>	<b>64.2</b>	<b>71.7</b>	<b>71.0</b>	<b>76.9</b>
Argentina	57.6	58.8	66.4	66.4	72.0
Brazil	4.1	4.2	4.2	3.6	3.4
Others	1.3	1.2	1.1	1.0	1.5
<b>CIS</b>	<b>8.9</b>	<b>8.5</b>	<b>8.3</b>	<b>11.2</b>	<b>11.2</b>
<b>Oceania</b>	<b>8.8</b>	<b>7.2</b>	<b>7.4</b>	<b>6.1</b>	<b>6.3</b>
<b>Developing</b>	<b>1343.1</b>	<b>1353.0</b>	<b>1400.9</b>	<b>1520.4</b>	<b>1537.5</b>
<b>Developed</b>	<b>17.5</b>	<b>17.0</b>	<b>15.7</b>	<b>13.0</b>	<b>13.5</b>

Source: FAO (2008). Committee on Commodity Problems – Intergovernmental Group on Tea, 18<sup>th</sup> Session, Hangzhou, China, 14-16 May 2008.

Table 3. World tea imports (' 000 t.).

Countries/Regions	2001-02	2003	2004	2005	2006
<b>WORLD</b>	<b>1506.1</b>	<b>1610.4</b>	<b>1557.4</b>	<b>1598.3</b>	<b>1570.9</b>
<b>Developed</b>	<b>811.0</b>	<b>894.1</b>	<b>819.3</b>	<b>842.3</b>	<b>826.2</b>
<b>Europe</b>	<b>362.3</b>	<b>400.3</b>	<b>369.6</b>	<b>373.7</b>	<b>359.1</b>
<b>EC (15)</b>	313.0	354.5	321.5	329.6	311.3
France	17.4	17.7	16.2	8.0	16.3
Germany	66.2	90.6	35.4	32.0	34.9
Netherlands	21.9	10.1	27.8	33.4	25.1
UK	163.2	156.6	156.2	150.4	161.3
Others	44.3	79.5	85.9	105.8	73.6
<b>Other Europe</b>	<b>49.3</b>	<b>45.8</b>	<b>48.1</b>	<b>44.0</b>	<b>47.8</b>
Poland	31.6	30.8	32.1	31.0	34.1
Others	17.7	15.0	16.0	13.0	13.8
<b>CIS</b>	<b>246.0</b>	<b>243.7</b>	<b>253.3</b>	<b>263.1</b>	<b>257.0</b>
Kazakhstan	20.5	21.7	18.3	18.3	18.5
Russian Federation	158.0	155.1	168.6	176.2	172.9
Ukraine	17.9	17.9	18.3	22.2	20.0
Uzbekistan	22.7	21.6	20.7	20.7	20.7
Others	26.9	27.4	27.4	25.6	24.9
<b>North America</b>	<b>139.1</b>	<b>188.3</b>	<b>118.3</b>	<b>117.1</b>	<b>125.3</b>
United States	94.8	94.1	99.5	100.1	107.6
Canada	44.3	94.2	18.8	17.1	17.7
<b>Oceania</b>	<b>17.3</b>	<b>17.5</b>	<b>25.3</b>	<b>15.6</b>	<b>15.6</b>
<b>Other developed</b>	<b>46.4</b>	<b>44.3</b>	<b>52.9</b>	<b>72.8</b>	<b>69.1</b>
Japan	29.0	25.7	33.1	52.8	49.1
Israel	1.4	1.9	1.9	1.9	1.9
South Africa	16.0	16.7	17.9	18.1	18.1
<b>Developing</b>	<b>695.1</b>	<b>716.3</b>	<b>738.1</b>	<b>755.9</b>	<b>744.7</b>
<b>Latin America and Caribbean</b>	<b>21.5</b>	<b>24.2</b>	<b>25.2</b>	<b>25.5</b>	<b>24.2</b>
Chile	15.6	16.4	20.2	20.2	19.1
Others	5.9	7.7	5.0	5.3	5.1
<b>Near East</b>	<b>369.3</b>	<b>363.6</b>	<b>361.4</b>	<b>347.8</b>	<b>358.0</b>
<b>In Asia</b>	<b>268.1</b>	<b>267.4</b>	<b>238.8</b>	<b>228.1</b>	<b>231.6</b>
Afghanistan	52.6	71.1	41.0	33.0	33.0
Iran Islamic Rep. of	40.8	41.0	28.0	33.6	35.1
Iraq	56.6	37.8	52.0	43.0	43.0
Saudi Arabia	21.1	21.9	23.9	23.9	24.4
Syrian Arab Republic	29.3	31.0	29.0	28.8	29.3
United Arab Emirates	40.0	40.0	43.4	44.0	44.0
Others	27.6	24.6	21.5	21.9	22.8
<b>In Africa</b>	<b>101.3</b>	<b>96.2</b>	<b>122.6</b>	<b>119.7</b>	<b>126.4</b>
Egypt	61.6	49.4	71.8	73.5	78.5
Libyan Arab Jam.	17.7	21.0	21.0	21.0	21.0
Sudan	22.0	25.8	29.8	27.0	27.0
<b>Other Africa</b>	<b>108.7</b>	<b>131.9</b>	<b>129.0</b>	<b>169.3</b>	<b>153.0</b>
Morocco	30.5	44.9	45.7	45.7	50.6
Others	78.2	86.9	83.3	123.6	102.4
<b>Far East/Oceania</b>	<b>195.4</b>	<b>196.5</b>	<b>222.4</b>	<b>213.1</b>	<b>209.4</b>
Pakistan	104.8	109.0	120.0	131.2	127.1
Others	90.6	87.5	102.4	81.9	82.3

Source: FAO (2008). Committee on Commodity Problems – Intergovernmental Group on Tea, 18<sup>th</sup> Session, Hangzhou, China, 14-16 May 2008.

Table 4. Tea domestic utilization (' 000 t.).

Countries/Regions	1997-2001	2002	2003	2004	2005	2006
<b>WORLD</b>	<b>2893.6</b>	<b>3097.8</b>	<b>3275.9</b>	<b>3511.0</b>	<b>3616.6</b>	<b>3644.2</b>
<b>DEVELOPED</b>	<b>827.8</b>	<b>871.5</b>	<b>992.2</b>	<b>924.4</b>	<b>957.0</b>	<b>926.1</b>
South Africa	21.2	20.2	21.5	17.8	19.9	22.2
United States	92.5	93.5	94.1	99.5	100.1	107.6
Japan	117.4	110.8	111.9	132.9	151.7	139.4
EU (27)	322.0	351.4	397.3	365.2	379.5	356.2
UK	168.7	168.4	156.6	156.2	150.4	161.3
Russian Federation	160.0	167.0	157.8	171.4	179.1	175.9
Others	114.8	128.7	209.5	137.6	126.8	124.8
<b>DEVELOPING</b>	<b>2065.8</b>	<b>2226.3</b>	<b>2283.8</b>	<b>2586.6</b>	<b>2659.6</b>	<b>2718.1</b>
Egypt	68.9	79.0	49.4	71.8	88.4	37.2
Kenya	30.4	24.6	35.4	46.1	74.6	53.1
Morocco	24.4	42.9	44.9	45.7	45.7	50.6
China	380.8	413.7	426.8	677.2	683.7	776.9
India	654.7	651.4	693.8	728.7	744.0	762.7
Turkey	161.7	146.4	153.0	202.1	201.4	201.0
Indonesia	76.7	78.6	78.4	47.3	69.0	97.8
Iran Islamic Rep. of	97.0	87.9	94.6	60.0	54.9	51.4
Pakistan	104.6	98.5	109.0	120.0	131.2	127.1
Viet Nam	25.7	34.4	31.8	20.5	18.6	27.4
Others	<b>441.0</b>	<b>568.8</b>	<b>566.8</b>	<b>567.2</b>	<b>548.1</b>	<b>532.9</b>

Table 5. Black tea: actual and projected production.

Countries/ Regions	PRODUCTION (' 000 t.)			
	Actual	Projected	Growth Rates (% per year)	
	2006	2017	1996/2006	2006/2017
<b>WORLD</b>	<b>2565</b>	<b>3141</b>	2.8	1.9
<b>DEVELOPING</b>	<b>2547</b>	<b>3118</b>	2.9	1.9
<b>Africa</b>	<b>480</b>	<b>532</b>	2.5	0.9
Kenya	311	344	2.0	0.9
Malawi	45	51	1.6	1.1
Uganda	36.7	38	7.8	0.3
Tanzania	31.4	34	4.7	0.7
Others	56.4	65	2.3	1.3
<b>Latin America</b>	<b>92.5</b>	<b>113</b>	3.6	1.8
Argentina	76.3	95	4.1	2.0
Other	16.2	18	1.3	1.0
<b>Near East</b>	<b>222.3</b>	<b>236</b>	2.1	0.5
Iran	22.3	26	-10.3	1.4
Turkey	200	210	5.7	0.4
<b>Far East</b>	<b>1744.0</b>	<b>2227</b>	3.1	2.2
India	945	1175	2.0	2.0
Sri Lanka	307.3	341	1.8	1.0
Indonesia	167.9	197	2.6	1.5
China	156.3	312	12.2	6.5
Viet Nam	67	76	13.6	1.2
Bangladesh	53.4	61	1.2	1.2
Others	47.1	65	11.5	3.0
<b>Other developing</b>	<b>7.9</b>	<b>10</b>	1.2	2.5
<b>Developed</b>	<b>18.4</b>	<b>22</b>	-1.7	1.8
<b>CIS</b>	<b>12.6</b>	<b>17</b>	0.8	2.5
<b>Other developed</b>	<b>5.8</b>	<b>5.8</b>	-5.5	-0.1

Source: FAO (2008). Committee on Commodity Problems – Intergovernmental Group on Tea, 18<sup>th</sup> Session, Hangzhou, China, 14-16 May 2008.

Table 6. Green tea: actual and projected production and exports.

Countries /Regions	PRODUCTION			
	Actual	Forecast	Growth rates	
	2006	2017	1996/2006	2006/2017
	(' 000 t.)		% / year	
<b>WORLD</b>	<b>968.1</b>	<b>1571.1</b>	<b>4.7</b>	<b>4.5</b>
<b>China</b>	<b>782.4</b>	<b>1352</b>	<b>5.8</b>	<b>5.1</b>
<b>Japan</b>	<b>91.8</b>	<b>100.5</b>	<b>0.3</b>	<b>0.8</b>
<b>Viet Nam</b>	<b>66.0</b>	<b>106</b>	<b>8.9</b>	<b>4.4</b>
<b>Indonesia</b>	<b>20.0</b>	<b>22.1</b>	<b>-5.7</b>	<b>0.9</b>
Countries /Regions	EXPORTS			
	Actual	Forecast	Growth Rates	
	2006	2017	1996/2006	2006/2017
	(' 000 t.)		% per year	
<b>WORLD</b>	<b>263.5</b>	<b>397.1</b>	<b>14.1</b>	<b>3.8</b>
<b>China</b>	<b>218.7</b>	<b>379.7</b>	<b>14.4</b>	<b>5.1</b>
<b>Japan</b>	<b>1.6</b>	<b>2.4</b>	<b>14.0</b>	<b>3.8</b>
<b>Viet Nam</b>	<b>26.0</b>	<b>33.5</b>	<b>16.8</b>	<b>2.3</b>
<b>Indonesia</b>	<b>9.1</b>	<b>13.3</b>	<b>7.7</b>	<b>3.5</b>

Table 7. Black tea: international trade, actual and projected exports.

Countries/Regions	EXPORTS			
	Actual	Forecast	Growth rates	
	2006	2017	1996/2006	2006/2017
	(' 000 t.)		% per year	
<b>WORLD</b>	<b>1151.1</b>	<b>1385</b>	<b>1.5</b>	<b>1.7</b>
<b>DEVELOPING</b>	<b>1142.5</b>	<b>1376</b>	<b>1.5</b>	<b>1.7</b>
<b>Africa</b>	<b>406.1</b>	<b>478</b>	<b>2.1</b>	<b>1.5</b>
Kenya	270.4	325	1.1	1.7
Malawi	42.0	48	4.9	1.2
Uganda	32.7	34	8.1	0.4
Tanzania	24.1	30	2.8	2.0
Others	36.9	41	2.6	1.0
<b>Asia</b>	<b>653.8</b>	<b>806</b>	<b>0.7</b>	<b>1.9</b>
Sri Lanka	310.4	395	2.9	2.2
India	200.9	265	2.5	2.6
Indonesia	86.3	95	-1.2	0.9
China	33.6	31	-8.4	-0.7
Others	22.7	20	-6.3	-1.1
<b>Latin America</b>	<b>76.9</b>	<b>86</b>	<b>6.7</b>	<b>1.0</b>
<b>Other developing</b>	<b>5.7</b>	<b>6</b>	<b>-0.8</b>	<b>0.1</b>
<b>Developed</b>	<b>8.6</b>	<b>9</b>	<b>3.5</b>	<b>0.7</b>
<b>CIS</b>	<b>8.0</b>	<b>9</b>	<b>4.8</b>	<b>1.0</b>
<b>South Africa</b>	<b>0.1</b>	<b>0</b>	<b>-26.2</b>	<b>6.5</b>

Source: FAO (2008). Committee on Commodity Problems – Intergovernmental Group on Tea, 18<sup>th</sup> Session, Hangzhou, China, 14-16 May 2008.

Table 8. Black tea: domestic utilization.

Countries/ Regions	CONSUMPTION			
	Actual	Forecast	Growth Rates	
	2006	2017	1996/2006	2006/2017
	Thousand Metric Tons		Percent per year	
<b>WORLD</b>	<b>2339.6</b>	<b>2819.9</b>	1.0	1.7
<b>Net Imports</b>	<b>189.4</b>	<b>200.9</b>	0.4	0.5
<b>Developing</b>	<b>483.1</b>	<b>491.6</b>	0.8	0.2
<b>Far East</b>	<b>323.3</b>	<b>331.5</b>	1.2	0.2
Pakistan	115.5	119.1	0.2	0.3
Others	207.8	212.4	1.8	0.2
<b>Other Devp'g</b>	<b>159.8</b>	<b>160.1</b>	0.0	0.0
<b>Developed</b>	<b>635.7</b>	<b>734.1</b>	-0.3	1.3
<b>Europe</b>	<b>233.5</b>	<b>241.8</b>	-3.3	0.3
<b>EU (25)</b>	<b>227.0</b>	<b>234.7</b>	-3.4	0.3
<b>Other Europe</b>	<b>6.5</b>	<b>7.1</b>	2.2	0.8
<b>Russian Federation</b>	<b>246.7</b>	<b>328.2</b>	4.0	2.6
<b>North America</b>	<b>103.0</b>	<b>107.5</b>	0.7	0.4
United States	89.1	92.3	0.7	0.3
Canada	13.9	15.2	1.1	0.8
<b>Oceania</b>	<b>19.6</b>	<b>16.1</b>	-1.6	-1.8
Australia	15.6	12.1	-1.7	-2.3
New Zealand	4.0	4.0	-1.4	0.0
<b>Other Dev'd</b>	<b>32.9</b>	<b>40.5</b>	-2.2	1.9
South Africa	15.0	19.3	-3.4	2.3
Japan	16.0	20.1	-0.5	2.1
Israel	1.9	1.1	-4.7	-4.9
<b>Domestic Utilization</b>	<b>1220.8</b>	<b>1594.2</b>	1.8	2.5
<b>Africa</b>	<b>37.2</b>	<b>42.5</b>	-4.1	1.2
Kenya	14.0	17.1	-0.4	1.8
Malawi	1.1	1.2	1.0	0.8
Tanzania	8.1	8.6	18.1	0.5
U'td Rep	14.0	15.6	-8.2	1.0
<b>Far East</b>	<b>1166.0</b>	<b>1535.0</b>	2.2	2.5
India	710.0	906.9	1.4	2.3
Turkey	145.0	189.0	2.6	2.4
China	92.0	115.0	14.6	2.0
Indonesia	68.0	95.0	7.4	3.1
Viet Nam	28.0	37.9	23.5	2.8
Iran Is. Rep. of	64.0	65.0	-3.5	0.1
Bangladesh	44.0	75.0	5.2	5.0
Others	15.0	51.2	-15.2	11.8
<b>Latin America</b>	<b>15.5</b>	<b>13.3</b>	-5.2	-1.4
<b>Oceania/dev.</b>	<b>2.1</b>	<b>3.4</b>	8.8	4.5

Source: FAO (2008) Committee on Commodity Problems – Intergovernmental Group on Tea, 18<sup>th</sup> Session, Hangzhou, China, 14-16 May 2008.