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Abstract

India's tea plantation sector had experienced an unprecedented crisis following the launching of trade reforms since 1991. The crisis with continued fall in domestic tea prices had persisted for several years adversely affecting the economic viability of tea plantations in the dominant tea growing regions of North and South Indian states. However, there was an increase in domestic tea prices in recent years, which came as a respite to a vast majority of tea planters. In this backdrop, this paper examines whether the Indian tea plantation sector has overcome the crisis with the improvement in tea prices in recent years. While doing so, the paper provides an overview of the growth and status of Indian tea plantation sector delineating the trends in economic performance in the global context in a historic perspective. It then examines the impacts of trade reforms on tea plantation sector manifest in terms of a persistent crisis and the crisis management strategies adopted by the tea planters and their impacts on plantation workers and livelihoods. Some of the major challenges confronting Indian tea plantation industry are also discussed, which might affect the sustainability and competitiveness of the industry in the emerging context of global market integration along with India's increased engagement in bilateral and multi-lateral trade agreements. The paper underscores the need for policy and institutional imperatives and long-term solutions for sustaining the growth dynamism of the tea plantation sector. In the context of the structural imperfections and market uncertainties affecting the Indian tea sector, an important policy perspective is to promote value added processing of tea so that the stake of the small tea producers is enhanced by strengthening their capabilities through provision of state of the art tea processing technology.

Keywords : Crisis in Tea plantations, trade reforms, trade agreements

JEL Classification : F53, Q13, F13

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Introduction

This paper aims at a critical assessment of the status India's tea plantation sector in the post-reforms context. In fact, the post-reforms period also coincided with the onset of an unprecedented crisis in India's tea plantation sector, adversely affecting the economic performance of the sector on the one hand and its competitiveness in the wake of India's increased engagement in FTAs and RTAs. The paper is organised into four sections. Section 1 provides a brief overview of the growth and status of Indian tea plantation sector delineating the trends in economic performance in the global context in a historic perspective. It also discusses about the two important dimensions of India's tea production sector, *viz.*, geographical and structural concentration. Section 2 examines the impacts of trade reforms on tea plantation sector manifest in terms of a persistent crisis and the crisis management strategies adopted by the tea planters and their impacts on plantation workers and their livelihoods. Section 3 discusses some of the major challenges confronting Indian tea plantation industry which might affect the sustainability and competitiveness of the industry in the emerging context of global market integration along with India's increased engagement in bilateral and multi-lateral trade agreements. Section 4 concludes the paper by discussing some policy and institutional imperatives for reinvigorating the economic dynamism cast by the Indian tea industry in the past.

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1. Indian Tea Plantation Industry: Its Growth and Status in the Global Context

Historically, tea plantations have been developed in the South and South East Asian countries under the European colonial patronage. While the Europeans brought the financial capital and the technical knowhow, the Asiatic countries contributed soil (land) and the natives, their labour (Waibel, 1941). The plantation mode of production has exposed these countries to the western economic system ever since the second half of the 19th century. The wide scale expansion of the plantation system in the tropics has greatly influenced the socio-economic life of the communities dependent on the plantation crops. Reportedly, plantation tree crops, comprising coconut, rubber, coffee, oil palm, tea, cocoa and various fruits occupy over 25% of the value of agricultural produce in their main growing regions of Southeast Asia (Food and Agriculture Organization, 1995) and a higher share of farm exports (Barlow, 1996) in the total merchandise trade.

Currently, tea is produced in about 45 countries. But, a major chunk of the global tea output (86%) comes from the Asian region with six countries, *viz.*, China, India, Sri Lanka, Kenya, Indonesia and Vietnam occupying almost 84% of the tea harvested area and 77% of the tea production even during 2010 (Table 1).

Table 1: Long-term Trends in Growth in Area and Production of Tea in the World, 1961 to 2010

Country	1961	1970	1980	1990	2000	2010
Tea Harvested area ('000 ha)						
1. China	355 (26)	519 (31)	1068 (45)	843 (37)	898 (38)	1419 (45)
2. India	331 (24)	356 (21)	382 (16)	415 (18)	490 (21)	583 (19)
3. Indonesia	107 (8)	89 (5)	86 (4)	94 (4)	121 (5)	108 (4)
4. Kenya	18 (1.3)	40 (2.4)	76 (3.2)	97 (4)	120 (5)	172 (6)
5. Sri Lanka	238 (17)	242 (14)	245 (10)	222 (10)	189 (8)	218 (7)
6. Viet Nam	19 (1.4)	29 (1.8)	35 (1.5)	60 (3)	70 (3)	113 (4)
Sub total	1068 (78)	1276 (76)	1892 (80)	1731 (77)	1889 (79)	2614 (84)
World	1366 (100)	1668 (100)	2369 (100)	2260 (100)	2384 (100)	3123 (100)
Tea production (Million Tonnes)						
1. China	97 (10)	163 (13)	328 (17)	562 (22)	704 (24)	1467 (32)
2. India	354 (36)	418 (32)	570 (30)	688 (27)	826 (28)	991 (22)
3. Indonesia	77 (8)	64 (5)	106 (6)	156 (6)	163 (5)	150 (3)
4. Kenya	13 (1.3)	41 (3.2)	90 (5)	197 (8)	236 (8)	399 (9)
5. Sri Lanka	206 (21)	212 (16)	191 (10)	233 (9)	306 (10)	282 (6)
6. Viet Nam	7 (0.8)	15 (1.1)	21 (1.1)	32 (1.3)	70 (2.4)	198 (4.4)
Sub total	755 (77)	914 (71)	1306 (69)	1869 (74)	2304 (78)	3488 (77)
World	984 (100)	1287 (100)	1893 (100)	2524 (100)	2964 (100)	4518 (100)

Source: Estimated from www.faostat.org (20 March 2012).

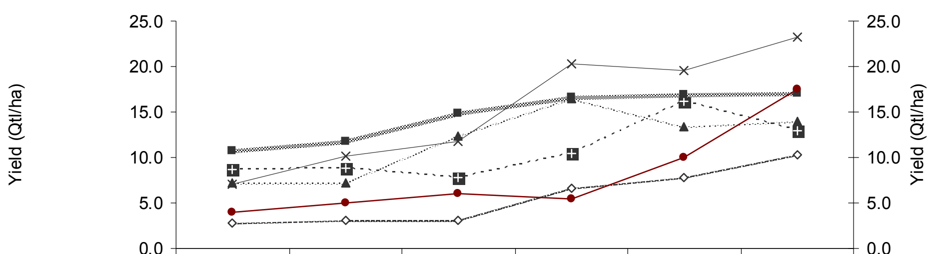
Note: Figures in parentheses indicate the respective share in global tea area and tea production.

From Table 1, it may be observed that though China had the largest tea harvested area in the world all through the decades, India had clear dominance in tea production until 2000, after which China became dominant with a relative share of 32% global tea output, followed by India (22%). Both China and India together accounted for 64% of tea harvested area and 54% of tea output in the world during 2010. The Table also reveals the decline in the relative contributions of the traditional tea growing countries of Sri Lanka and Indonesia, though both of them continued to maintain stability in area and production of tea over time. The Table also brings out an interesting aspect of the emergence of Kenya as a major player in the global tea sector with a 10 fold increase in tea harvested area and more than

30 fold increase in tea production over time. In absolute terms, though India's tea growing area had increased only by about two times from 3.31 lakh ha in 1961 to 5.83 lakh ha in 2010, its production had increased by almost three times from 354 Million Tonnes to 991 Million Tonnes during the same period.

As evident from Figure 1, in case of tea productivity, India had greatest comparative advantage over others until 1980, when Kenya emerged as the major competitor. By 2010, India was pushed to the third position in tea productivity (17 qtl/ha) with Kenya ranking first (23.2 qtl/ha) and Vietnam in the second position (17.5 qtl/ha).

Figure 1: Trends in Tea Productivity in Major Producing Countries, 1961 to 2010



	1961	1970	1980	1990	2000	2010
China	2.7	3.1	3.1	6.7	7.8	10.3
Indonesia	7.2	7.2	12.3	16.5	13.4	13.9
Sri Lanka	8.7	8.8	7.8	10.5	16.2	12.9
India	10.7	11.7	14.9	16.6	16.9	17.0
Kenya	7.1	10.2	11.7	20.3	19.6	23.2
Viet Nam	3.9	5.0	6.1	5.4	9.9	17.5

Source: Estimated from www.faostat.org (20 March 2012)

It may also be noted that like many plantation crops, productivity of tea is also highly subjective and is determined by a host of factors, like age of the plantation and bush size, agro-climatic factors, extent or the intensity of management interventions, like input use, silvicultural or plant protection measures, adoption of R& D as well as extension activities, etc. The production conditions and other factors described above might differ across tea producing countries having significant bearing on production and productivity. Further, the very institutional structure within which the entire plantation system operates also influences productivity. For instance, a major chunk of world tea production originates from large estate based plantation systems, with the exceptions of Kenya to a greater extent and India and Sri Lanka to a limited extent. Moreover, the performance of tea plantation sector across countries is also influenced by the institutional, policy and regulatory interventions made by the respective countries with respect to promotion, upscaling and control of plantation production systems in historic perspective (Viswanathan and Shah, 2009).

1.1 Indian tea sector in global context

Obviously, India's dominance in global tea production also had given it a pre-eminent position in the global export map as well. India was continuously enjoying the status of the largest tea exporter in the world market (with a relative share close to 30%) closely followed by Sri Lanka until 1990 (Table 2). However, since 1990 India's relative position in tea world exports got weakened to the extent of 11% during late 2000s. On the contrary, Sri Lanka, China and Kenya have consolidated their position in the global market. By 2009, India's ranking has receded to the fourth position after Sri Lanka, China and Kenya. Kenya has emerged as the second largest exporter with a relative share of 17% in the global tea exports, followed by China (13.5%). Table 2 also brings out an important point that the combined share of the five countries in the global share in the value of exports had declined substantially over time from 84% in 1961 to 74% in 2000 and to about 66% by 2009. This in other words indicates the loss of traditional export markets, such as India and Sri Lanka and the strengthening of new tea producing countries, such as Kenya, Vietnam, China, etc. It may be noted that the loss of India in the global tea export market could be due to a combination of factors, such as the expanding domestic market and its loss of comparative advantage as the traditional exporter.

Table 2: Trends in Country-wise Share in Global Tea Exports, 1961 to 2009

Year	Sri Lanka	India	China	Kenya	Indonesia	Five countries (% share)	World (Million US$)
1961	34.3	38.0	6.0	1.8	3.8	83.9	682.8
1970	27.1	28.2	6.6	5.8	2.6	70.3	693.5
1980	18.4	28.7	12.7	8.5	5.6	73.9	2026.4
1990	21.1	25.4	19.8	3.7	7.7	77.7	2338.5
2000	24.3	15.4	13.9	16.4	4.0	74.0	2810.2
2009	21.9	10.9	13.5	16.7	3.2	66.2	5357.7

Source: Estimated from www.faostat.org (20 March 2012)

Thus, the foregoing discussion reveals that India continues to be a major player in the global tea sector in terms of its contributions to area, production and exports of tea, though its status got weakened during the last two decades. It also unfolds that the presence of Sri Lanka and the emergence of China and Kenya would have significant impact on India's performance in the global tea industry.

1.2 Growth of Indian tea sector: Geographical and structural dimensions

Though the European planters had established commercial plantations of coffee, tea, spices and rubber in India as early as the first quarter of the 19th Century, the plantation expansion received greater impetus in the post-Independence period when the Government of India and the respective state governments have initiated various policy and institutional support measures including setting up of various Commodity Boards[1] to facilitate area expansion by protecting the native planters' interests. These proactive

[1] These Commodity Boards have been set up through various enactments of the Indian Parliament and are under the administrative jurisdiction of the Ministry of Commerce and Industry, Government of India. These boards, *viz.*, Coffee Board, Tea Board and the Rubber Board were established in 1942, 1953 and 1954 respectively. The major functions of the Commodity Boards are to act as catalysts in the process of area expansion, production and productivity enhancement through various R&D and institutional support measures, including subsidy, technical, extension and marketing support (George *et al.*, 1988; Viswanathan and Shah, 2009).

policy and institutional interventions as well as the socio-economic and political development processes have resulted in dramatic increase in area under plantation crops, including tea in India. However, growth of plantation crops, such as tea needed conducive agro-climatic conditions including rainfall, elevation, soil suitability, etc. As a result, tea plantations have been mostly concentrated in North and North Eastern states of West Bengal, Assam, Tripura, etc as well as the South Indian states of Tamilnadu, Kerala and Karnataka (Viswanathan and Shah, 2009).

Table 3 shows the regional concentration in area and production of tea plantations in India. North Indian states dominate in terms of area and production of tea plantations with a relative share of 78% and 75% respectively. However, though the South Indian states, mainly Tamilnadu and Kerala have lower share in area and production of tea, they have larger concentration of tea producing units, comprising large and medium estates and small and marginal tea producers. In terms of tea productivity, South India (1851 kg/ha) has a comparative advantage over North India (1667 kg/ha).

Table 3: Development of Tea Plantations and Regional Concentration in India

Year	Tea planted area			Tea Production		
	North India (%)	South India (%)	All India ('000 ha)	North India (%)	South India (%)	All India (Million kg)
1971	79.3	20.7	356.5	76.3	23.7	435.5
1981	80.6	19.4	383.6	78.1	21.9	560.4
1995	79.4	20.6	427.1	75.2	24.8	756.0
2000	77.5	22.5	504.4	75.7	24.3	846.9
2005	74.7	25.3	555.6	75.9	24.1	946.0
2009	77.9	22.1	583.0	75.1	24.9	979.0
Tea productivity- 2009 (Kg./ha)				1667	1851	1705

Source: Estimated from Tea Statistics, Tea Board, India.

A disaggregate level analysis of the concentration of tea plantations indicate that Assam accounts for about 34% of the total tea plantation units and 52% of the total tea planted area in the country during 2004. On the other hand, Tamil Nadu has the highest share in the number of tea plantations (48%) while its share in tea planted area has been around 15%. In contrast, West Bengal with a relative share of 7% in the number of tea plantations account for almost 22% of the tea planted area in India. Kerala accounts for only 5% of the tea plantations and 7% of the area.

Structurally, tea plantations in India are classified as big plantations (estates) and smallholdings and the management of plantations, including tea, are governed by the Plantation Labour Act (PLA)[2], 1951. Accordingly, while plantations above 10.12 ha are considered as medium and large plantations (estates), those below 10.12 ha are considered as smallholdings. An interesting contrast of the Indian tea plantation sector is the predominance of small producing units (99%) in the total number of plantations, while they have very small share in tea planted area (28%) and tea production (26%) at the aggregate level. At the same time, it is important to note that the shares of small tea producers in area and production have been on the increase especially since the last 2 decades, which increased from 3% to 28% and 6.5% to 26% respectively between 1990 and 2008.

The structural feature of the Indian tea plantation sector as noted above underlies the virtual monopoly and dominance of the private/ corporate planters over the country's tea production and exports. Such a concentration of the tea industry in the hands of the private corporate sector is an outcome of the high degree of vertical integration enjoyed by the big planters in terms of the scale economies in processing and manufacturing of tea in the country (Viswanathan and Shah, 2009). It is this skewed production structure that makes the Indian tea plantation sector distinct *vis-a-vis* the tea sectors in Sri Lanka, Kenya and Indonesia in particular.

India's tea plantation sector also offer immense socio-economic benefits in terms of provision of employment and livelihoods to a vast segment of the rural workforce as well as small and marginal tea producers in the country. A conservative estimate by the Government of India reports that

[2] PLA is implemented by an Act of the Parliament and it provides for the welfare of plantation labour and regulates the condition of work in plantations. The term 'Plantation' itself has been defined under the PLA as "any land used or intended to be used for growing tea, coffee, rubber, cinchona and cardamom which admeasures 5 hectares or more and in which fifteen or more persons are employed or were employed on any day of the preceding twelve months".

about a little over 4.5 million producer households and about 20 million farm workers and their households derive their livelihood from ancillary activities associated with production, value addition and marketing of tea in India (GOI, 2007). Tea plantations require massive labour force for tea plucking and routine agro-management operations (production workers). They also offer immense employment opportunities to factory workers in tea processing and manufacturing of processed tea. The employment potential also has a strong gender dimension, as women workers constitute almost 58% of the tea plantation workforce.

2. Trade Reforms and Crisis in Indian Tea sector: Impacts and Outcomes

This section briefly discusses about the major impacts of the trade reforms manifest in the form of a crisis in tea plantation sector, the crisis management strategies adopted by the planters and their implications on the livelihoods of the small tea producers and the plantation workers. It may be observed that following its entry into WTO, India had also launched trade reforms in its tea plantation sector like many other sectors. Accordingly, the tea plantation sector was opened up to global competition through removal of tariff and non-tariff barriers for facilitating easy market access for other countries.

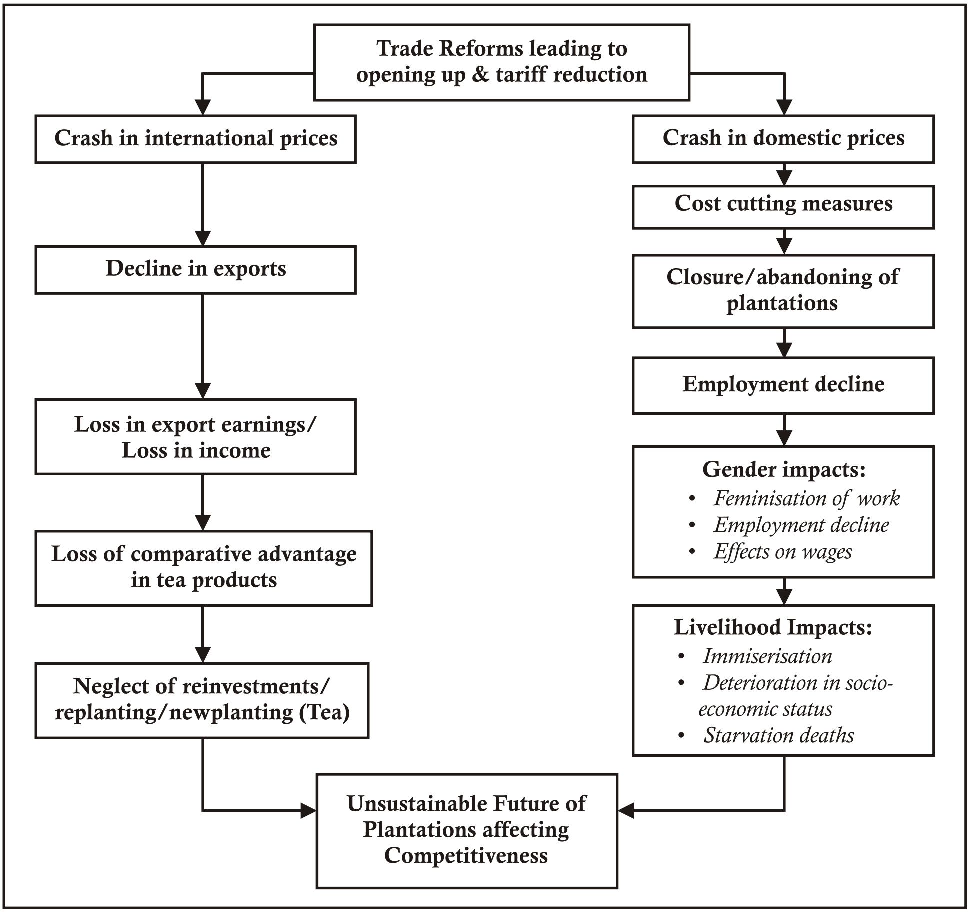
From a macro perspective, an immediate cause of the crisis has been the perceptible decline in international and domestic prices of tea, mainly caused by the recovery of Kenya's production from a past damage in the late 1990s coupled with the loss of Iraqi market due to the war (Hayami and Damodaran, 2004). The trends in domestic producer prices of tea in equivalent US dollars during the 1990s revealed that tea prices in India has declined by almost 14% from 0.213 US$ per kg (1991) to 0.184 US$ per kg (2000). This was in sharp contrast to very marginal decline in China from US$ 1.253 to US$ 1.222 per kg, significant rise in Kenya (43%) from US$ 1.40 to US$ 2.0 per kg, and 27% rise in Sri Lanka from US$ 1.13 to US$ 1.43 per kg during the same period. Moreover, the average tea prices reported for India during the 15 year period (1991-2005) was US$ 0.206 compared to US$ 1.589 for Kenya, US$ 1.285 per kg for China, and US$ 1.19 per kg for Sri Lanka. This further suggests that the producer prices of tea in India were hardly 13-17% of the prices of these three countries.

The decline in tea prices at the international markets had severely affected the Indian tea sector in terms of a sharp decline in value realised from the tea exports. For instance, when India's tea exports increased in quantitative terms by 2% between 1990-91 and 2000-01, there was more than 27% decline in value terms from US$ 596 million to US$ 433 million, the corresponding decline in unit value being more than 28%. Thus, the immediate impact of the trade reforms was a drastic reduction in prices as received by the tea planters and small tea producers. The magnitude of price decline was so severe that the prices received by the producers were far below the cost of production. As the unremunerative prices affected the profitability[3] and the viability of the plantations, the large scale planters in particular vehemently adopted various cost cutting and prudent financial management measures to overcome the crisis (George and Joseph, 2005).

The crisis management strategies adopted by the planters had serious impacts on the production sector in terms of employment decline as caused by labour retrenchment, abandoning of plantation operations, as well as decline in production and productivity. The major impacts of the trade reforms in the plantation sector and the resultant opening up and tariff reduction as experienced through the crisis which had serious implications for the sustainable future of the Indian plantation sector may be elaborated as shown in Chart 1.

[3] It has been found that during the late 1990s and after the cost of tea production has been higher than the domestic tea prices by 20-25% as compared to significant levels of profit as reported from Indonesia (64-67%), Sri Lanka (25-31%) and Bangladesh (7-19%).

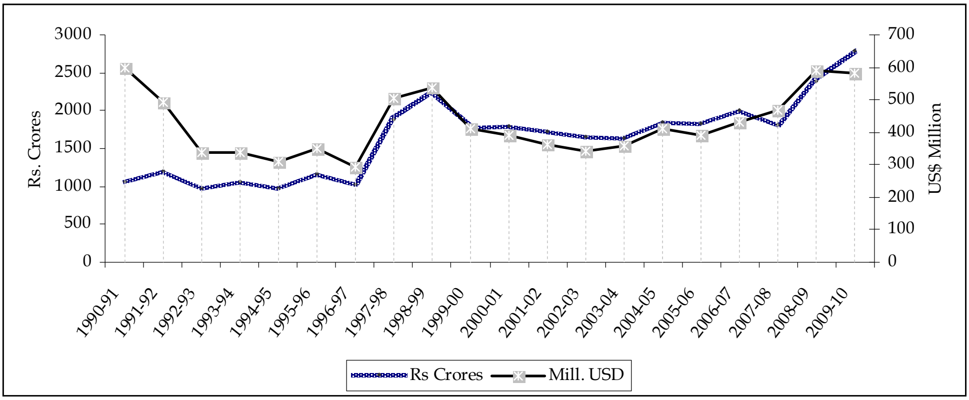
Chart 1: Impact of Trade Reforms and the Resultant Crisis in Tea Plantation Sector in India



2.1 Dwindling export earnings

The immediate effect of the decline in prices in the international markets has been the persistent decline in India's tea exports. This was evident from the declining trend in export earnings. For instance, India's tea exports had declined from its peak levels of US$ 538.4 million during 1998-99 to US$ 341.4 million during 2001-02. The declining trend in export prices (both in dollar and domestic currency terms) had persisted for quite a long period since early 1990s to mid 2000 with only few exceptions during the two year period 1997-99 as evident from Figure 2.

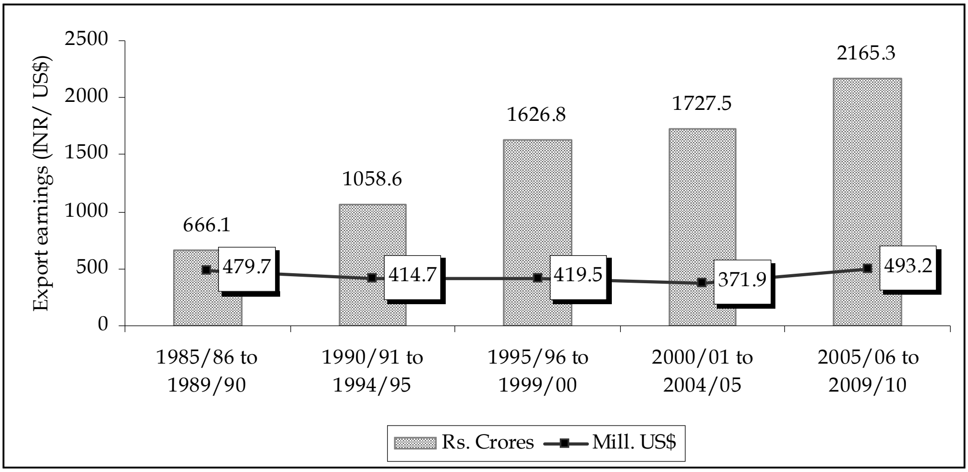
Figure 2: Trends in Value of Tea Exports from India 1991 to 2009-10



Source: Estimated from Tea Board Statistics Database.

As evident, India's export earnings from tea had declined since 1991 and the trend continued until 2007-08 when there was an increase in export earnings both in dollar as well as rupee terms. Interestingly, the declining trends in export earnings also reflect on the weakening of Indian currency against US dollar. This is further evident from the almost stagnant queniquenniel average export earnings of tea during the last two decades of implementation of trade reform measures (Figure 3).

Figure 3: Five-Yearly Average Export Earnings from Tea in India, 1985-86 to 2009-10



Source: Estimated from Tea Board Statistics Database.

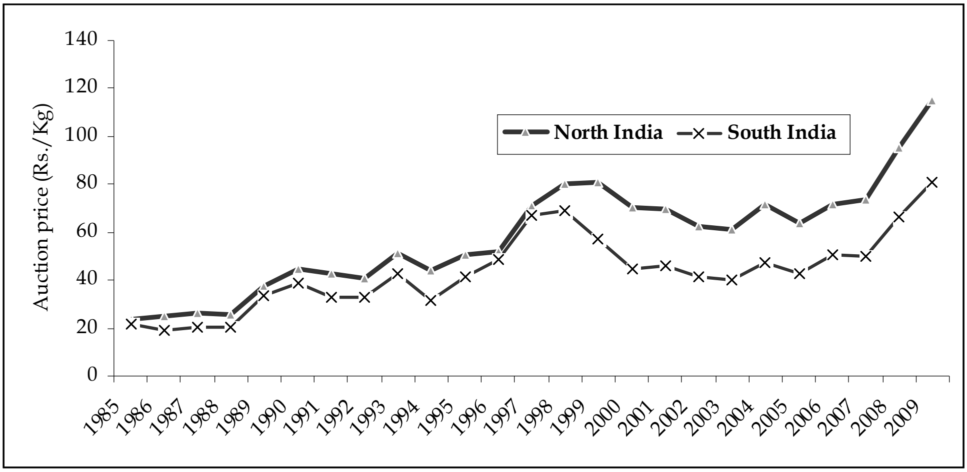
For instance, India's average export earnings from Tea had declined from US$ 479.7 million between 1985/86 & 1989/90 to US$ 414.7 million between 1990/91 & 1994/95. There was a steep decline thereafter to US$ 371.9 million during 2000/01 to 2004/05.

As already observed from Table 2, India had also been losing its comparative edge in the global tea export market and the relative share in world tea exports had remained around 12% during the last decade as compared to Sri Lanka (20.5%), Kenya (16.5%), and China (14%). The post-reforms period also witnessed significant rise in tea imports into India. For instance, between 1998 and 2009, India's tea imports rose by almost three times from US$ 15.56 million (1998) to US$ 45 million (2009).

2.2 Impact on domestic prices

An important aspect of the working of the global tea market is the dominance of auctions in price fixation. Roughly 70% of the global tea output is transacted through handful of auction centres mainly located in India (Kolkata, Cochin), Sri Lanka (Colombo) and Kenya (Mombasa). These three major auction centres together accounted for almost 90% of the tea auctions during 2007. India alone accounts for 42% of the global tea auctions. Within India, the auction centres of North India (at Kolkata, Guwahati and Siliguri) account for almost 73% of the total tea auctioned in the country while the South auction centres (Cochin, Coimbatore and Coonoor) account for 26%. In view of the minimal share of South India in the total volume of tea auctioned, the South Indian auction prices have always remained lower than the North Indian auction prices. Following the crisis, the Indian tea auction prices have continued to be highly volatile and lower compared to the auction prices of Kenya (Mombassa) and Colombo (Sri Lanka). During 2006, the tea auction price in India was lower at US$ 1.46 per kg compared to US$ 1.93 in Kenya and US$ 1.90 in Sri Lanka. The decline in international auction prices had adversely affected the domestic prices in India along with widening the gap between the North Indian and South Indian auction prices as evident from Figure 4.

Figure 4: Trends in Tea Auction Prices across North and South Indian States



Source: Compiled from Tea Board Statistics Database.

2.3 Employment decline and dwindling social security measures

The crisis in tea plantations has also been regarded as an outcome of structural issues in the organisation of production and management of labour. An overwhelming majority of tea plantations operate as corporate or private sector entities with a captive and regimented labour market attached to it. They are also bound by the legislations under the PL Act (PLA) 1951 to protect the labourers with various protective and welfare measures. In the event of the crisis, tea planters have adopted various cost cutting and prudent financial management measures to overcome the crisis. Few important measures thus adopted included retrenchment of labourers, abandoning or lockouts of plantations, cutting down on the provisions of the various labour welfare measures, etc. Much of these steps were taken in the guise of restructuring of tea plantations which mostly included abandoning of routine plantation management operations, which gave the planters sufficient reasoning to cut down the size of plantation workers.

Evidences also suggest that a large number of medium and small-scale tea estates were closed in the major tea growing regions in the country due to the crisis and strained management-labour relations. This had two major impacts with respect to status of employment of workers in plantations. First, there was retrenchment of labourers in case of closed plantations.

Second, the surviving plantations have reduced the number of workers causing a decline in employment in plantations. Table 4 shows that employment in tea plantations has been on the decline since early 1990s which got intensified in the wake of the crisis. As evident, the extent of decline in employment was very high (27.4%) during 2002-07 as compared to 24.3% during 1990-2002. The trends also reveal increasing feminization of work in tea plantations. In this regard, it may also be noted that besides the decline in employment levels, the planters also cut down several of the wage and non-wage benefits and social security measures provided to the workers as stipulated by the PLA.

Table 4: Trends in Average Daily Employment in Tea Plantations and Share of Women

Period	Employment (Lakh nos.)	Share of women (%)
1990-1995	11.7	48.7
1996-2002	8.8	50.3
2002-2007	6.4	54.7
% change (1990-2002)	-24.3	3.2
% change (2002-2007)	-27.4	8.9

Source: Estimated from Tea Statistics, Tea Board.

Besides reduction in employment, the process of restructuring has also involved an array of disquieting developments as reported from almost all tea plantation areas in the country. Such developments included: a) lowering, stagnation, deferment and or non-revision of wages; b) non-provision of bonus; c) increase in workloads, ie., a hike in the minimum quantity of tea leaves/ coffee beans to be collected and increase in tapping task (number of rubber trees to be tapped); d) curtailment of non-wage or extra-wage benefits and incentives; e) non-compliance of provisions of welfare measures as stipulated by the PL Act, 1951; f) temporary closure of crèche, health centres; g) non-maintenance of labour lines, etc to mention the most pressing needs affecting the status and livelihoods of women plantation workers in particular. As a matter of fact, the extent and degree of imposition of these measures varied across plantations depending on the extent to which the planters wanted to keep their profit margins intact.

The adverse trade impacts as revealed by the crisis cause greater concerns about the social security as well as sustainable livelihoods of the plantation workers especially, women. Even otherwise, the socio-economic status of women workers in tea plantations continues to be a matter of serious concern, as a vast majority of them are tribals and or are migrants and hugely suffer from landlessness, illiteracy, widow-hood, ageing, etc. These features relating to the women workforce and dependent households underscore that this large segment of the population are most vulnerable to the socio-economic disturbances caused by poverty, lack of access to resources, ill-health, under-nutrition, etc to mention a few. This being so, it is highly likely that the crisis as experienced in the plantation sector would have destabilized the livelihoods of the women workforce in particular and their dependent households. Moreover, as plantations are situated in isolated and remote areas, there are no alternative means of supporting their livelihoods. Obviously, a loss in employment due to retrenchment or closure of plantations in this regard would have resulted in abject poverty and despair to these workers, which is grossly under-reported.

Other than retrenchment or closure of plantations, the tea planters have also adopted a new strategy of sub-dividing and fragmenting the plantations into smaller parcels below 10 ha so that they could escape themselves from providing the non-wage benefits and the welfare measures as stipulated by the PL Act. This tendency has been on the rise in the plantation sectors, especially in Assam and Tamilnadu in recent years. In the South, this had resulted in a surge in the number of registered tea plantations especially in Tamilnadu. The number of newly registered tea plantations had more than doubled from 25746 to 62145 in the Nilgiris. This in fact has resulted in a gross exclusion of a major chunk of plantation workers from the protective provision of labour legislation, like supply of drinking water, suitable medical facilities, crèches as well as bonus, gratuity and provident fund (Viswanathan and Shah, 2009).

3. Major Challenges Facing Indian Tea Plantation Sector

From the foregoing discussion, it emerges that Indian tea plantation sector, which has been a major source of economic dynamism to the country's growth in the past, has been reeling under serious crisis especially in the post-reforms period. Majority of the tea plantations have vehemently responded to the crisis by adopting prudent measures to overcome the crisis, which mostly included retrenchment of labour and the stoppage of labour welfare and social security provisions as stipulated by the PLA. In fact, one may argue that the crisis management approach as adopted by the plantations has been based on the erroneous assumption that labour was the major triggering factor behind the crisis in tea plantation sector. Rather the challenges are much larger and more fundamental, which entail an array of issues pertaining to the structure and organization of tea plantations, issues of market orientation and value addition in the context of global market integration, institutional impediments, resource use and management regimes, etc. In this regard, this section tries to make a brief account of the important challenges facing the Indian tea plantation industry.

3.1 Technological incapability of small tea producers

Prima facie, it may be observed that while rubber and other plantations (such as coffee, cardamom, pepper, etc) in India had witnessed a significant structural transformation in production from the plantation mode to the smallholder system, tea production still remains to be a plantation system with all its colonial appendages of control of production and labour by the big plantation entities in the corporate, private and public sectors. As noted, a striking contradiction in the structure of tea plantations in the country is that the smallholders admeasuring an area below 10.12 ha account for almost 98% of the production units, while almost 73% of the tea plantation areas are owned and operated by the medium and large-scale planters. This skewed distribution characterised by the predominance of the medium and large plantations in case of tea is the outcome of the indivisibility of the processing technology and the advantages of vertical integration as provided by such processing technology. Thus, though the small tea producers outnumber the medium and large-scale planters in the total number of tea plantations, their technological incapability always put them at a disadvantage, adversely affecting their socio-economic wellbeing and livelihoods despite their long pursuit of plantation life over generations.

A comparison between manufacturing of ‘black tea’ and ‘green tea’ best explains the technological incompetence of the small tea producers compared to the large tea plantations. The manufacturing of black tea at standardized quality for exports requires a large scale fermentation plant in which fresh leaves need to be fed within few hours of picking. The need for close coordination between farm production and large scale processing underlies the structural impediment that the small tea producers are facing in India. While institutional interventions in case of other plantations (especially, rubber) has enabled small producers to overcome the technological impediments involved in processing, the institutional intervention offered by the Tea Board has never been favourable to small tea producers in acquiring control over tea processing technology.

3.2 Lack of emphasis on value added manufacturing

A closer look at the tea processing technology in India reveals that historically, India's tea sector has been oriented towards manufacturing/ processing CTC (crushed-torn- curled) grade of tea. On the other hand, teas produced in Sri Lanka are mainly of the orthodox type, accounting for almost 95% of the total production. Indonesia, Vietnam and China also export mainly orthodox teas. India, Kenya and Malawi on the other hand, produce mainly CTC used primarily in tea bags (Wal, 2008). About 97% of Kenya's tea production is constituted CTC or black tea. Table 5 provides a comparison of tea production structure of India *vs* other dominant tea producers in the world.

Table 5: Types of Tea Produced in Major Tea Producing Countries, 2007

Country	CTC (%)	Orthodox (%)	Green & others (%)	Total (Million Kgs)
India	90.1	8.9	1.1	945.0
Sri Lanka	5.2	93.4	1.3	305.0
Kenya	96.5	3.5	0.0	370.0
China	0.0	4.5	95.5	1165.0
Vietnam	7.4	48.0	44.6	148.0

Source: Viswanathan and Shah, 2009.

It shows that major tea producing countries differ in terms of their production and market orientation. While India and Kenya predominantly produce CTC (90 and 96.5% respectively), Sri Lanka concentrates on orthodox tea (93.4%) and China produces green tea (95.5%). Only in the case of Vietnam that the production structure shows a balance between orthodox tea (48%) and green tea (44.6%) along with smaller proportion of CTC (7.4%).

The trends in status of India's tea production and marketing structure as presented in Table 6 reveal that the dominance of CTC has become more prominent after the 1980s. The share of CTC was 64% during 1981 which became 80% by 1991. India's dominance in CTC production may be mainly attributed to North India, as South India's tea output comprises both CTC and orthodox types.

The shares of specialty teas, like green tea and Darjeeling tea have been rather insignificant in the country's tea output. In this regard, it may be noted that India is yet to make a major shift in its tea production towards high value products, such as the green tea and other specialty teas. This is evident from the fact that India's share in the global green tea production has been one of the lowest (only 1.1%) as compared to China (77%), Japan (11%), Indonesia (5.4%) and Vietnam (4%).

Table 6: Trends in Grade-wise Production/marketing of Tea in India, 1961 to 2007

Year	CTC (%)	Orthodox (%)	Darjeeling Tea (%)	Green Tea (%)	Total (Million Kg)
1961	34.5	54.0	2.8	8.7	354.4
1971	55.1	37.8	2.4	4.7	435.5
1981	63.8	32.7	2.2	1.4	560.4
1991	80.0	16.8	1.8	1.3	754.2
2001	88.9	9.3	1.1	0.6	853.9
2007	90.0	7.6	1.2	1.1	944.7

Source: Viswanathan and Shah (2009).

In view of these infirmities in processing technology, India has been losing its comparative advantage in the global market as well as the immense opportunities and potential for increasing value addition and thereby gain from international trade. In this regard, Table 7 shows the world market shares of major tea exporting countries with respect to high valued tea products, including green tea, tea mate extracts and essences. It shows that India's share in the total global exports of all types of green teas has been quite insignificant as compared to China, Sri Lanka and even UK. India has significant global market shares only in case of two products, *viz.*, black tea fermented and partly fermented (HS Code-090240) and tea partly fermented in immediate packings (HS code-090230). In fact, there was a significant decline in India's market share in the higher value added tea/ mate extracts from about 10% in 1998 to below 5% (4.1%) in 2010, which is a major cause for concern (Veeramani, 2012).

Table 7: World Market shares of Leading Exporters of Tea, India and Others, 2010

Products	China	India	Sri Lanka	Kenya	UK
Green tea in immediate packings (HS Code- 090210)	45.5	1.5	5.6	—	8.4
Green tea, nec (HS Code- 090220)	60.1	2.8	1.5	1.1	2.4
Tea partly fermented in immediate packings (HS Code- 090230)	5.8	9.4	24.7	1.0	18.9
Black tea (fermented) and partly fermented, nec (HS Code- 090240)	7.2	17.2	18.1	25.9	2.5
Tea/mate extracts, essences (HS Code- 210120)	7.9	4.1	1.7	4.4	1.3

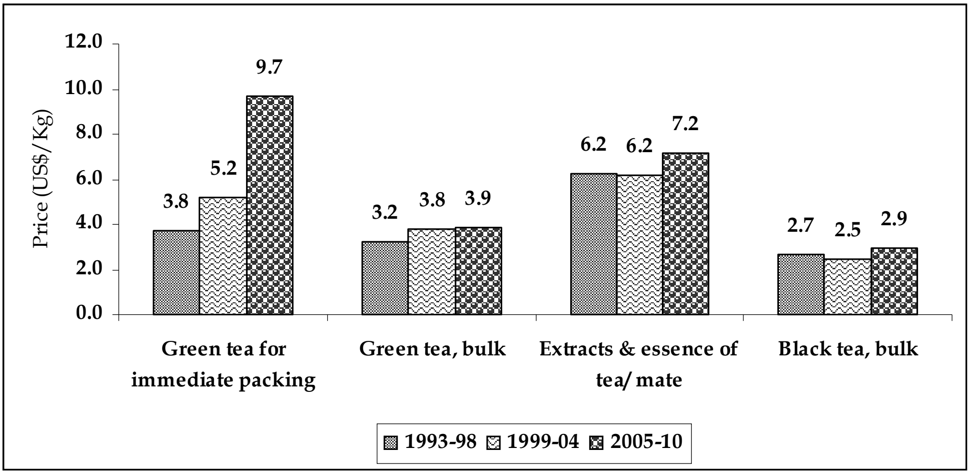
Source: Compiled from Veeramani (2012): 20-21.

Note: HS – Harmonised system as defined under the WTO parlance; nec- not elsewhere classified.

Thus, exploring possibilities of increased value addition in the global export market seems to be a major challenge for India, given the existing status of processing/ manufacturing technologies. Based on the price levels existed during 2010, it may be observed that the average extent of value addition in Indian tea sector has been hovering around 35-40% between the domestic and export markets. This scenario needs to be juxtaposed against the potential of increased value addition that is possible for the Indian tea industry through a reorientation in manufacturing structure with increased processing and export of specialty teas, including green tea. This is further evident from the increased unit value realisation from exports of specialty teas, such as green tea and extracts of essence of tea/ mate as compared to exports of bulk black tea, over the last two decades (Figure 5). It is evident that the exports of specialty teas, such as green tea and extracts of essence of tea/ mate have earned relatively higher prices (average of $9.7/kg in the case of green tea for immediate packing; $7.2/kg in case of extracts and essence of tea/ mate) as compared to black tea in bulk (average of $2.9/ kg) during the period 2005-10.

This suggests that if the export potentials that exist in the specialty tea markets are properly explored, the extent of value addition can be significantly increased from 60 to 160%. This essentially calls for major interventions in terms of increased investments for advanced processing/ manufacturing technologies so as to capitalize on the potential export markets for specialty teas in the emerging scenario.

Figure 5: Trends in Unit Value of Exports of Different Grades of Tea in India, 1993 to 2010



3.3 Uneconomic age profile of tea plantations

A major structural challenge that augured the crisis in Indian tea plantation industry pertains to the age profile of the existing tea plantations. As evident from Table 8, larger chunk of tea plantations (44%) have turned out to be unproductive or non-viable as they fall in the unproductive/ uneconomic class of 40 years and above.

Table 8: Age Structure of Tea Plantations in India, 2004 (% share)

Age (Years)	Area under Tea Plantations (% share)				All India (% share)
	Assam	West Bengal	Tamilnadu	Kerala	
Below 5	6.7	5.4	17.7	9.5	9.0
5-10	14.5	13.8	23.7	3.9	15.0
11-20	14.7	9.6	8.9	2.3	11.4
21-30	13.4	9.2	6.5	1.8	10.2
31-40	12.6	11.1	6.1	2.9	10.2
41-50	8.7	9.3	7.3	9.2	8.7
Above 50	29.4	41.6	29.8	70.4	35.5
Total (Lakh ha)	2.31 (100.0)	0.97 (100.0)	0.63 (100.0)	0.37 (100.0)	4.43 (100.)

Source: Compiled from Tea Statistics, Tea Board.

Among the states, Kerala faces the biggest challenge as almost 70% of its tea plantations are more than 50 years old, followed by West Bengal (42%), Tamilnadu (29.8%) and Assam (29.4%). This certainly reflects on the gross neglect of investments by the planters for plantation regeneration activities, especially, replanting and replacement of older and weaker tea bushes on a systematic basis.

3.4 Labour shortage and feminisation of workforce

Growing labour shortage along with increasing feminisation of workforce are the two critical challenges posing the long-term prospects of the Indian tea plantation industry. As observed, the employment decline had also resulted in increased 'feminisation' of work in tea plantations. Trends reveal that the share of women workers in tea plantations had increased from 49% during 1990-95 to 55% during 2002-07. It may be observed that the employment reduction at the aggregate level and the subsequent increase in the share of women workers in tea plantations has been one of the crisis management strategies adopted by the planters to restructure the plantation operations. The increase in the number of women workers in the plantations has been reported as an attempt by the planters to cut down the wages and other monetary and social security benefits by way of displacing the permanent male workers. In turn, the planters opted for the recruitment of low paid women workers, which had resulted in a rise in the proportion of females in the plantation workforce. Though as per the PL Act 1951, women workers are also entitled for basic welfare amenities, it is reported that there is a huge gap in the provisions of social security and welfare measures in case of majority of tea plantations (Viswanathan and Shah, 2012).

Increasing labour shortage poses a major challenge in majority of tea plantations in India. Since wage rates in tea plantations are significantly lower than the agricultural as well as non-agricultural wages across states, it may be rather difficult to attract labour force to work in tea plantations in the near future. It is also important to note that even fresh labour recruitments are done by offering higher wages, there will be issues as harvesting of tea (plucking of tea leaves) involves certain degree of skill and necessitate training of workers on a priority basis. Addressing labour shortage through fresh recruitments of workers, especially women workers would entail provision of additional wage as well as non-wage benefits as well as improved accommodation facilities in order to ensure better work participation.

3.5 Impact of trade reforms

As evident, India's comparative advantage in tea production is largely constrained by lower productivity and consequential higher cost of production. Since a major chunk of the plantations are old and uneconomic, the viability of the plantations has also been severely affected. The investments for replanting and expansion of tea plantations have not been forthcoming in a proportionate manner. As a result, India's price competitiveness in tea has been badly affected by higher cost of production as compared to its counterparts. The comparable cost of production estimates reveal that India has the highest unit cost of production (US$ 1.62 per kg) compared to Sri Lanka (US$ 1.23/kg), Kenya (US$ 1.16/kg), Vietnam (US$ 0.96/kg) and Indonesia (US$ 0.58/kg). The estimates are an indication although it may appear to be over estimates.

In this regard, it is also important to consider the major challenges emerging from the launching of trade reforms and the subsequent bilateral and multilateral trade agreements involving the tea plantation sector. Given the multifaceted challenges as described, it is quite important that India's plantation sector needs to restructure the domestic production environments in order to enhance the competitiveness on the one hand, and strengthen the stakes of small producers (as against that of the few big players) and women plantation workers in particular, and thereby make a better ground for protecting their livelihoods.

It may be observed that in the emerging context, prospects of India's trade in tea products may depend on various exogenous factors. This is because, some of the effective regional trade agreements (RTAs) are signed between India and the countries within the South and South East Asian region, who are also producers of tea. More importantly, there are serious concerns on the welfare effects of the RTAs in country-specific contexts as countries differ as regards extending MFN status to the neighbouring countries within the same regional/ geographical contexts. Incidentally, India's major competitors in tea are also from within Asian region, *viz.*, Sri Lanka, and China.

One of the critical instruments gaining importance in the context of trade reforms is the tariff reduction commitments to be followed by countries engaged in FTAs/ RTAs, in order to ensure increased access to the global market. An important point emerge here is that even with increased tariff reduction commitments, India's applied MFN tariff rate on tea/ coffee remains to be high (55.6%) compared to its potential competitors, *viz.*, Sri Lanka (27.5%), Kenya (25%), China (14.7%), Indonesia (8.3%), Thailand (28.3%), etc (Table 9). This signifies that India may have to make further reduction in tariffs to remain competitive in the global tea market.

Table 9: Applied MFN Tariffs on Tea and Agriculture Products, India and Others, 2009-10

Country	Simple average (%)	Tea/Coffee (%)	Agri products (%)
1. India	13.0	55.6	31.8
2. China	9.6	14.7	15.6
3. Indonesia	6.8	8.3	8.4
4. Sri Lanka	10.6	27.5	26.3
5. Vietnam	9.8	23.5	17.0
6. Kenya	12.5	25.0	19.7
7. EU	5.1	6.5	12.8
8. Thailand	9.9	28.3	22.8
9. Malaysia	8.0	5.7	10.9
10. US	3.5	3.2	4.9

Source: Compiled from WTO (www.wto.org).

In this regard, the full scale implementation of any trade agreement between India and rest of the countries would put India under severe pressure to further liberalise the tariff regime to 0-5% on par with its counterparts as being proposed under the South Asia Free Trade Agreement (SAFTA), which may turn out to be detrimental to the tea plantation sector and the dependent producer and worker populations (Viswanathan and Shah, 2012).

3.6 Challenges of setting environmental and labour standards

The emergence of various forms of non-tariff barriers (NTBs) may be seen as the most significant development in the international trade front especially in the post-Doha scenario. Empirical evidences though limited, suggest that by and large developing countries stand to experience losses in exports because of the difficulties in complying with the environmental and labour standards mostly in the form of sanitary and phyto-sanitary measures. It may be noted that the issues related to setting up of environmental standards in the form of SPS and labour standards imposed by the plantation products importing EU countries in particular are likely to affect India's tea production sector. Already there are evidences of increasing import restrictions imposed by tea importing countries, such as the EU in particular through imposition of various voluntary certification standards, including the Fair Trade (FT) and Rain Forest Alliance (RFA) systems (Lalitha and Viswanathan, 2012). In this context, the tea plantation sector may have to undertake various plantation production restructuring and disciplining activities in order to enhance their competitiveness and thereby improve market access. Compliance to SPS measures in the case of tea requires keeping very low levels of pesticide residues (MRLs) in made tea. Even otherwise the tea sector faces greater challenge of restructuring the production sector to retain its competitive edge in the international markets. As implementation of the SPS measures entails huge costs without compensating effects on profit or market shares, majority of the tea producers (medium and small) may not be able to incur such costs. SPS issues in the tea sector also relate *inter-alia* to certification and packaging, labour standards, etc (Viswanathan and Shah, 2012).

4. Conclusions, Policy and Institutional Imperatives

India's tea plantation sector had experienced an unprecedented crisis following the launching of trade reforms since 1991. The crisis with continued fall in domestic tea prices had persisted for several years adversely affecting the economic viability of tea plantations in the dominant tea growing regions of North and South Indian states. However, there was an increase in domestic tea prices in recent years, which came as a respite to a vast majority of tea planters. In this backdrop, this paper examines whether the Indian tea plantation sector has overcome the crisis with the improvement in tea prices in recent years.

The analysis brings out that though the domestic tea prices have improved and thus helped majority of the tea planters to resume tea production activities in recent years, the crisis continue to persist in terms of destabilization of livelihoods of small tea producers and plantation workers, especially, women workers. The ramifications of the crisis have turned phenomenal as the planters' community vehemently adopted various crisis management strategies, one of which was targeted towards displacement of the workforce in tea plantations. In the process, most of the structural issues and internal contradictions have been largely ignored by the plantations. By and large, the neglect of the structural impediments may have serious implications in so far as the sustainable development and growth of India's plantation sector is concerned.

This makes it imperative to think in terms of the policy and institutional imperatives and the long-term solutions for sustaining the growth dynamism of the tea plantation sector. In the context of the structural imperfections and market uncertainties affecting the tea production sector in particular, an important policy perspective is to promote value added processing of tea so that the stake of the small tea producers is strengthened. This also necessitates strengthening the capabilities of small tea producers through provision of state of the art tea processing technology. Even though the country has a checkered history of more than a century of tea planting with significant growth in smallholder adoption, there has not been any remarkable impact on the livelihoods of the small tea producers as well as the tea plantation workers, especially, women. This is in sharp contrast to the rubber sector in the country, wherein the smallholder sector had transformed as a dynamic source of growth for the rubber industry along with greater linkages and welfare outcomes.

As a matter of fact, though development of tea plantations in India has been ably assisted by the institutional support mechanisms provided by the Tea Board, the entire development process has ignored the largest segment of small tea producers as well as plantation workers, especially, women. A major segment of small tea producers do not even have registrations with the Tea Board, which is mandatory for receiving the institutional support for plantation development. This has been due mainly to the lack of title deeds for cultivable land operated by the small tea producers. Thus, the absence of title deeds prevents them from getting registered with the Tea Board thereby hindering their access to the subsidies and financial assistance under various schemes of the Tea Board and other financial institutions.

Further, India's tea plantation development programmes grossly suffer from long-term perspective plans and development strategies especially in matters related to sustainable management of plantations in the face of trade reforms on the one side and the emerging labour market crisis confounded by severe labour shortage. These issues become more prominent and need suitable policies, institutional strategies and incentive mechanisms especially to retain and strengthen the existing workforce in the plantations. It is a fact that acute labour shortage, mounting social costs and dwindling social security provisions as observed are going to affect the sustainable performance of tea plantation sector in India in the wake of the trade reform and global market integration policies. The anti-labour policies and labour retrenchment measures as adopted by the plantations in the context of the crisis have resulted in serious implications for the sustainable future of plantations. This has become more evident from the acute labour shortage experienced by tea plantations despite a reasonable improvement in prices and wages in recent years. The labour shortage scenario has worsened as a significant proportion of the workers have already migrated to other industries following the retrenchment policies adopted by the tea planters.

Finally, it may be observed that the FTAs that India already signed with the ASEAN and the proposed India- EU FTA may have significant implications for the tea plantation industry. The Indian tea sector might face stiff competition from its counterparts, viz., Kenya, China and Sri Lanka. The changing times and trade environments in the global market essentially calls for the tea plantation sector to be highly sensitive to resolve labour market dilemmas, especially the concerns on gender equality in wages, social security provisions and access to resources that strengthens their livelihoods. India's increased engagements in trade in tea with the EU in particular, would necessitate stricter compliance to labour and environmental standards. Launching of such environmental and labour standards would require greater investments for HRD of plantation workers, especially, women. India's tea sector also needs a thorough revamping of its production and marketing structures so as to enhance value addition through product diversification and thereby strengthening the competitiveness in the global market.

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The Gujarat Institute of Development Research (GIDR), established in 1970, is a premier social science research institute recognised and supported by the Indian Council of Social Science Research (ICSSR) of the Government of India, and the Government of Gujarat.

The major areas of research at the Institute are the following:

1. **Natural Resources Management, Agriculture and Climate Change**

   Research under this area concerns the broad realm of environment and development. Studies have focused on economic viability, equity, environmental impact assessment and institutional mechanisms. Issues in common property land resources, land use and water harvesting have been researched extensively. Implications of climate change risks for Asia and the adaptation and mitigation strategies at the local levels have begun to be studied.

2. **Industry, Infrastructure and Trade**

   The main themes include policy dimensions concerning the micro, small and medium enterprises, industrial clusters and intellectual property rights. Studies on basic infrastructure and linkages between infrastructure and regional growth have also been carried out. Trade and development and finance are new areas of interest.

3. **Employment, Migration and Urbanisation**

   Studies under this theme relate to employment, labour, diversification of economic activities and migration. International migration has emerged as an additional theme along with urban services and aspects of urban economy and governance.

4. **Poverty and Human Development**

   Issues examined include access, achievement and financing of education and health sectors. Studies on poverty relate to conceptual and measurement aspects, quality of life, livelihood options and social infrastructure. There is an increasing interest in understanding urban poverty, rural-urban linkages and issues in microfinance.

5. **Regional Development, Institutions and Governance**

   Recent studies enquire into regional underdevelopment and the dynamics of local level institutions. Tribal area development mainly relating to livelihood promotion and human resource development has been a focus area. Recent analyses have also looked into Panchayati Raj Institutions, Forest Rights Act, MGNREGA and Right to Education Act.

Much of the research informs national and regional policies. The Institute also undertakes collaborative research and has a network with governments, academic institutions, international organisations and NGOs. A foray into specialized training and doctoral programme has just been made.

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