Chapter - 14

COMMODITY CASE STUDY - TEA

Y.B. Thapa

All government plans and policies recognize that tea is an important export commodity of Nepal and that it has high potentials to contribute to national income, employment and environment protection. Nepalese teas, from the camellia genus, come in two main categories: orthodox/green (leaf) tea and black tea/CTC tea. The former is produced in the hills for export and is available only in limited quantities, while the CTC tea produced in the Tarai is mostly for domestic consumption. Overall, Nepal is a net importer of tea.

The purpose of this chapter is to discuss major issues facing the tea sector, both in terms of export and import competitiveness. The analyses show that tea farming and manufacturing is competitive and there are important direct and indirect benefits from tea growing. Yet, the area devoted to tea production is still very small due to some structural constraints and policy anomalies that need to be addressed for the growth of the sector. In particular, the chapter tries to specify where the key constraints are and how they relate to each other. They include supply-side constraints (not having enough surpluses or inability to expand production) for various reasons, lack of competitiveness in the international market (cost and quality) due to structural and policy reasons and barriers to trade. In addition, the paper also covers some issues related to various WTO Agreements as these relate to tea, notably the AoA, TRIPS (including geographical indications), TRIMS and SPS/TBT Agreements.

The chapter is organised in three sections that cover: an overview of the tea economy including the international context, demand and supply aspects, and trade and government policies; identification of issues related to market potentials, constraints to expand area and production (e.g. research and extension, credit), indicators of competitiveness, effects of close and porous border with India, auction, and various WTO Agreements; and some conclusions.

The study is based on a number of sources: primary data collected through rapid market appraisals; interviews and snapshot surveys; and review of past studies. The author visited several major production and market centres in Nepal as well as Siliguri in India. The survey covered tea growers (eight groups), processors (six firms) and traders (seven firms), as well as relevant government line agencies.

OVERVIEW OF THE TEA ECONOMY OF NEPAL

Production trends

The growth of tea production in Nepal has been impressive, increasing at the rate of 13% per annum during 1983-2002 (Table 1). The growth rate for the six recent years is even more so at 22%. It is also clear that almost all of the growth has come from expansions in area since the trend growth rate of yield is only 1.4% per year. The DoI database for 2003 shows that the total number of large tea firms is

82, with authorized capital Rs 5.1 billion, fixed capital Rs 4.9 billion, working capital Rs 1.6 billion, employment of 21 200 people, and capacity utilization rate of nearly 70%. The Tenth Plan (2003-07) target for tea output is 10 000 tonnes, but this falls short by about 50% of the milestone set by the 2000 Tea Policy. The Tea Policy has targeted to: i) expand tea area to 41 000 hectares by 2005; (ii) increase tea output to 46 000 tonnes (65% orthodox tea) by 2010; and (iii) create employment opportunities for additional 79 000 people in the first five years. It implies a target yield of 1,156 kg/ha. This target, although almost twice the actual level for recent years, is itself quite low relative to those achieved in major tea producing countries (FAO 2002). Also notable is the aim to substantially raise the production of the orthodox tea for exports.

Table 1: **Tea area, yield and production – trends and targets**

	1996/97	1997/98	1998/99	1999/00	2000/01	2001/02	Trend and targets (%/Year)	
							Trend; 1982-02	Target: 2000-10
Area (Ha.)	3502	4515	11675	10252	12004	12365	11.1	15.2
Production (Ton)	2906	3021	4493	5085	6638	7518	12.7	24.6
Yield (Ton/Ha.)	0.830	0.669	0.438	0.496	0.553	0.608	1.4	8.8

Sources: National Tea and Coffee Development Board, MoAC and Tea Policy 2001-2010

Consumption and demand growth

According to the Nepal living standards survey data, per capita consumption of tea in Nepal is nearly 0.5 kg per annum in the mid 1990s. With a population of 23 million, this results into total household consumption of about 12 000 tonnes per year. With the following assumptions about some parameters, the total demand for tea is estimated to grow at a rate of 4.9% per year: population growth rate of 3% per year (including the effect of increasing number of tea users); income growth rate of 2.5 to 4.0%; fairly high expenditure elasticity of demand for tea (0.51); and constant real price of tea (Thapa 2003). This amounts to some 27 000 to 32 000 tonnes by 2020, plus an additional 4 000 tonnes estimated to be consumed outside the household, e.g. in restaurants and teashops.

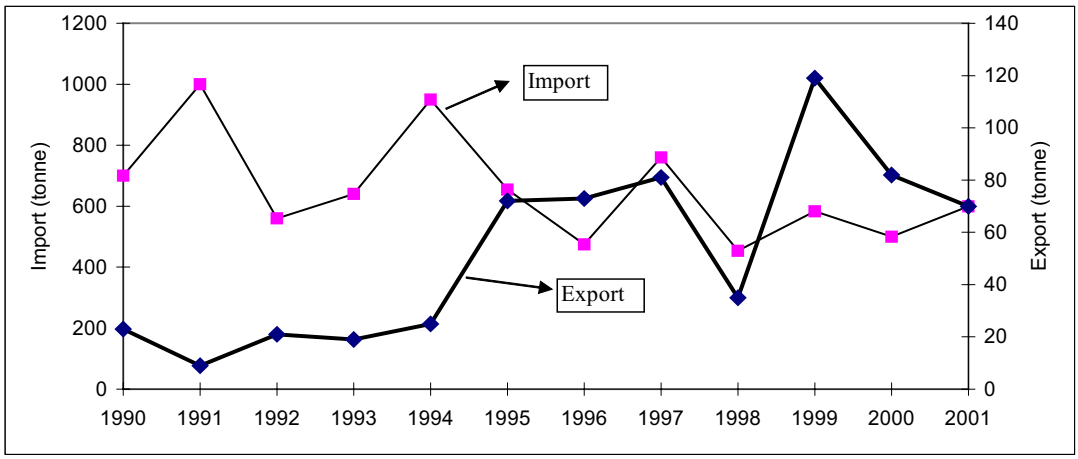
In other words, total demand is projected to outstrip total production by several folds. The demand is expected to exceed even the production targets set in Tenth Plan and Nepal Tea Policy. This means imports are expected to be both substantial and growing fast. While this is the case under a constant price scenario, the demand growth will be moderated somewhat if relative price of tea rises, since the price elasticity of demand for tea is estimated to be high (about -0.92). These estimates underscore the need to consider rapid expansion of tea area and production as a matter of strategy.

Import and export trends

Figure 1 shows import and export trends of tea in volume terms for the period 1990-2001, based on the FAOSTAT data. These data show the following. First, despite marked year-to-year fluctuations, the overall trend is positive for export and negative for import. For example, tea exports increased from 18 tonnes

during 1990-92 to 90 tonnes during 1999-01, averaging 7.4 tonnes per year.[103] During the same periods imports fell from 753 tonnes to 561 tonnes, equivalent to a linear decline of 25 tonnes per year. Interestingly, the barter terms of trade improved considerably during the 1990s as Nepal increasingly exported higher quality tea and imported lower quality produces. Thus, while unit import value (price) fell at the rate of $11 per tonne, unit export price increased at the rate of $136 per tonne (see footnote 103). Due to improvements in both trade volumes and terms of trade the trade deficit in tea improved markedly.

Figure 1: **Trends in the volume of tea exports and imports**
(In tonnes)



Source: FAOSTAT statistics.

Export destinations

The principal export destination of Nepalese orthodox tea is Germany, which accounts for 80% of the total volume (Table 2). Hong Kong was the next important destination during 1996-98 (10%), but Japan has taken that position in the second period. The second last row of the table also shows that export destinations have been markedly diverse in most recent years. The table also shows unit export prices, which vary somewhat by destination. In this connection, it is also interesting to note that the Nepalese tea does not seem to compete with tea from other South Asian countries, major destinations being different. For example, major markets for Indian tea are former Soviet Union countries, UAE, Poland. Similarly, former Soviet Union countries, UAE and Syria are main markets of Ceylon tea while Bangladesh exports mainly to Afghanistan, Iran I.R. and Pakistan. Nepal also exports black/CTC tea to India and Pakistan where under SAPTA provisions import tariffs are very low to nothing. Import tariffs on tea are very low even in most developed countries, while Nepal's current market share is very small. It means that the Nepalese tea essentially faces infinite import demand from overseas countries provided there are no problems in other areas, notably technical standards and other qualities (e.g. taste, flavour etc.).

[103] This comes as the coefficient of the term associated with the "trend (time)" variable of a linear trend regression equation. The fitted equations for exports and other variables are as follows (t indicates time or years): Tea export = 4.5 + 7.4 t; Tea import = 818 – 25 t; Unit export price = 1287 + 136 t; and Unit import price = 2161 – 11t.

Table 2: **Export of Nepalese orthodox tea by export destination**

Country	1996/97-1998/99 average			Country	1999/00 – 2001/02 average		
	Volume (Kg.)	Value (Rs. 000)	Price[1/] (US$/Kg.)		Volume (Kg.)	Value (Rs. 000)	Price[1/] (US$/Kg.)
Germany	51,034	16,172	4.1	Germany	61,998	19,7345	4.1
Hong Kong	5,595	1,495	3.4	Japan	8,377	3,733	5.7
United Kingdom	2,192	931	5.4	United States	1,357	505	4.8
Japan	1,942	979	6.5	France	1,012	395	5.0
France	955	330	4.4	Sweden	898	283	4.0
United States	318	119	4.8	Czech Republic	785	244	4.0
Australia	272	83	3.9	Belgium	586	187	4.1
Norway	227	99	5.6	Norway	477	155	4.2
Austria	157	40	3.2	Switzerland	332	61	2.4
Others[2/]	126	42	4.2	Others[3/]	400	147	4.7
Total	62,818	20,290	4.1	Total	76,222	25,444	4.3

Notes: 1/ Assumed 1 US$ = 78 Rs for both periods; 2/ Total for 12 countries; 3/ Total for 27 countries.

Source: Trade Promotion Centre statistics (various issues).

Policy framework and policies

The government grants a number of incentives and assistance to the tea industry. The list is long and includes: exemption of land ceiling; exemption of 75% of land registration fee and land revenue; leasing of public land for tea cultivation; low interest rates for land consolidation; no capitalization of interest cost during grace period; grants to small farmers to transport tea cuttings; free technical service to small and cooperative tea farming; capital grants for irrigation; lower customs duty on agro-inputs; priority to develop infrastructure and services in commercial tea areas; access to fuel wood for tea industry from forest committees and tea garden's own-plantations.

In addition, trade policies encourage packing industry to establish domestic tea brand and to value-addition by tea packets, help small and co-operative tea entrepreneurs to participate in trade promotion and to develop auction system with private participation, and removes the requirement for letter of credit to export tea up to one container. Further more, customs duty on import of packaging materials and machinery (for export-processing) are to be levied at the same rate as for agricultural instruments. Also granted are duty drawback facilities for packaging materials for export use, and income tax holiday for five years.

The National Tea and Coffee Development Board Act 2049 empowers the Board (NTCDB) to operate Tea Development Fund (TDF). The Fund includes: i) 50% of the amount received through the lease of land; ii) 100% of the cess (Rs 0. 50 per kg from tea producers, Rs 0.10 per kg from tea importers and Rs 0.50 per kg from tea exporters) and (iii) lease of property. The Board is to mobilize stakeholders to establish tea research and training centre, develop human resources, recommend the government on tea-related policy, fix national logo and prevent business malpractices.

Nepalese and Indian tea industries

Table 3 gives a comparative account of the tea sectors in Nepal and India. The differences are clear. The nearest competitor for Nepalese tea is North East India, where tea yield is three times higher than in Nepal while the size of the tea sector is 25 times larger. The estimated labour productivities show that pooled productivity in North East India is 1,652 kg per hectare and 698 kg per labourer. On the whole competing with India is a major challenge and the gaps are immense, although some experts in Nepal feel that Nepal has comparative advantage in one area, which is labour productivity over Darjeeling tea.

Table 3: **Tea production and productivity in Nepal and North East India**

Indicator	Unit	Nepal		India		
		Hills	Tarai	Darjeeling	Tarai	Deoars
Production	Tonnes	1200	6300	10100	138800	35400
Yield	Kg./Ha.	287	851	566	1943	1864
Labour Productivity	Kg./labour	232	319	202	877	814

Source: Tea Board of India (1997) for India in 1997/98; MOAC for tea yield (year 2001/02) and Bhandari (1997) for labour productivity in Nepal

Given the open porous border, formal and informal trade takes place with North East Indian markets when differences in prices and margins are marked. During field survey for this study it was reported that farmers and traders export substantial amounts of leaf tea to Darjeeling through formal and informal channels. Factors such as the proximity of the growing areas, peoples movements and trading practices corroborate, an informal reporting by the tea factories in Darjeeling that about 1 000 tonnes of leaf tea was exported annually during 1997-99 (DEVA 2001 and Sharma 2002). The export of green leaf tea to Darjeeling takes place primarily because of 50 % higher price there (Table 4).

Table 4: **Price of green leaf tea in Ilam and Darjeeling,** (N. Rs/kg)

Location	1997	1998	1999	2000	2003[1/]	Average
Ilam	15.5	18.0	27.4	20.0	20.0	17.0
Darjeeling	27.2	30.4	32.0	35.2	27.0	25.4

Source: NTCDB (2002) for 1997-2000. *Gorkhapatra* daily, 8 August 2003.

The outlook for global tea markets

At the global level, total tea production in the year 2000 is estimated to be 2.8 million tonnes, 76% of which is black tea and the rest green tea. This translates into an average production of 0.47 kg per capita. FAO's recent projections show that world production of tea would be 3.3 million tones by 2010 - black tea growing at the annual rate of 1.2% and green tea by 2.6% (FAO 2003). The production growth would result largely from improvements in yields. The projections also show that the growth of world trade of black tea would slow down considerably in the next ten years, compared with the trend in the past ten years, suggesting increased consumption at the source. By contrast, trade of green tea is projected to grow by a robust 2.8% per annum.

Asia dominates in global tea production and export. In 2000, India alone accounted for 38% of world production, followed by Sri Lanka (14%) and Kenya (11%). By 2010, India's share is projected to rise to 44%. Most major tea exporting countries in Asia are expected to experience slight declines in exports in line with their own expected growth in income and population that would foster domestic consumption. For example, exports from India and Indonesia would decrease by 2.4% to 150 890 tonnes and by 1.1% to 87 000 tonnes, respectively. Conversely, exports from Sri Lanka would increase from 281 000 tonnes to 293 400 tonnes, an annual average growth rate of only 0.4%.

The study also shows where markets are emerging. Bulk of the increased consumption and so net imports between 2000 and 2010 will be accounted by a few countries and areas. These include countries of the former Soviet Union (import growth rate of 3% per annum), Pakistan (2.9%), the United States (1.4%) and Japan (1.8%). Commenting on the overall market outlook, the FAO study concludes that over the next decade the world market of black tea is expected to remain broadly in balance. As a result, price levels should be maintained. By contrast, with consumption outstripping the production of green tea, an upward trend would persist in the medium-term.

ANALYSIS OF POLICY AND WTO-RELATED ISSUES

Potentials for expansion of area under tea and land use policies

Despite high potentials for its production and exports the area under tea in Nepal (12 000 ha) is insignificant relative to total cultivated area (3.1 million ha) or green cover (8.9 million ha). In the Eastern region, tea area is just 0.44 % of the arable land whereas the target has been to cover 1.5 % of the total area. To produce 100 000 tonnes of tea plantation should cover 100 000 hectares that is about 1.8% of total area in the eastern and central regions. In 2001/02, 68% of the tea area was under tea estates and 32% owned by small holders.

Tea, compared to other crops, seems to give competitive return (Table 5). Farmers prefer tea to other land uses for reasons such as higher return, lower risk, use of barren/sloppy lands, land-ceiling exemption, long-term returns, etc. It seems that they are willing to forego production of cereals in favour of tea.

None of the Acts and Regulations related to the use of land, forestry, watersheds or NTCDB restrict expanding tea farming in private, community or government land.[104] However, conversion of public land to tea estates has not worked, as it should have been for various other reasons. One option would be to consider mobilizing such local users' groups as forests, leasehold forest, water supply, cooperatives, or guthi to develop community-owned tea gardens to provide community base for the tea industry, rather than privatizing public forest/pastures for tea estates. Moreover, there are several advantages with encouraging small holder tea expansion: i) lower cost of tea growing; ii) the adaptability of their farming system to

[104] These regulations include Land Act 2021, Land Regulations 2023, Forest Act 2049 and Forest Regulations 2051, and Land and Watershed Protection Act 2039.

organic tea plantation (in conjunction with animal husbandry like dairy); and iii) lower capital cost for area expansion compared to big estates.

Table 5: **Gross value per hectare from competing land uses in the hills**

Crop	Yield Tonne/Ha.	Price Rs./Kg	Gross value: Rs.'000/Ha
Maize (a)	2.4	13	31.2
Ginger (b)	11	16	176.0
Cardamom (c)	0.23	322	74.1
Firewood (d)	1.75	0.25	5.2
Broom grass (e)	1.5	15	22.5
Tea: Orthodox (c)	3.24	36	116.6[1/]
Tea: Organic (c)	2.73	22	60.1
Tea: Hills general (c)	4.22	28.2	119.0[2/]
Cabbage (f)	7.0	3.5	245.0

Notes and sources: (a) DOA (1999a), (b) DOA (1999b), (c) DEVA (2001), (d) Observations in Fikkal, (e) Based on produce of Kucho from broom grass; (f) Views of PARC official and ADO/Illam. 1/ Add Rupees 1,200 from twigs 2/ Add Rupees 4,100 from twigs

Expanding tea area and yield and improving tea quality – growers' responses

In the course of this study, eight group discussions were held with farmers where farmers were asked to identify key factors/constraints to expand tea area and yield and improve tea quality. Table 6 shows the responses. As regards area, farmers said that current farmed tea area is much below the area suitable for tea growing, and that plantations can be expanded by about 25% if conditions are favourable.[105] Better prices for green tea leaves was identified as the most important factor in the decision to expand area. Credit availability was next in importance, which is not surprising given that farm credit from institutional sources has been markedly tight in Nepal in recent years.

Table 6: **Response of tea growers on measures required to increase area and yield and to improve quality**

Area expansion measures	% Yes	Yield enhancement measures	% Yes	Quality Improvement measures	% Yes
Price of leaf tea	63	Fertilizer use	75	Timely plucking	38
Credit availability	50	Cultivation practices	63	Use organic manures	38
Labour supply	38	Use of chemicals	50	Grow TRI hybrid variety	25
Fertilizer availability	25	Irrigation	50		
Land price	25	Labour skills	50	Reduce poisons	25
Training/Tech. support	25	Frame tables	40	Keep insect/pest free	17
Policy uniformity	17	Farm yard manures	25		
Soil testing	17			Demand for quality	17

Source: Field Survey, February 2003. Note: response indicates % of "yes" answers

On the issue of raising yields, higher application of fertilizers was singled out as the main factor. Indeed, agronomists say that the huge gap between potential and actual yields of tea is explained considerably by low levels of fertilizer use, e.g. virtually no use versus 460 kg/ha recommended during transplanting, and 211

[105] Likewise for tea estates, current planted area is considered to be only 58% of the planned/registered area (NTCDB 2002).

kg/hectare recommended during bush formation versus barely 124 kg/hectare actual use (NTCDB, no date). Farmers said that the revenue-cost squeeze was the main reason for the low applications. Indeed, back of the envelope calculations for recent years show that fertilizer use is fairly responsive to the farm price of tea. Better cultivation practices were also ranked high, next to fertilizers, indicating scope for targeted extension programmes. For example, farmers use soil-bed methods although the recommended method for nursery is plastic sleeves. Farmers also reported that mineral fertilizers could be substituted to some extent by farmyard manures, labour and irrigation. Irrigation could shift up the tea yield by about 25%. Farmers also identified several factors for improving tea quality. These included plucking methods, use of farm manures, regulation of pesticides, and supply of good varieties and consumers' awareness.

The WTO Agreement on Agriculture and tea sector

Nepal does not have any price support programme for tea. Hence the WTO discipline in this area (the AMS) is irrelevant. Nor is there any non-exempt direct payment to tea growers. The tea sector, like other crops in Nepal, benefits from the same support system. The subsidy for seeds, fertilizers, pesticides and machinery has been phased-out during 1996-99 as per the agreement with the donors. The agri-inputs are often of sub-standard quality and are sold at unduly higher prices. Non-traded inputs like credit, water and electricity are more costly or unavailable. Government intervention for provision of marketing services/facilities has ceased following privatization of the Nepal Tea Development Corporation. The government support for research, extension, roads, irrigations and marketing facilities fall under 'green box' policies. Such facilities barely exist.

Government budget for tea is about 0.3 % of the tea output during 1997-2002 (Table 7). Most of this budget goes for administrative purpose followed by some for research works. Nepal Agriculture Research Council (NARC) is yet to develop in-house expertise on tea. NARC has designated its Pakhribas Agricultural Research Centre (PARC) for research on tea whose total budget and expenditure for the year 2000/01 was Rs 47 million and 37 million, respectively. The share of tea is Rs 1.13 million (about 2.4 %) of the PARC's total budget. Most of it came from a Hill Agricultural Research Project supported by the Government of the United Kingdom (Rs. 0.83 Million/ year for 2002-04) and NARC's Tea Project (Rs 0.30 million). Thus, tea-growing activity is under-supported.

There are no export subsidies on tea. So this aspect of the AoA is also not applicable.

Table 7: **Government budget for tea development**

	Unit	1996/97	1997/98	1998/99	1999/00	2000/01	2001/02
Value of tea output	Rs. Million	320	354	568	646	683	859
Government outlay on tea	Rs. Million	1.2[1/]	0.7[1/]	0.5[1/]	2.0[2/]	2.0[3/]	5.7[3/]
Outlay as % of output	%						

[1/] Actual expenditure [2/] Revised estimate of expenditure [3/] Budget estimate

Source: Ministry of Finance for Budgets; NTCDB (2058) for tea output

The WTO TRIMS Agreement and the tea sector

Tea industry benefits in several ways from Several Acts and Regulations e.g. the NTCDB Act, Industrial Enterprises Act 1992, Industrial Enterprises Regulations and Industrial Policy 1992 and Foreign Investment and Technology Transfer Act 1992, that have provisions to benefit the industry. They include for example: i) seven years tax holiday to national priority industries; ii) five-year tax holidays to manufacturing industries; iii) additional two-year tax holiday to industries using 90% or more domestic raw materials; iv) additional two-year tax holiday to industry providing direct employment to 600 or more people; v) provision to deduct 40% of new additional fixed investment from taxable income if a industry diversifies itself through re-investment or expansion of installed capacity; and vi) concessions on customs duties and excise and sales taxes on the procurement or import of all materials required for producing exportable commodities.

There is some apprehension that these provisions may be inconsistent with the WTO TRIMS, which requires the same treatment to domestic and foreign industries A reading of the above provisions shows that no where is it said that these concessions would be limited to domestic tea industries only. The only provision that seems to be inconsistent is number (iii) in the list, local sourcing of raw materials. This may need a revision. In fact, Nepal's industrial policy is quite liberal, and allows foreign investment up to 100 % ownership in large and medium size industry, and guarantees non-nationalization. Subsequently, the Income Tax Act 2002 has removed some of the incentives to the tea industry, and so the chances of the provisions being inconsistent with TRIMS are very slim.

Technical standards and the SPS Agreement

All stakeholders interviewed in the course of this study underlined the need for quality tea and acceptable standards in export market, which is obvious. The SPS Agreement requires exporters to meet acceptable international standards as a minimum. Improving quality and standards is a long-term process that should begin with good practices at all stages, e.g. Good Agricultural Practice and Good Manufacturing Practice. As noted in Chapter 5 above, there are no Codex standards for some of the important products of this region, including tea. In case of India, it has two standards for different regions. However, Nepal standard varies in some components such as crude fiber content not more than 15%, whereas Indian teas have this component more than 17%-18.5% for both types of teas. While Indian standard contains pectinase enzyme as one parameter, Nepalese standard includes caffeine content. On the whole, Nepal standard is stricter in terms of extract by boiling tea, and crude fiber. Table 8 shows quality standards for tea, coffee, cocoa and their products, comparing Nepal standards with the ISO standards and actual situation based on laboratory test. Chapter discusses several measures essential for upgrading food standards in Nepal. Upadhyaya (2000) and Chapagain and Phunyal (2002) also recommend various improvement measures. Some improvement measures are simple – Chapter 5 shows that filth, of all things, accounted for the largest proportion of rejections of exports from Asia in the United States. The same chapter also discusses various measures needed for improving food quality.

Table 8: **Quality standards for tea, coffee, cocoa and their products**

Particulars	Limitations (in %) defined by:		Actual result[3/]
	Nepal Law[1/] (HMG)	ISO[2/]	
Total ash (boiled in 100^0 C, constant weight of dry tea)	5.5-8.0	4-8	6.3
Water soluble ash compared to total ash	40 or more	32	43.6
Ash insoluble in dilute hydrochloric acid (dry weight basis)	1.0 or less	1	0.1
Extract obtained by boiling tea (100^0 C, constant dry weight)	35.0 or more	45	34.7
Alkalinity of soluble ash (on K_2O basis)	1.0-2.0	1.3	1.9
Crude fiber (boiled in 100^0 C, constant weight)	15.0 or less	16.5	10.8
Caffine (dry weight basis)	2.0 or more	--	2.9
Moisture[3/]	--	--	9.0

Sources: 1/ NTDC (2003); 2/ M. B. Shrestha (2001) and 3/ Melican (1997)

One other problem facing Nepalese exports is pesticide residue. It could apply to tea also. Regarding technical standards, it was found that most tea-processors/traders do not use the "NS" mark on their brands[106]. In case of organic tea, Melican (1997) has noted that there is a lack of clear understanding of the procedures for certification. On this and other issues, technical advice from the NTCDB to the private sector is thin and lacks support in input analysis, factory design and processes. For example, products packed specifically for export fall short of necessary standards and there is lack of exposure in target markets.

Another issue facing Nepal in this area is that Nepalese tea has to be sent to Kolkota for food testing standards, which is costly in time, money and management. Progress is required on a proposal that has been on the table for some time – to have a joint quarantine laboratory or a mutual recognition agreement (between Indian and Nepalese food laboratories).

The WTO TRIPS Agreement and the tea sector

The TRIPS concept of geographical indications would apply to tea to protect the public from being misled and to promote fair competition. So other suppliers have to compete with say the Darjeeling Tea or Kenyan coffee with their own identity/brands (Fink and Smarzynska 2002). India recently promulgated the Geographical Indication (GI) Act to protect the Darjeeling Tea and may seek its multilateral registration. As a member of World Intellectual Property Organization (WIPO), Nepal will have to honour the TRIPS. Nepal has a history of tea growing of about 150 years, but it is yet to prepare an inventory of its tea seeds, clones and wild relatives, identify teas or products that can be protected under GI and take legislative action. Otherwise, Nepal Tea may face an identity issue in future.

Out of the 43 varieties of tea grown in Nepal, almost all the cultivars are from India, most of them are garden series clones and only nine are seed stocks (Table 9). Their indices of yield and quality are modest. The country's *Seed Act* is inadequate to protect the plant varieties and farmers rights. Private developers are optimistic about the prospects of Nepal Tea if steps like: (i) advertising the flavour aspect of tea (as with the China variety), (ii) wide adoption of tea technologies using

106 Kanchungha Tea Estate has obtained the organic tea certification "JAS" (Japan) and "NASSA" (Australia). Another company has obtained ISO 9,200 certificate.

latest information from research (e.g., Kenya used about 75% of Indian tea technology to build its tea industry) and (iii) explaining about tea in the proper context are taken. So far, a few firms have used the "Nepal Tea" logo.

Table 9: **Type of tea varieties grown in Nepal**

Lines of plant varieties	Total Number	Yield index (%)	Quality (max. 11) of:	
			CTC tea	Orthodox tea
Tocklai vegetative series clones	13	137	7	3
Tocklai series bi-clone seed stocks	9	106	6	4
Tea Research Association garden series clones	21	133	-	-

Note: Yield and flavor indices are relative to biclonal stock Nandadevi (TS 378 = 100 for 1,000 kg).

Research and extension needs of the sector

Research on tea is at an early, planning stage. Although it could be a long way before some substantive progress is made, those involved are aware of the research needs and activities required. Various documents show a number of planned activities which include: i) identification of tea clones, seeds and wild relatives, their characterization, on-station evaluation, and adaptability tests; ii) survey of tea nursery/sapling production practices by farmers and of production constraints; iii) soil and nutrient analysis; iv) organic tea; vi) biological research for production of aroma/aroma through clone selection, environment and altitude effects, green manures, effect of shading, cultivation practices and use of neems; vi) food research and development of brands; and vi) economic analysis for minimizing costs and increasing profits.

Tea extension programme needs improvements. The Department of Agriculture (DoA) needs to strengthen its capacity to provide extension services to tea cultivation. Not being involved so far, the DoA lacks in-house expertise on tea farming and processing. The NTCDB could also provide some of these services but lacks manpower. The NTCDB also needs greater co-ordination with other agencies, notably with the ADB for finance, the AIC/Agri-input traders for input supply/training, the DoA for technical workshops/extension, the DDC for planning workshop with farmers, the Tea Planters' Association for administrative aspects, Small Producer Association for training, other agencies for the conversion of public land to tea plantation, and the CBS for tea statistics.

Issues on credit and investment finance

Based on the rapid appraisal surveys conducted for this study (Table 6, above), lack of credit was the second most important constraint limiting the growth of industry. Indeed, preliminary calculations show that credit gap is immense. For recent years, the credit delivered to the tea sector is about Rs 80 million per year, equivalent to about 16% of the value of tea output. On the other hand, assuming that Nepal's desirable level of tea is 100 000 tonnes and a capacity of 90 000 tonnes is added to present capacity over a decade, total credit requirements would be roughly Rs 3.2 billion per year, which is several times higher than current disbursement levels. Credit needs will decline somewhat if the tea industry relies on small holders for tea and if public land is converted into tea gardens. Besides the

well known general measures to increase the flow of credit to the agricultural sector, other measures specific to tea are government/NRB refinancing/line of credit facility for the tea sector, and the easing of entry barriers into tea trading.

The tea growers and entrepreneurs seemed to go well with the prevailing interest rate of 11 to 12 %, which is the market rate. The ADB regional Office/ Birtamod provided the interest rate structure for tea sector as follows: (i) tea growing 10.0 %, (ii) tea processing 13.5 %, and (iii) agri-marketing 16%. The demand for credit for marketing is minimal because of monopoly threats on entry. The interest on time deposits ranges from 3.25 to 8.0 % and the bank's lending rates range from 10 to 12 % for the co-ops, and 12 to 14 % for agriculture. So policy to reduce interest margin accruing to the banking sector and on-lend to the tea growers at lower rates would be helpful.

The Government needs to encourage commercial banks to lend to the tea sector. The *Nepal Rastra Bank Act, 2058* has limited provisions of refinance for a period of six months only. This provision may need a revisit to give the commercial bank liquidity to repay the depositors prior to the gestation period if required. Other constraints include: mismatch of funds, term-savings versus long-term investment requirement, lack of line of credit, poor loan recovery and line agencies' low capability to match the credit delivery rates.

The issue of a tea auction market in Nepal

Various stakeholders interviewed in the course of this study stressed on the value of a tea auction facility in Nepal to improve transparency in marketing, quality, costs and prices. One advantage cited is higher share to farmers of the consumer price. At present farmers' share is estimated to be about 45% in the price of manufactured tea and about 29% of the import/export price. Tea growers and some manufacturers stress that they ought to get higher shares of the final prices[107]. A competitive and transparent auction system, and better infrastructure for small holders will help to increase these shares.

The Siliguri Tea Auction Centre is cited as a model. Transactions in this market grew from three to 80 thousand tonnes during 1976-82 and have stabilized around this level, the same volume as Nepal's tea production target of 66 to100 thousand tonnes. If 100 000 tonnes is transacted in a similar action centre in Nepal, the centre could generate revenue of about Rs 150 million, assuming average auction price of Rs 100 per kg and an auction fee of 15 %. This is a substantial amount of resource for Nepal’s tea industry. The NTCDB has drafted a Nepal Tea Auction Committee (NTAC) Directives but implementation is awaited.

Nominal and effective protection to the tea sector

Table 10 shows customs tariffs and other duties applicable to made tea, and to the inputs used in tea production and processing. It shows that made tea enjoys

[107] In Sri Lanka, Kenya and India, farmers’ share range from 50 to 68% of the manufacturing or auction prices (Boriah 2002). In Sri Lanka and Kenya, farmers also get bonus from the auction price of tea made from their produce.

much higher nominal protection, about 25 to 30%, compared with average tariff of about 13% on other agricultural products. The WTO bound rate on black tea is 50% initially and 40% by 2006, indicating a considerable scope for raising tariff on tea for the purpose of protection and safeguard, as and when necessary.

Table 10: **Customs tariffs and other duties on made tea and production inputs**

Tariff on made tea	Rate av. %[1/]	**Tariff on inputs. - Continued**	Rate av.% [1/]
Import/customs duty	25.0	Furnace burner (84.16)	5
Security tax (SPF)	3.0	Heat pump (84.18)	15
Local development tax	1.5	Tea sorting machine (83.84)	1
Tea Development Fund	0.1[2/]	Electric generator set (85.01	15
Quarantine fee	2.0[3/]	*Average for processing*	8.1
		Weighted average of agriculture.	
Tariff on inputs *(HS Code)*		and manufactured	15.2
Fertilizers *(31.05)*	25	Plastic (39.16)	25
Coal (27.01)	5	Paper packing (48.19)	15
HS Diesel (27.10.11.17)	15[4/]	Tin (80.05)	10
Other Diesel (27.1.11.18)	5[4/]	Average for packaging	16.7
Furnace Oil (27.1.11.18)	3[4/]	Average for tea industry	15.4[5/]

Notes: 1/ av.= *Ad valorem* (%) 2/ Rs./Kg. 3/ Rs./CFt 4/ Approximate value 5/ Weighted average with weights of 32% for tea growing, 45% for tea processing and 23% for packaging

Sources: Tariff rates from Department of Customs (2058 BS) and interviews

While nominal tariff protection is important, it is the effective protection rate (ERP) that provides a better indication of the effective protection for the tea industry as a whole, as the ERP also takes into account tariffs on imported inputs. Based on the individual tariffs shown in the table, the weighted-average tariff on imported inputs used by the tea sector comes at about 15.4%. The data further show that the share of imported-inputs is about 25% of the market value of made teas. With these parameters, the EPR for the tea sector is estimated to be 28% (Table 11). The differences in the ERPs for various tea production activities and the two tea varieties are very small.

Table 11: **Effective rates of protection to Nepal tea by stages of production**

Activity	Effective protection rate (%) by types of tea:		
	CTC	Orthodox	Weighted average
Tea growing	25.0	25.0	25.0
Tea processing	28.6	27.6	28.5
Tea packaging	27.9	28.5	28.0

Source: Author's estimates.

Although no ERP estimates are available for other agro-industrial products so that a meaningful comparison could be done, an ERP of 28% should be considered to be fairly high because while applied tariffs on most agricultural products in Nepal are in the range of 10-15%, those on imported intermediate inputs should be comparable to those for tea. The longer background paper (Thapa 2003) presents tea ERPs under a variety of assumptions. Thus, for example, the same 28% EPR could be provided with lower tariff on tea if duties on inputs are reduced to 5-10%,

for example. The ERPs are also sensitive to changes in the share of imported inputs used in tea production. Finally, nominal exchange rate is an important determinant of an ERP. Thus, the ERP of 28% can be attained even with lower tariff on tea if the Nepalese rupee is depreciated. The economics profession generally prefers currency depreciation (i.e. correcting for overvaluation) to higher tariff for the sake of protecting producers for a number of reasons that include economy-wide distortions and negative export incentives (see Virmani 2003).

Competitiveness issues

Table 12 shows estimated Revealed Comparative Advantage (RCA) index for Nepalese tea. Although the RCA values fluctuate somewhat, the average for the period is 3.5, significantly higher than unity, indicating that the Nepalese tea has been competitive in export markets.

Table 12: **Nepal's Revealed Comparative Advantage (RCA) in tea export**

	Unit	1995	1996	1997	1998	1999	2000	2001	Average
Nepal's exports of:									
Tea exports	Rs. million	18	26	33	27	35	89	26	51
Total merchandise	Rs. million	17600	19900	22600	27500	37700	49800	55700	32971
World export of:									
Tea	$ Billion	2.28	1.83	2.62	2.90	2.54	2.88	2.46	2.50
Total merchandise	$ Billion	5078	5299	5523	5400	5668	6379	6143	5641
Revealed comp.adv.1/	Ratio	2.33	3.71	3.04	1.79	2.08	3.96	5.67	3.46

1/ Revealed comparative advantage = (Nepal tea exports/ Nepal total merchandise exports)/(World tea exports/World total merchandise exports)

Source: Author

Table 13 shows statistics on costs and margins for various production activities. Although subject to some margin of error due to poor statistics, the results show very low profit margins for tea growing, about Rs7/kg for orthodox tea and barely Rs1/kg for CTC tea. It is true that profitability of growing CTC tea in the Tarai has fallen in recent years as farm prices fell. Accounting for additional costs like land rental, non-factor services, some non-marketed inputs, and transport/marketing losses would reduce these margins further.

Table 13: **Costs of tea production, by Orthodox and CTC types, 2003**

Types of tea	Costs and margins (Rs./Kg)					Share in total costs (%)		
	Added cost	Buying price	Total cost	Selling price	Margin	Labour	Domestic inputs	Imported inputs
Tea growing (hills)	15	-	15	21	7	64	14	22
Tea growing (Tarai)	8	-	8	9	1	56	18	26
CTC tea processing	29	28	57	75-92	18	4	73	23
Orthodox tea manufacturing	104	95	199	226	27	13	66	21
Packaging CTC tea	19	75	94	126-138	32	11	5	85
Packaging orthodox tea	19	226	245	264	38	11	5	85
CTC tea marketing	25	126	151	151-169	18	47	46	7

Source: Author's estimates based on various statistics (Thapa 2003 shows details).

By contrast, the margins for tea processing and packaging seem to be much higher, e.g. Rs38/kg for packaging orthodox tea and over Rs.32/kg for packaging CTC tea. The high cost of manufacturing orthodox tea (Rs 199 per kg) is comparable to estimates in an earlier study by DEVA (2001)[108]. This cost comes at about 59% of the average export prices ($ 4.2/kg). Margins would be higher where tea manufacturers are integrated with tea estates (i.e. same firm). The CTC (cut-tear and curl) tea packaging activity indeed offers one of the best margins (Rs32/kg) in the tea supply chain. Traders combine tea blending/packaging and marketing activities. Compared with small farmer tea growers, the tea estates, manufacturers and packaging firms have better profit margins.

The Domestic Resource Cost (DRC) is another important indicator of competitiveness. The estimated DRC values are 77% for orthodox tea and 67% for CTC tea. Their pooled/weighted average comes to 68%, where the weights based on the area coverage by tea varieties are: CTC 84% and the orthodox 14%. The high DRC values reveal that tea business is profitable socially. Thus tea offers comparative advantage potentials for factor employment, export earning and import substitution with small expense of foreign currency. The profitability will further increase if tea processing uses hydro-electricity and if power tariff is lowered. Further statistics on input requirements per kilo of made tea and input-output coefficients show that tea generates value addition of 42% of the market price of output.

CONCLUDING REMARKS

The following paragraphs highlight some key considerations for the sector in view of the analysis in the previous sections.

***Expansion of tea area*:** Analysis shows that the current area under tea is only a fraction of the potential total area suitable for tea – as low as less that one percent in the current "tea zone" of Nepal. In addition, current forested areas in the region provide additional scope for tea expansion, of course without undermining forestry. Given the immense gap in projected tea demand and supply in Nepal, area expansion should be considered seriously as a matter of strategy. This requires addressing a number of well-known constraints like fair output prices based on a competitive market structure, access to credit and inputs, technical support, and infrastructure. In addition, legislative reforms would be needed to use forested areas for tea growing, especially by small growers and in the context of poverty alleviation. Any measure to convert public land/forests into plantations must involve community organizations fully.

***Credit*:** Lack of sufficient credit was said to be the second most important constraint to the growth of the tea industry. The analysis presented in Section II showed that for reaching the production capacity of 90 000 tonnes, credit requirements come at around Rs3.2 billion per year over a decade, in contrast to the current credit delivery rate of Rs80 million per year. In addition to commonly known measures, the following would seem to be desirable to meet the credit needs of the sector: refinance facility from the government/Nepal Rastra Bank or/and special

[108] The operational cost of processing Darjeeling Tea (NRs364 per kg) is much higher than Nepal tea (NRs 204 per kg) (DEVA 2001). The higher processing cost in Darjeeling is mainly due to higher labour cost.

line of credit for tea; easing of entry barriers in tea trading; improving line agency capability to match the credit delivery rates; and encouraging foreign direct investment on the sector. Special credit facilities are also essential for small growers.

***Institutions*:** One suggestion for consideration is that the NTCDB Act may need to be amended in order to ensure that the composition of its leadership is depoliticised and business-led. In addition, some modalities are essential to make various line agencies and other actors in the sector, notably the DoA, NARC, DFTQC, ADBN and NGOs, accountable to their respective agency functions.

***Tariff and effective protection*:** Nepal's tea sector enjoys relatively high nominal tariff (25-30%). It was interesting to note that some stakeholders consider tea tariffs to be on the lower side in view of the occasional substantive imports and import surges. However, analysis presented in Section II showed that the tea industry enjoys relatively high level of effective protection (ERP), when taking into account tariffs on imported inputs etc. One issue for debate here is the desirability of relatively high ERPs, i.e. why should tea sector have a high ERP, compared with, for example, sugar? The other issue is slightly higher ERP to industry than to agriculture. The question is does this lead to misallocation of resources? Overall, thus, lack of protection of the sector is not an issue – if anything the sector receives higher protection relatively.

***Competitiveness and export potential*:** All the main indicators of competitiveness, namely revealed comparative advantage, domestic resource cost and net value addition criterion, show that Nepalese tea is competitive in the international market. The computed RCA index was 3.5 (i.e. substantially more than unity), the DRC was 68% and value-added rate is 42%. The Nepalese orthodox/green/specialty tea fetches good export price (about US$4.8 per kg in some recent year), three times the import/domestic market price of black/CTC tea. With global demand for specialty tea of about 45 000 tonnes and current supplies substantially below that level, trading opportunities are largely unexploited. Given climatic advantages, Nepal has immense potential to expand in this market segment.

By contrast, production/trade indicators are not as favourable in the CTC/black tea category. Here, Nepalese tea must compete at home with cheap imports. Imports are rising, and despite high tariffs. Given the open border, tariff protection will not be an option, and raising productivity is the only way to be competitive in the domestic market.

Tea auction centre: There is almost consensus among all stakeholders surveyed for this study that the Nepal's tea sector would benefit considerably with a tea auction centre in Nepal itself. Some of the benefits, discussed earlier, included higher export prices following competition among traders, and higher prices to producers for the same reason. Indeed, an overwhelming numbers of stakeholders perceived unfair prices to be one principal impediment for the expansion of the tea area and yield, and modernization of factories. In view of the fact that the present size of the tea industry – in terms of trade and transaction - is similar to what was the case with the Siliguri tea auction centre in the early 1980s, a tea auction centre

in Nepal can evolve along the path of the Siliguri auction. Importantly, tea auction market can be self-sustaining financially.

WTO-related issues: The focus of the analysis in the preceding section was on how various WTO Agreements could affect current policies and practices in the tea sector. As regards the AoA, it was noted that this Agreement would not restrict or limit any current policies and practices. With current support to tea production of about one million rupees annually (or 0.35 % of tea output), there is a considerable scope for granting subsidies in the future, if necessary. All the main support activities necessary for the growth of the tea sector, such as research, extension, irrigation, other infrastructures etc. fall under the AoA's Green Box and are not restricted. Similarly, bound tariffs on tea are relatively high. Thus, substantial scope exists for raising tariffs, if necessary and feasible. In any case, given that most tea is imported from India and the border is porous, imposing higher tariffs on tea is not a viable option for Nepal. Nepal cannot grant direct export subsidy – but this is hardly an issue. Overall, the AoA has few negative implications for the sector.

As regards the implications of the TRIMS, there is some apprehension about this Agreement affecting some incentives to the tea industry where these are limited to domestic processors. For example, it was noted that some incentives on tax and tariffs to tea manufacturing and packaging firms might be affected. However, this does not seem to be true. In any case, such policies, if any, have to be changed to make compatible with the TRIMS Agreement.

Identity and standards: There is a need to protect tea plant varieties and harmonise standards for tea products in export markets. Experts hold that Nepalese tea provides a unique blend of aroma/aroma of the Chinese tea and the colour/liquor of the Indian tea. There is also a sizable scope for improvement through research and infusion of new technology. One problem is that of the 43 varieties grown in Nepal, almost all the cultivars are from India; most are garden series clones and only nine are seed stocks. In this area, priority activities for research and improvement include: characterization of indigenous tea varieties and their wild relatives; improving tea quality and yield indices; organic tea; factory design; energy efficiency; and standards and establishment of tea museum. Legislations are also due on the plant variety protection, geographical indications and food standards as per the guidelines of the Codex and other international standards. Likewise, the NTCDB should try to enforce the use of *Nepal Tea* logo and the NS/ISO marks. Similarly, Indo-Nepal joint quarantine laboratory or reciprocal accreditation would be helpful.

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