



USAID | **NEPAL**
FROM THE AMERICAN PEOPLE

VALUE CHAIN/ MARKET ANALYSIS OF THE ORTHODOX TEA SUB- SECTOR IN NEPAL

Contract No. AID-367-TO-11-00001

August 2011

This publication was produced for review by the United States Agency for International Development. It was prepared by ANSAB- sub-contractor to NEAT Activity under Prime Contract No. EEM-I-00-07-00008, AID-367-TO-11-00001

Nepal Economic Agriculture, and Trade Activityô Value Chain/ Market Analysis of the
Orthodox Tea Sub-Sector in Nepal
Contract No. EEM-I-00-07-00008, AID-367-TO-11-00001
United States Agency for International Development
General Development Office
Kathmandu, Nepal

The author's views expressed in this publication do not necessarily reflect the views of the
United States Agency for International Development or the United States Government.

CONTENTS

Acronyms	iii
Executive Summary	1
1. Introduction	3
1.1 Background	3
1.2 Objective	4
1.3 Scope of the Study	4
1.4 Study Approach and Methodology	5
1.5 Limitations of the Study	5
2. Industry Analysis	6
2.1 Production Situation	6
2.1.1 Worldwide Production	6
2.1.2 Domestic Production	7
2.1.3 Cost of Production	10
2.1.4 Distribution of Value Added	10
2.1.5 Impact of Organic transition	11
2.2 World Market	12
2.2.1 World Export of Tea	12
2.2.2 World Import of Tea	13
2.2.3 Quality Standards of Tea	14
2.3 Domestic Market	14
2.3.1 Exportation of Tea	14
2.3.2 Tea Imports	17
2.3.3 Domestic Consumption of Orthodox Tea	18
2.3.4 Price Trends of Orthodox Tea	19
3. Value Chain Analysis	19
3.1 Value Chain Map	19
3.2 Functions	21
3.3 Actors	21
3.4 End Markets	23
3.5 Enablers and Facilitators	24
3.5.1 Commodity Specific Organizations	24
3.5.2 Development Organizations and Donor Projects	25
3.5.3 Government Agencies and Projects	26
3.6 Policy Framework	26
3.7 Value Chain Governance	27
3.7.1 Horizontal and Vertical Linkages	28
4. Analysis of Constraints and Opportunities	31
4.1 Constraints	31
4.1.1 Production and Productivity	31
4.1.2 Processing	32
4.1.3 Marketing	32
4.1.4 Enabling Environment and Policy	33

4.2 Opportunities	33
4.2.1 Production and Productivity.....	33
4.2.2 Processing	34
4.2.3 Marketing.....	34
4.2.4 Policy.....	34
5. Strategic Areas for NEAT Interventions	35
5.1 Short-term Strategy	35
5.1.1 Production and Productivity.....	35
5.1.2 Processing	37
5.1.3 Marketing	38
5.1.4 Policy and Institutions.....	39
5.2 Long-term Strategy	40
6. References	42
7. Annexes	43
Annex 1: List of Major Importers	43
Annex 2: Contact Information of Specialty Tea Buyers	44
Annex 3: Export Data of Different Categories of Tea from Nepal	47
Annex 4: List of Top Exporting Countries	48
Annex 5: List of Top Importing Countries	48
Annex 6: Top Tea Producing Countries	49
Annex 7: Existing Tea Cooperatives	49
Annex 8: Types of Orthodox Tea	51
Annex 9: Cost of Production of Green Tea Leaf in 0.5 ha of Land	52
Annex 10: Export Data (ITC, 2011)	53
Annex 11: Import Data (ITC, 2011)	55
Annex 12: List of PSDM Participants	59
Annex 13: List of Offices and People Visited	60
Annex 14: Orthodox Tea Producing Factories in Nepal	61
Annex 15: List of Cooperatives with Mini-Processing Units	64
Annex 16: Orthodox Tea Sector Cost/Benefits	65
Annex 17: Estimate of Profits Gained/Lost When Converting to Organic ...	68
Annex 18: Estimated Production Levels of Various Tea Factories in Nepal	69

ACRONYMS

ANSAB	Asia Network for Sustainable Agriculture and Bioresources
AEC	Agro Enterprise Center
BIMSTEC	Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation
CAA	Commercial Agriculture Alliance
CADP	Commercial Agriculture Development Project
COP	Cost of Production
CTC	Cut, Tear and Curl
CTCF	Central Tea Cooperative Federation
CoC	Code of Conduct
CBS	Central Bureau of Statistics
DADO	District Agriculture Development Offices
FAO	Food and Agriculture organization
FBOs	Farmers Based Organizations
GDP	Gross Domestic Production
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
GAP	Good Agriculture Practices
GMP	Good Manufacturing Practices
GoN	Government of Nepal
ha	Hectare
HOTPA	Himalayan Orthodox Tea Producers Association
HIMCOOP	Himalayan Tea Producers Cooperative
HS	harmonized System
HACCP	hazard Analysis and Critical Control Point
IDE	International Development Enterprises
ITC	International Trade Center
JICA	Japan International Cooperation Agency
kg	Kilogram
MoCS	Ministry of Commerce and Supplies
MRLs	Maximum Residue Level
MT	Metric Ton
NEAT	Nepal Economic, Agriculture and Trade
NTCDB	National Tea and Coffee Development Board
NTDC	Nepal Tea Development Corporation
NTPA	Nepal Tea Planters Association
NTIS	Nepal Trade Integration Strategy
NPR	Nepalese Rupees
NGOs	Non-Governmental Organizations
PSDM	Private Sector Dialogue Meeting
SAFTA	South Asian Free Trade Area
SEAM-N	Strengthening of Environmental Administration and Management at the Local Level in Nepal
SPS	Sanitary and Phytosanitary
SNV	Netherlands Development Organization
TDA	Tea Development Alliance
TEPC	Trade and Export Promotion Centre
TEASEC	Tea Sector Service Center
USD	United States Dollar

USAID
VAT
WI

United States Agency for International Development
Value Added Tax
Winrock International

EXECUTIVE SUMMARY

The Nepal Economic, Agriculture, and Trade (NEAT) Activity is a USAID funded project intended to promote economic growth, reduce poverty, and improve lives in Nepal. Under project component 2- encouraging competitiveness and exports in selected agricultural and non agricultural commodities or services, NEAT has identified four agricultural commodities for intervention including orthodox tea,. NEAT subcontracted the Asia Network for Sustainable Agriculture and Bioresources (ANSAB) to conduct a study of the orthodox tea subsector in Nepal. The study included market visits, interactions with stakeholders, consultations with traders, processors and exporters, and validation of information through private sector dialogue meetings.

Tea is a popular drink around the world. It is one of the major export commodities of Nepal, and it makes a significant contribution to the national economy. Orthodox tea, grown mostly in the eastern hills of Nepal, is known for its aroma, appearance, bright liquor, and slightly fruity flavor. An estimated 90 percent of orthodox tea is exported, mainly to India. Ilam is the leading district of orthodox tea production, followed by Panchthar, Dhankuta, and Terathum. Despite high global demand, the production of organic orthodox tea is still low in Nepal. The cost of production for green tea leaf is approximately 19.55 Nepali Rupees (NPR) per kilogram (kg). The cost for organic tea production is 39.43 to 52.20 NPR per kg. The average price for organic leaf is 40 to 55 NPR/kg, and for conventional leaf is 20 to 26 NPR/kg; however, the price varies depending on flush and leaf quality. The estimated average manufacturing cost is 140 to 200 NPR/kg for conventional tea and 260 to 300 NPR/kg for organic.

In all cases, the cost can vary significantly due to use of fuel, damage, or damage to raw materials. Usually, Nepalese exporters sell tea to Indian importers and commission agents based in Kolkata and Siliguri. From India, a high percentage of Nepali tea is then exported to overseas markets, especially Germany.

Some of the major constraints to the orthodox tea sector are the following:

- High use of pesticides;
- Low quality and high cost of available inputs;
- Absence of commercial nurseries;
- Problems with irrigation;
- Shortage of labor;
- Low productivity;
- Limited knowledge on proper plantation methods;
- Inadequate harvesting and post-harvest handling activities;
- Limited technology access and inadequate technical manpower;
- Inadequate collection centers and lack of central warehouses;
- Low entrepreneurial orientation among farmers;
- Difficulty in obtaining financial services;
- High cost of certification;
- Inconsistent quality of made tea;
- Insufficient product diversification;
- High cost of packaging materials;
- Political and labor strikes;

- Low market promotion;
- Lack of auction market;
- Unavailability of accredited and well-equipped laboratories; and
- Insufficient support from the Government of Nepal (GON) and the tea board.

After analyzing the constraints, the suggested interventions are as follows:

- Building the capacity of input suppliers, farmers, processors, cooperatives and related organizations including the Central Tea Cooperative Federation (CTCF), Himalayan Orthodox Tea Producers Association (HOTPA), Himalayan Tea Producers Cooperative (HIMCOOP), and National Tea and Coffee Development Board (NTCDB) to increase production and enhance competitiveness;
- Support in product diversification, market diversification, and promotional activities;
- Support in establishment of nurseries, composting plants, demonstration plots, training centers, collection centers, link roads, blending facilities, central warehouses, maintenance units, auction markets, and market information centers;
- Support in organic and other international certification, packaging materials, development of quality technical manpower, creating an industry database, geographical indicators, tea tourism, piloting of plucking machines and irrigation systems, and upgrading laboratories;
- Research on Nepal's own blend, quality needs assessment, and development of norms and standards; and
- Lobby for duty concessions in inputs and packaging materials.

1. INTRODUCTION

1.1 Background

ANSAB is an independent, non-profit, civil society organization that has been working in South Asia since 1992. ANSAB is committed to biodiversity conservation and economic development through community-based oriented solutions. ANSAB is the pioneer in developing and applying new approaches to promote natural product-based enterprises and value-chain interventions in Nepal. With its exemplary track record, competent team, and wide networks, ANSAB has designed and successfully completed hundreds of related projects including value chain studies of commercially important products with tangible results. It has also provided different expert services to stakeholders working in Nepal and other neighboring countries. In this context, ANSAB was awarded an assignment under NEAT to conduct a value chain/market study of selected agricultural commodities including orthodox tea.

Agriculture in Nepal has long been based on subsistence farming, particularly in the hilly regions where farmers make earn their livings from fragmented plots of land cultivated in difficult conditions. The economic well being of Nepal is very closely bound to natural resources ó arable land, water, and forest areas. Although only comprising about 21 percent of land area, agricultural land is the major determinant of economic activities and the nation's socio-political identity; it provides employment opportunities to 66 percent of the total population and contributes about 36 percent in the GDP¹. Most of the agriculture households are smallholders. About 45 percent of the farming households have less than 0.5 hectares (ha) of land and poverty is widespread. Poverty is much more severe in rural areas (35 percent) compared to the urban areas (10 percent) (CBS 2004). Farming remains primarily subsistence-oriented and only a small portion of farms use modern production units. Agricultural growth in Nepal is constrained by poor infrastructure, weak institutions, and inadequate technical support for commercialization and supply chain development.

Nepal's foreign trade is in a deficit. There is a domestic increase in demand every year for foreign goods as well as high consumption with a static trend in export growth. In this context, the National Trade Integration Strategy (NTIS), 2010 has prioritized 19 commodities with export potential, among them, tea is one (MoCS, 2010).

In Nepal, the history of tea cultivation began in 1863 with the establishment of the Ilam Tea Estate in the hills and later in the mid hills of Saktim. The first tea plantation in the private sector was Budhhakaran Tea Estate which was established in 1959 in the plains of the Terai. With the establishment of the Nepal Tea Development Corporation (NTDC) in 1966 by the Government of Nepal, the commercial cultivation of tea increased. In 1982, the government realized the potential of tea as a viable crop and export commodity. The GON declared five districts - Jhapa, Ilam, Panchthar, Tehrathum and Dhankuta as Nepal's Tea Zone and provided support to the tea growers and processors.

The growth and development of the tea sector increased after the economic liberalization process which was initiated in 1991 and the private sectors and small holder farmers participated actively towards commercial tea cultivation. In 1992, the Nepal Tea and Coffee Development Act was introduced and the legislation paved the way for provisions on the

¹ <http://www.moac.gov.np/>

establishment of the National Tea and Coffee Development Board (NTCDB) in 1993. The role of NTCDB was to organize tea and coffee farming, produce high quality products, and facilitate policy development towards market management and export and import substitution. The government leased its NTDC holdings to a private firm in 2000 for 50 years. Many commodity specific organizations and cooperatives were formed to promote and support the tea sector such as the Nepal Tea Planters Association (NTPA), Nepal Tea Association (NTA), Himalayan Orthodox Tea Producers Association (HOTPA), Himalayan Tea Producers Cooperative (HIMCOOP), and the Central Tea Cooperative Federation (CTCF). In due course, various donor agencies and local development organizations supported the development of the tea sector. Furthermore, the GON introduced the National Tea Policy in 2000 and NTCDB developed a Tea Sector Development Strategic Plan for 2010-2014.

1.2 Objective

The overall objective of this study is to analyze the present value chain/market status of orthodox tea and identify strategies to enhance the competitiveness of the sector with a prominent role by the private sector.

1.3 Scope of the Study

The scope of this study is presented below:

- Short description of the orthodox tea value chain based on existing reports (value chain analyses with focus in competitiveness and impact) by the Commercial Agriculture Development Project (CADP), Netherlands Development Organizations (SNV), and the Agro-Enterprise Center (AEC) with a clear value chain map;
- Identification of all actors along value chain; their numbers, roles and existing relationship/trust;
- List with contact details of lead firms/exporters/traders and to the extent possible an estimate of their size (i.e. tons purchased) and/or importance (i.e. percent of market, major commodity supply areas);
- List with contact details of foreign importers/buyers;
- In depth market study giving reliable monetary estimates of the full value chain; production, imports/exports, value addition, value chain governance etc.;
- Interviews with major lead firms/exporters identifying key opportunities and constraints;
- Provide calculations on impact of organic transition within the NEAT project life, potential increase in export value;
- Conduct private sector dialogue meetings, bringing together key actors along the value chain, to discuss key opportunities and constraints and possible win-win activities for NEAT;
- Assess willingness of actors (exporters, traders, firms) to work together to enhance their competitiveness; and
- Based on NEAT annual work plan and subsector analysis report, interviews, dialogue meetings and market information, identify main strategies and their implications for down- and upstream actors, including their costs-benefits and timeframe.

1.4 Study approach and Methodology

This study is based on a value chain approach focusing on competitiveness and export markets. The methodology for this study included market visits, interaction with stakeholders, traders, processors, and exporters. Three types of checklists were developed and used for discussions with traders/processors/exporters, focus groups, and other institutions. Another component of the study includes an analysis of the enabling environment, which is necessary to foster business.

The study was carried out in coordination with NEAT staff and in consultation with lead traders, processors, small holder farmers, HOTPA, HIMCOOP, NTCDB, various departments from the Ministry of Agriculture (MOA), Ministry of Commerce and Supplies (MOCS), Ministry of Industries (MOI), and other donor agencies. Both qualitative and quantitative data were used during this study. Qualitative data was collected from the interaction with traders, processors, exporters, and related stakeholders whereas quantitative data was collected from secondary sources. Assistance was also sought from our Indian private sector partner ó Medherb Consulting Company - to gather information from the Indian buyers. The information collected from different sources was triangulated and validated through a Private Sector Dialogue Meeting (PSDM) conducted in Kathmandu and included expert review before completion. Specifically, the study followed the following activities in sequence:

- Development of methodology including checklists and travel plan;
- Consultation with NEAT team and finalization of methodology including checklists and travel plan;
- Review of existing reports and publications ó AEC, ITC, FAO, SNV, CADP
- Consultation with key informants;
- Interview with lead firms/exporter/traders/processors;
- Visit to production pockets and interaction with local actors;
- Visit to major domestic market hubs and some Indian boarder cities; and interaction with traders;
- Compilation of findings and triangulation with secondary sources;
- Organization and facilitation of a private sector dialogue meeting;
- Meetings with other donor agencies/projects;
- Preparation of first draft to be shared with NEAT team and experts; and finally
- Review of report and final submission to NEAT.

1.5 Limitations of the Study

The following conditions define the limitations of the study:

- There was little time to conduct a detailed value chain study of the orthodox tea sector and the study was confined to Nepal;
- It was difficult to acquire information from processors and exporters due to trade secrets;
- Segregated data on orthodox tea was not available;
- There may be gaps in the trade data reported by the Food and Agriculture Organization of the United Nations (FAOSTAT) due to different reporting schedules among countries and the fact that data is not updated in a timely manner;

2. INDUSTRY ANALYSIS

2.1 Production Situation

The production trend of tea is increasing world-wide as well as in Nepal.

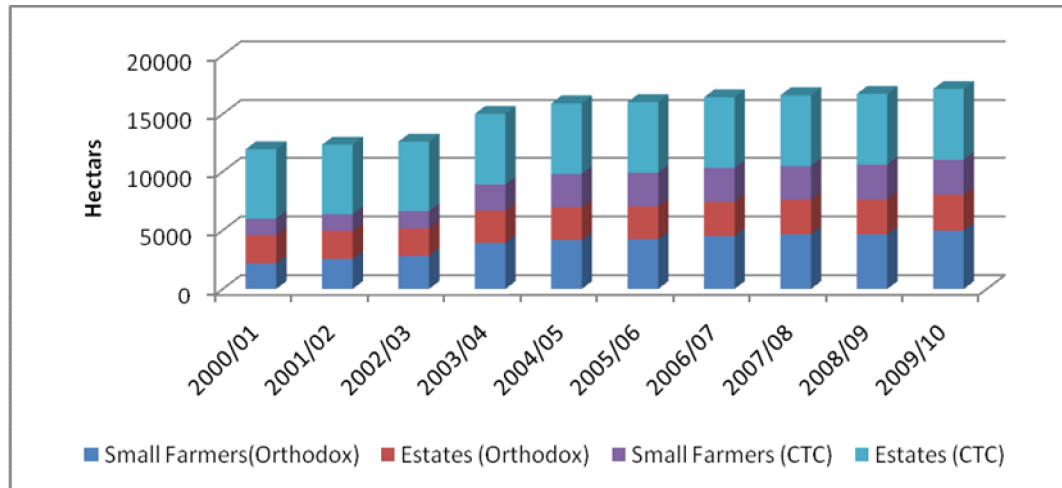
2.1.1 Worldwide Production

China, India, Kenya, Sri Lanka, and Turkey are the top tea producing countries. India was first until 2004 when China took over the lead spot. Nepal has been ranked 20th on the list of the top tea producing nations since 2006. A detailed table is presented in Annex 6.

2.1.2 Domestic Production

The commercial production of tea began in 1966 with the establishment of the Nepal Tea Development Corporation. With the economic liberalization policy implemented in 1991, the private sector has taken a major role in the tea industry. Both estates and small holder farmers are actively involved in the production of tea. Figure 1 presents the trend of plantation area growth between 2000 and 2010 for orthodox tea and Cut, Tear, and Curl (CTC) Tea.

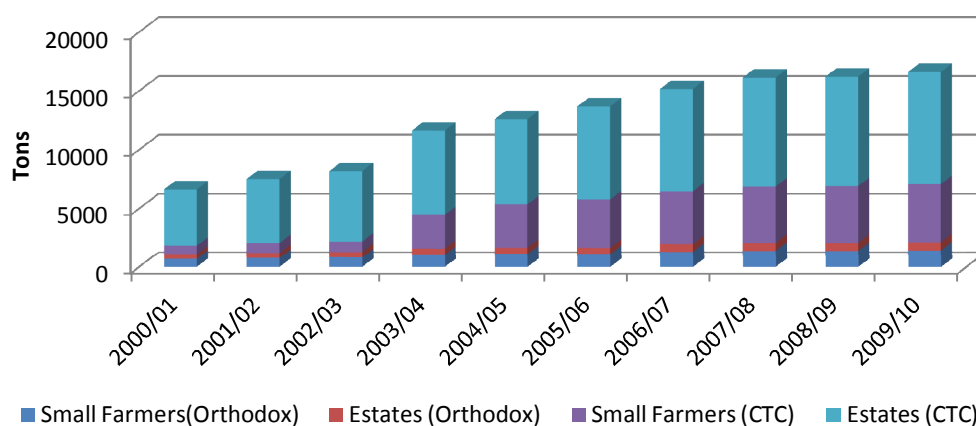
Figure 1 Tea Plantation Area in Hectares



Source: NTCDB, 2011

The above figures reveal the increasing trend of the overall plantation area of tea. The plantation area of CTC has always remained higher than orthodox. Most of the plantation area in CTC is owned by estates whereas the plantation area in orthodox tea is dominated by small farmers. The production volume of tea from 2000 to 2010 is reflected in Figure 2.

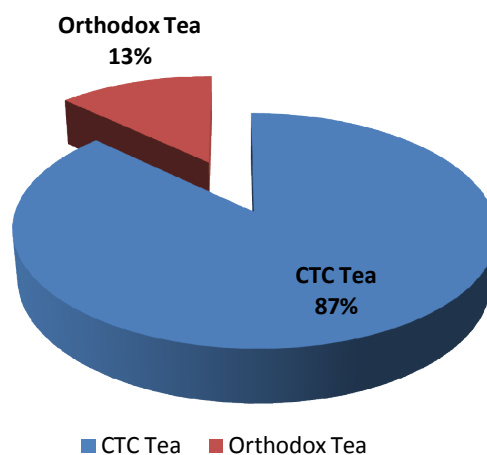
Figure 2: Production trend of tea from 2000 to 2010



Source: NTCDB, 2011

There was a significant increase in the production of CTC tea from 5,537 tons in 2000/01 to 14,471 tons in 2009/10, whereas production of orthodox tea has increased from 1,100 tons to 2,135 tons in the same periods. In Nepal, small farmers have a greater share of orthodox tea production than the state owned tea states. Figure 3 shows the production share for orthodox tea and CTC tea in Nepal in 2009/10.

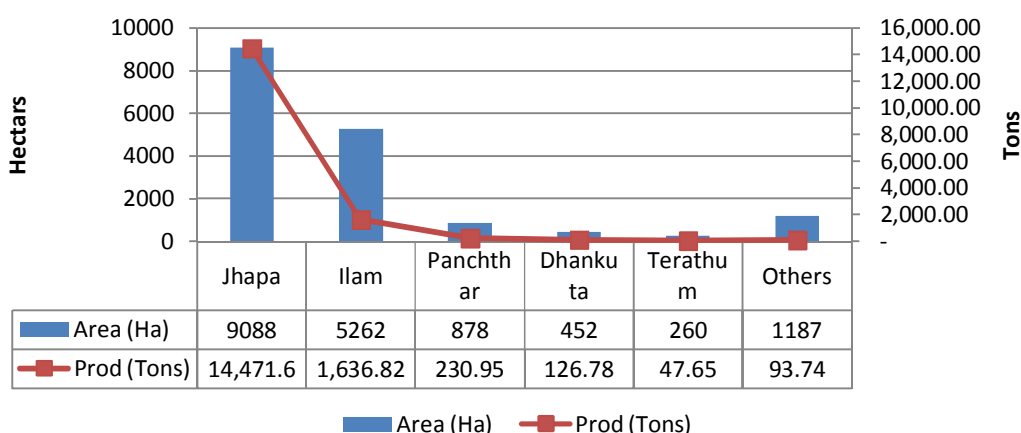
Figure 3: Percentage share of Orthodox tea production and CTC tea production in 2009/10



Source: NTCDB, 2011

Tea has been mostly cultivated in the eastern region of Nepal. Figure 4 represents the major tea producing districts with plantation areas and quantities produced in 2009/10.

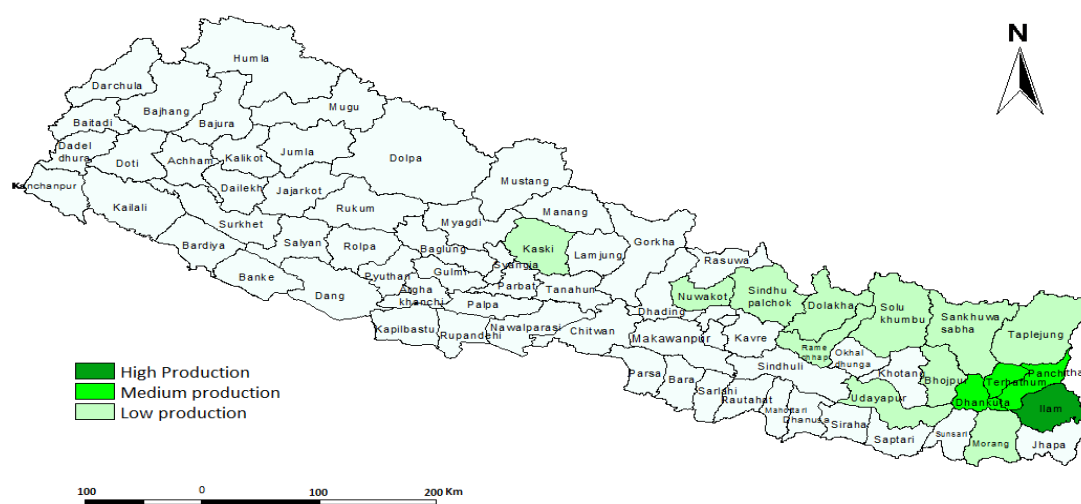
Figure 4: Major Tea producing districts²



Source: NTCDB, 2011

Jhapa is the major production pocket for CTC whereas the hill districts including Ilam, Panchthar, Dhakuta, and Terathum are the major producers of orthodox tea. According to NTCDB, the total production of orthodox tea is 2,136 tons. However, the private sector has reported production of 2,600 tons (HOTPA, 2010). Ilam alone occupies 77 percent of total orthodox tea production. The total area of production of tea, excluding Jhapa which is basically producing CTC tea, is 8,039 ha. Soil, topography, climatic conditions, and weather patterns of eastern Nepal are conducive for orthodox tea production. Mostly, orthodox tea is grown at elevations from 3,000 to 7,500 feet. It is best known for its aroma and fruity flavor. Figure 5 represents the orthodox tea plantation area in Nepal.

Figure 5: Map of Orthodox tea plantation area

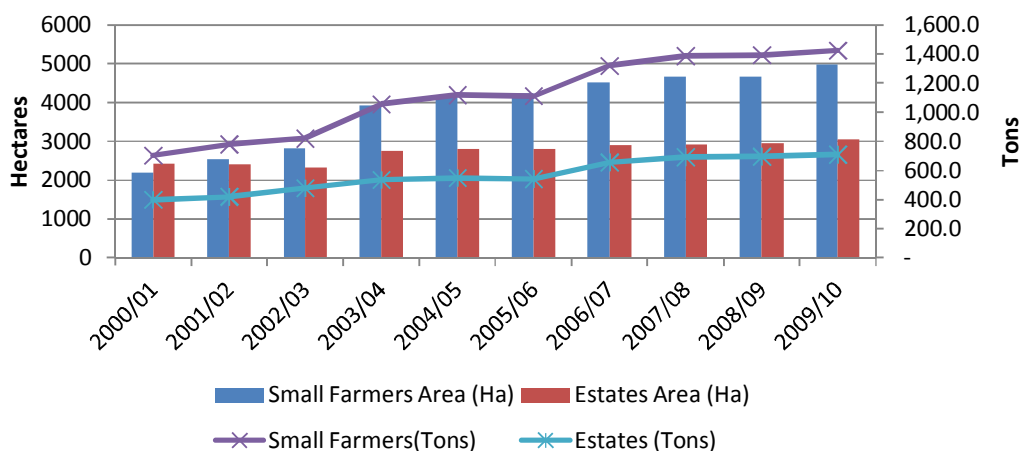


Some emerging districts in orthodox tea production are Bhojpur, Sankhuwasabha, Taplejung, Sindhupalchowk, Nuwakot, Solukhumbhu, Kaski, Dolakha, Morang, Ramechhap, and

² Figures are those collected and reported by NTCDB. Private sector estimation might be different

Udayapur. However, the production volume in these districts is relatively small. Figure 6 presents the plantation area and production of orthodox tea in Nepal between 2000 and 2010.

Figure 6: Plantation area and production trend of Orthodox tea (2000-2010)



Source: NTCDB, 2011

From the above figure, we can clearly observe the importance of small farmers in the production of orthodox tea. According to official data from NTCDB, the orthodox tea plantation area of small holder farmers has increased from 2,181 ha in 2000/01 to 4,987 ha in 2009/10. However, the plantation area of estates has only increased from 2,423 ha to 3,052 ha. The production of orthodox tea by small farmers has also seen a significant rise from 702 tons in 2000/01 to 1,425 tons in 2009/10. The orthodox tea production by estates has increased from 398 tons to 710 tons in the same period.

Production is basically divided into two major groups- conventional method of production and organic method of production. In the conventional method of production, chemical fertilizer and pesticides are used to increase productivity. However, due to low knowledge on the proper methods of farming and use of inputs, major problems like excessive use of pesticides, decline in soil fertility, and inconsistent leaf quality are prevalent in tea production. In organic farming, chemical inputs are not used, thus it is regarded to be safer from a health and environmentally conscious point of view. As the world market is becoming increasingly concerned with health problems that can come from the use of pesticides, the demand for organic tea is increasing. However, there are only a limited numbers of organic farms in Nepal and production of organic tea is still low. Some of the reasons for low production include inadequate awareness and knowledge on organic farming, comparatively difficult production methods, low yield during the conversion period, unavailability of timely inputs, and high cost labor inputs.

The cost for organic certification is also high and most of the technical experts are brought in from India which has further increased the costs of going organic. Due to these issues, farmers are reluctant to move towards organic production. Through discussions with various stakeholders, it was found that if provided with support to overcome the above mentioned issues; and if a fair price is provided, more farmers would be willing to go organic.

The low availability of green leaf is one of the reasons why most of the factories are running below capacity. Despite the good production of green leaf in the some rural parts such as Tehrathum, and Panchthar, the leaves are unable to reach factories due to a lack of an adequate transportation infrastructure. From rural communities, green leaf is carried by humans or on the backs of animals which limits the amount of quality leaf that can reach a specific factory.

2.1.3 Cost of Production

The cost of production (COP) in orthodox tea depends on farming methods, productivity of soil, input costs, labor costs, overhead, and other financial variables. Farmers are generally not sure of the COP and very often the financial costs are not taken into account. This results in a sub-standard level of knowledge in pricing methods.

The cost of production can be divided into *conventional* and *organic*. The conventional method yields higher productivity compared to organic due to the use of chemical fertilizers and pesticides. As per a report completed by the Netherlands Development Organization (SNV), the cost of production of green tea leaf under the conventional cropping methods comes to around 19.55 NPR/kg based on production yield of green leaf to be around 2.75 metric tons per year in a land of 0.5 ha. In contrast to this, COP of green tea leaf under organic cropping methods which has a yield of green leaf around 1.35 metric tons per year per 0.5 ha (while using only non-composted cattle dung) is 52.20 NPR/kg. For organic cropping methods which have a yield of 1.75 metric tons per year per 0.5 ha (while using cattle dung and composts), the COP of green tea leaf is calculated to be 39.43 NPR/kg. The detailed cost of production was calculated in the SNV report and is presented in Annex 9.

2.1.4 Distribution of Value Addition

The green leaves provided by farmers are processed in large and small factories located in and around production areas. Based on farming methods, two types of orthodox green leaf are supplied by farmers- *organic green leaf* and *conventional green leaf*. Organic green leaves are priced higher than the conventional leaves. Through discussions with farmers and traders, the average price for organic leaf was found to be 40 to 55 NPR per leaf and for conventional leaves was 20 to 26 NPR per leaf. The price of green leaf also differs according to the flush and leaf quality. The first flush conventional green leaf had received a price of 31 to 43 NPR in some areas.

The proceeds received by farmers for their tea leaves are low and in some cases almost equal to production costs. The gross income per household from green leaf varies from place to place depending on the cost of production. The farmers who have easy access to resources such as agricultural inputs, transportation, and live near factories have an advantage over those who are not nearby factories or input providers. With an average plantation area of 0.75 ha per farmer and productivity of 5.5 tons/yr/ha, the estimated average gross revenue per household from the green leaf comes to around 95,000 NPR per year when the average price is 23 NPR per leaf. It is estimated that 60 percent of proceeds are profited by farmers after deducting costs; however, the margin can vary depending upon the cost of production.

During shortage periods, the CTC processors come to the hills for the purchase of green leaf and offer competitive prices to fulfill their requirement for raw materials. The price of orthodox green leaves is mostly determined by the price received by made tea in the Siliguri

and Kolkotta markets. For organic green tea leaves, the price is usually based on the negotiation and contract agreements between processors and farmers and is varied from factory to factory. For specialty teas, the production methods are different and require great care and effort to produce. Specialty teas are produced in very low quantities and are sold for premium prices. For example, the cost of green leaves used to produce white tea and silver tips presently varies from 250 ó 500 NPR per kg. It takes about 5 kg of green leaf to make 1 kg of made tea.

The cost of manufacturing depends on the types of tea made and the production volume. In discussion with processors, the average manufacturing cost is approximately 140/200 NPR/kg. The average cost of manufacturing is higher for organic and is around 260/300 NPR/kg. However, in both cases the cost can vary significantly due to the use of fuel for electricity, low quantity production, or damage to raw materials. The exporters have to absorb taxation at various places during transportation.

The customs clearing expense for orthodox tea is about 13,000 NPR per truck (1 truck load equals 10 tons) which includes customs duty charges, agent charges, bank charges, and other expenses. Usually, Nepalese exporters sell the made tea to Indian importers and commission agents, mostly based in Kolkata and Siliguri. The average price offered for Nepalese orthodox tea in Kolkata is estimated around 240/272 NPR/kg. However, the price can vary considerably depending upon the type and quality.

Besides black tea, other teas such as green tea, oolong tea, and white tea are also made in small quantities. handcrafted tea is usually made by small processors and receives premium price. Blend teas are made by some processors and exporters, especially with herbs such as lemongrass, mint, cinnamon, ginger etc. Tea bag is produced by some packagers and processors; however, tea-bagging industry is still in its nascent stage and latest technologies like pyramid tea bags are still to be used.

Packaging ranges from normal to special handcrafted packages. Normally, tea chests are used for export. For retail packaging, a variety of gift packages are made at the cottage level and used to provide value addition.

2.1.5 Impact of Organic Transition in Tea Subsector

As the world is demanding more health and environment friendly products, a conversion to organic from conventional cropping in tea has become increasingly important, especially for exporting to overseas markets. Conversion to organic cropping has different variables that must be considered. First, productivity will decline heavily during the initial years which can later be increased gradually by the use of optimum organic inputs. Secondly, due to the productivity decline and high labor requirements as well as the need for organic inputs, the cost of production increases. These factors should be considered while calculating the economic impact of an organic transition. The following table presents a rough estimate on the impact of organic conversion compared to conventional crops.

Table 1 Impact of organic transition

Estimated Calculation	Organic conversion			Certified
	1st year	2nd year	3rd year	
Decline in Productivity	High	Medium	Medium	Medium
Increase in Price/kg received	Medium	Medium	Medium	High
Increased in COP/kg	High	High	High	High

Note: High- 40% to 60%; Medium- 20% to 40%; Low- 0% to 20%
(Certification is assumed to be received within 3 years).

The above table shows that there will be a high decline in productivity in the initial years of conversion to organic and hence the estimated cost of production is high. The cost of production is also increased due to high labor requirements, additional costs of achieving certification, and more organic input requirements. The estimated cost of certification per the factory managers interviewed comes to around 3,000 to 5,000 NPR per year depending on the site, area, and type of certification as well as the inspector's charges. Four to seven extra workers are required to manage the field activities and paper work which is estimated to place an extra cost of 4,000 to 6,000 NPR per year. However, the price offered for organic in conversion is more than the conventional ones. After achieving organic certification, the full organic product can receive even higher prices. Similarly, the cost of certification also decreases and the productivity increases compared to the initial years of conversion. In conclusion, it can be said that though the conversion to organic in initial years is not profitable, and even might have to bear loss, gradually the losses are recovered and the business will become profitable in the long run.

The increased cost in organic cropping can only be offset by ensuring increases in productivity by the use of better organic manure and also ensuring premium price for green leaves.

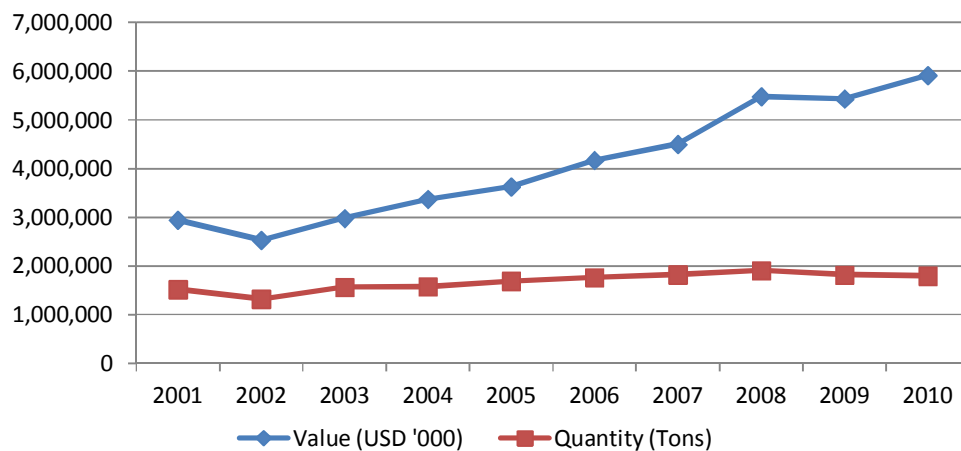
Currently, a good quality Nepali organic tea receives an average price of 6 to 10 USD per kg in international markets whereas the conventional tea receives only 3 to 4 USD per kg and is mostly sold in Indian markets. For the organic specialty teas like white teas, silver tips, and green teas, the price received is 4 to 5 times higher than the normal grade tea. Therefore, organic tea production can provide two to three times increase in export value and thus can have a positive impact throughout the whole value chain.

2.2 World Market

2.2.1 World Export of Tea

With an increased global consumption of tea, the world export of tea has also increased. Figure 7 presents the trend of world export of tea from 2001 to 2010 both in terms of value (USD in thousands) and quantity (tons).

Figure 7 World export trend of Tea between 2001 and 2010



Source: ITC, 2011

There has been an annual growth rate of 8 percent in world export value from 2001 to 2010. Similarly, in terms of quantity, the annual growth rate of the world export is 2 percent over the same period. The total value of worldwide tea export in 2010 is over 5.9 million dollars. This includes the four major categories of tea i) Black (fermented) and partly fermented tea in packages not exceeding 3 kg (HS code 090230) ii) Black (fermented) and partly fermented tea in packages exceeding 3 kg (HS code 090240) iii) Green tea (not fermented) in packages not exceeding 3 kg (HS code 090210) and iv) Green tea (not fermented) in packages exceeding 3 kg (HS code 090220).

Black tea packages not exceeding 3 kg consist of both orthodox tea and CTC tea and those exceeding 3 kg mainly consist of CTC tea. China has the highest export volume of tea; however Sri Lanka is the top exporter in terms of value. A chart illustrating the major exporters of overall tea in 2010 is presented in the Annex.

The annual world growth rate of black tea in packages exceeding 3 kg (HS 090240) was 12 percent between 2006 and 2010, and 18 percent in the same time period in terms of value. This segment mostly consists of CTC tea. Kenya is the leading supplier to the world with an export share of 37.1 percent followed by Sri Lanka and India in 2010.

The market for green tea is increasing. The export of green tea not exceeding 3 kg (HS 090210) and exceeding 3 kg (HS 090220) has an annual growth rate in terms of value of 5 percent between 2006 and 10. China is the major supplier of green tea worldwide with more than half of the world supply (53 percent for >3 kg, and 62.2 percent for <3 kg). The countries following China in export of green tea below 3 kg category are UK, Sri Lanka, and Japan with share of 6.9 percent, 5.4 percent, and 4.7 percent respectively in world export.

Detailed tables of export data are presented in the Annex 3.

2.2.2 World Import of Tea

In 2010, the major importers of tea (all types) were Russia, UK, USA, Pakistan, Egypt, UAE, Japan, Germany, and Canada.

In 2010, Russia was the leading importer of black tea in packages not exceeding 3 kg category (HS code 090230), with share of 8.3 percent total world import with a quantity of 26,015 tons and a value of USD 121.4 million in 2009-10. The United States is the second largest importer with a value near Russia, but the quantity of import varies significantly between the two countries. The import quantity of USA is 13,563 tons. The United States shares 7.3 percent of the world import.

Detailed worldwide import tables of all the four categories are provided in Annexes 5 and 11.

2.2.3 Quality Standards in Tea

Quality Standard of Nepalese Tea

Nepalese orthodox tea is known for its aroma, tippy appearance, bright liquor, and slightly fruity flavor. It has relatively young bush, suitable soil, good climate, and ideal elevation; all of which lead to good quality. Most of the orthodox tea produced is black leaf grade tea. Nepal mainly produces four seasonal qualities of orthodox tea- first flush (in early spring), second flush (May-Jun), monsoon flush (late June to Sept) and autumn flush (Oct to Nov). Besides producing black leaf grade, Nepal also produces oolong tea, green tea, white tea, and other specialty teas.

There are mainly four grades of orthodox tea: Leaf Grade, Broken, Fanning, and Dust. In discussion with traders, it is found that the percentage yield of each grade is estimated to be 30-65 percent Leaf Grade, 25 -50 percent Broken, 10-15 percent Fanning and 6-8 percent Dust.

Despite its high quality characteristics, Nepali tea producers use a high amount of pesticides. Many factories, especially those exporting overseas have tried to upgrade themselves by achieving international certifications like HACCP, ISO, Organic or even Fair Trade.

International Quality Standards

There are international standards related to food safety such as radiation level, pesticide maximum residue level (MRLs), heavy metal contents, microbial contamination, and also in labeling, packaging and others. The level of each component can vary depending upon the importing country.

The quality requirements of the EU market are strict and consist of both legal and non-legal requirements. The EU legal requirements consists of food safety including traceability, examination of contamination level, detail on materials and articles coming into contact with food, food control checks, general food labeling including requirements related to nutrition and allergens labeling, general product safety, GMP for food contact materials, hygiene of foodstuffs (HACCP), MRLs, microbial contamination checks, and organic production and labeling requirements for food marked as "organic". In addition, the companies can go to non-legal requirements such as environmental requirements, social (labor) requirements and organic/Fair Trade/UTZ certified/Rainforest Alliance certification (CBI, 2011).

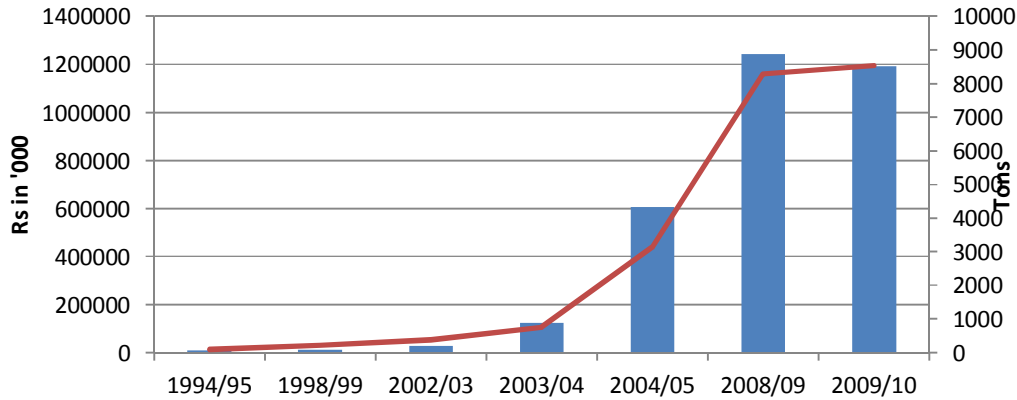
2.3 Domestic Market

2.3.1 Exportation of Tea

In FY 2009/10 the export volume for tea in Nepal was 8,498 tons with an export value of about 1,195.3 million NPR. The significant growth in export was seen during FY 1998/99,

2002/3, 2003/4, and 2004/5 till 2007/8. The following figure provides the trend of tea export from Nepal in different years.

Figure 8 Export trend of tea from Nepal in different years



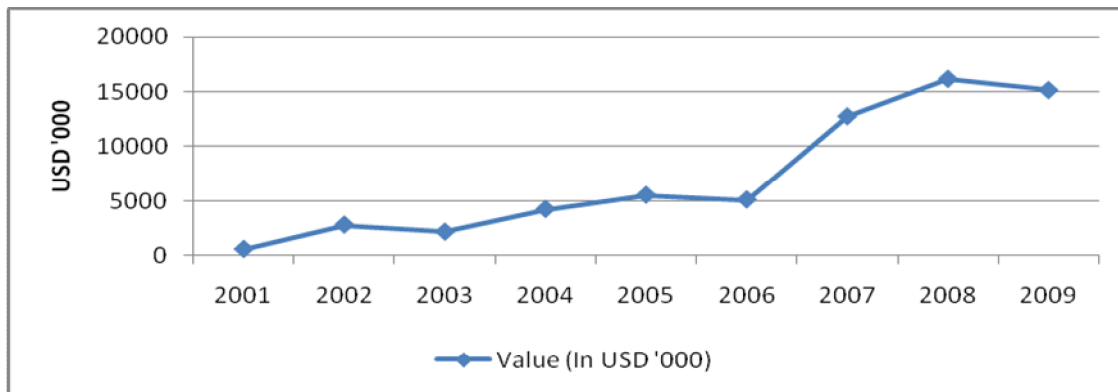
Source: NTCDB, 2011

In 2009/10, a total of 8,484 tons of tea with a value of 1,187.5 million NPR was exported from Nepal. Black tea not exceeding 3 kg was the major export segment with a quantity of 8,360 tons and a value of 1160 million NPR.

Export to India

Nepal exports about 96 percent of its total tea (including orthodox and CTC) to India alone. The following figure shows the trend of import of tea from Nepal by India.

Figure 9 Import trend of Nepalese tea by India

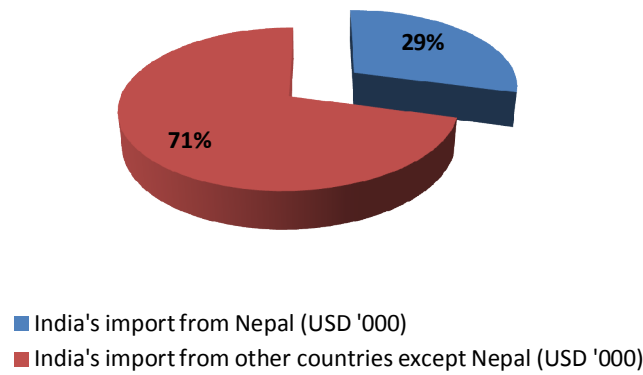


Source: ITC, 2011

Nepal mainly exports black tea exceeding 3 kg to India and has an import share of 32 percent of the total tea imported by India. The share of black tea not exceeding 3 kg is nominal and

covers about 3 percent The green tea exported to India is also negligible. The major suppliers to India besides Nepal are Kenya, Indonesia, China, and Sri Lanka.

Figure 10 Import data of tea of India (2009)



Source: ITC, 2011

According to a discussion with an Indian customs clearing agent, around 120 to 130 truckloads of orthodox tea is exported from the Kakarbhitta border to India.

Nepalese traders usually sell their products to importers and commission agents in India. The major destinations of the Nepalese tea in India are Kolkata and Siliguri. Some of the Nepalese exporters have their marketing offices in Kolkata, India.

India’s market is vast and has a high capacity for tea. Every grade of tea (whole leaf, broken, fanning, and dust) is sold in the Indian market. Most of the orthodox tea goes to India without any value addition. Much of the value addition is completed in India such as producing blend teas, flavor teas, and specialty teas. Nepalese exporters complain of the low prices received in the Indian market. Nepalese teas sell for lower prices than Darjeeling teas. There is a great opportunity for Nepalese tea to continue exploring the lucrative market of India which is vast and expanding.

Potential overseas market for Nepalese orthodox tea

In consultation with exporters, commodity organization (HOTPA, HIMCOOP), analysis of export/import data, and by literature review, some of the potential overseas market for Nepalese orthodox teas are USA, Russia, Canada, Germany, France, Japan, UAE, UK, and Ireland. The NTIS 2010 has listed Egypt, UAE, Russia, USA, UK, Iran, Pakistan, Germany, Kazakhstan, and Australia as the 10 most attractive markets for export of Nepalese tea (both CTC and Orthodox combined) (MoCS, 2010). More detail is presented in the table below:

Table 2 Import analysis of the potential countries

Country	Import from World	World import Share	Annual Growth rate (2006-10)	Nepal's Export (In USD 000)	Major Supplying countries and its import share
Germany	168732	3.06%	3%	454	Sri Lanka, India, Austria, Indonesia, China
USA	400729	7.07%	8%	71	China, Argentina, India, Germany Canada, UK, Sri Lanka
Russian Federation	387593	9.9%	11%	28	Sri Lanka, India, Azerbaijan, Indonesia
Japan	195087	3.44%	1%	43	Sri Lanka, India, China
Canada	160891	2.84%	6%	53	UK, USA, India, China, Sri Lanka
France	154523	2.73%	6%	46	China, Germany, Belgium, UK, Poland
UAE	218706	3.86%	10%	0	Sri Lanka, Indonesia, UK
UK	421020	7.43%	7%	0	India, China, Indonesia, Sri Lanka
Ireland	47058	0.83%	13%	3	UK, India

Source: ITC, 2011

Germany is the major destination of tea exports from HIMCOOP. Details of the export from HIMCOOP in various years are presented below:

Table 3. Export of HIMCOOP

Year	Quantity in Kilograms	Some Importing Countries
2003	5,425	Germany, France, Czech Republic, Netherlands, USA
2004	26,693	
2005	27,171	
2006	NA	
2007	41,374	
2008	46,900	
2009	28,720	
2010	46,716	

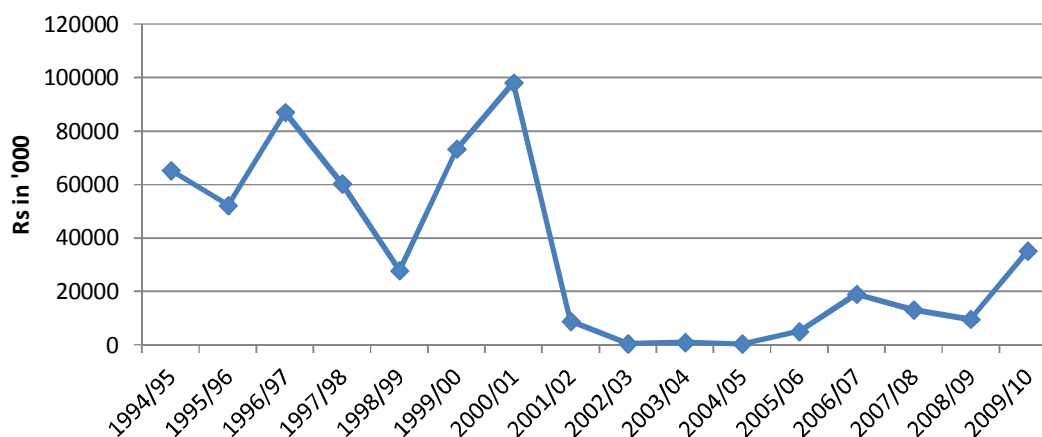
Source: HIMCOOP, 2011

With an increase in the global consciousness towards health and the environment, there is a great potential for organic tea. The demand for blend tea and specialty tea is also increasing worldwide. This is a positive indication for the Nepalese orthodox tea sector which has capacity for good quality production because of favorable climatic conditions and topography.

2.3.2 Tea Imports

Nepal has been able to significantly reduce the import of tea due to increased domestic production. Figure 11 represents the trend in import of tea by Nepal.

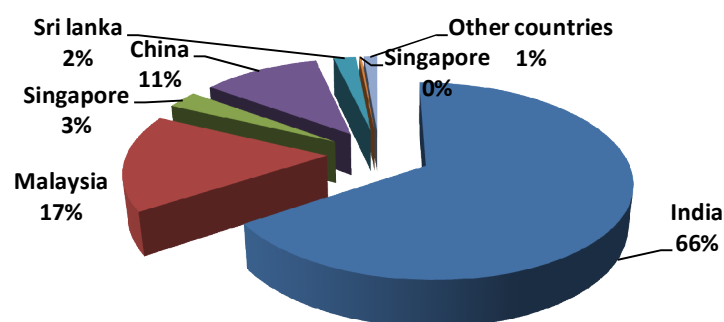
Figure 11 Import trend of tea in Nepal



Source: NTCDB, 2011; TEPC 2011

In 2009/10, the import of tea increased to 241.5 tons with an import value of 35.1 million NPR. Almost 71 percent of imports are black teas in bulk, mainly consisting of CTC tea. India is the major supplying country with 202.2 tons (23 million NPR in value) exported to Nepal in 2009/10. The other major supplying countries are Malaysia, China, Sri Lanka, and Singapore. The figure presented below shows the share of some major supplying countries to Nepal in 2009/10.

Figure 12 Share of major countries in import of tea in Nepal (2009/10)



Source: TEPC, 2011

2.3.3 Domestic Consumption of Orthodox Tea

Nepal's domestic market is dominated by CTC tea. However, the consumption of orthodox tea is gaining momentum in the domestic market. The exact consumption data for orthodox tea is not available; however, it is estimated that 5 percent of the total domestic production of

orthodox tea is consumed domestically. Through discussion with several shopkeepers in Kathmandu, it was learned that 60 percent of tea buyers are Nepalese nationals and the rest are foreign nationals. Various brands of orthodox tea are available in the market including foreign brands, mainly from India and Sri Lanka.

2.3.4 Price trends of Orthodox Tea

The price of orthodox tea varies and is dependent upon the type, grade, and quality of tea as well as the importing country. Samples are sent to the buyers and are usually tested by tea tasters who determine the quality. Although claimed to be of the same quality as Darjeeling, Nepalese orthodox tea is sold for a lesser price. In discussion with traders, the average price offered per kg for Nepalese tea in Kolkata is 240 to 272 NPR. However, the price can vary a lot depending upon the grade and quality and is finalized upon negotiation with Indian importers/agents.

Overseas sales are mostly leaf grade. The export market is more of buyers market. Usually buyers fix the prices on the basis of submitted sample and evaluated for taste, liquor, infusion, flavor and characteristics. As per discussion with some traders, the average price realized per kg for leaf grade is USD 6 to 10. Specialty tea like white teas, silver tips, green tea, oolong tea fetches are produced in low quantity and are sold at 4 to 5 times higher price than normal leaf tea grade. The composite price of tea from the FAO is presented below.

Figure 13 Composite price of tea



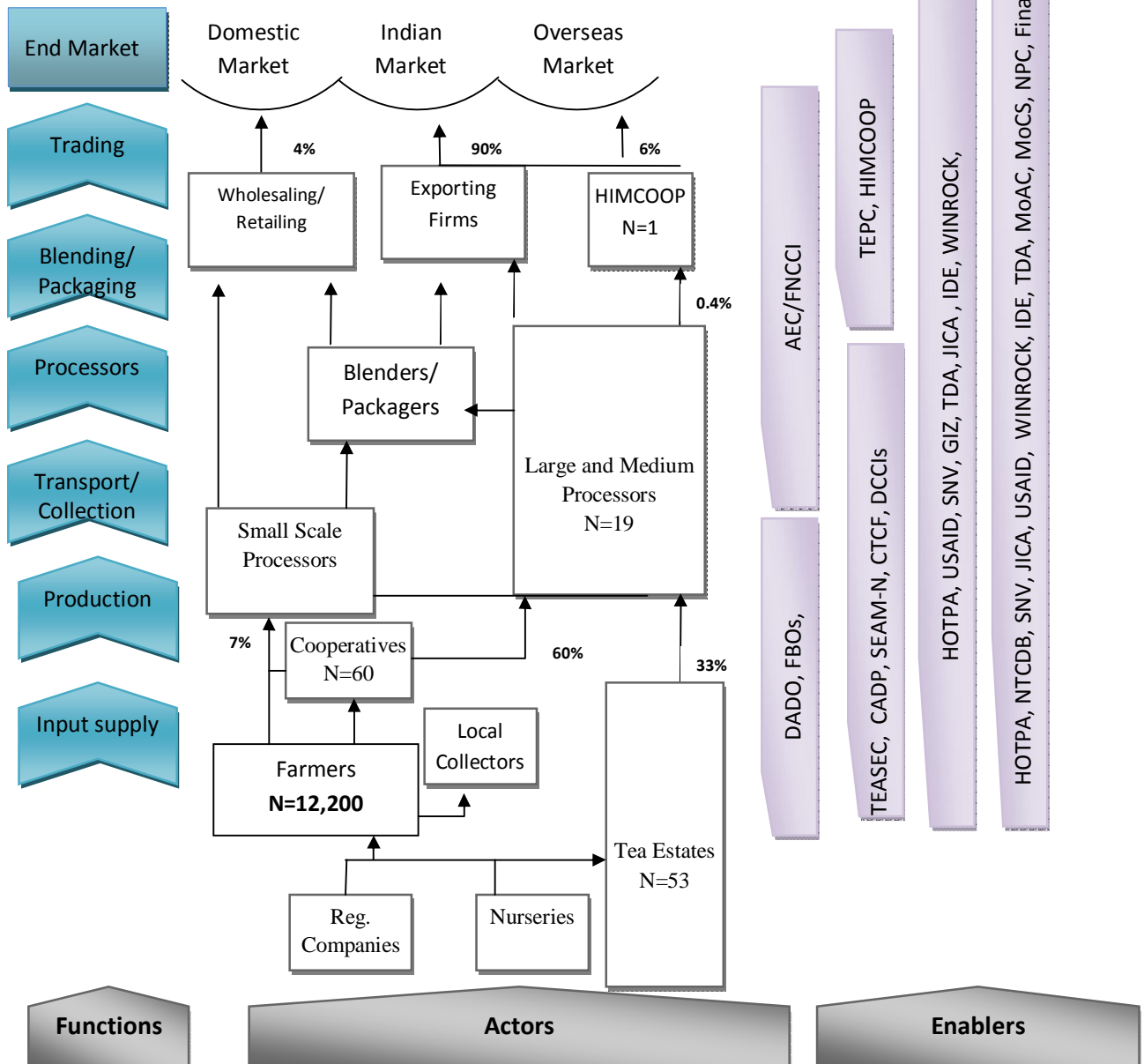
Source: FAO website

3. VALUE CHAIN ANALYSIS

3.1 Value chain map

The value chain map of orthodox tea is presented in Figure 14 below. A brief description of each actor and enabler is presented in section 3.3.

Figure 14 Value chain map of Orthodox tea in Nepal



3.2 Functions

The major functions involved in the orthodox tea value chain are input supply, production, transportation/ collection, processing, blending and packaging, and exporting and domestic trading (wholesaling/ retailing). The input supply function is carried out by agro-vets and fertilizer distributors. Farmers and tea gardens are equally involved in getting their own inputs such as saplings, manures, and bio-pesticides. The transportation/collection is conducted by farmers, tea estates, cooperatives as well as green leaf brokers. Processing is completed by large/medium factories and small processors. Blending and packaging functions are conducted either by individual companies or the tea factories, themselves. Most of the exporting is conducted by factories. Some trading companies are also involved in exportation. Domestic trading is conducted by outlets of factories, wholesalers, and retailers.

3.3 Actors

A brief description of the actors involved along the orthodox tea value chain is listed below:

- **Input Suppliers:** Besides a few plantations including Ilam Tea Estate, Nepal's entire tea plantation is carried out by using cloned planting materials. Most of the clones are derived from an existing mother bush. Small holder farmers and tea gardens usually prepare clones from their own fields; however, some get the clones from commercial nurseries which are very few in numbers. The extension offices of NTCDB also maintain the mother bush. The research and development of new clones are still lacking. Agro-vets supply the necessary inputs like pesticides, insecticides, sprayers, and other agricultural equipment. There are registered companies that supply fertilizers to farmers. For organic production, organic manure is prepared by small holder farmers; however, they also purchase organic fertilizers, bio-pesticides, and insecticides.
- **Producers:** Smallholder farmers play a significant role in the production of orthodox tea leaf. According to NTCDB data, 67 percent of total orthodox tea production was completed by small holder farmers in 2009/10 and the total numbers of small farmers involved in green leaf production (excluding Jhapa³) reached 7,781 in 2009/10. The total production area of small holder farmers producing orthodox tea is 4,987 ha (NTCDB, 2011).

Most of the producers supply directly to large and medium sized factories. Some supply to small processors and some conduct hand-processing themselves. The green leaves are also collected by local collectors and cooperatives.

There are several orthodox Tea Estates owned by factories. The total area of Tea Estates as presented by NTCDB is 3,052 ha in 2009/10. The Tea Estates employ laborers for maintenance and harvesting of tea bushes. The current wage rate is about 120 NRP/day and some other incentives are provided by the Tea Estates depending on the quality of the harvest. Some provide social incentives like education to farmers/laborers. Six NTCDB program offices in four districts are also involved in production and supply green leaf to factories.

³ Jhapa has mainly green leaf production for CTC

Conventional methods of production using chemical fertilizers and pesticides are more prevalent than organic production. Organic production is typically either carried out by factories that have their own plantations or by small holder farmers and cooperatives that have contract agreements with organic factories. 2,606 farmers are affiliated with 48 organic tea farmers' cooperatives in four districts (see Annexure for details) and out of these, 10 cooperatives (1 from Tehrathum and 9 from Ilam) also engage in collective marketing and supply green leaf to factories (SNV, 2010). These cooperatives achieve a profit margin of 1 to 1.5 NPR in return for their marketing services.

- **Collectors:** There are local brokers who collect green leaf from farmers. Green leaf collection is also conducted by cooperatives. Local brokers and cooperatives supply the collected leaf to the processors.
- **Processors:** There are large and medium sized factories as well as small scale processors producing various types of tea in Nepal. The production of the factories varies from 10 MT to 800 MT made tea (HIMCOOP, 2009); however, those producing organic tea have a comparatively lower average and are mostly operating below capacity. Almost all of the factories are owned by the private sector except for the government owned Nepal Tea Development Commission (NTDC) which has been in operation since 2000. As per the information obtained from HOTPA, there are a total of 19 orthodox factories. Most of the factories are located in Ilam. These factories mainly produce orthodox black tea. In addition, some factories produce oolong tea, green tea, white tea, silver needles/tips/needles, and other specialty teas. Ilam Tea Producers Pvt. Ltd. is the biggest processor of orthodox tea.

Three factories are HACCP (hazard Analysis and Critical Control Point) certified, two are ISO certified (Shakya, 2010) and six are organic-certified. Out of the six organic certified, Himalayan Shangrila, Nepal Green Tea, Guranse, and Kanchanjunga tea estates have received certification from NASAA. Australia, Gorkha, and Meghma tea estates have obtained certification from IMO in Germany. Kanchanjunga Tea Estate has received Fair Trade Certification.

There are a number of small tea processing units in Nepal. More than 15 small tea processors are established by farmers (SNV, 2010). Most of them produce handmade tea, green tea, and other specialty tea. We learned that there are currently 12 small processing units that are having Chinese machines installed to produce green tea. From the information received from the field, about eight more of said units are going to be established in 2011. These processors obtain green leaf from their own plantation area and from surrounding farmers. The small processors mainly sell their tea to the domestic market. Some sell in Indian market as well as overseas market but the quantity is relatively small.

- **Blenders and Packagers:** Usually, the packaging of made tea is completed by the factory. They either prepare bulk packages or consumer packaging such as tea bags, aluminum foil, tea chest, etc. There are some packagers who buy made tea from factories and do the packaging.

The blending of orthodox tea is completed in smaller quantities. Some factories have started blending on their own. One tea warehouse company named Nirvana Tea Processing and Packaging Pvt. Ltd. did the blending but due to a shortage of tea, it could

not continue its operation (Shakya, 2010). The blend tea of Kanchanjunga Tea Estate, Himalayan Shangrila, and other herbal blends are also available in domestic markets.

- **Exporters:** Most of the big factories export their products themselves, there are some exporting firms who purchase made tea from factories/small processors and export. The majority of the exported product goes to India and rest goes to countries including Germany, USA, UK, Czech Republic, France, and Japan. Almost all the exporters have marketing offices in Kathmandu. Some exporters also have marketing offices in Kolkata.

Himalayan Tea Producers Cooperative (HIMCOOP) was formed to engage in collective marketing and exporting. HIMCOOP members largely represent large and medium sized factories. HIMCOOP has been sending the products of its members by consolidating orders; however, the percentage of export is relatively low. Some of the small processors also supply directly to India and overseas, but the quantity is negligible.

- **Wholesalers and Retailers:** For the domestic market there are several wholesalers and retailers mainly based in cities especially in Kathmandu, Pokhara and other major cities. The wholesalers get the supply from factories as well as small processors. There are an estimated 40 tea shops operating in Kathmandu and Pokhara (SNV, 2010). Departmental stores and groceries have also placed the orthodox tea both of domestic and foreign origins.
- **End consumers:** Most of Nepalese orthodox tea is exported to India where it is either placed as fillers in other teas or as value added by blending and supplied to the Indian domestic market and international markets. Some quantity of orthodox tea are sent in the brand name -Nepal Tea to international market mainly Europe. There is less consumption of orthodox tea in domestic market though various brands of Nepalese orthodox tea are available in the tea outlets and retails. The domestic consumption of orthodox tea is in increasing trend. According to some departmental stores, the domestic consumers are around 40 percent while rests are foreign nationals.

3.4 End Markets

India is the major end market for Nepalese orthodox tea. Though formal data is not available, it is estimated that around 90 percent of orthodox tea processed is exported to India. The major destination markets for Nepalese orthodox tea in India are Kolkata and Siliguri. There are auction markets in both market hubs of India and Nepalese tea is not allowed in Indian auctions except private non registered auctions.

India's market is vast and has a high capacity for tea. Every grade of tea (whole leaf, broken, fanning and dust) is sold in the Indian market. Most of the orthodox tea goes to India without any value addition. Much of the value addition is completed in India such as producing blend teas, flavor teas, and specialty teas. Nepalese tea sells for a lower price than Darjeeling tea despite of claims of being of equal quality. Some exporters also sell to reputed brand names of India such as TATA tea or Apurva. There is a greater scope of Nepalese tea to explore the lucrative market of India which in itself is vast and expanding.

Some of the overseas importing countries are Germany, France, Japan, USA, Russia, Poland, and Canada. Germany is a major importer of Nepalese tea. In the cooperative level, HIMCOOP is leading overseas marketing and sales. Some of the major buyers of HIMCOOP

from Germany are halssen and Lyon Gmbh, Teegschwendner Gmbh, J.Fr. Scheibler Gmbh & Co, and Ludwig H.O. Schroeder & Rudolph hamann.

Mostly high grade orthodox leaf black tea is exported overseas. During overseas export, the buyers usually demand international certification like HACCP, ISO and/or Fair Trade and test the sample for various quality parameters such as MRLs, labeling, and packaging. There is more demand for organic and specialty tea by overseas buyers. The USA tea market is emerging and has greater requirements for specialty tea such as flavor tea, and blended teas. Some portion of tea enters the domestic market; however, the domestic market is comparatively small and is made up of both domestic buyers and foreign nationals.

3.5 Enablers and Facilitators

Many commodity specific organizations, cooperatives, farmer based organizations, domestic and international nongovernmental organizations, government ministries and departments, tea boards, and other organizations have been involved in the development of the orthodox tea sector and have conducted various activities at different levels of the orthodox tea value chain. Some of the major enablers are summarized below.

3.5.1 Commodity specific organizations

There are commodity specific organizations at the value chain production level, processing level, and marketing level. The Central Tea Cooperative Federation (CTCF) is involved in production level. In the processing and marketing levels; HOTPA and HIMCOOP are actively involved. Similarly, District Chambers of Commerce and the Federation of Nepalese Chambers of Commerce and Industries (FNCCI) are also assisting in the development of the tea sector.

Central Tea Cooperative Federation (CTCF): CTCF is an umbrella organization made up of district level tea producers' cooperatives. Its primary role is to conduct advocacy and lobbying activities at the national level in support of tea. It was established in September 2010 and till date has members from four tea producers' cooperative associations and 56 tea producers cooperatives from seven districts including Ilam, Jhapa, Panchthar, Tehrathum, Dhankuta, Udaypur and Bhojpur.

Himalayan Orthodox Tea Producers Association (HOTPA): HOTPA was established in 1998 to address the issues and problems faced by the Nepalese orthodox tea industry and to establish orthodox tea as a major export commodity. HOTPA currently has 22 members comprising of Tea Farmers Federations, tea gardens, and tea estates and processing factories. From its inception, HOTPA has been actively involved in providing trainings to farmers, international marketing, Code of Conduct (CoC) implementation, policy advocacy and much more in partnership with various donor agencies including: USAID, GIZ, JICA, SNV, DFID, IDE and Winrock International.

Himalayan Tea Producers Cooperative (HIMCOOP): HIMCOOP is a marketing cooperative established in 2003 and is an association of 17 industry specific members. Together with HOTPA, HIMCOOP has established several international market linkages, promoted the Nepal Tea brand through participation in numerous trade fairs, tea events, and has been involved in providing necessary assistances such as sending samples, inquiring buyers, disseminating product information, quality controls, policy advocacy and others.

Several donor agencies such as GIZ, SNV, and Winrock International have supported HIMCOOP through various activities.

Tea Development Alliance (TDA): TDA is an alliance of national and international organizations providing services to support the development of the orthodox tea subsector. Its main objective is to enhance the orthodox tea value chain by helping link efforts of various supporters and actors. The Alliance's secretariat is with AEC and is presently not active.

Agro Enterprise Center (AEC)/Federation of Nepalese Chamber of Commerce and Industries (FNCCI): AEC is the agricultural wing of FNCCI which was established in 1991 with an objective of developing private agribusiness in Nepal. It is a member of TDA and has contributed significantly to the development of the tea sector.

3.5.2 Development organizations and donor projects

The United States Agency for International Development/Nepal (USAID/Nepal): USAID has been involved in the development of the tea sector for a very long time. It has supported various associations like AEC/FNCCI, HOTPA, HIMCOOP and have co-funded organizations like Winrock International, and IDE Nepal for the promotion of the tea sector. Currently, the USAID/NEAT Activity project has identified orthodox tea as one of the four sub-sectors it is focusing on under its Competitiveness Component.

Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH: Former GTZ (now named in GIZ) has been involved in development of the Nepalese orthodox tea sector by providing technical and financial support through different programs including RDP, PSP, PSP/RUFIN, PPP and INCLUDE.

Japan International Cooperation Agency, Nepal (JICA): JICA has been involved in various programs for the development of tea sector like Himalayan Tea Technology Outreach and Extension Program (HIMTEX), Peace Building through Agriculture, and ToTs.

International Development Enterprises (IDE): IDE has primarily been involved in developing and disseminating micro-irrigation technology in Nepal. IDE has played an active role as an implementing partner of various programs targeted for the tea sector.

Netherlands Development Organization in Nepal (SNV/Nepal): SNV has been involved in the tea value chain since 2006, focusing on capacity building and knowledge dissemination. SNV has supported stakeholders in implementing and promoting a code of conduct based on a four pillar mechanism that ensures respect for nature, respect for people, transparency, and product quality.

Winrock International (WI): WI has contributed to the tea sector by starting the TDA and has played a major role including brand promotion, CoC implementation, participation in trade fairs, and organizing tea events.

Tea Sector Service (TEASEC): TEASEC is an institution that supports small holders in the Eastern Himalayan Region of Nepal. Beginning in 2004, TEASEC decided to establish a commercially viable service center to cater to the technical needs of small growers. The

organization also serves as a forum for small tea growers to lobby for supportive policies at the national level.

3.5.3 Government Agencies and projects

Ministries and National Planning Commission (NPC): The Ministry of Agriculture and Cooperatives, Ministry of Commerce and Supplies and Ministry of Industry are directly and indirectly involved in providing support to the tea sector and are responsible for formulating and executing policy at the national level. The National Planning Commission is the central body for devising development planning in the tea sector.

District Agriculture Development Offices (DADO): DADOs operate under the Department of Agriculture of the Ministry of Agriculture and Cooperatives and is functional in all 75 districts. DADOs are the main points of reference for activities related to agriculture in any given district. Group formation, technical advice to producers, technology demonstrations, and trainings are some of the activities DADOs are involved in.

National Tea and Coffee Development Board (NTCDB): The NTCDB was established in 1993 under the Tea and Coffee Development Board Act of 1992. Its main objective is to formulate plans and policies for the development of Tea and Coffee at the national level and to strengthen the public, private sectors involved in the Tea and Coffee industry. It has two Regional Offices and seven Tea Extension projects.

Strengthening of Environmental Administration and Management at the local level (SEAM-N): SEAM-N is a project that began in 2001. It is led by the GoN and Finland and one of its primary activities is the production of bio-slurry and converting farms to organic.

Commercial Agriculture Alliance (CAA)/Commercial Agriculture Development Project (CADP): CADP manages the Commercial Agriculture Fund (CAF), a cost-sharing grant program available to CAA general members to strengthen market-chain activities and develop linkages within the market chain. Some tea producer cooperatives and tea factories already have joined CAA, thus becoming eligible to get project proposals approved for implementation.

Trade and Export Promotion Centre (TEPC): The Government of Nepal established a "Trade and Export Promotion Centre" in 2006. TEPC is a national trade promotion organization with the primary objective of promoting trade. TEPC has been providing support to HOTPA/HIMCOOP in trade fairs.

3.6 Policy Framework

The Government of Nepal has promulgated four policies for the development of the tea sector. In 2000, the National Tea Policy 2057 was completed with ambitious targets to achieve within a 10 year period. In orthodox tea, it has planned to increase the operating area of 30,133 ha, production by 30.13 million and exports by 27.11 million. The National Tea Policy included several packages for development of the tea sector including exemption on land ceilings, rebates on land registration, and grants to small farmers. However, the Tea Policy was widely regarded as a failure and its ten year validity has already expired.

In 2004, the National Agriculture Policy (2004) was promulgated with an aim of making agriculture more dynamic and profitable to help reduce poverty and focused on effective implementation of the Agriculture Perspective Plan.

The Agriculture Promotion Policy, 2006 was promulgated in 2006 to enhance the participation of private sector in the infrastructure development of agriculture market, trade and agro-based industries in order to diversify, commercialize and promote agriculture sector.

In 2009, the government promulgated Commerce Policy 2005. The policy aims to promote exports of agricultural products. The Commerce Policy also envisaged the establishment of coordination among stakeholder agencies of the government and private sectors for improving the competitive capacity by increasing the production of highly export potential agricultural products.

3.7 Value chain governance

The trading of orthodox tea is mainly lead by Indian importers because almost 90 percent of exports go to India. The price is usually determined by Indian importers/agents and is based on the quality and grade of the product. Payment is mostly in credit. The relationship between exporters and importers is quite stable. The Indian importers/agents do not have restrictions on various grades of tea and they purchase all types of grades and price accordingly. At the processor level, there is an environment of mistrust between farmers and processors. Most of the processors are themselves exporters. Usually, farmers complain of lower prices offered for their green leaf whereas processors complain of poor quality leaf. There are also problems with tea labour because many workers are not satisfied with the wages received and are demanding an increased wage rate. There are closures of factories and tea gardens due to conflicts between processors and labourers.

Usually, farmers sell their leaf to the nearby processors. However, some farmers supply the leaf to other processors if offered a better price. There are also occasions where the farmers sell to CTC processors.

Organic production which has been adopted by tea estates including Gorkah, Kanchanjunga, Himalayan, and Shangrila tea estates, the process is little different from the conventional type and require more human resources and documentation. Total conversion to organic requires a minimum of three years for tea estates. Until the organic certificate is obtained, tea estates will describe themselves as "organic in conversion" or "under organic conversion." The initial step of organic conversion is to familiarize oneself with organic production and implementation methods. This requires training and strict monitoring of tea fields. If it is found satisfactory, a local inspector recommends and provides a date for a certifying agent to visit. The certifying agencies do the inspection of the field every year and at the third year only it issues organic certificate provided all their criteria are fulfilled. For the organic production, both the farmers and processors need to keep log books and diaries of several checks such as that of traceability (e.g. details of suppliers, estimated production, inputs placed, details of pruning and plucking, quantity supplied, price provided, warehousing, personal hygiene and transportation). Staff members at the factory provide training, ensure proper implementation and conduct data collections. Organic production demands a mutual relationship and trust between farmers and processors and they usually prepare contract agreements for mutual benefits.

Green leaf is priced depending upon the grade. Cooperatives and individual farmers can also go for contract agreement with processors for supplying leaf at prior fixed rate. Mostly, selling is done in credit. Incentives are offered by some processors to farmers. There is rare incidence of providing advance payment to the producers. In totality, the governance of orthodox tea value chain is buyer driven with low trust between various actors especially farmers and processors.

3.7.1 Horizontal and vertical linkages

Vertical Linkages: Vertical linkages can be attained through cooperation between different actors or firms, and they have the benefits of transferring skills from one actor to another. In the orthodox tea value chain, vertical linkages exist between farmers, processors, and traders/exporters. Farmers sell their green leaf to nearby processors (mostly large and medium factories) mostly randomly. Some provide their leaf to cooperatives for collective selling. Some cooperatives and individual farmers make agreements with factories for the supply of green leaf. The agreement can be in written contract form or simply a verbal commitment. In some cases, factories provide incentives for production and input purchases. Usually, the payment of the green leaf is done at the time of sale or in credit. The processors mostly are exporters themselves. Some sell made tea to other traders/exporters. The traders/exporters have their own clients to whom they supply the end product. Overall, there are good vertical linkages between producers, processors and traders/exporters.

Horizontal linkages: Horizontal linkages represent the relationships among different actors operating at the same level of a value chain: It can be seen at producers' level where there are various Farmer Based Organizations (FBOs) and cooperatives operating within production pockets. Group members organize meetings periodically and share about the status of production, input procurements, and output marketing. CTCF is the umbrella organization of various district cooperatives and is providing assistance to farmers in production and other issues. NTCDB also works parallel with cooperatives and farmers in production as well as market promotion. Furthermore, HOTPA has been conducting several activities towards quality production and policy lobbying and advocacy. For collective marketing, HIMCOOP has been actively assisting in marketing and promotion of Nepal tea from various processors. However, HIMCOOP has not been able to do higher trading as most of the processors are dealing directly with buyers. This has hampered the income of HIMCOOP.

Various development organizations and donor projects are supporting the promotion of the tea sector from production to marketing. Some of the organizations are USAID/ Nepal, GIZ, SNV, Winrock International, IDE, JICA, and TEASEC. The GON and its agencies have also implemented programs and policies intended to support the tea sector, however, such programs and policies have not been regarded as successful. A competitive analysis compares the commercialization of the orthodox tea sector through export promotion and diversification to existing industry levels and determines the nature of challenges that the sector faces. This analysis identifies strengths, weakness, opportunities and threats (See Table 4).

Table 4: SWOT Analysis of Orthodox Tea Sector

Strengths	Weaknesses
<p>Production</p> <ul style="list-style-type: none"> Favorable climatic condition and geographical topography Virgin land cultivation; young tea bushes Low labor cost Environment friendly crop. Nepal tea standard has been set by government which complies with accepted parameter for made tea (MoCS, 2010) <p>Processing</p> <ul style="list-style-type: none"> Presence of large, medium, and small processors with sufficient processing capacity Increasing practice of organic, HACCP, ISO <p>Marketing</p> <ul style="list-style-type: none"> Good aroma Presence of HIMCOOP? and other marketing agencies International certification National brand <p>Enabling Environment/Policy</p> <ul style="list-style-type: none"> Opportunities for rural people's and women employment and empowerment. Estimated total employment contribution by the sector is around 100,000 (ITC, 2007) Contribution to poverty reduction Government incentives such as exemption of land ceiling, land registration fees and land revenue (up to 75%) leasing up to 50 years, capital grants for irrigation subsidies 	<p>Production</p> <ul style="list-style-type: none"> Low productivity (274kg/ha) yield comparatively 25 percent and 30 percent low than India and Sri Lanka (MoCS, 2010) Difficulty to obtain inputs High use of pesticides and insecticides and incorrect application cycles Inconsistency in production quality of green leaf Poor on-farm infrastructure <p>Processing</p> <ul style="list-style-type: none"> High cost of production due to high electricity cost, packaging material cost and expertise hiring cost <p>Marketing</p> <ul style="list-style-type: none"> Absence of auction markets and inadequate market information system Absence of central warehouse Poor product reputation due to inconsistent quality and high MRLs Accredited lab equipped to carry out all the required test High cost of packing materials <p>Enabling Environment/Policy</p> <ul style="list-style-type: none"> Delay in VAT refund Financing difficulty No research facilities No duty rebate in packing materials and processing equipments Inadequate subsidies and incentives <p>Lack of domestic tea experts in Production, Processing and Marketing, Currently dependent upon Indian Experts.</p>
Opportunities	Threats
<p>Production</p> <ul style="list-style-type: none"> Greater scope of expansion of tea plantation area Easiness in technology and expertise importation due to proximity of Darjeeling, renowned worldwide for tea <p>Processing</p> <ul style="list-style-type: none"> More factories and small processors coming up Increasing involvement of private sectors <p>Marketing</p> <ul style="list-style-type: none"> Increasing recognition of Nepal Tea brand 	<p>Production</p> <ul style="list-style-type: none"> Shortage of labor Limited financing for farmers Global warming and other natural disasters having adverse effects on agricultural lands <p>Processing</p> <ul style="list-style-type: none"> High quality production and greater production differentiation of major competitors <p>Marketing</p> <ul style="list-style-type: none"> Heavy reliance in Indian market Inconsistent Indian Import policy.

<ul style="list-style-type: none"> • Increasing world demand <p>Enabling Environment/Policy</p> <ul style="list-style-type: none"> • Increase in numbers of financial institutions • Member of WTO, SAFTA, BIMSTEC • Presence of FBOs, cooperatives, farmers groups, NGOs, donor agencies and other organization for promotion of the sector • Quarantine board establishment announcement 	<ul style="list-style-type: none"> • Loss of potential markets due to poor and inconsistent quality <p>Enabling Environment/Policy</p> <ul style="list-style-type: none"> • Political instability • Labor strikes and factory shutdown • Inadequate activities towards compliance to SPS issues
---	---

4. ANALYSIS OF CONSTRAINTS AND OPPORTUNITIES

This part of the study deals with constraints and opportunities found in the orthodox tea sector. The information is mostly collected from meetings with key stakeholders. The constraints and opportunities are categorized in four parts: production and productivity, processing, marketing, and enabling environment/policy.

4.1 Constraints

4.1.1 *Production and Productivity*

- High use of pesticides is one of the major concerns of the conventional tea farming. This has raised serious issues not only on the consumption of the tea produced but also to the surrounding ecosystem and health of farmers. More serious is the issue of use of banned pesticides like Monocrotophos, and Ethion.
- Low quality and high cost of available inputs are major concern. There is less monitoring mechanism of cross check of inputs by the concerned departments.
- Absence of commercial nurseries for tea.
- Irrigation is a problem in orthodox tea sector as the cultivation areas are mostly in hill slopes. The farming is totally dependent on quantity of rainfall. This has limited the production of year round quality leaf.
- Labor shortage is unanimously raised by all the stakeholders. The present method of farming is labour intensive and demand huge labour force from cultivation to post harvest handling. There is increasing trend of labour force migrating to overseas for salaried jobs. The labour union representatives claim of low daily wage (basic of NPR 120/day) being one of the reason for labour fleeing from industry.
- Low productivity compared to other major orthodox producing countries like India, Sri Lanka.
- Limited knowledge on the proper plantation, harvesting and post harvest handling activities (e.g. drying leaf in sun, inappropriate pruning and plucking cycles, improper packaging rough handling during transportation, delay in reaching processing factories, etc) leading to low productivity and low quality leaf.
- Limited technology access for better productivity and inadequate technical manpower that can provide assistance in educating the proper way of conducting agricultural practices.
- Lack of proper storage and transfer facilities (collection centers) to maintain the freshness of green leaf and for the collective marketing.
- Transportation problem from tea garden to processing facilities. Due to the hilly landscape of the orthodox tea plantation area, the roads are frequently damaged and are very narrow. It is also seen that the tea plantation has been promoted without prior assessment of the accessibility of the road.
- Lack of entrepreneurial orientation among farmers.
- Compared to the cost of production, the farmers are not getting a competitive price for their green leaf.
- Difficulty in obtaining financial services in economic rates. Previously, Agriculture Development Bank Nepal used to provide loans in lower interest rates but has presently stopped providing such loans.
- Besides the above constraints, other constraints especially faced while doing organic farming are i) decline in productivity for at least 3 years with nearly 30 percent-50 percent decline in first year; ii) unavailability of inputs such as organic manure, certified organic fertilizers, bio-pesticides and bio-insecticides iii) more labor

requirement compared to conventional method due to extra works to required for maintaining garden, weeding, extra documentation, training, monitoring and other activities; iv) high cost of certification v) should be done in collective manner as radiation of pesticides and leeching of chemical fertilizer will occur if even one of the farmers does not agree to go for organic from the area; and vi) lack of awareness and education towards organic farming.

4.1.2 Processing

- Shortage of qualified technical manpower such as tea taster in the processing factories. In present context, most of the technical manpower are from Darjeeling and are hired at high rates.
- Inconsistent quality of made tea.
- Insufficient product diversification such as blend tea, flavor tea, specialty tea etc to interest buyers of these niche markets.
- The factories have inadequate infrastructure such as storage, packaging, dehumidification etc. Most of the factories are operating older machines, mostly imported from India, and need to be modernized for increasing efficiency and quality of products. Similarly, the small processing units which are increasing in numbers do not have proper maintenance facilities to provide support.
- High cost of electricity and irregular supply.
- High cost of packaging materials.
- Political strikes and shut down of the factories.
- There is mistrust between farmers and processors where farmers blame processors for not offering reasonable rates for their green leaf, whereas processors blame to farmers of not bringing quality leaf.
- Many factories are still yet to obtain standard international certification like ISO, HACCP, Organic, Fair Trade, etc. limiting their export potential with premium prices.

4.1.3 Marketing

- In recent years, Nepal tea has gained its popularity. Still, the brand recognition and credibility of Nepal tea is not sufficient. Activities such as participation in various trade fairs, organization of tea events and exposure visits etc for market promotion are also inadequate and irregular.
- Lack of central warehousing facilities is regarded as one of the major constraints by the exporters. This is hampering the business as in most of the occasion the export quantity is low and two or more than two orders need to be consolidated to fill a container resulting in delayed shipping as well as quality reduction.
- There is lack of central blending facility for international quality value addition of basic tea. The central facility will provide economies of scale and reduce cost of manufacturing. The central facility will also be able to receive sufficient raw material for the quantity orders.
- No auction market present in Nepal to attract sellers and buyers thus restricting competitive bidding.
- Many buyer companies and countries seek test reports on residue level, heavy metal, radiation clearances and other quality measures in every consignment. Due to the unavailability of an accredited and well-equipped laboratory to test and analyse samples for exports, orders are held up for long periods till the results are released from laboratories overseas such as India, Germany, etc.

- Nepal is highly dependent on India for its export. The market diversification/promotion activities are inadequate and irregular. Even within India, the market is limited to certain traders only and more lucrative markets are not tapped.
- No market information system is available to give guidance to exporters on current market trends, price movements, quality requirements, changes in consumption habits etc.
- There are limited domestic market promotion activities.

4.1.4 *Enabling Environment and Policy*

- Inadequate support from the Government and Tea Board compared to other similar government agencies like India and Sri Lanka.
- Although the government in its FY 2011/12 budget has announced 50 percent subsidy on the capital expenditure to the small farmer cooperative institutions in the purchase of machinery and equipment for processing, the subsidy is limited and no subsidies are allocated for other necessary inputs such as packaging materials and is focused to only small farmer cooperative.
- The import duty for packaging materials such as chest, paper etc, which are mostly used in export products, is very high.
- VAT refund process for exported goods is difficult.
- There is a serious problem in accreditation of quarantine checks done in Nepal.
- Nepal is a landlocked country and is facing issue of transit route and ports. There are obstruction and delays in the transit despite of bilateral trade agreement between Nepal and India.
- There is inadequate coordination between government agencies and private sector organization and within government bodies (such as MoCS and MoAC) as well.
- Proper incentives and policy is not devised for encouragement of organic farming.
- NTCDB is not functioning properly and there is minimal support and poor implementation of the programs. The organization is also dealing with inadequate funds.
- The commodity specific organizations such as CTCF, HOTPA, and HIMCOOP do not have enough capacity to deliver the required promotional and supporting activities to the development of the subsector. There is weak horizontal linkage between these organizations.

4.2 OPPORTUNITIES

4.2.1 *Production and Productivity*

- There are various input supplying companies in the markets.
- The improved variety of mother bushes to produce saplings are available in the markets.
- The climatic condition of hilly regions of Nepal is favorable for orthodox tea production. This can allow nationwide expansion of the tea plantation.
- The plantation is comparatively new in the country. Most of the bushes are young and are cultivated in virgin lands.
- Being neighbor of Darjeeling, India, a pioneer area in tea industry, Nepal tea industry has advantage of relatively easy access to improved inputs, technology and experts from its neighbor.
- The tea industry has provided good employment opportunity especially to rural people and women.

- Existence of farmers based organizations and cooperatives are distinctive advantage for the growth of the sector. Beside supporting the farmers in cultivation, some of the cooperatives have also started collective marketing.
- Higher scope for organic production due to increasing market demand.

4.2.2 Processing

- Increasing number of processing plants including small processing plants.
- Active involvement of private sector in the industry.

4.2.3 Marketing

- Greater recognition of Nepal tea in international market could lead to increase in exports.
- Increasing trend of world tea consumption. The market for organic, fair trade and value added product such as specialty tea, blend tea, flavor tea etc are increasing, where Nepalese tea can compete due to its good characteristic (flavor, aroma).
- Presence of support organizations such as HOTPA, HIMCOOP, NTCDB, etc.

4.2.4 Policy

- Government incentives such as exemption of land ceiling, land registration fees and land revenue (up to 75 percent) leasing up to 50 years, capital grants for irrigation subsidies are encouraging for the industry.
- The government has started to provide subsidy to small farmer cooperative in the purchase of machinery and equipment for processing tea which is a good news for small farmers.
- Subsidy on organic certification (reimbursement of the expenses towards organic certification) is a good step towards organic farming.
- Cash incentive for exports (2-4 percent depending upon the value addition on the product) will have positive impact on trade.
- Presence of extension programs of NTCDB in major production district
- Tea sector recognized as one of the prioritized sector by NTIS, 2010.

5. STRATEGIC AREAS FOR NEAT INTERVENTION

The strategic interventions for this project are divided as short term and long term. The effects of the short-term strategies will be seen as outcomes of the NEAT project. The suggested interventions are categorized in five parts: input supply, production/productivity, processing, marketing, and policy. Long-term strategies are also suggested which will be helpful to uplift the orthodox sector of Nepal and whose outcomes can be evaluated beyond the project period.

5.1 Short term strategy

5.1.1 *Production and Productivity*

- **Pilot plucking machines:** Plucking machines are available in markets for tea harvesting. It has been used in plains in CTC plantation area; however the machine is still needed to be piloted in orthodox plantation because of the sloped landscape and extra care required. These machines can be provided to farmers through FBOs and cooperatives in certain production pockets for piloting.
- **Training to Agrovets on pesticides:** This would be beneficial in raising awareness and educate the agrovets and mobilize them to spread words to farmers.
- **Conduct interactive meetings between input suppliers and farmers:** This will help to build trust among agrovets and farmers and provide an opportunity for being informed on the quality inputs and proper methods of application
- **Support for easy access to organic inputs:** Partnership can be done with input suppliers to provide easy access to organic manures, bio-fertilizers, bio-pesticides and insecticides. Facilitation should be provided to introduce alternative input supplying company.
- **Establishment of composting plants:** Support can be provided for the establishment of biogas plants and vermi-composting at farmers' level. In addition, cattle can be provided and shed made in the field that will provide raw material for the plants and also help in increasing soil fertility due to direct seepage of the excreta.
- **Support in packaging materials to farmers:** Packaging materials such as nets can be provided in subsidized rates for farmers to maintain freshness of the leaf.
- **Study and piloting of irrigation system:** Tea plantation in Nepal is totally dependent on rainfall that makes it difficult for the year round quality leaf production. Due to sloppy landscape, the usual irrigation method is not possible. However, from the consultation with experts and tea garden owner, it is understood that the (drip for nursery and young tea/sprinkler for mature gardens) irrigation can be a useful medium of irrigation but the initial cost is comparatively high. Another alternative for irrigation can be rain water harvesting. A detail study should be conducted on the feasibility of the both irrigation types in the production pockets and if found feasible, a piloting should be done as per the findings of the study.
- **Facilitate for establishment of nurseries and quality clone development:** Since there is lack of commercial nurseries for tea, NEAT can provide initial support to FBOs, cooperatives or private entrepreneur for establishment of such nurseries provided that the long term sustainability is assured and proper benefits are shared among farmers. Normally, the nurseries can be developed and its trade activity at local level initiated within 16 months.
- **Conduction of trainings to farmers for improved quality production and increased productivity:** Quality begins from the farm level. In order to achieve products that are of international standards, increased productivity, and are also

friendly to human health and environment, farmers should be educated on good agricultural practices. Trainings can be conducted on proper cultivation practices including Integrated Pest Management and pruning cycles, quality harvesting/plucking, and post harvesting handling including proper packaging and transportation. Local organizations (NGOs, FBOs and cooperatives) should be partnered and mobilized. ToT should be given to local resource person who will provide trainings to the farmers.

- **Conduction of awareness campaign:** Along with trainings, awareness campaign should be run simultaneously by partnering with media, local resource persons and local organizations including FBOs, NGOs and Cooperatives. Series of programs should be developed to be broadcasted by local FMs. Booklets and brochures that are easily understandable by farmers should also be published and distributed.
- **Establishment of demonstration plots:** For practical inputs and extension service delivery to the farmers, demonstration plots can be established at appropriate places. Demos on specialty tea manufacturing process through new or existing small tea factories should be carried out to enhance export trade activity reducing dependency to Indian markets.
- **Provide entrepreneurial and business planning training to FBOs:** These types of trainings are very essential for FBOs and their members which will help them to develop business perspective and understand market dynamics. The trainings can be given by partnering with organization experienced in providing such trainings. Three toolkit modules on - Entrepreneurship Development, Business Planning and Local Resource Person - developed by ANSAB can be used for the purpose.
- **Establishment of permanent type of collection centers:** The collection centers are vital points to allow collection of green leaf and maintain the flow of fresh green leaf without any delay to factories. The farmers can bring their leaf to the nearby collection centers where the leaves are inspected and graded according to quality. Such collection centers can be established at major production areas within easily reachable distance (less than 3 km). The center can be of permanent type with cemented platform and corrugated iron roof. Management of such centers can be given to the FBOs/ cooperatives, tea factories and regularly inspected by HOTPA to ensure the quality of leaf. Special trainings can be provided to collection center service provider for operation, logistics and meeting quality standards.
- **Facilitation in developing linkages for to establish contract between cooperative/FBOs and factory:** It is very essential to understand complaints from producer by the processors and vice versa to maintain good relationship. Contract agreement could be a way to ascertain regular supply of quality raw materials for processors as well as increase bargaining power of producers. Already some cooperatives are practicing such contract with Guranse Tea Estate whereby they supply green leaf to the factory on the predetermined price fixed during contract signing every year. This should be replicated to other areas also.
- **Support in achieving organic certification:** Every processors and traders agree that the future is in going organic. Technical support can be provided for obtaining organic certification by facilitating in the paper works, inspectors visits and linking with accredited certifying agencies. Also, facilitation should be provided to produce technical manpower who can orient/assist/monitor farmers and handle the required documentation activities.
- **Assist in group certification:** To encourage and assist small farmers who have limited land holdings, facilitation can be provided to obtain group certification. The group certification can be provided to FBOs and cooperatives or interested factories

5.1.2 Processing

- **Assist in obtaining international certification:** International certification like HACCP, ISO, Organic and Fair Trade are vital for increased market access. Some factories have already received such certification. Facilitation can be provided to factories towards obtaining these certifications. The factories which are already organic can be assisted to get Fair Trade certificate.
- **Assist in ensuring safety standards, increasing efficiency of the factories and implementing good manufacturing practices (GMP):** To attain these the program following activities can be supported: i) analyze operational and management constraints of the factories ii) facilitate to bring technical experts from machine/equipment supplying companies to conduct study on necessary upgrading required, ii) support technology, equipment, and material upgrading depending upon the cost effectiveness and within acceptable budget, iv) provide training on use and maintenance on the upgraded technology, v) conduct exposure visit for processors to tea factories in China, India or Sri Lanka, and vi) provide managerial trainings on quality management.
- **Develop tea taster/technician:** There are specialized short-term and long-term courses offered by universities to produce tea experts and professionals. Support can be provided to send key Nepalese staff or entrepreneurs to attend suitable courses as required by the tea sector. Identification of potential candidate can be done through consultation with HOTPA/HIMCOOP. At present, most of the tea experts are brought from Darjeeling paying high wages.
- **Establishment of blending facilities:** Blending facilities are need of present and highly demanded by the industry people. Blending helps in product diversification of Nepalese tea (especially second grade tea like monsoon season tea which are sold in discounted prices in India) to produce value added tea such as flavored tea, Masala Tea, Spice Blends, Herbal Blend, Dried Fruits Mix, that are highly priced in niche international markets. Support can be provided to establish and operate blending facility implementing PPP model whereby the program can assist to search/build factory complex, provide blending and office equipments and give trainings to concerned staffs on operation, maintenance and quality management.

The concept of a Central Blending Facility (CBF) could be appropriate in the present context if it is cost effective and remains within program budget, as the quantity of blending required by an individual factory is less. Hence, consolidated quantities must be obtained from various factories to realize the full potential of the CBF. The CBF can be built and managed in partnership with HOTPA/HIMCOOP or interested individuals. The potential location for such CBF could be in and around Kakarbhitta in close proximity of proposed Central Warehouse.

The alternative/additional activity can be the establishment of cost-effective blending facilities at local level that is equipped with efficient blending drum and simple tumble drier manufactured locally. Technical trainings can be provided to assemble, operate and maintain such machineries. Similarly, business planning and managerial training is required for better management of the facility.

- **Research on Nepal's own blend:** The program can assist on research and development of Nepal's own unique blend that are easily marketable in international market especially focusing on the growing US specialty tea market.

- **Support small scale tea machinery suppliers and service providers:** Small-scale processing units can have significant value addition at farmers' level and help to increase the income of farmers. Large number of farmers are interested to establish small scale processing units but lack financial and technical capacity. Support should be provided to such interested farmers and farmer groups to help establish such factories. Support should be provided on a cost share basis where farmers will establish the factory building with basic machineries (many are presently available) and NEAT could look into supporting those machinery which could drastically improve quality thereby making them able to produce and export specialty teas to international markets.

For the existing small processing units, supports should be provided on increasing technical expertise, upgrading equipments and improving practices for quality production. Business planning and managerial trainings should be provided to both old and new small processors. Also, support should be provided to establish demo units in a cost share basis where farmers will receive training on specialty tea production and quality up gradation activities.

- **Establishment of maintenance facility:** With increasing number of processing factories, there is greater need of the maintenance facility. The focus of such maintenance facility should be on numerous small processing units already in the area where it is to be established. Some estimated 12 new Chinese small processing units along with old processing units are already installed at various locations and there are 8 new processing units being installed in the country. Supports can be provided in establishment of the maintenance facility in Ilam equipped with technical expert, testing equipments and spares. The facility will also be able to address maintenance problem of large and medium factories that are solvable at local level. Orthodox tea from Terai region can also be promoted for increased production.

5.1.3 *Marketing*

- **Support in upgrading Packaging:** Research and facilitation can be conducted on getting improved packaging machineries (such as pyramid tea bags, vacuum packing) and materials. Training can be conducted in better packaging methods. Assistance can be provided to develop attractive promotional materials.
- **Establishment of Central Warehouse:** A central warehouse is highly demanded by the industry people. The necessity of the warehouse is felt due to low quantity order received by individual exporters from the international market which needs to be consolidated with other orders in order to ship in a container for to reduce the cost of delivery. Due to lack of proper storage house, the exporters are not being able to provide on time delivery which is hampering the export. In this regard, support should be provided for establishment of Central Warehouse in and around Kakarbhitta, Jhapa with capacity to consolidate tea products from various factories. The warehouse will also support the Central Blending Facility proposed to be built in the proximity. Initially, the food warehouse of Nepal Food Corporation which are left unused should be explored and lobbied to obtain it and upgraded to fit for tea storage. If that option is not attainable, initiation should be taken to construct the new ones on the PPP model. Partnership can be done with HOTPA, HIMCOOP, NTCDB or individual businesses towards such establishment. A plan can be devised and management committee formed for its long term sustainable operation.
- **Increase credibility and market linkages of Nepal Tea:** Nepal Tea is steadily gaining its popularity and brand image. However, massive activities should be

conducted for its brand establishment. Some of the promotional and support activities that can be performed within the programs lifetime are i) Support for participation in international tea fairs on regular basis e.g. World Tea Expo, Xiamen fairs, Hong Kong tea fair, Tea and Coffee World Cup etc., ii) Organize tea events at renowned sites such as world heritage sites, base camp of MT. Everest etc and bring the international importers to the event, iii) Coordinate with Chambers of potential/importing countries and to organize tea tours, iv) Organize visits of highly potential individual importers in tea estates and factories and provide them extra hospitality, v) Conduct interactions with Tea Associations, Tea Boards and similar bodies in tea importing countries, vi) Coordinate with World Tea Media for promotion of Nepal Tea, vii) Assist in market expansion to USA, Russia, Middle East, EU, UK, Japan through market study and coordinating with the respective countries chambers and concerned departments, and viii) Tap and expand the lucrative market of India. These activities should be conducted in partnership with HOTPA, HIMCOOP, NTCDB and FNCCI.

- **Development of Auction Market:** An auction market needs to be developed to bring the buyers and sellers at one point and allow competitive bidding. The auction market can be developed in Kakarbhitta at the proximity of Central Warehouse. The concept of e-auction should also be launched for global coverage. The program should partner with experienced private auctioning company such as J. Thomas of India who can be invited to conduct feasibility study and coordination the market's establishment.
- **Quality Needs Assessment:** Support in assessment of quality requirement of tea in potential export markets and technical assistance in obtaining such quality including new product development.
- **Upgradation of the laboratories:** Supports can be provided to upgrade the existing laboratories in order to capacitate them for conducting analytical tests on residue level, heavy metals, microbiological and other quality parameters. The program can work together with MoCS for the accreditation of such laboratory in importing countries. A review can be done of the support conducted by other donor agencies in similar activities in order to avoid duplication.
- **Group branding for small processors:** It is difficult for most of the small processors to establish their own brand and conduct promotional activities due to limitation of their business volume. Group branding can be done for such interested small processors which will help in terms of economies of scale. Support can be provided to devise a Group Brand by developing norms on quality standards, assisting in necessary documentation and packaging, conduction of promotional activities and market linkages. In order to brand tea, quality consistency is a must. This is possible by establishing small scale tea blending units at local level on a cost share basis.
- **Domestic market promotion:** In order to increase the domestic consumption of orthodox tea, market promotion can be important tool. For this, NEAT can assist in establishment of special sales outlet at strategic locations such as Thamel. These outlets will only supply pure quality tea. The outlets will have special packaging for each estate tea in order to differentiate tea from various estates. Also, promotion campaign can be conducted through print and electronic media as well as street promotional campaign such as placing stalls at various strategic locations, distribution of promotional materials, etc.

5.1.4 Policy and Institutions

Strengthening and capacity enhancement of HOTPA, HIMCOOP and CTCF:

HOTPA, HIMCOOP and CTCF are active organization striving for the development

of tea industry. These organizations/cooperatives are working from field level to end market to promote quality production and make export trade more competitive and effective. These networks are crucial for the further development of the tea industry. Hence, these organization should be strengthened and capacitated for to continue and the task of making the industry more competitive. Expanding the membership base, strengthening the organizational structure and governance, providing infrastructural support to the secretariats, capacitating managerial staffs, developing as resource centers are some of the activities that can be conducted for strengthening the organizations.

- **Development of norms and standards:** The commodity specific norms and standards can be developed in partnership with HOTPA, HIMCOOP, NTCDB, MoAC and TEPC.
- **Support in discussion forum:** Assistance can be provided to hold discussion forum among the major stakeholders including private sectors and government for policy dialogues.
- **Strengthen NTCDB:** There is a greater demand from private sector and associations in restructuring of NTCDB with more role of private sector and institutional representation from major institution of the industry such as HOTPA, NTPA, NTA HIMCOOP, CTCF in order to make NTCDB more functional and reflective to the requirement of all the stakeholders. With consultation and coordination between NTCDB and other stakeholders, the program can facilitate to strengthen NTCDB for better functioning. All policy issues should be carried out under the umbrella of FNCCI.
- **Development of Industry Specific Database:** The development of new database is essential for to support the industry. For this, a survey needs to be conducted and a database prepared to ascertain the exact status of the industry. Updating mechanism can also be devised for long term use. Partnership can be done with NTCDB/HOTPA for its long term sustainability
- **Promoting Tea Tourism:** Nepal has a lot of potential for tourism promotion in tea producing regions due to its natural beauty and warm hospitality of people. Besides, tourists can learn the art of producing tea, from plucking to tasting and enjoy the diverse cultures of Nepal. The program can assist in promoting Tea Tourism which can create employment, increase local economy as well as provide exposure to Nepalese tea.

5.2 Long term strategy

- **Establishment of training centres:** Training centres can be established to train farmers where they will get theoretical and practical knowledge on producing good quality leaf.
- **Research on increasing soil fertility and bio-pesticides:** Assistance can be provided to research institute such as NARC for to conduct research on ways of increasing soil fertility and bio-pesticides by use of natural products in tea plantation area.
- **Support for the establishment of market information center:** Market information is a key requirement for every actor throughout the value chain. However, the Nepalese tea sector does not have an organized mechanism for to compile and disseminate market information. NEAT can assist in establishment of market information center in partnership with NTCDB/AEC.
- **Awareness raising and dialogues against banned pesticides and inferior inputs:** The issue of use of banned pesticides and inferior quality inputs is a key concern of

the tea industry. The program should conduct awareness program at field and conduct dialogues with concerned department of Government as well as Chambers for the proper implementation towards prohibiting banned products.

- Conduct policy lobby for duty free or duty concessions in importation of agricultural equipments and packaging materials.
- Assist in the facilitation of regular dialogues and coordination between farmers, employee and employers for labor issues and other concerns.
- Expansion of tea plantation area: There is high potential for the expansion of tea plantation area in the current tea producing districts as well as other parts of the country. NTCDB, with its seven extension project in various districts, is working in the expansion of tea plantation area. In partnership with NTCDB, potential tea plantation can be identified and expansion program can be conducted.
- Establishment of Tea Research and Development and Training Center (TRDTC): Coordination can be done with concerned government agency in initiating the concept of development of TRDTC. The center will be able to produce professionals which will fulfill the present human resource gap and have a long term positive effect.
- Conceptualization of a Tea Park: Tea Park is a new concept emerging in major tea producing country where tea related activities are conducted. It may consist of tea processing factories, laboratory, blending facility, warehousing facility, tea exhibition hall, tea tasting facility, tea museum and many more. The concept of Tea Park is to provide all the services required for tea sector within a single compound. Consultation can be conducted with related stakeholder including government on the concept of Tea Park and if found feasible assistance can be provided.
- Assistance in Geographical Indicators: Geographical indicators can be used as marketing tool and is done in production area of exporting countries like Darjeeling in India, Dimbula/Nuwara Eliya in Sri Lanka. The production and processing and the quality of the final product in such clearly defined and identified areas has to be closely studied and special features associated with them classified to use as marketing materials.
- Upgrades/establishment of link road: Assistance can be provided to upgrade/establish link roads between production areas and factory as per the urgency/importance. This will help maintain freshness of green leaf and also provide some assistance to farmers.

6. REFERENCES

- CADP (2008), Product Chain Study Orthodox Tea, Final Report. Biratnagar, Nepal: Commercial Agriculture Development Project, Department of Agriculture, Ministry of Agriculture and Cooperative, Government of Nepal
- CBI (2011), Compliance with EU buyer requirements for tea. Rotterdam, The Netherlands: Center for promotion of imports from developing countries (CBI), Ministry of Foreign Affairs. Available at: <http://www.cbi.eu/>
- CBS (2004), Nepal Living Standard Survey 2003/04, Statistical report, Volume 2. Kathmandu, Nepal: National Planning Commission Secretariat, Central Bureau of Statistics, Government of Nepal
- FAOSTAT (2011), Food and Agriculture Organization (FAO). Available at: <http://faostat.fao.org/site/339/default.aspx>
- HIMCOOP (2009), Special Fifth Anniversary Commemorative Publication. Kathmandu, Nepal: Himalayan Tea Producers Cooperative Ltd.(HIMCOOP)
- ITC (2011), International Trade Center. Available at: <http://www.trademap.org/SelectionMenu.aspx>
- ITC (2007a), Export potential assessment in Nepal, Market Analysis Section, International Trade Centre (ITC) in collaboration with the Trade and Export Promotion Centre (TEPC) of Nepal
- ITC (2007b), Sector study on tea, Advisory Services on Export Development of Priority Sectors of Nepal, International Trade Centre
- MoCS/GoN (2010), Nepal Trade Integration Strategy 2010: Executive Summary and Action Matrix, Kathmandu: Ministry of Commerce and Supplies, Government of Nepal
- MOCS (2009), Commerce Policy-2065. Kathmandu, Nepal: Ministry of Commerce and Supplies, Government of Nepal
- NTCDB (2011), Tea-Coffee Sovineuir-2067 and earlier annual issues. Kathmandu, Nepal: Nepal Tea and Coffee Development Board
- NTCDB (2009), Strategic Plan for the Tea sector in Nepal (2010-2014). Kathmandu, Nepal: National Tea and Coffee Development Board
- Shakya,D. B. (2010), Nepalese Orthodox Tea Sub-Sector, Draft Status Paper. Kathmandu, Nepal: Tea Development Alliance Secretariat, Agro Enterprise Centre/FNCCI
- SNV Nepal, Cost benefit analysis- Production of green tea leaf for orthodox tea. Lalitpur, Nepal: SNV Netherlands Development Organization Nepal
- SNV Nepal (2010), Adding value to Nepal's Orthodox Tea Industry. Lalitpur, Nepal: SNV Netherlands Development Organization Nepal
- TEPC (2011), Nepal Foreign Trade Statistics 2009/10. Kathmandu, Nepal: Trade and Export Promotion Centre, Ministry of Commerce and Supplies, Govt. of Nepal

7. ANNEXES

Annex 1: List of Major Importers

A. List of major Indian importers currently receiving orthodox tea from Nepal

Name of Importer	Address	Approximate import
Accord India Int. Ltd 224, A.J.C. Bose Road, Krishna Building, Suite No. 409, 4th Floor, Kolkata - 700 017, India	Contact Person: Mr Sumaysh Agrawal Email: tea@accord-int.com Phone: 0091 33 2283 4494 Phone: 0091 33 4008 2680 - 84 Fax: 0091 33 2283 4317 Fax: 0091 33 4008 2685 Website: http://www.accord-int.com	600 MT
J.N. Enterprises 541 A, Rabindra Sarani, Kolkata, West Bengal - 700 003 India	Mr. Soumitra Chandra +(91)-(33)-32505112	120 MT
Siddhi Binayak Tea Modak Complex, B. M. Sarani, Mahananda Para, Dhangipara, Siliguri, West Bengal 734001 India	Contact : Binod Sinhal (0353) 2522728	300 MT
Chandan Tea Corporation T-539, Bidhan Market, Siliguri, West Bengal 734001 India	(0353) 2435187 Phone - (+91 353) 420187	150 MT
Nilpur Mkt. Pvt. Ltd. 24, Sir Rajendra Nath Mukherjee Road Kolkotta 700 001 India	Phone:+91 33 2210 2793/0526 Fax: +91 33 2243 6052 Email: info@nilpur.com Website: http://www.nilpur.com/	200 MT
Camelia International (Ilam Tea Producers Pvt. Ltd.) 127 A Narkeldanga Main Road, Kolkotta 700054 India	Ph: 91-33-23649145 Fax: 91-33-23649160 Email: camellia@cal2.vsnl.net.in Website: www.antuvalleytea.com	500 MT

Source: Interaction with Indian Custom Clearing Agent

List of foreign importers currently receiving goods from HIMCOOP

Name of Importer	Address
halssen and Lyon Gmbh	Pickhuben 9, D- 20457, hamburg, Germany
Teegschwendner Gmbh	Heidestrasse 26, 53340 Meckenheim, Germany
J.Fr. Scheibler Gmbh & Co	Trostbruck 4 , D- 20457 hamburg, Germany
Ludwig H.O. Schroeder & Rudolph Hamann	Pickhuben 6, 20457, hamburg, Germany
Le Palais des Thés	3 rue de Nice75011, Paris ó France
Blue Greens Nepalese Tea Importers	Robijnstraat 3, 2403 BP Alphen a/d Rijn, The Netherlands
Darjeeling Cz	Rotalova 34, 614 00 Brno, Czech Republic
Tea Trekker	65 King Street, Northampton, Massachusetts 01060, USA

Source: Interaction with HIMCOOP

Annex 2: Contact information of some of the specialty tea buyers interested in purchase from Nepal (Source: Nepal Tea Assessment, 2011)

A. Those capable of buying full container loads (i.e. up to 15,000 kg at a time)

Adagio Teas

Cynthia Fazekas

141 Lanza Avenue, 18D Garfield NJ 07026

917-815-7185 fax 917-591-5625

Cynthia@adagio.com

R.C. Bigelow, Inc.

Cindi Bigelow

201 Black Rock Turnpike, Fairfield, CT 06825

203-334-1212 fax 203-382-5509

cindi@rcbigelow.com

The G. S. haly Company

Michael J. Spillane

156 Arch Street, Redwood City, CA 94062

650-367-7601 fax 650-367-0291

gshaly@pacbell.net

Harney & Sons

Gary harney

851 Dog Kennel Road, Sarasota, FL 34240

Gharney@aol.com

The Republic of Tea

Barbara Graves

8 Digital Drive, Suite 100, Novato CA 94949

415-382-3413 / 800-354-5530 fax 415-382-3401

Barbara@Republicoftea.com

TAZO

Keith Hutjens

501 SE 2nd Avenue, Portland, Oregon 97214

503-736-9005 fax 503-231-8801

khutjens@tazo.com

B. Those capable of buying up to 5,000 kg at a time

Teas Etc.

Beth Johnston

480 Tall Pines Road, Suite C, West Palm Beach, FL 33413

561-683-6838 / 800-832-1126 fax 561-683-6837

Beth@TeasEtc.com

Mighty Leaf Tea Company

Jill Portman

136 Mitchell Blvd., San Rafael, CA 94903

415-491-2650 x 102 fax 415-472-1648

Jill@mightyleaf.com

Serendipitea

Linda Villano

32-29 Greenpoint Avenue, Long Island City, NY 11101

718-752-1444 fax 718-752-0333

Linda@serendipitea.com

Simpson & Vail

Jim harron

Quarry Road, Brookfield, CT 06804

203-7750240 fax 203-775-0462

jim@svtea.com

The Metropolitan Tea Co.

Gerry Vandergrift

60 Industrial Pkwy., Suite 776, Cheektowaga, NY 14227

800-388-0351 fax 800-319-8327

sales@metrotea.com

Special Teas

Jurgen Link

2 Reynolds Street, Norwalk, CT 06855-1015

203-866-1522 fax 203-866-1528

link@specialteas.com

C. Those who buy 1 kg to 100 kg at a time

The East Indies Company

Mim Enck

7 Keystone Drive, Lebanon, PA 17042

717-228-2000 fax 717-228-2540

mstea@paoline.com

Tea Source

Bill Waddington

752 Cleveland Ave. South, St. Paul, MN 55106

651-690-9822 fax 651-690-9820

bill@teasource.com

TEACUP
Elisabeth Knottingham
2128 Queen Anne Ave N, Seattle WA 98109
206-283-5931
efk@seattleteacup.com

The Cozy Tea Cart
Danielle Beaudette
40 Mountain Road, Brookline, NH 03033
603-249-9111
info@thecozyteacart.com

T bar
Susan Chu
117 South 12th Street, Philadelphia, PA 19107
215-625-3936 fax 215-625-3937
susan@tbartea.com

Tumblewood Teas
Riza Chase Gilpin
P.O.Box 1088 Big Timber, Montana 59011
tumblewoodteas@gmail.com

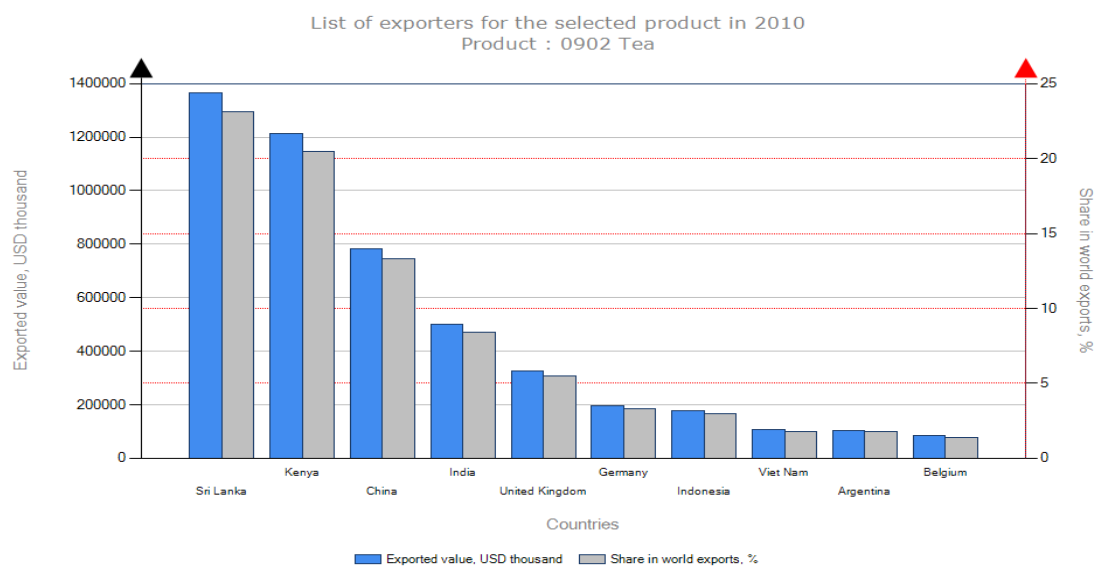
Nigel Melican,
Teacraft, 1 Grisedale Court, Kempston,
Bedford MK42 7EE, U.K.
44-1234 852121
fax 1234 853232
Nigel@nbtea.co.uk

Annex 3: Export data of different categories of tea from Nepal

Country	Black Tea < 3 kg		Black Tea >3 kg		Green tea < 3kg		Green Tea >3 kg	
	Qty (ton)	NPR (In Million)	Qty (ton)	NPR (In Million)	Qty (ton)	NPR (In Million)	Qty (ton)	NPR (In Million)
India	8,080.00	1,098.53	-	-	-	-	51.46	11.11
Germany	46.72	27.44	0.64	0.79	0.18	0.50	3.95	4.46
Czech	138.52	10.26	-	-	-	-	18.80	2.38
Kazakhstan	50.00	9.90	-	-	-	-	-	-
USA	2.28	3.43	1.83	0.45	-	-	4.72	1.28
Canada	0.39	0.71	-	-	13.00	1.71	5.81	1.42
China PR	1.37	0.19	-	-	21.81	2.79	-	-
Japan	2.02	1.27	1.00	0.60	0.47	0.44	1.70	0.82
Russia	11.48	1.71	-	-	-	-	0.98	0.37
Austria	1.30	0.93	-	-	1.16	0.45	0.52	0.76
Malaysia	4.32	0.47	-	-	0.30	0.05	4.31	0.47
Indonesia	11.22	0.99	-	-	-	-	-	-
Sweden	0.28	0.12	-	-	-	-	2.46	0.38
Sri Lanka	3.10	0.73	-	-	-	-	-	-
Bhutan	1.92	0.66	0.21	0.39	-	-	-	-
France	0.49	1.86	-	-	0.04	0.01	0.38	1.12
UK	1.30	0.17	-	-	-	-	-	-
Netherlands	0.74	0.35	0.47	0.23	0.02	0.03	-	-
Kenya	0.87	0.13	-	-	-	-	-	-
Ireland	0.37	0.23	-	-	-	-	-	-
Switzerland	0.40	0.18	-	-	-	-	-	-
Australia	0.37	0.28	-	-	-	-	0.13	0.05
New Zealand	0.51	0.21	-	-	-	-	-	-
Korea R	0.03	0.08	-	-	-	-	0.43	0.43
Iceland	0.00	0.00	-	-	-	-	-	-
Hong Kong	-	-	0.07	0.01	-	-	0.13	0.01
Denmark	-	-	-	-	-	-	0.21	0.46
Seychelles	-	-	-	-	-	-	0.01	0.02
Poland	-	-	-	-	-	-	0.48	0.51
TOTAL	8,359.99	1,160.83	.22	2.46	36.98	5.97	96.47	26.06

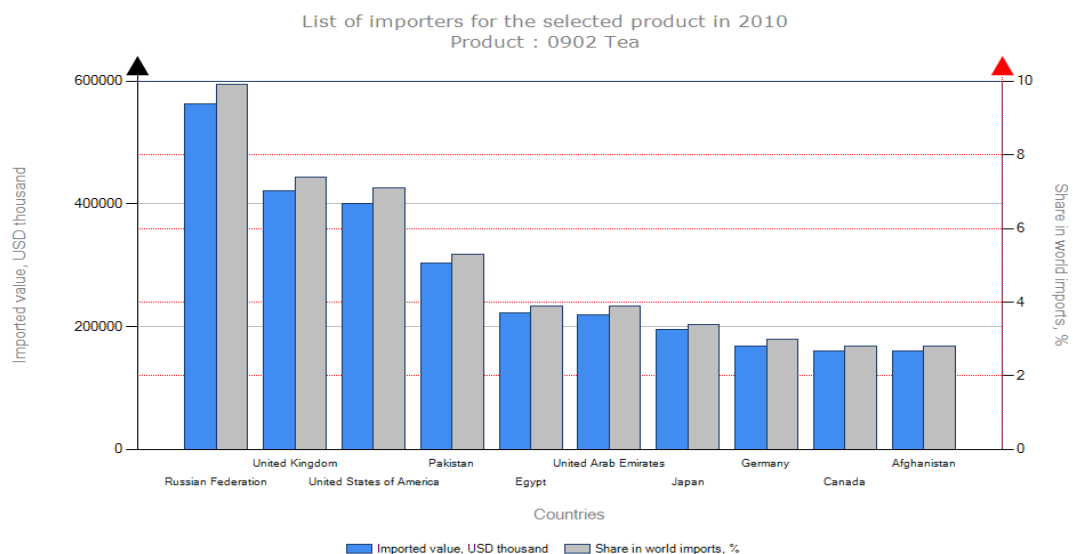
Source: TEPC, 2011

Annex 4: List of top exporting countries



Source: ITC, 2011

Annex 5: List of top importing countries



Source: ITC, 2011

Annex 6: Top Tea Producing Countries

Rank	Country	Production (Int \$1000)	Production (MT)
1	China	1,380,615	1,275,384
2	India	871,615	805,180
3	Kenya	374,331	345,800
4	Sri Lanka	344,995	318,700
5	Turkey	214,386	198,046
6	Viet Nam	189,331	173,500
7	Indonesia	163,297	150,851
8	Japan	104,462	96,500
9	Argentina	82,270	82,148
10	Thailand	66,636	61,557
20	Nepal	17,493	161,60

Source: FAOSTAT, 2011

Annex 7: Existing Tea Cooperatives

Estimated number of smallholder tea farmers in Ilam, Dhankuta, Panchthar, and Taplejung districts organized by cooperatives

District: Ilam

S.N.	Name of Cooperative	No. of Farmers
1	High Hill Tea producer Cooperative Society Ltd.	91
2	hariyali Jakibk Tea Producer Cooperative Society Ltd.	145
3	Kanyam Tea Producer Cooperative Society Ltd.	169
4	Green Hill Tea producer Cooperative Society Ltd.	97
5	Triyuga Tea Producer Cooperative Society Ltd.	32
6	Shihadevi Tea Producer Cooperative Society Ltd.	95
7	Ajambare Tea Producer Cooperative Society Ltd.	62
8	Charkola Tea Producer Cooperative Society Ltd.	41
9	Tinjure Tea Producer Cooperative Society Ltd.	110
10	Kanchan Himal Tea Producer Cooperative Society Ltd.	76
11	Eco Tea Producer Cooperative Society Ltd.	116
12	Sriantu Organic Tea Producer Cooperative Society Ltd.	71
13	Siddithumka Tea Producer Cooperative Society Ltd.	90
14	Sundarpani Tea Producer Cooperative Society Ltd.	102
15	Ilameli Tea Producer Cooperative Society Ltd.	57
16	Baudadham Tea producer Cooperative Society Ltd.	48
17	Nawami Tea Producer Cooperative Society Ltd.	84
18	Shidda Pokari Tea Cooperative Society Ltd.	40
19	Deurali Tea Producer Cooperative Society Ltd.	62
20	Himsikar Tea Producer Cooperative Society Ltd.	65
21	Laligurash Tea Producer Cooperative Society Ltd.	63
22	Sadhubesi Tea Producer Cooperative Society Ltd.	65
23	Batase Tea producer Cooperative Society Ltd.	50
24	Mangmalun Tea Producer Cooperative Society Ltd.	42
25	Borboteli Tea Producer Co-operative Society Ltd.	47

26	Gogane Tea Producer Co-operative Society Ltd.	63
27	Sakhejung Tea Producer Co-operative Society Ltd.	45
28	Sayapatri Tea Producer and Processer Cooperative Society Ltd	33
29	Sanimai Tea Producer Cooperative Society Ltd.	70
30	Iruntar Farmers Group	25
	Total	2,156

District: Dhankuta

S.N.	VDCs	No. of Farmers
1	Pakhibas	40
2	Muga	30
3	Falante	15
4	hattikharka	20
5	Tankuwa	20
6	Parewadin	15
7	Bhirgaon	25
8	Rajarani	25
9	Basantatar	25
10	Belhara	15
11	Chungbang	15
	Total	245

District: Panchthar

S.N.	VDCs	No. of Farmers
1	Chilingden, Faktep	51
2	Pawasartap	24
3	Fidim,Ranitar,Imbung,Chokmagu,Shiva	108
4	Lalikharka	27
	Total	210

District: Terathum

S.N.	Cooperative	No. of Farmers
1	Singhadevi Tea Producer Cooperative	200
2	Janahit Tea Producer Cooperative	28
3	Jalakanya Tea Producer Cooperative	27
4	Basant Tea Producer Cooperative	25
5	Fulake Tea Producer Cooperative	25
6	Ramite Tea Producer Cooperative	25
7	Asine Tea Producer Cooperative	25
8	Kulkule Tea Producer Cooperative	26
9	Morang Tea Producer Farmer Group	20
	Total	401

Annex 8: Types of Orthodox Tea

Leaf	Broken	Fanning	Dust
STGFOP: Special Tippy Golden Flowery Orange Pekoe	GFBOP: Golden Flowery Broken Orange Pekoe	T/GOF: Tippy/Golden Broken Orange Fanning	FOF: Flaky Orange Fanning
TGFOP: Tippy Golden Flowery Orange Pekoe	FBOP: Flowery Broken Orange Pekoe	FOF: Flowery Orange Fanning	FD: Fine Dust
GFOP: Golden Flowery Orange Pekoe	GBOP: Golden Broken Orange Pekoe	BOPF: Broken Orange Pekoe Fanning	
OP: Orange Pekoe	BOP: Broken Orange Pekoe	OF: Orange Fanning	
		BOP 1: Broken Orange Pekoe one	
		BPS: Broken Pekoe	

Annex 9: Cost of Production of Green Tea Leaf in 0.5 ha of land (NPR/kg)

	Conventional ⁴	Conversion to Organic (Method 1)	Conversion to Organic (Method 2)	Organic (Method 1) ⁵	Organic (Method 2) ⁶
Farm Input Costs (Includes Planting Materials, Fertilisers, Manure, Pesticides, etc)	2.91 (14.9%)	5.63 (12.0%)	3.74 (10.4%)	5.63 (10.8%)	3.74 (9.5%)
Labour Costs (includes land preparation, infilling, mulching, weeding, training, skiffing and pruning, fertiliser and manuring, supervision and overseeing)	1.78 (9.1%)	8.52 (18.1%)	6.57 (18.2%)	8.52 (16.3%)	6.57 (16.7%)
Labour Cost (Plucking)	6.37 (32.6%)	16.71 (35.5%)	12.89 (35.8%)	16.71 (32.0%)	12.89 (32.7%)
Overheads (includes stalking, machinery/ equipment operational depreciation, transportation, irrigation/ water, etc.)	1.89 (9.7%)	3.85 (8.2%)	2.97 (8.2%)	3.85 (7.4%)	2.97 (7.5%)
Capital Costs (includes interest on investments, interest on operating costs, and land opportunity cost)	4.99 (25.5%)	10.75 (22.8%)	8.24 (22.9%)	10.75 (20.6%)	8.24 (20.9%)
Amortised Investment Costs (includes initial five years input costs, manpower/ labour costs, overheads and interest/ capital costs amortised over 30 years)	1.61 (8.2%)	1.61 (3.4%)	1.61 (4.5%)	6.74 (12.9%)	5.01 (12.7%)
Total Cost of production	19.55 (100%)	47.07 (100%)	36.02 (100%)	52.20 (100%)	39.43 (100%)

Source: SNV, 2010

⁴ Yield for 0.5 ha of conventional cropping regime have been put at 2.75 metric tonnes per year

⁵ Organic Method 1: the productivity or the yield has been calculated at 1.35 metric tonnes of green leaf per year for 0.5 ha of land.

⁶ Organic Method 2: the productivity or the yield has been calculated at 1.75 metric tonnes of green leaf per year for 0.5 ha of land.

Annex 10: Export Data (ITC, 2011)

A. Worldwide export of black tea (fermented) & partly fermented tea in packages not exceeding 3 kg (Product: 090230)

Exporters	Trade Indicators						
	Value exported in 2010 (USD thousand)	Quantity exported in 2010	Unit value (USD/unit)	Annual growth in value 2006-10 (%)	Annual growth in quantity 2006-10 (%)	Annual growth in value 2009-10 (%)	Share in world exports (%)
World	1,589,927	0		9	1	20	100
Sri Lanka	622,695	126,529	4,921	16	5	29	39.2
United Kingdom	248,533	21,431	11,597	2	3	17	15.6
India	96,867	0		10	6	20	6.1
Belgium	63,091	7,134	8,844	4	6	16	4
Germany	57,019	4,535	12,573	4	-2	-4	3.6
Poland	53,544	5,986	8,945	24	18	42	3.4
Russian Federation	48,718	8,188	5,950	6	1	-10	3.1
China	48,286	7,372	6,550	11	1	34	3
Uganda	36,740	21,932	1,675	43	46	2	2.3
Azerbaijan	32,468	7,984	4,067	17	5	21	2

B. Worldwide export of black tea (fermented) & partly fermented tea in packages exceeding 3 kg (Product: 090240)

Exporters	Trade Indicators						
	Value exported in 2010 (USD thousand)	Quantity exported in 2010	Unit value (USD/unit)	Annual growth in value 2006-10 (%)	Annual growth in quantity 2006-10 (%)	Annual growth in value 2009-10 (%)	Share in world exports (%)
World	3,250,343	0		12	2	18	100
Kenya	1,206,643	415,303	2,905	16	4	37	37.1
Sri Lanka	701,362	180,624	3,883	7	-5	6	21.6
India	387,584	0		11	1	27	11.9
Indonesia	140,119	73,941	1,895	34	18	1	4.3
China	129,141	53,525	2,413	6	2	13	4
Argentina	98,320	80,890	1,215	11	2	29	3
Viet Nam	85,115	0		18	10	15	2.6
Malawi	80,606	49,876	1,616	14	1	3	2.5
Germany	79,215	15,191	5,215	2	-1	8	2.4
United Republic of Tanzania	47,017	25,961	1,811	17	4	-29	1.4

C. Worldwide Export of green tea (not fermented) in packages not exceeding 3 kg (Product: 090210)

Exporters	Trade Indicators						
	Value exported in 2010 (USD thousand)	Quantity exported in 2010	Unit value (USD/unit)	Annual growth in value 2006-10 (%)	Annual growth in quantity 2006-10 (%)	Annual growth in value 2009-10 (%)	Share in world exports (%)
World	725,511	0		12	5	10	100
China	388,419	123,877	3,136	12	4	5	53.5
United Kingdom	49,780	2,185	22,783	3	1	18	6.9
Sri Lanka	39,130	5,028	7,782	19	10	46	5.4
Japan	34,238	1,645	20,813	17	10	21	4.7
Indonesia	30,323	8,595	3,528	6	1	26	4.2
Germany	29,464	1,461	20,167	12	7	10	4.1
Belgium	18,868	2,672	7,061	21	16	6	2.6
France	17,401	1,332	13,064	11	10	9	2.4
United States of America	15,793	3,141	5,028	9	16	8	2.2
Poland	12,899	1,060	12,169	41	28	13	1.8

D. Worldwide Export of Green tea (not fermented) in packages exceeding 3 kg (Product: 090220)

Exporters	Trade Indicators						
	Value exported in 2010 (USD thousand)	Quantity exported in 2010	Unit value (USD/unit)	Annual growth in value 2006-10 (%)	Annual growth in quantity 2006-10 (%)	Annual growth in value 2009-10 (%)	Share in world exports (%)
World	351,138	0		7	0	20	100
China	218,322	117,686	1,855	5	-1	19	62.2
Germany	28,734	4,759	6,038	8	6	7	8.2
Viet Nam	20,113	15,137	1,329	8	6	13	5.7
Japan	14,207	588	24,162	15	8	70	4
India	9,547	1,931	4,944	13	3	16	2.7
United States of America	5,277	1,146	4,605	3	6	11	1.5
United Kingdom	4,564	570	8,007	13	20	5	1.3
Indonesia	4,458	2,808	1,588	27	21	-21	1.3
Netherlands	4,309	789	5,461	-6	-8	323	1.2
France	4,111	333	12,345	4	-4	-1	1.2

Annex 11: Import Data (ITC, 2011)

A. Worldwide import of black tea (fermented) & partly fermented tea in packages not exceeding 3 kg (Product: 090230)

Importers	Trade Indicators							Average tariff (estimated) applied by the country (%)
	Value imported in 2010 (USD thousand)	Quantity imported in 2010	Unit value (USD/unit)	Annual growth in value 2006-10 (%)	Annual growth in quantity 2006-10 (%)	Annual growth in value 2009-10 (%)	Share in world imports (%)	
World	1,468,629	0		9	3	16	100	
Russian Federation	121,438	26,015	4,668	-3	-8	10	8.3	15.5
United States of America	107,338	13,563	7,914	16	8	27	7.3	0
Canada	89,622	6,833	13,116	4	1	7	6.1	0
Syrian Arab Republic	76,296	15,412	4,950	21	7	7	5.2	7
France	72,069	6,842	10,533	1	-1	13	4.9	0
Australia	53,998	6,176	8,743	7	0	10	3.7	0
Ukraine	52,869	9,109	5,804	6	5	0	3.6	9.5
Japan	49,704	4,320	11,506	1	-4	23	3.4	11.5
Italy	42,577	3,102	13,726	6	2	16	2.9	0
Iraq	41,934	10,814	3,878	52	41	99	2.9	...

B. Worldwide Import of Black tea (fermented) & partly fermented tea in packages exceeding 3 kg (Product: 090240)

Importers	Trade Indicators							Average tariff (estimated) applied by the country (%)
	Value imported in 2010 (USD thousand)	Quantity imported in 2010	Unit value (USD/unit)	Annual growth in value 2006-10 (%)	Annual growth in quantity 2006-10 (%)	Annual growth in value 2009-10 (%)	Share in world imports (%)	
World	317,2986	0		11	2	20	100	
Russian Federation	387,593	136,902	2,831	18	3	11	12.2	0
United Kingdom	362,939	138,391	2,623	6	-3	14	11.4	0
Pakistan	298,494	105,798	2,821	7	-3	35	9.4	10
Egypt	212,483	132,196	1,607			-3	6.7	1.8
United States of America	184,672	91,136	2,026	7	3	17	5.8	0
United Arab Emirates	169,192	49,254	3,435	13	2	20	5.3	...
Afghanistan	157,259	49,422	3,182	64	44	57	5	...
Japan	126,786	33,049	3,836	3	0	17	4	5.2
Iran (Islamic Republic of)	109,474	23,871	4,586	15	-2	5	3.5	30
Germany	96,944	34,008	2,851	1	1	12	3.1	0

C. Worldwide import of green tea (not fermented) in packages not exceeding 3 kg (Product: 090210)

Importers	Trade Indicators							Average tariff (estimated) applied by the country (%)
	Value imported in 2010 (USD thousand)	Quantity imported in 2010	Unit value (USD/unit)	Annual growth in value 2006-10 (%)	Annual growth in quantity 2006-10 (%)	Annual growth in value 2009-10 (%)	Share in world imports (%)	
World	660,089	0		12	6	12	100	
Morocco	131,733	57,934	2,274	13	7	26	20	33.1
United States of America	53,965	5,409	9,977	11	6	25	8.2	1.2
France	52,997	7,663	6,916	14	9	31	8	0.3
Canada	35,253	2,770	12,727	11	-1	11	5.3	0
Mauritania	33,828	10,103	3,348	23	14	26	5.1	5
Togo	24,183	8,576	2,820	60	49	3	3.7	9.7
Mali	23,420	7,007	3,342	28	21	4	3.5	9.7
Algeria	21,853	8,196	2,666	10	2	-15	3.3	27.8
Russian Federation	17,933	3,293	5,446	-5	-13	28	2.7	15.5
Belgium	14,706	3,010	4,886	17	14	-10	2.2	0.3

D. Worldwide import of green tea (not fermented) in packages exceeding 3 kg (Product: 090220)

Importers	Trade Indicators							Average tariff (estimated) applied by the country (%)
	Value imported in 2010 (USD thousand)	Quantity imported in 2010	Unit value (USD/unit)	Annual growth in value 2006-10 (%)	Annual growth in quantity 2006-10 (%)	Annual growth in value 2009-10 (%)	Share in world imports (%)	
World	364,395	0		5	0	17	100	
United States of America	54,754	16,760	3,267	-3	0	31	15	1.2
Russian Federation	36,143	15,409	2,346	24	13	37	9.9	0
Germany	35,884	12,186	2,945	2	-1	21	9.8	0
Uzbekistan	23,393	18,551	1,261	23	1	-9	6.4	8.6
France	16,754	2,119	7,907	15	8	2	4.6	0
Japan	15,861	5,212	3,043	-13	-17	11	4.4	7
United Kingdom	14,474	3,715	3,896	6	5	0	4	0
Poland	14,132	6,021	2,347	47	60	119	3.9	0
Chinese Taipei	10,969	9,524	1,152	13	7	8	3	18.8
Ukraine	10,072	3,411	2,953	18	15	49	2.8	4.8

Annex 12: List of PSDM Participants

SN	Name of Participants	Organization	Designation	Phone No.	Email
1	Tara Baskota	Kanchanjangha Tea	Director	9841462192	sagro@wlink.com.np
2	Shanta Baskota	Kanchanjangha Tea	Director	9841737074	sagro@wlink.com.np
3	Laxman Pd. Poudel	Agri Product Export Promotion Program	Sr. Agri Economist	9841553860	paudel_laxman@yahoo.com
4	Dilip Rai	Nepal Small Tea	Chairman	9851084515	sakurachiya@hotmail.com
5	Sunil Rai	TEASEC	Chairman	9851001936	teasecfor@yahoo.com
6	Madhu Niraula	ECO-T-COP	Manager	9842635733	
7	Rajendra Kr. Jabegu	CTCF Nepal	Vice Chairman	9842661583	ctcfnepal@yahoo.com
8	Pallavi Singh	NTCDB	Tech. Officer	9841598391	pallaviid.singh@gmail.com
9	Raju Sherma Limbu	Sharma Trade Link	Chairman	9851034216	raju@aromanepal.com
10	Arun Rana	GIZ	S. Program Officer	9841892611	arun.rana@giz.de
11	Udaya Chapagain	HOTPA	Chairman	9851078467	uchapagain@gmail.com
12	Bachan Gyawali	HIMCOOP	Vice-chairman		-
13	Laxmi Joshi	Trade and Export Promotion Center	S. Officer	9841540848	ljoshi25@hotmail.com
14	Bhishma P. Subedi	ANSAB	ED		-
15	Sudarshan Khanal	ANSAB	Communication Officer		
16	Binod Mishra	IDE Nepal	PD	9852830169	
17	Ishwor Pd. Rijal	National Plant Quarantine Program	Chief	9841574505	ip_rijal@yahoo.com
18	B.B Mathema	NEAT	DCOP	9851108452	
19	Kamal Raj Mainali	HOTPA	Director	9851024068	
20	Atul Man Rai	HOTPA Ilam			
21	Ram H. Subedi	Gorkha Ayurved		9851033346	
22	Ananda Ghimire	NEAT	VCDS	9741195574	
23	C. Bhushan Subba	NEAT	Tea specialist	9851079478	
24	John Taylor	HIMCOOP	Marketing Manager	9841340581	
25	Priyanka Shrestha	GIZ	APD	9851127675	
26	Abhinanda Giri	Shree Antu Ilam	Managing Director	9852674396	
27	Chetan Paudel	ANSAB	Intern	9741101777	cpoudel@oberlin.edu
28	Krishma P. Prasain		Trader	9851114061	
29	Sushil Rijal	HIMCOOP	President	9852020250	sushilr@info.com.np
30	Kiran Adhikary	ANSAB	Manager		
31	Puspa Lal Ghimire	ANSAB	Manager		
32	Kabir Sthapit	ANSAB	PO		
33	Anju Katuwal	ANSAB	AA		

Annex 13: List of Offices and People Visited

SN	Organisation/Company	District	Contacted Person	Phone
1	Ilam tea producer's Ltd	Ilam	Krishna Prasad Prasai	01-4445885
2	Kuwapani Tea Plantation P. Ltd.	Dhankuta	Sushil Rijal	026-540210
3	Jun Chiyabari Tea Garden/ Ilam Chiyabari	Dhankuta/ Ilam	Bachan Gyawali/ Robin Banerjee	01-5527370
4	Indo Foreign agents	Kakarbhitta	Dulal Chandra Roy	+91-99331-86853
5	Sherma Trade Link P. Ltd	Kathmandu	Raju Sherma	9851034216
6	Nepal Small Tea Producers Ltd.	Ilam	Dilip Rai	01-4434577
7	Trade and Export Promotion Center	Kathmandu	Ramesh Kumar Shrestha/ Badri Narasingha Adhikari	01-5525898
8	Agro Enterprise Center	Kathmandu	Pradip Maharjan/Shila Thapa/Pradhumna Pandey	01-4262260
9	Gorkha Tea Estate/ HOTPA	Ilam	Uday Chapagain/ SK Pradhan	01-4498319
10	Parajuli Tea Industries	Jhapa	Aditya Parajuli	023-520971
11	HIMCOOP	Kathmandu	Sushil Rijal/John Taylor	01-5521942
12	Central Tea Cooperative Federation Ltd.	Ilam	Govinda Pd. Dahal	027-521034
13	TEASEC	Ilam	Jyoti Adhikari	027-540014
14	Himalayan Range Tea Industries Pvt. Ltd	Ilam	Sachin Gomden	27-540165
15	Kanchanjunga Tea Estate	Panchthar	Dilli Banskota	024-520169 9851014421
16	Guranse Tea	Dhankuta	Navin Karki	01-4478301
17	Ganesh Rasik	Ilam		
18	Sagarmatha Chiya	Ilam	Gyani Limbu	9842686228
19	National Tea and Coffee Board	Kathmandu	Madhav Thapaliya	01-4495792
20	Ministry of Commerce and Supplies	Kathmandu	Hem Lal Devkota	9841284508
21	Agriculture commodity export promotion program	Kathmandu	Durga Pd. Uprety	9741150733
22	Department of Agriculture Extension	Kathmandu	Raju Ghimire	9841428878
23	Himalayan Shangrila Tea Estate	Ilam	Hom Sitaula	9842692487
24	Jung Bdr. Gongwa	Dhankuta		9842112753

Annex 14: Orthodox Tea Producing Factories in Nepal

SN	NAME OF THE FACTORY	ADDRESS	CHAIR PERSON	MANAGER	PRODUCTION IN 2010 (kg)	EXPORT IN PERCENT (%)			CONTACT NO
						Calcutta, India	Abroad	Domestic	
1	Kanchanjunga Tea Estate	Panchthar	Deepak Parsad Baskota	Nirananda Acharya	50,000	-	80	20	024-520169
2	Ilam Tea Producers Pvt. Ltd., Panchakanya Unit	Ilam	Ashok Murarka	Hari Timsina	550,000	100	-	--	027-555027
3	Ilam Tea Producers Pvt. Ltd. Sri Antu Unit	Ilam	Ashok Murarka	Kumar KC	500,000	100	-	-	98526-75434
4	Sri Antu Tea Industries, Sri Antu	Ilam	Atal Rai	Uttam Pradhan					98169-24631
5	Mist Valley Tea Industries, Jeetpur	Ilam	Sures Limbu	Bhim Subba(factory supervisor)	81,000	100	-	-	023 697523 98526-70287
6	Gorkha Tea Estate, Sunderpani	Ilam	Udaya Chapagai	Uttam Pradhan		60	40	-	027 690211
7	Sakhejung Hill Range Tea Industries, Sakhejung	Ilam	Aswani Kumar Agrawal	G. R. Rana		100	-	-	97426-26279
8	Megma Tea Industries, Jogmai	Ilam	Sanjog Tamang		Tea Estate is closed	-	-	-	97331-76998(India)
9	Senchelengma Tea Estate Industries	Panchthar	Sunil Kumar Rai	Sandesh Rai					97410-83599
10	Mai Tea Company Pvt. Ltd, Kagatepani	Ilam	Suraj Vaidhya	D K Younjan	81,000	100	-	-	027-520576
11	Nepal Tea Development Corporation	Ilam	Subash Shanghai	Punya Dhakal	305,000	95	5	-	027-540236

12	Himalayan Range Tea Factory	Ilam	Ram Kumar Rathi	Sachin Gomden	370,000	50	50		027-540165 021-525316
13	Nepal Small Tea Producers Ltd. Fikkal	Ilam	Dilip Rai	Punam Bantaba	374,000	99	1		027-540227
14	Himalayan Shangri-La Tea Industries, Sakhejung	Ilam	Laxmi Mainali	Ram Chandra Nepal	115,000				027-690111 9842635818
15	Nepal Green Tea , Pashupatinagar	Ilam	Dilip Rai	Punam Bantaba	4,600	-	65	35	
16	Mangal Tea Industries, Kanyam	Ilam	Subash Rai	J. Lama	65,000	100			98426-36700
17	Ayush Tea Industries, Fikkal	Ilam	Mohan Shrestha		No production because factory was destroyed				027-540268
18	Ilam Chiyabari Tea Industries,Aitabare	Ilam	Sushil Rijal	Rabin Banerjee	115,000	90	-	10	027-555180
19	North Nepal Tea Estate Industries, Sarangdanda	Panchthar	Banawari Lal Mittal	Raju Sherma	Under construction	-	-	-	98510-34216
20	Guranse Tea Industries, Kuwapani	Dhankutta	Suraj Vaidhya	Andrew Gardner	25,000	40	60	-	026-540380
21	Kuwapani Tea Industries	Dhankutta	Sushil Rijal	Piter Orchard	10,000	55	35	10	026-540198 026-540210
22	Jun Chiya Tea Industries, Kuwapani	Dhankutta	Bachan Gyawali	Moris Orchard					026-540255
23	Pathivara Tea Estate	Panchthar	Bom Bahadur Youngya	New management from this year with Kanchanjunga TE					
24	Keshari Tea Estate	Panchthar	Ayiendra Angbo	Estate left without management					
25	Janata Tea Estate	Panchthar	Narendra Rai	Estate left without management					98427-23221

26	Sagarmatha Tea Estate, Tamrakhop, Mude	Sangkhuwasava	Subash Kafle	Only tea estate without factory					98084-74630
NEW FACTORY UNDER CONSTRUCTION IN ILAM									
1	Sri Antu ilam		Subash Shanghai						
2	Siddhi Binayak Tea Industries, Panchkanya	Ilam	Pradeep Agrawal						027-540423

Annex 15: Cooperatives with Mini Tea Processing Units

SN	Name of Cooperative	Address	Contact person	Telephone	Remarks
1	Kanyam Tea Producers Cooperative	Kanyam-2, Ilam	Bhimlal Giri, President	984710756	Supported by Cooperative Dept.
2	Ilameli Tea producers Cooperative	Fikkal-6, Ilam	Sonam Chiring Sherpa, President	9842627584	Supported by Cooperative Dept.
3	Ajambare Tea Producers Cooperative	Jitpur-2, Ilam	harka Tamang,	9804983807	Supported by Cooperative Dept.
4	Ramche Tea Producers Cooperative	Pakhribas-3, Dhankuta			Supported by Cooperative Dept.
5	Deurali Tea Producers Cooperative	Jitpur, Ilam	Nar Kumar Magar	9742625954	Supported by Tea Board
6	Singhadevi Tea Producers Cooperative	Mangalbare-5, Ilam	Ramkrishna Subedi,	9742613760	3 members with individual MPU
7	Tinjure Tea Producers Cooperative	Fakfok, Ilam			Supported by Tea Board
8	Suryodaya Tea Producers Cooperative	Kanyam , Ilam			
9	Lali Tea Producers Cooperative	Fidim-7, Panchthar			Supported by Tea Board
10	Greenhill Tea Producers Cooperative	Ilam	Govind Dahal, President	9852680492	
11	Sandakphu Tea Processors Pvt. Ltd. Jasbire	Ilam	Twistina Subba	9841542522	Under Construction
12	Light Hill Small Tea Producers Pvt. Ltd. Sakhejung	Ilam	Mohan Dahal	9842636151	Producing and Marketing Tea Individually
13	Pathivara Orthodox Small Tea Producers Pvt. Ltd.	Ilam	Moti Dahal	9842663389	Producing and Marketing Tea Individually
14	Green Hill Orthodox Small Tea Producers Pvt. Ltd.	Ilam	Tanka		Producing and Marketing Tea Individually
15	Kanchanjunga Orthodox Small Tea Produceers Pvt. Ltd.	Ilam	Damber Khatri		Producing and Marketing Tea Individually
16	Gajurmukhi Orthodox Small Tea Producers Pvt. Ltd.	Ilam	Kheti Nath Khatri		Producing and Marketing Tea Individually

Annex 16: Orthodox Tea Sector Cost/Benefits

Note: No = No immediate benefit; Low = Immediate benefits will be less than the initial costs; Medium = Benefits will be similar to the initial costs; High = Benefits exceeding costs

SN	Intervention	Cost (USD)				Remarks
			Year 1	Year 2	Beyond the project period	
A	Short term					
1	Piloting on plucking machines	7,500	Medium	High	High	50 Chinese machine with 50% subsidy
2	Training to Agrovets on pesticides	15,000	Low	Low	High	10 trainings
3	Conduct interactive meetings between input suppliers and farmers	5,000	Low	Medium	High	6 meetings
4	Support for easy access to organic inputs	15,000	Low	High	High	Research on suppliers, establishing linkages, demonstrations
5	Establishment of composting plants	75,000	Low	High	High	5 vermicompost plants, 100 biogas, 50 cattle on cost share basis
6	Support in packaging materials to farmers	35,000	High	High	High	10000 nets
7	Study and piloting of irrigation system	30,000	Low	Medium	High	50 ropani piloting
8	Facilitate for establishment of nurseries and quality clone development	20,000	No	Low	High	300000 seedlings
9	Conduct trainings for farmers for improved quality production and increased productivity	100,000	Medium	High	High	20 FBOs, 6 trainings for each FBO
10	Conduction of awareness campaign	15,000	Low	Medium	High	Booklet production, FM broadcasting
11	Establishment of demonstration plots	7,000	Low	Medium	High	4 plots, support only for labour charge for 2 years
12	Provide entrepreneurial and business planning training to FBOs	50,000	Low	High	High	Can be done jointly with other crops
13	Establishment of permanent type of collection centers	100,000	No	High	High	20 collection centers with infrastructure support
14	Facilitation in developing linkages to establish contract between cooperative/FBOs and factory	5,000	Low	High	High	10 meetings between FBOs and factories

15	Facilitate getting organic certification	7,500	No	Medium	High	Assist with certifying agencies, paperwork, inspections
16	Assist in group certification	7,500	No	No	High	Assist with certifying agencies, paperwork, inspections
17	Assist in obtaining international certification	7,500	No	No	High	Assist with certifying agencies, paperwork, inspections
18	Assist in ensuring safety standards, increasing efficiency of the factories and implementing good manufacturing practices (GMP)	75,000	Low	High	High	Bring technical expert for factory visits, equipment support, trainings, processor visits to tea factories (India/China/Srilanka)
19	Develop tea taster/technician	10,000	Low	High	High	Training in Darjeeling/North Bengal
20	Establishment of blending facilities	100,000	No	High	High	Support for machinery
21	Research on Nepal's own blend	7,500	No	No	High	Expert fee
22	Support small scale tea machinery suppliers and service providers	75,000	No	High	High	10 new and 5 upgrading of small processing plants on cost share basis
23	Establishment of maintenance facility	10,000	No	Medium	High	Training and spares for small processors
24	Support in upgrading packaging	100,000	Low	High	High	Support in machineries on cost share basis
25	Establishment of Central Warehouse	250,000	No	High	High	Infrastructure support
26	Increase credibility and market linkages of Nepal Tea	110,000	Low	High	High	Trade fair participation, market study, tea event, 1 tea tour, coordination activities
27	Development of Auction Market	75,000	No	High	High	
28	Quality Need Assessment	-	Low	High	High	Covered under market study
29	Upgradation of the laboratories		No	Medium	High	
30	Group branding for small processors	15,000	No	Low	High	Workshops for logo development and registration, packaging materials, promotion
31	Strengthen and build capacity of HOTPA, HIMCOOP and CTCF	85,000	Low	Medium	High	For 2 years
32	Development of norms and standards	7,500	No	Low	High	Information compilation and 2 workshop
33	Support in discussion forum	7,500	Low	Medium	High	Coordination and national level workshop
34	Strengthen NTCDDB	15,000	No	Medium	High	
35	Development of Industry Specific Database	15,000	No	Low	High	
36	Promoting Tea Tourism		Low	Medium	High	
37	Domestic market promotion	40,000	Low	Medium	High	1 tea outlet and marketing campaign on street and media, publication of brochures

B	Long term					
1	Establishment of training centres	40,000	No	Low	High	6 training centers
2	Research on increasing soil fertility and bio-pesticides		No	Low	High	
3	Support for the establishment of market information center	20,000	No	Medium	High	Training and electronic equipment support
4	Awareness raising and dialogues against banned pesticides and inferior inputs	15,000	Low	Medium	High	Support in media and coordination with government
5	Duty free or duty concessions in importation of agricultural equipments and packaging materials	20,000	Low	High	High	Dialogue meetings
6	Expansion of tea plantation area	15,000	Low	Low	High	Coordination with NTCDB
7	Establishment of Tea Research and Development and Training Center (TRDTC)	15,000	No	Low	High	Meetings with stakeholders and coordination with government
8	Conceptualization of Tea Park	7,500	No	Low	High	Meetings with stakeholders and coordination with government
9	Assistance in Geographical Indicators	30,000	No	High	High	
10	Upgradation/establishment of link road	10,000	Low	High	High	Collaboration support with DDC & VDC; meetings, workshop support

Annex 17: Estimate of loss/gain when converting to organic production

Estimated Calculation	Conventional	Organic conversion			Certified
		1st year	2nd year	3rd year	
Decline in Productivity*	0%	35%	30%	25%	20%
Production per hectare	5,500	3,575	3,850	4,125	4,125
Price(NPR)/kg	23	35	35	40	45
Total sales (NPR) (A) per hectare	126,500	125,125	134,750	165,000	185,625

Estimated COP (NPR)/kg	19.55	36	35	34	34
Total expenses(NPR)/ha	107,525	128,700	134,750	140,250	140,250
Cost of certification(NPR)/ha **	0	2,500	2,500	2,500	1,250
Additional overheads(NPR)	0	2,400	2,400	2,400	2,400
Total cost (NPR) (B)	107,525	133,600	139,650	145,150	143,900

Change in sales revenue (NPR)(A-B)	18,975	(8,475)	(4,900)	19,850	41,725
------------------------------------	--------	---------	---------	--------	--------

Source: Field survey 2011 and SNV report

* Estimated productivity during conventional farming calculated at 5500 kg/ha and during organic conversion calculated at around 3500 kg/ha

**Estimated certification cost of NPR 0.5 million each year for 200 ha land; afterwards approximate certification cost NPR.0.25 million /yr

Estimated on basis of requirement of five extra staffs @ NRs. 8000/person for internal management.

Annex 18: Estimated production levels of various tea factories in Nepal

SN	Company Name	Location	Estd	Altitude	Size	Approx. Production Capacity/ target	Production	Small-Holders	Products	Certifications
1	Everest Tea Estate Pvt. Ltd	Jaisigaun, Sindupalchock	Garden/ Factory 1996	1,370-1,980m (4,500ft-6,500ft)	75 ha		10,000 kg/yr	60+	Orthodox Black Tea, Oolong Tea, hand rolled Tea	
2	Gorkha Tea Estate (P.) Ltd.	Sundarpani, Ilam	Garden 1992; Factory 2009	1,828-2,134m (6,000 to 7,000ft)	20 ha	150,000	100,000 kg/yr (40,000 organic)	150+	Orthodox Black Tea, Green Tea, White Tea, Silver Needles	IMO organic certified
3	Himalayan Shangri-la Tea Producers Pvt. Ltd	Nepaltar, Ilam	Garden/ Factory 1999	1,707m (5,600ft)	94 ha	160,000	130,000 kg/yr (45,500 organic)	1000+ (192 certified farmers)	Orthodox Black Tea, hand rolled tea. Oolong Tea, White Tea, Green Tea	HACCP; ISO 9001: 2000; NASAA organic certified
4	Ilam Tea Producers Pvt. Ltd	Aitabare, Ilam	1997	1,370m (4,500ft)	1.6 ha	2 million (target)	1,200,000 kg/yr	2000+	Orthodox Black Tea,	HACCP
5	Jun Chiyabari	Hile, Dhankuta	Garden/ Factory 2001	1,850 m (6,070 ft)	125 ha	100,000	25,000 kg/yr	200+	Orthodox Black Tea, Oolong Tea, Green Tea	Under Organic Conversion
6	Kuwapani Tea Plantation Pvt. Ltd.	Kuwapani, Dhankuta	Garden 2001, Factory 2005	1,829 m (6,000ft)	100 ha	60,000	15,000 kg/yr	20+	Makalu Tippy, Makalu White, Makalu Black, Makalu Oolong, Orthodox Black Tea	

7	Kanchanjangha Tea Estate Pvt. Ltd	Ranitar, Panchthar	Garden 1984, Factory 1995	1,300-1,800m (4,265-5,906ft)	94 ha	100,000	40,000 kg/yr	100+	Orthodox Black Tea, Green Tea, flavoured Teas, Wild Nettle, Ginger, Cardamom, Lemon Grass & Cinnamon	USDA- NOP, JAS, NASAA Organic certified FLO fair Trade Certified
8	Nepal Small Tea Producers Ltd (Nepal Green Tea)	Doctor Khola, Ilam	1991	1,630m			300,000 kg/yr		Orthodox Black Tea, Green Tea, Emerald Green, Sencha, Bancha, Mao Feng, White	Organic, HACCP Certified
9	Nepal Tea Development Corporation Ltd. (Kanyam Tea State)	Kanyam, Ilam	Garden & Factory 1974	1,524-2,073m (6,000 ft)	212 ha		150,000 kg/yr		Orthodox Black Tea	
10	Mist Valley Tea Industry Pvt. Ltd	Jitpur, Ilam	2001	1,300-1,800m (4,500ft)	94 ha		150,000 kg/yr	290+	Orthodox Black Tea	
11	Sri Antu Tea Industries Pvt Ltd	Sri Antu, Ilam	Garden/ Factory 1998	1,981 m (6,500 ft)			150,000 kg/yr	900+	White Tea, Golden Tips, silver Tips, Orthodox Black Tea	
12	Sagarmatha Tea Estate (P.) Ltd	Mudey, Sanischarey, Sankhuwasabha	1998	700-2,200m (2,297-7,218 ft)	74 ha		1000 kg/yr		Orthodox black tea, hand Rolled Tea	

13	Sakhejung Hill Range Tea Processing Tea Industry P.	Sakhejung, Ilam	2008	1,220-1,830m (4,000-6,000ft)	1600 Ropani		50,000 kg	50+	Orthodox Black Tea	
14	North Nepal Tea Estate P. Ltd.	Sarang Danda, Panchthar	1994							
15	Senchalengma Tea Estate P. Ltd.	Rabi, Panchthar	1993	1,675m (5,500ft)	60 ha				Orthodox Black Tea	
16	Parajuli Tea Estate	Maheshpur, Jhapa	2010 (orthodox)		192 (CTC and OT)	200,000 (orthodox)	160,000 kg (orthodox)		CTC, Orthodox Black Tea	
17	Ilam Chiyabari	Aitabare, Ilam			4.5 ha	350,000 (target)	200,000 kg	700+		
18	Himalayan Range Tea Industries	Fikkal, Ilam	1993	3,500-6,500 ft	5 ha	400,000 (target)	360,000 kg	900+		ISO 9001:2000
19	Guranse Tea Estate	Kuwapani, Dhankuta		3,300-7,300 ft	35 ha	120,000	40,000 kg (48% organic)	160+	Orthodox Black Tea	NASAA Organic certified; ISO 9001:2000

