IMPLICATION OF WTO ON NEPALESE AGRICULTURE: COMPETITIVENESS OF TEA

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ABSTRACT

1. Background

Production, distribution and consumption of various agriculture products including tea in Nepal has been much affected after Nepal has signed into WTO agreement and became a member of it. It might have both positive and negative consequences in export and domestic consumption. The study entitled, “Implication of WTO on Nepalese Agriculture: Competitiveness of Tea" attempts to reveal the implications of WTO membership on the growth and export potential of cash crops in general and tea in particular. The problem was that Nepal has not brought out clearly the implications of WTO from legal and trade perspectives. This has limited the scope for taking full advantages from the agreements and developing appropriate measures, to defend trade interest. The biggest challenge Nepal faces in agricultural is lack of competitiveness of tea. So, the study has categorically investigated the constraints and opportunities of the competitiveness of tea in export market.

2. Objectives of the study

The general objective of this research was to assess the implication of WTO agreements on cash crops of Nepal in general and particularly on tea. However, specific objectives were, to explore and compare the export and production situation of tea before and after the membership of WTO; to explore the competitiveness of tea in export market; to analyze the major economic aspects of green leaves; to examine and establish the linkage between the productivity of tea leaves and the educational status of the farmers including the land holding size and finally to put forth the issues for policy to debate on Nepalese tea.

3. Methodology of the Study

To fulfill the research objectives both qualitative and quantitative data from both primary and secondary sources of information were used. As a primary source of information, a field-based micro-level data through structured questionnaire was used. Propability sampling design was followed to draw samples and data were collected from tea growers, processors and exporters. Ilam and Jhapa were chosen as the sample spots. The tea in the study includes Orthodox and CTC (cut tear and curl).

To observe the changes in the state of tea, before and after the membership of WTO and to calculate the RCA index, data were obtained from secondary sources of information especially

from International Tea Committee (ITC), National Tea and Coffee Development Board (NTCDB) and International Trade Centre (ITC).

4. Findings of the Study

While reviewing and observing the implications of WTO on tea, Agreement on Agriculture (AoA) of WTO allows the government to provide subsidy and support programme to the tea industry, i.e. subsidy on credit, capital equipment subsidy, export subsidy and other support measures. But there is negligible subsidy and supports are provided by the government. Some subsidies on fertilizers, irrigation etc have been removed. As a result, there has been low investment in tea production after the membership of WTO which led to low level of production.

The applied tariffs on major cash crops are significantly lower than the bound tariffs which are in the 40-60 percent range. For tea, the bound tariff level is 50 percent, while that for sunflower seeds, mustard seeds and sugarcane is 50, 40 and 60 percent respectively. Thus, in aggregate there is considerable scope for Nepal to raise applied rates to the bound levels when faced with, for example, depressed import prices or import surges, without the need for resorting to safeguard measures.

Sanitary and Phyto-Sanitary (SPS) and Technical Barriers to Trade (TBT) agreements of WTO are most challenging tasks for agricultural products. These standard related measures could affect significantly in the export of cash crops of Nepal. For example, Nepal experienced the quality related trade problems which have come up with the export of Orthodox tea to Europe mainly on the ground of her non-compliance with pesticide residual level. These agreements required to adopt the good practices in crop production. However, study reveals that good practices in all stages, i.e., at farmers, processors and exporters level, it is too lacking in Nepal. Consumers of developed countries are more aware about food safety and they are increasingly demanding greater safety standards which may possess another challenge for Nepal. Nepal's position is very weak in the standard related agreements. It is due to the higher compliance cost, loose definition of standard, unclear risk assessment and lack of well equipped laboratories to test and certify the quality of food products.

The study also shows that export market of tea for Nepal is vulnerable due to heavy dependency on Indian market. More than 90 percent of Orthodox and 40 percent of CTC Tea has been exported to India from Nepal. The Export of tea from Nepal has been increased every year.

Before WTO (2002-2004) there was change in export by 48.33 percent and after WTO (2005-2007) it has increased by 94.4 percent. But all growth in export, after the membership period may not be the result of WTO. Because it had started to grow before the WTO period.

Tea production and planted area is growing every year from 1998-2008. The production reached to 259 percent and plantation area increased by 62 percent respectively. Tea yield in Nepal is found to have increased by 122 percent during the last 10 years. However, it is just 58.4 percent that of Indian (1663 kg/ha) average for the year 2007/08. Study shows that at present yield level of Nepal is low but due to the virgin soil, youngness of tea bushes and gaining the knowledge about tea plantation, still there is potentiality to improve it to meet Indian level.

There is positive relationship between production and export. These values for Nepal and India are 0.95 and 0.09 respectively. Correlated value for Nepal is very high which is near about perfect correlation than the value of India. It indicates that Nepal's position in production and export pattern is growing faster than the India.

The production pattern of tea in Nepal had higher value which increased by 129 percentage point during the period (1999/2000-03/04) before WTO membership. But after (2004/05-08/09) the membership of WTO it has been increasing at lower rate, i.e. 28.57 percent. The main factors those have contributed to increase in lower rate are the decreasing in price of tea, increase in cost of production on labour, withdrawal of subsidy on fertilizer and price hike of energy and chemical/pesticide. As a result, profitable situation of tea industry has been degraded which discouraged production of tea.

From the study it is observed that if other things remain same, predicted value of tea export for Nepal and India during the 2007-2015 will be increased by 75.16 and 2.60 percent respectively. The predicted export trend of India indicates that export potentiality of India is relatively lower than Nepal. Due to large number of population and high consumption pattern of tea in India there is low export potentiality.

For the period of 15 years from 1990-2005, Nepal's labour productivity improved by 23 percent only. While this improvement was more than 60 percent for India. Nepal's position in R&D, Technology and Innovation are lacking behind in comparison to other South Asian neighbors resulting the low competitiveness of agricultural product.

Despite the low competitiveness of Nepalese agricultural product in export market, some products, i.e., Tea, Cardamom, Ginger, Vegetable products and Dry vegetable are found to have

a higher comparative advantage for Nepal. It was found that Nepalese tea has increasing Revealed Comparative Advantage (RCA) during the period 2003-2008. The value of RCA for the year 2003 was 19.62 percent and it was found to be increased in 2008 by 50.97 perecent. It indicates that Nepalese tea has comparative advantage in export market.

The average productivity of tea is 2233 and 846 kg/ha for CTC and Orthodox type tea respectively. The average productivity (including both type) of tea is 1646 kg/ha which is less than India (1663 kg/ha). Total variable cost of CTC and Orthodox green leaves are found to be 8.67 Rs/kg and 14.36 Rs/kg respectively. Labor is the major contributing factor of green leaf production followed by chemical fertilizers and pesticides. Applications of these inputs are in decreasing trend in recent years. It was observed that, mainly two factors are responsible for declining tendency of fertilizer used; they are increasing the price of fertilizer and awareness on organic production of leaves.

The benefits cost ratio of CTC (1.48) tea was found higher than Orthodox tea (1.11) type. Green leaf price trend seems to be fluctuating since last 10 years. It was found that green leaves price continuously declined from the year 2000/01 to 2005/06. There is restriction imposed by India to transfer the leaves from Nepal to adjoining location of Darjeeling and Silguri of India. It results the over supply of green leaves for domestic processors in Nepal. It leads to lower the price. Afterwards, there seemed to be changed in business environment because of arm conflict in Nepal. It has has been changed into peace process then. It creates relatively better business environment. Consequently, domestic processors have started to utilize their optimum capacity. It ultimately led to raise in green leaves price slightly.

After the accession into WTO, demand pattern of green leaf is observed to have changed. Main causes of such change in demand pattern are; increasing number of processing factory and high demand of organic leaves. It has also been observed that after the mid 1990s' to 2000, the tea industry was profitable for farmers, processors and exporters. It was resuled into increase in processing factories. At the same time, there was complete ban of green leaf transfer from Nepal to India that led to establish the domestic processors. The demand of organically produce tea was increased due to the awareness of foreign consumer.

Majority of the farmers (88.3 percent) were unaware about the WTO and its agreements. Among those who were informed about the WTO, 21 percent were aware on implementation of Sanitary and Phyto-Sanitary (SPS) measures because they are conscious about the food product

which should be safe for human consumption. Most of the tea processors had experienced that entry into the WTO will positively affect tea sector as the easy access in global market. The compliance of standards for quality products is expected to increase the competitiveness in Nepalese tea sector. Most of the processors stated that the membership of WTO will not only be harmful but also does not contribute to the decline in the demand for tea.

Majority of the farmers (87.6 percent) expressed the importance of auction market to enhance the tea trade. The auction market is also needed for maintaining price level; retaining quality; enhancing transparency in the price structure and increased communication with local buyers.

The green leaf quality of Nepal is relatively better than India. The young tea bushes, virgin soil, low application of chemical fertilizer/pesticide, good tips and clone variety are the main factors for competitive strength of Nepalese tea. Similarly, *suitable* climatic conditions, such as warm and humid climate, with plenty of rainfall, and long duration of sunlight, are other factors for better production of green leaves. If we maintain the Good Agricultural Practice (GAP) and Good Manufacturing Practice (GMP) (these are the processes/activities to make product as safety to human consumption and it started from the plantation of the crops to processing and packaging of the products) in production process of tea which leads to increase in the competitiveness of tea. Furthermore, government of Nepal has formulated the tea policy and lunched, then, some programmes, such as subsidy on credit, principal repayment time schedule facilitation, transport facilities for cutting plant and training for small farmers. However, market access opportunities provided by WTO agreements and allowed subsidy and support schemes are negligible in tea sector.

There is negative relationship between the educational level and green leaf productivity. The relationship is strong (G=-0.602) and significant for CTC, however, this relationship is found weak (G=-0.073) in the context of Orthodox. There is negative (G=-0.788) relationship between the land holding size and green leaf productivity. The relationship between two variables is strong and significant for CTC, however this relationship found weak (G=-0.272) for Orthodox type.

As Nepal Tea industry is relatively young, the quality of tea trees is regarded as high and it is also considered as a potentially important crop. However, significant obstacles remain. There are some major problems which include, lack of technical knowledge and skilled labour;

price instability; minimum support of the government; market uncertainty; inadequate infrastructure development; lack of disease and pest management; weak capacity of tea board and high charges of electricity.

5. Recommendations

To resolve problems related to tea in Nepal it is necessary to increase the government support and subsidy for stable market price of green leaf. It should be determined in coordination with the stakeholders. There must be good guidelines for the use of chemical fertilizer/pesticides to the farmers and should be focused on organic production. Establishment of training centre and R&D, well equipped laboratory are some other measures. Nepalese logo of tea and auction market development, infrastructure development, such as agricultural road, irrigation and electricity facilities should be developed. Awareness programme on WTO agreements to the tea stakeholders is needed to develop the geographical indication to protect the own seedling and clones.

6. Conclusion

After the membership of WTO there is improving scenario in the competitiveness of tea and farmers, growers and processors are conscious over it. Still, Nepal is not enough able to grasp open global market created through WTO membership. But this opportunity of access to the foreign market has brought challenges as well. The major challenge is to be competitive. Regarding this, Nepal should be wise to choose right commodity and right destination.

There is no doubt that a comparative advantage criteria is one of the important criterions of choosing commodities for export. Nepal has comparative advantage in certain commodities most of which belong to agriculture sector. Some of the major cash crops are Ginger, Cardamom and Tea. Nepal is fortunate enough to be situated between China and India. If Nepal adopts proper policy then these countries could be good market and Nepal need not struggle for market in other part of the world. In the long run, Nepal needs to concentrate on those commodities in which Nepal has high level of comparative advantage and there is less possibility for other countries to produce those commodities with equal competitiveness.

CHAPTER - I
INTRODUCTION

1.1 Background

Multilateralism and regionalism have become important approaches of trade liberalization in recent times. There have been a growing number of bilateral and multilateral trade agreements. Nepal has been the part of several bilateral and multilateral trade agreements. Nepal has also entered into the bilateral trade agreement with India and sixteen other countries in the world. The present study focuses significantly on the World Trade Organization (WTO).

The WTO is an international body dealing with international trade rules. As a successor to the General Agreement on Trade and Tariff (GATT), the WTO was established in January 1995 with the principle as "to provide the common institutional framework for the conduct of trade relations among its members in matters related to the agreement" (Article II Marrakesh agreement).

Nepal applied for the membership of GATT, (the predecessor of the WTO), in 1989. However, the efforts for obtaining membership of the GATT could not materialize due to the long accession process. Nepal has eventually become the 147th member of the global trade regime. The fifth ministerial meeting of the WTO held in September 10-14, 2003 in Cancun, Mexico decided to provide the membership of WTO to Nepal. As Nepal had the experience of initiating the economic liberalization program during mid 1980s and fullfledgelly in early 1990, the WTO accession was not a surprising phenomenon.

On 23 April 2004, Nepal has formally been inducted in the WTO as its 147th member. Although there were various groups of opponents who were against the agreement, Nepal's newly acquired membership in the WTO marks the beginning of the expansion of Nepal's international trade integration with global market. It is believed that the WTO brings both opportunities and challenges to poor country like Nepal.

Being a least developed country, Nepal is the beneficiary of the concessions provisioned for LDCs. Regarding this, the global market has undoubtedly been opportunity for low income developing countries. However, the situation of the poorest countries with small holder farming structure is very critical because these households cannot satisfy quality standard set by the Organization for Economic Cooperation and Development (OECD) (Wilcke, 2006). In this context, agricultural products of Nepal may face many challenges.

Agriculture significantly contributes about one third of the GDP. More than two third of the labour force is engaged in this sector and most of the industries are based on agricultural raw materials. Compared to other South Asian economies, agriculture continues to be a main driver of the Nepalese economy and industry, the weakest contributor to Gross Domestic Production (GDP). Share of agriculture GDP was in between 60 percent to 70 percent during 1960-1980 which declined to 51 percent in 1985 and to around 40 percent in 2000. After 2000, the share is continuously declining and it was 33 percent in 2007. Various reform measures adopted by the government including the economic liberalization program of early 1990s and Structural Adjustment Program (SAP) are supposed to have contributed reducing the share of agriculture (ADB, DFID, ILO, 2009).

Several trade agreements have given access to foreign market for Nepalese exporter. “The Enabling Trade Index (ETI) published by World Economic Forum reported in the ETI-2010 reports that Nepal’s position is lowest among the South Asian Countries and her position is worst not only in the over all ranking but also in five out of ten components of ETI, namely domestic market access, efficiency of custom administration, efficiency of import, export procedure, availability and use of information and communication technology and regulatory environment. Nepal’s position is second from the last in other three components; namely transportation, transparency and physical security. Most impressive indicator for Nepal is access to foreign market. Nepal has highest position for this indicator not only in South Asia but also in the whole world except Madagascar” (Adhakari, 2010).

There are some important agreements that have bearing on Nepal's agriculture. These include the Agreement on Agriculture (AoA); the application of Sanitary and

Phyto-Sanitary measures (SPS); Technical Barriers to Trade (TBT); and Trade Related Intellectual Property Rights (TRIPs). The opportunities received through the WTO membership are i) Enhancing the productivity of the Nepalese agricultural sector and harvesting globally marketable high-value agro-product through greater value addition; ii) Enhancing the quality of products with proper attention paid to production process so as to make them acceptable in global market; iii) Increasing private and foreign investment to upgrade production system and diversify agro-production; iv) Increasing value addition in final agro-produce that can help to realize better market and prices for the poor farmers; v) Increasing market access of the Nepalese agro-product by taking the advantage of various duty and quota-free privileges provided by the developed countries.

At the same time, some special provisions for LDCs are provided by WTO. WTO has given some concessions to LDCs; longer time frame to gradually scale down tariff rates, domestic subsidies and even export subsidies. Besides this, with a view to hold LDCs better integrate themselves into the global trading system, several multilateral institutions, including the World Bank, the International Monetary Fund (IMF), the WTO, the United Nations Development Programme (UNDP) and the International Trade Centre (ITC) launched the Integrated Framework for Trade Related Technical Assistance (IF) in 1997. LDCs are given technical assistance under the IF not just to enhance their capacity to meet WTO obligations, but also to increase their export competitiveness. Likewise, the European Union (EU) also provides special concessions to LDCs through its 'Everything but arms' initiative. Except arms and ammunitions, all products originating in LDCs are granted duty and quota-free access to the European market. Besides, LDCs have been given longer transition period for the full implementation of different WTO agreements.

Nepal can also enjoy a considerable policy space under the WTO regime. As Nepal's bound rates previously stood at 51 percent to be reduced to 42 percent by 2006, were considerably higher than the applied rates. Nepal can raise the applied rate upto the bound level without breaking WTO commitments in case cheap imports international markets pose threat to the domestic farmers and agro-products. The use of tariffs can be one of the important means to protect domestic

products. Besides this, trade remedy measures can also be taken to regulate unfair competition.

At 1.3 percent of value of AGDP, Nepal's agricultural subsidy is far below the permissible 10 percent. As such, AoA does not restrict or limit any current policies and practices. The government can give product specific support such as minimum farm price. This kind of support for any product, however, cannot exceed 10 percent of the value of that product. Besides, the government can give unlimited green box support to the agricultural sector, as the WTO puts no limit on these.

The decisions are made under the WTO regime, through consensus, each country could have a veto in the decision making process. This provides an opportunity even for a small country like Nepal to make its voice heard at the WTO.

However, there are also some challenges that Nepal may encounter from the membership of WTO. They are: eventual phase out quota system which was earlier granted to Nepal under the Multi-Fiber Arrangement (MFA), Nepal's ready-made garment has been the victim to get access to international market. But Nepal government does not seem to have any programme at hand at this stage to tackle this inevitable crisis. This shows the further vulnerability of Nepalese export.

The standard related agreements of WTO such as SPS measures and TBT require its member to follow the international standards as far as possible. However, developed countries are making use of so-called scientific justification to raise the standards at such level, which could not be fulfilled by the LDCs like Nepal.

Nepal significantly lags behind in physical and technical infrastructures that are necessary to ensure quality of the agricultural products at international level. As a result, the sustainability of the Nepalese agricultural products in foreign market is difficult. Besides, inadequate physical infrastructure and delay in transportation have restricted the growth of large production farms and distribution networks.

The agricultural sector of Nepal receives very few subsidies from the government of Nepal compared to China and India. Both neighbors are directly subsidizing the export of some agricultural products and providing substantial domestic support to their respective agricultural sector, which is challenging to Nepal. However, Government of Nepal has revised subsidy policies and started to subsidize farmers in fertilizer, shallow tube well etc.

Nepal faces a major challenge in the area of capacity building and human resource development. Enhancing capacity and skill of the government officials for the implementation of the WTO commitments, and negotiating a better deal at the WTO in the coming days are indeed challenging tasks.

Nepal has not still brought out clearly the implications of WTO agreements from both legal and trade perspectives. This has limited the scope for taking full advantages from the agreements and developing appropriate measures to defend countries' trade interest. The biggest challenge Nepal faces in agriculture is lack of competitiveness.

Despite all apparent threats of Nepal's WTO membership on agricultural sector, there is actually enough policy space with the government to safeguard their interest. Regarding this issue, the implication of WTO agreements in general on cash crops of Nepal and particularly on tea sector is briefly mentioned here.

Regarding the Agreement on Agriculture (AoA), it is noted that this agreement would not restrict or limit any current policies and practices. With current support to tea production of about one million rupees annually (or 0.35 percent of tea output), there is a considerable scope for granting subsidies in the future, if necessary (Thapa, 2004). All the main supporting activities necessary for the growth of tea sector, such as research, extension, irrigation, other infrastructure etc fall under the AoA's Green Box and are not restricted. Similarly, bound tariffs on tea are relatively high. Thus, substantial scope exists for raising tariffs, if necessary and feasible. Because of porous border to India higher tariffs on tea is not suitable option for Nepal.

The tea industry benefits in several ways from several acts and regulations. For example, the NTCDB Act, Industrial Enterprises Act 1992, Industrial Enterprises Regulations and Industrial Policy 1992 and Foreign Investment and Technology Transfer Act 1992 have provisions benefiting the industry. There is an apprehension that some of the provisions of acts mentioned above may be inconsistent with the WTO, TRIMS, which requires the same treatment to domestic and foreign industries. The provisions of additional two year tax holiday to the industries using 90 percent or more domestic raw materials, in industrial act 1992, seem to be inconsistent with the TRIMS agreement. In such agreements revision is necessary.

In fact, Nepal's industrial policy is quite liberal and allows foreign investment (up to 100 percent ownership) in large and medium size industry. This policy also guarantees non-nationalization. Subsequently, the Income Tax Act 2002 has removed some of the incentives to the tea industry, and so the chances of the provisions being inconsistent with TRIMS are very slim (Thapa, 2004).

There is a tendency among developed countries to change SPS standards too often. The intentions are to protect domestic farm products from competition. Nepalese producers also will face great problems while trying to meet these ever-changing standards. Likewise, the growing consumer awareness in relation to food item, especially in developed countries, poses another challenge for Nepal. People are realizing dangers of food borne diseases. As a result, food safety and food quality are becoming important issues for consumers. They are increasingly demanding greater safety standards. Nepal, a small producer, is not always in a position to meet them and Nepal is unable to take relative advantages from WTO agreement.

In addition, standard related problem facing Nepalese exports is pesticide residue. It applies to tea also. Regarding technical standard, it is found that most tea processors/traders do not use the "NS" mark on their brands (Thapa, 2004). In case of organic tea, Melican (1997) has noted that there is a lack of clear understanding of the procedures for certification. On this and other issues, technical advice from the National Tea and Coffee Development Board (NTCDB) to the private sector is thin and lacks support in input analysis factory design and processes. For example, products packed specifically for export fall short of necessary standards and there is

lack of exposure in target markets. Another issue facing Nepal in this area is that Nepalese tea has to be sent to Kolkata for food testing standards, which is costly in time, money and management.

The TRIPS concept of geographical indications would apply to tea protect the public from being misled and to promote fair competition. As a member of World Intellectual Property Right Organization (WIPRO), Nepal will have to honor the TRIPS.

Nepal has a history of tea growing of about 150 years, but it is yet to prepare on inventory of its seeds, clone and wild relatives, identify tea or products that can be protected under GI and take legislative action. Otherwise, Nepal's tea may face an identity crisis in the future.

However, WTO agreements such as AoA, SPS measures, TBT and TRIPS will have both positive as well as negative impacts on the agricultural product. A host of opportunities exist for the agricultural sector under the WTO regime. Regarding AoA there is considerable scope for granting subsidies because current subsidies and the support is negligible to the agricultural sector as well as in the tea sector. Similarly, bound tariff on some important cash crops is in the range of 40 to 60 percent, particularly in tea, it is 50 percent. Thus, substantial scope exists for raising tariffs. Side by side, government grants a number of incentives and assistance to the tea industry to enhance the production and export. Subsidies and support are not inconsistent with AoA of WTO. Despite the facilities there is a wide gap between government policies and their implementation.

This study is an attempt to examine WTO agreements, government policies related to WTO and its implications on competitiveness of tea in Nepal. Generating data from two, Ilam and Jhapa, districts of Nepal this study basically explores production and exports of tea and green leaves economics along with relationship with productivity.

1.2 Statement of the Problem

Entering into WTO for Nepal would also mean entering into a rule based global trading system. WTO has tremendous impact on its member countries. They

are required to liberalize not only trade in goods but also trade in services and investments. In this respect, Nepalese economy will be affected in various grounds. Being a poor and agro-dominant country, there are various constraints in order to get benefits from the WTO scenario.

Some conditions are associated with TRIPs, SPS measures, TBT, AoA and other set of rules under WTO to prevent the use of national or regional requirements that hinder the international trade. Besides other, there is an absence of competent personnel and institutional mechanism.

SPS measures and AoA are more concerned subject for Nepalese agriculture with respect to world trade regime. SPS standard related to quality and safety food production for human consumption. Likewise, AoA is concerned with market access, domestic support to the agriculture sector and export subsidy to agriculture products. But In reality, LDCs, like Nepal, cannot be 'standard setter' of WTO provisions because almost all the food standards are set by Codex Commission which is dominated by developed countries (Ghimire & Dahal, 2004) and they can be taker. Regarding this issue, questions like what will be the implications of these agreements on agricultural products will be raised. This is the most important task to be studied. Therefore, a brief situational analysis of AoA, SPS measures and some existing problems of agriculture sector responsible for low competitiveness of agricultural products are explained here.

Nepal's position has been very weak in respect to implementation of SPS agreement. Nepal is yet to harmonize the standard of quality of its agricultural products and production process with widely accepted international standard system like codex. Nepal has to amend a number of existing laws related to food quality and formulate some new laws as per the SPS agreements. Otherwise, such agreement may be used by others as non-tariff barriers in accessing market for agro-products. It seems to be great challenge to get share in international market of Nepalese cash crops.

Nepalese agriculture is seriously handicapped by many problems. It is still subsistence in nature and highly dependent on vagaries of monsoon and vagaries of nature causes substantial production fluctuation and it is suffering from lack of

adequate investment. Many farmers cultivate their land not as a commercial venture, but merely as a family tradition.

The great disadvantages of geo-physical constraints reflect largely in high cost economy and hindering the competitiveness in the open market. With weak bargaining power and less competitive strength, LDCs might be forced to depend on foreign trade orientated export of unfinished products.

Due to the low competitiveness of Nepalese agro-products which are already been affected by the Indian products. Nepalese agro-products may be affected again by the product of developed countries, because market access opportunity is for all the member country. At the same time, developed countries are spending billions of dollar to their farmers as subsidies for protection, which has made impossible to send the products of developing and LDCs, like Nepal, to the market of developed countries. Taking out subsidy from fertilizer, shallow-tube well etc. resulting the high cost of production of farm products leads to low competitiveness.

All policies, programmes, acts and regulations made by the government can enhance the competitiveness of Nepalese tea. But the plans and policies of the government are not effective in implementation process. At the same time, acts and regulations made by government are inadequate and inconsistent to develop the tea sector of the country to some extent. Few studies have been done by some individuals and organizations. Studies on competitiveness of export potential high value cash crops with connection to WTO are also lacking. Nepal too has been experiencing low competitiveness of agricultural product. Apart from a few case studies, no serious analysis has been carried out in depth to probe into the extent of this phenomenon as well as the implication of WTO on Nepalese cash crops. Under this gap this study raises some important questions which are as follows:

(a) What is the situation of productivity of tea with respect to age of the tea bushes, educational status of the farmers and land holding size?

(b) What are the major economic aspects of green leaves?

(c) What is the level of competitiveness of Nepalese tea in export market?

(d) What is the export and production situation of Nepalese tea before and after the accession into the WTO?

(e) What the issues for policy debate on Nepalese tea would be necessary to make Nepalese tea market more competitive?

1.3 Objectives of the study

The general objective of this study is to assess WTO implications on Nepalese agriculture in terms of cash crops. This general objective is aimed to achieve through the following specific objectives:

a) To explore and compare the export and production situation of Nepalese tea before and after the accession into the WTO,

b) To explore the competitiveness of Nepalese tea in export market.

c) To analyze the major economic aspect of green leaves.

d) To examine the productivity of tea with respect to age of the tea bushes, educational status of the farmers and land holding size.

e) To put forth the issues for policy debate on Nepalese tea, which would be necessary to make Nepalese tea market more competitive.

1.4 Hypothesis

(a) H_0: There is no difference in export and production of tea before and after the accession of Nepal into the WTO.

H_1: There is difference in export and production of teach before and after the accession of Nepal into the WTO

(b) H_0: There is no difference in the competitiveness of Nepalese tea before and after the membership of WTO.

H_1: There is difference in the competitiveness of Nepalese tea before and after the membership of WTO.

(c) H_0: There is no relationship between land holding size and productivity of green leaves.

H_1: Landholding size and productivity are independent.

(d) H_0: There is no relationship between educational status of the farmers and productivity of green leaves.

H_1: Educational level of farmers and productivity of green leaves are independent.

1.5 Significance of the Study

After the WTO membership, the major concern is to get easy access to the global market. But this opportunity to the foreign market has brought challenge too. The challenge is to be competitive because market is open to other countries as well. For example Nepal's duty free access to Chinese market is an opportunity. But China has provided such duty free access to other twenty six countries of Africa too. In this situation, Nepal should be wise enough to choose right commodity and right destinations.

Production of tea in Nepal has two dimensions, as an export and import substitution. In this situation, the study about the Nepalese tea, connecting with the WTO agreements and its competitiveness is essential.

The standard related agreements of WTO are more concerning due to their linkage to the quality aspects which has significant impact on agricultural products in general and tea in particular. Standard related agreements require exporters to meet acceptable international standard as a minimum. Regarding this, there is need of careful analysis of WTO agreements and government programmes and policies concerning to the tea sector.

It is essential, to find out the impact of WTO agreement on tea. Likewise, the questions like what are the factors responsible to enhance the competitiveness of tea, Study brings out major economic issues of the green leaves, which will be meaningful to policy perspective. It attempts to establish the linkage between productivity and educational status of the farmers and also with land holding size. So, for the fulfillment of this gap, there should be comprehensive study on aforementioned issues, which are essential to get more benefits from global market.

In addition, it is important because Nepal is going to expand the plantation and production of tea in massive way with the introduction to the National Tea Policy (2000) and hence, the market is required. At the same time, there is withdrawal of

subsidy and there are also chances of existing non-tariff barriers. Regarding this, it will be significant to assess the problems and suggest appropriate policy measures to enhance the competitiveness of tea. Furthermore, to compare and develop the market strategy for promoting the Nepalese tea in the international market, this study undertakes the brief survey on production, export and consumption pattern of India. So, this also shows the significance of the present study.

In all this respect, the present study will be important for policy makers and social scientists. Similarly, the work will be useful to the researchers, university teachers and students as well in the same way government institutions, business communities, NGO's and INGO's will have an input to plan and execute the programme addressed to the upliftment of the cash crops in general and tea in particular of Nepal.

1.6 Limitations of the Study

- This study does not go beyond the implication of WTO agreements on agriculture particularly in tea sector.
- This study is confined to economic aspects of green leaves.
- This study is limited to districts Ilam and Jhapa were selected as study area.
- Data were collected through structured questionnaire and in depth interview with key informants
- Competitiveness of Nepalese tea in export market has been studied mainly through the Revealed Comparative Advantage (RCA) method
- Data analysis is mainly based on the year 1998/99-2007/08.
- Simple statistical tools measures of association trough Gamma, bi-variate correlation and prediction through percentage are used.
- This study covers only agricultural sector and export potential of high value cash crops of Nepal and the results may not be applicable to generalize in other sectors and products of the economy.
- Due to the nearest competitor and largest producer and exporter of tea, in some cases, this study has been compared with Indian tea only.

- The study does not reduce the recall biasness of farmers while receiving information, either through questionnaire or through interview.
- The findings of this study may not be applicable to generalize the implication of WTO in other sector and agricultural production.
- Other districts including Kaski and Gulmi are being popular for tea production now. But this study does not cover those areas.

1.7 Expected Output

The final output of this study is expected to be clearly mentioned the implication of AoA, SPS, TBT and TRIPs of WTO, in cash crops in general and tea in particular. This study attempts to show the pros and cons of WTO agreements for promoting Nepal's export trade of tea and its competitiveness in export market. Furthermore, it attempted to recommend measures to be adopted for enhancing export under the provisions of WTO. Additionally, present study aimed to analyze the relation between the dependent and independent variables, such as, educational status of the farmers and land holding size and the productivity of green leaves.

1.8 Chapter Scheme

This study is comprised of eight chapters. Chapter one includes introduction in which the statement of the problem, objectives, hypothesis, significance of the study, limitation of the study and expected output along with an outline of chapter scheme are mentioned.

Second chapter, review of literature, discusses comprehensively the relevant literature on WTO agreements and agriculture and tea sector.

Third chapter, methodology of the study, includes research design, nature and sources of data, population and sample, location, data collection procedures and methods of data analysis and interpretation.

Chapter four, Nepalese agriculture and WTO Implication, deals with the implication of WTO agreements and some aspects of Nepalese agriculture such as

growth rate, some major high value export potential cash crops, their current position and Nepal's foreign trade in brief are comprised.

Fifth chapter is related to major economic aspects of green leaves and its productivity which includes the major economic issues of green leaves, some key information about tea processors/exporters and suggestions.

Chapter six of the study is concerned with global scenario and Nepal's position in tea, which includes- the global production, export, import, and consumption pattern of tea. This chapter also includes the comparative study in some aspects between India and Nepal.

In chapter seven, export competitiveness, revealed comparative advantage and export strategy, discussion of factors for competitiveness, explanation of RCA index, RCA of Nepalese tea and export strategy are included.

The last chapter, eight, includes summary, conclusion and recommendation. It broadly contains summary, overall findings of the study and some suggestions made for policy implication.

CHAPTER - II
REVIEW OF LITERATURE

2.1 Theoretical Review on International Trade Competitiveness

"Positive impact of international trade on growth of an economy has been widely advocated on both theoretical (see Grossman & Helpman, 1997) and empirical (see Keller, 2002) ground. Proponents of international trade argue that trade liberalization leads to higher income and output for a country through static and dynamic gains. The static gains, a short run increase in income and output rises from reduced costs from economies of scale, efficiency gains from exploiting comparative advantage, reduction in distortion from imperfect competition, and increased product variety. Although there is no concrete evidences of causal link between trade liberalization productivity growth (see Rodriguez and Rodrik, 1999), the dynamic gain is the long run productivity growth of an economy that is achieved mainly through technological spillover caused by international trade" (Quoted from Adhikari, 2010 : 3).

However, there is no consensus regarding impact of trade liberalization on economic growth. Many empirical studies have found that outward-oriented economies have higher growth rate than inward-economies. Export Led Growth postulates that countries growth is enhanced by increased level of export through increase in real output, specialization and increased productivity level, access to advanced level technologies, learning by doing, better management practices and removing foreign exchange constraint (see Giles & Williams, 1999).

Some scholars assert that export as an engine of growth depends on structural characteristics of economies (see Buffie, 1992). Frankel, Romer & Cyrus (1996) for south Asian countries found that large share of growth of Hongkong and Singapore is explained by openness while share of openness is small for Korea, Taiwan and Malaysia. This indicates the country specific openness. Authors further found that trade, instead of openness policy, is responsible for growth in these countries. Contrary to the ELG, Growth Led Export (GLE) argument is supported by Neoclassical trade theory according to which other factors aside from the export are

responsible for output growth (Giles & Williams, 1999). According to GLE growth of an economy enhances level of skill and technology that leads to increase export through improved comparative advantage (Kaldor, 1964, Krugman, 1984).

There may be controversy regarding causality between export and growth, there are certain factors which determines the level of export of a country. Productivity and competitiveness are the most common factors that determine level and growth of export of a country. Besides these, Redding & Venables (2003) found that geographical structure, both internal and external, of a country and its supply side capacity determines her export performance (Adhikari, 2010 : 6).

The anti-export bias in international trade is the main problem in the export side of any country. Reducing such anti-export bias is therefore essential to improve the environment for export growth. The best way to reduce anti-export bias and to improve the environment for export growth is to reduce protection of the domestic market (World Bank, 2012: website). This means reducing tariffs, reducing or eliminating tariff escalation, and eschewing the use of anti-dumping and QRs. But reforms of this kind are often long and difficult. In the meantime there are a number of export promotion policies that can be used to reduce anti-export bias and make exports more competitive (Ibid.).

International trade theory postulates that features of developing countries is abundant labour force relative to capital leading to make them comparatively advantageous labour intensive product in their trade with the rest of the world.(Quoted from Adhikari, 2010)

Trade liberalization policies related to international trade in terms of export and import might have negative and positive impacts. Such policies, in fact, have linkages with multilateral, regional and bilateral agreements. Regarding this issue Rahaman, Shadat & Das found that Nepal will be affected by SAPTA negatively due to negative export performance caused by structural limitation (2006).

Trade liberalization is the key of international trade leads to the higher economic growth rate shaping export and import because it induces outward-oriented economies. Export oriented economies emphasizes on the competitiveness of product to compete in international market. International trade competitiveness can be

investigated in the basis of RCA, Revealed Export and Import Advantage Index, Trade Specilization Index, Diversification Index etc. by comparing for a given year or period for a given commodity group from SITC etc. But these all methods may not be applicable in all cases. RCA index is one of them to measure export competitiveness in international market.

The term comparative advantage was first discussed by Robert Torrens in 1815 on his essay 'Corn Laws' where he argued that England has no advantage to trade with Portugal for grain as it can be produced more cheaply at England.[1] Later, Adam Smith proposed a theory of absolute advantage of trade. This theory explains that a country has absolute advantage of trade when a particular good can be produced at a lower cost than other countries do. The theory of absolute comparative advantage, however, does not take into account of opportunity cost. Ricardo developed a theory of comparative advantage which states that country has comparative advantage of trade if a country can produce the commodity at lower opportunity cost than rest of the countries. The fundamental assumption of this theory is that different countries have different state of technology and a result there is difference in cost of production across the countries. Adding to comparative advantage theory of trade, Heckscher-Ohlin (popularly known as H-O theory) argued that cost difference across the countries is due to the differences in prices of factor inputs rather than different state of technology. This theory assumes same technology across the countries and comparative advantage is attributed to the difference in cost arising from different level of factor prices across countries.

Given theoretical explanations of comparative advantage, its empirical examination is however complicated mainly due to the fact that the 'relative prices' as suggested that the comparative advantage can be measured through the observed pattern on trade (Liesner 1958; Balassa 1965). For empirical/a/ purpose, they argued that comparative advantage can be 'revealed' from observed pattern of trade flow. Therefore, it has been commonly termed as Revealed Comparative Advantage (RCA) in international economics jargon. RCA in an index that measures the relative importance of the commodity or group of commodities (product group) vis-à-vis world's trade. More formally, it measures the importance of export of a commodity or

[1] http://en.wikipedia.org/wiki/comparative_advantage.

product group by a country to total export of that commodity or product group by world. Nevertheless, economists have developed different indices to calculate RCA. For example, Liensner (1958) has measured the RCA simply as a ratio of export of commodity say 'I' by 'K' to export of same commodity by the world. This however not capture the relative importance of export of commodity in country's as well as world's export. Therefore, Balassa (1965) developed an alternative and comprehensive RCA index as the ratio of country's export of a commodity relative to its total exports and to the corresponding export of world.

2.2 The Context: Tea- Competitiveness Study

Thapa studied about competitiveness issue and export potentiality of Nepalese tea in respect to the main indicators of competitiveness, namely RCA, DRC and net value addition criterion which shows that Nepalese tea is competitive in the international market (2004 : 237). Initially, Thapa studied about competitiveness issue and export potentiality of Nepalese tea in respect to the main indicators of competitiveness, namely RCA, DRC and net value addition criterion which shows that Nepalese tea is competitive in the international market. The computed RCA index is 3.5 (i.e., substantially more than unity), the DRC is 68 percent and value addition rate is 42 percent. Firstly, he has talked about Revealed Comparative Advantage (RCA) index for Nepalese tea. He finds that, although the RCA values fluctuate somewhat (1.79-5.67) the average for the period of 1995-2001 was 3.5, which is significantly higher than unity, indicating that Nepalese tea is competitive in export market (Thapa, 2003). Thapa, in his article, examined some issues on costs and margins for various production activities of tea. He further states:

> *Although subject to some margin of error due to poor statistics, the results show very low profit margin for tea growing, about Rs 7 Kg for Orthodox tea and barely Rs 1/Kg for CTC tea. It is true that profitability of growing CTC tea in the Tarai has fallen in recent years as farm prices fell. Accounting for additional costs like land rental, non-factors services, some non-marketed inputs and transport/ marketing losses would reduce this margin further* (2004 : 235-237).

He has also provided a comparative account of the tea sectors in Nepal and India. The nearest competitor for Nepalese tea is North East India, where tea yield is three times higher than in Nepal while the size of the tea sector is 25 times larger. The estimated labour productivities show that pooled productivity in North East India is

1652 Kg per hectare and 698 Kg per labour. On the whole, competing with India is major challenge and the gaps are immense, although some experts in Nepal feel that Nepal has comparative advantages in one area, which is labour productivity over Darjeeling tea. Labour productivity of Nepal's Hill (orthodox) tea is 232 kg/labour and 202 kg/labour for Darjelling (Tea Board of India, 1997) tea. In this context, Nepal's Hill Tea has comparative advantage than the Darjeeling tea (Ibid).

Secondly, he has discussed the Domestic Resource Cost (DRC) as another important indicator of competitiveness. The estimated DRC values are 77 percent for Orthodox tea and 67 percent for CTC tea. Their pooled/weighted average comes to 68 percent, where the weights based on the area coverage by tea varieties are: CTC 84 percent and the orthodox 14 percent. The high DRC values reveal that tea business is socially profitable. Thus, tea offers comparative advantages potential for factor employment, export earning and import substitution with small expense of foreign currency. Thirdly, he attempted to show input requirements per kilo of made tea and input output coefficients show that tea generates value addition of 42 percent of the market price of output (Ibid : 236).

Fourthly, he derived conclusion as the Nepalese orthodox/ green/ specialty tea fetches good export price (about US$ 4.8 per Kg in some recent year), three times the import/ domestic market price of black /CTC tea with global demand for specialty tea of about 45000 tons and current supplies substantially below that level, trading opportunities are largely unexploited. Given climatic advantages, Nepal has immense potential to expand in this market segment. By contrast; production/trade indicators are not as favorable in the CTC/black tea category. Here, Nepalese tea must compete at home with cheap imports. Imports are rising, and despite high tariffs. Given the open boarder, tariff protection will not be an option, and raising productivity is the only way to be competitive in the domestic market (Ibid : 237).

Tea Board of India, in its report, has reported that the Government of India has approved a modernization scheme with an outlay of IRs. 93 crore for the tea sector. The implementation of the scheme is set to contribute to the overall modernization and development of the plantation of tea sector. The modernization scheme for the tea sector includes grant of subsidy for the production of orthodox tea at the rate of IRs. 3 per kg for leaf grades and IRs. 2 per kg for dust grades for existing level of

production. There will be an additional incentive of IRs. 2 per kg for incremental volume over the previous year from Jan. 1, 2005 to March 31, 2007. Further, in order to support R & D in the tea sector, the scheme proposes to provide a package of IRs. 28 crore to meet the actual deficit of the two research and development institutions namely Tea Research Association at Tocklia (Assam) and United Planters Association for Southern India Tea Research Foundation, Tamil Nadu for a period of five years from 2004-05 (Tea Board of India, 2007) Such type of support activity from the Indian government to the tea sector lead to decline the cost of production, as a result competitive strength of India tea will be high.

The Indian decision in 1998 to cut import duties on tea from Nepal, Bangladesh and Sri Lanka should bring about strong competition in tea market of India. The tea market background study focused on Darjeeling tea which has already been suffering from production stagnation and falling prices, is under threat from the discovery of an identical aroma and light golden liquor in tea from the Nepalese Hills in the district Ilam. This study adds that Nepal's National Tea Policy 2000 also aims of 46 million kg for overall tea production by the end of the decade. Among them at least 65 percent of orthodox tea will be produced by the end of this decade. This situation will make Nepal more competitive than Darjeeling tea of India (The Tea Market Background Study, 2002)

An environment research group of India, Ashoka Trust for Research in Ecology and Environment and People Science Institute has found a number of rivers flowing through ranetuaries and reserve forests get residual pesticides drained from tea gardens. Study adds that sometimes toxicity of these rivers go up to an alarming level. According to the Times of India, May 23, 2001 at least 10 leopards and 5 elephants have died in the last two years due to the leakage of pesticides through waste water from tea gardens in West Bengal. It indicates that using level of pesticides is higher in West Bengal. A study adds that pesticides worth IRs. 730m (15.5m) has annually been used in North Bengal's 104226 ha land in tea gardens (Market-trade fair.com/assets/english/teamarket.pdf). It means pesticides used in North Bengal is around IRs. 7000 per ha of land which is higher level than Nepali tea gardens.

Hazirika, in his book, said that the Indian tea market has a burning problem of maintaining the international standard on the quality (pesticide control) of tea. Indian tea also faces such pesticide residue problem in recent years, which affects its position in international market. But testing and conformity assessment for these standard are difficult and expensive. This study adds that the cost required for the test is roughly US$ 234 per analysis. So, it is too expensive (Hazirika, 2008).

Tea Board of India, in its report, examines that the most important factor afflicting the Indian tea industry is the aging of tea bushes, leading to declining quality and productivity. This has resulted in the cost of production of Indian tea becoming the highest among major tea exporting countries (www.teaboard-sptf.com). To arrest this trend, the government of India, Ministry of Commerce and Industry have approved a proposal of Tea Board India for setting up of a Special Purpose Tea Fund (SPTF) for extending financial support to the needy tea estate for undertaking replanting, replacement planting, rejuvenation of old aged tea bushes. Government's contribution towards the tea sector during the XI Plan Period (2007-2012) has been fixed at IRs. 567.10 Crores. This is allocated to capital infusion (of IRs. 91crores) to the SPTF and subsidy (of IRs 476.10 crores equivalent to 25 percent of the projected project expenditure of IRs. 1904.40 crores (Tea Board India, 2007). It seems that tea board/Government of India has been serious about the tea economy of India for the strengthening their position in international as well as domestic market. Providing the subsidy and other financial support to the sector can enhance competitive strength of Indian tea in international market. Therefore market access opportunities generated through WTO provisions can be converted into actual gain when government subsidy to tea sector; like Indian tea financial, technical and other domestic support; which fall under the green box category of AoA; can enhance the competitiveness of tea. Otherwise Nepalese tea cannot compete with Indian tea.

2.3 Age of Tea Bushes as a Productivity and Quality Concern

Age of the tea bushes is most important determining factor for high quality and productivity of tea. Most of the studies which are concerned with the age of the tea bushes have said youngness of the tea bushes has been more productive as well as of high quality. In this regard, some study report and their views are as follows.

Mishra, in his book, mentioned that the old age of tea bushes is one of the causes of low productivity in west Bengal. So, age of the tea bushes is one of the important factors to determine the productivity (1979, cited in Dwibedi, 1999 : 30).

Duibedi, in his research states that age of tea bushes in Darjeeling is more than 150 years old. Leaf bearing capacity of bushes reduces after their age is 50-60 years. However, the general impression amongst experienced planters, at present, is that the upper limit of economic age of the bush is fifty years. Yield of tea leaves from any bush would decline despite reasonable care if the said bush crossed the age of fifty years (Dwibedi, 1999 : 70-71).

Trikey, in his thesis, shows that after independence of India, the tea industry in the Darjeeling Hills was approaching one hundred years in age. This meant that, unless the previous tea plantation management had initiated some replantation measures, tea bushes had already gone past their prime product age of 40 to 60 years consequently, the older tea bushes were not yielding the best crops even during 'peak seasons'. Trikey adds in his study that the over aging of the tea plants had direct consequences for the productivity of tea leaves. As the plant aged, tea production went steadily down (Trikey, 2005 : 51).

Gandhi, in his article, argues as regard the age of tea bushes that the productivity and quality of tea produced in India is also affected due to the existence of ageing plantation. A significant portion of tea plantation is aged beyond economic life of tea bushes (2006 : 2). Most of the tea gardens in India (especially in North India) are approximately 100 and more years older. But in Nepal most of the gardens are 4-5 times younger than the Indian ones. In this connection, experts suggest that there is need to take drastic measures to improve productivity and take up replantaion/ rejuvelation on a war footing to improve competitiveness and long-term viability.

Rana and Rimal, in their article, indicate that Nepal has a relatively young tea growing history and produces less than one percent of the world's orthodox tea. Nepalese orthodox tea is better tea as compared to that of Darjeeling tea. Due to the newer bushes of the Nepalese tea than Darjeeling tea and at the same time it has grown in the Himalayan environment with pure air and water. So, Nepalese tea is relatively quality tea as compared to the Darjeeling tea (Rana and Rimal, 2006 : 32).

GTZ studied about orthodox tea in Nepal and emphasized and mentioned that the relatively younger bushes in Nepal produce a superior quality orthodox tea than the old plantation of Darjeeling. Therefore, the fading quality of Darjeeling tea, together with the increasing demand for orthodox tea worldwide, offers Nepal enormous prospects to expand tea cultivation and increase its trade outside of Nepal. Like this, other many studies are concerned with the Nepalese tea, that have explained the competitiveness of their tea in respect to younger bushes of tea than Darjeeling and other tea producing area of India (GTZ, 2007).

Chakrabarti and Sarkar, in their report, mention that the cost of production is very high as leaf productivity per unit is low, partly due to geographical and environmental reasons and partly due to management practices followed. Again they added that the low productivity in Darjeeling due to the weather and hilly terrain considerably reduce the leaf bearing capacity of the bushes and the plucking capacity of the workers respectively. To top it all, laxity in uprooting existing bushes once they age beyond their peak leaf bearing capacity and in replacing them with newer ones has also contributed to the lower productivity of Darjeeling tea gardens. According to them average yield in Darjeeling is only 500 kg/ha, compared to an all-India average of 1700 kg/ha (Chakrabarti and Sarkar, 2007 : 29).

2.4 WTO agreements and Implication on Agriculture

Young and Westcott reports that crop insurance subsidies averaged US Dollar 1.4 billion during 1995-98, resulting in an increase of 600000 hectares planted, with wheat and cotton showing the largest percentage gains. Beginning in 2001, U.S. crop insurance subsidy almost double to about U.S. Dollar 3.0 billion owing to the reform by Congress to improve the “safety net” for U.S. farmers (2000 : 762-67).

MOICS and Government of Nepal had their own estimates for SPS and TBT respectively. MOICS, on the one hand, has submitted a report to WTO with a detail action plan for implementing the SPS measures at the time of accession to the WTO. The action plan estimates that it will cost US$ 12.5 million to introduce an improved SPS regime. While the government, on the other, estimates that it needs US$ 12 million over a five year period to comply with the agreement on Technical Barriers to Trade (TBT). This would cover procuring equipment purchasing consulting services.

Similarly, it is estimated that it will cost between US$ 4 million to US$ 32 million to fully implement intellectual property right (IPR) law in Nepal. These cost are more than the entire annual budget of many LDCs like Nepal. So, the implementation of WTO rules, agreements and obligation are more problematic for LDCs (MoICS, 2003).

Thapa, in his study, fitted equations for exports and other variables (e.g. time) as follows (t indicates time or years): Tea export= 4.5+7.4t; Tea import=818-25t: Unit export price= 1287+136t; and Unit import price = 2161-11t (Thapa, 2004). But this study does not establish the relationship between the land holding size and productivity as well as education status of the farmers and productivity.

Awasthi and Adhikari, in their article, analyze various provisions of domestic supports measures of AoA. Furthermore, their study states that the some implication of AoA on Nepalese agriculture sector. It was noted that the AoA disciplines or limits only some forms of subsidies that are production and trade distorting. Thus, there are no supports limits on Green Box measures like agricultural research, extension, agricultural roads etc. Hence, there are no issues here from the WTO standpoint as regards non- exempt support measures that fall under the Amber Box category, express in terms of aggregate measurement of support or AMS, Nepal committed at the time of the WTO Accession to limit these subsidies to within the de minimis level, or 10 percent of the value of the agriculture output (VoAP) (Awasthi and Adhikari, 2004 : 35).

They further state that currently, Nepal does not have product –specific AMS as there are no price supports programmers. The study further adds that AoA does not prohibit these programmes for the future provided that the subsidies are limited to the de minimis level. In any case, the amount of subsidies permitted in considerable as regards non product specific AMS (e.g. on fertilizer, irrigations, seeds, credit etc), Nepal can grant these subsidies any time up to the de minimis level. Compare with this limit of 10 percent of the VoAP. In fact, even if the entire government budget on agriculture is assumed to be subsidies, the ratio does not exceed 5 percent. So, the study concludes, as regards the implication of AOA on agriculture sector is that this agreement provides ample room for Nepal to supports its agriculture. The main constraint is resource, not the AoA (Ibid).

Chitrakar and Thapa, in their book, argue that standard related agreement of WTO should be applied by all member countries. But for the LDCs, like Nepal, it is not easy to implement the standard related agreement namely, SPS measures and TBT agreement in various ground. Additionally, they argue and indicate that even the relatively industrialized countries such as China, Argentina and Russia needed US$ 82.7 million, US$ 10 million, and US$ 150 million respectively for implementation of some SPS measures. This accounts for more than the development budget of seven of the twelve LDCs for which no figures have been calculated as implementation costs yet. It does imply that the agreements place a much heavier burden of compliance to LDCs most standard are favorable for high technology and capital rich companies and a country like Nepal's Labour incentives manufacturing industry companies can not take benefit much from the agreements as much. Meanwhile, the cost of the SPS and TBT measures especially in agriculture is very high and the technical assistance to be provided by developed countries is not binding (2004 : 23-24).

Pandey, in his article, examined the Standard Related WTO Agreements regarding the opportunities and challenges for SMEs and he examines the TRS agreement of the WTO and sheds light on their impacts on the Nepalese SMEs. Furthermore, he indicates that, if TRS measures adopted by WTO member is viewed in conjunction with the export basket of Nepal, given the level of technical capability of the country to comply with SPS measures, there is every possibility that the market access provided by other WTO agreements could be denied to many industrial product as well as most primary and processed agricultural products. They can prohibit market access by imposing an import ban or by increasing production and marketing costs (2004 : 65).

Furthermore, Pandey added that apart from problems related to complexity, stringency or technical characteristics of certain regulations and standards, Nepal faces a number of constraints as a result of structural problems. These include lack of awareness and management of information, poor infrastructure, dominance of small producers, lack of finance and insufficient access to technology and institutional capacity. Typically, essential facilities like laboratories are not adequately staffed, scientific equipment is antiquated for the required tests, and there is no systematic collection and recording of information. The high cost of conformity assessment

including testing for thresholds of residues is also a serious problem. Besides, Nepal is a 'Standard taker' and not a 'Standard setter' (Ibid : 66). He cautions that the cost of complying with standards of importing developed countries could be very high and beyond the reach for the Nepalese SMEs. He also suggested the government for supporting the enterprises by way of incentives or subsidies in WTO compatible manner as well as establishes its own test laboratories with international accreditation standard. The government should also initiate extension programmes, which include training of entrepreneurs, managers and different level of workers (Ibid : 65- 68).

Shrestha, in his article, suggests that the SME entrepreneurs should be equipped with necessary knowledge and skill to counter the threats posed by the countries WTO membership and take advantage of the benefits offered. Awareness rising should be a continuous process. The government and the private sector have to work together to identify products that have comparative and competitive advantage, not just for the purpose of exports, but for the purpose of survival in the domestic market as well (2004).

Adhikari, in his article, indicates that there are three direct and indirect trade remedy measures. Direct measures include anti-dumping, countervailing measures and safeguards, while indirect measures include balance of payment (BOP) cover and special safeguard in the case of agriculture. Anti-dumping measures are taken to protect domestic enterprises against unfair practices of foreign private companies, while countervailing measures are taken against the subsidy provided by the foreign governments. Similarly, safeguard measures are taken to remedy the problem of import surge. He, however, cautions that it will be difficult for a country like Nepal to actually utilize these measures as it is necessary to first enact laws, put in place institutional mechanisms and prove that dumping has caused serious injury to the domestic enterprises in order to be eligible to use these measures. He, thus, suggests that the government should immediately start to work to enact the required legislation, development put in place the necessary institutions and train human resources to make use of trade remedy measures (2004 : 77-80).

Until recently, the Hindu-Kush Himalaya (HKH) region was less connected to the plains primarily because of different terrain and resultant lack of requisite infrastructure. However, the forces of globalization have changed or are about to

change all this (Jodha, 2004 : 17). He further argues that the process of globalization trend to create the circumstances. This may marginalize the nature -endowed economic niche of mountain areas. It would force them to interact as a weaker party in the competitive world market. The process is governed by the driving forces, which are not sensitive to the concerns of fragile ecosystems and their residents (2004 : 17).

Dhar, in his article, says:

> *One important consideration for the developing countries is that the TRIPS Agreement does not define what constitutes an 'effective' sui-generis system for protecting plant varieties. This offers the flexibility to WTO members to devise systems of protection of plant varieties, which suit their interests to the fullest extent* (2004 : 108).

According to him, the sui generis legislation that developing countries must introduce has taken into consideration the interests of both the farming communities as well as the plant breeders involved in the formal sector. Agriculture in most developing countries relies significantly on the traditional farming communities who have made their contribution to the production process through informal innovations as well. Most importantly, the seed supply systems in many of these countries continue to be in the hands of the farming communities, despite plant breeders in the formal sector starting to make in-roads into the seed markets in recent years (Ibid : 108).

The pressures to join the UPOV platform are supplemented by the efforts of the developed countries to use other for. They are even using other international platforms such as World Intellectual Property Organization (WIPO) and Food and Agriculture Organization (FAO). Tripathi, in her article, aptly puts it:

> *A looming threat to the current flexibilities in the TRIPS Agreement that are being fought for could be undermined by WIPO patent agenda with its three pillars (patent law treaty, patent cooperation treaty and substantive patent law treaty) that could make it simpler to file world wild patents, harmonies the domestic laws further as well as possibly remove the exemptions currently allowed under the TRIPS Agreement- in other words a one stop shop for a single global patent* (2004 : 114).

In recent days, at the international level, it is being explored whether farmers' right could be implemented through the creation of sui generis rights to traditional knowledge. Biber-Klemm, in her article, studied the Implementation of Farmers Right through the Creation of Suigeneris Rights to Traditional Knowledge. Therefore, she

calls for the further exploration of the options of sui generic IRPs to protect traditional plant genetic resources for food and agriculture and traditional knowledge as one of various elements for the implementation of farmers' rights. She recommends that this should be done within a clearly defined strategy and taking account of the main objectives of protection and maintaining/opening up the possibility to integrate the option to protect traditional knowledge by sui generis rights at the regional and international levels (2004 : 190-192).

Karna, in his article, has examined the opportunities and challenges that Nepal faces after the entry into the WTO. He has followed analytical as well as descriptive research design. The discussion is made on the basis of secondary sources of information/data. He has analysed the challenges and opportunities of WTO rules and provisions in the context of Nepalese economy. He argues that there is no doubt the membership of WTO has opportunities as well as challenges to be faced by Nepal. Challenges may weigh heavier than opportunities. He has written briefly about the offers of WTO provisions and challenges what Nepal will face in this context. He has discussed some concerting agreements and provision of WTO to Nepalese economy like Special and Differential Treatment (S&DT), Trade Related Investment Measures (TRIMs) Trade Related Aspects of Intellectual Property Rights (TRIPs) and he relates and discusses the WTO provisions to import protection and export promotion; poverty alleviation; employment opportunities and income distribution; efficient allocation of natural resources and environment; raising of government revenue and begetting new prospects with respect to the expansion of international market. Furthermore, he has discussed the prospects for growth of export of clothing to OECD countries as a result of acceding to WTO. He has concluded that it is a challenge to translate the WTO membership into economic benefits. After becoming a member of the WTO, situation invites efficiency, competitive environment, and a lot of challenges. According to him, there may have negative implications of WTO through erosion of quota (preference), price escalation, and additional cost for new product and cost of adjustments, restructuring/monitoring and participating for WTO- compliance. Regarding this, the best strategy is to minimize or mitigate losses. To reaping the benefits of a WTO membership he has suggested that government of Nepal and private sector as well as donors has to work together (2004 : 162-172).

Tiwari, Rai and Verma, in their article, examined the agreement on agriculture regarding the export competition provision of WTO. According to them, the vast majority of the developing countries do not subsidies exports simply because they cannot afford it. But they are affected indirectly by subsidies given by their trade partners. This works through several ways. First, export subsidies increase the share of the exporter in world market, at the cost of those who do not subsidize. Second, they depress world price, which not only cut export earning of other countries but also transmit disincentives to farmers in the third world countries. Third, export subsidization also makes world market prices unstable thereby increasing difficulties of coping with price risks for an importer. For these reasons, export subsidies are considered to be must distorting of three main policies covered by the AOA. The other two being domestic subsidies and border measures. They further explain that Nepal, like the other LDCs and the majority of the developing countries, neither it can subsidize exports nor it can afford. During the WTO accession it has also committed not to subsidize exports. Yet, as noted above, the Nepalese agriculture stands to be affected negatively by this practice of trading partners. For example, the government of India decided in October, 2001 to export its wheat stocks at highly subsidized prices. Similar programme was initiated in April, 2001 for rice (2004 : 61-74).

But this was found not to be in conformity with article 9.1 (b) (Sale or disposal for export of government stocks at a price lower than to buyers in the domestic market). They clarify it in their study that; in any case, the important point is that the Nepalese agricultural stands to be affected negatively from subsidized exports by India of cereals and other products. The WTO rules are like a double –edged sword – while Nepal may utilize the provisions of the AOA article 9.1(d) and (e) there are also negative implications of having such provisions in the WTO agreements. The worst case is when Nepal does take advantage of the special provision but is affected negatively when trading partners subsidize exports using the provision (Ibid : 74-75).

The major conclusions, of their study, notably on the implications of various WTO rules on domestic policies and export subsides and export promotion and export restrictions, are as follows:

- Nepal's WTO commitment not to subsidize the export agricultural products has little negative implications on the Nepalese agriculture.

- Nepal, however, can grant subsidies to reduce the cost of domestic and international transportation.
- Nepal can also promote exports through various incentive measures of the WTO subsidies Agreement. Under the SDT of article 27 of the Subsidies Agreement as a LDC Nepal qualifies for using of it.
- Nepal is occasionally affected negatively in export subsidization by others. In Nepal's case, export subsidization by India is much more relevant than by others (Ibid : 75-78).

The conclusion that can be derived from the above points is that the AoA prohibits Nepal from granting direct export subsidies on agricultural product. Yet, there are some indirect ways in which Nepal can subsidize and assist except and export-oriented enterprises, by virtue of its developing country status. The two main avenues are subsidies to reduce the cost of marketing exports including domestic and external transport costs, and various export incentives measures.

Joshi and Shrestha, in their article, have examined the implication of WTO to agriculture sector. They state that the volume of agriculture trade of Nepal has been very small owing to the subsistence agricultural production system. Recently, Nepal has acceded to WTO. Among various agreement of WTO, AoA, TRIPs and SPS agreements are directly related to agriculture. Under AoA, member country is bound to reduce subsidy provided to the agriculture sector and at the same time to open up its domestic market for foreign agricultural production providing national treatment to them. Nepal has ample rooms to grant subsidies to producer farmers. However, market access of Nepalese agricultural products in the international market has been constrained by fairly low competitiveness and poor quality of the production. The situation has been compounded by highly protected agricultural sector of developed economies together with administration of non-tariff barriers (Joshi and Shrestha, 2005 : 8).

According to Joshi and Shrestha, additionally, they argue that Nepal's position has been very weak in respect to implementation of SPS agreements. Nepal is yet to harmonize the standard of quality of its agricultural products and production process with widely accepted international standard systems like codex. Nepal has to amend a number of existing laws related to food quality and formulate some new laws as per

the SPS agreements. It seems to be great challenge to comply with the SPS agreements to get share of international market of Nepalese agriculture production in the prevailing administrative and institutional environment at home. Finally, they argue that having small and vulnerable economy, Nepal has limited advantages of acceding to WTO. To capitalize limited opportunities that have accrued to being a member of WTO, and to minimize the negative implication of the membership, Nepal should strive for attaining economies of scale in agricultural production, quality improvement of our production, WTO friendly legal and institutional reforms and human resources development (Ibid).

Pyakuryal, Thapa and Roy, in their report, have reviewed and discussed the different WTO provisions like AoA, SPS measures as regards the implication of WTO on competitiveness and Food Security Perspectives. They state that Nepal does not provide domestic subsidy; domestic support to the farm sector has been declining, support to agricultural research and extension is about 2.8 percent of the agricultural output and falls within the limit of 10 percent allowed by AoA. Furthermore, they add in context to AoA is that agriculture production support up to 10 percent of output is exempt; tariff and export subsidy by the least developed countries are allowed and some others support activities such as government service to research, disease control, infrastructure, irrigation, food security, direct income transfer to farmers etc are fallen under the 'green box' support allowed by AoA. If the government wants to support the agricultural sector, provisions of AoA does not restrict support (Pyakuryal, Thapa, Roy, 2005 : 55-58). They conclude that the impact of liberalization on food security in Nepal seems to correct to recognize that liberalization did have positive impacts. The overall impact, however, has been limited due to two main reasons. The first is Nepal shares a long porous border with India. Thus, restrictive trade policies have only a limited bite. Secondly, the regions in Nepal are segregated from each other. The remote areas in the hills and the mountains have not benefited from liberalization while the Terai has reaped most of the benefits (Ibid).

NTCDB, in its report, has examined and found out the various cost components of green leaves production. But this study is mainly located in the area where tea extension offices are in operation in the district of Ilam and Jhapa. However, this study report shows the cost of green leave production in Hills and

Terai. According to this study, average cost for green leaves production in Hills and Terai region is 14.52 Rs/Kg and 8.71 Rs/Kg respectively.

Pokhrel, in his thesis, has analyzed the some economic issues of tea and study only located in Ilam district. In his study, small holder green leaves producer and processed Orthodox tea trader were the major sources of primary data. Besides this, information obtained through observation, group discussion and key informant surveys. For primary data collection, he designed an interview schedule. Some socio-economic variables like family size, occupational pattern and educational status, age of plantation and size of holding were analyzed by using simple descriptive statistics. For the analysis of contribution of tea in household income, he used the simple regression analysis. In his study, Cobb-Douglas production function also applied to find out the variables, which have significant effect on green leaf production (2006 : 43-57). But his research did not examine the export and production situation of tea before and after the membership of WTO.

Action Aid Nepal study report argues that negative effect on domestic industries due to fair and unfair trade practices which are real life phenomena. In the WTO, many disputes are about these issues. The WTO recognizes difficulties and negative effects arising from both fair and unfair trade practices of trading partners and provides response measures known as trade remedy measures. While three such measures, namely antidumping, countervailing and emergency safeguards are accessible to all WTO members, special safeguards under the agreement on agriculture, specifically related to agricultural products, are accessible to only few countries in the world (2006 : 1).

This study further adds that the developing and LDCs around the globe have repeatedly been experiencing increasing imports of agricultural products, leading to a substantial distortion of their domestic market. Such increasing imports have many a times led to depression in prices of domestic agricultural products, as well as reduction in production of the product in question, among others. Given this scenario, it would only be logical to allow developing and LDCs to protect their respective domestic markets, not just considering the market distortions that such imports would bring, but even considering the implications such increasing imports would have on food and livelihood security (Ibid : 1).

Furthermore, AAN report has examined the provisions of AoA and argues that the agreement of AoA allows LDCs like Nepal to provide subsidy to the agricultural sector to extent of 10 percent of the agricultural GDP. In addition, since most farmers in Nepal fall into the category of low-income-resource-poor (LIRP), article 6.2 of the AoA allows non-inclusion of inputs and investment subsidies in the AMS if they are directed to LIRP farmers. Besides, there is no limit on the support that the Nepalese government provides for research and agricultural extension among others. In practice, the government support to the agricultural sector is negligible, even less than one percent of the AGDP. There is immense scope for Nepal to grant input subsidies if there are resources and if the government considers the subsidies to be useful for agricultural development (2006 : 35-36).

Nepal, thus, has the flexibility to provide substantive supports to the agricultural sector. Nepal's challenge to identify competitive products and adopt appropriate support measures to achieve global/regional competitiveness. It is also encouraging to note that the bound tariff on commodities that have export potential for Nepal is high. This will allow Nepal to raise the tariff on these products up to the bound level: in this case, Nepal wants to provide-temporary protection to these products without violating the WTO rules.

A report of SOMO reveals the various aspects of critical issues in the tea sector of six leading tea producing countries. This study report says that except for Vietnam in all countries (Sri Lanka, Kenya, India, Indonesia, Malawi), small-scale farmers were getting low prices of green leaf. According to this study, farmers were claimed that price realization is below the cost of production and because of the fixed price there is no incentive for them to produce better quality green leaf. A report on the smallholder sector in 5 State in India by the Indian Tea Board indicates that only in Assam were prices for green leaf above the cost of production in 2005, in the remaining states they were all well below production cost. SOMO study further add, that most of the cultivators in Indonesia, they frequently come to the last solution, sell their land or change to more profitable commodities. Also in Kenya low payments for green leaf to smallholders were beginning to negatively affect production. This was evident in some areas in Vihiga district tea farms being neglected and in some extreme cases tea bushes uprooted. Furthermore, study that the small growers do not

have any control over green leaf prices, and the price fluctuation in the auctions directly and immediately affects the price realized by them (SOMO, 2008 : 45).

Poudel, in her Master thesis, has attempted to analyze the implication of it on Nepalese agriculture after the accession to WTO. She has used the regression analysis to analyze the determinants of Nepal's agro-export and agro-imports. The results in the study show the positive relationship between AGDP and total agro-export which implies that as AGDP increases, total agro-export also increases. But in the case of comparison between before WTO and after WTO it shows different result. Her study shows that value of regression line positively related between agro-export and AGDP before the accession to WTO. But after the WTO membership the regression line shows the negative relationship between AGDP and export of agricultural product. It indicates that the relationship between AGDP and agro-export before WTO is better than after WTO. Her study adds that there is positive relationship between agro-import and agricultural GDP which implies that GDP increases, total agro-import also increases. But in the case of comparison between before and after the accession to WTO, her study shows different result that implies the impact of WTO, in agriculture of Nepal. We can conclude here from her study that Nepal has not succeeded to decrease the import and increase the export of Nepalese agro-product after entering WTO. The result of total agro-export seems better before entering WTO. After entering WTO it has to be increased and has to show positive mathematical values. But it has not shown and in the case of total agro-import which has to be decreased and has to come negative value after WTO that is also different from that. It can be said that the impact of WTO in Nepalese agriculture has shown negative result (2009).

Furthermore, her study is concerned with the impact of WTO on overall agro-export after and before the accession to WTO. But present study basically depends on tea sector of Nepal. So, it will show the impact of WTO on tea sector of Nepal after entering to the WTO of Nepal. Present study fulfils this gap.

2.5 WTO Agreements and Its Implication on Tea

For Downes and others, geographical indications defined as being linked to a region and a method of production provide a marketing tool that allows them to capitalize on their uniqueness-for example, Roquefort Cheese and Parma ham. Such designations normally come out after well established agricultural and/or artisanal activity that has national recognition and produces items sought after by consumers. David Downes and others in a study of these studies with five case studies of niche products (Kava, Rooibos, tea, quinoa, Basmati rice, and neem) concluded that "both geographical indications and trademarks show the greatest potential (to benefit local producers) where traditional small scale producers is still present, on the supply side, and where end-use products are marketed directly to consumers. In other words, they are less likely to be appropriate when the product is a commodity traded primarily in bulk (1999).

Dasgupta studied on the tea industry in the perspective of the WTO and TRIPS agreement. He, in his article, has analyzed the WTO agreement like TRIPS and Sanitary and Phytosanitary (SPS) measures in the tea sector. TRIPS agreement covers seven areas- patent, copyrights, trademarks; geographical indications, industrial designs, integrated circuit layout designs and undisclosed information for protection. Geographical indication is area of interest with regard to the tea sector. He emphasized that for the protection of their product within the framework of TRIPS agreement, country needs to take two urgent and simultaneous steps. On the one hand, a concerted effort needs to be made to identify which teas or products can be protected under geographical indication and on the other hand, governments that have not done yet so the country needs to take legislative action in drafting and enacting a geographical indication of goods act (2001 : 22-25).

His study shows that SPS measures agreement gives countries the unrestrained right to introduce sanitary and phytosanitary measures that result in a higher level of protection than would be achieved by measures based on relevant international standards, guidelines or recommendations provided there is sound scientific basic for doing so. According to him, unfortunately however, various countries have used this provision of the agreement as a protectionist measure to check market access of

specific countries. For example, Japan insists on a DDT residue level of 0.4 particles per million in un-manufactured tobacco, while the international standard is as high as 6 particles per million. As regards this, Indian tobacco has a DDT residue level of 1-2 particles per million which is well within the prescribed international norm. Nevertheless, Japan does not allow un-manufactured tobacco from India on phytosanitary ground. This study has attempted to analyze the SPS agreement on the tea sector. Given the fact that the SPS agreement can and indeed, has often been used to erect non-trade barriers to trade, it is important for the tea industry to take careful cognizance of the same. According to him, several issues may be raised as a result of this agreement: for instance, is the tea grown in a pest or disease free area, what contaminants/pesticides are being used, what is the level of contamination, what labeling procedures are being followed (what does the label say?), what is the packaging procedure (Is environment-friendly packaging material being used?), are the tea pickers properly attired (are they wearing gloves? Have checks been carried out to see whether anyone has a cut finger? Are they ill?). The list can be fairly long and there is evidence to suggest that if market access is to be denied, newer question would emerge. Finally, he suggests in his study that governments and industry need to consciously and urgently address the issue of standard as it is likely to emerge as a dominant barrier to trade (Ibid : 24).

Thapa studied the implication of WTO agreement on tea sector of Nepal. In his article, he mentions that, Agreement on Agriculture (AoA) has few negative implications for the tea sector. It was noted that this agreement would not restrict or limit any current policies and practices. With current support to tea production of about one million rupees annually (0.35 percent of tea output), there is considerable scope for granting subsidies in the future, if necessary. All the main support activities necessary for growth of tea sector, such as research, extension, irrigation, other infrastructure etc fall under the AoA's green box and are not restricted. Similarly, bound tariff on tea is relatively high. Thus, substantial scope exists for raising tariffs, if necessary and feasible. In any case, given that most tea is imported from India and the boarder is porous, imposing higher tariffs on tea is not a viable option for Nepal. Nepal cannot grant direct export subsidy but this is hardly an issue (2004: 238). Overall, from his study on AoA, we can conclude here that, it has few negative implications in the tea sector.

Furthermore, his study as regards the AoA in connection with tea sector of Nepal, he adds that under the green box measure of AoA, tea sector of Nepal can be permitted to support by the government. The government support for research, extension, roads, irrigation and marketing facilities fall under green box policies. Government budget for tea is about 0.3 percent of the tea output during 1997-2002(MOF for Budgets). Nepal Agriculture Research Council (NARC) has designated it Pakhribas Agricultural Research Center (PARC) for research on tea. The total budget and expenditure for the year 2000/01 was of 47 millions and 37 millions, respectively. The share of tea is Rs 1.3 million (about 2.4 percent) of the PARC's total budget. Most of it came from a Hill Agricultural Research Project supported by the government of the United Kingdom (Rs 0.83 million/year for 2002-04) and NARC's Tea Project (0.3 million) (Ibid : 229). Thus, tea growing activity is under supported, although these data show that support given by the government to the tea sector is very much low than the permissible limit of AoA.

Ghimire and Dahal, in their book, examined the implications of WTO provision on livelihood and food security perspectives. In their study they have attempted to analyze the possible implication of standards related agreements on food security and export of food items. In this concern, they point out that currently almost all food standards are being set by the Codex Commission, which is dominated by developed countries. Developing countries such as those in South Asia are neither represented nor actively involved in the standard setting process of codex. The lack of developing countries participation results in standards that are already predetermined and often too high. Hence, agriculture product on developing countries can not meet such standard and have a limited access, to the, markets in developed countries. In addition, there is an observed tendency of developed countries to change SPS standards too often which act as effective barriers to foreign imports (2004 : 55-56).

Chitrakar and Thapa, in their book, have attempted to analyze the safety standards of WTO on food products. They argue that many developing countries are also restricting import of agricultural products from developing countries on the basis of process standards. Even if the product does not show any signs of risk, it is still denied market access on grounds that the production process was not safe enough. For

example, the EU maintains an excessive rule that in dairy products, animal and the feed given to them be monitored (2004 : 25).

Shakya's study on "The Agriculture within the WTO: Challenges and Opportunities for Nepal" has explained and examined the effect of WTO membership on agricultural sector. He states that a host of opportunities exist for the Nepalese agricultural sector under the WTO regime. According to him Nepal can benefit from WTO membership by: enhancing the productivity of the agricultural sector and harvesting globally marketable high value agro-produce through greater value addition, enhancing the quality of products with proper attention paid to production processes so as to make them acceptable in the global market, increasing private and foreign investment to upgrade production systems and diversify agro-production, promoting the establishment of large commercial farms with better transportation and market connectivity, increasing the market access of the Nepalese agro-produce by taking advantage of various duty and quota-free privileges provided by the developed countries. Nepal can also enjoy a considerable policy space under the WTO regime. His study further adds that, as Nepal's tariff bound rate is 40 percent on tea, which is considerably higher than the applied rate. Nepal can raise the applied rate up to the bound level without breaching WTO commitments in case cheap imports from international markets pose threats to the domestic farmers and agro-based SMEs. It is encouraging to note that the bound tariff on commodities that have export potential for Nepal is high. Nepal's bound tariff commitments rate for tea is 50 percent. This will allow Nepal to provide temporary protection to tea without violating WTO rules (2004 : 38-40). So, the use of tariffs can be one of the important means to protect domestic agro-based SMEs. Besides, trade remedy measures can also be taken to regulate unfair competition (Ibid : 40).

Additionally, Shakya has focused on threats of WTO membership on Nepalese agriculture. He argues that membership for Nepal is not only opportunities; there are several challenges, which may be faced by the Nepalese agricultural product. All the agro-product including tea sector of Nepal is facing the various challenges. In this concern, his study has focused on and examined the problems of Nepalese agricultural sector and says that, one of the major impediments faced by the Nepalese agricultural product is the lack of effective means of transportation. Due to poor transport linkages between markets and the agricultural production areas in different parts of the county,

farmers and traders find it hard to deliver the agro-produce to markets. Besides, the difficulty in transportation also results in degradation in the quality of agricultural produce and subsequently leads to lowering of demand and prices. Technological up-gradation in the agricultural sector is very limited, which has resulted in high cost of production and limited value addition. Likewise, Nepal significantly lags behind in physical and technical infrastructures that are necessary to ensure quality of the agricultural products at the international level. As a result, Nepalese agricultural products are finding it difficult to make sustainable presence in foreign markets. Besides, inadequate physical infrastructure and delay in transportation have restricted the growth of large production farms and distribution networks. Above all, Nepal's agricultural products are finding it hard to meet even the minimum quality standards prescribed by importing nations and global standard setting institutions. Furthermore, he adds that the same time, Nepalese agriculture sector does not receive any direct subsidies from the government. This is in contrast to what China and India are doing. Both neighbors are directly subsidizing the export of some agricultural products and providing substantial domestic support to their respective agricultural sector. This is proving challenging to Nepal (Ibid : 41).

Thapa, in his article, argues that, under SPS (Sanitary and Phyto-Sanitary Measures) agreement, there are some acceptable minimum international standards, which all exporters must meet. Improving quality and standard is a long-term process that should begin with good practices at all stages e.g. good agricultural practice and good manufacturing practice. In this concern in all aspect of tea plantation, plucking and processing method should be maintaining the internationally accepted standards. He adds that the basic objective is to ensure food safety or to prevent animal-borne diseases and plant borne diseases from entering country. It is important to note that the SPS agreement gives countries the unrestrained right to introduce sanitary and phyto-sanitary measures that result in higher level of protection than would be achieved by measures based on relevant international standards. However, various countries have used this provision of agreement as a protectionist measures to check market access of specific countries (2004 : 230).

Furthermore, he states that another problem facing Nepalese exports is pesticide residue. It applies to tea too. Regarding technical standards, it was found that

tea processors/traders do not use the "NS" mark on their brands. In case of organic tea, Melicon has noted that there is lack of clear understanding of the procedures for certification (1997). On this and other issues, technical advice from the NTCDB to the private sector is thin and lacks supportive input analysis, factory design and processes. For example, products packed specifically for export fall short of necessary standards and there is lack of exposure in target markets. Thapa emphasized another issue facing Nepal in that area was that Nepalese tea has to be sent to Kolkata for food testing standards, which is costly in time, money and management (2004 : 231).

Regarding the identity and standards for tea, Thapa concludes that there is a need to protect tea plant varieties and harmonies standard for tea products in export markets. According to him, exports hold that Nepalese tea provides a unique blend of aroma/aroma of the Chinese tea and the colour/liquor of the Indian tea. There is also a sizable scope for improvement through research and infusion of new technology. In his view, there is one problem that of the 43 varieties grown in Nepal, almost all the cultivars are from India; most are garden series clones and only nine are seed stocks. Further he states that in this area, priority activities for research and improvement include; characterization of indigenous tea varieties and their wild relatives; improving tea quality and yield indices; organic tea; factory design; energy efficiency; and standards and establishment of tea museum. He adds that, legislation are also due on the plant variety protection, geographical indications and food standards as per the guidelines of the Codex and other international standards. Likewise, he suggests that, the NTCDB should try to enforce the use of Nepal Tea Logo and the NS/ISO marks (Ibid : 238).

Thapa, talking about TRIPS (Trade Related Intellectual Property Rights), has noted that concept of geographical indication would apply to tea to protect the public from being misled and to promote fair competition. As a member of World Intellectual Property Right Organization (WIPRO), Nepal will have to honor the TRIPS. Nepal has long history of tea plantation, but it is still to prepare an inventory of its tea seeds, cloned & wild relatives, identify tea or products that can be protected under GI (Geographical Indication) and take legislative action. Otherwise, Nepal tea may face identity issue in future (2004 : 231). As regards the implication of the Trade Related Investment Measures (TRIMS), there is some apprehension about this

agreement affecting some incentives to the tea industry where these are limited to domestic processors. Incentive on tax and tariffs to tea manufacturing and packaging firms might be affected. In any case, such policies, if any, have to be changed to make compatible with TRIMS agreement (Ibid : 238)

Shrestha, in his article, has examined the implication of multilateral trading regime on the Nepalese SMEs. His study presents some of the more apartment threats from WTO membership come from some WTO agreements, particularly Sanitary and phyto-Sanitary (SPS) measures and Trade Related Aspects of Intellectual Property Right (TRIPS). In this concern, he warns the SPS measures that allow a member country to impose various trade barriers in the name of protecting plant, animal and human health can be used arbitrarily. As regard agricultural product, he argues that there is always a risk that importing nations would restrict imports citing different SPS measures. Regarding this he adds that agro-exports from Nepal to existing trade partners are subjected to quarantine cheeks, which have created difficulty and given rise to delays and losses in transits. One of the recent examples of how the Nepalese traders suffer due to SPS measures is that of the Nepalese honey exporters. Norway banned the import of the Nepalese honey under its Hazard Analysis and Critical Control Point (HACCP) regulations stating that the Nepalese honey is unfit for human consumption (2004 : 25). Such kind of problems can be raised by the tea importing country in the sector of tea too.

Ghimire, in his article, has attempted to examine the TRIPS agreement and analyses its impact on the Nepalese SMEs. He states that TRIPs agreement sets out the minimum standards or IPR protection. While examining the impact of the TRIPS agreement on the Nepalese SMEs, he cautions that the use of reverse engineering will be restricted. He also observes the use of Geographical Indicating (GI) protecting for promotion some of Nepal's unique products abroad could be more difficult than assumed. TRIPS will also affect the agro-based industries as it has the potential to weaken farmers' position in relation to plant breeders. He suggests that special measures will have to be put in place to protect "farmer's right". The fact that more than 70 developing countries have not been able to fully implement the TRIPS provisions necessitates that Nepal seeks external technical and financial assistance. He also suggests that Nepal should collaborate with other least developed countries (LDCs) and work closely to protect the interest of

SMEs within the framework of the multilateral IPR regime (2004 : 48-49). In this regard, like Darjeeling tea we can protect by the Geographical Indication (GI) under the TRIPs agreement as Ilam tea.

Adhikari and Adhikari, in their report, argue that agricultural extension service in Nepal is not well equipped to take care of agricultural export of the country. According to them, non-tariff barriers in the form of health, safety and quality standards are prevalent in most of the developed country's market. It is imperative for the agricultural extension workers to impart knowledge to the farmers on production and process methods and good agricultural practices among others. The study further shows that the importers or the government authorities in the EU are within their rights to reject the tea consignments from Nepal containing tea, the leaves of which were picked by farmers or working after smoking cigarette. In this concern, they argue that capacity building of such workers is required to ensure that the products exported are safe for consumption abroad and the reputation of a country as a quality conscious supplier is established and maintained (2005 : 19).

Additionally, they observe that India has bounded its tariffs for all types of tea at 150 percent which is quite high. However, the applied rate is just at 10 percent for all types of tea. Therefore, if India maintains the applied tariff at this rate in future, there might not be problems for Nepal to export tea but if it takes the advantages of bound rate in future and increase the tariffs at higher levels, there is a greater chance that Nepal will face prohibitive tariff, making it impossible to export to India (Ibid, 2005 : 5).

Furthermore, their study adds that Nepal has also a great potential for tea exports to China. A majority of Chinese population drinks tea therefore, the demand for tea is very high. They indicate that it is discouraging for Nepal that China has bounded its tariffs at 15 percent and applied the same at 27 percent for all types of tea. On the face of it, it appears that China is applying tariffs on tea which is higher than bound tariffs, which is absurd. However, as per the commitment made by China during the process of its accession to the WTO, it is required to gradually reduce its tariff on tea import to 4 percent by the end of 2004. After that, Nepal will have virtually no tariffs to export its tea to China (Ibid : 6).

Pant, in his study report, says that there are cases of final product rejection faced by Nepalese Tea Exporters. Major problems are faced in meeting the chemical quality (pesticide residues). There are development activities on building awareness on made tea, quality requirement of various tea importing countries, SPS-TBT measures implemented by the tea importing countries but there are less activities on helping farmers in producing good quality tea leaves. As regard this, report further says and suggests that, there is need of helping small farmers and tea estates in producing quality tea leaves and making their tea garden management activity an economically sustainable activity (2008 : 8-11).

Further, they state in their study, that patent system of plant varietals protection is not suitable to LDCs, like Nepal. Since it only protects breeder's right. Instead effective sui-generis system of plant reflecting the socio- economic and technological development contexts of Nepal can only admire and protect farmers' right in plant varietals protection and maintenance. Also, there are high chances of bio piracy of our native plant varieties if adequate precautionary measures are not adopted (Ibid).

Rijal, in his article, has analyzed the AoA of WTO with relations to Nepalese Agricultural sector. According to him, it is assumed that AGDP is 22.5 billion in this respect government can subsidies the amount of Rs. 2.25 billion to the agriculture sector for irrigation, fertilizer, infrastructural development, market development and R & D etc. While government of Nepal allocated to agriculture sector is about Rupees 7.87 billion for the year 2009/010. This much allocated amount is about 3.5 percent of total AGDP of the year 2009/010. Furthermore, he states that subsidize amount on chemical fertilizer, irrigation, improved seed and agricultural credit etc. is about one percent of total AGDP. However, AoA of WTO allows to subsidies up to ten percent of the value of agricultural production. In this regard, he suggests to there should be subsidized amount in agricultural sector not less that 50 billion in present condition. This much subsidy can help to enhance the competitiveness of agriculture products in global markets (2009 : 6-7).

Various studies concerning Nepalese agriculture, tea sector of Nepal and related WTO agreements show that Nepalese agriculture has not yet been able to have competitive strength in comparison to foreign agro-product. At the same time, there

are some agreements in WTO framework, which are very much complicated and difficult to maintain for the LDCs like Nepal. However, some studies (Thapa, 2004; Dahal, 2005, Rathi, 2005) conclude that Nepalese tea has some positive aspects in comparison to Indian tea and other foreign tea markets. Young bushes of tea comparison to others products (say Indian tea), Himalayan air and water and higher productivity of labour than the Darjeeling tea are the main positive aspects of Nepalese tea which can be promoted. Some of the literatures (Thapa, 2004, Adhikari and Adhikari, 2005) show that Nepalese tea has few negative implications of WTO rules and regulation and it is an export potential product of Nepalese agriculture.

Reviewed all literature above answer questions like; what are the implications of WTO on agriculture (not in specific way but in general)? What are the provisions of WTO agreement? What is the present situation of tea in Nepal? But these literatures don't answer the following questions adequately:

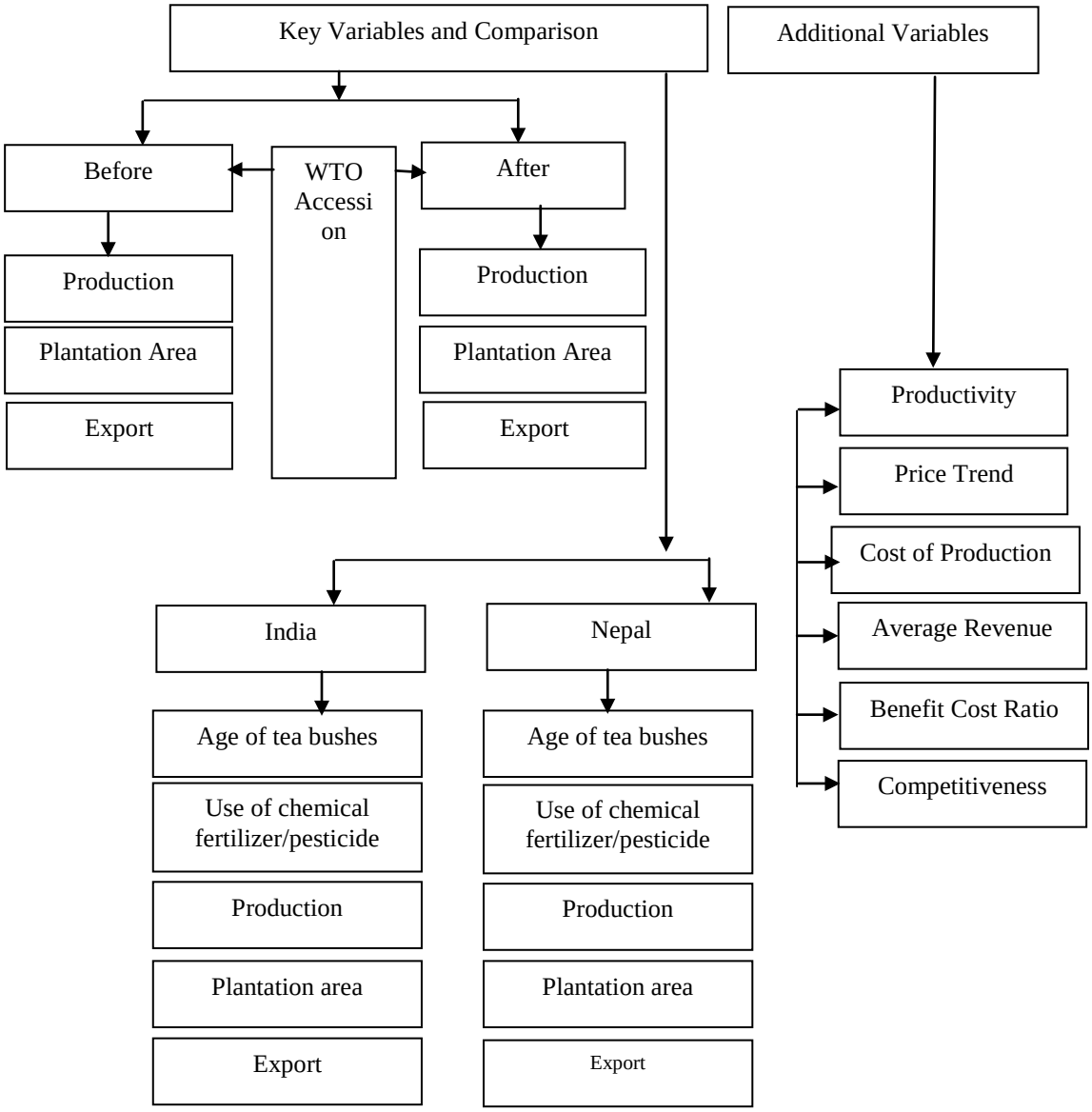
* What is the implication of WTO agreements on tea sector?
* What is the production and export situation of Nepalese tea before and after the accession into WTO?
* What is the competitiveness of Nepalese tea in export market?
* What is the productivity of green leaves according to the age of the tea bushes, land holding size and educational status of tea farmers?
* What are the major economic aspects of green leaves?

Hence, an attempt has been made so far to investigate the major concerns of the questions raised. The study justifies the present work with all the queries mentioned above. For the purpose of the study some important concepts and variables are chosen. It can be shown in conceptual framework.

2.6 Conceptual Framework of the Study

Overall presentation and analysis of this dissertation is focused on key variables, their comparisons. For clarity production, plantation area and export of tea is compared before and after WTO accession, age of bushes, use of chemical fertilizer/pesticide, production, plantation area and export is compared between India and Nepal, and finally productivity, price trend, cost of production, average revenue, benefit cost ratio and competitiveness of tea is explained in the existing condition of

Nepal. To explain international competitiveness of tea in export market RCA index is used. The summary of concepts and variables can be presented in the form of conceptual framework as given below:



CHAPTER - III
RESEARCH METHODOLOGY

3.1 Research Design

This study has followed descriptive as well as exploratory research design. It is a type of survey study of a given population. The study shows the competitiveness of Nepalese tea in respect to their comparative advantage in export market. This study follows descriptive research design to explore qualitative facts. However, there are more quantitative figures to explore facts.

In the study, productivity of tea is regarded as the dependent variable on the one hand and age of the tea bushes, size of the land holding, educational status of the tea farmers, cost of production, use of insecticides, pesticides and chemical fertilizer, export price of tea, production of tea and expansion of tea farm size are the independent variables on the other hand.

3.2 Nature and Sources of Data

This study employs both the primary and secondary sources of information. Dominantly primary data and information have been used. Especially macro level data have been obtained from secondary sources. The previous studies and reports, which have been published by different national and international researchers and institutions, are the major sources of secondary data. Secondary sources of data were collected from library, FNCCI, Tea and Coffee Development Board, International Tea Committee Statistical Bulletin, SAWTEE, Action Aid, WTO publications, FAO publications, GTZ, WIN Rock International, Nepal Rastra Bank publications, Export Trade Promotion Centre, Ministry of Finance, Ministry of Agriculture and Co-operative, Ministry of Commerce and Supply, HOTPA, NTA, Central Department of Economics and others related institutions publication.

Mainly the information about the WTO and its agreements has been obtained from WTO, SAWTEE and World Bank publications. In order to understand the implication of WTO on agricultural sector, FAO and SAWTEE publications were mainly used. The information on tea production and plantation area and productivity

has been collected from National Tea and Coffee Development Board. Data of world production, export, and import and consumption pattern per head were taken from ITC Report and others some tea related data have been obtained from Agro-enterprises centre of FNCCI, HOTPA and Nepal Tea Association. Information about area, production and productivity of tea has been obtained from Government of Nepal Ministry of Finance and Agriculture. Information on the use and price of chemical fertilizer, insecticides and pesticides has been obtained from Agriculture Inputs Cooperation. The information on price and export/import quantity of tea has been collected from NTCDB and Trade Promotion Center Nepal. Regarding to information about agricultural production and other related data for Nepalese agriculture were obtained from Economic survey.

In addition, so as to fulfill the research objectives at micro level, data have been collected on the basis of primary sources. In this regard, filed survey has been the main method for collecting such data. Accordingly, field survey approach was employed to collect more detailed information regarding the cost of production of tea, price and demand pattern of tea, use of pesticide and chemical fertilizer, organic and non-organic situation in green leaf production and understanding level of farmers and processors on WTO. Likewise other factors were seasonality factors, youngness of tea bushes, price realization by tea farmers and employment situation in tea farming were collected from the sampled area of Jhapa and Ilam Districts. In the same way, information regarding the cost of production of tea, capacity utilization of processing factory, export destination of tea, price and demand trend of tea, facilities given by government to the factory was obtained on the basis of same process. Main problems faced by tea farmers, tea processing factory and exporters including tea farm labourers also were obtained mainly from the field survey.

Moreover, the data used in this study are primarily of quantitative nature. However, as mentioned in research design the study incorporates qualitative nature of data as well. Therefore, the study is of both qualitative and quantitative (qual-quan) in nature.

3.3 Population and Sample

In the study area total number of small tea planters was 5778 (NTCDB, 2065). Among them 4907 were the Orthodox type and 871 were the CTC type. There were 134 tea gardens and 40 units of tea processing factory (NTCDB, 2065). There were also a few tea exporters. Among the mentioned population, samples were selected (Table 3.1).

For the sampling process, probability sampling method was used. Under the probability sampling cluster sampling was applied because the tea gardens and small tea planters were scattered in the study area. The geographical areas of each districts was divided into five different clusters under consideration of main tea plantation area covered in the VDCs. While making this cluster 12 VDCs were taken from Jhapa and 17 VDCs from Ilam. In total, 10 clusters were formed. Being homogeneous character it was thought that about 150 samples could represent the population. For this purpose 50 from CTC (Jhapa) and 100 from Orthodox (Ilam) were supposed to be selected. Based on this sampling frame, 22 samples from each cluster for Orthodox tea and 10 for CTC tea were randomly selected. From this frame there had been 160 samples from systematic random sampling. Beyond that two more samples were selected during the random selection. These two samples were also included in the sample size. For the case of tea industries systematic sampling was used. List of the tea exporters and labourers is not available, due to this reason judgment and purposive sampling method was used to select the sample of exporters and labourers (Table 3.1). The population characteristic was homogeneous from which samples were taken. Therefore, this sample size is large enough to represent the population.

Table No 3.1

Population and Sample

S.N.	Categories	Population	Sample	
1.	Orthodox type tea farmers	4907	112	
2.	CTC type tea farmers	871	50	
3.	Tea Industries (processing factory)	40	CTC 6 Orthodox-6	12
4.	Exporters (including packegers)	20•	5	
5.	Labour (above around 40,000♣)	40,000	25♦	

• Tea coffee, 2068, NTCDB.

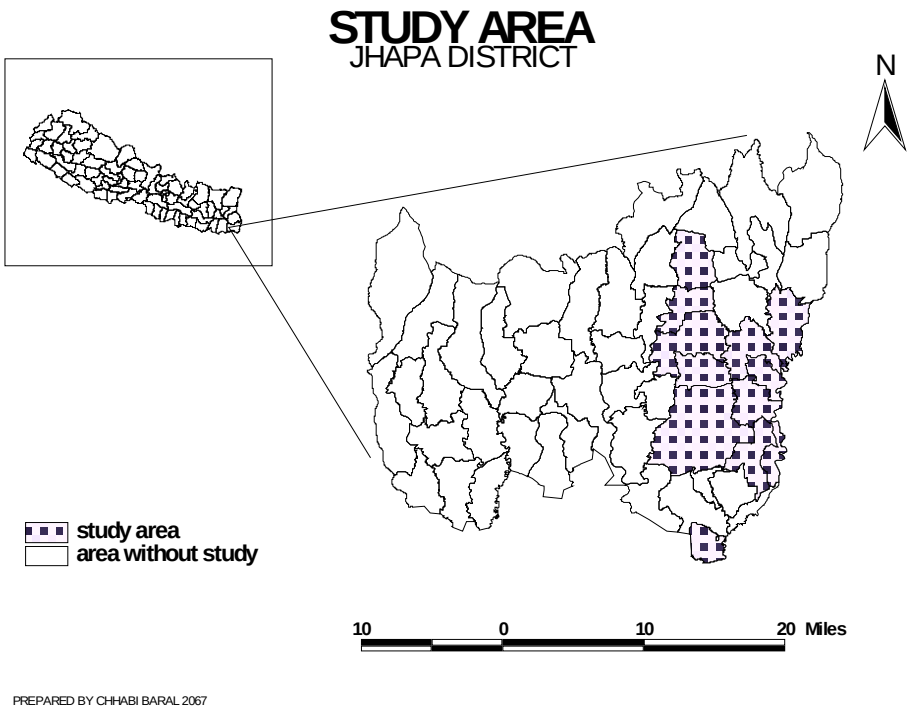
♣ Ibid

	Total		204

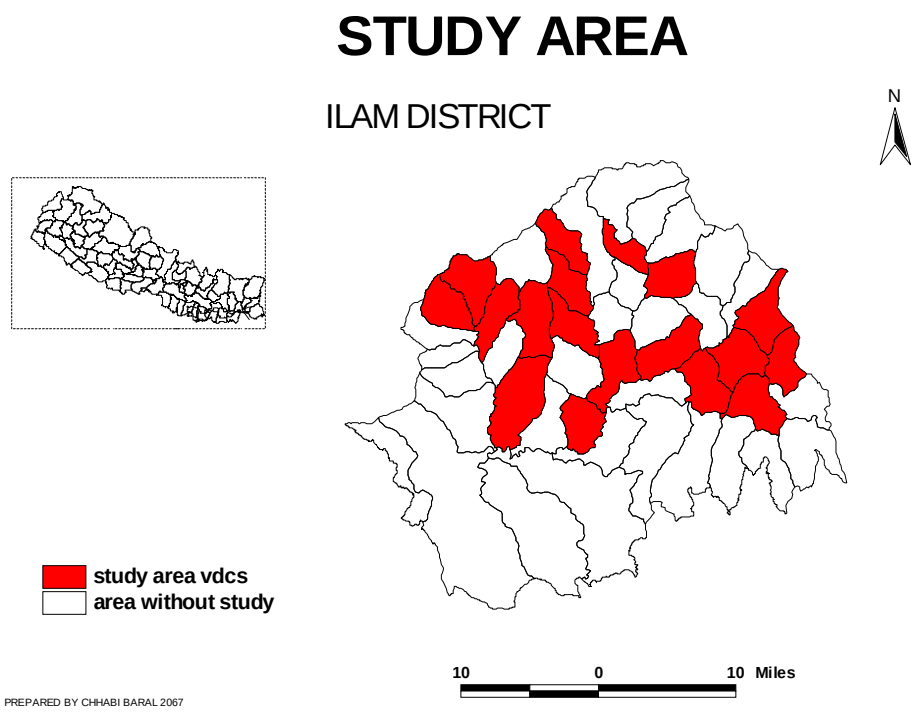
Source: National Tea and Coffee Development Board, 2065, **Tea-A-Tea**.

3.4 Location of the Study

Generally, two types of tea are produced in Nepal: they are Orthodox/green (leaf) and black/CTC tea. The orthodox tea is produced in the hills namely of Ilam, Dhankuta, Panchathar, Terathum, Sindhupalchok, Nuwakot, Ramechhap district while the CTC tea is produced in the Jhapa district of Terai. In this research work Ilam and Jhapa districts were selected as a study area for Orthodox and CTC tea respectively. These two districts are the main tea producing district of Nepal. At the same time, these districts represent two different types of tea. These locations are shown in the map which was generated by using the GIS method. These locations were special for the study of tea farmers, but for the study of tea processing factory and exporters, location were Kathmandu and other district too.



♦ It is not sample size, but taken those labour encountered at tea garden during the field work.



3.5 Data Collection Tools and Techniques

Since the research is of both quantitative and qualitative in nature both types of data collection tools were used to generate primary data. Primary data collection tools were interview, focused group discussion, observation and questionnaire through schedule method have been used.

3.5.1 Interview

Interview was one of the most important tools of data collection in this study. This interview was designed to fill up structured questionnaire schedule. The interviewer made direct personal contact with the person and took interview to collect information from respondents at the spot, especially in Jhapa district: Haldibari, Prithivinagar, Maheshpur, Anarmani, Kechona, Garamani, Jymirgadi, Sensichare, Jalathala and in Ilam district: Harkate, Kanyam, Fikkel, Shree-antu, Aaitbare, Mangalsare, Jashbire, Sakhajung, Soyak, Shanti dadha. These areas were included in direct interview to collect primary data. It was expected to be more and greater depth of information in the study.

Key informant interview was an interview carried out with a person who has in-depth knowledge about some specific issues or problems. Some leading institutions head and personality from tea sector were key informants for the interview. They were Chairman of Small Farmer Co-operative in Jhapa, Himalayan Orthodox Tea Producer's Association (HOTPA), Himalayan Tea Producer Co-operative Ltd, Regional Head of Tea and Coffee Development Board, NTCDB members, Chairman of Nepal Tea Producer Association. Mainly the questions related to the government's tea programme and policies, WTO implication in tea sector of Nepal, problems and prospects of Nepalese tea and the suggestions for the betterment of tea sector of Nepal (for detail see interview check list) were asked to them. One objective of this study was to find out the competitiveness of Nepalese Tea in export market. Due to the nearest competetor of Nepalese Tea, researcher needed to understand the relevant information/data related to Indian tea. The researcher consulted to some institutions head like Darjeeling Tea Planter Association (DTPA), Tea Research Association (TRA) Terai Siliguri in India was key informant person. Mainly the questions regarding the price situation, quality challenges and opportunities of Darjeeling Tea as well as CTC tea of India were asked to them.

3.5.2 Focused Group Discussion

Basically, researcher used focused group discussion as data collected techniques in this study. Focused group was comprised ten members including tea farmers, tea processors, tea cooperative related persons. Three such focused group discussions were organized, in which two focused group discussion were arranged at Ilam and one was arranged at Jhapa. FGD was arranged in the study to obtain information in common. It helped to check the uniformity of data and common understanding among tea related stakeholders about WTO accession, CTC and Orthodox tea production including problems and prospects. Major concerns were the challenges and opportunities in the field of tea. What are you thinking about the government programme and policies? What are the implications of WTO on Tea sector of Nepal? And how can we modify the tea sector of Nepal?

3.5.3 Observation Method

Observation was also one of the important data collection tools applied by the researcher in this study. It was designed to observe tea processing factory, tea gardens

and the labours who engaged in the field. In order to look at the quality aspect of tea, researcher observed the plucking style of green leaf, storage system and places of green leaf/made tea especially, how they handle the leaf and made tea.

3.5.4 Questionnaire Schedule

Structured questionnaire schedule was designed for field survey. There were four sets of questionnaire schedules. The first one was for tea farmers which were filled up through interviewing 162 respondents. The second set of questionnaire was for tea processing firm (industry) which was filled up through interviewing 12 firm respondents. The third set of questionnaires was prepared for exporters and filled up interviewing five tea exporters. The fourth set of questionnaire was prepared for tea garden and factory laourers. Labourers were also asked questions concerned to them. During the field survey, questionnaires were put over by the researcher himself to the respondents and the responses were recorded on the spot.

3.5.5 Pre-Testing

After the preparation of four sets of questionnaires, only one set of questionnaire related to tea farmers were pre-tested. In order to pre-test the questionnaire ten respondents from both Jhapa and Ilam districts were purposively selected. The purpose of the selection was to get respondents who have been engaged in tea sector since very long. For this purpose, researcher visited regional office (NTCBD) at Birtamod, Jhapa and got a list from government official about farmers working in tea sector. Then researcher lunched pre-test of the questionnaire in the field.

Based on necessary feedback from the pre-test researcher gave questionnaire the final shape.

3.6 Desk Review

Desk review was another method used in this study. Different documents related to WTO provisions collected were reviewed carefully. Secondary quantitative data were also intensively dealt with before their presentation and analysis. All the questionnaires used in survey were first carefully observed, then coded, and then

entered into computer. This was very lengthy work during the overall period of research, and till the final draft.

3.7 Data Analysis and Interpretation-Tools and Technique

Data collected in this study were both qualitative and quantitative in nature. They were primarily qualitative in nature supporting by quantitative data. Qualitative data were described to arrive at a conclusion. While quantitative data were analyzed through sophisticated software Statistical Package for Social Sciences. For this purpose, in the beginning the primary and secondary information collected from the field survey and other methods were coded and entered into computer. They were tabulated and analyzed by using SPSS and Microsoft Excel. Statistical tools were also applied to show the relationship between dependent and independent variables. Under the inferential statistical techniques Gamma (G) was applied to show the strength of association between the variables. The price, production and export were analyzed applying trend prediction method. Before and after analysis based on percentage change has also been carried out in production and export as well as planted area. The tools used for analysis are discussed here.

3.7.1 Socio-Economic Variable

Variables like, educational status of the farmers, age of the tea bushes, size of the landholding, productivity of green leaves, cost-components and their contribution on green leaves production were analyzed by using simple descriptive statistics such as frequencies, percentage, mean and standard deviation.

3.7.2 Gross Margin Analysis

The gross margin provides simple and quick method of analyzing a farm business. For any enterprises gross margin is difference between the gross return and the variable cost incurred. For the analysis of gross margin, only the variable cost was considered. The gross margin of the tea farmers in this study was calculated as:

Gross Margin = Gross Return - Total Variable Cost

Gross Return = Green Leaf Sold (kg) x per Unit Price of Green Leaf (Rs/Kg)

Total Variable Cost = Summation of all Variable Cost Items.

3.7.3 Benefit-Cost Comparison of Green Leaf Production

Benefit-cost analysis was done after calculating the total cost and gross return from green leaf production. Benefit-cost comparison was carried out by using following formula:

B/C Comparison = Gross Return of Green Leaves/Total Variable Cost of Green Leaves

3.7.4 Revealed Comparative Advantage and RCA for Nepalese Tea

There are few studies carried out by using different methodology to suggest commodities that should be produced by Nepal for taking advantage from export. One of them is Revealed Comparative Advantage (RCA) indices which can be used to assess the capacity of Nepal's exports to resist competitive pressure in the international market.

Present study uses RCA index developed by Balassa (1965) for the fact that the objective of the study is to find out the competitiveness of tea in international market. Following Balassa (1965), RCA is calculated as the ratio of share of commodity 'i' in country 'k's exports to share of commodity 'i' in the world trade that is,

$$RCA = \frac{x_{ki}/x_k}{x_{wi}/x_w}$$

Where,

X_{ki} = Export of tea by Nepal

X_k = Total export of Nepal

X_{wi} = World's export of tea

X_w = Total world's export

In other words RCA is

$$RCA = \frac{\text{Share of commodity i in country's export}}{\text{Share of commodity i in world export}}$$

Therefore, as argued above, the RCA measures the relative importance of tea in Nepal’s export to that of world's trade of tea. Now, if Nepal has large share of export of tea on her total export than tea share on world's export, the RCA value will be greater

than unity. In such cases, Nepal is said to have a revealed comparative advantage in tea. On contrary, if the RCA index is less than unity, the country will not have RCA (rather comparative disadvantage) on tea as Nepal has small share than expected from the world's average. For typical case if RCA is equal to unity implying that two ratios are equal and hence Nepal does not have RCA on tea.

3.7.5 Hypothesis Testing

The hypotheses formulated in Chapter-One has been tested through some statistical tests. Major statistical tests made in this study were bivariate (between independent and dependent variable) correlation and Gamma tests. In the study independent variables used were educational status of farmer, landholding size and age of the tea bushes and dependent variable was productivity. Test of significance was explained based on correlation coefficient and Gamma value.

CHAPTER - IV

NEPALESE AGRICULTURE AND WTO IMPLICATION WITH FOCUS ON TEA

4.1 Agriculture Sector: A Brief Description

Nepal is a small landlocked agrarian country. It has got a landmass of progressively increasing altitude from below 100 to higher 8848 meters. Climate ranges from tropical in the Terai to tundra in high altitude mountain region. There exists large diversities in topography, weather and climate from region to region. Total cultivated area is about 2.6 million hectares. Almost half (47.3 percent) of holdings are less than 0.5 hectare and average size of the agriculture land holding is 0.80 hectare. 65.7 percent population (population 10 and above years) are engaged in agriculture. Irrigated land is 1.07 million upto the year 2007/08. The share of agriculture in GDP is 32.12 percent for the year 2007/08 (MOAC, 2009). Geographical diversity is one of the major characters of Nepal, which has afforded a diverse and immense potential in the agricultural sector. But it is to be noted that agriculture so far practiced in Nepal remains primarily subsistence-oriented. Overall agricultural growth during the last ten years is low.

Regarding this situation of Agriculture in Nepal, its economic development is inconceivable without achieving significant growth in agriculture. Better performance of the agricultural sector is not only necessary for sustained high growth of the economy, but also for ensuring food security and reducing rural poverty. A dynamic agriculture provides the backdrop to successful livelihood diversification and urbanization. The sector has a central role to play in, if the rural poor make choices about their livelihood strategies from a position of strength rather than weakness or desperation. Its importance can be gauged against the fact that it provides livelihood to over four-fifth of the total Nepalese population.

Given a sizeable contribution to GDP, the growth of the Nepalese economy is determined largely by the growth of the agriculture sector. However, the growth of agricultural sector has been slower than that of non-agricultural sector. The agricultural sector continues to face various problems such as high labor intensity, low level of commercialization, small and declining farm size (per family farm land holding size is 0.8

hector in 2001/2002), relatively low use of production inputs as compared to South Asian average (SAWTEE, 2008), skewed pattern of land ownership, lack of irrigation facilities (at the end of ninth plan 11,21,441 hector land has been irrigated), (use of chemical fertilizer per hector not more than 31kg, Tenth Plan, 2002), low level of productivity which is lowest in South Asia and it is 10-15 times below for milk and 3 times below for meat than in the developed countries (Pyakuryal, Thapa and Roy, 2005: 55). Therefore, there is a big scope to increase productivity through increased inputs and better management. There is a need to transform subsistence agricultural system towards productivity oriented, comparatively advantageous and commercialized agricultural system for sustainable development of agriculture by reducing the pressure of increasing population and use of modern technology with existing resource utilization patterns and developing transport and market mechanism.

In context of facing the various problems in agricultural sector, Nepal has entered WTO. SAWTEE, 2008, study focused that being a signatory of this multilateral trade agreements, Nepal should enhance its competitiveness to cope with the challenge for Nepalese products in the global open market regime. Indo-Nepal bilateral trade agreement is based on MFN treatment, and more than two third of Nepalese trade has been with India. SAWTEE study adds that unsubsidized agri-business products in Nepal have to compete with heavily subsidized Indian product for their export market. So, it is great challenge to Nepal to make competitive strength of agricultural products.

4.2 Growth of Real-Agricultural and Non-Agricultural GDP

Growth trend of real-agricultural and non-agricultural GDP for the year 2001/02-2007/08 at basic price are shown as follows.

Table No. 4.1

Growth of Real-Agricultural and Non-Agricultural GDP

Year	Agricultural GDP (Annual Percentage Change)	Non-Agricultural GDP (Annual Percentage Change)	
		Industry	Services
2001/02	3.1	0.7	-1.8
2002/03	3.3	3.1	3.7
2003/04	4.7	1.5	6.8
2004/05	3.5	2.9	3.3
2005/06	1.9	4.4	5.6
2006/07	1.0	4.0	4.5
2007/08	5.8	1.6	7.3
2008/09	3.0	-0.3	6.3
2009/10*	1.2	3.9	5.5

Source: **Economic Survey**, MOF, 2010.

* Preliminary estimate

Table 4.1 figure shows the annual growth of real agricultural and non-agricultural GDP for 2001/02 to 2009/10 period. Table 4.1 clearly shows that there is remarkable fluctuation in the growth from year to year. The growth rate was 3.1 percent for the year 2001/02 and 4.7 percent in 2003/04 and likewise, it was 1.0 percent in 2006/07 and for the year 2007/08 it was increased by 5.8 percent. Likewise for the year 2009/10 it was 1.2 percent. The poor performance of the agricultural sector is mainly due to the adverse weather conditions which affected the food and cash crops production. As a result, growth of agricultural sector can't be high and fluctuations occur in every year. Performance of agricultural sector influence industrial GDP to some extent and this sector also suffered considerably.

4.3 Some Export Potential High-Value Cash Crops of Nepal

Traditionally, Nepalese agricultural export constitutes bulk of lower value commodities. But in recent years, the export of agricultural products has been more diversified as the export of the pulses, hides and skins, Niger seed and essential oil have come to prominence. Beside these products, some high value cash crops have emerged such as cardamom, ginger, honey, tea and coffee. There are maximum potentials for producing these high value crops in different ecological zones on the basis of ecological diversity of the country. ITC (2007) report also identifies the products such as cardamom, ginger, honey, tea and coffee as export potential of Nepalese agriculture. These high value crops are generally export oriented. The current volume of production of these products is small in comparison to world export value. Despite the volume of export these products are important in Nepalese agricultural sector. So, this study has comprised and summarized the present condition of these cash crops as follows:

Cardamom

Total production and cultivated area for cardamom is 7037 mt. and 11849 ha respectively for the year 2008/09. Yield per hectare is 0.5mt (MoAC, 2008/09). The production is highly concentrated in Ilam, Panchthar and Taplejung districts of eastern Nepal. Around 5,500 people are estimated to have been involved in the growing and treatment of large cardamom based on full–time employment equivalent. As many as 67,000 households across Nepal drive their livelihood from cardamom production. As large cardamom farming and processing is still very traditional and has not been mechanized, at the farm level labor intensity is high. Large cardamom is a very important export commodity for Nepal. The earnings from its export is 21,329,000 US $ in 2008, which is 2.2 percent of total export value (NTIS, 2010).

Ginger

The value of ginger export is increasing over the years and three fold more from 2004-2008 (NTIS, 2010). Almost all export market is India. Nepal is a significant producer of ginger and ranks within the top 15 world exporters. Nepal's share of the total world trade in 2004 was almost 2 percent. The total area of land under ginger cultivating has almost doubled in 10 years. In 2004/05 the total land area under ginger cultivation reached almost 12,000 ha, up from some 5,300 ha in 1994/95

(ITC, 2007). Current socio-economic impact of ginger in terms of employment is still low. The sector currently requires around 66,600 people for 2 months per year, which is estimated around 11,000 peoples having as full-time employment. The earning from ginger exports was 2518,000 USD for the year 2004 and it reached 8,130,000 USD in 2008. The share of ginger export in total exports for the year 2008 is 0.8 percent (NTIS, 2010).

Honey

The total domestic production is estimated as being around 600-1000 mt (around 0.5 percent of world production) (ITC, 2007). The production is scattered and usually small–scale and production methods are traditional but have recently shown some modernization. The estimated domestic demand for honey is only about 300 mt. This excludes more than 50 percent of the total production unaccounted for we can assume that this is exported (India). It is estimated that more than 50,000 farmers are involved in honey production. The earnings from honey was 49000 USD in 2004 but is had decreased by 26.9 percent annually for the year 2004 to 2008 and export value of honey is 1400 USD in 2008 (NTIS, 2010). It shows the low performance of honey export.

Coffee

This is very encouraging for Nepal as the USA, EU and Japan together consume coffee about 75 percent of the total world production of coffee. Nepal remains a very small player in the world coffee arena. It produced about 267 mt. of green bean in the year 2008/09 112 mt. of coffee was exported in 84.40 million rupees in the same year (NTCDB, 2010).Current socio-economic impact of coffee in terms of employment is also low. More than 7,700 people are directly involved in this sector as estimated full-time employment equivalent. For the fiscal year 2009/10, export of coffee (green bean) from Nepal was 120,000 kg.

Tea

The most popular non-alcoholic beverage is Tea, obtained by soaking the processed leaf of tea plant. The word 'Tea' comes from 'te' which is used in the Chinese dialect. Of the non-alcoholic beverage, tea is the most popular drink being consumed by one-half of the world's population (Pandey and Pandey, 1988). Tea belongs to the genus Camellia and family Camelliaceae. Camellia though includes 82 species, only two species viz., C. assamica and C. sinensis are the original species for tea. As they were highly crossable with each other, the present day tea seedling (jat) are hybrids of these two species and are often referred to as C. assamica sub sp lasiocalyx. It is an ancient cultivated plant and it is used as beverage in south India and China. A native of South East Asia i.e., China and known to Chinese as early as 2737 B.C., it became a common beverage in China during the Seventh century (Shunmugavelue, Kumar and Peter, 2002: 208-211).

Tea Plantation and Development in Nepal

NTA in its report states that the history of tea plantation in Nepal is about 1.5 century old. The legend says that the beginning of tea plantation in Nepal dates back to the year 1863 when Mr. Gajaraj Singh Thapa, the chief Administrator of Ilam district, planted the first tea garden, currently known as Ilam Tea Estate. Similarly, in B.S. 1865, Soktim Tea Estate was established. In 1959, first private Tea plantation estate, namely, Budhkaran Tea Estate was established (NTA, 2005). Rapid plantation started in Nepal after late King Birendra Bir Bikram Shah Dev declared the eastern Zone as "tea zone" (Baida, 2001). More than 15000 (NTCDB, 2063 B.S.) hectares of land is under tea plantation to produce both orthodox and CTC type of tea in nine districts of eastern and central Nepal namely; Jhapa, Ilam, Pachthar, Dhankuta, Sankhuwasabha, Terethum, Dolkha, Ramechhap, Nuwakot and Sindhupalchok. Jhapa is the only district for CTC tea production while the rest Hilly districts are suitable for high value orthodox tea production. Nepal Tea Planters Association (NTPA), Organization of CTC tea producers was established in 1987. In 1992, the government established National Tea and Coffee Development Board (NTCDB). Nepal Tea Association (NTA), Organization of Tea Packagers and Exporters were established in 1995. Similarly, Himalayan Orthodox Tea Producers Association (HOTPA) came into existence in 1998. National tea policy came in 2000 and NTDC was privatized in the same year. Himalayan Tea Producers Co-operative (HIMCOOP), Co-operative of tea

exporters was established in 2003. The main ambition of all these association is to enhance quality tea production and promote domestic and international market (Sharma, 2004). The tea industry of Nepal comprises of the government owned tea estates, the private estates, bought leaf factories, and small holder farmers. The seven public tea estates had already been privatized for 50 years. They were previously managed by NTDC. Tea plantation in the private sector comprises of small holders, bought leaf factories and the big tea estates owners. Smallholder's plantation in eastern region started with the introduction of out grower's scheme proposed by the overseas development administration soon after the establishment of NTDC. In the initial stage, the out growers were given tea plantation support in the form of government subsidies on the interest, free distribution of tea planting materials and technical support. Small holders or the out growers started planting tea in their fields in the early seventies but remained small in number and volume. Gradually with the increase in tea plantation, private entrepreneurs started installing bought leaf factories (GTZ, 2000).

Current Status and Potentiality of Tea in Nepal

NTCDB in its report exhibits that the total land area of tea plantation in Nepal is around 15900 hectares. Among them 6949 hectares and 8951 hectares of land has been used for Orthodox and CTC tea respectively (NTCDB, 2006). NTA report reported that currently, Nepal is producing more than 1.67 million kg of orthodox tea of which, more than 90 percent is exported to India and overseas countries and the rest is partially used for direct consumption and partially for blending purposes in the black tea to import it with good flavor. CTC tea being domestically demanded is mainly marketed within the country whereas the domestic market for orthodox tea is limited and it is mainly export oriented due to its demand and high price value. More than 2.5 million kg of CTC tea is reported to have been sold to India and Pakistan in 2003-04 (Nepal Tea Association, 2005).

Nepal Tea Association report further states that the Nepalese tea in respect to their current status and potentialities and expansion of CTC tea sector, will fulfill the national demand in near future and there will be surplus for export by coming 4-5 years. Furthermore, the National tea policy 2000 aims at the production of CTC tea up to 36 million kg by the year 2010-11 from which 0.6 to 0.65 million kg will be available as

surplus to export. So, Nepal needs to start market promotion of CTC in the international markets, of which one of the probable countries will be Pakistan. Similarly, the demand for orthodox tea in the overseas markets is increasing due to the health conscious and quality demanding consumers. Most of the orthodox tea exports are destined directly to Germany, Japan and US and other overseas destinations and also to India for its consumption and re-export. Also, the government has put forward ambitious plan to increase the production level of orthodox tea more than 16 million kg within the year 2010-11, so the market prospectus and growth of this sector is promising too (Ibid).

Nepal produces world's finest orthodox tea but most of the Nepalese organic tea is believed to sell for 30 percent less value than it would have otherwise if the industry had direct market linkages to Europe. Until the country knows little and care even less about the difference in value, Nepalese tea fetches much lower price for the quality it actually offers as it makes way to the international markets- mainly Europe - through international auction facility in Calcutta, India as the Darjeeling Tea (Rana and Rimal, 2006 : 32).

Nepal has a relatively young tea growing history and produces less than one percent of the world's orthodox tea. The Nepalese tea is not as well as India's Darjeeling and Assam's tea, which have a history of more than 150 years. Similarly, Sri Lanka tea has enormous contribution to the country's economy and has distinctiveness and reputation as among the best. Nepalese orthodox tea is better tea as compared to that of Darjeeling tea. Due to the newer bushes of the Nepalese tea than Darjeeling tea and at the same time Nepalese orthodox tea is grown in the Himalayan environment with pure air and water. So, it is relatively quality tea as compared to the Darjeeling tea (Ibid).

Potential world market and competitiveness of Nepalese black tea has found that it is a high valued agriculture product with high export potentials but having very limited market in Nepal. Orthodox tea is believed to have a huge demand overseas and its export from Nepal is increasing over years. The major market of this type of tea is Western Europe and North America (AEC, 2002).

Nepal has an estimated 30133 hectares of potential area for orthodox tea plantation, however, only 22 percent of which is currently under cultivation. It is

estimated that about 30 million kg of orthodox tea can be produced in Nepal. But actual situation in this regard is very different. According to the NTCDB staff, report presented in "Tea-Coffee" in 2066 B.S., for the year 2065 B.S., production of orthodox tea was 2.78 million kg. It is much lower than the targeted level. National Tea Policy 2000 aims to expand the tea plantation area by 40,875 hector within 5 years and targeted production by ten years was 46.11 million kg among them 65 percent of total production is orthodox tea. It seems that, after 8 years of announcement of National Tea Policy actual situation of tea production is too low than the targeted level (GTZ, 2004).

The government grants a number of incentives and assistance to the tea industry. The list is long and it includes: exemption of land ceiling; exemption of 75 percent of land registration fee and land revenue; leasing of public land for tea cultivation; low interest rates for land consolidation, no capitalization of interest cost during grace period, grants to small farmers to transport tea cutting; free technical service to small and cooperative tea farming; capital grants to irrigation; lower customs duty on agro-inputs; priority to develop infrastructure and services in commercial tea areas. In addition, trade policies encourage packing industry to establish domestic tea brand and to value addition by tea packets, help small and co-operative tea entrepreneurs to participate in trade promotion and to develop auction system with private participation and removes the requirement for letter of credit to export tea up to one container. These are the main policy frameworks and policies taken by the government, which can help to develop the tea industry in Nepal and it also, increase the potentiality of Nepalese tea (Thapa, 2004 : 225).

Regarding the potentiality of expansion of tea area, Thapa's analysis shows that the current area under tea is only a fraction of the potential total area suitable for tea-as low as less than one percent in the current "tea zone" of Nepal. In addition, current forested areas in the region provide additional scope for tea expansion, of course without undermining forestry. Given the immense gap in projected tea demand and supply in Nepal, areas expansion should be considered seriously as a matter of strategy. His study further states that, to make this potential into the reality it requires addressing a number of well-known constraints like fair output prices based on a competitive market structure, access to credit and inputs, technical support, and

infrastructure. In addition, legislative reforms would be needed to use forested areas for tea growing, especially by small growers and in the context of poverty alleviation (Thapa, 2004 : 236).

As many as 10,000 households are estimated to be directly involved in the tea sector, with total employment close to 40000. Despite significant growth about 20 percentage annually (Nepal Tea and the World, 2004), since the early 1990s, the Nepalese tea industry remains small in comparison to most tea exporting countries. As Nepal tea plantation is relatively young, the quality of tea plant is regarded high, compared to those in India. For these reasons, various stakeholders have identified the development of the tea sector as a potential growth industry and agent for poverty reduction (MOICS, 2004 : 76).

While significant progress has been made in providing an institutional framework conducive to investment in the tea sector, substantial constraints still remain. According to Nepal Trade Competitiveness study, the key remaining issues are as follows:

(i) Many employees do not have adequate training to carry out extension services. For example the board has only one trained tea tester.

(ii) Tea Board is overloaded with conflicting functions and responsibilities. The tea board is a regulator, promoter and facilitator. Given scarce financial and technical resources, the Board is unable to perform any of these functions satisfactorily.

(iii) Investment approval process is cumbersome and complex, which is a major deterrent to investment. It also provides officials with wide discretion, which creates investor uncertainty.

(iv) Inadequate private sector participation on the Tea Board ensures that there is little policy engagement with the private sector.

(v) Extension services to smallholder growers are inadequate.

(vi) Land fragmentation remains an obstacle to large-scale investment in the sector. Under the Tea sector policy, tea investors can request a waiver from the regulation limiting the amount of land the companies can hold. However, the criteria for obtaining this waiver unclear and opaque, and it is a lengthy process involving various agencies (Ibid).

Trade competitiveness explains the infrastructural and marketing constraints faced by the tea sector. Study, adds that poor road infrastructure hinders growth of the tea industry in Nepal. Transport is crucial, as tea leaves need to arrive at the tea processing plant within three hours of being plucked; otherwise, quality deteriorates. Of particular importance is that many areas lack proper feeder roads and are often inaccessible during the monsoon seasons (Ibid).

Likewise, lack of international marketing channels for tea is a significant constraint. Producers of orthodox tea believe that there is a large niche market for their tea in Japan, Germany and the U.S.; however, they have few contacts with buyers and lack know-how to marketing their products. Producers believe that the lack of an image for Nepal tea has partly contributed to this problem. Nepalese tea is not sold through the major international auctions, which is seen as a major obstacle to trade. Industry participants believe that acquisition of an auction floor at the Kolkata Auction Center is important to gain greater awareness of tea from Nepal, as it is the largest gathering of buyers and sellers. However reportedly, Indian tea growers have resisted previous attempts by Nepal to gain entry into the auctions. If true, this issue should become part of Nepal–India economic dialogue (Ibid : 77).

High valued crop with a potential for generating foreign exchange, reducing rural poverty, promoting economic growth and improving ecology and environment. Tea provides highest yield and returns against investment in this sector. In recent years prices of tea considerably scaled up, which is attributed to higher demand for tea in the world market (NTA, 2005).

In recent times, tea sector has been totally a private sector engagement rapidly growing as a part of global business both in quantity and quality. Informal statistics exhibit that tea production in Nepal is currently estimated to be 11.0 millions kg against the total requirements for domestic consumption of approximately 8.0 millions kg. His study further added that the global demand for high quality tea is estimated to be 45.0 million kg. of which, India supplies 10.0 millions kg, China 6.0 millions kg and Sri Lanka 4.0 millions kg. The existing unmet demand for additional 25.0 million kg at the international market provides a big scope for tea industry in Nepal (Ibid).

As per the statistics of the government, currently, Nepal is producing 10.94 million Kg of the CTC tea (NTCDB, 2006). The internal consumers consume almost all of the CTC produced within the country. As per a study carried out by AEC, it is projected that, the country would meet its demand of tea from the domestic in a very near future (The Himalayan Flavour, 2005)

National Tea Policy (2000)

Government of Nepal has approved and implemented National Tea Policy (2000) as per the intention implied in NTCDB Act (1992) for the development of tea as a reliable source of income to enhance the opportunities of employment and to earn foreign currencies through the promotion of private sector in the production, processing and commercial transaction of tea with the sustainable and systematic utilization of available opportunities in the country.

The major objective of National tea policy is to increase production of tea qualitatively as well as quantitatively with increasing participation of private sector in the tea cultivation; to help in poverty alleviation with increasing opportunities of income generation and employment; to keep on promoting the institutional development for the development of tea and to give emphasis in the development of human resources, technology, study and research necessary for the tea business.

MoICS study report mentions the key features of the national tea policy are as follows:

(i) Financial Incentives- Provisions that bank must provide loan to tea businesses as priority credit, subsides on interest payments, income tax holidays and duty draw back of customs duties.

(ii) Land Provision – Public land made available for tea plantation under lease for up to 50 years.

(iii) Institutional Issues- Include developments of a tea auction in Nepal, Nepal's Rastra Bank to establish a tea development fund to provide loans to the sectors, administer Nepal label, and export promotion.

(iv) Manpower Development – Establishes Tea Research and Training Centre and training for smallholder growers (MOICS, 2004 : 76).

National Tea Policy (2000) has been announced for planned development and promotion of tea sector. The policy aims to expand the tea plantation area by 40,875 hector within 5 years. Annual target production of tea by ten years is 46.11 million Kg, among them 65 percent of Orthodox tea and additional employment opportunity for 79,310 persons (The Himalayan Flavour, 2005).

The National tea policy 2000 spells out some major incentive packages, commitments for the existing and potential stakeholder in the commercial tea development and restructuring the composition and functioning of the Tea Board with more participation of the private sector stakeholders. Some of the major incentives include: priority lending, principal repayment and interest payment schedule facilitation, rebate on the land registration tax, up to 50 year's lease prospect of Government land, introduction of cess (Service fee) to manufactures and traders (importers/exporters), establishment of research and training centers in collaboration with private sector, incentives to ancillary industries, new institutional arrangements of board with more pvt. sector participation and the provision of tea development fund (Ibid).

Tea as Export Potential Cash Crop

The export potential of tea is high and performance is also strong compared to other crops. Nepal produces both CTC, which is primarily for domestic consumption and high land Orthodox tea, which is mainly exported. The tea sector experienced significant growth, following its liberalization over a decade ago. The tea industry has been expanding in recent years along with an expansion of its plantation areas from 3500 hectares in 1996 to 16718 hectares in 2008/09 (NTCDB, 2010). In 2001/02, Nepal tea exports experienced a major uplift, from an average annual export of around 80.00 tones, export grew exponentially to 984.2 mt in 2003/04 and 8889 mt in 2008/09 (NTCDB, 2010). Nepal has become increasingly self-reliant on tea and the import of CTC tea has decreased substantially. This massive change took place as a result of liberalization carried out about two decades ago.

The major market of Nepalese tea are India, Germany, Czech Republic, U.S.A, Canada, France, Japan, Malaysia, Netherlands and Pakistan. The main countries to which Nepal exports tea are shown in table 4.2.

Table No. 4.2

Export of Tea from Nepal to Some Major Importing Countries for the Year 2004/05-2009/010

S.N	Countries	F.Y 2004/05	F.Y 2005/06	F.Y 2006/7	F.y 2007/08	F.Y 2008/09	F.Y 2009/010
1	India	444.37 (82.0)	382.83 (79.43)	558.16 (81.84)	844.08 (93.41)	1171.09 (94.07)	1109.64 (92.83)
2	Germany	28.97	30.73	29.16	26.85	27.52	33.18 (2.77)
3	Czech Rep.	4.90	4.80	2.78	4.75	8.8	12.64 (1.05)
4	U.S.A.	6.37	1.46	13.67	5.77	3.82	5.16 (0.43)
5	Canada	0.31	0.19	5.17	1.51	0.81	3.84 (0.32)
6	France	6.46	2.27	1.90	3.18	2.43	3.38 (0.28)
7	Japan	2.55	2.63	3.18	1.94	3.93	3.13 (0.26)
8	China P.R	NE	NE	4.70	1.30	2.63	2.98 (0.25)
9	Malaysia	NE	NE	6.76	0.93	2.25	0.98 (0.08)
10	Netherlands	0.79	NE	0.18	3.36	1.46	0.60 (0.05)
11	U.K	0.29	0.03	1.81	0.57	0.21	0.17 (0.01)
12	Pakistan	32.65	28.89	42.18	NE	1.91	NE
13	U.A.E	10.72	25.99	4.94	NE	NE	NE
14	Others	1.43	1.80	7.39	7.88	18.00	19.60 (1.64)

Note: Parentheses value indicates the percentage of total export value. Value for 2009/010 is shown according to their exports value rank. NE indicates not export. Calculation done by researcher based on following sources.

Source: Value for India for the year 2004/05 is based on **Department of Custom and NTCDB,** 2009 and other are from TEPC 2004/05 to 2009/010, **Nepal Overseas Trade Statistic and Nepal Foreign Trade Statistics.**

Table 4.2 reveals that India is the most important and main destination of the tea export of Nepal. Data in table 4.2 shows, there is more than 80 percent tea exporting to India from the year 2004/05 to 2009/010. The share of tea export from Nepal has increased from 82 percent to 92.83 percent in the year 2004/05 to 2009/010. There seems heavy dependence of tea export on single country India. So, tea market of Nepal is vulnerable. That's why there is need of market diversification.

Share of the other countries besides India for tea exports from Nepal is 20 percent of total export value for the year 2004/05 to 2006/07 but it has decreased from about 20 percent to 7 percent in 2009/010. It reveals further vulnerability of tea export

to Germany, Czech Republic and U.S.A which are other important tea importing countries of Nepal. Their share is 2.77 percent, 1.05 percent and 0.43 percent respectively for the year 2009/010. Pakistan and U.A.E were important importer of Nepalese tea in 2004/05 to 2005/07 but afterward except Pakistan's 1.91 million rupees for the year 2008/09, there is no import from Nepal by both countries. It is mainly due to the lower price of competitors' tea than Nepal .There is need of identifying the factors, which are in fact responsible for loosing these markets. Table 4.2 shows that total value of tea export is increasing every year from 2005/06 to 2008/09, but it has slightly decreased in the year 2009/010. Canada, France and Japan are also important for Indian as well as Nepalese export. In recent year Canada, France and Japan are also importing Nepalese tea, continuously from the 2004/05 to 2009/010, which is shown in the table 4.2. They hold the 5th, 6th and 7th rank respectively in export value, while share in total export is around 0.32 to 0.26 percent.

Export price of tea for various countries varies significantly. According to the data available from TEPC 2009/010 black fermented category was sold at 129.56 Rs/Kg in India. But this category of tea was sold for China P.R, Japan and Czech Republic at 229.46Rs/kg, 426.06 Rs/Kg and 514.97 Rs/Kg. It indicates export price of tea in India is below than other countries. More than 90 percent tea is exporting to India with lower price than other. It means that Nepal is loosing more money from the international tea market. In order to get the rational price of exporting tea market access opportunities provided by WTO rules should be grabbed. There is need of identifying a stable and profitable market besides India. Table 4.2 shows the heavy dependency on India as a trading partner for tea which has increased tremendously in last five years. It further illustrates Nepal’s vulnerability. It is, therefore, imperative that the agricultural product as well as expansion of international market must be diversified.

Nepal's market access conditions, especially in market openness, are very favorable, but Nepal does not have any tariff advantages. Nepal enjoys free access in major markets, with the exception of Russia that imposes a very high conditional tariff of 20 percent, with a minimum payment of 0.8 Euros per Kilogram (ITC, 2007). Major OECD countries Russia and Syria are the most attractive markets for Nepalese Orthodox tea. Nepalese tea is highly underrepresented in most of the attractive

markets. At the regional level, India is very attractive market for Nepalese tea, especially owing to high tariff advantages as opposed to its competitors.

Socio-economic impact of tea in term of employment is high compared to other crops. Although figures vary, one estimates that around 105,000 people are employed in this sector (Ibid).

It is a sector, where labor requirement is highest in comparison, to other crops such as ginger and cardamom. The study, done by DEVA, shows that the labor requirement per hectare per year is highest for tea with 726 person days (DEVA, 2001:24). It indicates the tea is better product than other to give more sustainable employment opportunity. Labor requirement period of tea is higher than cardamom as it decreases after the 15^{th} year.

The sector seems to be a strong engine for farmer's income generation and poverty reduction, as tea gives competitive returns compared to other crops. Small farmer have been attracted growing tea as the demand and prices for Orthodox tea bring higher returns than traditional crops. It seems that they are willing to forego production of other crops in favor of tea.

The government is also supporting tea Industry through the establishment of NTCDB and formulated the National Tea Policy 2000, with the goal of increasing the production of tea with the increasing participation of the private sector in the tea cultivation. Further more, there is large potential in terms of expanding the area under tea cultivation. Tea is emerging as a potential export commodity with significant potential to contribute to national income growth, employment creation and rural poverty reduction. The growth of the industry should be encouraged from a gender perspective since women play an important role in the tea industry. Overall, socio-economic impact of tea is higher than other high value cash crops such as cardamom, ginger, honey and coffee. So, researcher has chosen the tea, to study the competitiveness of it in export market.

4.4 Nepalese Trade: A Brief Description

Despite its landlocked nature, Nepal is an economy that is heavily trade dependent. Foreign trade-notably exports is the engine of growth for the countries.

Nepal's trade performance over recent years has been highly variable. In this sub-section general background of Nepalese trade, composition and direction of foreign trade of Nepal, agricultural trade and constraints related to foreign trade are comprised.

4.4.1 General Background of Nepalese Trade

Historically Nepal's trade was limited to India and Tibet where people used to export wool, herbs, handicrafts, painting, metal costing and gems, wood and bronze carving, sculpture etc. Nepal had signed a treaty with Tibet. The treaty had provided tax free access to Tibetan market for Nepalese traders and Tibet had access to India and Bhutan via Kathmandu (Dahal, N.A.). Nepal had signed another treaty with Tibet in 1856 and with British India Company that allowed unrestricted import of British goods to Nepal. In fact, the "Treaty of 1923, held between Nepal and British-India, led Nepal to be India-oriented" (NPC, 1983).

Currently, Nepal has formal trade relationship with about seventeen countries. Nepal has signed several bilateral, multi-lateral and regional trade agreements. Nepal has export destination to about eighty countries in the world and imports from more than ninety five countries.[1] Similarly, Nepal exports more than one hundred commodities and imports about three hundreds types of commodity.[2] This indicates Nepal's expanded horizon for external trade. However, the performance in external trade is not as satisfactory as Nepal has led emphasis to this section.

Increasing import and decreasing export is the major problem of Nepalese trade. Nepal's value of export for the year 2001/02 was more than Rs. 45000 million which reduced to only about Rs. 41000 million in 2007/08, (measured in 2000/01 prices). On the other hand, import in the same period increased from about Rs. 103000 million to Rs. 154000 million. Out of the total export, export to the India is almost stable. It means export to the other countries declined sharply in between 2001/02-2007/08. During the period to the other countries decreased from Rs. 18000 million to Rs. 14000 million. In Nepal's foreign trade few trading partner and narrow

[1] As of 2003 import-export data available at http://www.trademap.org/tradestat/country selproduct country TS. asps.

[2] As of 2008 import data available at http://www.trademap.org/tradestatecountry_selproductcountry TS.aspx with cluster at 4-digit and value exceeding one thousand dollar.

product base is another problem. During the period of 2001/02 - 2007/08, Nepal exported about 63 percent of total export to India and imported about 59 percent of its total import from India. In aggregate, during that period, Nepal's trade link with India was about sixty percent of total trade (Adhikari, 2010).

The matter of concern is not only the increasing import and decreasing export, but more serious thing is the volume of import and export. During the period of 2001/02 - 2007/08, Nepal's total export remained only about 35 percent of import and about 25 percent of total volume of trade. This has led huge trade deficit. Countries trade increased by tenfold from 2001/02 - 2007/08. It was only Rs. 58000 million in 2001/02 which stood up to Rs. 581000 million in the year 2007/08. Out of the total trade deficit for that period, sixty percent deficit was with India (Economic Survey, 2009).

Regarding the export destination, India, USA, China, Germany and UK are top five countries and they absorb ninety percent of Nepal's total export. As of ITC dataset for 2008, Nepal exported 605 types of product. However, only 102 types of products have export value of more than one million dollar. Top twenty products which were exported in the year 2008 constitute about two third of total export value and five of them were agricultural products. Among the top twenty product group five agricultural product and major partners of Nepal's export are shown in box 4.1:

Box – 4.1

Top Five Agriculture Products and Major Nepal's Export Partners for the Year 2008

Code	Product	Top Five Importer	Share of Top Five Importer
'0713	Dried vegetables	India, Bangladesh, Sri Lanka, Bulgaria, USA	99%
'0908	Nutmeg, mace and cardamoms	India, Pakistan, Singapore, UAE, Italy	99%
'1516	Animal or veg tats, oils tract, hydrogenated	India	100%
'0902	Tea	India, Germany, Pakistan, USA, Bangladesh	98%
'3203	Coloring matter of vegetable/animal origin	India	100%

Source: Extracted from ITC dataset for the year 2008 available at http:/www.trademap.org/product_selcountry_TS.aspx.

Out of twenty top products, nine products are imported by India only while India is the largest importer of other nine products. USA is the major importer of remaining two products. This is sufficient to indicate Nepal's concentration in India for external trade.

More disaggregated data of goods exported shows that lentil is the number one product followed by carpet in export basket in terms of value. It's a bit surprising that iron and steel product constitute large share of export from Nepal. Nepal has to import raw materials for iron and steel products. Being landlocked country with bad infrastructure and transportation facility, transportation cost is very high in Nepal in comparison to India and other neighboring countries. In this situation, success in exporting goods produced from imported raw materials is the matter of investigation (Top twenty products exported from Nepal are shown in Annex-G).

Nepal's export basket consists of mainly intermediate goods followed by consumer goods and primary goods. Capital good is only about one percent of total exported goods. As of 2008 data about fifty percent of total export is based on intermediate goods. Share of consumer good is about 35 percent and that of primary good is about 12 percent. Similarly, share of hi-tech product is only 0.7 percent.[3]

Although Nepal's export is concentrated with India in absolute value, absolute values of exports and imports are not good indicators to show the extent to which two countries prefer to trade amongst themselves, relative to their other trading partners in the rest of the world (Shinoj, 2009).

Landlocked geographical position has been serious constraints in the expanding trade with the third countries. India is only one economically viable transit country through which for all the commercial traffic flow of Nepal with the third country takes place. Transit through China is another option, but it is not economically viable due to the long distance. Nepal has to depend upon port facilities and railway wagons provided by India in order to trade with third countries. All of these factors make transport costs high, hinder the development of markets, raise the costs of expanding agriculture and create near-complete dependence on India for transit routes.

[3] ITC dataset for year 2008.

Despite significant structural changes in its merchandise exports over the last two and half decades, Nepal like other low-income countries, remains dependent on relatively few exports, making it more vulnerable to external shocks. The destination of Nepal's exports and the sources of its imports are limited to a few countries. Limited diversification in both commodity and country wise is the main challenge of Nepal's foreign trade. The foreign trade of Nepal is getting concentrated towards India. This is also a natural phenomenon as India is not only an immediate neighbor of Nepal but also an emerging economy in the world.

In the recent years, high dependency of Nepal's foreign trade on India has elevated risks arising from Indian policy shifts. The India-Nepal trade treaty renewed in March 2002 was more restrictive than its 1996 predecessor as it imposes: (i) stringent Rules of Origin (ROO); (ii) Tariff Rate Quota (TRQs); (iii) Clear specification of safeguard clauses; and (iv) Submission of information regarding the basis of calculation of ROO to the Indian government by Nepal on an annual basis This change in policy, from virtual free trade into one with a number of restrictions, has had an immediate negative impact on Nepal's export performance with India.

Nepal India trade treaty has been renewed on March 2007 and finally on October, 2009. Though the treaty has been modified and amended many times, the inherent philosophy has not fundamentally changed over the period. The major elements of these treaties (see Annex-H) include (Prasad, 2007):

* Exemption from basic custom duties and quantitative restrictions on imports of primary products on reciprocal basis.
* Nepali manufactured goods (excluding some items on the negative list) are granted duty free access to India market without quantitative restrictions on the basis of non-reciprocity.
* Manufacturing goods imported from India is granted preferential entry to Nepal, without quantitative restrictions.

According to the concerned parties Nepal has blamed Indian side, that renewed trade treaty has not been fully implemented by India. They charge India as regard this, India has levied custom duty on vegetable ghee, pluses and others agro-products, pashmina, quarantine problems of agro-product and livestock, certification problem of industrial product and tax imposed by state government of India has

hindered to entry of Nepalese goods into the Indian market. Provision of custom exemption will be implemented 5 years latter of declaration, which was declared in 2008. This situation would be very harmful for Nepal to export in India. Dwindling of Nepalese export in the international markets is mainly due to: the high cost of production, tariff and non-tariff barriers against Nepal's export, ban on Nepalese commodities by developed countries raising issues of human right and child labour, in competitiveness in the international market, poor quality of product, low export base etc. Due to the above mentioned reasons Nepal's foreign trade specially export front is vulnerable. Although, there has been given due attention in each and every plan to the foreign trade; trade has been given top most priority in the interim plan period 2007/08 - 2009/10. Interim plan has targeted to increase export from 61 billion to 100 billion in the last year of the plan and reduce the trade deficit from 17 percent of GDP to the 15 percent (NPC, 2007/08).

4.4.2 Direction and Composition of Foreign Trade

Foreign trade of Nepal is broadly divided into two categories, i.e. trade with India and trade with other countries or rest of the world. Exports, imports and trade balance situation are given in Annex-I accordingly. Annex-I shows the trade statistics for the year 2003/04 to 2007/08. A brief description of foreign trade according to the above mentioned categories, which is based on the Annex-I is given below:

Trade with India

India has been a major trade partner of Nepal since a long time back. Popular and cultural ties of India with Nepal have consistently been close and have reflected in trade terms continuously. Long porous borders, free movement of people and capital, and the special regime of trade and payments between the two countries are the major responsible factors. Despite a concerted effort by Nepal in the 1970's to diversity its foreign trade partners, the share of Nepal's total trade with India is higher than the others in the recent past. Table 4.6 shows that the share of India in the total foreign trade was 57.6 percent for the year 2003/04 and it has increased by 12.6 percent during the 2007/08. Total trade with India is about two-third for the last five years, which can be observed in table 4.8. Export trade with India has gradually been

increased showing the share holding of 57.1, 66.3, 67.1 and 70.8 percent for the year 2003/04 to 2006/07 respectively (see Annex-I).

But for the year 2007/08, share of India in export trade of Nepal is 66 percent, which is 7.3 percent less, compared to the previous fiscal year. Imports from India as a percentage of total trade with India was 57.8 percent in 2003/04 and went upto 60.4 percent in 2007/08. There is a tendency of raising the total import from India for the year 2005/06 to 2007/08 (see Annex-H).

Trade balance of Nepal is negative (trade deficit) since long years back and its general increasing trend has been seen. Share of the trade deficit with India is 58.6 percent of total trade deficit and stands at NRs. 105897.7 million in 2007/08. Import export ratio of Nepalese foreign trade between two countries is about 2.3 to 3.7 in the year 2003/04 to 2007/08. It means import from India is 2.3 to 3.7 times higher than export. This situation clearly shows that Nepalese export trade with India is lower than imports, as a result, trade deficit with India is widening. Country-wise diversification of Nepalese foreign trade is very limited in terms of value of trade. But at present, about more than hundred countries are involving in trade with Nepal.

Major exporting goods to India are as follows:

Vegetable ghee, jute goods, cardamom, polyester yarn, juice, threads, zinc sheets, textile, wire, M.S. pipe, stone and sand, tooth paste, hides and skins, brans etc.

Major importing goods from India are as follows:

Vehicle and spare-parts, medicines, machinery and parts, petroleum products, electrical equipments, insecticides, agri-equipment and parts, glass sheet and glassware, coal, textile, threads, chemicals, pipe and pipe fittings etc.

Trade with Others Countries

Beside India, all countries are comprised in this broad category of foreign trade of Nepal. Nepal's trade with other countries are given in the table 6.11 and it shows that export trade with other countries is in the range 43 to 34 percent in the year 2003/04 to 2007/08 but it was about 90 percent of total export trade with other country in the year 1991 - 1992/93 (FNCCI, Statistical Profile, 2006: 6). It indicates

during this period export trade with India was about 10 percent of total export. After 1990s due to the changing situation of policy and program, as a result, trade structure and pattern are also going to be changed. Due to this reason, export trade with other countries has declined and on the other side Nepal's dependence on exports to India has increased sharply due to the preferential trade treaty (signed in December 1996), a showdown in exports to other key markets. Excessive concentration makes Nepalese exports vulnerable to import policy changes and international competition in destination countries. In 2001, two treaties came into effect in the U.S., which can be considered as negative policy shocks for Nepal. The Africa Growth and Opportunity Act (AGOA) and Caribbean Basin Trade Partnership (CBTPA), which grant producers in Sub-Saharan Africa and the Caribbean preferential access to the U.S. market, may have negatively affected Nepal's garment exports (MOICS, 2004 : 12). In real ground, this situation has clearly existed. In 2004, when multi-fiber arrangement has been ended, resulting the sharp decreasing trend of readymade garment exports to U.S. market have seemed. Exports of garment was highest in 2003, which value was 123.1 million US$ but it decreased by 80 percent in 2007 (Daghi, 2009 : 295).

Direction of foreign trade (see Annex-I) exhibits that the percentage share of other countries on total exports, imports and trade deficit is 34, 39.6 and 41.4 respectively for the year 2007/08. Of total trade with other countries export and import share is 21 and 79 percent respectively in the year 2007/08. Export value is less about four times than import, it results the heavy trade deficit with other countries. Concentration on limited market of Nepal's foreign trade regime is harmful for Nepal. Due to the low competitiveness of the product, market access opportunity in global market is very difficult.

The major trading partners of Nepal in export and import front are India, Bangladesh, U.S.A., Germany, U.K, France, China P.R., Canada, Italy, Japan and India China P.R., Indonesia, Japan, U.A.E., Singapore, Thailand, Argentina, Malaysia and U.S.A respectively. Country name is in the rank, according to their trade value (highest to lowest) for the year 2007/08 (TEPC, 2008) (See Annex-J).

There are some major countries (See Annex-I), which are importers of some selected commodities i.e. carpet/knotted of wool or fine animal hair, readymade garments, hides and skin, lentils, cardamom (large), handicrafts, silver jewellery,

woolen and pasmina shawls/scarves and like, Nepalese paper and paper products etc. Nepal exports the readymade garment, handicrafts, silver jewellery, woolen and pasmina and Nepalese paper and its products to the U.S.A. which value is highest in comparison to other countries. Germany and U.S.A. are top 1st and 2nd for importers of Nepalese carpet/knotted of wool or fine animal hair in comparison to other countries, where, Nepal exports these items. Nepal exporting cardamom (large) to Pakistan, Lentils to Bangladesh, Hides and skin to Italy is high in value terms, in comparison to other countries besides India.

4.5 Agreement on Agriculture (AoA) and Its Implication on Agriculture

The objective of AoA 'is to establish a fair and market-oriented agriculture trading system". AoA requires its member to make commitments in the following three areas to liberalize trade in agriculture. These are also known as three pillars of AoA. Under AoA, member country is bound to reduce subsidy provided to the agriculture sector at the same time to open up it's domestic market to foreign agricultural production providing national treatment to them. Three pillars of AoA are explained and analyzed in the following ways:

4.5.1 Market Access

Market access is one of the main pillars of the AoA. It deals with rules and commitments related to import goods in the WTO context. "Market Access" is about both obligations and rights. Nepal's obligation as a WTO member is to provide market access to other member in return for her "right" of access to other's markets for Nepalese goods on multilaterally agreed terms. Market access relates to conversion of tariff and non-tariff trade barriers to custom duties and then reduction of applied rate to bound rate within the agreed time frame. This process is known as tariffication. Nepal has bound its entire agricultural tariff at an average of 51 percent to be reduced to 42 percent by 2006. Nepal's applied average tariff in agriculture products, at around 10 percent, is much below the bound rate. The tariffication of agricultural products marked a new era in the global agricultural trade, as it was the first attempt in history to discipline trade in this sector. However, the liberalization impact was negligible, as major importers of agricultural products had bound their tariff at very high levels assuming very high tariff equivalents to

non-tariff measures. This made entry of imports almost impossible (Ghimire and Dahal, 2004).

Nepal's applied average tariffs in agriculture products are generally low for several reasons. First, the Nepalese market is fairly open to Indian products for reasons such as proximity, porous border and bilateral agreement. Second, the border is open and porous, enforcement of high tariff is difficult as encourages smuggling except where it is easier to defect the smuggled goods like vehicles. Third, countries also, as one objective is to diversity trade. Fourth, many domestic industries depend heavily on imported raw materials whose tariff have to be kept low. Fifth, the political economy reasons for maintaining low prices in the domestic market thanks to the high incidence of poverty in the country. Finally, for these very reasons, higher tariffs do not necessarily yield higher revenue. Infact, lower tariffs at times have been associated with increased customs revenue. In the coming years also, it is very unlikely that the situation would change markedly. Therefore, applied tariffs in Nepal most probably will continue to be on the lower level, more or less similar to the rates seen for recent years (Pant, 2004).

Table 4.3

Nepal's Schedule of Tariff Commitments on Major Cash Crops

Product	Bound Rate at the Date of Accession	Final Bound Rate	Implementation Date
Tea	50	50	
Sunflower Seeds	50	40	2006
Mustard Seeds	40	30	2006
Sugarcane	60	60	

Source: **Nepal's Schedule of Concessions Submitted to the WTO**

The sprit of AoA is to continue on lowering the bound and applied tariffs through further negotiations. Although, Nepal's agricultural trade is highly concentrated to India, and about 80 percent of Nepal's imports are from India. In this existing situation, the effectiveness of the use of tariffs to protect domestic market is weak due to Nepal's preferential trade agreement with India under which primary agricultural products from India face zero or little tariff barriers. The regional trade

agreement- SAFTA-can also weaken the effectiveness of tariffs to protect domestic market.

The tariffs on agricultural products can however, be raised to the bound tariff levels to safeguard the interest of the Nepalese farmers in case there are import surges or depressed world prices.

A strong reason for tariff protection is to protect domestic processing industries. This is usually done through tariff escalation. It is a method of increasing the applied tariffs as the level of processing increases. A typical example of this is low tariff on sugarcane and higher tariff on sugar. Nepal has utilized this option, and its bound tariff on processed products is most cases in higher than that on primary agriculture products. This measure, however, should be applied cautiously as some of the processed products could be inputs for domestic industries (Ghimire and Dahal, 2004).

Applied tariff on cereal grains have always been low in Nepal (around 10 percent). There are two reasons for this the porous border with India (most cereals trade is with India) and preferential trade relationship, and domestic food security reason, i.e. to maintain affordable prices. In contrast, tariffs on cereal-based processed products are higher, typically in the range of 15-40 percent. This is called tariff escalation.

These applied tariffs are significantly lower than Nepal's bound rates, which are in the 40-60 percentages. Notably, the bound rates on cereals and cereal-based products vary in the 40-60 percentages with 60 percent on rice, wheat and maize. In general, the bound rates for many products are several times higher than currently applied rates, although there are some exceptions, e.g. processed waffles and biscuits, which bound and applied rates, are similar. Thus, on the whole, there is a considerable scope for Nepal raising applied rates to the bound levels when faced with, for example, depressed import prices and or import surges, without the need for resorting to safeguard measures (Pant, 2004).

4.5.2 Domestic Support

It covers subsidies to agriculture in various forms and contexts including minimum support prices and their gradual abolition in due course of time. Domestic

support is quantified through what has been called the Aggregate Measurement of Support (AMS). AoA distinguishes between support programmes that stimulate production directly and those that are considered to have no direct effect on production. AoA emphasizes that domestic policies that have direct effect on production and trade have to be gradually reduced and eliminated. This category of domestic support is also called "amber box" support.

Measures such as government support on research, disease control, agriculture roads, domestic food aid, environmental protection, also known as "green box" measures or support, with minimal impact on trade can be used freely. That also includes payments made directly to farmers such as assistance to help farmers restructuring agriculture that do not stimulate production. Direct payment made to farmers to limit production area known as "blue box" measures is also permitted. The "green box" and "blue box" subsidies are exempt from inclusion in the AMS. The agreement also has a *de minimis* provision which exempts supports that are less then 5 percent in the case of developed countries and 10 percent in the case of developing countries of the total value of agricultural GDP from reduction commitments.

Domestic support for the agriculture sector is important for both protecting the livelihood of the farmers and increasing the competitiveness of the Nepalese agriculture sector in the international market. The market access opportunities in the international market for Nepal will depend on the competitiveness of the Nepalese agriculture sector. Nepal will be allowed to give direct support to the agriculture sector not exceeding 10 percent of the value of agricultural GDP. Likewise, Nepal will be free to give as much "green box" subsidies as it wants. The only limiting factor will be the lack of resource with the government. The fact is that the present level of domestic support in the agriculture sector is around 1.3 percent of AGDP (Ghimire and Dahal, 2004). In addition, Nepal is a LDC and with some 97 percent of the farmers fall into the category of low-income-resource-poor (LIRP). Article 6.2 of AoA allows non-inclusion of inputs and investment subsidies in the AMS if directed to LIRP farmers (Ghimire and Dahal, 2004). Nepal thus, has the flexibility to provide substantive support to the agriculture sector. Nepal's challenge will be to identify competitive products and adopt appropriate support measures to achieve global/regional competitiveness. It is also encouraging to note that the bound tariff on

commodities that have export potential for Nepal is high. This will allow Nepal to raise the tariff on these products up to the bound level; in this case, Nepal wants to provide temporary protection to these products without violating WTO rules.

Green Box Measures

Under the domestic support of AoA "green box" measures is most important aspect. These measures are listed in Annex 2 of the AoA. The fundamental requirement for exclusion of these policies from reduction commitments is that they have no, or at most minimal, trade distorting effects or effects on production. There are no limits to government support to green box measures under the AoA rules. Following are the important categories of green box measures for Nepal.

(i) **Agricultural Research:** Under the green box measures of AoA, Nepal can give support to the agricultural activities. Agricultural research activities in Nepal have been concentrated on food crops, livestock, high value crops, soil fertility, intensive farming and integrated pest management. But data shows that actual expenditure on research has been very low. During 1994-2001, it has been around 2.5 to 5.5 percent of total agricultural expenditure and around 0.2 percent of the AGDP (Awasthi and Adhikari, 2003). Along with very low expenditure on agriculture research activities, field level dissemination and research findings is very limited. In this situation the government can increase their research expenditure for enhancement of productivity.

(ii) **Extension and Development Services:** The AoA rules do not put any limit on extension expenditure. Extension service includes training, advisory, marketing, inspection and promotional services, pest and disease control programmes, soil conservation, fodder grassland and pasture development. In addition to this, the supporting cost of fertilizers and seeds in the mountain and hill districts that lack basic transport facilities. Infact, majority of the farmers are illiterate, the government must support them to increase their productivity through this services.

(iii) **Agriculture Road:** AoA puts no limit to government expenditure on agricultural roads. Agriculture road is a infrastructure for the commercialization and development of agriculture sector. It can link production center with market center. Access to market centers will enable farmers to get higher prices for their crops and increase their

living standards resulting in enhanced ability to buy necessary food. Though, the government has put agricultural road in priority in the various plan period in the past but the actual performance has been way behind the planning. For example, during the first four years of the Ninth Plan (1997-2001), the District Development Committees (DDCs) were able to complete only 146 km of all-weather agricultural road representing 9 percent of the target of 1701 km. Over the same period, the budget allocated for agricultural roads amounted to Rs. 440 million, or less than 14 percent of the amount proposed in the Ninth Plan (ANZDEC, 2002). During this period, the principal constraint was limited capacity at central and DDC level to plan and design roads for construction. It tooks time to set up the institutional structure and to apply the planning procedure at the DDC level (Awasti and Adhikari, 2004).

(iv) **Domestic Food Aid:** Some of the remote mountain and hill districts do not produce enough food. The government has been subsidizing food in these districts as a social safety net. Domestic food aid program has been implemented by the Nepal Food Corporation (NFC). This support is only on transportation; and there is no direct price support to farmers. Such type of food aid can be continued and if required, it can be increased.

(v) **Miscellaneous Green Box Measures:** Under the green box measures, AoA also allows government to give support to farmers in the situation of food insecurity, which is occurring by the natural calamities, such as disease outbreaks and pest infestations destroy crops and infrastructure developments. Relief programmes are obviously implemented when there is a calamity. Overall expenditure on these measures are not large, but more importantly the AoA does not place any limit on these outlays.

Support Measures not Exempted by AoA

These relate to the total AMS that has two components, they are: product-specific and non-product specific AMS. They are discussed below.

(i) **Product Specific Support:** Minimum price support program, crop-specific direct payments and input subsidies tied to a product are included in product-specific support. AoA does not prohibit Nepal from implementing price support program. But it should be the *de minims* level, i.e. 10 percent of the value of production of the

commodity supported. Based on the total value of agricultural production in 1999-2002, paddy farmers in Nepal can be subsidized through minimum farm price up to the level of Rs. 3.22 billion.[4] It shows that, given the present level of support is not high. Clearly, this limit is rather high compared to the ability to grant subsidy, as government agricultural, budgets for recent year would show. So, these subsidies are permissible under AoA for Nepal.

(ii) Non-Product Specific Support: As in other developing countries, Nepal has continued to implement programmes that provide subsidies to farmers through inputs. Non-product specific category of support includes subsidies on fertilizer, support on irrigation, seeds and credit that are not linked to specific products. Under the AoA Nepal does not prohibit the non-specific product support. The support on this category is very low. The main constraint on this support is that such support should not be more than the *de minims* level, i.e., 10 percent of the AGDP. Between 1996 and 2000/2001, the total subsidies amounted to about 1.3 percent of the AGDP (Awasthi and Adhikari, 2003). So, this level of subsidy is much below the *de minims* level. In this respect, government allows to grant on this field.

Fertilizer Subsidies

Subsidies were being provided in fertilizer for many years. They were given in two forms: price subsidy and transport subsidy. The price subsidy reduced the cost of fertilizer to farmers and transport subsidy was given to reduce the cost of transportation to remote areas.

Data show the amount paid by the government to Agriculture Input Corporation (AIC) for fertilizer subsidy, is downward trend. In 1995/96 it was Rs. 1228 million, while by 2000/01 it was Rs. 822 million, Rs. 561 million, Rs. 343 million, Rs. 244 million changed in 1997, leading to removal of fertilizer price subsidies from 1999. The stated purpose included reducing subsidy burdens, encouraging private sector participation, and supplying adequate amount of fertilizer on a time basis. In any case, fertilizer subsidies have always been small in Nepal, amounting to no more than 1 percent of the VoAP. From the standpoint of AoA rules,

[4] These value is based on production value for 1992-02 of paddy, *de minims* outlays = 10 percent of the value of production.

this level of subsidy is much below the *de minims* level, so, the government allows to grant on this field (Awasthi and Adhikari, 2004).

Irrigation Subsidy

Irrigation facility is a key factor for crop production. Being a agro-dominant country, all farmers should have the facilities of irrigation. Mainly there are two types of irrigation schemes in Nepal are surface and ground water. Most of the surface irrigation schemes (including some deep tube-wells) are constructed and almost fully funded by the government. Despite the efforts made towards some cost sharing, particularly on operation and maintenance (O & M) costs, these schemes still remain subsidized. In the AoA's definition of the NPS-AMA, only the operation and maintenance costs are considered, while construction costs are considered as Green Box Support. In a study, irrigation subsidies are estimated as the difference between total operation and maintenance (O & M) costs and revenues collected from users. Nepal Irrigation Sector Project (NISP) study in the O&M (sep, 2001) provides data on O&M cost and water charge recovery for 26 surface and ground water projects under the department of irrigation. The average recovery rate is very low, only 1.3 percent of the O&M cost on average for the 26 projects. In other words, 98.7 percent of the total O&M cost is subsidy. The level of subsidies estimated for various years by applying this rate of subsidization to the O&M values, the average subsidy during 1993/94 - 2000/02 period comes at Rs. 113 million (Awasthi and Adhikari, 2004).

In the case of Shallow Tube Well (STW), the government subsidized the installation part until recently, but not the O and M costs. Even these subsidies were discontinued from 2000/01. A debate has been going on in Nepal since 2000 on the impact of subsidy removal, the several case studies have confirmed, that the demand for STWs has declined considerably following the removal of the subsidies.

Subsidized Credit

The government has made efforts to encourage commercial bank to operate in rural areas and expand credit flow, mainly in agriculture as a priority sector. ADBN, Small Farmers Development Program and production credit for Rural Women programmes are providing the farm credit. Many small scale surface irrigation

schemes and tube well programmes were implemented with the help of subsidized credit.

The credit subsidies fall under non-exempt category from the AoA viewpoint. So they need to be included as part of the NP-AMS. During the last five-six years when several programmes involving credit subsidies have been phased out.

For the WTO member's without AMS reduction commitment, the total amount of subsides cannot exceed the *de minims* level of 10 percent of the total VoAP. The total NPS-AMS of Rs. 709 million during 1996/97-2000/01 and the value of production of Rs. 153643 million, the ratio was 0.5 percent (Awasthi and Adhikari, 2004). This is indeed a very small value compared to the 10 percent limit allowed by the AoA. As a matter of fact, there is an immense scope for Nepal to grant input subsidies if there are resources and the government considers the subsidies to be useful for agricultural development.

In Nepalese context, domestic support schemes implemented by India to their agriculture sector are a influencing aspect to remember. The domestic support given by Indian government to its farmers can affect the Nepalese agro-product negatively. So, regarding this brief review has been done, here.

In India the NPS-AMS outlay was positive and close to $6 billion in 1995, or equivalent to 7.5 percent of the VoAP. Given the 10 percent *de minims* limit for India, this means only some room for raising farm subsidies. Subsidies on electricity and fertilizers accounted for a major share of the NPS-AMS, with credit, irrigation and seeds making up to the rest. Presumably given that the percentage NPS-AoA level in 1995 was closer to the 10 percent limit, India notified, much lower NPS-AMS outlay while reporting substantive amount of the NPS-AMS under the Article 6.2 category. As a result, the percentage of NPS-AMS level fell to 3 percent of VoAP while outlays under Article 6.2 category increased to about 6 percent, from only 0.3 percent of VoAP in 1995. India had reserved its original WTO schedule the option to transfer almost 80 percent of the NPS-AMS outlay to the article 6.2 categories, stating that about 80 percent of land is farmed by low-income, resource-poor farmers. The main implication is that India created room for increasing subsidies on farm inputs (Awasthi and Adhikari, 2004).

Gulati and Narayan (2003) also present analysis of input subsidies. They find that for India as a whole total subsidies on the three inputs-fertilizers, irrigation and electricity- rose sharply from about IRs. 9 billion (2 percent of AGDP) in 1982-83 to IRs 102 billion (7.7 percent of AGDP) in 1990-92 and to IRs. 284 billion (8.7 percent of AGDP) in 1999-00.

If this situation prevails in agriculture sector in India, it can hamper the agriculture sector of Nepal. Due to the poor resources and other constraints Nepal can't give too much subsidies in various form for their farmers. It leads to increase the cost of production of agro product of Nepalese farms in comparison to Indian agricultural products. It gives the result as a low price of Indian product compared to the Nepalese product. It can displace the market of Nepalese agro-product.

Regarding the implications of the AoA on domestic support to the Nepalese agriculture, given the above situation, there are few direct implications. There are no support limits in Green Box measures like agriculture research, extension, agricultural road etc. Hence there are no issues here from the WTO standpoint. Regarding non-exempt support measures that fall under the Amber Box category, expressed in terms of Aggregate Measurement of Support (AMS). Nepal committed at the time of the WTO accession to limit these subsidies within the *de minims* level, or 10 percent of agricultural output (VoAP). Currently, Nepal does not have product-specific AMS as there are no price support programmes. The AoA does not prohibit their programmes for the future provided that subsidies are limited to the *de minims* level. In any case, the amount of subsidies permitted is considerable, as the analysis in the above section showed. Regarding non-product specific AMS (e.g. on fertilizer, irrigation, credit etc), Nepal can grant these subsidies any time up to the *de minims* level. Compared with this limit of 10 percent of the VoAP, actual subsidies in 1990's have been very low-less than 1 percent of the VoAP. Infact, even if the entire government budget on agriculture is assumed to be subsidized, the ratio does not exceed 5 percent. So, the key message is that the AoA provides ample room for Nepal to support its agriculture. The main constraint is resource, not the AoA.

6.5.3 Export Subsidies

It prescribes reduction to eventual elimination of export promotion measures provided to agriculture related products. The majority of the developing countries do

not subsidize exports up permissible level simply because of their limited financial resource. But they are affected indirectly by subsidies given by their trade partners. It works through several ways first; export subsidies increase the share of the exporter in world markets, at the cost of those who do not subsidize. Second, they depress world price, which not only cut export earning of other countries but also transmit disincentives to farmers in the third-world countries. Third, export subsidization also makes world market prices unstable there by increasing difficulties to cope with price risks for an importer.

Nepal is not subsidizing exports. During the WTO accession it has also committed not to subsidize exports. As a Special and Differential Treatment (S&DT), the AoA exempts developing countries to provide subsidies to reduce the marketing costs of exports, including the cost of international transport and freight, and internal transport and freight charges on export shipments. For Nepal, the closest example of this type of subsidies would be the assistance for export of oranges to Bangladesh. The subsidy given to transport apples from Jumla would also be an example if the apples were destined for export. Thus, this provision would be useful for countries like Nepal to give export subsidies occasionally when it is worth doing so on the basis of other considerations.

It is very unlikely that the commitment not to provide any export subsidy in the future has any negative implication for the Nepalese agriculture and export. First, export subsidies are not sound economic policies and have high economic cost. Second, Nepal would not be able to afford export subsidies in the foreseeable future. Third, export subsidies on agricultural products may even be phased out in the coming negotiations, thus closing this window for other WTO members also. However, as a developing country, Nepal is allowed to provide subsidies to reduce the cost of internal and external transportation of export consignments. These (allowed) provisions are in the article 9.1(d) and (e) of the AoA. It is shown in Box No. 4.2

Box 4.2

Allowed Provisions of AoA

d.	The provision of subsidies to reduce the cost of marketing exports (other than widely available export promotion and advisory services) including handling, upgrading, and other processing costs and the cost of international transport and freight.
e.	Internal transport and freight charges on export shipments, provided or maintained by governments on terms more favourable than for domestic shipments.

Source: Ghimire, and Dahal (2004), **Nepal in the WTO, Livelihood and Food Security Perspectives**, SAWTEE and AAN.

Some Asian countries like India, Pakistan, Sri Lanka etc. used this provision during 1995-2000. Most of the products receiving such subsidies have been niche, non-traditional commodities, like fruits, fresh vegetables and cut flowers. On the whole, the amount is very small with a large year-to-year fluctuation. Some export assistance schemes, are implemented by India. In view of their relevance to Nepal, they are discussed in following paragraph.

India assists agriculture exports through a scheme that grants transport assistance for identifying horticulture, processed food and poultry products. Agriculture and Processed Foods Export Development Authority (APEDA) of India implements the program. As per the rule, the assistance would be limited to a maximum of 10 percent of the f.o.b. value, subject to a celling of 25 percent of the freight cost or fixed per kilo rate for each mode of transport (air and sea), wherever is lower. For 2002-04 the rate fixed on a per kilo basis were as follows. For transport by air, the rates that vary by destination were in the range of Rs. 6-22/kg for horticulture products, Rs. 9-34/kg for floriculture products (Rs. 7-30/kg in the peak season) and Rs. 6/kg for poultry products (only Middle East markets eligible). For shipments by sea, the subsidizes rate for fresh and frozen fruits, vegetables and poultry products ranged from Rs/ 3/kg (Middle East and South East Asian markets) to Rs. 8/kg (North

and South American markets). Nepal is also listed as a destination eligible for assistance (Tiwari, Rai and Verma, 2004).

The government of India, in 2001 decided, to export its wheat stocks at highly subsidized price (initially about IRs. 4150 or 86$ per tone ex-FCI warehouse). Similar program was initiated in April 2001 for rice. As government stocks started to decline, government begins to reduce transport subsidizes. The schemes were discontinued in August 2003 (Tiwari, 2004).

If provisions provided by the AoA Article 9.1(d) and (e), which are export subsidies in the form of, the cost of marketing and transport, used by the country, it is generally supposed that, it can increase their export volume. It may hamper the domestic trade of those countries, who can't give export subsides and incentives to their product. In case of Nepal, export subsidization by India is much more relevant than others. There were several reporting in Nepal that the de-stocking of rice and wheat by the Food Corporation of India during 1999-01 (with transport subsidies) led to import surges in Nepal with negative effects to farmers. Nepal may not grant export subsidies but stands to be affected negatively (Tiwari, 2004).

Due to the porous border with India, trade of Nepal is hindered by Indian export subsidization scheme. Minimum support price fixation and subsidy on fertilizer and other inputs is given by the government of India to their farmers. It reduces the cost of production. It leads to the lowering of price of Indian agricultural product. Comparing with Nepalese agro-product it may be cheaper. In this regard, Nepalese farmers can loose their position. At the same time another argument is that subsidized export of Indian product will be available in low price in domestic market. It will be beneficial for the consumers.

In case of trade between India and Nepal, it is expected that huge amount of traded goods are not under the record. Due to this situation, facts and figures are not easily available and related government mechanism is not up to date and effective. Therefore, it is necessary to develop capability in government to document the problem with facts and figures.

Yet, as noted above, the Nepalese agriculture stands to be affected negatively by this practice of trading partners.

4.6 Implication of Sanitary and Phyto-Sanitary Measures on Agricultural Product

Starting with the Tokyo Round and reaching full flagged in the Uruguay Round, GATT disciplines have been extended to domestic regulations. Many of the new agreements (including TRIPS, SPS and TBT) attempt to harmonize domestic regulations in an effort to minimize adverse effects on trade flows. In this section, brief description of SPS measures and analysis of its implication on agricultural sector have been comprised.

4.6.1 An Overview of the SPS Agreement

Article 20 of the GATT 1994 allows governments to regulate trade in order to protect human, animal or plant life or health, provided such actions do not discriminate or are used for disguised protection. The purpose is to establish a multilateral framework of rules that discipline the development, adoption and enforcement of sanitary and phyto-sanitary measures with minimum negative effects on international trade. Main objectives of the SPS agreement are the following:

(i) Protect and improve the current human health, animal health and phyto-sanitary situation of all member countries; and

(ii) Protect member from arbitrary or unjustifiable discrimination due to different SPS standards.

Products that are often subjected to SPS measures include:

(i) Fresh fruits and vegetables;

(ii) Fruits juices and fruits preparations;

(iii) Meat and meat products;

(iv) Dairy products;

(v) Processed food products.

SPS agreement, too, encourages countries to adopt internationally recognized standards, although it leaves them free to apply higher standards. However, they must provide scientific justification for such higher standards. The agreement includes guidelines for assessing risks to human, animal or plant health. SPS standards are developed by several organizations, including Office International Epizootic (OIE), International Plant Protection Convention (IPPC) and the codex commission.

Generally the developing countries apply lower SPS standards, quantitively and qualitatively, than developed countries. Notwithstanding this situation, the principle embodied in the SPS agreement should help to facilitate trade from developing to developed countries by improving transparency, promoting harmonization and by preventing the implementation of SPS measures that cannot be justified scientifically. Main elements of SPS are as follows:

Harmonization

With the objective of reducing regulatory trade barriers, members are required to base their SPS measures on international standards, guidelines and recommendation, where they exist are sufficient to provide appropriate level of protection. They can establish a higher level of protection if scientific justification is provided in accordance with the requirement in Article 5 members are also encouraged to participate in codex, OIE and IPPC, within the limits of their resources, to promote development of SPS standards. It is to be noted here that the agreement requires the measures to 'be based on' international standard and not 'to confirm with' international standard. In other words, members have the flexibility to incorporate 'only some and not all elements of the standard' into their national standard.

Equivalence

Members are required to accept SPS measures of other members where they can be demonstrated such measures to achieve equivalent level of SPS protection (Article 4). Such equivalence helps 10 protect exporting countries from unjustified trade restrictions, even when these products are produced under qualitatively different SPS requirement. Nonetheless, the exporting country is obliged to provide reasonable access for inspection, testing and other procedures upon the importing countries request.

Risk Assessment

Members are required to provide scientific evidence when applying SPS measures that differ from international standards. This evidence should be based on risk assessment, taking into account, when possible and appropriate, risk assessment methodologies developed by the international standards organizations. Further,

members are obliged to avoid arbitrary or unjustifiable distinctions in the level of protection it considers to be appropriate if the distinctions would act to distort trade.

Transparency

The agreement establishes procedures for enhanced transparency in setting SPS standards amongst members. Members are obliged to publish and notify the WTO of all SPS measures proposed and implemented. This information is relayed via the 'Notification Authority' within each member government. Moreover, members are required to establish an 'Enquiry Point' which is the direct point of contact for any other members regarding any questions about SPS measures or relevant documents.

Adaptation to regional conditions including pest or disease-free areas and areas of low pest or disease prevalence:

The agreement recognizes that SPS risks do not correspond to national boundaries and that there may be areas within a particular country that have lower risk than others. Based on geography, ecosystems, epidemiological surveillance and the effectiveness of SPS controls, members may declare pest-or disease-free areas and areas of low pest or disease prevalence (Article 6.2).

Dispute Settlement

Both the GATT and SPS agreement are subject to the dispute settlement understanding concluded during the Uruguay Round. Even after having codified all the rules, there would still be a temptation for member countries to break the rules of the WTO in order to protect the interest of the domestic sectors. Therefore, these rules would remain only on paper if they were to be frequently broken by the member countries. In order to resolve this problem, the WTO envisages an effective dispute settlement system, within built system for check and balance as well as sanctions: As opposed to the dispute settlement system of the GATT, the decision of the dispute settlement panel or Appellate Body of the WTO cannot be rejected unless and until there is a consensus not to adopt the report.

Technical Cooperation and Special and Differential Treatment

Article 9.1 of the SPS agreement calls for the provision of assistance to developing countries, either bilaterally or through international organizations, to

develop their capacity in all aspects of the agreement, notably regulation and infrastructures. Article 10 is about special and differential treatment for developing and least developed countries. Further, developing countries can seek some time-bound exceptions in the implementation of this agreement.

Legal and Institutional Infrastructure in the Area of Food Safety in Nepal

Food safety issues are multi-faceted and require multi-disciplinary approach for solution involving inputs from agriculture, industry and health sectors. The main objective of the food safety and quality system is to safeguard the right and well-being of consumers. SPS legislation and concerned institutional setup in Nepal are briefly discussed as follows:

Department of Food Technology and Quality Control (DFTQC)

DFTQC under the ministry of agriculture is the apex body in the area of food standards and safety and responsible for the preparation, adoption and application of SPS measures in Nepal. It has several divisions and branches, e.g. Quality Control and Standardization Division, Inspection Services and Maintains the Central Food Research Laboratory.

Under the Ministry of Agriculture and DFTQC, there are some food safety and standards related mechanism and person, who/which are responsible for the food safety in Nepal. They are as follows:

Public Analyst

On the request of the director-general of DFTQC and the inspector, the public analyst shall undertake necessary analysis of food and deliver analytical reports of the sample to the inspectorate.

Food Inspectors

The inspectors can inspect food-processing plants, identify critical point and assess whether they have been routinely monitored. Further, they can visit marketing areas and import/export points collect representative samples for inspectional

evidences for any violation of law. They also investigate complaints on food products and maintain records of all inspections made or actions taken by them.

Food Standardization Committee

The committee, provisioned under food act is chaired by secretary, MOAC and its major function is to make recommendations to the government on matters related to food standards and safety issues.

Central Laboratory

This is the apex laboratory for providing a wide variety of analytical services e.g. testing for food additives, contaminants and food microbiology. the central laboratory has capability to analyse all major food commodities and facilities for monitoring pesticides my cotoxins, heavy metals, radio nuclides and microbiological analysis.

Minimum standards or specifications have been fixed for certain categories of agricultural products (food products-processed and unprocessed) and animal feeds under.

* Food Act, 2023 (1967)
* Food Rules, 2027 (1970) and,
* Animal Concentration Act, 1976

The responsibility to implement these laws lies with the DFTQC in association with the local administration.

The export and import of plant and plant materials such as seeds, sapling and seedling are subject to phytosanitary measures at the border checkpoints. These measures are based on:

* Plant Protection Act (1972);
* Plant Protection Rules (1974); and
* Seed Act (1998)

Likewise, the Pesticide Act 1991 and Pesticides Rules, 1994 regulate the export and import of pesticides. These acts and Rules authorize the MOAC to ban and/or restrict any convention on Prior Informed Consent Procedures (PIC) pesticides

are potentially hazardous to health. Nepal bans all the PIC listed pesticides and chemicals (22 pesticides and 5 industrial chemicals) except Methyl Parathion and Monocrotophos (Ghimire and Dahal, 2004: 53).

Under the Ministry of Health, its Department of Drug Administration, is responsible to implement the drugs related measures. Production, export, import, storage, supply, sales, distribution and quality assessment, regulatory control and rational use of drugs are regulated through:

* Drug Policy, 1995
* Drug Act, 2035 (1978)
* Drugs Registration Regulation, 2038
* Drugs Examination, Inspection, Regulation, 2040 (1983)

Nepal adheres to the IPPC as well as plant protection agreement for the Asia and Pacific Region. Nepal is a member of the OIE, CAC and Asia Pacific Plant Protection Commission (APPPC). In order to bring the regime of standard setting into full compliance with the agreements on TBT and SPS, Nepal needs to amend Nepal standards (Certification Mark) Act, 1980 and Regulation, 1982 (Amendment), Plant Protection Act, 1972 (Amendment) and Regulation 1975 (Amendment), Seed Act, 1998 (First Amendment) and other legal texts as well as strengthen standard setting institutions. Nepal has provided a timetable for the enactment of legislation that implements the TBT and SPS agreements. Nepal has made legally binding undertaking to implement fully the provisions of the TBT Agreement, including compliance with the code of Good Practice, as well as the SPS Agreement by 31 December 2006. In the time of accession negotiations, Nepal has committed to introduce legislative and institutional measures that would be compitable to the TBT and SPS agreements.

Activities being undertaken after the WTO accession of Nepal are as follows:

(i) As per the WTO agreement, a member country should establish enquiry points to inform other countries. Such as, the Department of Food, Technology and Quality control under the Ministry of Agriculture and Cooperatives as for Sanitary and Phyto-Sanitary-SPS and Nepal Bureau of standards and metrology under Ministry of Industry, Commerce and Supplies for Technical Barriers to Trade-

TBT have been the enquiry points. Similarly, division of WTO under the Ministry of Industry, Commerce and Supplies serves as the enquiry point on service related issues.

(ii) A focal point has been formed for inter-governmental coordination in subjects concerned with the WTO. The focal point has been working with regular meets for fulfilling the commitment to WTO.

(iii) WTO reference centre has been established to inform and disseminate information on the WTO. The centre also holds monthly interactions on WTO issues with experts.

(iv) Different Acts such as Competition and Market Promotion Act, New Company Act, Multi-Model Transportation Act, Crop Protection Act, Export/Import and Intellectual Property Rights Act, Insolvency Act and New Customs Act have been issued. New Trade Policy, 2008 has come into effect upon GON approval. Draft of new Industrial Policy, Foreign Investment Policy Quality Control Act, and SEZ Act have been prepared.

(v) Customs Duties has been accommodated each year as per the commitment to WTO in providing market access to products.

(vi) Enhancing Nepal's Trade-Related Capacity Project, run by UNDP. This has provided continuity to the talks like boosting trade related capacity of the government and private sectors related to trade, increasing the level of participation of stakeholders in formulating trade and industrial policies and trade analysis, skill development and creating investment friendly environment.

(vii) Preliminary works for the infrastructure development are being carried out through European Union supported EC-Nepal WTO Technical Assistance to avoid non-tariff barriers in export trade of Sanitary and Phyto-Sanitory (SPS) areas.

(viii) People's awareness programmes are given continuity for maintaining coordination with private sector with a view to create awareness about the opportunities and challenges that Nepal possesses after WTO membership. Trade related awareness and capacity enhancement programmes are being implemented in collaboration with various Geneva-based international organizations related to trade including UNCTAD and WTO (Economic Survey, 2008).

6.6.2 Implication of Standards Related Agreements of WTO on Agriculture

TBT and SPS measures are standard related agreements under WTO rules. It could affect significantly in the Nepalese exports of agricultural products. Nepal routinely experiences quality-related trade problems, notably with India, for some food commodities, e.g. vegetable ghee. There are some other SPS related cases, for instance the export of honey to Norway, the export of Orthodox tea to Europe had faced SPS retaliated obstacles mainly on the ground of Nepal's non-compliance with pesticide residual level.

SPS standards deal with the kind of chemicals, for example, pesticide residues that are permissible in foods. It will determine what concentration (e.g., how many micrograms per kg of food) of a given chemical residue are allowed. It has been experienced that the levels of residues, the consideration of chemicals as safe or unsafe and the extent of growth hormones allowed are sometimes fixed arbitrarily the SPS agreement requires exporters to meet acceptable international standards as a minimum. Improving quality and standards are a long-term processes that should begin with good practices in all stages; e.g. Grod Agricultural Practice (GAP) and Grod Manufacturing Practice (GMP) GAP and GMP could make products as qualitative/standards.

Implementing food quality assurance activity requires adoption of good practices in crop and animal production such as GAP, Grod Veterinary Practices (GVP) and in food processing such as GMP and Grod Hygiene Practices (GHP) etc. These good practices not only ensure the safety of foods to the consumers, but also promote trade without having any risk to rejection of consignment. The good practices include planting the certified best quality seed of appropriate varieties, using certified and authorized chemical inputs (fertilizer, pesticides) in accordance with approved dosage (concentration, frequency, timing of use) etc, employing appropriate harvesting and on-farm storing and handling measures, using right kink of shipping to market food products, proper slaughtering of health animals taking care of avoiding veterinary drug residue in animal, tissues, plus utmost care in food hygiene, food handling, food processing such that unwanted microbes and contaminants are deliberately in the food chain.

Standards related agreements of WTO are required to adopt the above mentioned good practices in all stages for making a goods as export quality. But in reality, agricultural sector of Nepal has not adopted these measures to make food products as safety for human consumption as regard the developed countries consumers. Because they are more aware about their health. Growing consumers awareness in relation to food items especially in developed countries, poses another challenge for Nepal. People are realizing dangers of food-borne diseases, with the result that food safety and food quality are becoming important issues for consumers. They are increasingly demanding greater safety standards. Nepal's agricultural producers are not always in a position to meet them.

Brief Review of the Agreement on Technical Barriers to Trade (TBT)

The TBT agreement aims that the technical regulations and standards, including packaging, marketing and labeling requirements, do not create unnecessary obstacles to international trade. The agreement covers all products, including industrial and agricultural products. WTO members must, nevertheless, be able to protect national security, prevent deceptive practices and protect human health or safety to animal or plant life or maintain good health and the environment.

In general, the TBT agreement, covers all activities of the standard setting, bodies, central government, local bodies and non-governmental bodies, as the case may be, with regard to the preparation, adoption and application of technical regulations, standards and their conformity assessments. For each of these activities, members are obliged to respect the basic WTO and GATT principles such as non-discrimination, transparency and consultation

The TBT agreement strongly revitalizes efforts by WTO members to harmonize technical regulations, standards and conformity procedures so as to minimize obstacles to trade created by national differences. It suggests three approaches to harmonization i.e. acceptance of international standards, equivalence and matual recognition.

Transparency is another requirement under the TBT agreement. First, each country is required to set up a national 'enquiry point' which would respond to all reasonable inquiries about its technical regulations and standards. The second,

obligation requires notification to the WTO secretariat of the changes in TRS and procedures. On some proposed standards, other countries even have the opportunity to give their comments that need to be taken into account while finalizing the standards.

The agreement obliges members to accept and comply with code of good Practice for the preparation, adoption and application of standards. Members should ensure that local government and non-governmental standardizing bodies within their territories accept and comply with this code of good practice. In addition, such obligations also apply with regard to regional standardizing bodies of which they or one or more bodies within their territories are members.

The agreement recognizes the difficulties of developing countries in complying with its provisions. Thus, it urges other countries to take these difficulties into account. The agreement also requests developed countries to give technical assistance to developing countries in any or all areas covered by the provisions. Further, it provides provisions to grant, upon request, specified and time limited exceptions in whole or in part from the obligations.

Currently, almost all food standards are being set by codex commission, which is dominated by developed countries. In this situation, developing countries, specially LDCs like Nepal cannot raise their voice strongly in the standard setting processes of codex. Nepal usually applies standards related agreements that are not higher than international ones. Due to this reason, farm products of Nepal may have limited access to developed countries markets.

Nepal is lacking required scientific expertise and resources related to standard related measures. So participation at codex committee from Nepal is very difficult. In fact, the food processing corporations with their international networks have always the higher hand with their up-to-date scientific knowledge. On the other hand, some codex decisions reflect political compromises designed to promote international trade, neo the best science designed to protect consumers. Role and influence of multinational companies and developed countries on codex standards setting and decisions are higher than the developing and LCDs like Nepal. Developed countries have a tendency to change SPS standards too often their intention is to protect

domestic products from the imported products. Nepalese agricultural products will face great problems while trying to meet such ever changing measures of standards.

Most of the developed countries have adopted SPS measures on the import of primary and processed agricultural products. Food safety standards on agricultural products that have used modern biotechnology, zero tolerance for e-coli, pesticide and antibiotic limits on honey and food and mouth disease control measures on dairy products. Nepal's export basket of food and agricultural products contain, among others, medicinal herbs, ginger, brooms, rosin, cardamom, cattle fodder, biscuits, noodles, vegetable ghee, raw jute, pulses, catechu, turmeric, tea, sugar, spices, uncooked pasta, vegetable fats, wheat, plants and beer. Given the country's limited technical capability to meet internationally agreed standards, these products could be denied market access in developed countries.

As regard the technical and standards related agreements of WTO Nepal's position is very weak in various ground i.e. higher compliance cost, loose definition of standard, unclear risk assessment and lack of well equipped laboratories to test and certified the quality of food products. Some other problems in economy, as a whole, like lack of awareness and management of information, poor infrastructure, dominance of small producer, lack of finance and insufficient access to technology and institutional capacity resulting the low competitive strength of agricultural products in comparison to international market. We can conclude here from the above discussion that Nepal's position in respect to technical and standards related agreements of WTO is very weak. There is big gap between the Nepal's standards level of the products and in relation to international standards which are setting by the international agency as well as other developed countries. Good practices in all stages are required action for a quality production of agricultural products. But in reality there is no minimum such practices exits in the cultivation and processing of the farm products. As a result, there may be higher/lower application of chemical fertilizer and pesticides in farm crops. High concentration (above the minimum level) of chemical and pesticide on food items may hindered the market access opportunities of agricultural products. No well storage facilities and lack of good handling of farm product lead to decrease the quality of products in comparison to the imported product. As a result, agricultural product may loose their position in international

market. To get benefit from WTO and its standards related agreements, Nepal should work the some additional activities like, concentration on quality management, process control and documentation, cooperation with external partners, market segmentation, collaboration with like-minded groups, regional and bilateral agreements. If country does these works at national and international level, it makes the country more competitive. Hence, impact of WTO and its agreements on agricultural sector will be positive.

4.6.3 Trade-Related aspects of Intellectual Property Rights (TRIPs) Agreement and Its Implication on Nepalese Agriculture

Many service products like books, music recordings, films, computer software and online services are bought and sold not usually because of the plastic metal or paper used to make them, bought and sold because of the information and creativity they contain which others cannot normally invent. Creators of these service products should be given the right to prevent other from using their inventions, designs and other creations. These rights are known as Intellectual Property Rights (IPRs). In this section a brief review of TRIPs Agreement, analysis of related aspect of TRIPs to the agricultural sector and implication of this agreement on agricultural sector is comprised. Discussion in respect to the above mentioned subjects are given below.

A Brief Review of TRIPs Agreement

IPRs belong to the core mandate of the WTO. The TRIPs Agreement governs them. The term 'intellectual property' refers to creative ideas that basically have a commercial value. Intellectual property rights recognize thus ownership over ideas and provide legal protection for them. Intellectual property is a form of knowledge, which enjoys specific rights. Individuals are granted IPRs for their creative works. This means that no one could use them without authorization derived mostly through compensation.

TRIPs specifics a full set of rules encompassing all the major areas of intellectual property rights, which include patent right, copy right and contiguous copy rights, trade mark, geographical indicator, industrial design, layout design of integrated circuit and undisclosed information.

The agreement sets out minimum standards of protection. Countries are allowed to provide higher degree of protection. Articles 7, 8, 65 and 66 of the agreement are very important for developing countries. They provide for transition period, technology transfer, special arrangement for protecting public interest and competition. There is a broad recognition that the TRIPs agreement can play a significant role in stimulating research and development in poor countries. The subject of IPR protection is also associated with the promotion of foreign investment, technology transfer and joint research programmes focused on the local needs of developing countries and LDCs.

Nepal's Position

With Nepal's successful bid to join the WTO, the TRIPs Agreement has become a reality. During the accession negotiations, Nepal agreed to implement TRIPs provisions by 1 January 2007. Infact, Nepal wants to be "integrated" into the global economy. It requires, among others, that global rules on IPRs be respected.

The concept of intellectual property is not entirely new to Nepal. Nepal's first Patent, Design and Trademark Act was promulgated as for back as 1937. The first Copyright Act came in 1965. While a TRIPs compliant Copyright Act has entered into force in 2002, its counterpart on the industrial property side is yet to be announced. A reincarnation of the industrial property legislation is now becoming an immediate reality. Relevant government agencies are already working on it. However, implementing the provisions of TRIPs can be a daunting task for Nepal as experiences elsewhere clearly show.

Implications for Agricultural Sector

Agricultural sector is playing important role in the Nepalese economy. It contributes about 32 percent to the GDP. It is also important for international trade. Agricultural sector may be affected by the TRIPs Agreement in several ways, both positive and negative. The possibility of unauthorized use of traditional knowledge by 'outsiders' is a future challenge for agriculture of LDCs like Nepal. Some opportunities and challenges associated with this agreement for the agricultural sector are examined here.

From a commercial point of view, patent protection is probably the most important of all forms of protection. Performance of the Nepalese agriculture is very poor in this regard. Agriculture will, therefore, be gaining most from copyright protection TRIPs and particularly Article 27.3(b), which requires that members allow patenting of plants and animals that have been produced through "non biological" or "microbiological" processes can have a significant effect on the livelihood and food security of Nepalese farmers.

Some observers are pinning high hopes on using Geographical Indication (GI) protection for promoting some of Nepal's unique products abroad. This cannot be taken for granted. In fact, GI benefits are based not on proliferation but on high-value image of a given product. Even so, some of Nepalese agro-products can benefit from it. One day hopefully Nepal can register her products under the GI category, and realize commercial benefits. Nepal indeed has immense opportunity in this area, due to agro-climatic diversity. Nepal's hand made paper, Ilam Tea, Jumlimarshi (rice from Jumla), Pyuthane Moola (radish from Pyuthan) are the examples.

'Traditional knowledge' is increasingly being recognized as intellectual property. This will cover the whole host of medicinal and aromatic plants in Nepal's different ecological zones. Local people and indigenous people will benefit from this.

If patents are too expensive for the small and medium size farms/firms they can protect their products through "trade secrets" of course, by having measures in place not be publish "undisclosed information". For example, fruit and vegetable preserves can benefit from this.

TRIPs agreement of WTO not only offers of benefit, this agreement will also be a challenge for agro-based industries, as it will weaken farmers' position vis-a-vis plant breeders. While plant breeders will have their rights protected under a patent or similar regime, farmers will have no 'rights' unless special measures are put in place. Patent protection for transgenic plants will also affect cropping patterns and biodiversity. Both are important for agro-based industries. The TRIPs Agreement is serving the purpose of big firms and Multinational Companies (MNCs). They can invest huge amount of money in R & D. They are also politically influential. Regarding this small sized farms/firms do not enjoy this access. So, the risk of such

farms being trampled by MNCs with regard to different forms of IPR protection. High costs associated with obtaining and enforcing IPR is yet another problem. The process is often cumbersome and takes time. It is very difficult to fully implement the provision of the TRIPs Agreement, for the LDC like Nepal. In fact, more then 70 developing countries have failed to implement the agreement within the agreed deadline, how can one assume that LDCs will be able to implement it? Keeping these issues in mind, Nepal needs to build coalitions with other countries in order to move them closer to protecting the agro-based industry and SMEs within the framework of any IPR regime.

4.6.4 Trade Remedy Measures and Import Surge

Generally all trade agreements contain safeguard provision. The WTO framework also recognizes difficulties and negative effects arising from both fair and unfair trade practices of trading participants and provides for response measures known as trade remedy measures. Three measures such as anti-dumping, countervailing and emergency safeguards, are accessible to all WTO members and applicable to all trade remedy measures and indirect measures include: (a) Balance of Payment (BoP) cover, and (b) Special safeguards in the last measure in the context of Nepal, we shall only discuss about the first four measures.

Anti-Dumping Measures

If a foreign supplier sells goods at a price below his/her cost of supplying the same goods in the domestic market, it is considered an act of 'dumping'. As per the legal definition "a product is to be considered as being dumped, i.e., introduced in to the commerce of another country at less than its normal value, if the export price of the produce exported from one country to another is less than the comparable price, in the ordinary course of trade, for the like product when destined for consumption in the exporting country" (Article 2.1 of ADA). Due to dumping of such products in the domestic market, the prices of those goods are reduced, thereby providing benefits to the domestic consumers. However, this act hurts the domestic industries, particularly small and medium sized agro-based industries, which are engaged in producing competing products. In order to protect the domestic industry from such practice, the government can leavy an amount equivalent to the 'margin of dumping' at the order

thereby creating level playing field for the domestic players. This duty is known as 'anti-dumping duty'. Alternatively, the supplier itself could be forced to resort to 'price undertaking' whereby he/she would undertake not to sell his/her products below certain prices so as to create fair condition of competition for the domestic players in the complaining country.

As per the rule book of WTO's Anti-Dumping Agreement (ADA), it is extremely difficult to take anti-dumping measures against foreign firms. The reason these rules have been made extremely cumbersome and complicated is that the drafters of the GATT text wanted to make it possible only for the genuine cases of dumping to be penalized. However, a country can apply an Anti-Dumping (AD) duty if following three conditions have to be met: (a) a determination that dumping has occurred including an estimate of the dumping margin, i.e. the differences in prices (b) that a domestic industry is suffering from, or threatened with, material injury: and (c) that the dumping is the cause of the injury. This implies that mere dumping is not sufficient to trigger action. It has also to be proved that dumping caused injury to the domestic industry. The examination of the impact of the dumped imports on the domestic industry concerned should include an evaluation of all relevant economic factors and indices having a bearing on the state of the industry, including actual and potential decline insoles, profit, output, market share productivity and actual and potential negative effects on cash flow etc. The imposition of anti-dumping duty can only be for temporary period. If the concerned authority feels that there is no need to continue such duty, it could be lifted such measures cannot be continued for more than five years under normal circumstances (Article 11 of ADA).

Countervailing Duties

The thinking about countervailing duties is similar to that of AD- while AD is aimed at "unfair" action of an exporting firm, countervailing action is aimed at "unfair" practices resulting from government subsidies (both domestic and export subsidies). Agreements on Subsidies and Countervailing Measures (ASCM) governs countervailing measures. When a foreign government provides trade distorting subsidies to its domestic enterprises, the home country has a right to impose additional duty over and above the normal duty in order to 'countervail' the impact of such subsidy in the home market. Like dumping, subsidies provided by a foreign

government is a boon for the home consumers because they could purchase foreign goods at cheaper prices, but the import of subsidies goods hurts the domestic industry. The impact on small size farms/firms could be even more severe because of their inability to compete.

However, there are certain rules to be respected before imposing countervailing duty at the border or forcing the exporter to resort to 'price undertaking', like in the case of imposition of anti-dumping duty. The countervailing measure may only be applied after an investigation by that member and a determination that the criteria set forth in the SCM Agreements are satisfied. The remedial process requires the determination of four elements: (a) existence of subsidy, which is prohibited and actionable. (b) the amount of subsidy; (c) the existence of injury to the domestic industry; and (d) the existence of causal relationship between subsidy and injury.

This implies that mere dumping is not sufficient to trigger action. It has also to be proved that dumping has caused injury. For a country like Nepal, which lacks the expertise and the knowledge to undertake such investigations, the demonstration of causal link between dumped products and injury can be a daunting task.

Emergency Safeguard Measures

Even when goods are not dumped into a WTO members market, but there can be a sudden surge of import leading to 'serious injury' to the domestic industry, the reserves the right to impose safeguard measures to protect its domestic industry. Safeguard measure ineffect means the imposition of additional duty at the border over and above the normal tariffs.

As per the legal text of the Agreement on Safeguards (AS) mentions, "A WTO member has determined that such product is being imported into its territory in such increased quantities, absolute or relative to domestic production, and under such conditions as to cause or threat to cause serious injury to the domestic industry that produces like or directly competitive products (Article 1 of Agreement on Safeguards). This is particularly important for the agricultural product and SMEs because there could be occasions when such measures need to be taken. There are

certain conditions which need to be fulfilled, before applying safeguard means, like in the case of offer trade remedy measures. Some of them are as follows:

(a) No country can take recourse under the agreement of safeguard is fully complaint worth the AS.

(b) A member can apply safeguard measures only for such period of time as may be necessary to prevent or remedy serious injury and to facilitate adjustment. The period cannot exceed four years under normal situation.

(c) During the investigation to determine whether increased imports have caused or are threatening to cause serious injury to a domestic industry under the terms of this agreement the authority should evaluate of an objective and quantifiable nature having a bearing on the situation of that industry, in particular, the rate and amount of the increase in imports of the product concerned in absolute and relative terms, the share of the domestic market taken by increased imports, changes in the level of safes, production, productivity, capacity utilization profits and losses, and employment. Moreover, it is necessary to establish a causal link between increased imports of the product concerned and serious injury or threat thereof.

(d) A member should immediately notify the committee on safeguards upon: (i) initiating an investigation relating to serious injury or threat thereof and the reasons for it; (ii) making a finding of serious injury or threat thereof caused by increased imports; and (iii) taking a decision to apply safeguard measures (Article 12.1 of AS).

BoP Measures

This measures can only be taken by developing countries, including Nepal, in the event the country faces serious BoP crisis arising mainly from efforts to expand its terms of trade. There is no need to prepare a separate legislation or designate as institutions to impose import restrictions to address BoP difficulties. This can simply be done by the government at the recommendation of the central bank. Like any other trade remedy measures, it can only be applied temporarily. One of the major conditions to be adhered to, at the time of imposing import restriction on the ground of BoP difficulty, is that the importing country should try to use the 'least trade restrictive' measures. BoP is the least selective trade remedy measure, meaning that once applied it should be done on all products from all sources. However, relying on

BoP measures is becoming increasingly difficult. Besides, Nepal has more the years been in a comfortable BoP position and so banking on BoP cover to protect its domestic economy is not practical.

Use of above mentioned trade measures require a great deal of homework in terms of enacting legislations, equipting institutions, developing human resources and information systems and capacity building of the civil servants as well as lawyers. Therefore, these processes should be done in the most cost effective manner so as to avoid putting excessive burden on the already over-stretched financial resources of the country.

Trade Remedy Measures in Nepal-India Trade Agreement

Since 1993 a new clause on import surge was introduced in the Nepal-India Trade Treaty, following an agreement to reduce the value addition requirement (from 70 percent to 50 percent) for Nepalese manufactured goods destined for export to India without any duty. The remedy agreed was joint consultations in the event of a surge. While renewing the treaty in 1996, the value addition requirement was abolished, and new protocol was added that permitted the contracting parties to maintain or introduce some restriction on trade as necessary, notably for non-trade reasons such as protecting public morale, human, animal and plant life, national treasures, gold and silver trade, and any other safeguard that is mutually agreed upon.

Following the 1996 treaty, the export of the Nepalese manufactured goods picked up fast and India started to raise the issue of surge and the need for consultations in various bilateral meeting. This eventually led to the addition of a surge clause in the 2002 revision of the 1996 treaty (protocol to Article IX). This surge clause is similar to those found in the WTO agreements.

The phenomenon of an import surge is expressed in the protocol to Article IX as follows: "In the event of imports under the treaty, in such a manner or in such quantities as to cause or threat to cause injury to the domestic industry or a significant segment of it relating to the article, the importing country may request for consultations with a view to taking appropriate measures. If the consultations in the Joint Committee fail to resolve the issue within a period of sixty days from the date of such request, then the requesting

government shall be free to take appropriate remedial measures. The India-Nepal Inter-Governmental Committee will review such measures".

The protocol also defines injury as a significant damage to the domestic producers of like or similar products resulting from a substantial increase of imports production or employment unsustainable in the short term. The protocol defines threat of injury as a situation in which a substantial increase of imports under the treaty is of a nature so as to cause injury to the domestic producers, and that such injury, although not yet existing, is clearly imminent. Determination of threat of injury shall be based on facts, not on more allegation, conjecture, or remote hypothetical possibility.

Import surge is a statistical concept. All surges may not necessarily result in domestic injury. However, where injury occurs, action must be taken to minimize or negate it. A case study done by Action Aid Nepal on import Surge of rice reported that the surges have been recorded in rice. However, injury cannot proved quantitatively due to a host factors, including the lack of adequate data. Except for depression of domestic rice prices, no impact on production and consumption can be seen. However, this is not to say that the extent of injury is not significant, since significant qualitative injury has been documented. At the multilateral level, however, simply making a claim of injury as a result of import surge without being able to quantitatively prove it cannot pare way for protection under the present rules of the WTO. This is an issue of concern to a country like Nepal, which neither have the capacity nor the expertise to prove injury resulting from imports. Countries like Nepal have to be provided with practical policy options to deal with such negative impact.

CHAPTER - V

MAJOR ECONOMIC ASPECTS OF GREEN LEAVES AND ITS PRODUCTIVITY

5.1 Introduction

This chapter includes economics of green leaves, impact of WTO, level of understanding about WTO, present condition and support needed for tea farmers, competitiveness of Nepalese tea and the facilities provided by the government and others. Regarding the problems faced by the tea farmers and suggestions for the betterment of tea sector, which are given by the tea farmer's, are also dealt in this chapter. Furthermore, various aspects of tea processing, firms, exporters and labours condition in tea gardens are also discussed in this chapter.

5.2 Economics of Green Leaves

A large number of small land holder farmers are engaged in tea cultivation in both areas: the CTC in Jhapa and the Orthodox in Ilam. And their contribution in total production is increasing over the years as more small farmers are being attracted towards the cultivation due to many reasons, including its profitability compared to other crops. This section deals with various aspects of green leaf production, such as; productivity of tea, green leaf price trend, average price of green leaf, benefit-cost ratio, causes of changes in demand pattern of green leaf and factors for better production of green leaves.

5.2.1 Productivity of Tea

Tea plants, if allowed to grow, can reach about sixty ft. in height. But for the purpose of harvesting the green leaves from the tea plants in an efficient manner, the height of the tea plant is kept within three ft. from the ground level. Tea plants, after planting in field, are allowed to grow and the cutting is done from time to time so that these can transform into bushes (Dwibedi, 1999).

Over the years, the tea bush yields, a number of branches and the surface area of the bush increases as the age of the bush increases. This indicates that the old bush

generally occupies more area in the field compared to the younger bush. According to NTCDB field representatives and farmers in the CTC area, the density of plants are 14,000 per ha (ITC, 2007). Yield of tea bushes depends on the number of plucking points on the surface area of the bush and also capacity of yielding number of green leaves which could be used for manufacture of made tea.

The data relating to production of green leaves and area under tea bushes aged five years are collected from the field. Yield of tea per hectare has been brought at on the basis of the following formula:

$$\text{Yield} = \frac{\text{Total Production of Green Leaf}}{\text{Total Matured Area}}$$

Table No. 5.1

Productivity of Tea by Type for the Year 2007/08

Tea Type	Green Leaf Productivity Kg/ha	Made Tea* (Productivity ÷ 5) Kg/ha	Made Tea Minimum Productivity Kg/ha	Made Tea Maximum Productivity Kg/ha	Green Leaf Productivity Standard Deviation
CTC	11168	2233	492	4430	3204
Orthodox	4229	846	161	2359	1906
		3069 ÷ 2 = 1535 Kg/ha for both type			

Note: an asterisk * denotes made tea (finished product-ready to use), calculated by researcher (information from tea expert) based on 5:1 ratio (of 5kg green leaves and 1 kg made tea)

Source: Field Survey, 2008.

The overall average productivity of green leaves per/ha of the 50 sampled farmers in Jhapa (CTC Type) is 12237 kg with a maximum of 22148 kg and a minimum 2461 kg. Likewise, the overall average productivity of green leaf of 112 sampled farmers in Ilam (Orthodox type) is 4229 kg/ha with a maximum 11796 kg and a minimum 806 kg. According to the tea experts, for one kg of made tea, approximately five kg of green leaves will be needed. In an average productivity of

made tea in CTC type is 2447 kg/ha and 845 kg/ha for Orthodox type tea. Here it is assumed that there is no plucking up to 5 years aged of tea bushes. The productivity shows a gradual increase with age cultivation. It should be noted that the productivity in much higher than the results of the general survey. This is logical because in this study only those farmers are included in the survey whose tea gardens were aged 5 years and above. It means only economic tea bushes i.e. aged 5 years and above are included to find out the productivity.

Productivity in terms of volume per hectare is affected by aspects such as climate, soil fertility and labour productivity. Productivity in Sri Lanka (1611 kg/ha) is lower than in India (1690) and Kenya (2235). Kenya started producing tea relatively recently, if we compare it to India and Sri Lanka. As a result, the tea lands of Kenya are more fertile and much less affected by pest and diseases (SOMO, p. 49, 2008). Nepal also started producing tea relatively recently, compared to India. So the land is relatively virgin and tea bushes are young. As a result, the productivity of tea, according to data of field survey shows that in an average productivity is 1545 kg/ha (including both tea type) which is not much below the India 1690 kg/ha. In the CTC areas the yields are lower than in Kenya but higher than India and Sri Lanka (ITC, 2007). In the Orthodox areas, however, the yields are significantly low, nearly 25 percent lower than India and 30 percent below Sri Lanka (Ibid, p. 30). As the international tea market is very competitive, relative low yield is a cause of concern.

Table 5.1 shows that productivity of CTC and Orthodox tea type is different. Productivity of CTC is 2233 kg/ha which is about three fold higher than the Orthodox. This is high indications but seen to be acceptable, as the quality of plucking which is not kept at the ideal 2 or 3 leaves and bud. In the hill areas of Ilam, the plant population in the plots observed were less and more scanty. The incidence of pests, insects and fungi was more as this region is damp and is more conducive for them to thrive. The low level of productivity of Orthodox tea is because of decreasing application of chemical fertilizer/pesticide in the Orthodox area to maintain MRL-SPS standard. Likewise unavailability of organic manure in the area is another reason for low productivity. Because of high demand of organic tea in international market after WTO membership, in Ilam (Orthodox tea) many farmers are going to apply the organic method of the cultivation. SPS standard of WTO always require food

standard, therefore, they are not using much more chemical fertilizer/pesticide in their field. As a result, the productivity in hills area is lower than the Tarai (Jhapa).

5.2.2 Educational Status and Productivity of Green Leaves

Generally, it is believed that there is a positive relationship between educational status and productivity. In this study the educational level of the family head has been considered and it is assumed that tea gardens will be run or managed by the head of the family. So, in this study, what will be the impact on productivity according to their educational status which are categorized into 3 different groups namely, illiterate, up to Secondary Level/SLC and above secondary/SLC level. Educational status and productivity of green leave is shown in following table 5.2.

Table No. 5.2

Educational Status and Productivity of Green Leaves

S. N.	Educational Status	CTC			Orthodox			
		No	%	Productivity kg/ha	No	%	Productivity kg/ha	Std. Deviation σ
1.	Illiterate	4	8	9940.2	12	10.7	4077.33	1643.07
2.	Up to secondary level	17	34	12763.4	67	59.8	4388.43	1999.28
3.	Above secondary level	29	58	10397.8	33	29.5	3959.61	1815.78
Total		50	100	11165.5	112	100	4228.75	1906.33

Source: Field survey, 2008

Table 5.2 shows educational status of sampled household head and productivity of green leaf accordingly. It was found that largest portion of population in both study area were having literate up to secondary level. Within this category number of population was 84 which is 51.9 percent of the whole population. The small portion of illiterate population (9.9 percent) confirmed high literacy rate in study areas. In study area, there were 38.3 percent people in the SLC above category. But there seems to be different within category of education according to the study areas. Respondents from Jhapa district were found that relatively higher number than the Ilam belongs to above SLC category of educational status. It is mentioned in

Table 5.2 that for Jhapa district 58 percent people were above SLC category and in Ilam district it was 29.5 percent, about half of Jhapa district.

Educational status of garden owner can affect their management skill to manage the gardens well/bad. It may directly affect the productivity level of green leaves, because the educated persons relatively can understand the methods like tea farming nursery of tea plant, plantation, plucking, chemical fertilizer and pesticide application and others necessary works in field level within a short period of time and can handle these works in good way. So, it is assumed that the productivity of green leaves will be high with the increase in the educational status. In this study, it is also assumed that all other factors are constant, which can affect the productivity, only the educational status is taken into consideration which has affected the productivity.

Table 5.2 exhibits the productivity according to the farmer's educational status. The actual situation of productivity according to their educational status is different as was already assumed. It has been clearly shown in the table 5.2. There is no positive relationship between these two variables. Analysis of this situation is given follows:

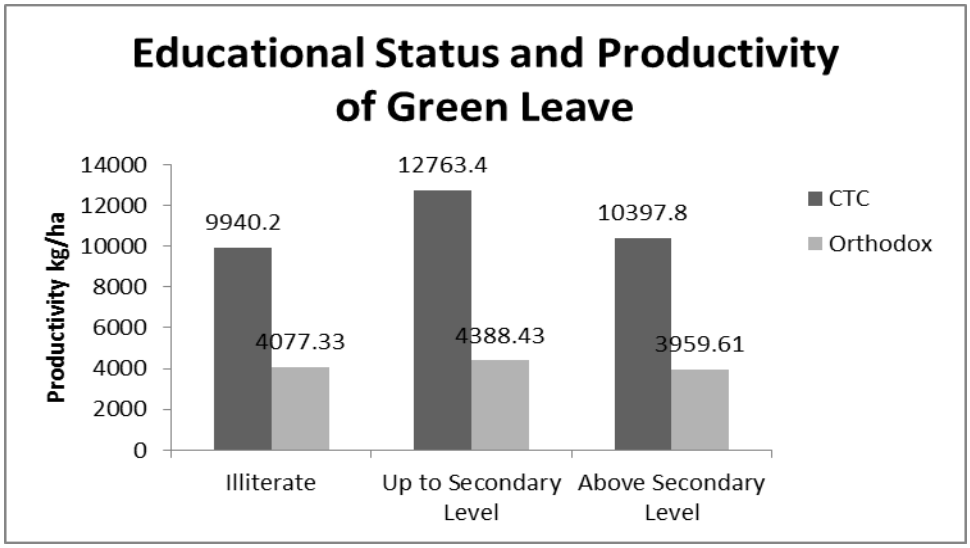
Due to high concentration in tea gardens of literate and up to secondary/SLC level category, their production is found high in both types of tea. Due to lack of full concentration on tea gardens of high educated people and involvement in different sectors' occupation too, their productivity level is found below than the up to secondary level category. Generally, it is believed that, illiterate people have low knowledge about tea farming in good way but it needs certain techniques rather than other food crops as a result productivity level of this category will be low than the literate ones. Regarding this, table 5.2 exhibits that productivity level is found lower than the ‘up to secondary level’ category for CTC type tea. But this is not true for the Orthodox type. This different situation in productivity is mainly due to the training taken by the illiterate framers belonging to Ilam district. After WTO, various groups of NGOs/INGOs and GOs are providing different training to them which has resulted relatively higher productivity compared to the SLC above level category.

Such type of different situation in productivity level for different educational category shows that there is no actual relationship between these variables. According

to this data, we can conclude that educational status of tea farmer is not major factor which can affect the productivity of green leaf.

To find out the association between the educational status and productivity, the statistical tool Gamma (G) has been used to measure the relationship between the variables. Using the Gamma (G) measures, result shows that there is negative relationship between educational level and green leaf productivity. The relationship is strong (G = -0.602) and significant for CTC, however this relationship is found very weak in the context of Orthodox (-0.073). This weak negative relationship between these variables is the effect that most of the respondents in orthodox tea area belong to small garden holders and more than 70 percent respondents were below SLC level. After the WTO membership they were trained by I/NGOs, GOs about WTO, international market and tea production. They are committed in orthodox tea production to compete in international market, whereas people with higher education, above SLC, have been engaged in other jobs rather than in tea production.

Figure No. 5.1



Source: Field survey, 2008

Figure 5.1 Illustrates the Productivityof green leaves according to their educational status.

5.2.3 Age of the Tea Bushes and Productivity

For the sake of this study, only those tea gardens are included whose age is 5 and above 5 years. Generally, it is experienced that 5 year old tea bushes are mature enough to bear the leaves. So aged 5 and above tea bushes have been called or named

as economic bushes. Age of the tea bushes are classified as follows for the sake of this study. Age of the tea plant and productivity of green leave is given in following table 5.3

Table No. 5.3

Age of the Tea Plant and Productivity

Type of Tea Plant	Age of the Tea Plant	Productivity Kg/ha	No	Percent	Std. Deviation (σ)
CTC	5-9 years	11818.56	27	54	3126.26
	10-14	11004.31	16	32	2223.78
	15 years and above	9014.71	7	14	4661.42
	Total	11165.46	50	100.0	3203.89
Orthodox	5-9 years	4554.81	27	24.1	2331.68
	10-14 years	4523.58	62	55.4	1765.52
	15 years and above	3051.22	23	20.5	1201.12
	Total	4428.75	112	100.0	1906.33
Total	5-9 years	8186.69	54	33.3	4571.78
	10-14 years	5852.96	78	48.2	3220.25
	15 and above years	4442.70	30	18.5	3488.70
	Total	6369.71	162	100.00	3995.12

Source: Field Survey, 2008.

Table 5.3 exhibits the productivity of green leaves, according to the age of tea plant and the type of tea. Most of the tea bushes of Nepal are young and very few gardens in Nepal are aged 30 years and more. Rapid plantation has started in Nepal after the declaration of eastern five districts as a 'tea zone'. One and half decade back price of green leaves was 35-40 Rs/kg for Orthodox tea and near about 20 Rs/kg for CTC green leaves. Afterwards farmers of these districts were very much motivated to the tea plantation, at the same time, government's supportive activities for them like establishment of NTCDB and announcement of National Tea Policy 2000, credit facility, interest subsidy etc have encouraged the farmers for tea plantation. As a result, many small holding farmers have started plantation. Classification of age of tea plant has been made available in this basis. In the study area, 48.2 percent respondents out of 162 found to have 10-14 years aged tea plant. Among them, 16 are from CTC and 62 are from Orthodox type tea. The green leave productivity of CTC aged 5-9 years is 11818.56 kg/ha which is shown in table 5.3

and is higher than other aged tea plant group. But not much more differences seen it from the aged 10-14 which productivity is 11004.3 kg/ha productivity of age group 15 and above years is 9014.71 kg/ha. This group is relatively older age than others, so their productivity has seemed as lower than younger ones. Average productivity of all aged groups is 11165.46 kg/ha for CTC type. After WTO membership farmers started new tea plantation, and most of the tea bushes are very young which give higher productivity with quality.

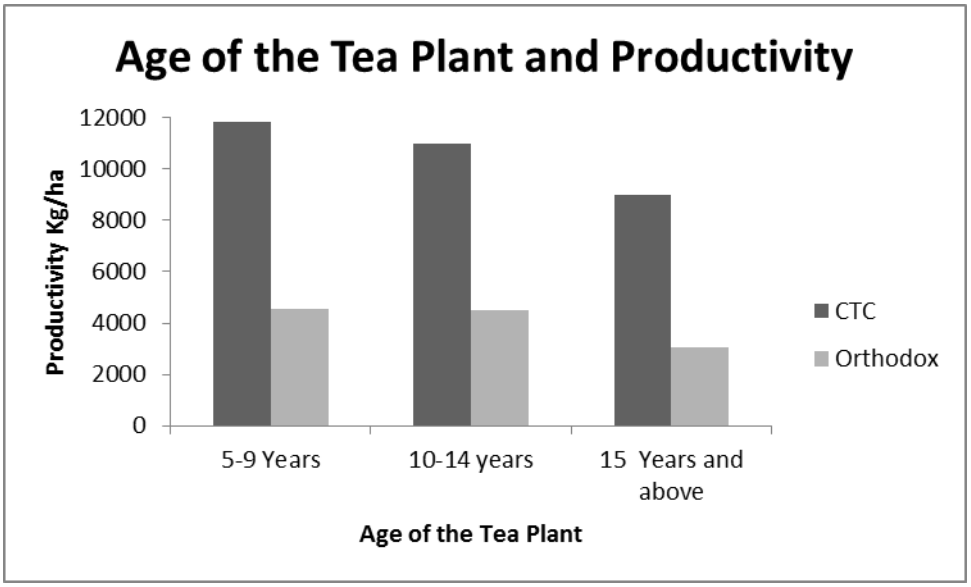
In the study area, 33.3 and 18.5 percent out of 162 respondents had tea bushes of aged five to nine years and 15 and above years respectively. The green leave productivity of Orthodox type aged 5-9 years was 4554.81 kg/ha, which is higher than others age groups. But there was no more difference seen in it. From the aged 10-14 years productivity was 4523.58. Productivity of aged 15 and above years was 3051.22 kg/ha, which seemed below the younger plant. Average productivity of all aged groups was 4228.75 kg/ha for Orthodox type tea. Average productivity of CTC type is 2.6 times higher than, that of Orthodox type. Due to the following differences between the two areas i.e. Ilam and Jhapa the first of which belongs to Hills and the other lies in Terai district, it means their elevation is different. Terai region (Jhapa) grows predominantly clone bushes and in hill region (Ilam) mainly seed varieties. Climate and soil differences, rainfall differences, sloppy land and surface land, application of chemical fertilizer/pesticide etc are differences, as a result, cumulative effect of these factors on productivity is the second differences for CTC type and Orthodox type tea.

Table 5.3 shows that productivity of green leaves decreases as the age of plant increases. Nepalese tea gardens are not beyond their economic age. Almost all tea gardens are within the prime or productive age. Although, green leaves productivity is lower for higher age group than the younger ones. However, the tea plants are planted in the tea field in the initial year of planting with all care and refinement of the horticultural operations, the death number of a tea plants over the years can not be ruled out. The vacant space arising out of the death of tea plants may lead to the crop loss year after year if the vacant space is not filled with tea plants subsequently. There must be chance of death of tea plants in older gardens than in young ones. Replanting in the vacant space in older gardens may lead to the loss in productivity. Present study

shows that there is negative relationship between the age of the tea plants and productivity of green leaves. Such inverse relationship between the age of the plant and productivity may not be single cause. There may be other reasons too. According to the farmers of the field they were more serious about their garden management to get high return from their investment. Majority of the small garden holder farmers were managing their gardens by themselves. Small holding sized tea gardens in the study area were found to have younger tea gardens. Full devotion in tea gardens of small holding farmer leads to have high level of productivity. Farmers belonging to old tea gardens were less serious about their gardens. It is due to the low price realization of green leaves. Most of the old age tea gardens in the study area were comprised in large sized holding. Based on observation, to take care of large sized and old aged bushes are more difficult than the small ones. We can conclude here from this analysis that older the tea bushes lower the productivity of green leaves is.

To find out the association between the age of the tea bushes and productivity, the statistical tool Gamma (G) has been used to measure the relationship between the variables. Productivity of green leaf is dependent variable, which depends on age of the tea bushes. Using the Gamma (G) measures, the result shows the negative relationship between these variables. The relationship between these two variables is strong (G = - 0.621) and significant for CTC type of tea, however this relationship is found weak in the context of Orthodox type tea, which is (-0.285) it is shown in Annex D and table B. After WTO membership old and new tea farmers developed new tea garden with young teas bushes which are yielding high productivity now.

Figure No. 5.2



Source: Field Survey, 2008.

Figure 5.2 shows the productivity of green leaves according to the age of tea bushes.

5.2.4 Land Holding Size and Productivity

There are numerous factors which affect the productivity of green leaves. Apart from climate and soil factor, the productivity may depend on educational status of tea garden owner, age of the tea bushes, investment on tea garden, size of the land holding (gardens) etc. In agricultural economics, the debate on the relationship between farm size and productivity is well known. Many economists have made valuable contributions in the field. But very little empirical study seems to have been made to see the relationship between farm size and productivity in the tea industry.

For the analysis of this study, researcher has chosen 'area' as the determinant of size. The 'area' denotes total area in hectares under tea cultivation aged 5 years and above of tea gardens. Here, the landholding size and productivity level has been examined by considering the productivity per hectare as the efficiency index. For the sake of this study landholding size has been classified in different three groups, named as less then 2 hectare, 2-5 hectares and above 5 hectares. Landholding size and productivity of green leaves is shown in the following table 5.4.

Table No. 5.4

Green Leaves Productivity According to Landholding Size

Type of Tea	Size of Land	No.	Productivity kg/ha	Std. Deviation
CTC	Less than 2 ha	15	13181.40	2614.89
	2-5 hectare	12	11030.56	2781.00
	Above 5 hectare	13	9921.11	3200.69
	Total	50	11165.51	3203.89
Orthodox	Less than 2 ha	91	4385.03	1893.86
	2-5 hectare	15	3302.53	1780.70
	Above 5 hectare	6	4174.00	2053.40
	Total	112	4228.75	1906.33

Source: Field Survey, 2008.

Table 5.4 shows that, there is decreasing tendency in productivity of green leaves, according to increasing pattern of landholding size for CTC type of tea. Those farmers, who belong to less than 2 hectare size (very small holding farmers) productivity is 13181.40 kg/has, which is higher than that of 2-5 hectares and above 5 hectares belonging farmers. For the 2-5 ha and above 5 ha landholding sized farmers their productivity is 11030.58 and 9921.09 kg/ha respectively. It indicates that there is negative relationship between the landholding size and green leaves productivity. Small holding farmers are very much efficient than the large ones. This may be caused by various factors. Small holding farmers have limited options for their livelihood, besides their land and other works, as a result their devotion on gardens is generally higher than the others resulting in high productivity than medium and large sized farmers or gardens/estates holders. Small size holding family can engage in their tea gardens with full time and they can serve to their tea bushes particularly, as a result, there may be good management and maintenance of gardens. Due to these all above mentioned reasons, productivity level of small holding is higher than the others.

But in the Orthodox type tea, there are some differences in the result. Productivity of less than 2 ha and 2-5 ha sized farmers is 4385.03 kg. and 3302.53 kg., respectively (table 5.4). It shows that there is inverse relationship between the productivity and their farm size. Increment in farm size leads to decrease in the productivity. This tendency is same with the CTC type tea. But for the above 5 ha size group, the productivity is 4174.00 kg/ha, which is higher than that of 2-5 ha holding

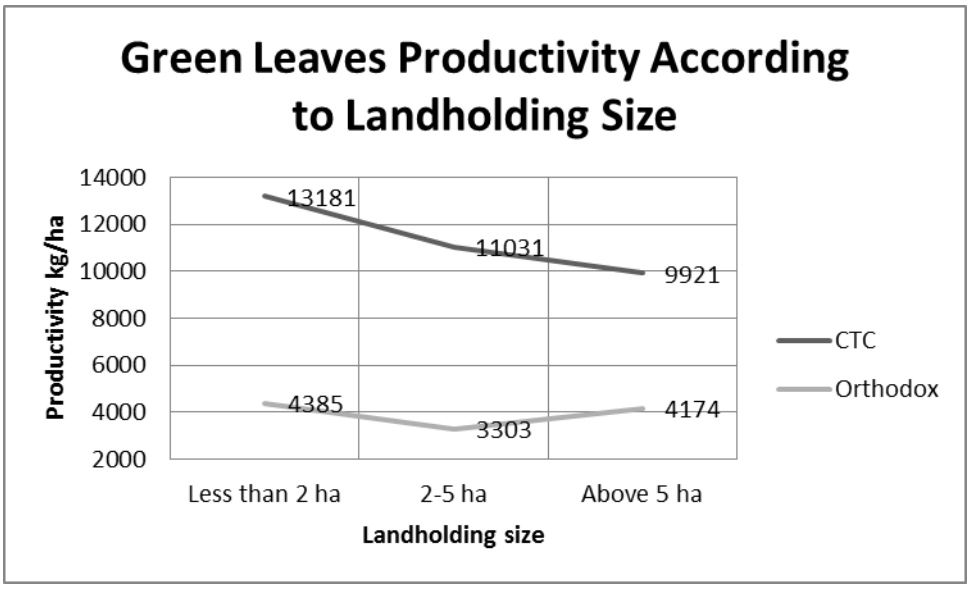
size. It is due to the setting of managerial staff to manage gardens efficiently. At the same time there was relatively higher application of fertilizer/pesticide, as a result productivity of green leaves is higher than that of 2-5 ha holding size. It seemed that managerial staff setting, to look after gardens are relatively weak in medium sized holding. From this study, we can conclude that size of the landholding can affect the productivity. Generally, it seems that higher the holding size it leads to have lower level of productivity. But in all cases it will not be true. The determining factors of productivity are not only the landholding size, there are other factors too. Another important fact is that there was a wide variation in productivity in different size. This suggests that the existence of some other factors apart from ownership and which may be responsible for variation of productivity amongst the tea gardens. In fact, the yield is the end product of a large variety of factors such as age of bushes, extent of technical efficiency achieved. Not all of these are common to all the units of any size. Relatively large tea gardens/estates had an entrance in the early years of establishment of tea plantation in Jhapa and Ilam and so most of the tea bushes in such gardens are relatively old. As a result, large gardens productivity of green leaves may be low than small ones. In an another side large tea estates normally enjoy some economics of scale like advantages of higher financial support, improved cultural practices including effective control measures, re-plantation of high yielding tea bushes after uprooting the old bushes and providing irrigation etc, which needs a huge investment (which) normally large estates, afford to do more effectively. This economics of scale help to promote the productivity level.

From the above discussion we can conclude that, size of the land is one of the affecting factors for the green leaf production. In the study area, it is observed that the large size tea gardens are less productive than the small ones. Here, association between these two variables is negative.

To find out the association between the land holding size and productivity, the statistic tool Gamma (G) has been used to measure the relationship between the variables using the Gamma (G) measure. Result shows that there is negative relationship between the land holding size and green leaf productivity. The relationship between these variables is strong (G = -0.788) and significant for CTC type. Major causes why it happened so are explained above. Beyond that, low or insufficient irrigation, fertilizer and inefficient

management are some important causes of decline in productivity. However, this relationship is found weak for Orthodox type, which is G = - 0.272 and it is shown in Annex F table B. This weak negative relationship is due to professional tea plantation. After WTO membership farmers were trained by various N/GOs and only a few farmers with large landholding size started professional and commercial production of tea. It caused increase in production but at a very low level relative to landholding size. Farmers with small landholding size started to apply new techniques, fertilizer/pesticide. They also managed irrigation and human resources too, and these all increased the productivity of the small tea garden.

Figure No. 5.3



Source: Field Survey, 2008.

Figure 5.3 Shows the productivity of green leaves accoring to landholding size by tea type.

5.2.5 Relationship between COP and Green Leaf Productivity

Productivity of green leaf depends upon different variables. It is affected by educational status of tea farmers, age of tea bushes, land holding size and cost of production on tea cultivation etc. Assuming the other variables are constant what is the relationship between the cost of production and productivity of green leaf is mentioned here. Generally, it is believed that, higher the investment on tea gardens, it gives the higher level of productivity. It means, there is positive relationship between these two variables. For the sake of this study costs are grouped as high and low in

comparison to average which are 8.67 and 14.38 Rs/kg (based on field survey data) for CTC and Orthodox type respectively. It is shown in the table 5.4.

To find out the association between the cost of production and the productivity the statistical tool Gamma (G) has been used to measure the relationship between these variables. Using the Gamma (G) measures, result shows that there is positive relationship between cost of production and the green leaf productivity. The relationship is found moderate (G = 0.571) however, the association is found significant for CTC (P value < 0.05), but this relationship is found weak in the context of Orthodox type which is 0.168 and it is not significant.

5.2.6 Green Leaf Price Trend

Price of green leaf is a major encouraging/discouraging factor for the tea farmers to be in the sector. It varies from factory to factory and is influenced by the number of market outlets as well as area distribution of the processing units. The leaf price variation mainly depends on seasons, leaf quality, quantity variation and variation as per area distribution of the factories.

The production of the first season which falls between the month of February to mid-May, which is called first flush leaf and its price is always higher than other flushes.

The green leaf price was Rs. 17.80 and 14.75 Rs/kg for the first flush to Orthodox and CTC type tea respectively. And for other seasons, it was an average of 10.78 Rs/kg and 7.50 Rs/kg to Orthodox and CTC type green leaf respectively. Average for all season was found 12.85 and 15.92 Rs/kg respectively for CTC and Orthodox tea type.

Price of green leaf does not differ only due to the seasons, standard of leaf is also the main cause of the price difference. If the farmers are maintaining the plucking standard (the quality ranking of plucking standards starts from (1) a bud only (2), one leaf and a bud, (3) two leaves and a bud followed by three leaves and a bud. Any thing above this is considered inferior quality of plucking- (DEVA, 2001, p. 36) they get higher prices than the coarse plucked leaf. The factories provide incentive of Rs. 1.00 per kg. of leaf plucked as one leaf. The price is lowered by as much as Rs. 2.00 per kg. if the plucking is coarser

than two leaf and a bud. The factories keep a separate and confidential dealing with such owners, who has large holding and considered as a potential supplier of green leaf. In most cases, big farmers receive Rs. 1 more than the average fixed for others. The brokers get Rs. 0.80-2.00 per kg. (Field data, 2008) margin in the procurement price and the selling price.

A large variation is noted in the prices of green leaf with the distribution pattern of the factories indicating market outlets for leaves. Also, until 1997, the price was strongly influenced by the offer of Indian buyers but with the establishment of more factories in Nepal and the restriction imposed by the Government of India to transfer the green leaf, the prices of leaf is now influenced by the Nepalese factories.

Table No. 5.5

Green Leaf Price Trend by Tea Type for the Year 1998/99-2007/08

		Year	Average Price Rs/Kg.
Tea Type	CTC	1998/99	14.67
		1999/00	16.31
		2000/01	12.57
		2001/02	9.71
		2002/03	8.30
		2003/04	8.06
		2004/05	8.93
		2005/06	9.68
		2006/07	10.55
		2007/08	12.85
	Orthodox	1998/99	33.36
		1999/00	33.40
		2000/01	26.74
		2001/02	21.50
		2002/03	18.15
		2003/04	15.87
		2004/05	14.78
		2005/06	13.65
		2006/07	14.09
		2007/08	15.92

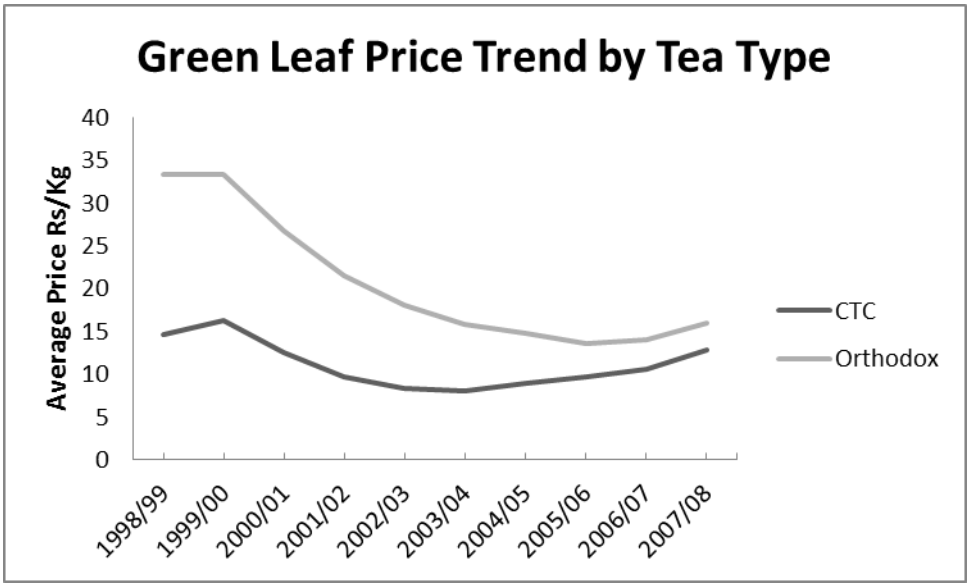
Source: Field Survey, 2008.

Table 5.5 shows the green leaf price trend for the year 1998/99 to 2008. In the year 1998/99 and 1999/2000, green leaf price was high at the rate of 14.67, 16.31 Rs/kg. for the CTC tea type and in the same years 33.36 and 33.40 Rs/kg for Orthodox

respectively. Afterwards, price of green leaf has declined drastically. If we look into the table 5.6, it seems to have started to increase slightly in both CTC and Orthodox area. As the field report data shows that out of 162 respondent 125 sold their green leaves to the processing firm. Only 23 percent tea farmers sold their leaves to the middlemen and others. Field data exhibits that selling on processing firm they were getting Rs. 0.80 to Rs. 2 per kg higher than the others for the Orthodox and CTC tea respectively.

Before the establishment of bought leaves factories (before 1991) almost all green leaves would be either formally or informally exported to India. It was estimated that about ten tea estates' factories of Darjeeling are involved in the green leaves supply from Nepal. The record obtained from informal sources in Darjeeling reveals that a substantial amount of tea was produced in Darjeeling from the green leaves purchased from Nepal. Green leaves transfer from Nepal to India, Darjeeling and Tarai Siliguri has been restricted formally since last 7-8 years. However, some tea planter/farmer adjoining the Indian boarders' tea factories sell their green leaves to them if they can get higher price than in Nepali site. Field report data shows that 21 out of 162 tea farmers sold their leaves to the Indian factories. 157 were found to have sold their leaves to the Nepalese factories. 5 tea gardens were not completely selling their leaves to the Nepalese factory. We can conclude here that, most of the green leaves were marketed in domestic market. In recent years, transfer of green leaves to India is very much low. The fluctuation in price trend is due to the ban imposed by India on green leaves export from Nepal after India got GI for Darjeeling tea according to WTO provisions. Gradual increase in tea price is due to establishment of new tea factory in Nepal.

Figure No. 5.4



Source: Field Survey, 2008.

Figure 5.4 shows the green leaf price trend by tea type.

5.2.7 Cost of Production (CoP) of Green Leaves

Cost component is the most important aspect of any farm. Profit/losses of any farm depend upon their cost of production on the one hand and their price of a unit of the product on the other. The agriculture output is a function of agricultural land, labour, capital and management. It is not possible to produce something without using these factors in the production process. For the production of tea, these all factors are used. But contribution of all the variables and fixed factors are not same. Land and labour are main factors for green leaves production. About 60 percent of total cost incurred in labour cost. Total cost and other cost of production of green leaves are given on the following table 5.6 and 5.7.

Table No. 5.6

Cost Component of Green Leaf by Tea Type CTC for the Year 2007-08

S.N.	Cost Component	Cost Rs/Kg	Percent
1.	Labour Cost	3.98	45.85
2.	Chemical Fertilizer	1.63	18.74
3.	Chemical Pesticide	1.14	13.19
4.	Organic Pesticide	0.04	0.47
5.	Traditional Fertilizer	0.77	8.90
6.	Others (Interest, tools, irrigation)	1.11	12.84
	Total	8.67	

Source: Field Survey, 2008.

Table No. 5.7

Cost Component of Green Leaf by Tea Type Orthodox for the Year 2007-08

S.N.	Cost Component	Cost Rs/Kg	Percent
1.	Labour Cost	9.06	63.11
2.	Chemical Fertilizer	0.74	5.13
3.	Chemical Pesticide	0.19	1.29
4.	Organic Pesticide	0.40	2.81
5.	Traditional Fertilizer	1.22	8.47
6.	Others (Interest, irrigation, tools)	2.75	19.19
	Total	14.36	

Source: Field Survey, 2008.

Table 5.6 and 5.7 show the production cost of green leaves by tea type CTC and Orthodox respectively. Total cost of production for CTC green leaves is found Rs. 8.67 per kg. Out of it, about 45.85 percent is found to be incurred in labour cost which is the major and most important cost component in tea plantation. Chemical fertilizer is another important contributor on production of green leaf in CTC sector followed by chemical pesticide which is 18.74 percent out of total cost i.e. 8.67 Rs/kg. Manure and chemical fertilizer varied amongst the VDCs and also amongst the farmers. The relatively higher rate of application seemed to be due to lower cost of fertilizer purchased and its availability in nearby Indian markets and also the demonstration effect of tea gardens in nearby India. Organic pesticide application is

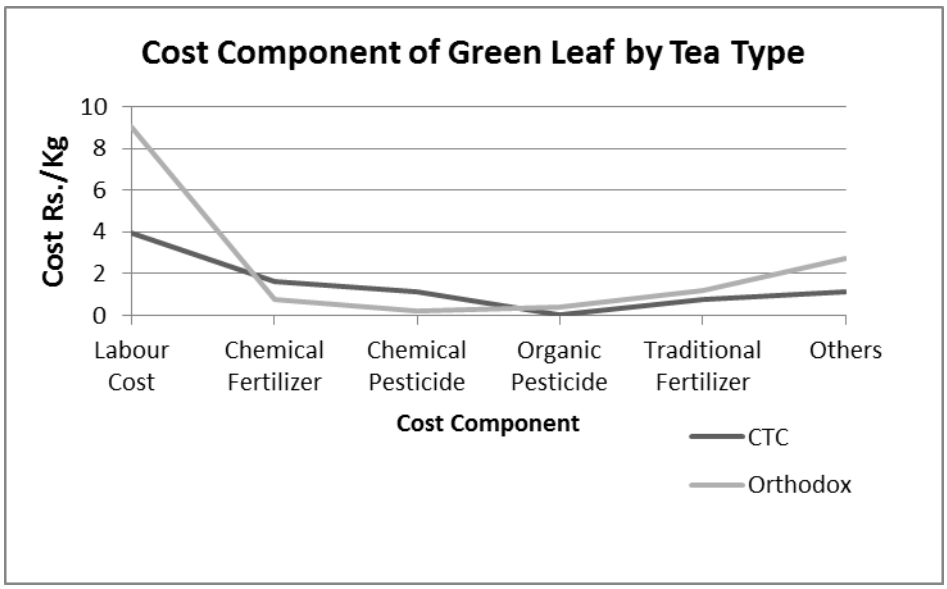
lower quantity in CTC area, which was just 0.04 Rs/kg used in this area. 4 out of 50 respondents were found to be using the organic pesticide for pest management in their tea gardens. It indicates that organic method of tea cultivation does not exist in the CTC area. They are mainly used the chemical pesticide/insecticide to control the pest and diseases in tea plant. Share of the traditional fertilizer/manure/animal dung is 8.9 percent in total cost of production of green leaf in CTC tea type production area. Irrigation, interest cost, tools like plucking bag, *kuto, kodalo* (spade) and other necessary tools for tea planting and purning are included in other cost of production which share is 12.84 percent in total cost of production of green leaf.

Table 5.7 exhibits that in Orthodox area i.e. Ilam district total cost of production of green leaf is Rs. 14.36 per kg. Labour cost is major cost component in tea cultivation. According to this study, about 64 percent of total cost is incurred on labour cost, which is higher than that of 46 percent of CTC type. Due to the relatively high application of chemical fertilizer and pesticide in CTC, the cost share on it is in high percentage. Plucking, pruning, garden management and other manual works are hard in Hill area than in Terai region. So, labour cost as well as other cost is high in hills than in Terai. WTO membership means the open access to international labour market. Many local labour at field level migrated to foreign countries which resulted to labour shortage. Basically the increase in labour cost increased cost of production.

Traditional fertilizer/animal dung and other (irrigation, interest, tools) cost are also important contributors of cost. Share of above mentioned factors are 8.47 and 19.19 percent respectively into the total cost. In Orthodox area chemical fertilizer and pesticide application is decreasing in recent years. 0.74 and 0.19 Rs/kg cost was incurred on chemical fertilizer and pesticide respectively which is just 5.13 and 1.29 percent respectively on the total cost of production. From the last five-seven years, tea farmers in Ilam district have experienced that using more chemical fertilizer and pesticide is not good for export potential product like tea. Orthodox tea mainly depends on export market. So, the farmers of Ilam district are much aware about organic product. After WTO membership, for their awareness NTCDB, HOTPA and others INGO/NGO like, SNV, GTZ etc. were playing role in organic production of tea, said farmers. To control the pest and diseases in tea plants, hill region tea planter are starting the application of organic and home made pesticide. In total cost, 2.81

percent contribution was of organic pesticide. Feeling on use of organic pesticides and fertilizer was increased amongst the tea farmers in Ilam district is going to be developed from the last 5 to 7 years towards the organic pesticide application. It indicates that application of non-organic pesticide is decreasing and organic pesticide application is increasing every year.

Figure No. 5.5



Source: Field Survey, 2008.

Figure 5.5 shows the cost component of green leaf by tea type.

5.2.8 Average Revenue of Green Leaves

Revenue is a selling price for per unit of the product. For the understanding of profitability/losses position of any farm, revenue is equally important as their cost. How much the tea farmers can get from the green leaves buyers is the revenue of the tea farm. For the calculation of average revenue, we must know about the productivity/quantity of green leaf and selling price of leaves in a unit. Calculated average revenue is shown in the table 5.8.

Table No. 5.8

Average Revenue of Green Leaves by Tea Type for the Year 2007/08

Tea Type	Average Revenue Rs/Kg
CTC	12.85
Orthodox	15.92

Source: Field Survey, 2008.

Table 5.8 shows that average revenue of green leaf production was found higher in Orthodox type than CTC type. But one important thing is that differences in their cost of production of CTC green leaf is higher than Orthodox. It indicates that gross margin is low for Orthodox tea in comparison to CTC type. Due to the low productivity and high cost of production as a result of profitability in Orthodox tea type is low.

5.2.9 Benefit-Cost Comparison of Green Leaves Production by Tea Type

Average cost and average revenue are calculated for profitability analysis of both type of tea i.e. CTC and Orthodox. Average Cost (AC) and Average Revenue (AR) of green leaves production in study areas are shown in following table 5.9.

Table No. 5.9

Average Cost and Revenue of Green Leaves by Tea Type for the Year 2007/08

Tea Type	Average Cost (AC) Rs/Kg.	Average Revenue (AR) Rs/Kg.	Differences AR-AC Rs/Kg.	B/C comparison
CTC	8.67	12.85	4.18	1.48
Orthodox	14.36	15.92	1.56	1.11

Source: Field Survey, 2008.

Table 5.9 exhibits that cost and revenue differences between CTC types are higher than Orthodox type. Farmers belonging to CTC area (Jhapa) district are getting gross profit as an amount 4.18 Rs/kg from the green leaves production. Whilst in Orthodox (Ilam) district farmers are getting less i.e. just 1.56 Rs/kg from the green leaf production. The benefit cost (B/C) comparison of CTC (1.48) was found higher than Orthodox tea (1.11) type. This indicates that CTC area's green leaf production is profitable than Orthodox area.

Relatively, cost of production of green leaves in Ilam district is higher and in comparison to cost price realization for Orthodox green leaf is relatively low. Due to this reason, gross profit from the Orthodox area is lower than the CTC type. Due to low productivity and low profitable position of tea farm in Orthodox area, tea farmers in Ilam district are not much more encouraged in their tea business from the last few years. Field study data shows that price of green leaf in Orthodox area was 33.35 and 33.40 respectively for the year 1998/99 and 1999/2000. Afterwards it has started to decline up to 2004/05 and it has slightly improved in 2005/06. Price decreasing trend in tea sector is hampering the overall development of tea sector.

5.2.10 Causes of Changes in Demand Pattern of Green Leaves

Both the area and production of tea in Nepal have increased over the last ten years. Due to this reason demand pattern of green leaf also changed over ten years. Field report data shows that 80 out of 162 respondents are found that the demand pattern of green leaf has been changed. Main causes of changes in demand pattern are increasing of processing factory which is found 42.5 percent and changes in demand pattern of organic green leaf is explained by 35 percent respondents out of 80 who responded. Seasonality factors also play important role to affect the demand pattern of green leaves. At the time of first flush, demand and price of leave are higher than in the other seasons. 17.5 percent respondents were said that first flush leave is more demanded than others, due to their quality and low moisture content. Causes of changes in demand pattern of green leaves are shown in table 5.10.

Table No. 5.10

Causes of Changes in Demand Pattern of Green Leaves

S.N.	Causes	No.	Percent
1.	Increases of processing factory	34	42.5
2.	Organic leaf demand	28	35.0
3.	Seasons/Flush	14	17.5
4.	Others	4	5.0
	Total	80	100.0

Source: Field Survey, 2008.

During focused group discussion it was reported that number of tea processing factories was increasing every year because the demand pattern of green leaves was also increasing.

5.2.11 Factors for Better Production of Green Leaves

Better production of green leaves depends upon so many factors, such as government policy, better market, better climate, price of green leaf, availability of inputs and so on. Respondents' answer about it with ranking and scaling on the factors are given in following Table 5.11.

Table No. 5.11

Factors for Better Production of Green Leaves

S.N.	Factors	Rank										No Response		Total No	Percent
		5		4		3		2		1					
		No	%	No	%	No	%	No	%	No	%	No	%	No	
1.	Government policy	89	54.9	49	30.2	7	4.3	2	1.2	3	1.9	12	7.4	162	100
2.	Better climate	79	48.8	69	42.6	3	1.9	3	1.9	3	1.9	5	3.1	162	100
3.	Market	66	40.7	76	46.9	8	4.9	3	1.9	4	2.5	5	3.1	162	100
4.	Price	20	12.3	72	44.4	19	11.7	1	0.6	3	1.9	47	29.0	162	100
5.	Demand	13	8.0	73	45.1	37	22.8	4	2.5	2	1.2	33	20.3	162	100
6.	Availability of inputs	12	7.4	47	29.0	88	54.3	5	3.1	2	1.2	8	4.9	162	100
7.	Credit facility	10	6.2	26	16.0	92	56.8	19	11.7	3	1.9	12	7.4	162	100
8.	Role of WTO	17	10.5	11	6.8	8	4.9	48	29.6	56	34.6	22	13.6	162	100
9.	Others	2	1.2	11	6.8	1	0.6	1	0.6	1	0.6	146	90.1	162	100

Source: Field Survey, 2008.

Field report data show that the government policy on tea sector is the most important factor for better production. Out of 162 sampled respondents, 54.9 percent responded for better production of leaves. The government programme/policy and incentive given to the farmers are the important factors followed by better climate and market availability. Out of total sampled respondents, 48.8 and 40.7 percent respectively said better climate and availability of market are next important factors for better production of green leaves. Just 10.5 percent farmers gave first rank to the role of WTO in better production. However, they do not know exactly about WTO. For the better production demand of tea, availability of inputs and credit facility are the other important factors.

Discussion among participants of focused group discussion also indicated that government role, market, price, agricultural inputs could be the important factors for better production of green leaves.

5.3 Impact of WTO on Demand Pattern, Employment Creation and Knowledge on WTO

This sub-section deals with some aspects like changes in demand pattern of green leaves, employment creation and level of knowledge of WTO after the accession into WTO.

5.3.1 Changes in Demand Pattern of Green Leaves after the Accession to WTO

Market nature and contact with international market have direct bearing on demand pattern. International trade organizations influence the demand pattern. WTO is one of the organizations that influences demand pattern. The condition in demand pattern of green leaves according to the tea farmers are shown in table 5.12.

Table No. 5.12

Changes in Demand Pattern of Green Leaves After the Accession in WTO

S.N.	Condition of Change	Number	Percentage	Responses Percent
1.	Changing noticed	5	3.1	13.2
2.	No changing	25	15.4	65.8
3.	Little change	8	4.9	21.1
		38	23.5	100
4.	No answered	124	76.5	

	Total	162	100	

Source: Field Survey, 2008.

Table 5.12 exhibits that 124 out of 162 respondents did not answer any thing. Just 23.5 percent respondents answered the question. Out of total respondents, 65.8 percent respondents were found that they did not notice any change in demand pattern of green leaf after the accession to WTO. Similarly, 13.2 percent out of 38 respondents noticed change in demand pattern of green leaf after the entry into the WTO. Next 21.1 percent out of 38 respondents felt a slightly change in demand pattern.

Out of 13, 53.8 percent respondents said that organically produced green leaf is in bigger demand than the others. 30.79 percent tea farmers said that farmers who are engaged in the tea cultivation were motivated to produce green leaf under the Code of Conduct (CoC) of HOTPA. According to 15.38 percent respondent expressed that MRL applied green leaf was more demanded. It indicates that very few farmers were aware about the WTO impact on green leaf demand. Most of them focused on organic green leaf as it was highly demanded. It can be concluded here that, if we want to participate in world market, production method of green leaf should be organic. This is an implication of WTO on green leaf production and more demanding pattern of organically produced green leaf.

5.3.2 Employment Creation in Tea Sector of Nepal

Nepal has a pre-dominantly rural population similar to other Asian neighbors. About 30,000 family units and more than 40,000 labour forces, with a majority of the workforce being women, are involved in the sector (ITC, 2007). Both the total area and production of tea in Nepal have increased tremendously over the last few years. So, in the tea sector, employment opportunities have also been increasing.

In this study, respondents were asked whether the impact of WTO on employment creation was positive or negative. The responses found in field or study area are given in table 5.13.

Table No. 5.13

Impact of WTO on Employment Creation

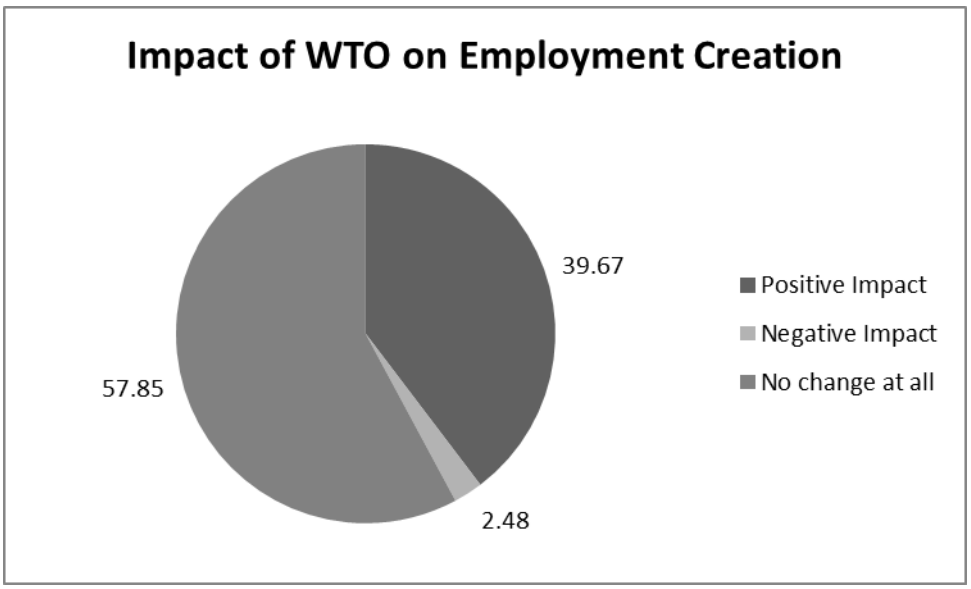
S.N.	Impact Experiences	Number	Percentage	Responses Percent
1.	Positive Impact	48	29.63	39.67
2.	Negative Impact	3	1.85	2.48
3.	No Change at all	70	43.21	57.85
	Total	121		100.00
4.	No Response	41	25.31	
	Total	162		

Source: Field Survey, 2008.

Table 5.13 shows that 39.67 percent out of 121 respondents said that after Nepal's accession in WTO, its impact on tea sector employment creation has been positive. Likewise 2.48 percent respondents said its impact on tea sector is negative and 57.85 percent respondents said no change at all in employment creation after the accession in WTO of Nepal.

Those respondents who answered as positive impact of WTO on tea sector mainly due to the extension of their farm size and at the same time some tea planters were adding the technical manpower for good agricultural practices which created some new jobs on the tea sector. Three respondents out of one hundred sixty two were found to have said that impact of WTO on employment creation is negative. Mainly, due to the decline pattern of green leaves price tea planter/farmers were not devoted on tea garden management in a good manner. Result of this situation is negative on tea sector employment. 70 respondents out of 162 found their experiences of WTO impact on employment as having no change at all. According to them, decreasing price and increasing cost of production is the main cause of constant level of employment. As a result, farmers are not encouraged to extension of their farm size, although there is potentiality of extension. However they have additional land to plantation of tea. Therefore, employment on tea sector is not changed. We can conclude that job creation on tea sector is possible if green leaf price trend is up warded or reasonable price gets according to their cost of production will be paid to the farmers.

Figure No. 5.6



Source: Field Survey, 2008.

Figure 5.6 shows the impact of WTO on employment creation. Most of the participants of focus group discussion have argued that after the WTO membership too there was no new opportunity for employment.

5.3.3 Knowledge about the WTO Agreement

Agreement on Agriculture (AoA), Sanitary Phyto Sanitary (SPS) measures, Technical Barriers on Trade (TBT) and Trade Related Intellectual Property Rights (TRIPs) are more concerned agreements of WTO for Nepalese agriculture. In this regard, to find whether these agreements were affecting or not in tea sector of Nepal and at the same time, what is the understanding level of the tea planter/farmer on the above mentioned agreement, is the concerning aspect of this study. Known/unknown respondents about the WTO agreement are as follows in study area:

Table No. 5.14

Knowledge about the WTO Agreement

Understanding Position	Number	Percent	Known Respondents			
			S.N.	Application of WTO Agreement	No	Percent
Known	19	11.70	1.	Tea plantation with MRL application	15	78.9
Unknown	143	88.30	2.	SPS measures/food safety measures	4	21.1

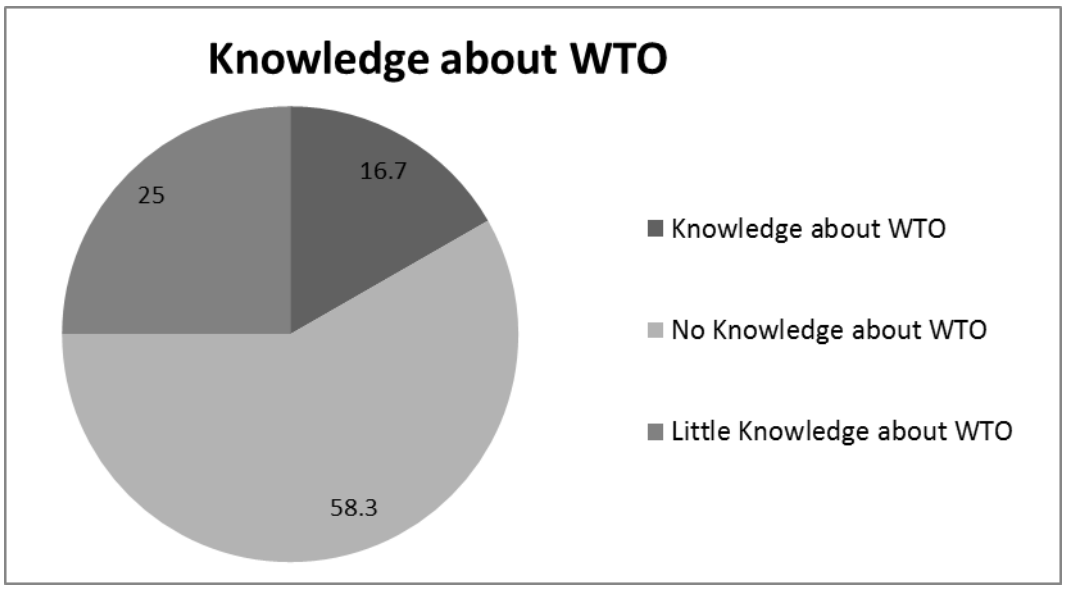
Total	162	100.00				

Source: Field Survey, 2008.

Table 5.14 shows that 19 out of 162 respondents were found to have said that they were familiar about the WTO agreement like, AoA, SPS and others. Those who belonged to higher education status were simply literate about the WTO and its agreements. Majority of the farmers were not able to understand the WTO and its agreements. Out of 162 respondents 88.3 percent were found that they were uninformed about the WTO and its agreements.

Among the informed respondents, 78.9 percent were found to follow the WTO and its agreements as MRL implementation in tea cultivation. It indicates that use of pesticide/insecticide should be at minimum level as prescribed. The tea farmers mainly belonged to Ilam district, were found to have decreasing tendency in application of chemical fertilizer and pesticide/insecticide. These farmers are inclined towards the organic tea farming which is more demanded in world market especially in the developed world. 21.1 percent respondents said that for the implementation of sanitary and Phyto-Sanitary (SPS) measures of WTO, they were conscious about the food product which should be safe for human consumption.

Figure No. 5.7



Source: Field Survey, 2008.

Figure 5.7 shows the knowledge about the WTO.

5.4 Present Condition and Support Needed

5.4.1 Transportation Condition and Cost

Transportation is the most important infrastructure to develop the tea sector. But most of the green leaf farmers are located in areas, where infrastructure is poor. Although, they are able to produce the leaves in quantities, method of transportation, such as an animal back, bicycles which are unsatisfactory because of they cause damage to the leaves in transit. Access to the farmer's premises quickly with suitable vehicles should be made available. After the plucking of green leaf, generally, with base of quality concern it should be brought at the factory premises within 3 hours. So, the transportation facility and means of transportation is vital concern in quality aspect of tea. Data on road condition, distance, means and cost of transportation is given in following table 5.15.

Table No. 5.15

Road Condition, Distance, Means and Cost of Production

Distance						Means of Transportation								Road Condition					
Km from Green Leaf Production Area to the Market						Riksha Van		Horse		Man		Tractor, Jeep, Truck		Black Toped		Graveled		Fare-Weath	
<3		>3 <6		>6															
No	%	No	%	No	%	No	%	No	%	No	%	No	%	No	%	No	%	No	%
56	37.3	61	40.7	33	22.0	15	9.9	39	25.7	34	22.4	64	42.1	57	38.8	34	23.1	56	38

Source: Field Survey, 2008

Green leaves producers are large, scattered and are in varied scale of production. In Jhapa district, accessibility of motorable road is relatively higher than in Ilam. Due to the hill area there is low development of motorable road, hence; Ilam is not as accessible as Jhapa district. Due to lack of year-round motorable road, transportation of green leaves to other area has become difficult. Table 5.15 shows that 40.7 percent tea planters (farmers) in study area distance were >3 <6 km from the market area of green leaves and 22 percent farmers were found more than 6 km away from their green leaves production field to the market/processing factory. 37.3 percent were found around market centre with in less than 3 km. Such type of information is needed to understand the quality of green leaves and at the same time, it gives information how much transportation cost incurred on green leaves production. If farmer's field is in the long distance from the factory, plucked green leaves can't be delivered at the reasonable time that results in the damage of leaves quality.

Means of transportation is another important aspect of maintaining the tea quality. Unsatisfactory means of transportation, like an animal back, bicycles, can damage the leaves in transit. Field survey data indicates that 42.1 percent respondents were focused to use Jeep, Truck and Tractor. These means were generally used in both tea cultivated area. Rickshaw van is another means of transportation of green leaf which is mostly used by small farmers in Jhapa district. 9.9 percent farmers were found to be using the Rickshaw van. Horse and men are also used as a means of transportation for carrying green leaves. Men are generally used for carrying the green leaves in the area where processing factory is near enough from tea plantation area. Field report data shows that 22.4 percent tea planters were found to have used men as a means of transportation of green leaf. 25.7 percent respondents were found to have used the horseback carrying the green leaf. It is mostly used by the farmers who are far from the factory premises in Ilam district. Most of the tea planters are not using the satisfactory and recommended bags and vehicles which is needed to maintain the quality of leaves.

Road condition here has been classified into three categories. They are black topped, graveled and fair weather. Black topped, graveled and fair weather road are 38.8, 23.1 and 38.1 percent respectively. It indicates that near about two-third part of the road is

not well. Low grade road increases the cost of transportation and length of delivery of green leaf into the factory premises and quality green leaf can deteriorate.

Cost of transportation of green leaves in the study area is classified into the three groups. One is the category of less than Re 1/kg. Within this group 78.4 percent respondents were found. Second classification was >1 <2 Rs/kg and third was <2 Rs/kg. 18.9 and 2.9 percent respondents were found as second and third classification respectively.

5.4.2 Credit Facility/Taken From

Proper investment is needed to the development of the tea sector. For it financial position of tea planter should be managed in whatever the way, may be possible either from bank/financial institutions or by himself. Tea planting in Nepal is small and mainly small land holder's are engaged in this sector. So, there is no need of large amount credit. However, small amount is needed to start tea cultivation and maintain the gardens. Tea cultivation has been financed largely from the resources of the households themselves. Everyone hasn't taken loan, and even those who have borrowed loan from the bank, have not been always and exclusively using the fund for meeting expenditure related to tea plantation. Tea farmers would like to take loan from the bank only because of the low interest rate than that of local money lenders. But taking loan from Bank has not been attractive because of the difficulties in the process and prompt sanction. Several households felt that there was need of soft loan for expansion of tea cultivation. They also express that the process should be simple. Field report data exhibit that out of 162 respondents 64.8 percent respondents had taken loan from the different sources, which is shown in table 5.16.

Table No. 5.16

Sources of Credit Acquisition

S.N.	Sources	Number	Percentage	Responded Percentage
1.	Commercial Bank	6	3.7	5.0
2.	ADB/N	72	44.4	59.5
3.	Financial/Institution	4	2.5	3.3
4.	Co-operatives	23	14.2	19.2
5.	Local Money Lender	16	9.9	13.2
6.	No Response	41	25.3	100.00
7.	Total	162	100.00	

Source: Field Survey, 2008.

Table 5.16 exhibits that amongst the respondents 59.5 percent farmers took loan from the Agriculture Development Bank of Nepal followed by co-operatives and local money lender. Very few farmers took credit from commercial banks and financial institutions. Data indicate that ADB/N is a major source of credit for the tea planter. Co-operative organizations and local money lender were 2nd and 3rd sources of credit for the tea planter in study area. But 41 respondents out of 162 did not response about any sources of credit. It means that they were managing financial aspect by themselves.

5.4.3 Auction Market

Nepal has a dual manufacturing base. It produces both CTC and Orthodox type of tea. Nepal's tea production is minimal in comparison to global market. The volume of production is 0.48 percent and currently exported volume is around 0.56 percent, out of total global output (ITC, Statistics, 2010). So, establishment of global auction market in Nepal has low potentiality.

Auction market is necessary factor for giving encouragement to the production/distribution of tea. Roughly 70 percent of global tea production is traded at auction (ITC, 2007). The rest is effectuated through private sales. Nowadays, the main centres are in India (Kolkata and Kochi), Sri Lanka (Colombo) and Kenya (Mombassa). The latter is also the auction centre for many other African tea

producing countries. Some other important tea-producing countries, such as China, Argentina and Turkey, do not have an auction system. However for Nepal, according to field report data 142 out of 162 respondents said that auction market is necessary factor for tea trade. Transparency of price, knowledge about the international tea market and price according to quality and grade are the main benefits of auction market. 58.6 percent respondents answered as price fixation and transparencies in price fixing were the benefit of auction. So, it is needed in Nepal as well.

Although all of 12 respondents, from tea processing factories, both CTC and Orthodox type tea producers, feel need of auction market. But one respondent from CTC type said that Nepal's production of tea was very limited in quantity so its establishment and good operation was very difficult. "With full cooperation and support from the government it can be run" he said.

All of the respondents from exporters have said that auction market is necessary to enhance the tea market. According to the respondents who were surveyed in concern with auction market said that it is beneficial for the price fixation according to quality/grade, price transparency, communication with local buyers and price competition. This fact was further proved by the participants of focus group discussion as well.

5.4.4 Information Access on International Market

Tea is a processed agricultural product, which is traded in the world market. For this reason, it will be better to know about the overall situation of tea globally, like production and consumption situation, tea producing countries, prices of leave and made tea, auction market etc. not only for tea processing factory and exporters but also for tea farmers. International tea market information accesses through different media are shown in following table 5.17. Field report data show that 72.8 percent tea planters were found to have no access to international market. 25.3 percent out of 162 respondents were found to have access of information about international tea market through Radio, TV, Newspaper but just 1.9 percent respondents have access information through personal link by Telephone and Internet.

Table No. 5.17

International Tea Market Information Access through Different Media

Media Access	Number	Percent
Radio, TV, Newspaper	41	25.3
Telephone/Internet	3	1.9
No media access	118	72.8
Total	162	100.00

Source: Field Survey, 2008.

5.5 Competitiveness and Quality of Nepalese Tea

5.5.1 Factors for Quality Production of Green Leaves

Quality of green leaves is one of the most important determinants of made tea quality. All factories prefer leaves, standard of high quality, if farmers maintain standard while plucking green leaves it will be of high quality. Adherence to good agricultural practices (GAP) is very essential for maintaining the qualitative standard of leaf. Farmers working under the CoC (Code of Conduct) rules and regulations seem to adhere to them in the use of chemicals and periods of applications; but the quality of the plucking is done in a haphazard manner; unsuitable coarse leaves are also included in their deliveries to the factories. Good plucking, use of skilled labour, good climate, appropriate age of the plant and organic method of the tea production are the main factors to determine the quality of green leaf. Ranking of the factors for quality production of green leaves is given in table 5.18.

Table No. 5.18

Ranking of the Factors

S.N.	Factors	Rank										Total No	%
		5		4		3		2		1			
		No	%	No	%	No	%	No	%	No	%		
1.	Skill labour	98	60.4	52	32.0	11	7.0	1	0.6	-	-	162	100
2.	Climate	76	46.9	74	45.7	8	4.9	4	2.4	-	-	162	100
3.	Age of plant	13	8.0	105	64.9	43	26.5	-	-	1	6	162	100
4.	Use of chemical fertilizer	-	-	1	0.6	23	14.2	107	66.0	31	19.1	162	100
5.	Use of C. pesticide	-	-	2	1.2	7	4.3	17	10.5	136	84.0	162	100
6.	Use of Organic method	27	16.7	112	69.1	18	11.1	4	2.5	1	0.6	162	100
7.	Good plucking	92	56.8	59	36.4	8	4.9	2	1.2	1	0.6	162	100

Source: Field Survey, 2008.

Table 5.18 exhibits that skilled labour, good plucking and good climatic condition are the major determinants of quality of tea leaves. Various activities are involved in tea farming, nursery bed preparation, nursery planting, digging, irrigation, purning and plucking are the main activities in tea farming. To take more productivity with quality, there will be the need of skilled labour. Taken into consideration of it, majority of the tea farmers i.e. 60.4 percent out of 162 respondents said skilled labour is the main factor for quality production of green leaf. In scaling 60.4 percent and 32 percent out of 162 respondents were given top value for skilled labour as the most important factor for quality production which were the top first and second in scale.

Good plucking is another important factor for quality production of green leaf. In ranking 56.8 percent out of 162 respondents found that good plucking condition get five scale which is the best among the others below scale of five. 36.4 percent respondents were given four scale which is the top second in present study to good plucking condition for quality production of green leaf. Generally, it is believed that two leaf and a bud picking is the good plucking. More than two leave and a bud is called coarse leaf. At the time of plucking picker should be conscious about the maintenance of quality leaf. So, majority i.e. 93.2 percent respondents gave top 1st and

2nd rank which was five and four scale for the quality production of green leaf as a good plucking.

Age of the tea bushes is another most important factor for quality and quantity production of green leaf. The tea bushes take 3 years to 6 years from the time of its planting in Terai and Hills respectively, to yield tea leaves for manufacturing made tea. The general impression amongst experienced planters at present, is that the upper limit of economic age of the tea bush is fifty years (Dwibedi, 1999). Most of the farmers' feeling is that young tea bushes can give quality leaf as compared to the old ones. So, majority of the tea planter i.e. 72.9 percent out of 162 found that quality of green leaf depends upon age of the plant. For this, they are scaling it as five and four rank which were the top first and second in present study.

Chemical fertilizer/pesticide application in tea farming is less important according to the farmers. For using the chemical fertilizer 66 percent out of 162 respondents gave just two scale which is the 2nd last important ranking in present study. 19.1 percent respondents were given one scale in rank, which is the last. Likewise, for using the chemical pesticide 84 percent out of total surveyed respondents said that it is less important for organic quality leaf production which is more demanded in global market. So, its scale is one, which is last in ranking. It indicates that farmers are moving towards the organic method of tea farming. Mainly this situation seems to be effective in hill area of tea production.

Quality of green leaves was the key concern for quality tea at international market which in fact induces demand. Participants of focused group discussion emphasizes on the production of quality green leaves to hold a good export position at international market with high price rate.

5.5.2 Green Leaves Plucking as a Quality Concern

Plucking style of green leaves can affect the quality of tea. Generally, it is accepted that for the quality of tea two leaves and one bud plucking is better than the three, four and more leaves and a bud. The quality of black tea is highly depended on the regularity of harvesting; the number of top young leaves harvested and the mode of harvesting/plucking, the care with which the green leaves are picked. Harvesting

only the two leaves and a bud produces the best quality tea (Kinyili, 2003:10). More days interval of plucking generally i.e. 7-10 days more is not suitable for plucking as a quality concern of tea. So, the quality standard of leaves depends upon plucking round and how much leaves picker pluck from the tea bushes. Green leaves plucking style is shown in following table 5.19.

Table No. 5.19

Green Leaves Plucking Style

Plucking Style	Frequency	Percent
Two leaves one bud	24	14.8
Three leaves one bud	47	29.0
Four leaves one bud	57	35.2
Five and more leaves and a bud	10	6.2
Not answered	24	14.8
Total	162	100.00

Source: Field Survey, 2008.

Table 5.19 exhibits that out of 162 respondents 35.2 found to pluck of four leaves and a bud followed by three leaves a bud at a 29.0 percent. 14.8 percent farmers/plucker picked two leaves and a bud. Generally, two/three leaves and a bud with suitable plucking round called as a standard leaves. Five and more leaves with a bud is not quality leaves. 6.2 percent respondents were found in this category such type of plucking is called coarse plucking and using the coarse leaves deteriotes the quality of tea. 14.8 percent respondents did not answer about the plucking condition of them.

5.5.3 Factors for Competitiveness of Nepalese Tea than Indian Tea

India is listed as the world's leading producer, producing 944 million kilograms of tea and also the world's largest consumer, consuming 786 million kilograms of tea in 2007 (SOMO, 2008). From the global perspective, Nepal is still one of the smallest players representing 0.48 of a global production (ITC, 2010). Its production is just eight million kilograms in 2005 (ITC, 2007). Being a neighbour and main trading partner Nepal's tea trade may be affected by Indian tea market and their

position. Some factors which are concerned with competitiveness of Nepalese tea with Indian tea are discussed.

Table No. 5.20

Factors for Competitiveness of Nepalese than Indian Tea

S.N.	Factors	Number	Percent
1.	Youngness of the tea bushes	125	77.60
2.	Virgin soil	91	56.17
3.	Low use of chemical fertilizer/pesticide	85	52.42
4.	Good tips	71	43.83
5.	Clone variety	53	32.70
6.	Good climate with pure air and water	42	26.00
7.	Good flavor	26	16.00
8.	Organic method of production	13	8.00

Source: Field Survey, 2008.

The factors which are mentioned in table 5.20 are basically concerned with quality of tea. In this ground, how Nepalese tea is more competitive than Indian tea is discussed. Quality of tea basically depends upon green leaves quality. And it depends on good agricultural practices and method of production (tea cultivation). In some ground, Nepalese tea leaves are qualitative as a result made tea of Nepal is qualitative with some competitive strength than Indian tea. Commercial cultivation of tea started in Nepal about 30 years ago. An average age of the tea bushes was about 12 years according to surveyed sample. In Indian history of commercial cultivation of tea, it is more than 100 years. There are so many tea gardens where tea bushes are aged 100 years and above. Quality and productivity of tea will be affected by its age. Field study data shows that youngness of tea bushes is the most important factors for competitiveness of Nepalese tea than that of Indian tea. Among all 162 respondents, 125 tea planters said that youngness of the tea bushes of Nepalese tea is competitive factor to compare with Indian tea. Most of the land which is used for planting the tea is new/virgin than Indian tea planting land. In virgin soil quality and quantity production will be high according to the respondent farmers. 56.12 percent tea farmers were found to have said the virgin soil of Nepal is the strong aspect of Nepalese tea. Consumers of the developed world are conscious about the organic product. To take global market their product should be organic. The low use of chemical fertilizer and pesticide/insecticide in tea bushes is better. In study area 52.47

percent out of total surveyed respondents said that the chemical fertilizer and pesticide at the low level compared with that of India. Sometimes large amounts of pesticides are used to control pests. For example, crop loss is 14 to 50 percent in extreme cases in India. To combat pest attacks in this country a huge quantity of pesticides finds its way to the industry and this had led to indiscriminate use instead of integrated pest management (SOMO, 2008). Data available in the study on tea board of India shows that cost of production of green leaf of small growers for fertilizers and pesticide in Assam and West Bengal is 2.78 NRs./kg and 3.40 NRs/kg and it is higher as compared to Nepalese tea sector. Field report data shows that all type of fertilizer i.e. chemical and animal dung/manure and organic and non-organic pesticide/insecticide cost on these component was 2.59 Rs/kg and 3.19 Rs/kg for Orthodox and CTC type tea respectively. Chemical fertilizer and pesticide are imported mainly from India and its price is high in Nepal than India. Such type of situation exists in Nepal, although cost on fertilizer/pesticide is low than India. Nowadays, low use of chemical fertilizer/pesticide/insecticide in tea plant has been experienced as quality leaves globally due to their consciousness on health. It indicates that use of chemical fertilizer/pesticide on tea in Nepal is lower than in India. In this ground, Nepalese tea is competitive than Indian tea.

Good tips and cloned variety of tea bushes are also competitive strength of Nepalese tea than India. 43.83 and 32.70 percent plantation owner respectively said that Nepalese tea is competitive than Indian tea in these ground. According to tea planter/farmers, good climate with pure air and water, good flavour and increasing practices of organic method of tea cultivation are the others causes of competitiveness of Nepalese tea are 26.0, 16.0 and 8.0 percent respectively. Tea planters were found to have said that above mentioned causes was the competitive strength of Nepalese tea than Indian tea. According to the key informants Nepalese tea has some competitive strength than Indian tea. Regarding this, mainly they focused on youngness of the tea bushes, low use of chemical fertilizer and pesticide, clone variety of bushes and good climate with pure air and water are the strength of Nepalese tea than Indian. Information from focused group discussion was also supportive to it.

Thus Nepal's good position in competitiveness of tea is because of mainly two reasons. One is young bushes planed very lately when farmers were inspired due to Nepal's

membership into WTO. Another factor is low level practice of chemical fertilizer when compared to India for organic production to compete in international market.

The issue of competitiveness of tea was discussed in deep among member of focused group discussion. The participants of the discussion highlighted on the young tea bushes, virgin soil and use of low level of chemical fertilizer and pesticides were the responsible factors for increased competitiveness of Nepalese tea and Indian tea.

5.5.4 Organic Certification

Tea is a high value export potential crop. If one wants to compete in the international market, growers, processor and exporter are expected to meet internationally accepted standards that have been set, or are being introduced, like radiation levels, pesticide maximum levels, heavy metal content. Buyers increasingly ask for a pesticide MRL certificate, a regulation imposed by many importing countries. There is neither laboratory equipped to carry out all these required tests nor there is any accredited international survey company available in the country. Due to this, sample has to be sent to India or other foreign laboratories, which is costly and time consuming. Within this context, adherence to good agricultural practices (GAP) and good manufacturing practices (GMP) are essential and the code of conduct drawn up by the tea alliance is a step in the right direction to achieve this goal. After WTO accession awareness of people on SPS measures, including at least organic production (for food safety) of tea has been increased. Similarly taking ISO certification, certification from NASAA are inspired after WTO accession.

Health conscious consumer always asks for organically produced food-stuff. Consumers of the developed countries are very much conscious about their health. So, our product should be organic if we want to sell them in better prices. In other words, farmers without using chemical fertilizer and pesticides are considered as organic tea farmers. But using no chemical fertilizer and pesticide only does not make organic tea. It is not sufficient just to say our product is organic. There is long certification procedure to assert for organic tea. It must be certified in internationally standard laboratories. In the study area, there is no single tea gardener who have organic certificate but it was found that some tea planters (mainly in Ilam district) were trying

to produce their green leaf as organic. As they understand the using of pesticide and chemical fertilizer is non-organic, some planters are reducing and replacing by the organic pesticide and animal dung/manure. Some tea planters have completely withdrawn of using the pesticide and chemical fertilizer as field report says. Field report has found that 3 percent tea planters are under processing to get the organic certificate from the NASAA, Australia. In Nepal, two Orthodox tea factories, i.e. Gurase tea factory and Kanchanjunga tea factory have got organic certificate from NASAA after WTO.

Why are the farmers not certifying their leaves as organic? What are the reasons behind it? In the study, 106 respondents out of 162 answered, as due to the lack of finance or more expensive method of certification they could not certify their leaf as an organic. Similarly, 59 respondents said that there is no availability of this facility, due to that they didn't work, they said. Due to the lack of knowledge 9 respondents were not certified and 12 respondents said that they know the importance of certification. Among them some respondents were given double or mix answer.

Application of Organic and Non-organic Fertilizer/Pesticide on Green Leave Production

In this study different inputs, like chemical fertilizer, non-organic and organic pesticide and traditional fertilizer using situation have been studied. User and non-user of different inputs are shown in the table 5.21.

Table No. 5.21

User and Non-user of Different Inputs

S.N.		CTC Type				Orthodox Type				Non User of Both (Non-organic/organic Pesticide)
		User		Non-user		User		Non-user		
		No	%	No	%	No	%	No	%	
1.	Chemical fertilizer	49	98	1	2	59	52.7	53	47.3	6 in CTC 12%
2.	Non-organic pesticide/ insecticide	49	98	1	2	32	28.6	80	71.4	32/38 in Orthodox
3.	Organic pesticide	4	8	46	92	50	44.6	62	55.3	28.57
4.	Tradition fertilizer	43	86	7	14	105	93.8	7	6.3	23.5%

Source: Field Survey, 2008.

Table 5.21 shows that in CTC type tea 49 out of 50 respondents were found using chemical fertilizer and non-organic pesticide. 4 respondents were found using organic pesticide in CTC type of tea. 86 percent out of 50 respondents were found using traditional fertilizer (animal dung) in the tea gardens. These data show that many tea farmers from CTC type are using chemical fertilizer and pesticide than the Orthodox type. 47.3, 71.4 percent out of 112 farmers from Orthodox type did not use the chemical fertilizer and non-organic pesticide respectively in their field. In orthodox type 44.6 percent out of 112 respondents were found to have use organic pesticide. According to the farmers in Ilam district, their tendency to have used the organic pesticide is increasing and chemical pesticide is in decreasing trend. Field report data reveal that 6 respondents from CTC type and 32 from Orthodox type farmers did not use the both type of pesticide. 86 and 93.8 percent respondents respectively from the CTC and Orthodox type have used the traditional fertilizer/animal dung. Generally, those farmers who belong to the small land holding size have livestock farming too and they use the animal dung in their tea gardens. Comparative indicators of user and non-user of different inputs in both types of teas are shown in table 5.22.

Table No. 5.22

User and Non-user of Different Inputs in Both Type of Tea

S.N.	Different Inputs	User		Non-user		Total
		No	%	No	%	
1.	Chemical fertilizer	108	66.7	54	33.3	162
2.	Chemical pesticide/insecticides	81	50.0	81	50.0	162
3.	Organic pesticide	54	33.3	108	66.7	162
4.	Tradition fertilizer	148	91.4	14	8.6	162

Source: Field Survey, 2008.

As revealed in table 5.22, in overall study area, i.e. out of 162, 66.7, 50.0, 33.3 and 91.4 percent respondents respectively were found to have been using the chemical fertilizer, chemical pesticide, organic pesticide and traditional fertilizer. Here it is important to look on cost contribution of chemical inputs in tea leaf production. If we want to produce organic leaf, there must be low use of chemical inputs. As a result, it will help to make minimum pesticide and chemical residual level in tea leaf. In the

study area cost contribution of these (above mentioned) inputs for the production of green leaves is shown in following table 5.23.

Table No. 5.23

Cost Contribution of Different Inputs on Green Leaves Production

S.N.	Inputs	CTC		Orthodox		Average for Both Type
		Rs/Ha	Rs/Kg	Rs/Ha	Rs/Kg	
1.	Chemical fertilizer	18149.9	1.63	3117.9	0.74	1.18
2.	Chemical pesticide/ insecticide	12770.9	1.14	782.8	0.17	0.65
3.	Organic pesticide	455.6	0.04	1705.0	0.40	0.22
4.	Traditional fertilizer	8622.2	0.77	5146.8	1.22	0.99
	Total	39999	3.58	10752.5	2.53	3.04

Source: Field Survey, 2008

Table 5.23 shows that chemical fertilizer is the most important contributor to the input cost for CTC type. It is 18149.9 Rs/ha and 1.63 Rs/kg production of green leaf. Chemical pesticide/insecticide is another important contributor for the production of green leave which is 12770.9 Rs/ha and 1.14 Rs/kg in CTC type tea. In the sector of Orthodox tea, traditional fertilizer cost is 1.22 Rs/kg which is higher as compared to the other inputs. Next important contributor is chemical fertilizer, which is 3117.9 Rs/ha and 0.74 Rs/kg for the production of green leaves. Cost on chemical pesticide in Orthodox tea producing area is lowest than others inputs as well as CTC tea producing area. But organic pesticide cost is higher for Orthodox tea which is 0.40 Rs/kg. For the CTC, it is just 0.04 Rs/kg. It indicates that influence of organic method of tea producing is high in Orthodox area than the CTC area. In an average cost of these four inputs is 3.04 Rs/kg for both type of tea. Input cost on these factors is 2.12 IRs/kg for West Bengal of India (SOMO, 2008:73). West Bengal green leave production cost on inputs (Fertilizer/pesticide/insecticide) is 2.12 IRs 1.60 (Exchange rate of Indian Currency) equal to 3.39 NRs/kg. This data indicates that there is higher degree of application of chemical fertilizer and pesticides than the Nepali site. If we compare cost on inputs of Nepali tea gardens directly with West Bengal tea gardens, it is below 0.35 Rs/kg. But real situation is different. West Bengal and others states of Indian tea estates can enjoy with low price of inputs. Due to the reasons that they are producer of such type of inputs at the same time transportation cost for inputs is also lower in India than Nepal. But Nepal is importer of chemical fertilizer/pesticides/insecticide and so on. As a result the cost on these inputs must be

higher than in India. If consider this situation in mind, actual quantity of application of these inputs, may be higher in Indian tea gardens than in Nepalese side. In recent years, low use of chemical fertilizer and pesticide in tea plant has proved quality leaves production globally. Health conscious consumers always want to have organic product or minimal pesticide residual level (MRL) certified product. In this sense chance of rejection of the product from developed countries' market is relatively higher in Nepal if other things remain unchanged.

5.5.5 Time Consumption to Arrive Green Leaves in to the Factory Premises

Quality of tea depends not only on good plucking but also depends on time length to arrive green leave in to the factory premises. Generally, it is believed that within three hours after plucking, the green leaves should be brought into the processing factory premises. Field survey data show that 64.2 percent out of 162 respondents said that they deliver the green leaf within an hour. Similarly, 3.7 percent tea planters deliver their leaves into the factory premises in 3 and above hours after the plucking.

Table No. 5.24

Time for Arrived of Green Leaves in to the Tea Factory Premises

Time (in hours)	Number	Percent	Cumulative Percent
0-1	64.2	64.2	64.2
1-2	27.2	27.2	91.4
2-3	4.9	4.9	96.3
3 and above	3.7	3.7	100.00
Total	162	100	

Source: Field Survey, 2008.

Table 5.24 shows that 96.3 tea planters send their green leave to the processing factory within three hours. To maintain the standard quality, this time shouldn't exceed. Above mentioned data indicates that in study area, planters and processing factories establishment should not be too far. Most of the tea factories should be located where tea plantation exists.

5.6 Facilities Provided by the Government and Others

For the promotion of tea cultivation at the farmers level there is need of various facilities which should be provided by the government and other concerned agency/institution. Different facilities which were available in the study area are shown in the table 5.25 with criteria of facility taken/non-taken farmers.

Table No. 5.25

Facilities Provided by the Government and Others

Facility Taken/Non	Number	Percent
Yes	114	70.4
No	48	29.6
Total	162	100.00

Source: Field Survey, 2008.

Table 5.25 shows that 70.4 percent farmers were getting different types of facilities. Mainly, they were given loan from bank and other financial institutions, interest subsidy, training from government institution and others. Similarly, 29.6 percent out of 162 farmers were found unable to get any facility provided by the government and others. Different types of facilities which were provided to the farmers are shown in the table 5.26.

Table No. 5.26

Different Types of Facilities

S.N.	Facilities	Number	Percent *
1.	Loan from bank/financial institution	82	50.6
2.	Training from government institution	55	33.9
3.	Interest subsidy/other subsidy	35	21.6
4.	Training from others	21	21.9
5.	No facility	48	29.6

Note: An aesterick * denotes multiple responses possible

Source: Field Survey, 2008.

Different types of facilities which were provided by different institutions are mentioned in table 5.26. Getting loan from bank/financial institution was the main facility in which 50.6 percent out of 162 farmers got it. Again, 33.9 percent and 12.9 percent farmers were found having the training for cultivation/maintenance of gardens from government institution and from other institution respectively after WTO. On the other hand, 21.6 percent out of 162 respondents were getting interest subsidy and other subsidy.

5.7 Main Problems Faced by Tea Farmers on Cultivation and Distribution of Tea

There are so many problems in tea sector of Nepal. Among them, some problems are related to tea planter/farmers. Top five problems which are faced by tea planter/farmer are given table 5.27.

Table No. 5.27

Problems Faced by Tea Farmers

S.N.	Problems	Number	Percent
1.	Ineffective government role/ no subsidy	153	94.4
2.	Lack of technical manpower/skill labour	136	83.9
3.	Low price of green leaf/market problem	134	82.7
4.	No availability of inputs	104	64.2
5.	Lack of factory/infrastructure	100	61.8

Source: Field Survey, 2008.

Table 5.27 exhibits that ineffective government role/ no subsidy given, lack of technical manpower/skill labour, low price of green leaf or market problem, no availability of inputs and lack of factory/infrastructure are top five problems faced by tea farmers on cultivation and distribution of tea. According to field data, 94.9 percent out of 162 farmers said that government role is not effective to develop the tea sector and at the same time majority of the farmer's experience is that government subsidy is very minimal for the tea sector. It has become essential for tea sector to be a competitive in comparison to international market, specially, with Indian tea sector. It is because India is our neighbour and competitor. Likewise, India is the largest tea

producing country in global market. And at the same time, India has been providing subsidy to its farmers and to the tea sector.

As table 5.27 exhibits 136 respondents said that lack of technical manpower and inadequacy of skilled labour is another most important problem faced by the tea farmers. Without technical manpower/skilled labour tea plantation and development process will not be beneficial. It is a commercial agro-crop which needs more knowledge than the other traditional agricultural product like paddy, maize, wheat etc. To maintain tea garden with leaf quality, technical/skilled labour force is required. Different problems are faced by the tea farmers. In the field, 82.7 percent respondents said that green leaf price's declining tendency is another important problem faced by the tea farmers. Green leaf price realization was 15.92 Rs/Kg and 12.85 Rs/Kg for the Orthodox and CTC type tea respectively for the year 2007/08. At the same year, average cost was 14.39 and 8.68 Rs/Kg for Orthodox and CTC tea type respectively. Field data shows that price of green leaf were again below the previous year than that of 2007/08. It means, there is a minimum difference between cost and price realization by tea farmers. As a result, most of the tea farmers are not being encouraged towards the tea business. It shows that without getting the reasonable price of green leaf, farmers are not further willing to develop the tea sector.

No easy availability of inputs and lack of processing factory/ infrastructure development were 4^{th} and 5^{th} top problems faced by the tea farmers in the study area. Out of 162 respondents, 64.2, 61.8 percent respondents said above mentioned problem respectively. Not easy availability of inputs like fertilizer, pesticide, insecticide and organic inputs are other prevailing problems in front of tea sector. Likewise, no easy road access, lack of irrigation facility and lack of electricity are also hindering the tea sector development.

5.8 Special Training Taken for Tea Cultivation in Study Area

Most of the tea planters need the training for cultivation of tea. Nursery maintenance, planting, plucking, purning and application of chemical fertilizer/pesticide are the main works in tea farming. So, it needs effective training to learn technical skill to maintain tea cultivation practices. Even farmers who have

taken several training feel that they need further knowledge on various aspects of tea cultivation. Field data show that 78 out of 162 respondents were found to have taken different types of training which are classified and mentioned in table 5.28.

Table No. 5.28

Different Types of Training Taken by Farmers

S.N.	Nature of Training	Number	Percent	Percentage Out of Training Receiver
1.	General tea farming method	62	38.3	79.5
2.	Purning/plucking	38	23.5	48.7
3.	Fertility/pesticide application	29	17.9	37.2
4.	Others	21	12.9	26.9
5.	No any training	84	51.8	

Source: Field Survey, 2008.

Table 5.28 reveals that 38.3 percent out of total surveyed respondents were found to have received the training about the general tea farming method in which tea planting, plucking, purning are included as a simple method of tea cultivation. But in specialized way plucking and purning method receiver were 23.5 percent out of 162 respondents. To have more green leaves quality plucking and purning style should be appropriate. These are the most important tasks in the management of tea garden. This situation reveals that special training on plucking and purning of green leaf and tea plant respectively needed to improve quality and quantity production of tea. How to use chemical fertilizer/pesticide in tea garden? It is another concern of training for farmers. In the study, 17.9 percent farmers were taken this training. Appropriate application of chemical fertilizer/pesticide/insecticide will help to increase the productivity and at the same time pesticide residue level will be maintained. Similarly, 21 out of 162 respondents found that they have received other training in which nursery management, making of organic fertilizer/pesticide etc are included. Again, 51.8 percent respondents were not taking any special training for tea cultivation. It seems that majority of the tea farmers are not well educated about the tea cultivation which is necessary for them.

5.9 Problems in the Tea Production Policy and Programme of the Government

Nepal government has approved and implemented National Tea Policy (2000) as per the intention implied in NTCDB Act (1992) for the development of tea as a reliable source of income to enhance the opportunities of employment and earning of foreign currencies through the promotion of private sector in the production, processing and commercial transaction of tea with the sustainable and systematic utilization of available opportunities in the country. National Tea Policy (2000) aims to expand area up to 40,875 hectares and additional employment opportunity for 79,310 persons (Sharma, 2004).

The major objective of National Tea Policy is to increase production of tea qualitatively as well as quantitatively with increased participation of private sector in the cultivation. Interest subsidy and subsidy on tea plant are the regular programmes for tea farmers. Likewise, training for tea plantation and maintenance of the gardens are also the programmes lunched by the government. But most of the tea planter/farmers are not satisfied with the government's role. Majority of the farmers in study area said that ineffective government role and faulty on policy and programmes are the main problems. No attention is paid on farmers' problem and lack of implementation of government policy and programmes are hindering development of tea sector.

Table No. 5.29

Different Problems in Government Policy and Programme

S.N.	Problems	No	Percent
1.	Fault in government policy and programme	42	25.9
2.	Problem in implementation of government policy	41	25.3
3.	No focus on farmers problems	31	19.1
4.	Weak implementation of government policy and programme	30	18.5
5.	Others	18	11.1
	Total	162	100.00

Source: Field Survey, 2008.

Table 5.29 shows that 25.9 percent respondents said that there are faults in government policy and programme which can't encourage farmers to cultivate and develop tea gardens. On one side, there are only a few government policies supporting tea farmers' development and, on another side the set policies too are not implemented by the government. In this study, 18.5 respondents reported that there is weak implementation of government programmes and policies. After the WTO accession Government of Nepal did not provide interest subsidy although there was provision.

5.10 Suggestions for Increasing Yield and Lowering Cost of Production

To make tea a profitable business, productivity should be increased and cost of production should be decreased. For increment of yield and minimization of cost, farmers have given some suggestions which are shown in table 5.30.

Table No. 5.30

Suggestions for Increasing Yield and Minimization Cost

S.N.	Suggestions	Number	Percent*
1.	Subsidy and government support	123	75.9
2.	Technical knowledge	87	53.7
3.	Reasonable price fixation	46	28.4
4.	Infrastructure development	37	22.8
5.	Availability of inputs	30	18.5
6.	Factory increase	29	17.9
7.	Others	27	16.7

* Multiple responses possible, percentage exceeds hundred

Source: Field Survey, 2008.

Table 5.30 reveals that 75.9 percent out of 162 respondents said that subsidy and government support for tea planter/farmers will help to increase yield and minimize the cost. Supportive role of the government would be the most important factor to enhance capability of tea sector. In the field 53.7 percent farmers reported that technical knowledge and skilled labour is another most important factor which is necessary to increase productivity and it can also decrease the cost of production.

Almost all of the farmers suggested that government subsidy/support and technical manpower development is necessary to develop the tea sector. There is also a misconception and confusion among the tea growers about the use of chemical fertilizer. To some extent, it seems that a wrong message is being given to the farmers during various training of NTCDB that use of chemical fertilizer is harmful. But nobody is making the situation clear to the farmers in study area. These indicate the urgent need for appropriate and effective training and imparting technical knowledge at a massive level in the tea growing area. In fact, the lack of knowledge is the exclusive problem that majority of the tea growers have mentioned that practical training in village must be provided. In study area, farmers experience is that from last 5-6 years price of green leaf is in decreasing tendency but cost of production is increasing every year. It indicates that profit ratio of tea farmers has been decreasing every year. Out of 162 respondents 28.4 percent suggested that reasonable price fixation of green leaf is required to make the tea business as profitable. Farmers experience that lack of infrastructure development, unavailability of inputs with reasonable price, lack of factory are also the problems in tea sector. So, farmers have suggested that these problems should be addressed in an appropriate manner.

Tea farmers further suggested that establishment of research centre, auction market, laboratory development for the MRL test initiation for organic method of cultivation of tea are the requirements to develop tea sector. Research center and laboratory are more crucial needs in the present context. Therefore, farmer's suggestions should be taken into consideration for the modernization of tea sector and its promotion for export which was also highlighted by participants of focused group discussion.

5.11 Tea Processing Factories: Some Key Information

According to the data available from the NTCDB, there were 15 and 25 tea processing factories belonging to Orthodox and CTC type tea respectively. Among them all 40 factories; 6 from each type of tea processing factory, were selected for the study. Some information regarding the capacity of production and their utilization, total cost of production and market share is given in Table 5.31.

Table No. 5.31

Orthodox Tea Processing Factory Key Information For the year 2007/08

Orthodox Tea Processing Factory				Market Share (in Percentage)		
Factory Code	Capacity (in kg)	Utilization of Capacity	Total Cost of Production	Domestic	India	Other than India
X_0	2,50,000	73.0	175	1	83	16
X_1	4,00,000	100.0	150	-	100	-
X_2	1,50,000	53.3	220	5	70	25
X_3	3,00,000	67.3	175	-	93.7	6.3 (Germany)
X_4	3,00,000	90.0	130	0.5	98.5	1.0 (")
X_5	1,00,000	50.0	300	6.0	5.0	89.0
Total	15,00,000	433.6	1150	12.5	450.2	137.3
Average	2,50,000	72.3	191.7	2.1	75.0	22.88
CTC Tea Processing Factory						
X_6	8,00,000	75.0	88.0	45	55	
X_7	8,00,000	80.0	80.0	25	75	
X_8	7,50,000	58.70	70.0	44	56	
X_9	10,00,000	80.0	99.0	50	50	
X_{10}	7,00,000	95.0	92.0	25	75	
X_{11}	15,00,000	100.0	85.0	50	50	
Total	55,50,000	488.7	514.0	239	361	
Average	9,25,000	81.45	85.7	39.8	60.2	

Source: Field Survey, 2008.

5.11.1 CTC Tea Processing Factory

According to data available, there are 25 CTC processing factories. Among them 6 factories were selected for the present study. Production capacity of them ranges from 0.7 million kg to 1.5 million kg annually which is shown in table 5.31. Annual average capacity was .925 million kg. Lowest capacity utilization of CTC factory is 58.7 percent and highest is 100 percent. In an average, it was 81.45 percent in the study area. Cost of the production of made tea was found ranging from Rs. 70 per kg to 99 for the year 2007/08. The average rate found there was Rs. 85.7 per kg. Some of the factories have applied for HACCP certification whilst a few are seeking ISO certification. These all have been after WTO entry.

The CTC factories process 6 grades of made tea they are BP, BOP, BPS, BPSM, Fanning and Dust. Some factories separate the green leaf into those supplied by Code of Conduct (CoC) certified farmers, having a different production, from those that are not certified. This is one way the factories are trying to overcome the problem of pesticide residue level. But very few factories are conscious about the use of pesticide in tea plantation at a required level. How they are conscious about either use of only pesticide on green leaf produced in their own fields or under their monitoring with farmer associations who follow the correct agricultural practices.

5.11.2 Orthodox Tea Processing Factory

Orthodox factories are located in the hilly areas of Ilam, Panchthar, Dhankuta, Terathum and are styled in the fashion of Indian Darjeeling factories. According to data available, there are 15 Orthodox processing factories. Among them 6 factories were selected for the present study. Production capacity of them ranges from 0.10 million kg to 0.40 million kg annually. Average capacity was found .25 million kg. And their capacity utilization ranges from 50 percent to 100 percent. In an average, it was found 72.3 percent. Cost of production of made tea was found in the range from Rs. 130 per kg to Rs. 300 per kg. Average cost of production of Orthodox made tea was found Rs. 191.7 per kg. There is a large variation between the cost of production as minimum and maximum for Orthodox type tea. Among the Orthodox processing factory in study area, only one factory is organic method applier. Application of the organic method relatively costs higher than others. Generally, due to high cost of green leaf and labour cost, total cost of production of organic tea is higher than the other type of production.

In the Orthodox factories too, there is separation of leaf supplier into the two categories of CoC certified farmers and others. This system of grading or categorizing of green leaf is also the influence of WTO. The grades processed in the Orthodox factories are as follows:

Leaf Grade	Nomenclature
STGFOP	Special Tippy Golden Flower Orange Pekoe
TGFOP	Typply Golden Flower Orange Pekoe
GFOP	Golden Flower Orange Pekoe
FOP	Flower Orange Pekoe
OP	Orange Pekoe
Broken Grades	
BOP_1	Broken Orange Pekoe 1
GFBOP	Golden Flowery Broken Orange Pekoe
BP'S	Broken Pekoe Souchone
GBOP	Golden Broken Orange Pekoe
FBOP	Flowery Broken Orange Pekoe
BOP	Broken Orange Pekoe
Fanning	
TGOF	Tippy Golden Orange Fanning
GOF	Golden Orange Fanning
OF	Orange Fanning

Source: **ITC, 2007**: 34-35.

5.11.3 Market Share of CTC and Orthodox Processing Factory

Field data in Table 5.31 shows that India is the main market for both CTC and Orthodox tea. About 60 and 75 percent of total production of CTC and Orthodox tea respectively has been exported to India. Very low quantity i.e. 2.1 percent Orthodox tea is consumed domestically. About 23 percent of Orthodox tea has been exported to other than India. In CTC type about 40 and 60 percent of total production has been consumed by domestic and Indian market respectively. It indicates that, the dependency on India as a trading partner for tea is high. Regarding this, any changes in Indian tea market directly affect the tea trade of Nepal. CTC tea has also been imported to Pakistan as well after WTO. Export market of Nepal has also been diversified and expanded after WTO (See Table 4.2). It is, therefore, imperative that Nepalese agricultural production as well as expansion of their international market can be diversified.

5.12 Respondents' Knowledge on Impact of WTO on various Aspects

5.12.1 Experiences of Processing Factory Owner/Respondent after Entering to the WTO

The experiences being gained in sector after Nepal's entry to the WTO are shown in table 5.32

Table No. 5.32

Experiences about WTO, After the Accession on It

	CTC Rank – Scale					Orthodox Rank – Scale				
Experiences	5	4	3	2	1	5	4	3	2	1
Beneficial	3	-	2	1	-	1	1	3	1	-
More competitive	4	2	-	-	-	2	2	1	-	1
Market damaging	-	-	-	-	4	-	-	-	1	5
Need to improve quality	4	-	1	1	-	2	4	-	-	-
Harmful	-	-	-	-	6	-	-	-	2	4

Total Rank - Scale

S.N.	Experiences	5	4	3	2	1	No Response
1	Beneficial	4	1	5	2	-	-
2	More competitive	6	4	1	-	1	-
3	Market damaging	-	-	-	1	9	2
4	Need to improve quality	6	4	-	1	1	-
5	Harmful	-	-	-	2	10	-

Source: Field Survey, 2008.

In this study, respondents were asked a question, what do you experience on tea sector after the accession of Nepal to the WTO? Table 5.32 shows that 4 out of 12 factories respondents said that they had experiences of beneficial for the tea sector of Nepal after entering in to the WTO. They gave highest rank of five for it. Similarly, one and five respondents gave 2nd and 3rd rank respectively. Again, six out of 12 experienced that after the accession of Nepal into the WTO, market was being more competitive at its highest scale, i.e. five was given by them. In the same way, four out of 12 respondents said that market for tea was going to be more competitive. They

were scaling for it 2nd highest at rank. Besides this, six out of 12 respondents had experienced need to improve quality of tea. Without quality product of tea, it is impossible to get international market. Some food safety measures like, SPS and TBT agreements are more concerning aspect in WTO scenario. So after the accession into the WTO 83.3 percent out of 12 gave highest and 2nd highest scale for need to improve quality of tea. Most of the tea manufacturing respondents experienced that entry into the WTO could have positive affect in tea sector. Due to the reasons that market accessibility in global market and quality consciousness bring competitive strength of tea sector.

Most of the respondents have experienced that entrance into the WTO will not be harmful and market damaging condition will not occur. In the study, 10 out of 12 respondents experienced/felt that it will not be harmful or market damaging. They have given just lowest scale i.e. 1 for it. It indicates that entry into the WTO will be beneficial, but not harmful. It is the market access opportunities for Nepal. If Nepal's product of qualities/organic and suitable for developed countries market, its potentiality will be high because consumers in developed countries are very much conscious about the quality/organic product.

5.12.2 Knowledge on WTO Agreements among Processors and Exporters

Agreements on WTO like, SPS measures, TBT, AoA and TRIPS are more concerning issues for Nepalese agriculture. They are related to global trading product, and there should be knowledge about the rules/regulation and agreements which are internationally agreed. To identify knowledge of farmers on the issue questions were asked to tea processing factory, and the responses received are presented in table 5.33

Table No. 5.33

Knowledge about the WTO Agreements

S.N.	Knowledge	Number	Percent
1.	Knowledge about WTO	2	16.7
2.	No knowledge about WTO	7	58.3
3.	Little knowledge about WTO	3	25.0
	Total	12	100.0

Source: Field Survey, 2008.

Table 5.33 shows that two out of 12 respondents said that they were aware of concerning agreement like, AOA, SPS, TBT and TRIPs. Most of the respondents were not able to understand the WTO and its agreements. Most of the tea processors said that they had no knowledge about the WTO and its agreements. Among the respondents with knowledge about WTO, one belongs to CTC type and another from Orthodox type tea processing factory. Just three out of 12 respondents have said that their understanding level on WTO agreement was low. It means that respondents were simply literate on WTO. Respondents having knowledge on WTO were conscious about the quality and food safety measures necessary in international market. They also knew how to get quality green leaves and how to handle, store, pack and process for the maintenance of quality and food safety aspects of processing factory. Known respondents were serious about these matters. But most of respondents (seven out of twelve) of the tea processing factories were not serious about it. It indicates that regarding the quality and safety aspect competitive strength of Nepalese tea will be low in global market.

In the case of exporters experiences differ from that of tea processors. For the understanding of the level of their knowledge about these agreements, questions were asked. In response, one and two respondents out of 5 had no knowledge and had knowledge about WTO, respectively. Out of 5, 2 respondents had knowledge about very few aspects of WTO agreements like AoA, SPS, TBT and others. Respondents having knowledge were more conscious about quality and organic production of tea. Because first grade quality tea and organically produced tea has more demand in global market, exporters felt this situation. Exporters' knowledge about the WTO and its provision was very weak. They were simply literate about the agreements. They

are unable to assess how these agreements affect the global tea market. The position of those who have known was also not satisfactory. In this situation, what we can imagine about the unknown/little known respondent. It is clear that respondents' knowledge about the WTO and its provision is very unsatisfactory/ weak.

5.12.3 Impact on Employment Creation- after Entry into the WTO

Total area and production of tea in Nepal have increased tremendously over the last few years. So, in the tea plantation as well as in the tea processing factory employment condition has been increased after the entry into the WTO. In the study area, 7 out of 12 respondents said that their firm size has been increased as a result the impact on employment creation is positive. Increase in farm size was due to some reasons; entering into WTO, increasing price of green leaf, increase in government subsidy on interest. Five out of 12 factories from both CTC and Orthodox type tea said there was no any change in employment situation after the accession into the WTO. World market price has been decreasing and production cost has been increasing every year. Due to these reasons, level of employment has not been changed according to them. Most of the respondents suggested that job creation on tea sector was possible if market price trend upwarded or if the framers got the reasonable price according to their cost of production.

5.13 Present Condition on Various Aspects of Tea Firms

5.13.1 Earning Changes or not for the Last 10 Years

The respondents of tea processing factories were asked about their earning pattern whether it has been changed or not for the last 10 years. According to the respondents the following situation was prevailing as regards their earning.

Table No. 5.34

Earning Situation of the Tea Processing Factory for the Last 10 Years

S.N.	Earning Situation	Orthodox	CTC	Total
1.	Profit	1	1	2
2.	Loss	-	-	-
3.	Breakeven	1	-	1
4.	No Change	1	5	6
5.	No Response	3	-	3
	Total	6	6	12

Source: Field Survey, 2008.

Table 5.34 shows that 6 out of 12 respondents said that there was no change in their earning situation for the last 10 years. Due to increase in cost of production and declining trend of price of made tea were responsible for no change in situation of the factories earning. One from Orthodox and one from CTC type tea factory were getting profit about 10-15 percent due to their quality production and as a result getting high price than others. None of them have said that they are in loss condition. Price of tea in international market has been declining in this period, due to these reasons, factories have not been able to get high price. As a result, their experiences in their earning pattern have not been increased. In the field, 1 out of 12 respondents said that there is in breakeven condition in recent year but there was in loss before 2-3 years. Similarly, three out of six Orthodox factories have not responded about their earning condition. It may be due to that they didn't like to disclose their secrecy.

5.13.2 Nepali Logo of Tea

There is need of Nepal's own logo of tea. For the improvement of global market share Nepal tea totally needs to be seriously considered. It should be the driving force to establish the Nepal tea logo and brand in global market.

In the study area, all 12 respondents from CTC and Orthodox type tea said that they were serious about the Nepali logo of tea. According to them, it is necessary for the enhancement of the export. According to the key informants of tea exports, Nepali logo of tea is essential to develop the market of tea. So, they focused on own logo and brand for

market development of tea in global market just like Darjeeling and Ceylon tea. This issue was highlighted by the participants of focus group discussion as well. It proves that Nepali Logo is required to promote tea trade in international market after WTO. Recently, Government of Nepal has formulated a policy to promote tea market in terms of Nepali Logo collaborating with private sector.

5.13.3 Labour Right Application

In the study area of CTC type processing factory, all 6 respondents said that they are applying the labour right which was enacted by the government. Four out of six processing factories were applying the labour right but two factories were found applying partially. Facilities given by them were; fixed wage rate, provident fund for permanent labour, sick leave gratuity, *Dashian* (a great Hindu festival) expenses, uniform, accidental/injury treatment and medicine etc.

5.14 Quality Production of Tea

5.14.1 Factors for Quality Production

There are many factors which are responsible for the quality of tea. Good plucking (for leaf standard), good agricultural practices (GAP) and good manufacturing practices (GMP), skilled and trained labours are the main factors, for determining quality production of tea.

Table No. 5.35

Factors for Quality Production

S.N.	Factors	CTC No.	Orthodox No.	Total No.	Percent
1.	Good Plucking	6	6	12	100.0
2.	GAP and GMP	6	6	12	100.0
3.	Skill/Trained Labour	5	5	10	83.3
4.	Factory well equipped	4	4	8	66.6
5.	Organic method of process	2	4	6	50.0
6.	Seasons	2	2	4	33.3

Source: Field Survey, 2008.

Table 5.35 shows that all of the respondents, i.e., 12 said that for the quality of tea, good plucking (leaf standard) and GAP/GMP are most important factors. Basically, without leaf standard there can't be qualitative tea. For it, good plucking should be done. Adherence to good Agricultural Practices (GAP) is to be maintained in farmers field and GMP is practiced in the factory. Good handling of leaf and made tea, processing, storage and packaging etc. works are included within the good manufacturing practices. SPS standard of food products there is need of implementing food quality assurance activity requires adoption of such practices. These good practice not only ensure the safety of food to the consumers. But it also promotes without having any risk to rejection of consignment. Similarly, 83.3 percent out of 12 respondents were found that skilled/trained labours are important for the quality production of tea. Well equipped factory is also important factor for quality production of tea. The basic processes of tea processing are the withering, rolling, fermentation and drying with adjustments of time frames and using different method for CTC and Orthodox type tea to obtain the final products. Without well equipped factory and machinery, these all processes can not be good. As a result, the quality of tea deteriorates. In this regard, 66.6 percent respondents focused on this requirement. Organic method of production process and seasons are also affecting factor for the quality tea. Again, 50 percent and 33.3 percent respondents reported that organic method of production process and seasons are responsible for the quality of tea.

5.14.2 Factors for Better Production

There are so many factors which are responsible for the better production of tea. Good plucking of leaves (leaves standard), price of tea, demand of tea in internal and external market, good government policy, minimum cost of production, inputs availability etc. are the main factors for better production of tea.

Table No. 5.36

Factors for Better Production of Made Tea

S.N.	Factors	CTC Rank - Scale					Orthodox Rank - Scale					Total				
		5	4	3	2	1	5	4	3	2	1	5	4	3	2	1
1.	Good plucking	3	2	1	-	-	3	2	1	-	-	6	4	2	-	-
2.	Demand	3	1	2	-	-	3	1	2	-	-	6	2	4	-	-
3.	Price	4	2	-	-	-	2	4	-	-	-	6	6	-	-	-
4.	Govt. policy	3	2	1	-	-	1	2	3	-	-	4	4	4	-	-
5.	Cost	2	3	1	-	-	-	4	2	-	-	2	7	3	-	-
6.	Auction market	3	2	1	-	-	4	1	1	-	-	3	6	2	1	-
7.	Logo	1	3	2	-	-	-	5	1	-	-	1	8	3	-	-
8.	Seasons	2	2	1	1	-	-	1	3	1	1	2	5	2	1	1
9.	Input Availability	2	3	1	-	-	1	2	2	1	-	3	5	3	1	-
10.	Loan facility	2	1	1	2	-	-	1	4	1	-	2	2	5	3	-

Source: Field Survey, 2008.

Data in table 5.36 shows that six out of 12 factories reported that good plucking (plucking standard) was responsible factor for better production or quality product. Similarly, 50 percent respondents gave highest scale i.e. five for it. On the other hand, 4 out of 12 gave it 2nd highest i.e. four scale of rank. Suitable price for tea is next important factor for better production. But 50 percent out of 12 factories gave highest scale for price and some numbers of factories were giving 2nd highest rank for price. Demand of tea is another most important/determining factor for better production. Without demand/market availability, tea production will not improve. Two third numbers out of total sampled factories were found to say that demand of tea is important for better production. They gave 5^{th} and 4^{th} scale for it. For the better production of tea, suitable government policy and programme can help the sector. In the same way, 66.6 percent out of 12 factories gave highest and 2^{nd} highest rank of government policy and programme which is important for the better production of tea according to the respondents. Next 33.3 percent respondents gave third rank for this factor. Auction market and Nepali logo of tea which will be helpful to promote the tea sector is explained by 25 percent respondents which is the highest scale for the auction market and Nepali logo of tea. It is needs for better production of tea. As shown in table 5.36, 6 out of 12 and 8 out of 12 gave 2^{nd} top rank for the auction

market and Nepali logo respectively which were the important factors for better production of tea. Inputs availability, cost condition, loan facility and season also can affect the production of tea. According to the tea factory respondents these above mentioned factors are responsible for better production of tea.

5.14.3 Superior Tea in SAARC Region

Tea is globally traded commodity. So its market is not limited within a country. To get market internationally, the product should be superior to others. ‘‘In SAARC region whose tea is superior to Nepalese tea?’’ This question was asked to the exporters. These processors were tea exporters as well. Therefore the question was asked mainly to those processor and exporters. Answers of the question are summarized in table 5.37.

Table No. 5.37

Superiority Position of Others than Nepalese Tea

CTC

Factory Code	Sri Lanka	India	Others	Causes	Remarks
X_6	1	-	1(Kenya)	Due to quality	Nepal's medium Standard
X_7	1	-	-	Due to quality good will	
X_8	1	-	1(Kenya)	Due to quality good will	Nepal=India
X_9	1	1	-	Quality and market mechanism	
X_{10}	1	1	1(Kenya)	Quality/market/Govt. policy	
X_{11}	1	1	-	Quality/market/Govt. policy/price	

Orthodox

Factory Code	Sri Lanka	India	Others	Causes	Remarks
X_0	-	1	1(China)	Price/quality/good will	
X_1	-	1	-	Price	
X_2	-	1	-	Market mechanism govt. policy/good will	
X_3	-	1	-	Market mechanism quality/govt. policy	
X_4	-	1	-	Price/quality/market/ govt. policy	
X_5	-	1	-	Market mechanism	

Source: Field Survey, 2008.

Table No. 5.38

Superiority Situation of Other's Tea than Nepal

Tea Type	Sri Lanka	India	Others	Remarks
CTC	6	3	3	1 Nepal Medium Standard
Orthodox	-	6	1	1 Nepal = India

Causes of Superiority

Tea Type	Quality	Market Mechanism	Price	Goodwill	Govt. Policy
CTC	6	3	1	1	2
Orthodox	3	4	3	2	3
Total No.	9	7	4	3	5
Percent	75	58.3	33.3	25	41.6

Source: Field Survey, 2008.

Table 5.38 shows all of the CTC type tea respondents said that Sri Lankan tea is superior to Nepalese tea. Among them 6 respondents from CTC group, 3 respondents said Indian tea is superior and 3 said, besides SAARC countries; mainly Kenyan tea is superior to Nepalese CTC tea. One out of six CTC respondents said Nepalese tea is medium standard than the others. One respondent said Nepalese and Indian Orthodox tea was equal in regard to their standard. In Orthodox type of tea, 6 respondents said Indian tea is superior to Nepalese tea. One respondent said besides SAARC, one from Orthodox type tea is superior to Nepalese tea.

According to the respondent the causes of the superiority of other tea than Nepalese tea are: their quality, market mechanism, government policy, goodwill and price. In this study, 75 percent out of 12 respondents said quality aspect of other's is higher than the Nepalese tea so their tea is superior to Nepalese ones. India, Sri Lanka, China, Kenya are the main tea producing countries. They have long history and they are developing the market and market mechanism. So, 58.3 percent out of 12 respondents said due to the market mechanism development of their tea is superior. Indian Darjeeling, Assam and Sri Lanka-Celyon tea are world wide famous. So, their products are worldwide branded and goodwill taker. As a result, these products are superior in global market than Nepalese ones. Similarly, 25 out of 12 respondents said

goodwill is their superiority aspect than Nepalese tea. Next 41.6 and 33.3 out of 12 respondents said government support/policy and their price are the superiority factors of others tea that of Nepalese tea.

5.14.4 Arrival Time of Green Leaves into Factory Premises as a Quality Concern

Made tea basically depends on processing method and leaf standard. For maintaining the leaf standard, plucked leaf should be brought into the factory premises within a reasonable time. Generally, it is believed that within 3 hours after plucking it should be entered into the factory for the production process. In the field study, 66.7 percent out of 12 respondents carried the green leaf within 0-2 hours. All 6 CTC tea processing factory had taken green leaves within this time. It indicates that in study area CTC tea planter and processing factories establishment is not too far. In Orthodox tea sector factory establishment and tea plantation area is relatively far. Among the three out of six processing factory could carry the green leaf within 3 hours. Remaining three were found taking time to carry green leaf was 3 and above hours. So, it indicates that to maintain the leaf standard, there should be additional Orthodox tea factories.

5.15 Problems and Suggestions to the Tea Processing Firms

5.15.1 Problems Faced by the Tea Industry (Processing Firms)

Tea processing factories are facing many problems like lack of sufficient energy/fuel, lack of technical /trained manpower, government subsidy and support, appropriate policy and due attention on tea sector. In the field, 83.3 percent respondents said that energy/electricity problem is the main problem for the industry. It is too irregular. Due to its irregularity, cost of production with alternative fuel consumption will be high, according to the respondents.

Table No. 5.39

Problems Faced by Tea Processing Factory

S.N.	Problems	CTC	Orthodox	Total	Percent*
1.	Energy/Fuel	6	4	10	83.3
2.	Lack of technical manpower/trained manpower	5	5	10	83.3
3.	No subsidy/lack of support by	5	5	10	83.3
4.	Labour problem	4	3	7	58.3
5.	Lack of appropriate policy/ no due attention on tea sector	3	3	6	50.0
6.	Input problem	2	4	6	50.0
7.	Market problem	3	3	6	50.0
8.	Lack of research centre/activities	2	2	4	33.3
9.	Lack of transportation	1	3	4	33.3
10.	Lack of auction market	2	1	3	25.0

Note: An aestrics * denotes multiple responses possible, percentage may exceed hundred

Source: Field Survey, 2008.

Trained/technical manpower availability is another need for the tea sector. For machinery operation and good handling of tea, there should be skilled or trained human resource. Without good managerial skill, factory can't run smoothly at lower cost. Table 5.39 shows that 83.3 percent out of 12 factory respondents said there is lack of technical manpower and skilled labour which is required for well operation of factory. Lack of government subsidy and support programme for tea factory is another most important problem which is faced by most of the processing factory. Next 83.3 percent out of 12 factories have also felt this problem. Subsidy can be given to the factory in various forms like subsidy on interest, capital subsidy on machinery, market searching subsidy and so on. There is too lacking in this field.

As a result, factories are unable to compete in international market in comparison to Indian factories because they are heavily subsidized by the Indian government. Labour is most important factor for tea sector. Basically tea estates/gardens depend on labours. Their skill and regularity is most important aspect for productivity and cost minimization of tea. But 58.3 percent respondents said that

labour problem is disturbing factor for tea production. For the fulfillment of their demands, labours and their unions use the means of closure the factories and gardens for a long time. In the field, respondents said that political instability and trade unions role had generally create the labour problems.

Government programme and policy are not effective. As per the provision of Tea policy tea plantation area has to be expanded, research fund has to be managed. But in practice it has not been done it. Lack of implementation is also big problem before tea industry. Not adequate emphasis has been given on tea industry by the government. So, 50 percent respondents took government programmes and policies as not effective and implementation problem still exists in the tea sector.

Tea industry in Nepal is small. The volume exported currently is around 0.56 percent and production is 0.48 percent, out of the total global output (ITC, 2010). With this small quantity, entering into the world market is difficult to build up a brand image unless with personal contacts and constant interaction. So, in this connection 50 percent out of 12 respondents said there is a marketing problem for tea industry. For the improvement of market share in the global market for Nepal tea is totality needed to be seriously considered. Lack of Nepali logo and brand in the global market is one of the problems of tea marketing. Geographical indication, mainly for Orthodox tea areas, can be within a TRIPs of WTO. But we are not still getting such situation as the main marketing problem prevailing in tea sector.

Very few researches have been done, here, in Nepal. Research activities on this sector are very low and there is no research, research area. which is specific to tea like manufacture, extension, training, information and now the important aspect of marketing is to look into new product development with global consumers in mind. But government of India has approved a modernization scheme with outlays of IRs 93 crore for the tea sector which would be implemented from Jan 1, 2005 to March 31, 2007 of which of, in order to support R and D in the tea sector, the scheme proposes to provide a package of IRs 28 crore to meet the actual deficit of the two research and development institutions namely Tea Research Association at Tokla (Assam) and United Planters Association for southern India Tea Research Foundation Tamil Nadu for a period of five years from 2004-05 (www.market.trade fair.com/assest/

english/tea market.pdf). Support activities done by Government of India in various parts for the tea sector development can overcome the problem in their tea industry. Regarding this, in Nepalese side there is almost vacant of R and D and other support activities, which is needed for the sector development. In this situation, how Nepal can compete with the Indian tea market.

Transportation facility and auction market are also required aspects for the betterment of tea sector. Nearly 33 percent and 25 percent out of 12 processing factories' respondents respectively said lack of easy transportation facility and no unavailability of auction market as the problems of tea industry. All these problems indicate that without removing above-mentioned problems, competitive strength of tea industries will not be higher than Indian ones.

5.15.2 Suggestions for the Quality and Quantity Production of Tea

In order to make tea as much as profitable business, respondents suggested many things which can improve the quality and quantity of tea. Tea factory owners want support/subsidy from the government side. Table 5.40 exhibits that all of 12 respondents which were surveyed, suggested that to increase the quality and quantity of tea, subsidization scheme, programmes should be launched by the government.

Table No. 5.40

Suggestions for Quality and Quantity Production of Tea

S.N.	Suggestions	CTC		Orthodox		Total	
		No	%*	No	%*	No	%*
1.	Govt. subsidy and support	6	100	6	100	12	100.0
2.	Technical knowledge	6	100	5	83.3	11	91.6
3.	Energy supply	5	83.3	3	50.0	8	66.6
4.	Solving the labour problem	4	66.6	2	33.3	6	50.0
5.	Tea research centre/lab	4	66.6	5	83.3	9	75.0
6.	Searching the new market	4	66.6	2	33.3	6	50.0
7.	Govt. initiative to make trade promotion scheme	4	66.6	3	50.0	7	58.3

Note: An aestrics * denotes multiple responses, percentage may exceed hundred

Source: Field Survey, 2008.

Technical knowledge/trained manpower development is another most important factor which is needed to increase production and quality. In this study, 91.6 percent respondents have suggested that technical knowledge and trained manpower development is necessary in this sector for the upliftment of the tea sector. Even factories' staffs/labours who have taken several training feel that, they need further knowledge on various aspects of tea processing. Within a country, tea sector experts are few in number so, factory owners and managers were relying heavily on Indian processing and marketing expertise thereby losing country image. Most of the respondents said that due to unavailability of technician within a country at field level, they were unable to consult at time of need.

Similarly, 66.6 percent out of total surveyed respondents suggested electricity is main source of energy but it is too costly and there are frequent power failures, which cause disruptions to the factory operations. As a result, productivity and quality of tea will be deteriorated. Power is required to run the withering fans and some of the machineries. Furnace oil and coal are the other energy sources used in the factories and these too are imported from India. In such a situation, running factories smoothly is very difficult. So, most of the respondents were serious about the energy supply system which is not good in Nepal. That's why, they are suggesting for good supply of energy by government/their institutions and other related stakeholders.

Tea is a labour intensive product. The cost of labour represents about 55 to 73 percent of made tea production cost (tea processing factory gate price not retail price) (SOMO, 2008). It shows that labour is most important factor in tea sector. Quantity and quality of tea basically depends on labour, their skill as well as suitable atmosphere to work. But the tea estates and factories of Nepal were closed by labour and their trade unions frequently. So, 50 percent respondents suggested, in this regard, that labour problem should be addressed properly. Labour act formation and implementation of it in the tea sector is needed, with consensus among the stakeholder like, labour representatives, trade unions, factory representatives and government authorities who should make new labour act for solving the labour problems which is exist in tea sector.

Like all other areas of the industry, research too lags behind. Research has been generally neglected. Tea research centre which needs to develop the productivity

and quality, variety of tea, pest and disease management in tea gardens, bio-chemical and fertilizer making process, market feasibility study and the overall situation of tea sector in Nepal with global perspective. These all things should be studied through research centres. For that, tea research centre (TRC) should be established. Out of 12 respondents, 75 percent respondents suggested it. Any potential research instincts have been suppressed to the extent that innovation in the industry or changes in the style of manufacture, or applying subtle changes to the methods of manufacture, have not been introduced.

It is necessary to establish a research centre, which is specific to tea with all the relevant divisions of agricultural based commodity in place to look into agronomy, physiology, pathology, bio-chemistry, manufacture, extension, training, information and now the important aspect of marketing to look into new product development with global consumers in mind.

The work stoppages caused due to political unrest in India, which is now in toll on the Darjeeling tea with both quality and quantity declining will open the possibilities for Nepal Orthodox tea for price gains and entry into new market. For CTC tea new market is needed along with India. Pakistan's market has shown same interest, it may be the new market for CTC tea. Germany, India, North America, Japan, EU and New Zealand are buyers for Orthodox tea. There is imperative to search the new markets for the both CTC and Orthodox tea, 50 percent respondents suggested it.

Next 58.3 percent out of 12 respondents suggested that government initiative to make trade promotion scheme would be fruitful.. For the promotion of tea trade in the global market, for example establishment of Nepal tea logo and brand is required. It is also necessary that the seedling and clones developed in Nepal be protected. Nepal must strive and develop Geographical Indicators, mainly for the Orthodox tea areas, similar to Darjeeling in India and Dimbula/Nuwava Eliya in Sri Lanka so that branding and marketing such product can be done.

5.16 Extension of Tea Exporting Firms and Causes

For the last 10 years size of the tea exporting has been increased, extension of tea exporting firms and causes increase in demand, new factory establishment, and market expansion and value addition. In the field study, four out of five were found to have said that their size has been increased for the last 10 years. But one respondent found to say that it has not been changed/ increased.

According to respondents, extension of the firms was mainly due to the increase in demands, increase in productions, establishment of new factory, increase in value addition activities and increases in publicity in global markets. These causes were responsible for the expansion of the size of tea exporting firms. After membership such activities have been continuously changed.

5.16.1 Price Trend for the Last 10 Years (Export Price)

Price of any consumption goods does not remain always the same. Mostly price of goods increases time to time. In the same way price trend of tea in Nepal has not remained the same. Price trend of tea for the last ten years is shown in table 5.41.

Table No. 5.41

For the Year 1998/99 - 2007/08

Export Price (in Rs/Kg)

S.N.	Year	A	D	E	Total A+D+E	Average A+D+E	Organic Orthodox (B)	Orthodox General (C)
1.	1998/99	60	65	60	185	61.7	300	120
2.	1999/00	70	75	70	215	71.7	300	120
3.	2000/01	75	75	70	220	73.3	300	120
4.	2001/02	80	85	80	245	81.7	350	120
5.	2002/03	70	75	80	225	75.0	380	120
6.	2003/04	60	70	85	215	71.7	400	120
7.	2004/05	60	70	85	215	71.7	400	160
8.	2005/06	70	80	90	240	80.0	425	180
9.	2006/07	80	90	100	270	90.0	450	200
10.	2007/08	110	120	115	345	115.0	500	210

***Note*:** A, D, E exporters were belonged to CTC tea type and B, C were from organic Orthodox and general Orthodox type respectively. So, the exporting price of them is different from each another type of tea.

Source: Field Survey, 2008.

Table 5.41 reveals the price trend of tea at exporting price as per the different types of tea. Exporting price of CTC tea for the year 1998/99 was found 61.7 Rs/Kg and for the year 2007/08 it was 115 Rs/Kg. Table 5.41 shows that within a last 10 years exporting price of tea was nearly doubled. Price of tea was continuously increasing for the year 1998/99 up to 2000/01. It was continuously declined up to 03/04. It remained constant for 2004/05.

After the year 04/05 it started to increase slowly after WTO entry. Later in 2007/08 the processing cost Rupees 87.5 (table 5.31) and gross margin rupees 20.30. This increment continued for following year. According to the respondents, price falling in world tea market was basically caused by oversupply situation of tea in global market. Since prices of tea have been rising due to the growing consumption in China and a slump in Kenya tea production it was the main cause of increasing of prices according to the respondent.

Price trend of organically produced Orthodox tea export is given in table 5.41. Price of tea for this type was for the year 1997/98 300 Rs/Kg up to 1999/2000 and it has been slightly increased as 350 Rs/Kg for the year 2000/01 and it has risen up to 500 Rs/Kg for the year 2006/07. Within this study period i.e. 1997 to 2007, no declining trend has been seen for this type of tea. But for the year 2003/04 and 2004/05 it was constant at the rate 400 Rs/Kg. Price trend was declining for CTC type tea in these years. Orthodox type tea exporters' price was 120 Rs/Kg for the year 1998/99. This rate was stable up to year 2003/04 and afterwards it has been increased up to 2007/08. In the year 2007/08 it was 210 Rs/Kg which is nearly double and more than half of CTC and organically produced Orthodox tea respectively. The cost of organic orthodox Rs 300 for the year 2007/08 with export price Rs 500 and gross margin equals Rs. 200. Similarly cost of production of general orthodox is Rs 166 (based on table 5.31) and export price is Rs 200/kg, and Rs 34 is gross margin.

5.16.4 Transportation/Export Cost

Transportation cost for export of tea is different in different countries/ destination. According to 3 respondents, around 10 Rs/Kg was the transportation cost for exporting the tea to India. Two respondents said exporting tea to Germany and EU

countries was ranged from 40 to 55 Rs/Kg of tea. Transportation cost for Pakistan was 15 Rs/Kg, according to the available data from the field for the year 2007/08.

It was reported that export cost for the last 10 years has been increased. According to the respondent, it was mainly increased in wages and transportation cost. Exporting cost has been just doubled in this period, two respondents said. Another three respondents said that it has been increased at the rate of 10 to 20 percent annually. It means nearly 100 percent export cost was increased in this period of time.

5.16.5 Factors for Price Change

There are so many factors affecting the price change. In the tea sector there are different methods of processing mainly CTC and Orthodox type. Within these types generally, 1st to 5th grade of tea qualities have been available in the market. As a result, price of tea differs. If quality of tea is changed change in price may take place. Factors affecting the price are shown in Table 5.42.

Table No. 5.42

Factor Responsible for Price Changed

S.N.	Factors	Number
1.	Production fluctuation	3
2.	Quality	4
3.	Seasons affect	3
4.	Taste	3
5.	Demand and supply situation	3
6.	Labour problem	2

Source: Field Survey, 2008.

Table 5.42 shows, four out of five respondents said that the change in price of tea mainly depends on their quality. Production fluctuation is also responsible for the change in price, three respondents said. Over production/supply of tea is another cause of change in price. Due to the over production, real-world market tea prices were fallen by roughly half from 1980 to 2005. But cost of production was increased mainly due to two reasons; the increase in wages and drastically rise in fuel cost over this period. It is clear that the profitability in the industry is under serious pressure.

Consumer's taste on tea is also a factor of price change. Consuming pattern/habit is also responsible for the price change. Seasonality is another factor for price change. Product of first flush will generally be high quality and its price will be higher than the other flushes of tea production.

After WTO entry it has direct effect on labour market, supply and demand, consumer's taste. Therefore, these factors have connection with WTO..

5.16.6 Changes in the Earning Pattern for the Last 10 years

According to the respondents earning pattern has changed for the last 10 years. In the study area, four out of five respondents experienced change in earning position as nominal amount. One respondent said that it was around 10-20 percent. But one respondent said that the earning position has not changed. The causes for the increment of earning, according to respondents, were the increase in production, timely delivery and good role in market.

5.16.7 Changing of Demand Pattern of Nepalese Tea in International Market

Demand pattern of Nepalese tea in international market has been changed for the last 10 years. This situation was experienced by the respondents. All of the five respondents (exporters) felt that there was change in demand pattern at the international market. Among the five exporters one said that there is no organic certification, as a result, European market has been down. Similarly, three out of five said that there was change in demand pattern due to the beginning of fair trade and participation in such occasion. As a result, publicity, quality improvement, specialty produce type of tea was highly demanded in international market. Mainly, respondents focused on organic and quality certification, fair trade and specialty production of tea to grab the global demand of tea.

5.16.8 Effects of Cheap Imported Product on Export

According to the field data, all the five respondents said there is no cheap import of tea, but there is existence of quality import. So, due to this reason there is no important question about cheap imports of tea and its effect on tea.

They were not damaging the profession by cheap import according to all five exporters. But among the respondents, one said that import of tea doesn't damage the profession but there is effect on export of Nepalese tea, as making less price, less demand, has reduced income and reducing the capacity.

5.17 Impact of WTO on Export/Exporters of Tea

In this study exporters were asked a question- what do you experience on tea export after the accession of Nepal into the WTO? Experiences of exporters are given in table 5.43.

Table No. 5.43

Experiences of Exporters, After Entering in to the WTO

S.N.	Experiences	Ranking				
		5	4	3	2	1
1.	Harmful	-	-	-	3	2
2.	Beneficial	2	3	-	-	-
3.	More competitive	2	1	2	-	-
4.	Need to improve quality	5	-	-	-	-
5.	Market damaging	-	-	-	1	4

Source: Field Survey, 2008.

Table 5.43 shows that tea exporters have found it beneficial to export tea after entering of Nepal into the WTO. Out of 5 respondents 2 and 3 gave highest scale 5 and 4 respectively for the beneficial experiences. Due to the market access opportunity of WTO agreement exporters can grab the opportunity as per the response of respondents.

All the respondents said there is need to improve quality of tea to take the global market. They gave the highest rank to improve quality. It is sure that without quality or competitive product global market will not be available. Tea exporters have experienced that global market will be more competitive after the entry into the WTO. Out of 5 exporters 2 were scaling highest rank for market will be more competitive. One and 2 respondents respectively gave 2^{nd} and 3^{rd} scale for market is being more competitive.

After the entry into WTO, exporting condition of tea will not be harmful and market damaging condition may not occur as per the response of the respondents

because they were not focusing on it. Most of the respondents gave lowest scale for this condition which will not be harmful and market damaging after entering into the WTO. Consumers of developed countries are more conscious about the quality/organic product. If Nepal's product is qualitative and organic, export potentiality of Nepalese tea will be high in international market.

5.18 Export and Policy Related Information on Tea Exporters

5.18.1 Factors for Better Export

Different factors are responsible for the export of tea. If a country can export large quantity with quality that is called better export. Field data show that for better exporting of tea there must be government support, quality production, chemical free certification, good manufacturing practices (GMP) and transportation/transit facilities. Factors responsible for better export are shown in table 5.44.

Table No. 5.44

Factors for Better Export

S.N.	Factors	Number
1.	Quality product	3
2.	Government support	4
3.	Chemical free	2
4.	Certification	3
5.	GMP	3
6.	Transportation/Transit	2

Source: Field Survey, 2008.

Table 5.44 reveals that 4 out of 5 respondents said government support programme/scheme to the exporters is most important factor for better export of tea. From the side of government, support scheme like, export credit with subsidized rate, market searching support, transportation and transit support, packaging material support etc may be included in this support. In availability of this support, export can be promoted. Likewise, quality with chemical free product is other factor for better export. In the global tea market, organic and 1st grade quality tea, are highly demanded. In this study, 3 respondents focused on quality and chemical free product of tea for the better exporting. Quality and organic certification is essential for better export of tea globally as 3

respondents reported. In good manufacturing practices (GMP) good handling, processing, storage and packaging etc. works are included. For the maintenance of quality GMP should be done. As a result, export of tea will be better which 3 respondents have focused on. Transportation/transit facility is also necessary for better export of tea. Without this facility exporters can't increase their export in quantity.

5.18.2 Relative Quality of Nepalese Tea in International Market

Relatively medium quality of Nepalese tea in international market is neither inferior nor superior. Its relative quality in international market is in between excellent and poor. As per the relative quality 2 out of 5 exporters said relative quality of Nepalese tea is excellent than the others and 3 said it is good. Relatively Nepalese tea is not poor in global market.[1] So, none of them said quality of Nepalese tea is poor in comparison to others.

According to the participants of focused group discussion and the key informants quality of green leaves in Nepal is relatively better, due to the youngness of the tea bushes good tips, clone variety and climatic condition is better than others. Quality of Nepalese tea is neither poor nor excellent. It is good in international market.

5.18.3 Strategic Alliance with Foreign Firms

Export promotion strategy with foreign firms is necessary to enhance the export of a product. There are many firms in the global tea market which can affect the tea market situation, like demand pattern, prices, production and consuming habits. Alliance of tea exporters with the foreign firms lacks in Nepal. According to the field data only one respondent has a trade agreement with Japanese and Germany party. But 4 out of 5 exporters have not any strategic alliance with foreign firms. This situation indicates that Nepalese exporters' capability to build the relation/alliance is very weak. In this competitive age, to grab the global market there must be alliance with foreign firms.

[1] See 5.14.3, "Superior Tea in SAARC Region".

5.18.4 Information Access of Exporters

Tea is traded in world market. For this reason it is necessary to understand the world market situation of tea; like consumption pattern/habit according to tea quality, producing countries, price situation, auction market, world production situation etc for the tea exporters. Field data show that all the 5 respondents have e-mail and internet facility for the access on information. But among them 3 respondents had remarked about the information access that their access on information is not strong, News letter, magazine, tea time and tea related literature were another sources of information for them. It was found that 4 out of 5 have access on information through newspaper, magazine and related literature of tea. Three respondents have access to personal contact through telephone. This is age of communication and different types of medias are being developed worldwide. According to field data, they have access in information, but not in strong position, all of them felt it.

5.19 Facilities Provided by the Government and their Institution

For the export promotion of tea there is need of facilities which the government and institutions should provide making competitive strength of tea in global market. But most of the tea exporters did not have facilities through government and their institutions. Government and their institutions have not provided facilities/supports for the exporters to promote the export. In the study 4 out of 5 respondents reported it. One respondent said that from the side of government, establishment of tea and coffee development board is supporting activity. Through this board, publicity of tea in international market is made available and some technical knowledge sharing for processing factory and in farmer's level is provided.

5.19.1 Loan Facilities

There is need of loan to exporters for the export promotion. There is only one international bank, the State Bank of India operating in Nepal. Standard Chartered Bank, Himalayan Bank, Nepal Bangladesh Bank, Nabil Bank and Nepal Investment Bank are established with foreign collaboration. Many local banks are operating at specific sector like Agricultural Development Bank. Some banks of Nepal such as

Nepal Bank Limited, Rastriya Banijiya Bank, Bank of Kathmandu, Laxmi Bank, Kumari Bank etc are also able to handle export financing. But they do not have the network of correspondents overseas to facilitate transaction. It hinders the smooth transactions in banking matters. There are no financial facilities available to exporters at favourable rates. There is no pre-shipment finance and export credit insurance scheme available to safeguard exporters in the event of default from overseas buyers which is now a grim reality. Observation shows that 2 out of 5 respondents have taken loan from the bank. One was getting loan from Agricultural Bank at the rate of 9 percent and another from the commercial bank at the rate of 11 percent. Most of the respondents were not getting loan facility. So, they felt lack of financial support to promote the export.

5.19.2 Problems Faced by the Tea Exporters and Suggestions for Enhancement of Tea Export and Problems in Government Programme/ Policies

Most of the exporters said that from the side of government there are no supportive and subsidy programmes for the exporters. There is no bonus for export in Nepal, but in India there is 7 percent cash incentive to the export of their value. Plant quarantine by India is also a main problem for the export of tea from Nepal. For the removal of problem, there is no effective initiative taken and programmes launched by the government. In this context, exporters suggest that government programmes and policies should be discussed among the stakeholders.

Main Problems Faced by Tea Exporters

There are so many problems faced by tea exporters in process of tea export. Field data show that most of the exporters mention weak unsupportive role of government as the main problem in the context of tea exporting. Likewise, there is no subsidy facility and loan facility with low interest rate. List of the problems which were faced by tea exporters are shown in table 5.45.

Table No. 5.45

Main Problems Faced by Tea Exporters

S.N.	Problems	No
1.	Supportive role of government is low, no subsidy facility loan facility with low interest rate	4
2.	No easy transit facility/lack of container facility	4
3.	Banda, Hadtal, Chanda, Terror-Strike	3
4.	Lack of transportation and communication	3
5.	Logo and identify problem	3
6.	Quality testing problem/non-trade barriers	3
7.	No market promotion activity	3
8.	Lack of quantity and quality	2
9.	Lack of wire houses/blending and auction market	2
10.	More expensive to participate the trade fare	2

Source: Field Survey, 2008.

Table 5.45 shows that most of the exporters i.e. 4 out of 5 said that the government role regarding the export increment was not effective or good. There is no subsidy for the export promotion activities and loan facilities with low interest rate available for the tea export. They said that export trade was inadequately supported by the government. Exporters were levied a VAT payment of 13 percent although it is refundable, it is very difficult to get back.

Being a land-locked country, Nepal is dependent on her neighbouring country India for the use of her seaport for export cargo. In the view of 4 respondents out of 5 reported that there exists bilateral transport agreement between India and Nepal. But there are delays and obstructions faced by the exporters sometimes adding on to costs. So, there is no easy transit facility as well as lack of container facility faced by most of the exporters as a main problem.

There seems to be total lack of information gathering in the industry except little or no active attempt to collect, analyze and distribute information to the exporters/ stakeholders. During the field work 3 respondents out of 5 opined that there is lack of information/ communication system. Due to these reasons exporters are

unable to understand the exact position of global market like, demand pattern, production, consumption pattern/new concept in tea consumption, specialty market segment etc.

In the context of maximizing export 3 respondents out of 5 exporters responded that there is identity problem to maximize the export. Nepal tea logo and brand in international market is not established. So, there is identity problem to enhance the product. It can be the driving force to establish the Nepal Tea Logo and brand in the global market for promotion of export.

There is lack of quality testing laboratories, which could be capable of conducting tests and to analyzing residue levels, heavy metal presence, fungal infestation and issuing reports required by the larger section of international trade today. Similarly, 3 respondents said that this is a great disadvantage, as sample of tea awaiting export have to be sent to laboratories in India and Germany for such tests to be performed. It indicates that there is existence of non-trade barriers on tea export respondents which is felt as a problem in tea sector.

Nepal's tea market is very small compared to that of the world market. Exported quantity of tea is around 0. 56 percent and production is 0.48 percent out of the total global production. There is also lack of promotional activity. Regarding this, 3 out of 5 respondents said that there is no market promotional activity. So, it is difficult to build up a brand image unless with personal contacts and constant interaction. No market information system is available to give guidance to exporters on current trend, price movements in other auction centres, changes in consumption habit etc. In this regard, there is need of promotional activity to enhance the export of tea.

Quantity and quality production, lack of warehouses/blending facility were also some other problems of export of tea. Participation in international fair trade can be an important marketing tool of tea export. But respondents said that participation in fair trade is more expensive for the Nepalese tea sector/ stakeholders. In this regard government support should be available for the participation in fair trade according to respondents.

Some Suggestions for High Quantity and Quality Export of Tea

There are many problems faced by the tea exporters in Nepal. If we looked into the problems, there might be some ways to overcome the problems to compete in the global market after entry into WTO. Some suggestions are given by the exporters to overcome those problems are as follows:

(i) Government support/subsidy should be given or increased;

(ii) Encouragement of organic method of cultivation and production;

(iii) Arrangement of training programmes;

(iv) Technical training for farmers to manufacturing level;

(v) Frequently close up tendency and forceful financial support activity (*Chanda Atanka*) by trade union activist and others visible and invisible elements should be controlled;

(vi) Transportation/transit facility should be managed;

(vii) Tea quality should be maintained;

(viii) There should be better co-ordination among the tea sector stakeholders;

(ix) Facilities should be given to the exporters and processing factories as per the subsidizing and supporting scheme of others tea producing countries.

5.20 Labour's Condition in Tea Gardens/Estates

This section includes the various aspects of labours, who work in tea gardens of the study area. Family size of the labour, educational status, wage rate, health condition and their behaviour having cigarette/tobacco during working time at the tea gardens are comprised in this section. All these aspects of labours are discussed in following ways.

5.20.1 Family Size

Tea cultivation is labour intensive farming. Family size is an important variable that determines the supply of labour to the farm operations. Family size of sampled labours is shown in table 5.46.

Table No. 5.46

Family Size of the Labourers

Size of the Family	No.	Percent	Average Family Size
Up to 3	2	8	Total No. = 130÷25
> 4 up to 6	19	76	
7 and above	4	16	
Total	25	100	5.2

Source: Field Survey, 2008.

For the sake of this study family size has been classified into three groups i.e. up to 3, 4 up to 6 and 7 and above number in the family. Table 4.46 shows that majority of the workers belong to the 4 up to 6 numbers in the family. In the study area 2 out of 25 families are in very small family i.e. upto 3 numbers. In the study area, large size family i.e. 7 and above number is just 4 out of 25. The overall average family size of the surveyed households is found to be 5.2, which is lower than that national average family size (5.45) (CBS, 2004). In the study area, the modal family size is of 6 persons.

5.20.2 Education of Sampled Household

In the present study, education status of labours aged 6 years and above has been considered. The education status has been categorized into 5 different groups. Illiterate means those who can't read and write at all. In primary level education category comprises those labour who can simply read and write and having formal schooling up to class five. Secondary level includes those labour who had attained or passed at least 5 class and up to SLC. Higher education level includes those who had joined or passed the certificate to Master's level. Technical education in context to present study is that, who have knowledge or getting education on tea farming is called as technical education. Educational status of sampled labours in study area is given in table 5.47.

Table No. 5.47

Educational Status of Labours

Illiterate		Primary		Secondary		Higher		Technical		Total	
No	%	No	%	No	%	No	%	No	%	No	%
12	48	10	40	3	12	0	0	0	0	25	100

Source: Field Survey, 2008.

Table 5.47 shows that 12 out of 25 sampled workers are found to be illiterate, 40 percent out of 25 workers belong to primary school level and 12 percent to secondary. Educational status of labours is below than the national average, which was 53.7 for 2001 (CBS, 2001). No respondent with technical education was found among sampled labours.

4.20.3 Wages for the Labours

Tea plantation is labour intensive activity. So in the tea gardens labour is the main factor of green leaves production. The cost of labour represents about 55 to 73 percent of made tea production cost (tea processing factory gate price not retail price) (SOMO, 2008: 27). In the study area, wage rate varies among the tea gardens. In large or organized tea estates and government owned estates, there is fixed wage rate. It was Rs. 95 for the year 2007/08. But in the small and unorganized tea gardens, different wage rate were practiced. Maximum wage paid for the labour was Rs. 100 and minimum rate was Rs. 70; this minimum wage rate is generally practiced in small and unorganized tea gardens. In an average Rs. 79.0 was paid for the labour. In some of the areas or in gardens temporary workers were found to have paid at a piece rate, with a fixed price per kg of green leaf picked. The result is that workers income varies according to their skill, working hours, health, strength and high and low seasons. Permanent workers have a better income or their real wage is high, due to the availability or getting the other facilities like provident fund, medical facilities, *Dashain* (a great Hindu festival) expenses etc, than the seasonal plantation workers. It also seems that of seasonal labours on large plantation are in turn better paid than those on small holder farms, where piece rates are often lower.

In the study area wage rate for the plucking of leaf in different tea gardens was found to be at minimum rate Rs. 70 per day to 75, 80, 85, 90, 95, 100 Rs/per day. Some gardens in the field, piece rate is/was also practiced. Workers said that in Orthodox and CTC area there are different piece rate of wage prevailing i.e. if one worker (picker) plucks 14 kg green leaf a day, it is one *Hazira* (certain weight based task) in Orthodox area and 23 kg for the CTC area. If plucker can met and go above the target (*Hazira* level) she/he gets additional Rs 5 and Re 1 per kg of green leaf respectively in Orthodox and CTC gardens. Workers said that in the peak harvesting season they can earn more than that of in the lean season, because there are simply not enough leaves to pluck.

According to the workers, they can pluck green leaf in an average per day 15-20 kg in Orthodox area and 40 to 50 kgs in CTC area. But in the peak harvesting season they can pluck 30-40 kgs for Orthodox and 60-80 kg in CTC areas, in the lean season 5-7 kgs and 30-40 kgs for Orthodox and CTC respectively will be plucked. Plucking capacity of the plucker depends on various factors. Their skill of plucking, health condition, remuneration and other facilities, what they are getting in real term, like food, medicine, education for their children, all these factors are responsible for the labour productivity. These facilities are not same in all gardens and at the same time, workers health condition, education and skill are different, as a result all workers can't work at same level. Overall impact of low wage rate of tea garden workers does not seem to be of good living standard.

Wage rate for the workers in Indian state of West-Bengal tea estates was 54 IRs for the year 2007/08, according to the manager of Thrpu tea estate of Darjeeling. Some other facilities like; food grain, housing, medicine, education for children is also provided from the estate to the workers, he told at the time of interview with researcher. In Kerala state of India worker's get wage at the rate of 78 IRs (SOMO, 2008: 28). This rate is higher than of Nepalese government tea estates and organized large tea estates, which was 95 Rs. per day. Wage rate for the West-Bengal tea gardens workers in Nepalese currency was about 87 Rs, which is higher than that of small tea gardens or unorganized tea estates and lower than government owned and large organized tea estates of Nepal. In India, workers on small holder gardens get paid at much lower rates than at the estates and they have hardly any right compared

to their plantation counterparts. It generally seems that workers on smallholder farms in India and Nepal are often paid below the minimum wage levels.

5.20.4 Working Period

Smallholder tea gardens relied solely on casual (and family) labour, although the majority of the workers on large estates were also working on temporary basis. One important reason for this is that tea work is often seasonal. Apart from offering flexibility, however, temporary workers are also popular because they tend to be cheaper than permanent workers. Casualization of labour is a major concern, because workers are not guaranteed job security and others benefits that permanent workers acquire, such as: pension rights and access to medical care for their children. Workers who have become permanent workers receive fixed monthly wages, and facilities such as housing, provident fund, *Dashain* expenses, gratuity, children's education fee, medical care etc. Working period status of labours in tea gardens in study area or surveyed households shows that 12 out of 25 workers were found working just for 6 month and 6 workers were working for 9 month. It means 72 percent workers are working as casual workers. Among them 28 percent respondents were found to have been working for a full year. Majority of the workers in tea gardens are casual and temporary. By nature, it is a seasonal business, so the gardens owners prefer the temporary workers mainly for the minimization of the cost on labour. If workers can't get the full time work, as a result, their earning pattern will be low, as well as their life style will be very difficult. Majority of the workers in tea gardens depend on daily wage for their life. Large estate and government owned firms are providing some other facilities other than daily wage. Small holding farmers are unable to provide full yearly work to labours and at the same time they were not operating as organized firms. So, the workers who are engaged in small holding firms had less number of facilities than the others.

5.20.5 Training on Tea Farming

The training in tea plantation about use of chemical fertilizer, nursery maintaining, plucking, purning and pesticide application and handling of green leaves are most important works in this field. Basically, these all works are done by the

labours. For it, workers should be trained or skilled to get more return from the tea gardens. But in study area, only 4 out of 25 workers have taken training or knowledge about the above mentioned works. According to the surveyed households, 17 out of 25 were in need of training about plucking, purning, application of chemical fertilizer and pesticide and other related to the tea gardens. Among them 8 workers said that above mentioned works can be done without any special training. They opined that such type of works can be easily done with the learning by doing principle. In this regard, however, workers in tea plantation activities, they must be trained or be skillful to enhance their productivity, well management of the gardens and to minimize the cost.

5.20.6 Health Condition

Healthier people can show their strength in time of working. Good health of workers positively contributes on production/productivity. In the present study, researcher asked them a question about their health condition- is your earning adequate to maintain your health? Out of 25 respondents, 5, 9 and 11 reported good, bad and normal condition of health, respectively. Out of total, 72 percent workers said that their earning was insufficient to maintain good health. It indicates that, wage rate and other facilities to the workers are insufficient to maintain their basic needs.

5.20.7 Children's Education

“Are your children getting education?” This question was asked to the workers to find out the education status of their family. In the study area, 72 percent out of surveyed workers reported that their children were getting formal education. In the study sampled households there were 44 children aged 6 upto 14 years. Among them 26 children were studying below the class 5. Among them 7 were studying in class 6 to 10. It seems that 75 percent of their children having school education and remaining children were doing other works like, taking care of their younger brother and sister and remaining time they work in the house as their parents tell to do. It means, all of the children having schooling age are not getting schooling opportunity. They are beyond the access to school education. As a result, they are marginalized and becoming marginalized within the society. This is overall existing situation of

Nepal in the case of tea farmers. Millions of children in Nepal are far from the path of development.

5.20.8 Having Cigarette/Tobacco

Cigarette/tobacco smoking habit of workers/picker is also an issue of concern in plucking and processing stage of tea. The cigarette smoking and having tobacco behaviour of workers have been studied in the present study. A study report says that, the importers or the government authorities in the EU are within the right to reject the tea consignments from Nepal containing tea, the leaves of which were picked by farmers or workers while smoking cigarette (Adhikari and Adhikari, 2005: 19). At the time of plucking and handling of green leave by workers, if they use the tobacco, its small part of nicotine will be transferred in to the tea leaves, report said. According to the report in this regard, such type of non-tariff barriers in the form of health, safety and quality standards are prevalent in most of the developed countries market.

According to the data available from the field study that 15 (60 percent) out of 25 sampled workers have used the cigarette or tobacco at the time of plucking and others have used at the time of handling of green leaves. The workers have used cigarette and tobacco generally for 6 to 15 times a day. This habit of the workers is harmful to them in respect to their health and economic ground side by side it is harmful to them who use the tea leaves plucked-handled by the smokers or tobacco users. The summary of variability of two study areas is given in table 5.48.

Table No. 5.48

Some variability between the study districts are shown in the following table:

Indicators	Districts	
	Jhapa	Ilam
1. Type of Tea	CTC	Orthodox
2. Average Productivity of tea	2233 kg/ha	846 kg/ha
3. Total variable cost	8.67 Rs/kg	14.36 Rs/kg
4. Benefit cost ratio	1.48 Rs/kg	1.11 Rs/kg
5. Association between educational status of the farmers and productivity	Strong negative	Weak negative
6. Association between landholding size and productivity	Strong negative	Weak negative
7. Cost on chemical fertilizer/ pesticide	32 percent of total variable cost (TVC of green leaves production)	7 percent of TVC
8. Cost on organic fertilizer/ pesticide	9.73 percent of TVC	11.28 percent of TVC
9. Average revenue from the green leaves	12.85 Rs/kg	15.92 Rs/kg

Source : Based on Field Survey Data, 2008.

CHAPTER - VI
GLOBAL SCENARIO AND NEPAL'S POSITION IN TEA

6.1 Introduction

Of the non-alcoholic beverage, tea is the most popular drink being consumed by one-half of the world's population. Globally it is produced in more than 35 countries but only a few countries: China, India, Sri Lanka and Kenya produce almost three-quarters of tea. Almost 56 percent of all tea produced worldwide is consumed locally. For the sake of present study it is important to know about the global scenario of tea and regarding this, the position of Nepal in global perspective should be discussed. So, in this chapter, global tea production, export, import and consumption pattern of tea in global market are comprised. Furthermore, comparative study in some aspect between Nepal and India are also discussed in this chapter. Similarly, condition of Nepal's tea production before and after entering into the WTO and it’s competitiveness in export market, is also dealt in this chapter.

6.1.1 Global Tea Production

Global tea production reached 3.8 million tones in 2008 (ITC, 2009). Tea is produced in more than 35 countries but only a few countries: China, India, Sri Lanka and Kenya produce almost three-quarters of production. More than half of the world's tea is produced in China and India. According to the data available from the ITC-2009, China is the largest producer of tea followed by India. Both countries production of tea is 1.2 million MT and 0.98 million MT respectively for the year 2008. This quantity is 57.3 percent of the world's tea production. Major five tea producers of the world and tea producers of SAARC region countries, their production and their share in world production are shown in table 5.1. Rest of the producers and their production and share is shown in Annex A and A1.

Table No. 6.1

Major Five and SAARC Tea Producing Countries

For the Years 2004 - 2009

In Metric Tons

S.N.	Name	2004	2005	2006	2007	2008	2009*	2009 Share of World Production
1.	China	835231	934857	1028064	1165500	1200000	1358642	34.5
2.	India (SAARC)	892965	945970	955907	944912	980818	978999	24.9
3.	Kenya	324608	323497	310578	369606	345817	314198	8.0
4.	Sri Lanka (SAARC)	308089	317196	310822	304613	318697	289778	7.4
5.	Vietnam	119050	133350	142500	148270	166375	154000	3.9
6.	Bangladesh (SAARC)	55627	60600	53265	57955	58818	59242	1.5
7.	Nepal (SAARC)	12600	13000	13500	13700	16127	19204	0.48
	World Production	3332900	3457166	3546644	3750894	3804196	3936096	100.00

Source: **International Tea Committee,** 2009. * **ITC**, 2010.

Table 6.1 reflects that China, India, Kenya, Sri Lanka and Vietnam are the largest tea producing countries of the world for the year 2009. Among the SAARC members India and Sri Lanka are 2nd and 4th largest tea producing countries of the world. Share of world production of tea for India and Sri Lanka is 24.9 and 8.0 percent respectively for the year 2009. In SAARC region other two countries i.e. Bangladesh and Nepal are also tea producing countries in the global map. Production share of these four countries in the world production is 1347223 metric tons, which is 34.22 percent of the world production of tea for the year 2009. Table 6.1 shows that share of China in the world tea production is 34.5 percent for the year 2009. But for the year 2000, it was 23.6 percent for China and 28.8 percent for India in the same year. After 2006 India is behind the China in tea production. In this year, share of world production of tea of China was 29.1 percent and for India it was 27.1 percent. This situation of production indicates that production trend of China is increasing than that of India which is decreasing. World tea production has grown by 51 percent over the last 20 years and doubled over the last 3 decades (SOMO, 2008 : 19). World demand of tea is lagging behind. However, there is situation of oversupply. The competition for market share is, therefore, fierce. While Indian and Sri Lankan production

grew moderately by 18 and 12 percent respectively over the last decade. Vietnamese, Kenya and Chinese production increased by 153, 67 and 41 percent respectively (Ibid).

6.1.2 World Export of Tea

Almost 56 percent of all tea produced worldwide is consumed locally. Consumption in India and China, for example represents 81 and 71 percent of the total tea production of each of these countries (SOMO, 2008). However, many other (leading) tea producing countries, such as Kenya, Sri Lanka, Indonesia and Vietnam, export most of the tea they produce. In African tea producing countries such as Malawi and Uganda export more than 93 percent of production.

The leading world's tea exporters in terms of volume are Sri Lanka and Kenya, which together control 41.57 percent of world exports for the year 2008 (ITC, 2009). In terms of value, however, the exports of Sri Lanka are substantially higher than those of its close competitor. Other important exporters are China, India, Vietnam and Indonesia. Leading five tea exporters of the world including SAARC countries are shown in table 6.2. Rest of the exporters and export quantity is shown in Annex B.

Table No. 6.2

Five Leading Tea Exporter Including SAARC Nation

For the Year 2004 - 2009

In Metric Tons

S.N.	Country	2004	2005	2006	2007	2008	2009*	2009 Share of World Production
1.	Kenya	332502	348276	312156	343703	383444	342482	21.8
2.	Sri Lanka (SAARC)	290604	298769	314915	294254	297469	279839	17.8
3.	China	280193	286563	286594	289431	296935	302949	19.2
4.	India (SAARC)	193908	195228	215672	178541	193000	189000	12.0
5.	Vietnam	99351	87918	105116	110929	104000	95000	6.0
6.	Bangladesh (SAARC)	13435	9007	4794	10555	8393	3153	0.2
7.	Nepal (SAARC)	3100	3600	4000	7000	8600	8889	0.56
	World Grand Total	1558834	1565990	1577545	15372725	1637935	1574428	100.00
	Exported % of global crop	46.87	45.3	44.1	41.9	43.1	40.0	

Source**: International Tea Committee**, 2009. ***ITC**, 2010.

Table 6.2, in terms of volume, shows that Kenya, Sri Lanka, China, India and Vietnam are major tea exporting countries of the world in descending order for the year 2009. Share of the world export of tea for the year 2009 is 21.8, 17.8, 19.2, 12.0 and 6.0 percent, respectively for the Kenya, Sri Lanka, China, India and Vietnam. Share of total export of these countries is 76.8 percent for the year 2009. Among the tea exporting countries, share of tea export of SAARC Nation is 30.56 percent (Sri Lanka, India, Bangladesh and Nepal). In world tea export market, share of Bangladesh and Nepal is 0.20 and 0.56 percent respectively. Data show that export of Nepal is increasing every year from the last 6-7 years (ITC, 2010: 57). From a global perspective, Nepal is still one of the smallest players representing 0.48 and 0.56 percent of global production and export respectively (calculation based on ITC, 2010).

With somewhat tight supply situation witnessed during 2008, the exported share of global crop reversed. Total volume of exports grew by 4 percent in 2008. Export from

the African continent increased by 5 percent against the previous year. African continent is retaining a share of over 30 percent of total export. In addition to Kenya, India also made noticeable gains with the exports.

Table 6.2 show that Indian exports were recorded a healthy 10 percent increment following a drop of 18 percent in the annual exports during the year 2007. Exports were boosted by higher exports to the CIS, Egypt and the UAE. Export to UK declined for the sixth consecutive year. Quantities exported to the Russian Federation, Poland and Finland were also noticeably lower (ITC, 2009).

The ever-increasing demand for internal consumption in Bangladesh led to a further drop of 20 percent in annual exports but the average unit price of US$ 1.70 was a huge improvement in comparison to the price of US$ 1.23 in 2007. Combined exports to Pakistan and Afghanistan accounted for almost 90 percent of total export (Ibid).

6.1.3 Global Imports of Tea

Total Global Imports for consumption recorded an encouraging growth of 2.8 percent during the year, reflecting the increased share of global crop that was exported in 2008. Russian Federation, United Kingdom, USA, Egypt, Pakistan are the major tea importing countries from world tea market. Just 8 countries import half of all the tea traded internationally (by volume, corrected for re-exports). In descending order of importance, these are the Russian Federation (115%), the UK (8.6), the USA (7.7), Egypt (6.8), Pakistan (6.5), United Arab Emirates (4.0), Iran (3.8) and the Morocco (3.2) for the year 2008. All together 52.1 percent of tea has been imported by above mentioned 8 countries for the year 2008 (ITC, 2009: 78-79). Percentage share of world tea imports retained for consumption in major importing countries are shown in table 6.3 and rest of the countries with major importers are shown in Annex C.

Table No. 6.3

Percentage Share of World Tea Imports Retained for Consumption in Major Importing Countries

For the Year 2004-2009

In Percentage

S.N.	Country Name	2004	2005	2006	2007	2008	2009*
1.	Russian Federation	11.7	11.8	11.2	11.7	11.5	11.9
2.	United Kingdom	9.0	8.8	9.1	8.8	8.6	8.2
3.	USA	7.0	6.8	7.2	7.3	7.7	7.5
4.	Egypt	5.0	5.0	5.3	4.6	6.8	5.3
5.	Pakistan	8.5	9.5	7.9	7.1	6.5	5.8
6.	Other CIS	4.3	4.4	4.7	4.8	4.6	5.7
7.	United Arab Emirates	3.0	3.6	3.8	3.8	4.0	3.7
8.	Iran	2.8	2.9	3.3	3.7	3.8	3.4
9.	Morocco	3.2	3.4	3.4	3.5	3.2	3.7
10.	Japan	3.9	3.5	3.2	3.2	2.8	2.7
11.	Afghanistan	2.9	2.3	2.3	3.0	2.6	3.2
12.	Iraq	3.6	3.8	4.4	2.1	2.4	3.0
13.	Poland	2.3	2.1	1.8	1.9	2.0	2.0
	Total	67.2	67.9	67.6	65.5	66.6	66.1

Source: **ITC, 2009**, Annual Bulletin of Statistics. * **ITC**, 2010

Table 6.3 shows that two third of the total imports retained for consumption by above mentioned 13 countries, which in total share percentage is 2 percent and above. Russian Federation and the United Kingdom are 1st and 2nd importers for the last 5 years. Third largest importer of global tea trade was Pakistan from two decade back (according to the available data, ITC, 2009), but in the year 2007-2008 her third position has been displaced by the USA. From 2005 up to 2009 import trend of Pakistan has been declined significantly. Pakistan's annual imports showed 7 percent drop with supplied from Kenya dropping by over 12 million kgs. Recorded imports into Afghanistan appeared to have dropped by 10 percent with lower intakes from China and Kenya (ITC, 2009).

Imports into the Russian Federation from India continued to increase and imports from Indonesia were higher by 46 percent. However, a noticeable 8 percent

drop was evident in imports from Sri Lanka. Average unit price of total imports at US$ 2.81 is 15 percent than in the year 2007. Imports into the United Kingdom were marginally lower against previous year's levels. Though the intake from Kenya was lower, it still accounted for nearly half of total imports. Average unit price of US$ 2.34 for total imports reflected an increase of 20 percent against 2007. USA imports continued to be increased by another 6 percent through 2008 with bulk of the increased imports coming from Argentina and China. However, green tea imports dropped. Average unit price of overall annual imports was US$ 2.73 (Ibid).

Table 6.3 reveals that Egypt becomes fourth largest importers of tea. Its share is 6.8 percent for the year 2008. The presence of Indian tea in the market showed a share of 9 percent with the share retained by Kenya, easing to approximately 86 percent (data based on ITC, 2009).

6.1.4 Consumption Pattern of Tea

Almost 56 percent of all tea produced worldwide is consumed locally. Consumption in India and China, for example represents 81 and 73 percent of the total tea production of each of these countries (SOMO, 2008). In the countries like China, Vietnam and Indonesia, most people consume green tea. Local production of these countries is also dominated by green tea. In all other markets, black teas are the most popular in general, more leafy teas are considered as higher quality, and are particularly appreciated in premium loose tea markets, such as, Germany and Japan. CTC is ideal for tea bags. Tea bags are preferred by consumers among others in the USA, UK and the Netherland. In many countries ready to drink tea products such as "ice tea", lemonade with tea extracts, or bottled tea are increasingly popular as well. Consumption pattern of tea in various countries are shown in the following table 6.4.

Table No. 6.4

Consumption Pattern of Tea in Various Countries

For the Year, 2002/04 - 2004/08

In Kg Per head

S.N.	Country Name	2002-04	2003-05	2004-06	2005-07	2006-08
1.	UK (Including channel Islands)	2.21	2.12	2.17	2.17	2.11
2.	Ireland Republic	2.96	2.79	2.35	2.16	2.17
3.	Afghanistan	2.07	1.75	1.56	1.65	1.73
4.	Bangladesh	0.30	0.30	0.30	0.23	0.30
5.	India	0.67	0.68	0.69	0.69	0.69
6.	Pakistan	0.76	0.84	0.82	0.78	0.67
7.	Sri Lanka	1.42	1.40	1.40	1.39	1.39
8.	Kuwait	2.32	2.11	2.05	2.04	2.21
9.	USA	0.33	0.33	0.35	0.35	0.37
10.	Germany	0.29	0.28	0.25	0.26	0.28
11.	Japan	1.11	1.15	1.18	1.13	1.10
12.	China	0.40	0.44	0.50	0.57	0.61
13.	Nepal	NA	NA	NA	NA	0.35

Note: N.A. denotes not available.

Source: **ITC, 2009**, p. 127, NTCDB - **Tea Coffee** - 2067 (2010), Annual Bulletin, p. 79.

Table 6.4 reveals that Ireland Republic, United Kingdom, Kuwait, Afghanistan are the countries, which prefer tea more and their consuming habit of tea is higher than in other countries. Per head consumption of above mentioned countries is 2.17 kg, 2.11 kg, 2.21 kg and 1.73 kg respectively for the year 2008. For Sri Lanka and Japan there are 1.39 kg and 1.10 kg respectively in the same year. Per head consumption pattern of Pakistan, India and Nepal is 0.67, 0.69 and 0.35 kg respectively for the same year, which are below the above mentioned countries. This estimated value for India and Bangladesh is almost constant from the last 6 years, which is shown in table 5.4. Consuming habit of Germany and USA is around the 0.25 kg to 0.37 kg per head respectively from the last 6 years. It indicates that per head consumption of tea for these countries is almost constant. Table 5.4 shows that, China is a country whose per head consumption habit is increasing every year from

the last 6 years? For the year 2002-04 it was 0.40 kg and for the year 2006-08 it has become 0.61 kg/ph. Among the above mentioned countries, most of their consuming pattern of tea per head has been decreasing from the last 6 years above data show that. Among the above mentioned countries per heads consuming pattern is increasing but not in large quantity. The overall situation of world tea consumption seems to have slightly increased than the world production ratio. World tea production has grown by 51 percent over the last 20 years and doubled over the last 3 decades (calculation SOMO based on ITC 2007 and FAO stat 2007). Demand is lagging behind, however, creating a situation of over supply. The competition for market share is, therefore, fierce.

Among the SAARC countries, Afghanistan is the highest per head consuming country of tea. It was 1.37 kg/ph for the years 2006-08 for Afghanistan. Data show that there is no fundamental difference in per head consumption of tea in SAARC nations. Besides India (1.5%), Nepal (2.11), Bangladesh (1.9), Pakistan (2.4)) have higher population growth rate for the 2000-06 (WDR, 2008 : 334-335). As a result, demand of tea for consumption for these nations in terms of volume will be high.

6.1.5 Comparative Study of Tea Production and planted Area of Nepal and India

Nepal produces less tea than India does. India is the 2nd largest tea producer, having 24.9 percent, of world production (ITC, 2010). But Nepal's position is very low in the list in world tea production ranking. Only 0.48 percent production share of world tea has been occupied by Nepal for the year 2009, which is 52 times less than Indian production. Tea plantation area of India is 34 times higher than that of Nepal. These data show that Indian position in respect to tea production and plantation area coverage is very much higher than Nepal's position. Tea production and planted area of Nepal and India are shown as follows:

Table No. 6.5

Tea Production and Planted Area of Nepal and India

Year	Nepal[a]				India[b]			
	Tea Production (in MT)	% Change[c]	Tea Planted Area (in ha)	% Change[c]	Tea Production (in MT)	% Change[c]	Tea Planted Area (in ha)	% Change[c]
1998/99	4492.980	48.84	10250	127.02	874108	NA	474025	NA
1999/2000	5085.237	13.18	10250	0.0	852936	-2.4	490200	3.41
2000/01	6638.082	30.53	11997	17.04	846913	-0.7	5043366	2.89
01/02	7518.575	13.26	12346	2.92	854078	0.85	509806	1.08
02/03	8198.000	9.03	12643	2.40	838680	-1.80	515832	1.18
03/04	11651.204	42.12	15012	18.73	878129	4.70	519598	0.73
04/05	12606.081	8.19	15900	5.91	892965	1.68	52140	0.35
05/06	13688.237	8.58	16012	0.70	945974	5.94	555611	6.56
06/07	15167.743	10.81	16420	2.55	981805	3.79	567020	2.05
07/08	16127.490	6.32	16594	1.06	944678	-3.78	567999	0.17
08/09	16208.127	0.49	16718	0.74	980818	3.80	578463	1.84
09/10	16607.555	2.46	17127	2.44	978999	0.19	588700*	1.77
Percentage Change in 1998/99 - 2009/10		269.6		67.1		12.00		24.2

Source: a. National Tea and Coffee Development Board**, Tea-Coffee**, 2009 (2066)

b. **International Tea Committee**, 2006, 2009, Annual Bulletin of Statistics

c. Calculation by researcher based on above Mentioned NTCDB and ITC data

* Predicted value based on data presented in Table 6.7

Table 6.5 reveals that tea production and tea planted area in Nepal are growing every year from the 1998/99 - 2009/10. Within this decade tea production and plantation area has been found to have increased by 269 percent and 67.1 percent respectively. Percentage changes in the production and area coverage is not in similar proportion. There is fluctuation. Growth in production of tea is about four times higher than of plantation area of Nepal. But in Indian side, frequently negative production tendency has been found. Planted areas have been increased by 24.2 percent for the year 1998/99 - 2009/10, at the same period 12 percent increment has been recorded in tea production for India. Table 6.5 shows a remarkable indication that tea production and planted area has been increasing every year for Nepal, but for

India tea plantation area have been increasing every year in fluctuating rate for the last 12 years. Tea production tendency for India is in plus and minus position within the last decade. There is increase in tea plantation area every year in India, it is about 24.2 percent change in area for the last 12 years, but just 12 percent change in tea production. It indicates that productivity level in India is declining. In 2008 as much as 802 million kgs or about 82 percent of 981 million kg tea used for domestic consumption. Such a massive increase in domestic consumption in India has been due to increase in population, greater urbanization, increase in income and standard of living etc. Productivity level in Nepal and India is shown in table 6.6.

Table No. 6.6

Productivity Level for Nepal and India

For the Year 1998/99 - 2007/08

Year	Tea Productivity of Nepal (in kg/ha)*	Tea Productivity of India (in kg/ha)*
1998/99	438.33	1844.00
1999/2000	496.12	1740.00
2000/01	553.31	1679.00
01/02	609.00	1675.30
02/03	648.42	1626.00
03/04	776.12	1690.00
04/05	793.00	1712.60
05/06	855.00	1702.50
06/07	924.00	1731.50
07/08	972.00	1663.20
08/09	969.50	1692.40
09/10	969.64	1663.00**

Source: a. National Tea and Coffee Development Board, **Tea-Coffee**, 2009 (2066)

b. **International Tea Committee**, 2006, 2009, Annual Bulletin of Statistics

*Calculation is done (dividing total production by total planted area) by researcher himself based on data available from ITC, 2006, 09, 10.

** Predicted value based on the figure on Table 6.7

Table 6.6 reveals that productivity of tea in Nepal is increasing every year from the last 12 years. In 1998/99 productivity was 438.3 kg/ha for Nepal and 1844.0 kg/ha for India. It shows that productivity level of India is about four times higher

than that of Nepal in 1998/99. Tea yield in Nepal is found to have increased from the last 12 years. Calculation of percentage change in tea productivity in Nepal is 121.3 percent increase for the last 12 years. For the year 2009/10 productivity is 969.64 kg/ha and 1663 kg/ha for Nepal and India respectively. Productivity level of India seems to be fluctuating in different years. For the year 1998/99 to 2009/10, within this period of time, yield of tea in India has decreased by 9.8 percentages. However, yield of tea in Nepal is 71.5 percent less than the Indian tea productivity for the year 2009/10. Overall changing trend of productivity for Nepal is shown positive and significantly increased but for India yield rate of tea is seemed to be fluctuating within 1626 kg/ha to 1844 kg/ha for the year 1998/99 - 2009/10. At present yield level Nepal is low, but there is potentiality to improve it to meet Indian level. There is still large gap in productivity between India (1663 kg/ha) and Nepal (969.64 kg/ha). Soil is virgin and tea bushes are young, as a result, yield of tea is increasing every year in Nepal, although it is nearly half of Indian productivity. Long experiences in tea plantation, availability of technical knowledge and high application of fertilizer/pesticide in Indian tea estates/gardens have resulted into their higher productivity than that of Nepal.

6.1.6 Prediction of Tea Production and Planted Area for Nepal and India

Prediction of tea production and planted area for Nepal and India for the year 2007 to 2015 is based on table 6.6 and predicted through using the trend prediction method, the predicted result are shown in table 6.7.

Table No. 6.7

Prediction of Production and Plantation Area

Year	Nepal		India	
	Tea Production (in MT)	Tea Planted Area (in ha)	Tea Production (in MT)	Tea Planted Area (in ha)
2010	20538.028	18787	996401	598871
2011	21927.450	19354	1010810	609043
2012	23316.872	19920	1025220	619214
2013	24706.294	20486	1039630	629385
2014	26095.716	21052	1054040	639557
2015	27448.138	21618	1068450	649728
Percent Increase	33.64	15.7	7.2	8.5

from 2010-2015				

Source: Calculation based **NTCD Board and ITC** data for 2006 and 2009, 10.

Table 6.7 shows that production of tea for Nepal will be 27448 MT in 2015 and planted area will reach 21618 hector in the same year. Percentage increase from 2010-2015 is 33.64 and 15.7 respectively for the tea production and tea planted area. Predicted value for tea production and planted area of India is 1068450 MT and 649728 hectares respectively. It is 7.2 percent for tea production and 8.5 percent for tea planted area. It seems that tea production and tea planted area will be increased by the same percentage. Other things remaining equal, growth rate of tea production and planted area of Nepal will remain higher than that of Indian side. Ratio of change in Nepal will be higher than in India, which is shown in the table 6.7.

6.1.7 Production and Export of Tea in Nepal and India

Production and export are interrelated variables to each other. Both may be dependent and independent variables in different situation. Tea export from Nepal and India and their production situation in different years are shown in table 6.8.

Table No. 6.8

Production and Export of Tea

Year	Nepal		India	
	Production (in MT)[a]	**Export (in MT)[b]**	**Production (in MT)[a]**	**Export (in MT)[b]**
1998/99	4492.80	82	874108	189092
1999/2000	5085.37	82	825936	204353
2000/01	6638.82	70	846913	179857
2001/02	7518.575	2090	854078	198087
2002/03	8198.00	2800	838680	170277
2003/04	11651.204	3100	878129	193908
2004/05	12606.081	3600	892965	195288
2005/06	13688.237	4623	945974	215672
2006/07	15167.743	7000	981805	175841
2007/08	16127.490	8600	944678	193000
2008/09	16208.127	8889	980818	200070

2009/10	16607.555	8489	978999	189000

Source: a. National Tea and Coffee Development Board, **Tea-Coffee,** 2009 (2006)

b. **International Tea Committee**, Annual Bulletin of Statistics, 2006, 2009, 10.

In order to study the relation between production and export situation of these two countries table 6.8 data are used. Available data which were taken for Nepal from NTCDB for the years 1988/99 - 2000/01 do not look reliable. So for the authenticity of these data researcher asked question about these data to the board of director and other staff of the NTCDB and they said only those export volume are included which is exported overseas and these data were taken from export promotion centre (it may be only Orthodox tea). In order to build the relation between productions and export of these two countries all 12 year data, i.e. 1998/99 - 2009-10, are considered. Correlation between production and export value for Nepal and India is 0.95 and 0.09 respectively. Hypothesis of this study is: there is no relationship between the export of tea and production of tea. It indicates that, if export increases it does not lead to increase in tea production. If we assume from another side export as a dependent variable, when production increases it leads to increase in export volume. Other things being equal these two variables are positively correlated. Therefore the null hypothesis is rejected and research hypothesis; there is relationship between production and export is accepted. Co-related value for Nepal is very high which is near about perfect correlation than the correlations value of India. In India production and export pattern is not much more different. So, correlation value is positive but very low, which is just 0.09. We can conclude from the discussion that Nepal's position in production and export pattern is growing faster than the India.

Prediction- of tea export for Nepal and India for the year 2008 - 2015

This predicted data is based on table 6.8 and predicted through using of trend prediction method, the predicted results are shown in table 6.9.

Table No. 6.9

Prediction of Export for Nepal and India

For the year 2008 – 2009 (In MT)

Year	Nepal	India

2010	9804	194873
2011	10856	195503
2012	11908	196132
2013	12960	196762
2014	14012	197392
2015	15064	198022
Percentage increase from 2010 – 2015	53.65	1.60

Table 6.9 shows that export of tea from Nepal will be 15064 MT in 2015, for India it will be 198022 MT. According to this predicted trend percentage change of export in Nepal from 2010-2015 is 53.65 percent but it is just 1.60 percent for India. This predicted export trend from India indicates that there is very low rate of increase in export than Nepal. Consumption pattern of tea in India is 0.69 kg per head and 0.35 kg for Nepal. Estimated mid-year population for India is 1134.02 million (ITC, 2009: 126) for the year 2007 and 28 million population of Nepal (WDR, 2008: 335) for the year 2006. If we multiply the population with their respective consumption pattern per head their annual need of consumption for these countries will get i.e. 1134020000 × 0.69 = 782473800 kg and 28 million x 0.35 kg per head = 9800000 kg for India and Nepal respectively. Remaining volume of their production can be exported to others countries. Available data are shown in Annex E. Tea plantation area and production has been increased in significant percent for Nepal but regarding this there is relatively lower change in India. This situation reveals that export potentiality of tea from Nepal is higher than that of India. Predicted value of export which is shown in table 6.9 has also clearly shown this situation.

6.2 Nepal's Tea in WTO Context

6.2.1 Implication of WTO on Tea Production of Nepal

There are a lot opportunities in Nepalese agricultural sector under the WTO regime. However, to translate the opportunities into actual gain, there is a dire need of technical knowledge and assistance including reduction in costs of production, improvement in transportation linkages and export promotion programmes. Entry into the world trade organization would mean market access opportunity for all products. If a country can produce a product in a competitive manner regarding the quality and price in comparison to international market, it can grab the market access opportunity.

Tea is a high value and export potential product of Nepalese agriculture. After the entry into the WTO, implication in the tea production sector of Nepal is presented in table 6.10.

Table No. 6.10

Tea Production in Different Years

Years	Production in kg
1999/2000	5085237
2000/01	6638082
01/02	7518575
02/03	8198000
03/04	11651204
Before WTO	129.1% change
04/05	12606081
05/06	13688237
06/07	15167743
07/08	16127490
08/09	16208127
After WTO	28.57% change

Source: National Tea and Coffee Development Board, **Tea-Coffee**, 2010 (2067)

Table 6.10 shows tea production data after and before entry into WTO. These data are taken from NTCDB, 2010 and grouped as before WTO for the year 1999/2000 - 2003/04 and after WTO for the year 2004/05 upto 2008/09. According to these group data, which are based on time divisions i.e. before and after the accession into the WTO, production pattern of tea in Nepal is that before WTO it had high increase at the 129 percentage point, but after joining WTO tea production has increased at slower rate. Compared to before and after entry into WTO, 28.57 percent production increase has been found after entering the WTO. Production of tea in Nepal has increased every year for the last 15 years. But 5 years before and after entry into the WTO, tea production pattern has been studied. In the present study data shows there is significant change in production pattern. After the entry into the WTO tea production pattern of Nepal is low. Production pattern and WTO membership has indirect relationship. Subsidy on credit, capital equipment subsidy, export subsidy (for transportation, internal and external) and other support measures can be applied by the LDCs like Nepal. But in reality, for the development of tea industry, government support is very negligible. At the same time, some subsidies on agricultural sector like fertilizer, irrigation etc have been removed, under the pressure of ADB/N, IMF and

World Bank which are the indirect impact of WTO entry. However, the possible reasons for declining tendency of production after the WTO entry are; decreasing in price of tea, increase in cost of production on labour, price hike of fuel and chemical fertilizer/pesticide. As a result, profitability situation of tea industry has fallen behind. It discourages increase in production of tea. AoA of WTO allows the government to give subsidy and support programme to the tea plantation and processing factory for the enhancement of tea production. As a result, low investment in tea production after the accession into the WTO has led to low increase in production.

6.2.2 Implication of WTO on Export of Tea in Nepal

Tea is high value export potential product of Nepalese agriculture. Export market of tea for Nepal is vulnerable due to their dependency on one major market India. Nepal depends on India for over 90 percent Orthodox and 40 percent CTC tea. Importers besides India are Pakistan, Germany, USA, Japan, UAE, France, Czech Republic, Hong Kong etc. Export of tea from Nepal has been increasing every year as data show. Availability of reliable data of export is lacking. To study the changing pattern in export of tea ITC and NTCDB data are used for the year 2000 - 2009.

Table No. - 6.11

Export of Tea, Before and After the Accession into the WTO of Nepal

Year	Export of Tea in kg	
2000	82000*	
2001	70000*	
2002	2090000	
2003	2800000	Before WTO - 48.33% change (calculated from 2002 to 2004)
2004	3100000	
2005	3600000	
2006	4600000	
2007	7000000	
2008	8600000	
2009	8889000	146.91 percent change after (from 2005 to 2009)

Source: **International Tea Committee, 2010**; Annual Bulletin of Statistics, p. 57.

* This amount does not include export to India according to NTCDB office staff.

This ten years period is divided into two groups i.e. 2000-2003 before WTO and 2004-2009 which is after WTO accession period. To find out the implication of WTO on export, percentage change before and after WTO method has been used. Table 6.11 shows that export pattern of tea in Nepal has increased every year. Before WTO (2000-2009) there is change in export by 48.33 percent, but after WTO (2004-2009) the change is 146.91 percent. It indicates that tea export from Nepal is increasing every year from the last -9 years. Growth pattern in export of tea after the accession period is relatively higher than the before period. But all growth in export, after the accession period may not be the result of WTO. Because it had started to grow before the WTO period, both types of tea (Orthodox and CTC) are exported mainly to India. And some other countries are also destination of Nepalese tea. The dependency on India as a trading partner for tea is high, so this situation shows Nepal's vulnerability. In this connection, it is, therefore, imperative that their agricultural production as well as expansion of their international markets may be diversified. Membership of WTO would mean market access opportunities for the product of a country. At the same time, countries are obliged to maintain the agreements like AoA, SPS and TBT of WTO. Meeting these WTO obligations is a major challenge to Nepal.

6.2.3 Major Challenges of Competitiveness of Tea in Nepal

After WTO accession competitiveness of tea in Nepal is facing some major challenges. They are discussed here:

Under the AoA of WTO, government can subsidize the amount of ten percent of the value of that commodity to the producers and exporters. In the tea sector total production of CTC and Orthodox is around 14 million kg and around 2.08 million kg, respectively for the year 2007/08. Estimated price for CTC and Orthodox (estimated by field researcher based on field survey 2007/08) tea is Rs. 85/kg and Rs. 170/kg respectively. It gives the total value of production of Rs 1547.4 million. Ten percent of this total value around 154.74 million can be subsidized to the tea sector by the government. But subsidy to the tea sector was less than one percent for the year 2007/08. This indicates that government support is marginal which is below permissible level of AoA. This much subsidization level to the tea sector from the government cannot enhance the competitiveness of tea. The government of India has

approved modernization scheme for the tea sector which includes grants of subsidy for the production of Orthodox at the rate of IRs 3/kg for leaf grades and IRs. 2/kg for dust grades for existing level of production. There will be an additional incentives of IRs 2/kg for incremental volume over the previous year from January 1, 2005 to March 31, 2007.

In order to grab the opportunity or market access created by WTO accession competitiveness of tea is required, which is not possible through marginal subsidizing policy of government of Nepal, which is the major challenge to the tea sector of Nepal.

Nepal is bound to reduce its entire agriculture tariff from an average of 51 percent to 42 percent by 2006. Nepal's applied average tariff in agricultural sector is around ten percent, which is much below the bound rate. Nepal's bounded tariff in tea is 50 percent but this rate for India is 150 percent for all types of tea which is quite high. However, the applied rate is just at ten percent for all types of tea. Therefore, if India maintains the applied rate in future there might not be problem for Nepal to export tea. But if it takes the advantages of bound rate in future and increase the tariff at higher level there will be a greater chance that Nepal will face prohibitive tariff making it impossible to export to India. So far as it is concerned with China it has bounded tariff at 15 percent and applied the tariff at 27 percent for all types of tea. On the face of it, it appears that China is applying tariffs on tea, is higher than bound tariffs, which is absurd. In such situation export of tea to China and India from Nepal is highly challenging.

Under the SPS measures there are several provisions to make products safety for human consumption. Non-tariff barriers in the form of health, safety and quality standards are prevalent in most of markets of the developed countries. Good practices at all stages, from plantation to processing, is required to maintain the quality of products. Health related and very sensitive questions raised by government authorities in EU were the leaves picked by farmers or workers after smoking cigarette. There is always a risk that importing nation would restrict import citing different SPS measures. In this context, export of agriculture products from Nepal are subjected to quarantine checks which have created difficulty and given rise to delays and losses in transit.

Standard related agreements of WTO like SPS and TBT, always desire quality products. Pesticide residue is an important issue for tea. Pesticide residue level should be certified through the well equipped laboratory. But these facilities are not available at home. Nepalese tea has to be sent to Calcutta for testing standards which is costly in time, money and management. It is challenging from both quality and price view point.

Provision of GI of TRIPS agreement of WTO would apply to tea to protect the public from being misled and to promote fair competition. Nepal has long history of tea plantation, but it is still to prepare an inventory of its tea seeds clones and wild relative identity tea or products that can be protected under GI, and take legislative action. Otherwise, Nepal tea may face identity issue in future.

CHAPTER - VII

EXPORT COMPETITIVENESS, REVEALED COMPARATIVE ADVANTAGE AND EXPORT STRATEGY

7.1 Introduction

Being a part of several bilateral, regional and multilateral trade agreements, Nepal has opened the door for participating in world market. Liberalization has reduced tariff and in some extent non tariff barriers for Nepalese product in foreign markets. Despite these facts, Nepal has not shown encouraging export performance. In this chapter, export competitiveness and some major contributing factors for competitiveness, RCA of Nepalese tea and what are the possible strategies for export promotion are comprised and discussed.

7.2 Productivity and Competitiveness

Becoming a member of trade agreements, a country gets access to the markets. But such agreements do not discriminate other countries as well. For example, being a member of WTO, Nepal benefits from the core WTO principles, the non-discrimination and most-favored nation (MNF) principles. But such benefits are obtained by other trading partners as well. In other word, the same tariff rate and other market access conditions apply to all member trading partners. In this situation, it is logical to say that WTO and others bilateral/regional trade agreements are only the means of opening up the market, performance in the market largely depends on the competitiveness of the country.

According to Global Competitiveness Report 2010, Nepal ranks in 125th position out of 133 countries. This position is lowest in South Asia with India (49), Pakistan (101), Sri Lanka (79) and Bangladesh (106). The report has identified twelve pillars for competitiveness. Based on the level of these pillars, report categorizes countries in to three categories, namely factor driven economy, efficiency driven economy and innovation driven economy. The report has identified Nepal as a factor driven economy. The factor driven economy needs to have well-functioning public and private institutions, well-developed infrastructure, a stable macro-economic

framework and a healthy and literate workforce for maintaining and improving its competitiveness (WEF, 2010).

Increment in productivity is the source for long run competitiveness. Similarly, investments in education and skills, machinery and equipment, physical and technological infrastructure and innovation (including commercialization) are also contributing factors for improving productivity and competitiveness (Ara and Rahman, 2010).

7.2.1 Some Major Contributing Factors for Competitiveness

There are various ways of assessing competitiveness of economy of any country. World Economic Forum, 2012-13, has comprehensively mentioned 12 different pillars of global competitiveness. Comprising such 12 pillars it has developed Global Competitiveness Index framework to look at the competitiveness of any economy at global level. The pillars mentioned in the report are; institutions, infrastructure, macroeconomic environment, health and primary education, business sophistication, innovation, higher education and training, goods market efficiency, labor market efficiency, financial market development, technological readiness, market size, basic requirements sub-index. However, there are other different approaches of looking competitiveness of agricultural products in which various factors are responsible for increment in competitiveness of agricultural products. Labour productivity, investment on education and skills, physical and technological infrastructure and innovation and institutional development are important factors in competitiveness. These factors are discussed briefly in following ways:

Labour Productivity

Labour productivity is one of the major components of overall productivity of an economy. Available data show that Nepal's labour productivity defined as GDP per workers is lowest in South Asia and it is almost stagnant in comparison to other South Asian countries. Nepal's labour productivity increased from US$ 544 to US$ 613 from 1995 to 2006 while during the same period it increased from US$ 968 to US$ 1613 for India (World Development Indicator, 2008). The value added per workers in agriculture sector for some South Asian countries with lowest value added per

workers for Nepal. Nepal remained in the lowest position for more than two decades (WB, 2005). It is not only the lowest level of value added per worker but Nepal is experiencing slowest growth rate of this variable. APO, 2008 data show that Nepal locked behind for improving labour productivity in comparison to her South Asian counterpart. For the period of 15 years from 1990-2005, Nepal's labour productivity improved by only 23 percent while this improvement was more than sixty percent for India followed by fifty percent of Bangladesh, 47 percent of Sri Lanka and 32 percent of Pakistan (APO, 2008). According to APO 2008, labour productivity in agriculture sector increased by 66 percent in between 1990 - 2005 while, during the same period, it decreased by 79 percent 14 percent in industry and service sector respectively. The possible reason for increasing labour productivity in agriculture sector is that large numbers of unskilled people from Nepal are going to work in foreign countries. This has reduced surplus labour from this sector leading to increase marginal productivity of labour. Decreasing labour productivity in other sectors is due to low level of infrastructure, health, education and institution quality (Pyakuryal, 2009). But it does not mean that other factors such as market efficiency, market size, technological readiness etc. are not important.

Infrastructure and Transportation

Sufficient and efficient infrastructure is a key element to improve competitiveness and countries ability to produce more goods. Well developed infrastructure reduces cost to connect markets. Quality roads, railroads, ports and air transport enable entrepreneurs to get their goods and services to market in a secure and timely manner. There are several literatures to show infrastructure as a major impediment to trade, competitiveness and sustainable development.

The overall infrastructure situation for attracting investment in Nepal is very dismal. Expensive and irregular electricity, small and low quality road network, expensive and deficient transportation and relatively less coverage and poor quality of telecommunication indicate lower position of Nepal in infrastructure stock when compared with its neighboring countries. Infrastructure quality score of South Asian countries reveals that Nepal, in fact, has the poorest infrastructure in comparison to other South Asian neighboring countries. Highest possible score is seven out of which

Nepal secures only 1.9. Bangladesh immediately follows with a score of 2.3. Nepal's position with this score is 119 out of 125 countries in the world.[1]

In Nepal, not only the quality of infrastructure but also the expenditure for infrastructure is very low. Nepal spends less than one percent of total GDP on infrastructure against 4.8 percent of India (RIS, 2008), study report shows that Nepal needs to invest US$ 3.44 billion (12.22 percent of GDP) for the period of 2008. 2012 in order to achieve eight percent growth rate.

Nepal lags behind in comparison to other South Asian neighbors not only in overall infrastructure but also in each individual infrastructure components, namely road, electricity and telephone. Out of 134 countries, Nepal's position was both in electricity, 125th in road and 113th in telephone.

The poor quality of road infrastructure of Nepal is reflected in higher cost of export and import. According to Doing Business Report 2010 (The World Bank, 2010), the costs to export and import a container are much higher than Bangladesh, India and Pakistan. In 2009, the cost to export a container from Nepal were estimated at US$ 1764, of which majority of the costs were on account of transportation. In comparison, the costs to export a container were US$ 970, US$ 945 and US$ 611 for Bangladesh, India and Pakistan respectively. Similarly, the costs to import a container to Nepal were estimated at US$ 1900, compared to US$ 1375, US$ 960 and US$ 680 for Bangladesh, India and Pakistan respectively.

Research and Development, Technology and Innovation

Economic theory and empirical finding have suggested that technological change is an important determinant of long run productivity growth. Advancement in technology is dependent on innovation and innovation is the outcome of Research and Development (R&D). Research and Development is defined as the effort of scientists, engineers, entrepreneurs or inventor's effort to develop new knowledge that helps to do the things in better ways (CBO, 2005).

[1] http://siteresources, worldbank.org/INTEXPCOMNET/Resource/2.01 overall Infrastructure Quality.pdf.

Data for R&D are not easily available for Nepal. World Development Indicator provides data on R&D for several countries. But there is no such data for Nepal. Scholars are found to mention this expenditure for Nepal for the year 2002. For the purpose of making data comparable, following table reports R&D expenditure of some countries for the year 2002.

Table No. 7.1

Research and Development Expenditure for Selected Countries

Country	Year	R & D Expenditure (% of GDP)
Nepal	2002	0.66
Bangladesh	2002	0.62
India	2002	0.72
Pakistan	2002	0.22
Sri Lanka	2000	0.14
USA	2004	2.68
China	2004	1.44

Source: Available at http://www.nationmaster.com/graph/ecores_and_dev_ exp_exp-_of_gdp_economy_research_development_expenditure_gdp.

Table 7.1 indicates that Nepal's R&D expenditure is comparable to South Asian country but far less than developed countries like USA and China. According to the World Development Indicator, there are about 136 technicians per million people in Nepal. This number is very high in comparison to India (86), Sri Lanka (76) and very low in comparison to UK (688), Germany (1092). But number of researcher per million people is less in Nepal. According to World Development Indicator, this number for Nepal is only 58 which is less than Pakistan (76) and India (136). Nepal's invention rate is also very low in comparison to South Asian neighbors. An invention is protected by patent right. Up to the year 2008, total patent application filled by Nepal is only 25. This number is negligible in comparison to Sri Lanka (2549), Pakistan (1634) and India (71023).

We can conclude from the above discussion that Nepal's position in R & D, Technology and Innovation are lagging behind in comparison to other South Asian neighbors resulting the low competitiveness of Nepalese product in comparison to foreign product in international market.

Institution

Institutions play vital role for enhancing productivity, profitability and for making overall business environment more competitive. The quality of institutions has a strong bearing on competitiveness and growth (WEF, 2010). The term institution for an economy is not related with government's rules and regulation only

but also with systemized excessive bureaucracy and red tap, overregulation, corruption, dishonesty, lack of transparency, political dependence of the judicial system etc, which increase the economic cost to business significantly and bring down the competitiveness (Ibid).

ADB, DFID, ILO (2009) found that institution along with infrastructure as binding constraint for growth. According to WEF (2010), Nepal has lowest position in comparison to other South Asian countries in the ranking for quality of institutions. Out of 133 countries, Nepal ranks in 123rd position with score 3.07. Among the South Asian countries, India has bet institution for competitiveness (rank 54) followed by Sri Lanka (rank 73), Pakistan (rank 104) and Bangladesh (rank 122). The ease of doing business database 2010 shows, on average, 7 procedures are involved in starting a business in Nepal. This compares favorably relative to other benchmark countries. On average, it takes about 31 days to clear these procedures in Nepal, which is very high in comparison to Sri Lanka (4 days), Pakistan (20 days) but it is comparable with India (30 days) (The World Bank, 2010). However, the cost of even these relatively few procedures is extremely high in Nepal. Perhaps most visible difference in ease of doing business between Nepal and other South Asian countries is in trading across borders. Total documents required are more or less same but number of days to export in comparison to Sri Lanka (8 days), Pakistan (22) and India (17). It is obvious that difficult and costly in starting business and difficult in export makes Nepalese exporters less competitive in international market.

Nepal's position, among South Asian countries, is worst in three out of nine indicators. These indicators are as follows: (i) Ease of doing business (ii) Starting a business (iii) Dealing with construction permit (iv) Employing worker (v) Getting credit (vi) Protecting investors (vii) Paying tax (viii) Trading across boarder (ix) Enforcing contract (x) Closing business (The World Bank, 2010). Report shows that, three indicators for Nepal are, which are dealing with construction permit, employing worker and trading across boarder. Similarly, Nepal's ranking is in two digit numbers only in two indicators, namely starting business and protecting investors. It means Nepal has very poor business doing environment for being competitive in the world market. ETI- 2010 report has put Nepal in 118th position which is lowest among the South Asian countries reported

in the report. Nepal's position is worst not only in the overall ranking but also in five out of ten components of ETI, namely domestic market access, efficiency of custom administration, efficiency of import export procedure, availability and use of information and communication technology and regulatory environment. Nepal's position is second from last in other three components, namely transport, transparency and physical security. Most impressive indicator for Nepal is access to foreign market. Nepal has highest position for this indicator not only in South Asia but also in the whole world except Madagascar (WEF, 2010b).

To sum up, in the context of being number one in the ranking of access to foreign market, sole responsibility of Nepalese government and private sectors are to be competitive in the world market via increasing productivity. Nepal's lower position in global competitiveness index shows that Nepal has lower level of productivity in its production. Low level of labor productivity, lack of sufficient and efficient infrastructure, low level of R&D, reluctant on adopting new technology and institutions factors including corruption, regulation along with insecurity are some of the factors which are impeding Nepalese productivity and competitiveness in the world market. It is felt that there are more trading houses rather than production units in the country. Then, in order to show good performance in export, it is necessary to overcome this problem along with producing these commodities, which have comparative advantages in the world market.

7.3 Revealed Comparative Advantage (RCA) of Nepalese Tea

The required data for calculating RCA of tea have been obtained from data library of International Trade Centre (ITC) of UNCTAD and WTO. Data covers the period of 2003 to 2008. RCA of Nepalese tea for this period is shown in following table 7.2.

Table No. 7.2

Revealed Comparative Advantage (RCA) of Nepalese Tea

For the year 2003 - 2008

Year	RCA Value
2003	19.62
2004	21.81
2005	29.55
2006	35.48
2007	55.09
2008	50.97

Source: Calculated from **ITC database.**

Table 7.2 provides the RCA of Nepalese tea which has comparative advantage over the period 2003-2008. It is found that increasing comparative advantage over the year except 2008. But figure for 2008 is also not more less than the previous year. Given value of RCA in table 7.2 for Nepalese tea is more than unity for each year. It indicates that Nepalese tea has comparative advantage. So, Nepalese tea is competitive, based on RCA, in export market.

7.4 Possible Export Strategy for Nepal

Access to the foreign market is not a problem for Nepal. As mentioned earlier, Enabling Trade Index (ETI) report ranks Nepal in the second position for the category of "access to foreign market" (WEF, 2010b). Nepal is situated in between two giant countries India and China which are large in both population and economy size. The whole world is being attracted towards influencing Indian and Chinese market. In this situation, Nepal's export strategy should be penetrated in to these two market. China is attractive export destination for Nepalese product due to huge population and common border. Although, Nepal has less than expected export to China. Nepal has formal trade relationship with China and recently China has provided duty free access to about four hundred products of Nepal. These are positive sides towards expanding Nepal's export to China. But the difficult road link to China and low level of competitiveness of Nepalese product in Chinese market is a serious problem. According to Shrestha (2008), "Nepalese products are not competitive in price and

quality with the Chinese products. We do not have the capacity to produce qualitative and quantitative products to satisfy the needs of the Chinese market. … Nepal's quality and standard certificate is not accepted by the Chinese authorities too, this is also creating a problem for exporters." In this context of difficult transportation facility and low level of competitiveness, Nepal's export to China should be concentrated on meeting the demand of Tibet. Exporting green vegetable and herbs are the viable option.

Uttar Pradesh, Bihar, Sikkim, West Bengal, Uttara Khanda are adjacent states of India to Nepal. Uttar Pradesh is most populated while Bihar is third most populated state. Similarly, these two states have very similar culture and tradition with southern part of Nepal. It means Nepal has huge market adjacent to its boarder. If it is assumed that production cost is equal in India and Nepal, it can be quite cheaper for people of these states to buy Nepalese products instead of buying products produced in any other parts of India.

Nepal has trade treaty with India. The latest agreement made on October, 2009 has provided duty free access to Nepalese products in Indian markets. The article IV of the agreement provides preferential treatment of the sixteen product group mainly from agriculture, floriculture, horticulture and forest produce. The agreement exempts custom duty and denies quantitative restriction for these commodities.

Above mentioned situation shows the bright picture for Nepalese exporter. But Nepal's export to India has not increased even if Nepalese exporters are enjoying similar facilities from India since long ago. So it is imperative to find the causes behind this. There may be the following causes:

(i) India is capable for producing most of the agricultural commodities in lower cost than Nepal. India provides subsidies in agriculture. Lack of subsidies makes Nepalese agricultural products more expensive than similar Indian products (Adhikari, 2008).

(ii) There is huge informal trade between Nepal and India. It is estimated that informal trade from Nepal to India is about USD157 million and that from India to Nepal is about USD 180 million (Karmecharya, N.A.). Major commodities that are exported from India to Nepal are agricultural commodities. The possible reason for such a huge informal

export from India to Nepal is the policies assisting Indian farmers providing cost advantages (ibid) and inadequacies and inefficiencies of formal trade channel (Taneja and Pohit, 2001). On the other hand, informal export from Nepal to India is third countries products.

(iii) Non-tariff barriers is another problem which include (a) delay in laboratory testing (b) quarantine restrictions for agricultural exports (c) imposition of additional duty (d) canalization of imports from Nepal. Although new Nepal India Treaty 2009 has made some significant change to address these issues by stating to simplify the procedures at quarantine check posts at the customs offices, to recognize quality certification issued by Nepali labs, to facilitate cross border flow of trade through simplification, standardization and harmonization of customs and trade-related procedures, to reduce or eliminate non-tariff, para-tariff and other barriers, to recognize sanitary and phyto-sanitary certificates on the basis of reciprocity etc. But all these commitments are not bound and have not been realized yet due to several factors.

According to ITC dataset, some of the commodities in which Nepal has comparative advantage and India has negative net trade are animal or vegetable fats or oil, flat-rolled products of iron, wire of iron or non-alloy steel and pasta Nepal can take huge benefit if producers are concentrated to export vegetable ghee, cardamom, G.I. pipe and noodles to India. There are some other commodities in which Nepal has high potential to expand its export to India. Some of the products are tea and ginger. But tea and ginger have positive net export to India. It means these commodities are exported to other countries via India. If Nepal can find final destination for ginger and tea itself then export earning could be higher than current earnings.

To sum up, country's policy liberalizes trade market and being a part of several trade agreements, Nepal has access to several foreign markets. But this opportunity of access to the foreign market has brought challenges as well. The challenge is to be competitive in the world market because market is open to other countries as well. For example, Nepal's duty free access to Chinese market is an opportunity. But China has provided such duty free access to other twenty six countries of Africa as well. In this situation, Nepal should be wise to choose right commodity and right destination.

There is no doubt that first criterion of choosing commodities for export is the criteria of comparative advantage. Nepal has comparative advantage in certain

commodities must of which belong to agriculture sector. Some of the major commodities are ginger, tea and cardamom. Nepal Trade Integration Strategy 2010 has also identified these commodities as Nepal's major exportable commodities.

Nepal’s geographical location between China and India is an opportunity for Nepal. These two countries have larger markets for tea. Nepal can grasp this market opportunity if Nepal adopts proper policy regarding tea so that Nepal need not struggle for finding market in other part of the world. Nepal's trade has already been concentrated with India and there is huge trade deficit with India. China is still underutilized market for Nepal. In the current situation, however, there is no possibility to expand export to China due to difficult transport facility. So it is a kind of compulsion for Nepal to take care Indian market. Nepal should concentrate to export those commodities in India based on the demand for these commodities. Data show that there are some commodities for which India has negative net trade and export potential for Nepal. Vegetable ghee, noodles, cardamom and iron and steel product are such commodities.

CHAPTER - VIII
SUMMARY, CONCLUSION AND RECOMMENDATIONS

8.1 Summary

Tea cultivation is one of the high value cash crops in eastern Terai and Hills of Nepal. Various efforts were made from the government level to increase area and production of tea. Such as declaration of 5 districts of eastern Hills and Terai as tea zone, subsidized loan facility for tea cultivation, technical support for small holder tea farmers from NTCDB and announcement of National Tea Policy (2000) were some steps taken by the government. However, the growth in tea area and production seems very low. According to the National Tea Policy (2000), the targeted tea covered area was up to 40875 hectares by the year 2005 by making Orthodox tea up to 65 percent of the total production. In reality, the area covered by tea is around 16420 hectares. Among them 7424 hectares and 8996 hectares of land has been used for Orthodox and CTC tea respectively. Currently, Nepal is producing more than 1097 million kg of Orthodox tea. More than 90 percent of production is exported to India and overseas countries and the rest is partially used for blending purposes in the black tea to export it with good flavour. Furthermore, the National Tea Policy (2000) aims the production of CTC tea up to 36 million kg by the year 2010-11 from which 0.6 to 0.65 million kg will be available as surplus for export. But in reality, about 12 million kg and 1.65 million kg of CTC and Orthodox tea respectively have been produced for the year 2007. This indicates that if such existing situation prevail in the production sector it is quite impossible to meet the target of production by the year 2010-11 which is aimed by NTP 2000. The government has put forward an ambitious plan to increase production level of Orthodox tea more than 16 million kg within the year 2010-11, but in reality it was ten fold less in 2007. This clearly shows that the expansion of tea cultivation area and production is not in progressive direction. Membership of WTO could have some effect on tea production in Nepal.

This study is designed to assess the implication of WTO accession of Nepal in agriculture focusing on cash crops, particularly in tea of both green leaf economies of Orthodox and CTC area i.e. Ilam and Jhapa districts, respectively. The specific objectives were to study export and production situation of tea before and after WTO

accession, competitiveness of Nepalese tea in export market, to explore the economics of green leaves, and to examine the relationship between productivity of tea with respect to age of the tea bushes, educational status of the farmers and landholding size.

This study covers Ilam and Jhapa districts, which share highest area and production of Orthodox and CTC tea in Nepal. Within Ilam district Kanyam, Fikal, Shree-antu, Aaitabare, Mangalbare, Jasbire, Sakhajung, Santidadha and in Jhapa district Haldibari, Prithivinagar, Mahespur, Anarmani, Garamani, Sanischare, Jalathala were included in sample. A representative sample of size 162 was drawn cluster (ten) wise purposive random sampling method. Out of this, 112 and 50, samples were Orthodox and CTC type tea, respectively. Considering the effect of the scale of production, farmers were classified into small, medium and large categories based on their area of tea cultivation. Tea farmers, processing factory and exporters were main source of primary data. Besides, other relevant and necessary information were collected from secondary sources.

The average productivity of green leaf per ha of the 50 sampled farmers in Jhapa (CTC) was 11166 kg with a maximum of 22148 kg and a minimum 2461 kg. Likewise, the average productivity of green leaf of 112 sampled farmers in Ilam (Orthodox type) is 4229 kg/ha with a maximum 11796 kg/ha and a minimum 806 kg/ha. In an average productivity of made tea in CTC type is 2233 kg/ha and 846 kg/ha for Orthodox type tea. The productivity of tea, according to field survey data, is 1646 kg/ha (including both type) which is not much below than India 1690 kg/ha. In the CTC area the yield is lower in Nepal than in Kenya but higher than India and Sri Lanka. Productivity of CTC and Orthodox tea type is different. For CTC it is 2447 kg/ha which is threefold higher than the Orthodox. After accession into WTO a number of I/N/GOs have been found involved in various training activities in the area to get higher productivity of green leaves.

Productivity of tea regarding the age of tea bushes varies from age to age and CTC to Orthodox. In both CTC and Orthodox tea plant, younger age tea bushes have higher productivity than older age tea bushes.

There is negative relationship between the educational level and green leaves productivity. The relationship is strong (G=-0.602) and significant for CTC tea, however,

this relationship is relatively found weaker (G=-0.073) in the context of Orthodox. There is negative (G=-0.788) relationship between the land holding size and green leaves productivity. The relationship between two variables is strong and significant for CTC, however this relationship found comparatively weaker (G=-0.272) for Orthodox type.

Total variable cost of CTC green leaves is found Rs. 8.67 kg. Out of it, about 46 percent of total cost was found to have incurred in labour cost, which is the major cost component in tea plantation. Chemical fertilizer is another important contributor on production of green leaves in CTC sector followed by chemical pesticide which was 18.75 percent out of total variable cost. Cost on organic pesticide used in this area was just Rs. 0.04 per kg. WTO membership opened up various opportunities in labour market. Many Nepali labourers went to international market which resulted into labour shortage in Nepal. Few labourers means high wage rate.

In Orthodox type tea total variable cost of production of green leaves was Rs. 14.36 per kg. About 64 percent of total variable cost incurred on labour cost which is higher than that of 46 percent of CTC type. In Orthodox area, chemical fertilizer and pesticide application is decreasing in recent years. Tea farmers have realized that the organic tea product is necessary to supply in international tea market as per the WTO standards. Likewise, 0.74 and 0.19 Rs/kg cost was incurred on chemical fertilizer and pesticide respectively. In total variable cost, 2.81 percent contribution was organic pesticide, which is about 12 fold higher than that of CTC type tea.

Average revenue of green leaves production was found higher in Orthodox type than in CTC, which was 15.92 Rs/kg and 12.85 Rs/kg for Orthodox and CTC respectively. But important thing is that differences in their cost of production of CTC green leaves is higher than Orthodox. As a result, gross margin is low for Orthodox tea in comparison to CTC type. Farmers belonging to CTC area were getting gross profit as an amount of 4.18 Rs/kg from the green leaves production. Whereas in Orthodox area, farmers were getting less i.e. just 1.56 Rs/kg from the green leaves production. The benefit cost (B/C) comparison of CTC (1.48) was found higher than Orthodox tea (1.11) type. This indicates that CTC areas green leaves production is profitable than Orthodox area. Thus cost of production was found increasing after WTO entry as explained farmers.

Green leaves price was found worth Rs. 17.80 Rs/kg and 14.75 Rs/kg for the first flush respectively to Orthodox and CTC type tea for the year 2007/08. And for other seasons it was in an average 10.78 Rs/kg and 7.50 Rs/kg respectively to Orthodox and CTC type green leaves. Average for all seasons was found 12.85 and 15.92 Rs/kg respectively for CTC and Orthodox tea type. Green leaves price trend seemed to be in fluctuation from last 10 year. In the year 1998/99 and 1999/2000, green leaves price was high at the rate of 17.67, 16.31 Rs/kg respective years for the CTC tea type and 33.36 and 33.40 Rs/kg for Orthodox in the respective years. Afterwards, price of green leaves declined drastically. It was found lowest in the year 2003/04 for CTC, which was 8.06 Rs/kg. Afterwards, it seems increasing slightly. For the year 2007/08, it was found reached 12.85 Rs/kg. In Orthodox tea type, it was found that green leaves price continuously declined from the year 2000/2001 to 2005/06. It was found 13.65 Rs/kg for the year 2005/06. Again it started to increase slightly in Orthodox tea type. For the year 2007/08, it was found to be 15.92 Rs/kg. After WTO membership price trend started gradually inclined, however, there was not at larger scale. Likewise the price of green leaves was decreased before WTO which again increased after WTO. India took, Geographical Indication as TRIPS provision of WTO and banded Nepali green leaves export to India which affected green leaves price (decreased) in Nepal.

In this study, 80 out of 162 respondents reported that demand pattern of green leaves has been changed for the last ten years. Out of the total surveyed respondents, 42.5 percent responded increasing number of processing factory as the main causes of changes in demand pattern. In the view point of 35 percent respondent high demand organic leaves was next important cause of change of demand pattern. In the same way, 124 out of 162 respondents did not answer any thing about the changes in demand pattern of green leaves. Similarly, 13 out of 162 respondents said that demand of green leaves has changed after the accession of Nepal into the WTO. Out of 13, 53.8 percent responded that organically produced green leaves were highly demanded than the others. After WTO membership organic tea leaves producers were increased to supply quality tea in international market. Farmers of Ilam are more aware on organic tea production that farmers of Jhapa. Various organizations (NTCDB, HOTPA, I/N/GOs like SNV, gtz) are also supporting it in different ways.

The perception of local people (39.67 percent) on the impact of WTO accession on employment was found positive. However, very few (2.48 percent) said that WTO impact on tea sector was negative. Most of the respondent (57.85 percent) felt no change at all in employment creation after the accession in WTO.

Out of 162, 64.8 percent respondents expressed that they have taken loan from the different sources of credit. Amongst the respondents who took loan from different sources, 59.5 percent farmers took from the Agricultural Development Bank (ADB/N) followed by co-operative and local money lender. Remaining 41 out of 162 tea planter didn't respond about sources of credit. It may be that, they were managing financial aspect by themselves.

Quality of green leaves is the most important factor for quality made tea. Good plucking, use of skilled labour, good climate, age of the plant and organic method of the tea production are the main factors to determine the quality of green leaf. During study, 60.4 percent out of 162 respondents viewed skilled labour as the main factor for quality production of green leaves. Similarly, 72.9 percent out of 162 said that quality of green leaves depends upon age of the plant. In the base of quality chemical fertilizer/pesticide application in tea farming is less important. For using the chemical fertilizer, 66 percent out of 162 respondents gave just 2 scales which is the 2nd last important ranking in present study. Likewise, for using the chemical pesticide, 84 percent respondents were found to have said that it is less important for organic quality leaves production which is more demand in global market. This awareness increased among farmers after WTO entry.

Plucking style of green leaves can affect the quality of tea. Generally, it is accepted that for the quality of tea, two leaves with one bud plucking is better than the three, four and more leaves and a bud. In this contest, in the study area, 35.2 out of 162 respondents were found saying plucked four leaves and a bud followed by three leaves a bud at a 29.0 percent of total surveyed respondents. Similarly, 14.8 percent farmers/pluckers picked two leaves and a bud. Generally, it is called standard leaves. Five and more leaves with a bud is not quality leaves. Remaining 6.2 percent respondents were found in this category.

To some aspects Nepalese tea leaf quality is found better than Indian one. As a result, made tea of Nepal is qualitative with some competitive strength than that of Indian tea. In this study, 125 out of 162 tea planters said that youngness of the tea bushes of Nepalese tea is competitive factor than Indian tea. Other 56.12 percent tea planters said that the virgin soil of Nepal is the strong aspect of Nepalese tea. In study area 52.47 percent out of total surveyed respondents were found to have said that in tea bushes of Nepal chemical fertilizer/pesticide use is at the low level compared to that of India. In this ground, Nepalese tea is competitive than Indian tea. Good tips and clone variety of tea bushes are also competitive strength of Nepalese tea than Indian. Out of total surveyed respondents 43.83 and 32.70 percent tea planters were found to have said that Nepalese tea is competitive than Indian tea in these ground. Thus competitiveness of Nepalese tea has been gradually increased after WTO membership.

Out of 162 sampled respondents 54.9 percent were found to have said for better production of leaves, government programmes/policies and incentives given to the farmers were the important factors followed by better climate and market availability. Out of total sampled respondents 48.8 and 40.7 percent respectively were found to have said better climate and availability of market were next important factors for better production of green leaves. Just 10.5 percent respondents were found to have said the role of WTO for better production of tea is very important factor and 34.6 percent said its role is very less.

There is long certification procedure for the assertion or organic tea. It must be certified in internationally accepted standard laboratories. In the study area, there is no single tea garden which has organic certificate but it was found that some tea planters (mainly in Ilam district) were trying to produce their green leaves as organic. Three percent out of 162 tea planters were found to be under process to get the organic certificate from the NASSA. Similarly, 106 respondents out of 162 answered that due to the lack of finance or more expensive method of certification they were not able to certify their leaves as organic. Reducing the use of pesticides some farmers (about 30 percent) are getting trained to make organic pesticides. For example, *neem* and *bakaino* were used for organic pesticide. Farmers got this opportunity of getting knowledge on various dimensions of quality tea production after WTO entry.

In this study, 19 out of 162 respondents were found to have said that they were having knowledge about the WTO agreements like, AOA, SPS and others. Majority of the farmers were not able to understand the WTO and its agreements. Similarly, 88.3 percent respondents were found that they did not have any knowledge about the WTO and its agreements. Among the respondents having knowledge, 78.9 percent were found to follow the WTO and its agreement as MRL implementation in tea cultivation. Other 21.1 percent respondents were found to have said that for the implementation of Sanitary and Phyto-Sanitary (SPS) measures of WTO they were conscious about the food product which should be safe for human consumption.

Tea is a processed agricultural product, which is traded in world market. There is a need of media access globally. But in the study area, it is found that most of the tea planters were out of the media access. According to the field study, 72.8 percent tea planters were found that they have no media access on international market. Next 25.3 percent out of 162 respondents reported they have access of information about international tea market through Radio, TV, Newspaper but just 1.9 percent had access through personal link by Telephone and Internet.

There are so many problems on tea cultivation and distribution, which are faced by the tea farmers/ planters. Among them negligible contribution of government subsidy, lack of technical human resources, low price of green leave/market problem, no easy availability of inputs and lack of factory/ infrastructure were the top five problems which were faced by the tea farmers as regards the cultivation and distribution of tea. These problems related to green leaf were reported in study area in priority basis. Some other 94.4 percent out of 162 respondents said that government's role is not effective and at the same time subsidy given is very minimal. So, majority of the farmers felt that it was a primary problem in front of tea sector. Secondly, lack of technical manpower and scarce of skilled labour were another top problems which were faced by tea farmers. Next 83.9 percent respondents experienced this problem as second one. Another most important problem was low price of green leaf and marketing problem which was experienced by 82.7 percent respondents out of 162. Green leaves price realization was 15.92 Rs/kg and 12.85 Rs/kg for the Orthodox and CTC type tea respectively for the year 2007/08. At the same year, average cost was 14.39 and 8.68 Rs/kg for Orthodox and CTC tea type respectively. No easy

availability of inputs and lack of processing factory/ infrastructure development were 4th and 5th top problems faced by the tea farmers in the study area. Remaining 64.2, 61.8 percent respondents reported above mentioned problems respectively. However, there have been various efforts to address the problems mentioned above after WTO membership. For example, there is also a B.Sc. program in tea technology in Mechi Campus Jhapa.

Out of 162 respondents 70.4 percent farmers were getting different types of facilities. Mainly they were given loan from bank and financial institution, interest subsidy, training from government institution and others. Among all respondents, 29.6 percent farmers were found that they were not getting any facility provided by the government and others. Getting loan from bank/financial institution was the main facility which 50.6 percent out of 162 farmers were getting it. In the same context 33.9 percent out of total sampled respondents were found to be getting the training from the government institution and 21.6 percent were found to have got interest subsidy and other subsidy. Most of the tea farmers needed the different types of training for cultivation of tea. Even farmers who have taken several training felt that they need further knowledge on various aspect of tea cultivation. In the case of training, 78 out of 162 respondents were found to have taken different types of training. Similarly, 38.3 out of total surveyed respondents were found that they received the training about the general tea farming method. But the training for specialized way plucking and purning method was received by 23.5 percent out of 162 respondents. Next 17.9 percent farmers were found to have taken the training about the application of chemical fertilizer/pesticide in their tea gardens. Remaining 51.8 percent respondents didn't have any special training for tea cultivation. There is increase in the opportunities of facilities and trainings after WTO entry and various organizations and NGOs like NTCDB, GTZ, SNV, HOTPA, Winrock International, etc. are being involved in such trainings.

Majority of the farmers in study area were found to have said that ineffective government role and faults on policies and programmes are the main problems. So far as it is concerned with government policy 25.9 percent respondents were found to have said that there were weaknesses on government policies and programmes which can't encourage the farmers to cultivate and develop the tea gardens. On the one hand,

there are few government policies for tea farmers' development and on the other hand, set policies were not implemented by the government.

For increment of yield and for cost minimization, farmers have given some suggestions. As per the 75.9 percent out of 162 respondents, subsidy and government support for tea planters/farmers are needed to increase yield and minimize the cost. Among all, 53.7 percent farmers were found to have said that technical knowledge and skilled labour are another most important factor which are needed to increase productivity and it also decreases the cost of production. In study area, farmers experience that from last 5-6 years price of green leaves is in decreasing tendency but cost of production was increasing every year. In the view of 28.4 percent respondents, reasonable price fixation of green leaves is required to make the tea business profitable.

Nepalese commodities have to compete with product from other countries. It means Nepal should be competitive in terms of price and quality in the basket of goods in exports. But this study found that Nepal's productivity and competitiveness is below the level of other neighboring countries. However, the RCA of Nepalese tea has comparative advantage over the period 2003-2008. RCA value of tea was 19.62 for the year 2003 and it has increased by 50.97 for the year 2008. This increase in RCA is due to membership of WTO. According to RCA method if the RCA value is more than unity of any commodity that is called comparative advantage goods. So it indicates that Nepalese tea has comparative advantage in export market.

8.2 Conclusions

Nepal’s accession into WTO has different implications in cash crops and agriculture in general, and particularly in tea sector of Nepal. One of the implications of accession into WTO on tea sector is found related to subsidy. Agreement on Agriculture (AoA) of WTO allows the government provide subsidy and support programme to the tea industry. But subsidy less than one percent and supports provided to the tea sector by the government is resulting in to low level of tea production in Nepal.

Sanitary and Phyto-Sanitary (SPS) and Technical Barriers to Trade (TBT) agreements of WTO are found most challenging tasks for agricultural products like tea in Nepal. These standard related measures are affecting the export of cash crops from Nepal. In the existing situation, low level of technology, lack of well equipped laboratory, low level of institutional capacity are prevalent here in Nepal which can not help to promote competitiveness of Nepalese tea in international market. However, competitiveness of tea of Nepal, RCA value of tea, was found gradually increasing from 2003 to 2007.

Major economic aspects of green leaves in Nepal are productivity, price trend, benefit cost comparison, cost of production and cost components. The production increased by 259 percent and plantation area increased by 62 percent respectively during the period. Tea yield in Nepal is found to have increased by 122 percent during the last 10 years. Productivity of tea per hectare is growing in Nepal. However, it is still lower compared with India, Sri-Lanka, Kenya etc. As the international tea market is very competitive, relatively low yield is a matter of concern for Nepalese tea. Poor management and carelessness about tea gardens were major reasons for low rate of growth in productivity. Restrictions imposed by Indian to transfer the leaves from Nepal to adjoining local to Darjeeling and Siligudhi of India caused over supply of green leaves for domestic processors in Nepal. This over supply of green leaves ultimately resulted into the sharp decline of green leaf price (from 33.40 Rs/kg to 13.65 Rs/kg) for the year 1998-2005.

Profitability position of tea farm is different for CTC type and Orthodox type tea. The benefit cost (B/C) comparison of CTC is higher than Orthodox tea. Relatively, cost of production for Orthodox tea is higher than CTC. This indicates that CTC area's green leaves production is profitable than Orthodox. It is mainly due to the high decline of green leaves price of Orthodox tea than CTC tea. Due to low productivity and low profitable position of tea farm in Orthodox area, tea farmers in Ilam district are not much more encouraging in their tea business from the last few years. Profitability situation of tea farm has been slightly improved after 2005/06.

Cost of production includes labour cost, chemical fertilizer and pesticides, organic pesticide, traditional fertilizers and others (irrigation, tools etc.) in which labour cost is the major component. Total variable cost of CTC tea (8.67 Rs/kg) is

less than Orthodox tea (14.36 Rs/kg). This variable cost is increasing every year mainly due to increase in labour, fertilizer and pesticide cost.

Productivity of tea regarding the age of tea bushes varies from age to age and CTC to Orthodox. In both CTC and Orthodox tea plant, younger tea bushes have higher productivity than older tea bushes.

The negative relationship between the educational level and green leaves productivity, strong (G=-0.602) and significant for CTC tea, and weaker (G=-0.073) in the context of Orthodox, indicates that concentration contributes, not by educational level, in the increase in productivity of tea. Similarly, the negative relationship between the land holding size and green leaves productivity, strong (G=-0.788) and significant for CTC, and weaker (G=-0.272) for Orthodox type tea, indicates that increase in land holding size does not contribute in productivity. But good management, full concentration on tea gardens, and appropriate application of chemical fertilizer and pesticide contributes positively in the productivity of tea.

Organically produced tea is highly demanded in global market. Especially EU countries, US and Japan are demanding it. Tea farmers are being motivated towards the organically produced tea, particularly in Orthodox tea, in Nepal.

8.3 Recommendations

Development of agriculture sector mainly depends on modernization and commercialization. In order to grab the opportunities from the global market, their agricultural product should be competitive. As regards tea, which is high-value agro-product and export potential product of Nepalese agriculture, it is facing the various problems. For the purpose of successful and profitable business of tea, following recommendations are made, which will be useful for planners, policy makers and other concerned researchers/ stakeholders related to tea sector.

Policy Recommendations for Government in Favour of Farmers

- Short term and long term policy adoption and policy revision, e.g. there is removal of subsidy on fertilizer and irrigation during the study period; it was leading increase in the cost of production of tea. So, such

policy should be revised and government should provide subsidy to the tea sector within the boundary of WTO provision in favour of growers.

- There are no laboratories or survey companies capable of conducting tests and analysis on residue levels, heavy metal presence, fungal infestation and issuing reports that are required by the larger section of international trade. Therefore, government should pay attention in establishing well equipped laboratory in Nepal for growers.
- Leaf standard and quality of tea should be managed through good agricultural practices (GAP) among the tea farmers. Farmers should strictly follow proper ways to ensure minimum damage to soil and environment. For this non-organic fertilizer/pesticides application should be at minimum or prescribed level. NARC can be a relevant institution for it.
- Leaf quality, during delivery, is being damaged due to poor transportation facility like, on animal back, bicycles, cycle and manual carrier (pottering). Government should provide commercial vehicles on duty free basis, which can protect the leaves standard during delivery.
- Service delivery by NTCDB is not adequate. There are a few numbers of technicians who can help the tea farmers in cultivation process of tea. Government should increase the numbers of technicians and provide technical support and service to the tea farmers, processors and exporters. Technicians should be trained through latest technology.
- There is dire need of IT development. NTCDB will be appropriate institution to develop it.
- For the stable market price of green leaves, it should be determined in coordination with the representatives of tea planters, tea processing factories and governmental institutions.
- Leaf quality, during delivery, is being damaged due to poor transportation facility like, on animal back, bicycles, cycle and manual carrier (pottering). Government should provide commercial vehicles on duty free basis, which can protect the leaves standard during delivery.
- Establishment of Tea Research Centre (TRC) for quality test, technology generation, study on pesticide application and its impact, recommendation of chemical and non-chemical pesticide, is necessary.

- There is enormous potential to increase productivity by good management and using organic manures, farmyard manures and botanical pesticides which can be prepared by using locally available resources. Farmers should be trained about these techniques. The NTCDB and NARC will be relevant institutions to do so.
- Old tea bushes should be removed and new tea bushes should be built through re-plantation or rejuvenation.
- Since, tea farmers with low level of education with training have done well in tea production, priority should be given in the trainings by the government, NTCDB, NARC etc.
- Since landholding size is not positively correlated with productivity emphasis should be given on facilities to be used in tea gardens, like irrigation, fertilizer, tool etc. motivating farmers in tea farming.

Policy Recommendations for Government in Favour of Processers

- Initiate the insurance of cash crops by government subsidy. It will protect the farmer's at the time of crop failure, due to the drought, disease attack and natural disaster.
- There are no laboratories or survey companies capable of conducting tests and analysis on residue levels, heavy metal presence, fungal infestation and issuing reports that are required by the larger section of international trade. Therefore, government should pay attention in establishing well equipped laboratory in Nepal for processers.
- Leaf standard and quality of tea should be managed through good agricultural practices (GAP) among the tea farmers. Farmers should strictly follow proper ways to ensure minimum damage to soil and environment. For this non-organic fertilizer/pesticides application should be at minimum or prescribed level. NARC can be a relevant institution for it
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provide technical support and service to the tea farmers, processors and exporters. Technicians should be trained through latest technology.

- There is dire need of IT development. NTCDB will be appropriate institution to develop it.
- For the stable market price of green leaves, it should be determined in coordination with the representatives of tea planters, tea processing factories and governmental institutions.
- Leaf quality, during delivery, is being damaged due to poor transportation facility like, on animal back, bicycles, cycle and manual carrier (pottering). Government should provide commercial vehicles on duty free basis, which can protect the leaves standard during delivery.
- Establishment of Tea Research Centre (TRC) for quality test, technology generation, study on pesticide application and its impact, recommendation of chemical and non-chemical pesticide, is necessary.

Policy Recommendations for Government in Favour of Exporters

- There are no laboratories or survey companies capable of conducting tests and analysis on residue levels, heavy metal presence, fungal infestation and issuing reports that are required by the larger section of international trade. Therefore, government should pay attention in establishing well equipped laboratory in Nepal for exporters.
- Service delivery by NTCDB is not adequate. There are a few numbers of technicians who can help the tea farmers in cultivation process of tea. Government should increase the numbers of technicians and provide technical support and service to the tea farmers, processors and exporters. Technicians should be trained through latest technology.
- There is dire need of IT development. NTCDB will be appropriate institution to develop it.
- Establishment of Tea Research Centre (TRC) for quality test, technology generation, study on pesticide application and its impact, recommendation of chemical and non-chemical pesticide, is necessary.
- All tea stakeholders desired Nepali logo of tea for international recognition and tea auction market for transparent marketing. Government should take initiation on them.

Academic Recommendations

- There were virtually no empirical studies in the production and export of tea before and after the membership of WTO and various economic issues of green leaves. This study has particularly filled the gap. However, further research could help reaffirming the findings of this study. In other words, this research conducted in after membership period will further help in analyzing the before and after situation of tea sector after the WTO membership in economic issues of green leaves and competitiveness of tea in export market.
- Furthermore, complementing the qualitative as well as quantitative research, it will help- in accumulating more data after WTO membership. These accumulated data, might in turn, provide an important reference sources for future studies and may be used by different studies. More researches can also be done in understanding the relation between the dependent and independent variables, such as, educational status of the farmers and productivity. Additionally, the factors, which can affect the productivity and competitiveness of tea will also be an important component which helps further to advance the tea sector.

Glossary

Accession. The process of a country becoming a member of an international agreement, such as the World Trade Organization (WTO). Negotiations determine the specific obligations a nonmember country must meet before it is entitled to full WTO membership benefits.

***Ad valorem* tariff**. A government tax on imports assessed as a percentage of the value of the goods cleared through customs. For example, 10 percent *ad valorem* means the tariff is 10 percent of the value of the goods.

Aggregate Measure of Support (AMS). Measure of the monetary value of the extent of government support to a sector. The AMS, as defined in the Uruguay Round Agreement on Agriculture, includes both budgetary outlays as well as revenue transfers from consumers to producers as a result of policies that distort market prices. The AMS includes actual or calculated amounts of direct payments to producers (such as deficiency payments), input subsidies (on irrigation water, for example), the estimated value of revenue transferred from consumers to producers as a result of policies that distort market prices (market price supports), and interest subsidies on commodity loan programs.

Agreement on Agriculture. The Agreement on Agriculture is one of the 29 individual legal texts included under an umbrella agreement establishing the WTO. The Agreement covers three major areas related to agriculture: market access, export subsidies, and domestic support.

Articles (of the GATT). Clauses of the General Agreement that lay out the rules and procedures that Contracting Parties will observe in their conduct of international trade and trade policy. Each of the 38 Articles in the GATT deals with a different aspect of trade. The GATT is now known as the World Trade Organization.

Bound tariff rates, tariff binding. Tariff rates resulting from GATT/WTO negotiations or accessions that are incorporated as part of a country's schedule of concessions. Bound rates are enforceable under Article II of GAT T. If a WTO member raises a tariff above the bound rate, the affected countries have the right to retaliate against an equivalent value of the offending country=s exports or receive compensation, usually in the form of reduced tariffs on other products they export to the offending country.

Green box policies. A popular term that describes domestic support policies that are not subject to reduction commitments under the Uruguay Round Agreement on Agriculture.

These policies are assumed to affect trade minimally, and include such activities as research, extension, food security stocks, disaster payments, the environment, and structural adjustment programs.

Codex Alimentarius Commission. Created in 1962 by the Food and Agriculture Organization (FAO) and the World Health Organization (WHO) to negotiate agreements among member countries on international standards and safety practices for foods. The Codex standards are minimum safety and hygiene levels that countries voluntarily apply to their exports and imports of commodities for human consumption. The standards are published in a listing called the Codex Alimentarius. Approximately 130 countries are members.

Countervailing duty (CVD). An additional levy imposed on imported goods to offset subsidies provided to producers or exporters by the government of the exporting country. A wide range of practices are recognized as constituting subsidies that may be offset. However, under WTO law, countervailing duties can only be imposed if it is determined that the imports are causing or threatening to cause material injury to a U.S. industry. Countervailing duties are permitted under Article VI of the General Agreement on Tariffs and Trade (GATT) as long as they are in accordance with the WTO Agreement on implementation of that article.

***De minimis* provision**. The total AMS includes a specific commodity support only if it equals more than 5 percent of its value of production, and noncommodity-specific support only if it exceeds 5 percent of the value of total agricultural output. The *de minimis* rule excludes support from the AMS if it does not exceed the 5-percent threshold.

Dispute Settlement Body (DSB). The General Council of the WTO, composed of representatives of all member countries, convenes as the Dispute Settlement Body to administer rules and procedures agreed to in various agreements. The DSB has authority to establish panels, adopt panel and appellate body reports, maintain surveillance of implementation of rulings and recommendations, and authorize suspension of concessions or other obligations under the various agreements.

Dumping. Technically, the sale of products on the world market below the cost of production to dispose of surpluses or gain access to a market. Dumping is generally recognized as an unfair trade practice because it can disrupt markets and injure producers of competitive products in an importing country.

Export subsidies. Special incentives, such as cash payments, extended by governments to encourage increased foreign sales; often used when a nation=s domestic price for a good is artificially raised above world market prices.

GATS:

The general agreement on trade in services, an agreement developed in the Uruguay spells out principles for liberalizing international trade in service. WTO member make individual commitments under GATS stating which of their services sectors (e.g., business service and telecommunications) they are willing to open to foreign competition, and how open those markets are.

GI- As per TRIPS Agreement, Article 22.1, geographical indications (GI) are defined, for the purpose of the Agreement, as indications, which identify goods as originating in the territory of a member, or a region or locally in that territory, where a given quality reputation or other characteristics of the good is essentially attributable to its geographical origin. Several products are traditionally product in specific geographical area and the specific characteristics of such products are associated with the area. The provision of GI allows such product to be identified by their respective area of origin. Scotch whisky of Scotland, Ceylon tea of Sri Lanka and Ilam tea of Nepal are some of the examples.

Market access. The extent to which a country permits imports. A variety of tariff and non-tariff trade barriers can be used to limit the entry of foreign products.

MNF- the principle of non-discrimination or equal treatment for all contracting parties- based on the concept of sovereign equality of states.

Non-tariff trade barriers. Government measures other than tariffs that restrict trade flows. Examples of non-tariff barriers include quantitative restrictions, import licensing, variable levies, import quotas, and technical barriers to trade.

Organization for Economic Cooperation and Development (OECD). An organization established in December 1960 to study and discuss trade and related matters. Members include the United States, Canada, 15 member states of the European Union, Norway, Iceland, Switzerland, Poland, Hungary, Czech Republic, Australia, New Zealand, Mexico, Japan, Korea, Slovak Republic, and Turkey.

Safeguard(s). Temporary measures implemented in order to protect an industry while it adjusts to increased competition by foreign suppliers. Safeguards can include tariffs or quantitative restrictions.

SPS: The agreement on Sanitary and Photo-sanitary measures. This agreement requires WTO members to apply their domestic regulations on food, plant and animal sanitation fairly and transparently to imported products. Member are encouraged to base domestic regulations

on international standards and principles of “sound science.” They are required to notify others when developing news SPS measures that may affect another WTO member’s exports.

Subsidy. A direct or indirect benefit granted by a government for the production or distribution (including export) of a good. Examples include any national tax rebate on exports; financial assistance on preferential terms; financial assistance for operating losses; assumption of costs of production, processing, or distribution; a differential export tax or duty exemption; domestic consumption quota; or other methods of ensuring the availability of raw materials at artificially low prices. Subsidies are usually granted for activities considered to be in the public interest.

Tariff. A tax imposed on imports by a government. A tariff may be either a fixed charge per unit of product imported (specific tariff) or a fixed percentage of value (*ad valorem* tariff).

TBT: The agreement on Technical Barriers to trade. This agreement requires WTO members to apply technical regulations affecting industrial products fairly and transparently. Technical regulations should embody international standards and should be designed to restrict trade as little as possible. Members are required to notify other when developing new technical regulations that may affect another WTO member’s exports.

TRIPS: The Agreement on trade-related Intellectual property Rights. The rules in the TRIPS Agreement state now copyrights, patents, trademarks, geographical names used to identify products, industrial designs, integrated circuit layout-designs and undisclosed information such as trade secrets ” intellectual property” should be protected when international trade is involved.

Unfair trade practices. Actions by a government or firms that result in competitive advantages in international trade. Such actions include export subsidies, dumping, boycotts, or discriminatory shipping arrangements.

BIBLIOGRAPHY

Acharaya, U.K., N.P. Adhakari, P.K. Yadav, and K.B. Karki (2009). ***Proceedings of the Second National Workshop on Commercial Crops,*** (eds.). Lalitpur: National Agricultural Research Institute.

Action Aid Nepal (2006). ***Import Surge in Nepal: A Case Study of Rice***. Kathmandu: Action Aid Nepal.

ADB, DFID and ILO, (2009). ***Nepal : Critical Development Constraint***, Manila: ADB, DFID and ILO.

Adhikari, D. (2008). "Nepal: Input, Infrastructure, Institution and Agricultural Productivity", a Report submitted to Asian Development Bank for the Project TA- 6397 (REG): ***Strengthening Country Diagnosis and Analysis of Binding Development Constraints in Selected Developing Member Countries.***

Adhikari, D. (2010). "Promoting Nepal's Trade in the Perspective of Bilateral and Multilateral Trade". Prepared for Economic Policy Network, Government of Nepal/ Ministry of finance and Asian Development Bank, Nepal Resident Mission, Kathmandu, Nepal.

Adhikari, R. (2004)."Trade Remedy Measure as a Means to Protect and Promotes

_____. (2009). ***Intra-Regional Free Trade Agreements: Implications for Regional Trade Integration in South Asia***, Kathmandu: SAWTEE.

Adhikari, Ratnakar and Kamalesh Adhikari(2005). ***Market Access Barriers to select Nepalese Agricultural Exports.*** Kathmandu**:** International Institute for Sustainable Development.

AEC (2002). ***Study on potential world market and Competitive of Nepalese Black Tea***, Kathmandu: AEC, FNCCI.

APO (2008). ***APO Productivity Data Book 2008***. Tokyo: Asian Productivity Organization.

Ara, L., & Rahman, M. (2010). ***The Competitiveness and Future Challenges of Bangladesh in International Trade***, Available at http://www.wto.aoyama.ac. jp/file/090126laila_paper.pdf.

Awasthi, D. Bishnu and Shrawan K. Adhikary (2003). “Domestic Support Measures”. Paper presented in the workshop, ***Implications of WTO membership on Nepalese Agriculture,*** Technical Workshop, Kathmandu, Nepal.

Awasthi, D.B. and S.K. Adhikari (2004), "Agreement on Agriculture: Domestic Support Measures". In: ***Implication of the WTO Membership on Nepalese Agriculture.*** FAO and UNDP in collaboration with MoICS, HMGN, Kathmandu, Nepal.

Baidya, S (2001). ***Proceeding of Agro-Business Interface 2001.*** In: D.B. Shakya, S.shakya and P.oli (eds.). Kathmandu: Jointly organized by AEC (Agro enterprise centre), National Tea and coffee Development Board.

Balassa, B. (1965). ***Trade Liberalization and Revealed Comparative Advantage***. The Manchester School, 33, 99 - 123.

Bhattarai, Keshav P. (2061). “WTO Accession-Articulating Nepal's Position”, ***VIKAS (A Journal of Development)*** (24) 37-44, Kathmandu, Nepal.

Biber-Klemm S. (2004). "The Implementation of Farmers' Right Through The Creation of Sui Generis Rights to Traditional Knowledge". In: Adhikari, R. and K. Adhikari, (eds), 2004. ***Evolving Sui Generis Options for the Hindu- Kush Himalayas,*** xi+230, SAWTEE, Kathmandu.

Buffie, E. (1992). On the condition for Export-Led Growth. ***Canadian Journal of Economics,*** 25,211-25

CBO (2005). ***R&D and Productivity Growth: Background Paper***. Congressional Budget Office, The Congress of the United States.

CBS (2001). ***Population Monograph of Nepal, Census 2001***. Kathmandu: CBS /NPC/HMG, Nepal.

CBS (2004). ***Statistical Pocket Book of Nepal 2004***, Central Bureau of Statistics, NPC/HMGN, Kathmandu, Nepal.

CEC (2007). “Working Paper on Behind Closed and Abandoned Tea Gardens Status Report of India”. New Delhi: Centre for Education and Communication.

Chakrabarti, Milindo and Animesh Sarkar (2007). "Closed Tea Gardens in Derjeeling Hills: A Case Study". In: ***Behind Closed and Abandoned Tea Gardens Status Report of India***, Malviya Nagar: CEC, New Delhi.

Chhetri, S. (1999). ***Women workers in the Informal sector***. Delhi : Gyan Sagar Publication.

Chitrakar, R. and D. Thapa (2004). ***International Trade and Standard: A South Asian Perspective***, V+30, Kathmandu: SAWTEE.

Dahal, Madan K. (2005). "Tea: A Road Towards Connecting Culture, Civilizations and Economy", ***The Himalayan Flavour***. Kathmandu: NTA, Nepal.

_____. (ed) (1999). ***Impact of Globalization in Nepal.*** Kathmandu: Nepal Foundation for Advanced Studies (NEFAS) and Friendrich-Ebert-Stiftung (FES).

_____. (ed) (2004). ***Nepalese Economy; To-words Building a Strong Economic Nation-State.*** Kathmandu : Central Department of Economics Tribhuwan University and New Hira Books Enterprises, Kirtipur, Kathmandu, Nepal .

Dahal, Navin (2006). ***Doha Round and Hong Kong Ministerial South Asian Trade Economic.*** Kathmandu: Briefing Paper. (SAWTEE).

Dahal, T. (N.A.). ***Nepal as a Transit State : Emerging Possibilities.*** Kathmandu: Institute of Foreign Affairs. Available at : http//www.ifa.org.np/polt/new4.pdf

Das, Ghanshyam. L (2004). "Challenges and Opportunities of Nepalese Agriculture under WTO Regime", ***The Economic Journal of Nepal***, Vol, 27, No.3, July-September, 2004, CEDECON- Tribhuvan University, Kathmandu, Nepal.

Dasgupta, A. (2001). "Tea Industry in the perspective of the WTO and the TRIPS Agreement". In: D-B Shakya, S.Shakya and P.Oli (eds.), ***Proceeding Agro-business Interface 2001***. Kathmandu: Jointly Organized by AEC and NTCDB, Nepal.

DEVA (2001). ***Poverty Reduction through Development of the Tea Sector in Nepal.*** A Baseline Study on Orthodox Tea Production in Eastern Hill Districts

of Nepal. Kathmandu: Development Associates for Regional and Rural Development, Nepal.

Dhar, B. (2004). "Introducing Plant Varieties Protection: Possible Options for Developing Countries". In: Adhikari R. and K. Adhikari, (eds.), 2004, ***Evolving Sui Generic Options for the Hindu-Kush Himalayas,*** XI+230, SAWTEE, Kathmandu.

Downes, D. R. and S.A. Laird with contribution by Graham Dutfield and Wynberg (1999). "Innovative Mechanisms for Sharing Benefits of Biodiversity and Related Knowledge-Case Studies on Geographical Indications and Trademarks". Paper Prepared for the UNCTAD Biotrade Initiative Geneva.

Dwibedi, H.N. (1999). ***Production of Tea in India***. Calcutta: K.P. Bagchi and Company,

FNCCI (2005*).* ***Nepal and the World: A Statistical Profile***. Kathmandu: Federation of Nepalese Chambers of Commerce & Industry (FNCCI), Nepal.

Food and Agriculture Organization of the United Nations and UNDP (2004). ***Implication of the WTO Membership on the Nepalese Agriculture***, FAO of UN and UNDP. In collaboration with MOAC.

Frankel, J., Romer, D., & Cyrus, T.(1996). ***Trade and Growth in East Asian Countries: Causes and Effect?*** Cambridge: NBER Working Paper Series, Working Paper 5732

Gandhi, G.P. (2006). "Export Prospects of Tea from India". In: ***Science Tech, ENTERPRENEUR***, n.p, 2006. September, New Delhi.

Ghimire, H. (2004). "SMES Under the TRIPS Regime". In: Dahal, N. and B. Sharma, (eds.), 2004, ***WTO Membership: Opportunities and Challegges for SMES in Nepal.*** Kathmandu: xiv+103,SMEDP and SAWTEE, Nepal .

Ghimire, Hiramani and Navin Dahal (2004). ***Nepal in the WTO, Livelihood and Food Security Perspectives***. Kathmandu: South Asia Watch on Trade, Economics and Environment (SAWTEE) and Action Aid Nepal (AAN).

Giles, J. A., & Williams, C.L.(1999). Export-Led Growth***: A Survey of the Empirical Literature and Some Non causality Results***. Economics Working

Paper No.9901.Available at SSRN:http://papers.ssrn.com/so13/papers.cfm?abstract_id=146208

GON (1997-2002). ***Budget Speech***. Ministry of Finance, Government of Nepal.

GON (2006/07). ***Stastical Information on Nepalese Agriculture, 2006/07.*** Kathmandu: Government of Nepal, MoAC, Agri-Business Promotion and Statistical Division, Nepal.

GON (2007/08). ***Statistical Information on Nepalese Agriulture, 2007/08***. Kathmandu: Government of Nepal, MoAC, Agri-Business Promotion and Statistical Division, Nepal.

GON (2008). ***A Glimpse of Nepal's Foreign Trade: Statistical Presentation. 2007/2008***. Kathandu: Trade and Export Promotion Center, Government of Nepal,Ministry of Commerce and Supply, Nepal .

GON, (2008/09). ***Statistical Information on Nepalese Agriculture, 2008/09***. Kathmandu: Government of Nepal, MoAC, Agri-Business Promotion and Statistical Division, Nepal .

GON (2010). ***Summary Report of Nepal Trade Integration Strategy 2010***, Kathmandu: Ministry of Commerce, Government of Nepal.

GTZ (2000). **"**Tea Development in Nepal" a Pre- Feasibility Study Report, 2000. Kathmandu: Germen International Aid consultancy, Nepal.

GTZ (2007). ***Orthodox Tea in Nepal***. Kathmandu: German Technical Cooperation/Private Sector Promotion-Rural Finance, Nepal.

Gulati, A. and S. Narayan (2003). ***The Subsidy Syndrome in Indian Agriculture***, Oxford University Press.

Hazarika, K.C. (2008). ***Problems of Indian Tea Industry***. Available at http://becononline.wordpress.com/2008/10/23/marketing-problem-faced-by-the-tea-industry/

HMG/N (1999). ***WTO Provisions On Least Developed countries***. Kathmandu: Trade Promotion Center, His Majesty's Government of Nepal, Ministry of Commerce, Nepal.

International Trade Centre (ITC) (2007). "Advisory Services on Export Development of Priority Sectors of Nepal-Sector Study on Tea", a Report submitted to UNCTAD, WTO.

ITC (n.d.). ***International Trade Statistics***, Retrieved July 3, 2010, from International Trade Statistics:

http://www.trademap.org/tradestat/product_selcountry_TS. Aspx.

ITC and TEPC (2007). ***Export Potential Assessment in Nepal***. Kathmandu: Implemented by the International Trade centre (ITC) Market Analysis Section, in Collaboration with the Trade and Export Promotion Centre (TEPC) of Nepal.

ITC (2009). ***International Tea Committee Report***, Annual Bulletin of Statistics 2009.

ITC(2010). ***International Tea Committee Report***, Annual Bulletin of Statistics 2010.

Jodha, N.S (2004). "Globalization and Mountain Agriculture: A Process of Integration through Disintegration". In: Adhikari .R and K.Adhikari, (eds.), 2004**.** ***Evolving Sui Generis Options for the Hindu-Kush Himalayas,*** Xi+ 230, SAWTEE, Kathmandu.

Joshi, G.R and R.K. Shrestha, (2061, B.S). "Nepal's Accession to WTO: Implication to Agricultural Sector". In: ***Briefing Paper of Pro-Public***, in collaboration of SAWTEE, Kathmandu, Nepal.

Kaldor, N. (1964). ***Essay on Economic Policies***. London: G. Duckworth

Karki, Tika B. (2003). ***Sanitary and Phyto-sanitary (SPS) Measures in SAARC Countries***. South Asia Watch on Trade, Economics and Environment (SAWTEE) & CUTS Center for International Trade, Economics & Environment (CUTS-CITEE).

Karmacharya, B. (2004). "India's Informal Trade in SAARC Countries: Case of Nepal, India and Sri Lanka", ***South Asia Economic Journal,*** 5(1), 27-54.

Karna, K. Sohan (2004). "The WTO Challenges and Opportunities: Implications for Nepal", ***The Economic Journal of Nepal***, vol.27, No.3, July-September 2004. Kathmandu, Nepal.

Karna. K. Sohan (2004). "Agriculture Development in Nepal, Problems and Prospects". In: Dahal.M.K(ed), ***Nepalese Economy, Towards Building***

a Strong Economic Nation- State, Central Department of Economics T.U, and New Hira Books Enterprises, Kathmandu.

Kerlinger, F.N. (1986). ***Foundation of Behavioral Research (3rd.ed.).*** New York: Holt, Rimehert and Winston.

Kinyili, M.J. (2003). **Diagnostic Study of the Tea Industry in Kenya**, Export Promotion Council, NAIROBI, Kenya.

Koirala, P. Nawa Raj Dahal. Jiwan Prava Lama and Uttam Kumar Bhattrai (2008). "Assessment of Certain Pesticide Residues in Nepalese Tea"***, Journal of Food Science and Technology of Nepal***. Kathmandu: Nepal Food Scientists and Technologists Association (NEFOSTA), Nepal.

Kothari, C.R (2004)**. *Research Methodology-Methods and Techniques.*** Second Revised Edition. Delhi: New Age International Publishers, New Delhi, India.

Krugman, P. (1984). Import Protection as Export Promotion. In H. Kierzkowski (ed), ***Monopolistic Competition in International Trade***. Oxford: Oxford University Press.

Liesner, H. (1958). "The European Common Market and British Industry". ***Economic Journal***. 68, 302 - 16.

Mbekeani, K.K. (2007). ***The Role of Infrastructure in Determining Export Competitiveness: Framework Paper***. Framework Paper No. ESWP_o5, Available at http://www.aercafrica.org/documents/export_supply_working_papers/KMbekeaniInfrast r8 DB3B.pdf.

Melican, Nigel, J.T. (1997). ***The Nepalese Orthodox Tea Industry: Status and Further Development.*** Tea Technology Associates, Bedford, U.K. April, 1997.

Ministry of Industry, Commerce and Supplies / His Majesty's Government Nepal, (2003). ***Nepal Trade and Competitiveness Study***. Kathmandu: MoICS.

Mishra, S.R. (1979). "Relative Contribution of Different Components Towards Tea Production in North Bengal Tea Gardens"**. *Tal News letter***, August.

MoAC (2009*). **Statistical Information on Nepalese Agriculture 2008/09***. Ministry of Agriculture and Co-operative, Agri-Business Promotion and Statistical, Division, Kathmandu, Nepal.

MoF (2004). ***Economic Survey***. Kathmandu: Ministry of Finance, His Majesty's Government of Nepal.

MoF (2005). ***Economic Survey***. Kathmandu: Ministry of Finance, HMGN, Nepal.

MoF (2006). ***Economic Survey***. Kathmandu: Ministry of Finance, Government of Nepal.

MoF (2009). ***Economic Survey*.** Kathmandu: Ministry of Finance, Government of Nepal.

----------(2010). **Economic Survey**. Kathmandu: Ministry of Finance, Government of Nepal.

MoCS, (2005/06). ***Nepal Overseas Trade Statistics***. Kathmandu: GON, Ministry of Commerce and Supplies, Nepal.

MoCS (2006/07). ***Nepal Overseas Trade Statistics.*** Kathmandu: GON Ministry of Commerce and Supplies, Nepal.

MoF (2007/08). ***Economic Survey***. Kathmandu: Ministry of Finance, Government of Nepal.

MoICS (2004). "Tea Processing Industry: Laying the Foundations for Further Growth". In: ***Nepal Trade and Competitiveness Study***, MoICS, 2004, Kathmandu, Nepal.

MoICS, (2004). ***Nepal Trade and Competitiveness Study***. Ministry of Industry, Commerce and Supplies: Kathmandu, Nepal.

MoICS, (2004/05). ***Nepal Overseas Trade Statistics.*** Kathmandu: GON, Ministry of Industry, Commerce and Supplies, Nepal.

Multilateral Trade", a Report prepared for Economic Policy Network, Government of Nepal/MOF, and ADB, Nepal Resident Mission, Kathmandu, Nepal.

National Tea & Coffee Development Board (2062). ***Tea-A-Tea***. Kathmandu: NTCDB, Nepal.

National Tea & Coffee Development Board. (2063). ***Tea-A-Tea.*** Kathmandu: NTCDB, Nepal.

National Tea & Coffee Development Board. (2064). ***Tea-A-Tea.*** Kathmandu: NTCDB, Nepal.

National Tea & Coffee Development Board. (2065). ***Tea-A-Tea.*** Kathmandu: NTCDB, Nepal.

National Tea and Coffee Development Board (2005/06). ***Cost Production of Green Leaves***, Kathmandu: NTCDB, Nepal.

National Tea and Coffee Development Board (2009). ***Tea-Coffee***, Kathmandu: NTCDB, Nepal.

Nepal Tea & the World (2004). Secretariat Agro Enterprise Centre (AEC/FNCCI) (2004). ***Nepal Tea and the World***. Kathmandu: Jointly Organized by HOTPA, HIMCOOP, NTPA, UNFPA, NTCDB, AEC, FNCCI.

Nepal Tea Association (2005). ***The Himalayan Flavour***. Kathmandu: Nepal**.**

NPC, (1983). ***Internal and International Migration in Nepal : Summary and Recommendation***, Kathmandu, National Planning Commission .

NPC, (1997). ***The Ninth plan (1997-2002)***, NPC, Kathmandu, Nepal.

NPC, (2002). ***The Tenth Plan (2002-2007)***, NPC, Kathmandu, Nepal.

NTIS (2010). ***Nepal Trade Integration Strategy 2010***, GON, Ministry of Commerce and Supplies, Kathmandu, Nepal.

OECD (2003). ***Agricultural Policies In OECD Countries***, Monitoring and Evaluation (Paris).

Pandey, B.P. and A. Pandey (1988). ***Economic Botany***, S. Chand, New Delhi.

Pandey, Posh Raj (2004). "Reflection on the July Package: A Nepalese Perspective". A paper presented at, ***The 13th Forum on Globalization and WTO,*** Organized by Action Aid Nepal and SAWTEE, Kathmandu, 9 November.

Pant, K.K. (2008). "Orthodox Tea - A Desirable Development Approach", In: **Tea-A-Tea**, 2008, NTCDB, Kathmandu, Nepal.

Pant K.P, Y.K Karki and P.R Pandey, (2004). "Agreement on Agriculture: Market Access". In: ***Implication of WTO Membership on Nepalese Agriculture***, 2004, FAO and UNDP in collaboration with MOICS, HMGN, Kathmandu, Nepal.

Pokharel, Pashupati (2006). "Economic Analysis of Orthodox Tea in Ilam District", Unpublished Thesis, M. Sc. Agriculture IAAS, Rampur, T.U.

Poudel, S (2009). "Nepal's Membership to WTO Impact on Agriculture Sector", Unpublished Master's Thesis, Central Department of Economics, T.U., Kathmandu, Nepal

Poudyal Sur B. (1998). "Foreign Trade and Economic Growth in Nepal". ***The Economic Journal of Nepal,*** XXI (1), CEDECON. TU.

Prasad, U. (2007). ***Nepal's Regional and Bilateral Trade Agreements: Performance and Prospects***. Kathmandu: Ministry of Industry and Supplies, Government of Nepal.

Pyakuryal, B. (2009). ***Socioeconomic and Labor Market Trend: Nepalese Case***, Kathmandu: ILO Nepal Country Office.

Pyakuryal, Bishwambhar, Y.B Thapa, and Devesh Roy, (2005). ***Trade Liberalization and Food Security in Nepal.*** International Food Policy Research Institute (IFPRI). MTID Discussion Paper No. 88.

Rana, A. and P. Rimal (2063). "Branding Nepal Tea" In: **Tea-A-Tea**. Kathmandu: NTCDB, Nepal.

Rathi K.R. (2005). "Tea Export from Nepal". In**: *The Himalayan Flavour***, Kathmandu: NTA, Nepal.

Rawal, Karan. K. (2004). ***Chiya Herda Sun Jasto (in Nepali), Part I***. Kathmandu: Asia Publication Pvt. Ltd. Bagbazar, Kathmandu, Nepal.

Rawal, Karan. K. (2004). ***Chiya Herda Sun Jasto (in Nepali), Part II***. Kathmandu: Asia Publication Pvt. Ltd. Bagbazar, Kathmandu, Nepal.

Rahaman, M. Shadat, W., & Das, N. (2006). Trade Potential in SAPTA: An Application of Augmented Gravity Model. Dhaka: Centre for Policy Dialogue.

Rijal, Ishor P.(2009), "World Trade Organization and Nepalese Agriculture", In : **Agriculture**, Bio-Monthly Agriculture Information and Communication Center, Year 46 - Kartik-Mangsir 2066-4, Kathmandu.

Redding, S., & Venables, A.J.(2003). ***Geography and Export Performance: External Market Access and Internal Supply Capacity***. NBER Working Paper 9637. Available at http:// www.nber.org/papers/w9637.

RIS (2008). "South Asia Development and Cooperation Report". New Delhi: Research and Information System for Developing Countries (RIS) and Oxford University Press.

Rodriguez, F., & Rodrik, D.(1919). ***Trade Policy and Economic Growth: A Skeptic Guide to the Cross National Evidence***. CEPR Discussion Paper No. 2143.

Selltiz, Claire, Jahoda, Marie, Destsch, Morton and Cook, Stuart W. (1959). ***Research Methods in Social Relations***, rev.ed., New York: Holt, Rinehart and Winston.

Shakya, D.V. (2004). "Agriculture within the WTO: Challenges and Opportunities for Nepal". In: Dahal, N. and B. Sharma, (eds.), 2004. ***WTO Membership: Opportunities and Challenges for SMEs in Nepal***. xiv+103, SMEDP and SAWTEE, Kathmandu, Nepal.

Shanmugavelu, K.G., N. Kumar & K.V. Peter (2002). ***Production Technology of Spices and Plantation Crops.*** Agrobios, India.

Sharma, D. (2004). "WTO and Mountain Agriculture: Preparing For a Sustainable Future". In: Adhikari.R and K. Adhikari, (eds.), 2004, ***Evolving Sui Generis Options for the Hindu-Kush Himalayas.*** xi+230, SAWTEE, Kathmandu.

Sharma, M.R. (2001). "National Tea Policy of Nepal". In: D.B. Shakya S. Shakya and P. Oli (eds). ***Proceeding of Agro Business Interface 2001***, Tea Event. Kathmandu: Jointly Organized by AEC and NTCDB.

Sharma, Ramesh (2002). "Developing Country Experience with the WTO Agreement on Agriculture and Negotiating Issues". Paper Presentation at International Agricultural Trade Research Consortium (IATRC) Summer Symposium on ***The Developing countries, Agricultural Trade and the WTO***, Vancouver, Canada, June 2002.

Shinoj, P. (2009). ***India-ASEAN Trade in Agriculture: Retrospect and Prospect (Policy Brief 29)***. New Delhi: National Centre for Agricultural Economics and Policy Research.

Shrestha, A. (2008). ***Current Nepal-China Trade and Economic Relations***, Retrieved July 2010, from the Kathmandu Post: http://www.gorkhapatra.org. np/detail.php?article_id = 28700 &cat_id=7.

Shrestha, P.M. (2004***)***. "Multilateral Trading Regime: Implications on The Nepalese SMEs". In: Dahal.N and B. Sharma. (eds.), 2004**. *WTO Membership: Opportunities and Challenges for SEMs in Nepal***. xiv+103, SMEDP and SAWTEE, Kathmandu, Nepal.

SMES". In: Dahal, N and B. Sharma, (eds.), 2004. ***WTO Membership : Opportunities and Challeges for SMES in Nepal,*** XIV + 103, SMEDP and SAWTEE, Kathmandu, Nepal.

SOMO (2008). ***Sustainability Issues in the Tea Sector***. A Comparative Analysis of Six Leading Producing Countries, Centre for Research on Multinational Corporation, Amsterdam, Netherlands.

Taneja, N. & Pohit, S. (2001). "India's Informal Trade with Nepal". ***Economic and Political Weekly.***

Tea Board (2007). ***Special Purpose Tea Fund Scheme (SPTF).*** Ministry of Commerce and Industries, Government of India, West Bengal India. Available at www.teaboard.spft.com

TEPC (2005). ***Nepal Overseas Trade Statistics***. Kathmandu: Trade and Export Promotion Centre, Ministry of Commerce and Industry, Nepal.

TEPC (2008). ***A Glimpse of Nepal's Foreign Trade***. Kathmandu: Trade and Export Promotion Center, Ministry of Commerce and Supplies, Government of Nepal, Nepal.

TEPC (2008/09). ***Nepal Foreign Trade Statistics.*** Ministry of Commerce and Supplies, GON, Kathmandu, Nepal.

TEPC (2009). ***Trade Statistics***, Retrieved July 3, 2010, from Trade and Export Promotion Centre, Nepal: http:/www.tepe.gov.np/tradestatistics.

TEPC (2009/010). ***Nepal Foreign Trade Statistics, Vol -1***. Ministry of Commerce and Supplies, GON, Kathmandu, Nepal

Thapa , Y.B. (2003). **"**Competitiveness and Policy Issues in the Tea Sector of Nepal". Background analysis prepared for FAO/MOAC Nepal/WTO Project, Draft Report, Kathmandu.

Thapa, Y.B. (2004). "Commodity Case Study-Tea", In:***Implications of the WTO Membership on the Nepalese Agriculture***. Kathmandu: FAO/UNDP in Collaboration with MOAC, HMGN,

Thapa, N.S. Ajit. (2005). "Concept Paper on Study of Nepalese Tea Industry-Vision 2020": A Report submitted to Nepal Tree Crop Global Development Alliance. Kathmandu: Winrock International, Nepal.

The Global Competitiveness Report (2012-13). World Economic Forum. Professor Klaus Schwab, World Economic Forum and Professor Xavier Sala-i-Martín, Columbia University (eds.). Pp. 3-48.

Chief Advisor of The Global Benchmarking Network

The Tea Market (2002). ***The Tea Market a background study-draft and comments***. Available at, www.markettradefair.com/assets/English/tea market. pdf.

Tirkey, L.P. (2005). "Tea Plantation in the Darjeeling District, India : Geo-ecologgical and socio-economic impacts in post-Independence Period" Unpublished Thesis, Master of Natural Resources Management, University of Manitoba, Canada.

Tiwari, B.H., M. Rai and S. Verma (2004). "Agreement on Agriculture: Export Competition". In: ***Implication of the WTO Membership on Nepalese Agriculture.*** (2004). FAO and UNDP in Collaboration with MOICS, HMGN, Kathmandu, Nepal.

Tripathi, R. (2004). "Review of TRIPS: A Roadmap for Protecting Farmers' Rights". In: Adhikari R. and K. Adhikari, (eds.), 2004. ***Evolving Sui Generic Options for the Hindu-Kush, Himalayas***, xi+230, SAWTEE, Kathmandu.

Upadhyay, M. (2004). "Farmer's and Breeders' Rights Issue in the Design of Sui Generis System for Nepal". In: ***Adhikari R. and K. Adhikari, (eds.),***

(2004), Evolving Sui Generic Options for the Hindu-Kush Himalayas, xi+230, SAWTEE, Kathmandu.

WEF (2010). ***The Global Competitiveness Report 2009-10***, World Economic Forum.

WEF (2010b). ***The Global Enabling Trade Report 2010***, Geneva: World Economic Forum.

Wilcke, Angelika (2006). "Fair Agricultural Trade in Agriculture & Rural

Wolff, Howard K. and Prem R. Pant (2005). ***Social Science Research and Thesis***

World Bank (2008). ***World Development Report: Agriculture for Development.*** Washington, D.C.: The World Bank.

World Bank (2010). ***Doing Business 2010: Reforming through Difficult Times***, The World Bank, IFC and Palgrave Macmillan.

World Bank (2010). ***World Development Indicator***, Retrieved July 1, 2010, from World Bank: http:/data.worldbank.org/indicator/NE.Exp.GNFS.ZS

World Bank (2012). www. Worldbank.org.

/WBSITE/EXTERNAL/TOPICS/TRADE/0,,content MDK: 20540442~menuPK:207652~pagePK:148956~piPK:216618~the site PK:239071.00.html. Accessed on April 13, 2012 at 8:00 AM.

WTO (2000). "Export Subsidies". Background paper by the secretariat, Document G/AG/NG/S/5, 11 May 2000.

WTO (2003). "Report of the working party on the Accession of the Kingdom of Nepal to the WTO", Document WT/ACC/NPL/16, 28 August 2003.

WTO (2004). ***World Trade Report 2004 (Geneva)***.

Yami, K.D. and Khanal (2002). "Organic Tea Farming in Nepalese Mountains". In: F.P. Neupane and K.M. Bajracharya (eds.), ***Proceeding of International Mountains 2002***, Organized by Integrated Mountain Development (ICIMOD), March 6-8, 2002.

Young, E.J. Westcott (2000). "How Decoupled is U.S. Agricultural Support for Major Crops?" American Journal of Agricultural Economics 82 (3): 762-67.

ANNEX

ANNEX – A

World Production of Tea[a]

In Metric Tons

Country Name	1999	2000	2001	2002	2003	2004	2005	2006	2007
India	825935	846922	853923	838474	878129	892965	945974	981805	944678
Bangladesh	46365	52639	56820	53624	58298	55627	60600	53265	57955
Sri Lanka	284149	306794	296301	310604	303254	308089	317196	310822	304613
Nepal	11000	11200	11500	12000	12600	13000	13300	13688	15168
China (Mainland)	675871	683324	701699	745374	768140	835231	934857	1028064	1140000
Indonesia	161003	162586	166868	162194	169819	164817	156273	146847	137248
Taiwan	22555	20349	19837	20345	20675	20192	18803	19345	17502
Iran	68501	44233	59000	49500	58051	40000	25000	20000	17000
Japan	88512	89309	90371	83677	91930	100262	100000	99500	92111
Myanmar	16800	17000	17200	17300	17700	17900	18000	18300	18400
Turkey	170563	130671	142900	142000	155000	165000	135000	142000	178000
Vietnam	65000	63700	76800	89440	106950	119050	133350	142500	148270
Kenya	248709	236286	294631	287102	293671	324608	323497	310578	369606
Malawi	38469	42114	36770	39185	41693	50090	37978	45010	48144
Tanzania	23490	23897	24745	27511	29482	30688	30362	31348	34863
Uganda	24730	29282	33255	33831	36475	35706	37734	36726	44913
Zimbabwe	20411	22489	22382	22544	21973	18734	14884	15737	13463
CIS Total	17828	8693	8717	8863	8851	8024	7278	8432	8558
Argentina	70973	67973	67120	66778	67278	64871	80000	88000	87000
Total Oceania	7500	7500	7400	7600	7900	8050	8200	8300	8360
Grand Total	2948648	2928674	3058540	3086407	3217059	3334934	3457894	3579649	3750894

Source: International Tea Committee, Annual Bulletin Statistics, 2009, p. 35. a. In this ANNEX A all of the tea producing countries are not included but most of the countries are included representing the approximately 98.00 percent tea production in 2007.

ANNEX- A_1

Percentage Share of World Production from Major Producing Countries

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
India	28.0	28.8	27.9	27.2	27.4	27.0	27.3	27.4	25.2	25.8
Bangladesh	1.6	1.8	1.9	1.7	1.8	1.7	1.8	1.5	1.5	1.5
Sri Lanka	9.6	10.4	9.7	10.1	9.5	9.3	9.2	8.7	8.1	8.4
Indonesia	5.5	5.5	5.5	5.3	5.3	5.0	4.5	4.1	3.7	3.6
China	23.0	23.6	22.9	24.2	24.0	25.2	27.0	28.7	30.4	31.5
Iran	2.4	1.5	1.9	1.6	1.8	1.2	0.7	0.6	0.4	0.5
Japan (Mainly Green)	3.0	3.0	3.0	2.7	2.9	3.0	2.9	2.8	2.5	2.4
Myanmar	0.6	0.6	0.6	0.6	0.6	0.5	0.5	0.5	0.5	0.5
Taiwan	0.8	0.7	0.6	0.7	0.6	0.6	0.5	0.5	0.5	0.5
Uganda	0.9	1.0	1.1	1.1	1.1	1.1	1.1	1.0	1.2	1.1
Zimbabwe	0.7	0.8	0.7	0.7	0.7	0.6	0.4	0.4	0.4	0.2
Other Africa	1.5	1.6	1.7	1.6	1.7	1.3	1.3	1.2	1.3	1.3
Africa	13.6	13.6	15.1	14.9	14.9	15.2	14.1	13.5	14.9	13.6
CIS	0.6	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2
Argentina	2.4	2.3	2.2	2.2	2.1	2.0	2.3	2.5	2.3	1.9
Other S. America	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Others	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: ITC, 2009, Annual Bulletin of Statistics.

ANNEX - B

World Exports of Tea[a]

In Metric Tons

Countries Name	2001	2002	2003	2004	2005	2006	2007	2008
India	179857	198087	170277	193908	195228	215672	175841	193000
Bangladesh	12925	13653	12173	13435	9007	4794	10555	8393
Sri Lanka	287503	285985	290564	290604	298769	314915	294254	96210
Nepal	70	2090	2800	3100	3600	4623	7000	8600
China (Main Land)	249678	252273	259980	280193	286563	286594	289431	296935
Indonesia	99721	100185	88175	98572	102294	95339	83659	96210
Taiwan	2451	2592	2713	2388	2175	1962	2008	2328
Iran	4000	8457	7014	8000	6500	6000	5000	5300
Turkey	4809	5160	7042	5904	7000	5500	3000	4500
Vietnam	68217	76748	60274	99351	87918	105116	110929	104000
Burundi	8709	6510	6926	7170	7607	5903	6000	5300
Kenya	270152	272459	267806	332502	348276	312156	343703	383444
Malawi	38261	39386	42015	46599	42978	41962	46585	40069
Rwanda	14243	11979	12032	11537	11652	12859	13000	13300
South Africa	6632	8569	7168	5785	2290	1300	575	2516
Tanzania	21060	22563	20416	24170	22498	24132	29125	24766
Zimbabwe	17154	17634	17056	14912	8451	11384	7601	5654
Uganda	30427	31073	34069	29686	33071	32699	43638	42385
Argentina	56645	57107	58191	66374	66389	70723	74880	77228
Grand Total	1397823	1436678	1391800	1559034	1566290	1578568	1572725	1637935
Exported % of Global Crop	45.7	46.6	43.3	46.7	45.3	44.1	41.9	43.1

Source: International Tea Committee, Annual Bulletin Statistics, 2009, p. 47. a. In this ANNEX B all tea exporters are not included but most of the countries are included representing the approximately 86 percent of total export for the year 2008.

Percentage Share of World Exports from Major Producing Countries

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
India	15.0	15.4	12.8	13.8	12.2	12.4	12.4	13.6	11.1	11.8
Bangladesh	1.2	1.4	0.9	0.9	0.9	0.9	0.6	0.3	0.7	0.5
Sri Lanka	20.9	21.1	20.5	19.9	20.8	18.6	19.0	19.9	18.7	18.2
Indonesia	7.8	8.0	7.1	7.0	6.3	6.3	6.5	6.0	5.3	5.8
China (Mainland)	15.9	17.2	17.8	17.5	18.6	17.9	18.2	18.1	18.4	18.1
Taiwan	0.3	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1
Turkey	0.4	0.5	0.3	0.4	0.5	0.4	0.4	0.3	0.2	0.2
Vietnam	2.9	4.2	4.9	5.3	4.3	6.3	5.6	6.6	7.1	6.3
Other Asia	0.4	0.4	0.6	0.8	0.9	0.9	0.9	1.0	1.0	1.2
Asia	64.8	68.4	65.0	65.8	64.7	63.8	63.7	65.9	62.6	62.2
Kenya	19.2	16.4	19.3	18.9	19.3	21.4	22.2	19.8	21.8	23.4
Malawi	3.4	2.9	2.7	2.7	3.0	3.0	2.7	2.7	3.0	2.4
Rwanda	0.9	0.8	1.0	0.8	0.9	0.8	0.9	0.8	0.8	0.8
Tanzania	1.7	1.7	1.6	1.6	1.5	1.5	1.4	1.5	1.9	1.5
Uganda	1.8	2.0	2.2	2.2	2.4	1.9	2.1	2.1	2.8	2.6
Zimbabwe	1.3	1.3	1.2	1.2	1.2	1.0	0.5	0.7	0.4	0.3
Other Africa	1.4	1.4	1.7	1.7	1.6	1.3	1.2	1.0	1.0	1.2
Africa	29.7	26.5	29.7	29.1	29.9	30.9	31.0	28.6	31.7	32.2
Argentina	4.1	3.8	4.0	4.0	4.2	4.2	4.2	4.5	4.8	4.7
Other S. America	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.2
Others	1.0	0.9	0.9	0.7	0.8	0.8	0.8	0.7	0.6	0.7
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: ITC, 2009, Annual Bulletin of Statistics.

ANNEX - C

Tea Imports for Consumption

(Imports adjusted for Re-exports: figures exclude local production)

In Metric Tons

Country Name	2004	2005	2006	2007	2008
Europe					
United Kingdom	128755	128232	135403	131152	129759
Russian Federation	166200	172974	166226	174400	175000
Other CIS	59500	61900	69000	72000	79300
Austria	1626	1362	1695	2205	2233
Belgium and Lux	2100	2150	2200	2300	2350
Czech Rep.	2392	2419	2658	3052	3078
Denmark	1466	1360	1369	1382	1384
Finland	1000	1322	1077	1038	1231
France	13053	14055	13433	15260	15108
Germany	21764	19623	21298	24369	23808
Hungary	1969	1907	2912	2407	2880
Ireland (Republic)	10461	9850	9760	8893	9946
Italy	6000	5946	6651	6243	6878
Netherlands	7700	7500	8000	7700	8400
Poland	32114	31057	27144	28077	30959
Spain	1200	1230	1300	1330	1360
Sweden	2850	2648	2060	3467	3752
Switzerland	2658	2238	2628	1722	1668
Baltic States	3300	3300	3500	3600	3700
N. America/Windies					
Canada	18155	18127	17034	17540	15203
USA	99484	100060	107572	109396	116749
Latin America					
Chile	20210	17870	19098	19611	22407
Asia					
Dubai	43419	53000	56000	58000	60000
Kuwait	5100	5000	5000	5000	6000
Oman	3500	3300	3500	3600	3550
Qatar	889	1824	1999	2341	2200
Saudi Arabia	14200	15200	12200	14700	14200

Other Arab States	1300	1350	1400	1450	1500
Afghanistan	41000	34000	34000	44000	39000
Hong Kong	9434	9749	10936	9890	9435
Iran	40000	43000	49600	55400	58000
Iraq	51000	58000	67000	32000	36000
Israel	3000	3000	3000	3000	2800
Jordan	16400	14200	11000	9000	13700
Lebanon	2300	1800	2000	2200	2000
Malaysia	13125	14946	14739	15700	14800
Nepal	800	750	800	820	800
Pakistan	120017	139261	116780	106366	99116
Syria	30556	29232	31000	27900	26800

ANNEX - C Continued

Turkey	5500	5300	6000	9500	8000
Yemen	12100	10400	7000	14300	14300
Africa					
Algeria	8225	9900	9600	9300	9500
Botswana	2100	2100	1348	1695	1600
Chad	3100	3200	3400	3300	3400
Egypt	71803	73500	78500	69000	104000
Ethiopia	1450	1500	1700	1600	1650
Gambia	3200	3300	3500	3400	3300
Ghana	6000	7000	7600	7400	7500
Ivory coast	1600	1550	1600	1400	1400
Kenya	10000	10605	8000	8683	4940
Libya	7400	17500	14500	9500	9000
Mali	7000	8000	8200	8400	8700
Mauritania	6500	6000	6500	8000	8500
Morocco	45669	50083	50607	52500	48200
Niger	5999	5020	4851	6747	6900
Nigeria	6000	4500	5000	4600	4500
Senegal	7000	8500	8000	9700	8400
Somalia	3300	2600	3000	3000	4500
South Africa	16568	18565	18795	18225	19252
Sudan	17000	20000	17500	23000	21400
Togo	2300	2400	2500	300	3800
Tunisia	10500	9300	11000	9500	9000
Oceania					
Australia	14027	13823	13600	13300	12900
New Zealand	4000	4000	4100	4200	4200
Major Producing Countries in Asia					
India	30800	16710	23810	15987	20280
Sri Lanka	6739	8150	12499	15587	18312
Indonesia	4300	5478	5294	8695	6625
China	2337	2783	3243	13400	9000
Japan	56196	51451	48092	47303	43107
Taiwan	19568	20775	24318	25055	25711
Grand Total	1427200	1468600	1487000	1489900	1531900

Source: International Tea Committee, Annual Bulletin of Statistics, 2009, p. 74-77. a. In this ANNEX C those countries are included whose import quantity is 1000 and more metric tons except Nepal in the year 2008.

ANNEX - C Continued

Percentage of World Tea Imports Retained for Consumption in Major Importing Countries

Europe	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
United Kingdom	11.1	10.5	10.2	10.0	9.3	9.0	8.8	9.1	8.8	8.6
Russian Federation	12.4	12.3	11.5	11.9	12.3	11.7	11.8	11.2	11.7	11.5
Other CIS	3.9	3.9	4.4	4.2	4.2	4.3	4.4	4.7	4.8	4.6
France	1.0	1.0	1.0	1.0	1.0	0.9	1.0	0.9	1.0	1.0
Germany	2.0	1.4	1.5	1.6	2.0	1.5	1.3	1.4	1.7	1.6
Ireland Republic	0.8	0.8	0.7	0.8	1.0	0.7	0.7	0.6	0.6	0.6
Italy	0.4	0.4	0.3	0.4	0.4	0.4	0.4	0.5	0.4	0.5
Netherlands	0.6	0.6	0.6	0.5	0.5	0.5	0.5	0.5	0.5	0.6
Poland	2.6	2.6	2.5	2.3	2.3	2.3	2.1	1.8	1.9	2.0
Sweden	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.2
Switzerland	0.2	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.1	0.1
Other Countries	1.5	1.4	1.7	1.5	1.7	1.6	1.5	1.7	1.7	1.7
Total Europe (a)	9.3	8.5	8.6	8.5	9.3	8.3	7.9	7.7	8.1	9.3
N. America/Windies										
Canada	1.5	1.4	1.4	1.4	1.5	1.3	1.2	1.1	1.2	1.0
USA	7.5	6.9	7.1	6.8	7.0	7.0	6.8	7.2	7.3	7.7
Other Countries	0.1	0.1	0.2	0.1	0.1	0.1	0.2	0.2	0.1	0.1
Total	9.1	8.4	8.7	8.3	8.6	8.4	8.2	8.5	8.6	8.8
Latin America										
Chile	1.1	0.9	1.1	1.1	1.2	1.4	1.2	1.3	1.3	1.5
Other Countries	0.3	0.2	0.3	0.3	0.2	0.3	0.2	0.3	0.3	0.2
Total	1.4	1.1	1.4	1.4	1.4	1.7	1.4	1.6	1.6	1.7
Asia										
Kuwait	0.4	0.3	0.4	0.3	0.4	0.4	0.3	0.3	0.3	0.4
Saudi Arabia	1.2	1.1	1.2	1.0	1.0	1.0	1.0	0.8	0.9	0.8
United Arab Emirates	2.0	1.8	2.3	2.3	3.6	3.0	3.6	3.8	3.8	4.0
Other Arabian States	0.5	0.4	0.6	0.5	0.5	0.5	0.6	0.6	0.6	0.5
Afghanistan	1.4	2.0	2.4	0.7	3.6	2.9	2.6	2.3	3.0	2.6
Hong Kong	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.6

Iran	3.2	3.7	3.2	3.1	2.3	2.8	2.9	3.3	3.7	3.8
Iraq	3.7	4.1	4.7	6.0	2.8	3.6	3.5	4.4	2.1	2.4
Israel	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Jordan	0.9	1.0	0.9	0.9	1.1	1.2	1.0	0.7	0.6	0.9
Malaysia	0.8	0.8	0.8	0.8	0.9	0.9	1.0	1.0	1.1	1.0
Pakistan	8.7	8.8	8.0	7.1	8.8	8.5	9.5	7.9	7.1	6.5
Syria	1.7	1.6	1.8	2.2	2.2	2.1	2.6	2.0	1.9	1.8
Yemen	0.8	0.6	0.8	0.7	0.7	0.7	0.7	0.5	1.0	0.9
Other Countries	1.1	1.0	1.2	0.8	1.1	1.0	1.1	1.1	1.4	1.2
Total	27.3	28.1	29.2	29.3	29.9	29.5	30.6	29.6	28.4	27.6
Africa										
Algeria	0.4	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.6	0.6
Egypt	5.9	5.0	4.2	5.8	3.7	5.0	5.0	5.3	4.6	6.8
Libya	0.8	1.1	1.4	0.8	1.4	0.5	1.2	1.0	0.6	0.6
Morocco	2.9	3.3	2.8	3.2	3.3	3.2	3.4	3.4	3.5	3.2
South Africa	1.0	1.1	1.0	1.1	1.1	1.2	1.4	1.3	1.2	1.3
Sudan	1.5	1.2	1.2	1.1	1.0	1.2	1.4	1.2	1.6	1.4
Tunisia	0.8	1.0	0.9	0.8	0.8	0.7	0.6	0.7	0.6	0.6
Other Countries	4.5	5.1	4.9	4.6	5.4	4.9	4.9	5.0	5.5	5.1
Total	17.8	18.3	16.9	17.8	17.3	17.3	18.5	18.5	18.2	19.6
Oceania										
Australia	1.2	1.2	1.1	1.0	1.0	1.0	0.9	0.9	0.9	0.8
New Zealand	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.3
Other Countries	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1
Total	1.6	1.6	1.5	1.4	1.4	1.4	1.3	1.3	1.3	1.2
Major Producing Countries in Asia										
Japan	4.0	4.5	4.5	3.8	3.5	3.9	3.5	3.2	3.2	2.8
Taiwan	0.9	1.0	1.1	1.3	1.4	1.4	1.4	1.6	1.7	1.7
Other Countries	1.3	1.8	2.0	2.3	1.6	3.1	2.3	3.0	3.6	3.6
Total	6.2	7.3	7.6	7.4	6.5	8.4	7.2	7.8	8.5	8.1
Summary										
United Kingdom	11.1	10.5	10.2	10.0	9.3	9.0	8.8	9.1	8.8	8.6
Russian Federation	12.4	12.3	11.5	11.9	12.3	11.7	11.8	11.2	11.7	11.5

ANNEX - C Continued

Other CIS	3.9	3.9	4.4	4.2	4.2	4.3	4.4	4.7	4.8	4.6
Rest of Europe	9.3	8.5	8.6	8.5	9.3	8.3	7.9	7.7	8.1	8.3
N. America and Windies	9.1	8.4	8.7	8.3	8.6	8.4	8.2	8.5	8.6	8.8
Latin America	1.4	1.1	1.4	1.4	1.4	1.7	1.4	1.9	1.6	1.7
Asia	27.3	28.1	29.2	29.3	29.9	29.5	30.6	29.6	28.4	27.6
Africa	17.8	18.3	16.9	17.8	17.3	17.3	18.5	18.5	18.2	19.6
Oceania	1.6	1.6	1.5	1.4	1.4	1.4	1.3	1.3	1.3	1.2
Major Prod. Countries	6.2	7.3	7.6	7.4	6.5	8.4	7.1	7.8	8.5	8.1
Grand Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

(a) Excluding United Kingdom, Russian Federation and Other CIS.

Source: ITC, 2009, Annual Bulletin of Statistics.

ANNEX - D

Table - A

Percentage Distribution of Productivity by Age of the Tea Bushes

Age of the Tea Bushes (In Year)	CTC			Orthodox		
	Low	High	Total	Low	High	Total
5-9	55.6 (15)	14.4 (12)	100 (27)	51.9 (14)	48.1 (14)	100 (27)
10-14	85.7 (14)	12.5 (2)	100 (16)	48.4 (16)	31.6 (32)	100 (62)
15 and above	85.7 (6)	14.3 (1)	100 (7)	78.3 (18)	21.7 (5)	100 (23)
	70 (35)	30 (15)	100 (50)	55.4 (62)	44.6 (50)	100 (112)

Source: Field Survey, 2007/08.

* In Parenthesis Indicates the Number of cases

Table - B

Estimation of Gamma (G) Relation by Age of the Tea Bushes

Type of Tea	Value	Asymp Standard Error	Approx	Approx Sig
CTC Gamma (N=50)	- .0621	.216	-2.528	.011
Orthodox Gamma (N=112)	- .285	.154	-1.798	.072

ANNEX - E

Table - A

Percentage Distribution of Productivity by Educational Status of the Farmers

Literacy	CTC			Orthodox		
	Low	High	Total	Low	High	Total
Illiterate	75.0 (3)	25.0 (1)	100 (4)			
Literate to Secondary Level	41.2 (7)	58.8 (10)	100 (17)	50.0 (6)	50.0 (6)	100 (12)
Above Secondary Level	86.2 (25)	13.8 (4)	100 (29)	55.2 (37)	44.8 (30)	100 (67)
Total	70.0 (35)	30.0 (15)	100 (50)	57.6 (19)	42.4 (14)	100 (33)

Source: Field Survey, 2007/08

* In Parenthesis Indicates the Number of Cases.

Table - B

Estimation of Gamma (G) Relation by Educational Status of the Farmers

Type of Tea	Value	Asymp Standard Error	Approx	Approx Sig
CTC Gamma (N=50)	- .602	.173	-2.662	.008
Orthodox Gamma (N=112)	- .073	.175	- .418	.676

ANNEX - F

Table - A

Percentage Distribution of Productivity by Land Holding Size

Literacy	CTC			Orthodox		
	Low	High	Total	Low	High	Total
Less then 2 Hectare	33.3 (5)	66.7 (10)	100 (15)	52.7 (48)	47.3 (43)	100 (91)
2-5 Hectare	75.0 (9)	25.0 (3)	100 (12)	66.7 (10)	33.3 (5)	100 (15)
Above 5 Hectare	91.3 (21)	8.7 (2)	100 (23)	66.7 (4)	33.3 (2)	100 (6)
Total	70.0 (35)	30.0 (15)	100 (50)	55.4 (62)	44.6 (50)	100 (112)

* In Parenthesis Indicates the Number of Cases.

Source: Field Survey, 2007/08

Table - B

Estimation of Gamma (G) Relation by Land Holding Size

Type of Tea	Value	Asymp Standard Error	Approx	Approx Sig
CTC Gamma (N=50)	- .788	.118	-4.058	.000
Orthodox Gamma (N=112)	- .272	.227	- 1.181	.237

ANNEX - G

Area Planted with Tea in Various Countries at the End of Each Year

In Hectares

Country Name	1999	2000	2001	2002	2003	2004	2005	2006	2007
India	490200	504366	509806	515832	519598	521403	555611	567020	567999
Bangladesh	48611	49195	49313	49500	50000	51265	52317	52407	53368
Sri Lanka	195460	188971	188971	187971	188199	188720	188480	188554	188570
Nepal	13800	14000	14000	14300	14500	14700	15500	16120	16420
China (Mainland)	1130000	1089000	1140700	1134200	1207300	1262310	1351900	1431300	1613300
Indonesia	156840	153667	150938	150723	143620	142086	138659	135591	132655
Taiwan	20502	19701	18938	18329	19310	18208	17620	17205	16256
Iran	34664	34664	34664	34500	34500	27000	23000	20000	18700
Japan	50700	50400	50100	49700	49200	48026	47988	47687	47400
Korea, Republic	1300	1505	1830	2072	2225	2509	3000	3415	3692
Malaysia	3051	3100	3100	3300	3300	3500	3400	3500	3400
Myanmar	71000	70000	72000	73000	75000	76500	77700	78000	78000
Turkey	76749	76749	76653	76600	76639	77000	78000	78000	79000
Vietnam	77142	80000	82000	85000	93000	101000	111000	119000	126000
Kenya	118542	120396	124292	130340	131453	136709	141315	147076	149196
Malawi	18807	18782	18761	18800	18694	18683	18735	18766	18666
Rwanda	12508	12509	12825	12862	12862	12849	11750	116574	11750
Tanzania	21479	21212	21371	21316	21984	22287	22715	22715	22722
Uganda	20400	20570	20870	21170	21570	21720	21500	22045	23360
Georgia	34100	34100	36000	36000	36000	36000	36700	36700	36700
Argentina	39040	37690	36600	36600	36870	36960	36900	36900	37200

Source: International Tea Committee, Annual Bulletin Statistics, 2009, p. 30.

Top twenty products exported from Nepal are shown in following Table 4.10 and among them eight are agricultural products.

Annex-G

Top Twenty Products of Nepal's Export for 2008

S.N.	HS Code	Product	Value (Rs. 000)
1.	7134000	Lentils	5660781
2.	57011000	Carpet, knotted of wool or fine animal hair	5350579
3.	54072000	Woven fabric obtained from strip or the like	3437495
4.	72104900	Flat rolled product of iron or non alloy steel, of a width of 600 mm or more, plated or coated with zinc	2538385
5.	72104100	Flat rolled products of iron or non-alloy steel, of a width of 600mm or more, plated or coated with corrugated zinc	2538385
6.	73069000	Tubes, pipes and hollow profiles of iron and steel	1694133
7.	63051000	Jute bags and sacks	1532198
8.	25171000	Pebbles, gravel, broken or crushed stone	1431509
9.	55092100	Single yarn, containing 85% or more by weight of polyester staple fibres	1398533
10.	9083010	Cardamom	1343571
11.	72172000	Wire of iron or non-alloy steel, plated or coated with zinc	1320745
12.	9024000	Black tea fermented	1213307
13.	10019000	Wheat and meslin	1211664
14.	20099000	Mixture of juices	1157723
15.	33061000	Dentifrices (toothpaste)	1023656
16.	55092200	Multiple or cabled yarn, containing 85% or more by weight of polyester staple fibres	936159
17.	14049000	Vegetable products	905715
18.	62052000	M & B cotton shirt, not knitted	806252
19.	12119000	Plant and parts of plants	758307
20.	63052000	Cotton sacks and bags	710709
		Total Export	36969806
		Share of Top twenty products in Total export (%)	54.6

Source: Extracted by researcher from **(TEPC, 2009).**

Annex-H

Major elements of Indo-Nepal Treaty (2009) is shown in Box 6.2

Box 6.2 ajor elements of Indo-Nepal Treaty (2009)

* Stringent rules of origin (ROO) requiring Nepal exports to fulfill the twin criteria of 30 per value addition and change in tariff heading at the four-digit level of the harmonized commodities description and coding system (HS) to be eligible for preferential market access.
* Tariff-rate quotas (TRQs) for four major products of export interest to Nepal, with zero-duty treatment provided to exports upto the quota and most favored nation (MFN) tariffs applied to exports of exceeding the quota.
* Requirement for Nepal to submit the criteria applied for ROO on annual basis.
* **Clear specification of safeguard clauses, which define 'injury' with a much more convenient trigger mechanism for the imposition of safeguard duty over and above normal tariff. The safeguard measure provided for the original 1996 version of the treaty was with respect to an 'export surge', which was set in general terms, thus making it difficult for the Indian authorities to prove that 'injury' had actually taken place.**

Source: Adhikari, R. (2009), ***Intra-Regional Free Trade Agreements: Implications for Regional Trade Integration in South Asia***, Kathmandu: SAWTEE

Annex-I

Direction of Foreign Trade

Value in Million Rs.

Description	2003/04	2004/05	2005/06	2006/07	2007/08*
Exports F.O.B.	53910.7(100.0)	58705.7(100.0)	61167.1(100.0)	58927.1(100.0)	58545.1(100.0)
India	30777.1(57.1)	38916.9(66.3)	41012.6(67.1)	41728.8(70.8)	38626.4(66.0)
Other countries	23133.6(42.9)	19788.8(33.7)	20154.5(32.9)	17198.3(29.2)	19918.7(34.0)
Imports, C.I.F.	136277.1(100.0)	149473.6(100.0)	175108.0(100.0)	195808.4(100.0)	239177.9(100.0)
India	78739.5(57.8)	88675.5(59.3)	109305.9(62.4)	115872.3(59.2)	144524.1(60.4)
Other countries	57537.6(42.2)	60798.1(40.7)	65802.1(37.6)	79936.1(40.8)	94653.8(39.6)
Trade Balance	-82366.4(100.0)	-90767.9(100.0)	-113940.9(100.0)	-136881.3(100.0)	-180632.8(100.0)
India	-47962.4(58.2)	-49758.6(54.8)	-68293.3(59.9)	-74143.5(54.1)	-105897.7(58.6)
Other countries	-34404.0(41.8)	-41009.3(45.2)	-45647.6(40.1)	62737.8(45.9)	74735.1(41.4)
Total Volume of Trade	190187.8(100.0)	208179.3(100.0)	236275.1(100.0)	254735.5(100.0)	277804.3(100.0)
India	109816.6(57.6)	127592.4(61.3)	150318.5(63.6)	157601.1(61.9)	183150.5(65.9)
Other countries	80671.2(42.4)	80586.9(38.7)	85956.6(36.4)	97134.4(38.1)	94653.8(34.1)
Export as % of Total Trade	28.3	28.2	25.9	23.1	21.1
Import as % of Total Trade	71.7	71.8	74.1	76.9	78.9
Export to India as % of total Trade with India	28.1	30.5	27.3	26.5	21.1
Import from India as % total Trade with India	71.9	69.5	72.7	73.5	78.9
Export to Other Countries as % of Total Trade with Other Countries	28.7	24.6	23.4	17.7	21.0
Import from Other Countries as % of Total Trade with Other Countries	71.3	75.4	76.6	82.3	79.0

*__Note:__ an aestrick * denote Provisional

Source: FNCCI, **Nepal and the World: A Statistical Profile, 2006.**

Trade and Export Promotion Centre**, A Glimpse of Nepal's Foreign Trade**, 2008 MoICS, GON, Kathmandu.

Annex-J

Major Countries (Except India) for Exports of Selected Commodities for 2007/08 According to Rank as their Value of Exports

S.N.	Carpet, Knotted of Wool or Fine Animal Hair	Readymade Garments	Hides and Skin	Lentils
1.	Germany	U.S.A.	Italy	Bangladesh
2.	U.S.A.	France	China P.R.	U.A.E.
3.	U.K.	Germany	Hong Kong	U.S.A.
4.	Switzerland	U.K.	Bangladesh	Sri Lanka
5.	Canada	Canada		Singapore
6.	Belgium	Spain		
7.	Turkey	Japan		
8.	Austria	Italy		
9.	Italy			
10.	Australia			

S.N.	Cardamom Large	Handicrafts
1.	Pakistan	U.S.A.
2.	Singapore	Germany
3.	U.A.E.	U.K.
4.	Bangladesh	Japan
5.		Italy
6.		France
7.		Taiwan
8.		Australia
9.		Netherlands
10.		Switzerland

S.N.	Silver Jewellery	Woolen and Pasmina Shawls, Scarves and the Like	Nepalese Paper and Paper Products
1.	U.S.A.	U.S.A.	U.S.A.
2.	Canada	U.K.	France
3.	Japan	Germany	U.K.
4.	Italy	France	Germany
5.	Germany	Italy	Japan
6.	U.K.	Japan	
7.	France	U.A.E.	
8.	Netherlands	Canada	
9.	Switzerland	Switzerland	
10.	Thailand		

Source: **TEPC 2008**, MoICS, GoN, Kathmandu

ANNEX - K

Questionnaire for Tea Farmer (Planter)

1. Name of the respondent: .....
2. Address: ..... Age: .....
3. Size of the family
   (a) Male .....
   (b) Female .....
4. Educational status (Please Tick)
   (a) Illiterate ☐
   (b) Literate upto SLC ☐
   (c) Above SLC ☐
5. Total area of production (Ropani/Bigha) .....

   Size of farm:

(Small) less than 2 hectare	(Medium) 2 – 5 hectare	(Large) more than 5 hectare

6. How old are your tea bushes? Years .....
7. Has your farm size increased from the last 10 years?
   (a) Yes ☐
   (b) No ☐

   If yes, what are the factors?
   (a) .....
   (b) .....
   (c) .....
8. What type of tea quality do you usually grow?
   (a) .....
   (b) .....
   (c) .....
9. What quantity of green leaf is produced annually (in kg)
   (a) CTC .....
   (b) Orthodox .....
10. Do you use chemical fertilizer for tea production?
    (a) Yes ☐

(b) No ☐

In terms of Rs/kg

Do you use pesticide/insecticides in your tea bushes?

(a) Yes ☐

(b) No ☐

If yes, how much Rupee do you spend for kg?

11. What is your total cost of production? (in terms of Rs/kg)

12. What proportion of the cost is spent on inputs?

(a) Per labor cost in Rs. .....

(b) Chemical fertilizer per (Ropani/Kattha) Rs. .....

(c) Organic Pesticide per (Ropani/Kattha) Rs. .....

(d) Non-organic pesticide per (Ropani/Kattha) Rs. .....

(e) Traditional fertilizer animal dung (Ropani/Kattha) Rs. .....

(f) Others .....

13. Are there any other cost involved in tea production?

(a) Yes ☐

(b) No ☐

If yes, what are they?

(a) .....

(b) .....

(c) .....

How much? (Rs. per Ropani/Kattha .....)

14. Is there any change in the cost of production during last 10 years?

(a) Yes ☐

(b) No ☐

If yes, how much and what would be the reason?

.....

15. Describe the price situation for the last 10 years? (In terms of Rs/Kg)

1998/ 1999	1999/ 2000	2000/ 2001	2001/ 2002	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	2007/ 2008

16. What is the price situation according to the seasons/months?

(In terms of Rs/Per Kg)

Highest	Months	Lowest	Months

17. Do you get credit facility?

(a) Yes ☐

(b) No ☐

If yes, from whom? Kindly mention respective interest rates

(a) Commercial Bank .....

(b) ADB/N .....

(c) Finance Company .....

(d) Co-operative .....

(e) Local money lender .....

(f) Others .....

18. What price do you get from your produce (green leaf) (Rs/Per Kg)

(a) Tea processing firm .....

(b) Middle man .....

(c) Wholesalers .....

(d) Others .....

19. In your opinion, what are the important factors for better production? Please rank within 1 to 5 scale. 1 = Least important, 5 = very important

(a) Availability of inputs ☐

(b) Better climate ☐

(c) Credit facility ☐

(d) Market ☐

(e) Demand ☐

(f) Role of WTO ☐

(g) Government policy ☐

(h) Others ☐

20. What is the difference in price between your product and the imported product? (In terms of Rs/Per Kg)

(a) Domestic/India .....

(b) Domestic/overseas .....

(c) Domestic/others .....

When was the difference between your product and imported product? (In terms of Rs/Kg)

		Year
(a)	Domestic/India	.....
(b)	Domestic/overseas	.....
(c)	Domestic/others	.....

21. Have your method of tea cultivation is organically certified by any authorized agency/mechanism?

(a) Yes ☐

(b) No ☐

22. Who are the major competitors of your product? (Please Tick)

(a) Indian product ☐

(b) Sri Lankan product ☐

(c) Others ☐

23. In which ground Nepalese tea is competitive than Indian tea? Give reasons

(a) .....

(b) .....

(c) .....

(d) .....

(e) .....

(f) .....

24. What are the factors for a quality product?

Please rank from 1 to 5.1 = least important, 5 = very important

(a) Skilled labor ☐

(b) Climate ☐

(c) Age of the plant ☐

(d) Use of fertilizer ☐

(e) Use of pesticides/insecticides ☐

(f) Organic method of product ☐

(g) Others ☐

25. Please fill out the following for calculating transaction costs:

(a) Kilometers from production area to the market .....

(b) Means of transportation .....

(c) Road condition .....

(d) Cost of transportation .....

26. Whom do you sell your green leaf? (Please tick)

(a) Domestic market ☐

(b) Indian market ☐

27. How many tea leaf do you pluck from tea bushes?

(a) Two leaves one bud ☐

(b) Three leaves one bud ☐

(c) Four leaves one bud ☐

(d) Five and more leaves and bud ☐

28. Is there a seasonality factor involved for the fluctuations in the price of the green leaf?

(a) Yes ☐

(b) No ☐

If yes, how the seasonality factor could affect green leaf production?

.....

29. How much do you earn through the tea farming? (Rs/annually)

.....

30. Have your demand pattern changed over the last 10 years? If yes, what are the reasons?

(a) .....

(b) .....

(c) .....

(d) .....

31. Have you ever noticed any change in the demand factor of the green leaf after accession into WTO? Mention the reasons.

(a) .....

(b) .....

(c) .....

(d) .....

(e) .....

32. Have your earning changed for the last 10 years?

(a) Yes ☐

(b) No ☐

If yes, by how much?

.....

33. After the accession of WTO of Nepal what do you experience of employment creation in tea sector of Nepal?

(1) Positive impact

(a) .....

(b) .....

(c) .....

(2) Negative impact

(a) .....

(b) .....

(c) .....

(3) No change at all

34. Have your production damaged/affected by a cheap imported products during the last 10 years?

(a) Yes ☐

(b) No ☐

If yes, why and when? .....

35. How much and what type of labour do you employ? (Please tick and fill)

(a) Skilled ☐

(b) Semi-skilled ☐

(c) Un-skilled ☐

36. If there is change in employment pattern in your farm then what was the reason for?

(a) .....

(b) .....

(c) .....

(d) .....

(e) .....

37. How long it will take to bring green tea leaf to the processing plant?

Period of time .....

38. Do you think that the tea auction market is necessary factor for tea production in Nepal?

(a) Yes ☐

(b) No ☐

If yes, describe the benefits of the tea auction

.....

.....

39. Do you know about the WTO agreements like, AoA, SPS measures, TBT, TRIPS and others?

(a) Yes ☐

(b) No ☐

If yes, how did you follow?

.....

.....

40. How do you access information on the international market?

.....

41. Rank top five problems faced by your farm on the cultivation and distribution of tea.

(a) .....

(b) .....

(c) .....

(d) .....

(e) .....

42. Is there any facility provided by the government and others?

(a) Yes ☐

(b) No ☐

If yes, give the nature of facility:

(a) .....

(b) .....

(c) .....

43. Do you have any strategic alliance with foreign farms?

(a) Yes ☐

(b) No ☐

44. Have you received any special training for tea farming?

(a) Yes ☐

(b) No ☐

If yes, give nature of training

(a) .....

(b) .....

(c) .....

Who provides these training?

.....

45. What are the problems in the tea production policy and programmer of the government?

.....

46. Give some suggestions for increasing yield and lowering cost of production

.....

.....

.....

Additional information (If any)

.....

.....

.....

.....

.....

ANNEX - L

Questionnaire for Tea Processing Firms

1. Name of the respondent: ..... Age .....
2. Educational Status/Title (Please tick)

Illiterate	Primary education	Secondary education	Higher education	Others

3. Address ..... Ph. No. .....

   E-mail ..... Website .....
4. Capacity of production .....
5. Capacity utilization .....
6. Ownership of firm:
   (a) Self .....
   (b) Rented .....
7. Types of production:
   (a) .....
   (b) .....
   (c) .....
8. How much do you invest in your firm?

   .....
9. Has your firm size being increased for the last 10 years?
   (a) Yes .....
   (b) No .....

   If yes, what are the factors?
   (a) .....
   (b) .....
   (c) .....
   (d) .....
10. What type of tea (quality) do you usually produce annually?
    (a) .....
    (b) .....
    (c) .....
    (d) .....

11. How much quantity of tea do you produce annually? (In terms of kg)

.....

12. What is your total cost of production for per kg. of tea?

.....

13. What proportion of the cost is spent on inputs? (For per kg. of tea)

    (a) Per labor cost (in Rs.) .....

    (b) Raw material (in Rs.) .....

    (c) Rent (in Rs.) .....

    (d) Interest (in Rs.) .....

    (e) Others .....

14. Are there any other costs involved in tea processing firm?

    (a) Yes .....

    (b) No .....

    If yes

    (a) What are they? .....

    (b) How much? (For per kg. of tea) .....

15. Is there any change in the cost of production during last 10 years?

    (a) Yes .....

    (b) No .....

    If yes, by how much and what would be the reasons for?

    .....

    .....

16. Do you get credit facility?

    (a) Yes .....

    (b) No .....

    If yes, then from whom? And in what rate of interest? (Please tick and fill the interest rate)

    (a) Commercial Bank .....

    (b) ADB/N .....

    (c) Finance Company .....

    (d) Others .....

17. Where and how much quantity do you sell? (Please tick and fill in terms of kg)

    (a) Domestic market .....

    (b) India .....

    (c) Other international market .....

18. What price do you get your product from (in terms of Rs./Kg.)

(a) Domestic market .....

(b) India .....

(c) Foreign market others than India .....

19. Describe the price situation for the last 10 years? (in terms of Rs/Kg)

1997/ 1998	1998/ 1999	1999/ 2000	2000/ 2001	2001/ 2002	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007

20. In your opinion, what are the important factors for better production and price? Please rank within 1 to 5 scale, 1 - least important, 5 = very important.

(a) Demand .....

(b) Competition from domestic product .....

(c) Competition from imported product .....

(d) Seasonality .....

(e) Credit facility .....

(f) Government policies .....

(g) Pricing .....

(h) Costs .....

(i) Auction market .....

(j) Proper supply of inputs .....

(k) Nepali logo of tea .....

(l) Others .....

21. What is the difference in price between your product and imported product? (in terms of Rs/Kg)

(a) Domestic/India .....

(b) Domestic/except India .....

22. Which quality of tea do you think very demanded?

.....

and why? .....

23. Who are the major competitors of your product? (Please tick)

(a) Indian product .....

(b) Sri Lankan product .....

(c) Other countries .....

24. What are the factors for a quality product?

(a) .....

(b) .....

(c) .....

(d) .....

(e) .....

(f) .....

25. Please fill up the following for calculating the transaction costs:

(a) Kilometers from production area to the market .....

(b) Means of transportation .....

(c) Road condition .....

(d) Cost of transportation (relative e.g. per ton) .....

26. Is there a seasonality factor involved in the tea market?

(a) Yes .....

(b) No .....

27. Which factor led to change in the price of tea?

.....

28. Have your earning changed for the last 10 year?

(a) Yes .....

(b) No .....

If yes, by how much and for what reason?

.....

29. How do you access information on the international market?

.....

.....

.....

.....

30. Rank the top five problems faced by your firm in the processing and distribution of the tea

.....

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.....

31. Do you have any strategic alliance with the foreign firms?

.....

.....

.....

32. Describe the demand pattern of green leaf for the last 10 years? In terms of kg.

1998/ 1999	1999/ 2000	2000/ 2001	2001/ 2002	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	2007/ 2008

33. Have your demand pattern of green leaf changed for the last 10 years and for what reason?

.....

.....

34. Have your productions been damaged/affected by a cheap imported products during the last 10 years?

(a) Yes .....

(b) No .....

If yes, when did it occur? .....

And for how long it would be? .....

35. In what form did the imports/smuggling damage your profession? (Please rank within scale 1-5, 1 = least important, 5 = very important)

(a) Less price .....

(b) Reduced households consumption .....

(c) Reduced income .....

(d) Reduced capacity .....

(e) Reduced employment .....

36. What do you experience in your tea production after the accession in WTO of Nepal? (Please rank within scale 1 to 5, 1 = least important and 5 = very important)

(a) Harmful .....

(b) Beneficial .....

(c) More competitive .....

(d) Need to improve quality .....

(e) Market damaging .....

37. Do you think that Nepalese tea processing considered to be standardized form of tea producing plant in the international market?

(a) Yes .....

(b) No .....

Describe the reasons for?

.....

.....

38. How do you access information on the international market?

.....

.....

.....

39. Whose tea in the region think that superior than Nepalese tea? (Please tick)

(a) India .....

(b) Bangladesh .....

(c) Sri Lanka .....

(d) Others .....

Why,

(a) Due to price .....

(b) Due to quality .....

(c) Due to market mechanism .....

(d) Due to government policy .....

40. How long it will take to bring green tea leaf to the processing plant?

Period of time .....

41. Do you think that tea auction market is necessary factor for better production and price?

(a) Yes .....

(b) No .....

If yes, describe the benefits of an auction

.....

42. Have your processing method of tea is organically certified by any authorized agency/mechanism?

(a) Yes .....

(b) No .....

43. Do you think that Nepali logo of tea is useful to capture the international market?

(a) Yes .....

(b) No .....

If yes, what are the reasons?

.....

44. How much and what type of labor do you use? (Please tick and fill)

(a) Skilled .....

(b) Semi-skilled .....

(c) Unskilled .....

45. Did you follow the labour right act initiated by the government/ILO?

(a) Yes .....

(b) No .....

46. Describe the labour employment pattern in (in numbers) your tea farm for the last 10 years

1998/ 1999	1999/ 2000	2000/ 2001	2001/ 2002	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	2007/ 2008

47. If there is change about employment pattern in your farm then what would be the reasons for?

(a) .....

(b) .....

(c) .....

(d) .....

(e) .....

48. After the accession in WTO of Nepal, what are the impacts of employment creation in tea sector in Nepal? (Please tick and fill)

(i) Positive impacts

(a) .....

(b) .....

(c) .....

(ii) Negative impacts

(a) .....

(b) .....

(c) .....

(iii) No change at all

(a) .....

(b) .....

(c) .....

49. Did you know about the WTO agreements like, AoA, SPS measures, TBT, TRIPS and others?

(a) Known .....

(b) Unknown .....

(c) Little known .....

If yes, how did you follow?

.....

50. Is there any facilities provided by the government and others?

(a) Yes .....

(b) No .....

If yes, give the nature of facilities?

(a) .....

(b) .....

(c) .....

51. Have you received any special training for tea processing?

(a) Yes .....

(b) No .....

If yes,

(i) Do you think that this training was sufficient?

(a) Yes .....

(b) No .....

(ii) Who provides these training?

If no, what type training would be useful to increase your efficiency and productivity?

(i) Who will provide these training .....

52. What are the problems in the tea production policy and programmes of the government?

.....

.....

53. Give some suggestions for high quality and quantity of tea production.

.....

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Additional information (If any)

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ANNEX - M

Questionnaire for Tea Exporters/Importers

1. Name of respondent ..... Age .....
2. Address ..... Telephone ..... E-mail .....
   Website .....
3. Nature of export/imports .....
4. Amount of investment in export/import firm .....
5. Has your firm size is being increased for the last 10 years?
   (a) Yes .....
   (b) No .....
   If yes, what are the reasons?
   (a) .....
   (b) .....
   (c) .....
   (d) .....
   (e) .....
6. How many labors do you employ in your export/import firm?
   .....
   .....
   .....
7. How much quantity do you export/import monthly or annually? (in terms of kg)
   .....
   .....
   .....
8. Which and how much tea do you export/import? (in terms of kg)
   (a) CTC .....
   (b) Orthodox .....
   (c) Others .....
9. How much and in which country do you export/import?

S.N.	Country Name	Quantity (in terms of kg)					
		CTC		Orthodox		Others	
		Export	Import	Export	Import	Export	Import
a.							
b.							
c.							
d.							
e.							
f.							

10. What proportion of cost is incurred on transportation?

    .....

11. What proportion of cost is incurred on labours? (In terms of kg)

    .....

12. Is there any costs involved rather than transport or labour?

    (a) Yes .....

    (b) No .....

    If yes, what (and how much) are they?

    .....

13. Is there any change in the cost of export/import during last 10 years?

    (a) Yes .....

    (b) No .....

14. If yes, by how much and for what reasons?

    (a) .....

    (b) .....

    (c) .....

    (d) .....

15. What price do you get per kg of tea?

    .....

16. Describe the price situation for the last 10 years? (In terms of kg)

1998/ 1999	1999/ 2000	2000/ 2001	2001/ 2002	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	2007/ 2008

17. In your opinion, what are the important factors for better export and price?

(a) Demand .....

(b) Competition from domestic produce .....

(c) Competition from imported produce .....

(d) Government policies .....

(e) Seasonality .....

(f) Pricing .....

(g) Auction market .....

(h) Nepali logo of tea .....

(i) Costs .....

(j) Credit facility .....

(k) Role of WTO .....

(l) Others .....

18. Do you get credit facility?

(a) Yes .....

(b) No .....

If yes, from whom? (Kindly mention respective interest rates)

(a) Commercial bank .....

(b) ADBN .....

(c) Finance company .....

(d) Others .....

19. Where and how much quantity do you sell?

(Please tick and fill) (In terms of Rs/Kg)

(a) India .....

(b) Other SAARC country .....

(c) Rest of the world .....

20. What price do you get for your tea from (Please tick and fill) (In terms of Rs/Kg)

(a) India .....

(b) Other SAARC country .....

(c) Rest of the world .....

21. What is the difference in price between your tea and imported tea? (In terms of Rs/Kg).

(a) India/domestic .....

(b) Other SAARC country/domestic .....

(c) Rest of the world/domestic .....

22. What do you think that which factors determine for exporting the quality tea of Nepal? (Please mention)

(a) .....

(b) .....

(c) .....

(d) .....

(e) .....

(f) .....

23. Please fill up the following for calculating the transaction costs:

(a) Kilometer from exports firm area to the market .....

(b) Means of transportation .....

(c) Cost of transportation (relative eg. per ton or kg) .....

24. Is there a seasonal factor involved in the tea market?

25. Which factors led to change in the price of tea?

(a) Kilometer from exports firm area to the market .....

(b) Means of transportation .....

(c) Cost of transportation (relative eg. per ton or kg) .....

26. Have your earning changed for the last 10 years?

(a) Yes .....

(b) No .....

If yes, how much and for what reasons .....

27. Have your export been affected by a cheap imported products for the last 10 years?

.....

28. Have your demand pattern of Nepalese tea changed for the last 10 years in international market and for what reasons?

.....

.....

29. What do you think the relative quality of Nepalese tea in the international market?

(a) Excellent .....

(b) Good .....

(c) Poor .....

Give reasons?

.....

.....

.....

30. Whose tea in the region do you think is superior than Nepalese tea? (Please tick)

(a) India .....

(b) Bangladesh .....

(c) Sri Lanka .....

(d) Others .....

Why,

(a) Due to price .....

(b) Due to quality .....

(c) Due to market mechanism .....

(d) Due to government policy .....

31. Do you think tea auction market would be useful for the betterment of tea sector in Nepal?

(a) Yes .....

(b) No .....

If yes, describe the benefits of tea auction

.....

.....

32. After the accession in WTO of Nepal, what are the impacts of employment creation in tea sector in Nepal?

(i) Positive impacts

(a) .....

(b) .....

(c) .....

(ii) Negative impacts

(a) .....

(b) .....

(c) .....

(iii) No change at all

(a) .....

(b) .....

(c) .....

33. Do you think that Nepali logo of tea is useful to capture the international market?

(a) Yes .....

(b) No .....

If yes, what are the reasons?

.....

34. Do you have any strategic alliance with the foreign firms?

.....

.....

35. Did you know about the WTO agreements like, AoA, SPS measures, TBT, TRIPS and others?

(a) Known .....

(b) Unknown .....

(c) Little known .....

If yes, how did you follow?

.....

36. How do you access information on the international market?

.....

.....

37. Is there any facilities provided by the government and others?

(a) Yes .....

(b) No .....

If yes, who would you support in this regard? And how?

.....

.....

38. Rank the top five problems faced by your firm in the export/import of tea

(a) .....

(b) .....

(c) .....

(d) .....

(e) .....

39. What are the problems in the tea exporting policy and programmer of the government?

.....

40. Give some suggestions for high quality and quantity of tea export.

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Additional information (If any)

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ANNEX - K

Questionnaire for Labor

1. Name of the respondent: .....
2. Address: ..... Age: .....
3. Size of the family
   (a) Male .....
   (b) Female .....
   (c) Total .....
4. Educational status (Please Tick)
   (a) Illiterate ☐
   (b) Primary ☐
   (c) Secondary ☐
   (d) Higher ☐
   (e) Technical ☐
5. Where do you work? Please tick
   (a) Tea estate ☐
   (b) Tea processing factory ☐
   (c) Tea related other sector ☐
6. How much wage do you get in your working places (per day/month)
   (a) In processing firm Rs. .....
   (b) In tea garden/estate Rs. .....
   (c) Tea related other sector Rs. .....
7. How many months do you get work in a year?

	Working place	Months
(a)	Tea farm/garden	☐
(b)	Tea processing factory	☐

   If you don't get job for 12 months, then how do you manage your daily life for remaining month?
   (a) .....
   (b) .....
   (c) .....
8. What is your health condition? Please tick
   (a) Good ☐
   (b) Bad ☐
   (c) Normal ☐

9. Is your wage income sufficient to mention the health?

(a) Yes ☐

(b) No ☐

10. Are your childrens getting the education?

(a) Yes ☐

(b) No ☐

11. Do you smoke cigarette/tobacco? Please tick

(a) Yes ☐

(b) No ☐

If you smoke, then how many times a day and which time do you prefer?

Time per day ☐

Which time

(a) After meal ☐

(b) Before meal ☐

(c) Time of plucking ☐

(d) Other time of tea landing ☐

12. Do you get any special training on the cultivation and processing? Please tick

(a) Yes ☐

(b) No ☐

If yes, that training was adequate?

(a) Yes ☐

(b) No ☐

If no, what type of training will be appropriate to increase your efficiency?

(a) .....

(b) .....

(c) .....

13. What are the facilities in your working places? Please tick

(a) Provident fund ☐

(b) Pension ☐

(c) Gratuity ☐

(d) Holidays ☐

(e) Others ☐

14. How much green leaves do you pluck a day? In kg

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Annex-L

Check-List for Key Informant Interview and Focused Group Discussion

1. What is your tea estate/processing factory situation?
2. Is your tea garden/tea factory running with profit?
3. Do you understand the WTO and its agreements?
4. What is your experience about the overall situation of tea sector of Nepal?
5. What do you think about others tea than Nepal?
6. Is Nepalese tea better than Indian ones?
7. How do you apply the WTO agreements like SPS?
8. What do you feel about the Nepalese tea after the entry of Nepal into the WTO? Is it beneficial or harmful for Nepalese tea? And why?
9. What problems lies in the government programmes and policies?
10. How can we make the Nepalese tea competitive in global market?
11. What are the main problems to develop the tea sectors of Nepal?
12. What are the implications of the WTO agreements to the tea sector of Nepal?