

Research Article**VALUE CHAIN ANALYSIS OF ORTHODOX TEA: EVIDENCE FROM
ILAM DISTRICT OF NEPAL****K. B. Adhikari^{1*}, P. P. Regmi², D. M. Gautam², R. B. Thapa² and G. R. Joshi³**¹Agriculture and Forestry University, Rampur, Chitwan, Nepal²Institute of Agriculture and Animal Science, Tribhuvan University, Nepal³Ministry of Agriculture Development, Government of Nepal**ABSTRACT**

Orthodox tea is produced in targeting international market. This study was conducted to examine the value chain of orthodox tea (*Camellia sinensis*) focussing on certification aspect in eastern Himalayan corridor of Nepal. Data were collected from 441 samples (213 certified and 228 non-certified tea growers) selected purposively obtained from cross-sectional household survey; focus group discussion and key informant interview in Ilam district during 2014. Out of 24 orthodox tea processing factories, three (Gorkha Tea Estate, Kanchanchanjunga Tea Estate and Himalayan Shangrila Tea Producers) were found supporting tea growers by training, visits and supplying inputs for green tea leaf production. They provided technical and financial support for organic certification in groups. Only these three processing factories collect green tea leaves from certified growers with premium price, process and export in international markets. While, other tea processing factories processed non-certified orthodox tea and exported in international markets by themselves. The marketing margin was higher in certified tea leaf (NRs. 24.21/kg) compared with non-certified (NRs. 14.21/kg). The findings revealed that certified tea growers had lower income than non-certified due to focusing of organic certification on small scale producers with low premium price. However, certification had played catalyst role in entering orthodox tea in international market with quality standard.

Keywords: International market, Focus group discussion, Export, Organic**INTRODUCTION**

Agriculture sector contributes about 30.13% share in the national Gross Domestic Product (GDP) whereas, tea sub-sector contributes about 0.0105% in the national GDP and 0.0347% in the Agricultural Gross Domestic Product (AGDP) (CBS, 2014). The Government of Nepal implemented 20 years Agriculture Perspective Plan (APP) during 1995 to 2015 for commercialization of agriculture to increase its share in the national economy (APROSC & JMA, 1995). Sugarcane, tea, tobacco, potatoes, oilseeds, ginger, cardamom and jute are the principal cash crops grown in Nepal (Sedain & Aryal, 2002). All the government plans and policies recognize that tea as an important export commodity (Thapa, 2005). Certification was originally perceived as a strategy for strengthening the position of orthodox tea producers in the value chain. The organic certification of tea encourage supply chain actors, contractual and regular sales from tea producers and quality and reliable sources of raw material to the tea processing factories (NEAT, 2011). Agriculture Development Strategy (2015-2035) has also focused on tea sub-sector among five identified sub-sectors for value

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chain analysis in Nepal (ADS, 2014). The global commodity of value chain consist of a set of inter organizational network clustered around one product, linking households, enterprises and states to one another within the world economy (Greff & Korzeniewicz, 1994). The value chain research and policy work examine the different ways in which global production and distribution systems are integrated and possibilities of firms in developing countries to enhance their position in global markets (Gereffi, *et al.* 2003).

There is lack of coordination, regular feedback, transparency of benefit sharing and efficient marketing system are necessary for efficient and sustainable value chain development of orthodox tea. Quality organic orthodox tea is fetching good market price in international market and low in domestic market, however the prices of green leaf is lower in the tea producers' field and leading low income to the growers. The growers are frequently demanding real price of tea green leaves and also organize strike or *bandha*. However, there are some unanswered questions, which are- (1) why farmers are less interested for planting tea replacing their traditional cereal crops? (2) why tea growers are not receiving reasonable price of green tea leaves? (3) why the market chain of orthodox tea is not efficient and sustainable? (4) why bargaining power of non-certified tea factories is lower than certified orthodox tea producing factories in markets?

The major objective of this study was to assess value chain analysis of orthodox tea among organic certified and non-certified tea growers in Eastern Himalayan Corridor (EHC) of Nepal.

RESEARCH METHODOLOGY

The major orthodox tea growing districts are Ilam, Panchthar, Terhathum, Dhankuta and Nuwakot in Nepal. Ilam, the largest orthodox tea producing district was purposively selected for this study. Majority of farmers have their own tea gardens and both certified and non-certified tea growers were available in Ilam District. The certified tea growers from Shantidanda, Mangalbare, Shakhejung, Maipokhari, Shreeantu and Sunderpani and Kolbung Village Development Committees (VDCs) and non-certified tea growers from Fikkal and Kanyam VDCs of Ilam district and households were selected using purposive random sampling technique for this study. Data were collected from a total of 441 households (213 from 654 HHs of certified and 228 from 698 HHs of non-certified which was nearly 33%) using face-to-face interview with structured questionnaires. In addition, two focus group discussions (FGDs) were conducted with traders and cooperatives separately. Key Informant Interview (KII) with processors and inputs/service providers were done purposively. The primary data were entered in Census and Survey Processing System (CSPro) and analysis was done using statistical package for social science (SPSS). Descriptive statistics, inferential statistical tools and value chain mapping were done to accomplish the study objectives.

RESULTS AND DISCUSSION

Economic characteristics of tea growers

The respondent households' economic characteristics regarding orthodox tea production are presented in Table 1. Among the respondent households, the average cultivated land was 28.12 *ropani* (1 ha = 20 *ropanies*), which was higher in certified tea growers (33.87 *ropani*) than non-certified tea growers (22.75 *ropani*) and it was statistically significant at 1% level. The average

tea cultivated area of the household was 11.94 *ropani*. The non-certified tea growers had larger farms (12.14 *ropani*) than certified tea growers (11.72 *ropani*); but statistically they were at par. The share of tea cultivated land from total cultivated land was nearly 50% among the tea growers which was higher with non-certified tea growers (59.18%) than certified tea growers (39.90%) and it was significant at 1% level. The average green tea leaf production was 249.35 kg per *ropani*, it was lower in certified tea growers (107.59 kg/*ropani*) than non-certified tea growers (381.79 kg/*ropani*) and they were statistically significant at 1% level. The practices behind the higher yield of green tea leaves by non-certified tea growers were heavy application of chemical fertilizer (urea) whereas certified tea growers had applied limited amount of organic manures and vermi-compost. The annual green tea leaves production was 3391.02 kg/household among the respondent households. It was higher in non-certified tea growers (5454.10 kg/household) than certified tea growers (1182.66 kg/household). The lower green tea leaf yield was the main reason behind which was not encouraging to certified tea growers for its production. The average price of green tea leaves of orthodox tea was NRs. 47.89/kg, it was higher in certified tea growers (NRs. 53.26/kg) than non-certified (NRs. 42.86/kg) and statistically it was significant at 1% level. The average household income from orthodox tea was NRs. 129738 which was higher in non-certified tea producers (NRs. 190809) than certified ones (NRs. 64366), statistically significant at 1% level. Though per unit price of green tea leaves was higher its low yield resulted poor income to certified growers. The result indicated that Third Party Certification scheme might target the small scale orthodox tea producers and overall price and production controlled by factories found major binding constraint of certification scheme in favour to income increment in study area.

Table 1. Economic attributes of tea growers and production in study area

Variables	Total (n=441)	Certified (n=213)	Non-certified (n=228)	Mean Difference	T- Value
Total cultivated land (Ropani) ¹	28.12 (25.47)	33.87 (32.63)	22.75 (14.27)	11.11	4.687***
Tea cultivated land (Ropani)	11.94 (11.68)	11.72 (11.24)	12.14 (12.10)	-0.42	-0.378
Share of tea area in total cultivated area (%)	49.89 (43.80)	39.90 (25.15)	59.18 (54.24)	-19.27	-4.723***
Tea yield (kg/Ropani)	249.35 (194.86)	107.59 (62.39)	381.79 (183.00)	-274.2	-20.760***
Annual tea production (kg/ farm)	3391.02 (8067.17)	1182.66 (1436.14)	5454.10 (10740.93)	-4271.43	-5.755***
Average price of orthodox tea (NRs./kg)	47.89 (8.59)	53.26 (4.65)	42.86 (8.38)	10.39	15.944***
Annual income from tea sub sector (NRs.)	129738 (146817.90)	64366.69 (77577.6)	190809.40 (168537.7)	-126442.7	-10.003***

Note: *** Significant at 1% level. Figures in parentheses indicate Std. Dev.

¹ 20 Ropani = 1 hectare

Value chain analysis of orthodox tea

Value chain concept and link with Nepali orthodox tea

The value chain concept was developed and popularized in 1985 by Michael Porter in “Competitive Advantage” and it was crucial work on the implementation of competitive strategy to achieve superior business performance (Feller, Shunk & Callarman, 2006). In case of Nepali orthodox tea, consumers of international markets are willing to pay more prices with the minimum acceptable pesticides residues due to consciousness to human health. The present value chain of orthodox tea divided the workforces or chain actors into two linkages such as backward and forward linkages (Figure 1). In backward linkages, tea growers were receiving inputs from agro- vets, tea nurseries, vermi-compost producers; trainings and technical support for organic certification from processing industries; and labors from local level. The tea growers had horizontal relationship/integration for production of quality green tea leaves. Both local traders and cooperatives collect green tea leaves and transport to processing industries.

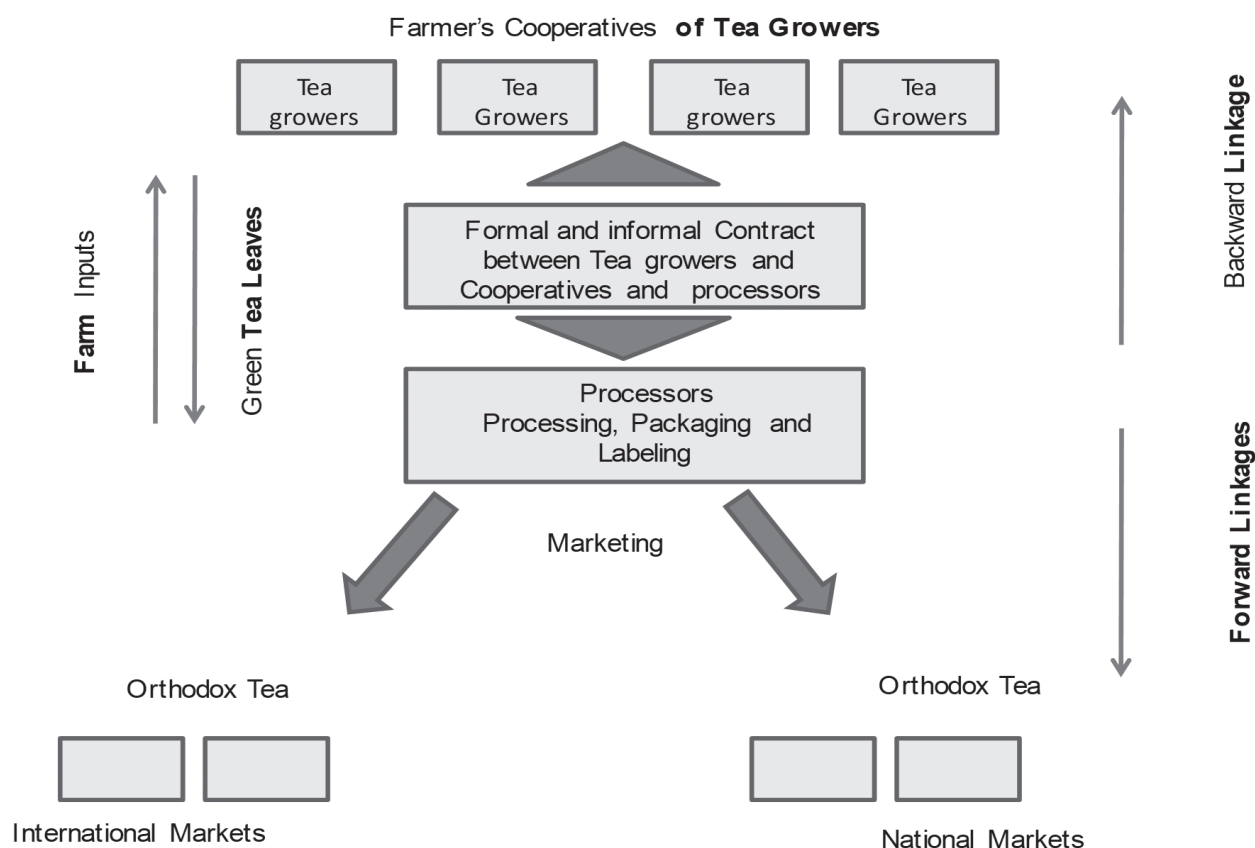


Figure 1. Backward and forward Linkages in orthodox tea

They tried to deliver quality and fresh green tea leaves to processing industries within 12 hours which is utmost necessary for best quality. In bridging the inbound and outbound logistics, the orthodox tea processors tried to have quality processing, sorting, grading, packaging and labeling. The vertical relationship of green tea leaf growers with local traders and processors was good, but the interpersonal relationship of orthodox tea processors was unhealthy. However, the role of private sector and achievement in orthodox tea commodity development was encouraging. The role of Government of Nepal was not clear in support services and policy issues.

Orthodox tea value chain mapping

The orthodox value chain map shows four level of mapping such as functions, activities, major workforce and enabler. In this value chain map, production of green tea leaves is growing by tea producers, trading of green tea leaves is doing by local traders and cooperatives; and processing and marketing is done by processing factories owners themselves. There are four types of processing factories: (1) small and medium processing unit processing green and black orthodox tea, packaging, labeling and marketing local and national markets; (2) processing factories are processing orthodox tea by collecting green tea leaves from tea growers and green tea leaves from their own garden; (3) processing factories were solely collecting green tea leaves from tea producers and processing orthodox tea exporting to international markets; (4) processing factory had leased the tea garden from Tea Development Corporation for long and producing orthodox (CADP, 2008).

The main enablers providing the support to major forces were Nepal Tea and Coffee Development Board (NTCDB), SNV (Netherlands Development Organization), Inclusive Growth Programme (UNNATI), Nepal Agricultural Research Council (NARC), Commercial Agriculture Alliance (CAA), Commercial Agriculture Development Project (CADP), District Agriculture Development Office (DADO), Federation of Nepal Chamber Commerce Industries (FNCCI) and Agriculture Development Bank Limited (ADBL). The Tea Sector Service (TEASEC), Central Tea Cooperative Federation (CTCF), Tea Association (TA) and Tea Cooperatives were directly providing support services to workforces involved in orthodox tea value chain. The Himalayan Tea Producers Association (HOTPA) and Himalayan Tea Producers Cooperative (HIMCOOP) were mainly responsible for marketing the orthodox tea in international markets (Figure 2).

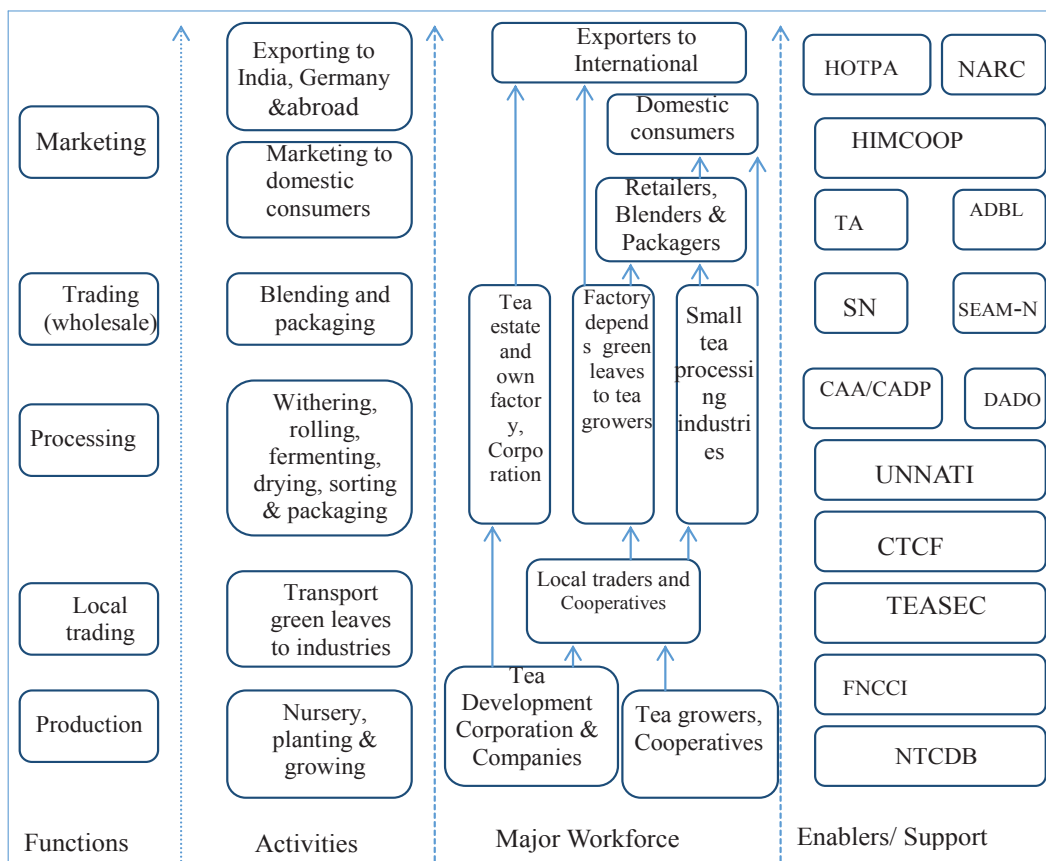


Figure 2. Orthodox tea value chain map, Nepal

Market and marketing margins of orthodox tea

Markets

In the study area, orthodox tea production pockets and processing industries were concentrated along the Mechi Corridor and both side of Mechi Highway. Particularly, Jitpur, Nepaltar, Ilam Headquarters, Maipokhari and Fikal in Ilam and Phidim in Panchthar districts. Dhankuta and Terhathum are other two orthodox tea growing districts in Koshi Corridor and tea factories located in Hile, Dhankuta. Ninety five percent of total orthodox tea produced in the country is exporting to abroad or it is about 1985 metric ton in the year 2010/11 (NEAT, 2011).

Marketing margin for tea producers

The production cost of certified and non-certified green tea leaves was NRs. 35.79/ kg and NRs. 25.79/kg, respectively. The premium price of green tea leaves was higher in certified tea (NRs. 60/kg) than non- certified tea leaves (NRs. 40/kg). The marketing margin was higher in certified tea leaf (NRs. 24.21/ kg) than non- certified (NRs. 14.21/ kg).

Market margin for local traders and cooperatives

Local traders and cooperatives were involved in collection and delivery of green tea leaves to the processing factories. The local traders had their own network of about seven green tea leaves collectors and collecting green tea leaves to the road heads and enjoying with additional margin of NRs. 7/kg of green tea leaves. Whereas tea growers delivered the green tea leaves to cooperatives, received additional NRs. 5/kg of green tea leaves. At the end of season, they received the NRs. 3/kg bonus from factories and distributed NRs. 2/kg of green tea leaves to tea producers and NRs. 1/kg to cooperatives as well.

Market margin for tea processors

The processing factories played important role in value chain of orthodox tea. For the production of 1 kg orthodox tea, it requires 4.5kg of green tea leaves and equal to NRs. 270 for green tea leaves; and it required NRs. 150 for fuel and administrative cost. The production cost of orthodox tea at factory level was NRs. 420/kg. The assembling, transportation and District Development Committee tax included a total of NRs. 7/kg of orthodox tea. The profit margin to processor was NRs. 213/kg of orthodox tea and the wholesale price of at processor level was NRs. 640/kg.

Table 2. Cost and price of value added orthodox certified tea in study area

Certified tea		Cooperatives/Traders (Non-certified)		Processors		Exporters	
Items	Cost (NRs./ kg)	Items	Cost (NRs./ kg)	Items	Cost (NRs./ kg)	Items	Cost (NRs./ kg)
Production costs		Farm gate price	32	Processing cost		Acquisition cost	640
Inputs	10.33	Cleaning/ Sorting		Raw materials, Admin, etc.	420	Overhead Cost	5
Labor	4.8	Acquisition cost	1			Trucking costs	5
Land rent	0.66	Transfer costs	2	Trucking costs	5	Total Assembling Costs	645
Plucking	20	Total assembling costs	35	Total assembling costs	425	DDC and other tax/levy	2
Total costs	35.79	Total trading cost	5	DDC & other tax	2	Custom clearance and transfer Jogbani - Rotadrum, Netherlands	80
		Total delivery at factory	40	Wholesale level cost	427	Total export cost	727
Margin	24.21	Margin	5	Margin	213	Margin	350
Farm gate price	60	Assembler level price	45	Wholesale price	640	Sales price Rotadrum, Netherlands	1077

Source: Field survey, 2014. Cost calculation per kg basis of prevailing price

Market margin for exporters

The owners of the processing factories are involving in exporting orthodox tea in international markets. At the point of export Jogbani, India, the exporting price was NRs.727/kg orthodox tea. The price of orthodox tea at Rotadrum, Netherlands was NRs. 1077/kg and the gross marketing margin to exporter was NRs. 350/kg certified orthodox tea (Table 2).

CONCLUSIONS

It is concluded that orthodox tea is emerging as lucrative business for earning foreign currencies by exporting to international markets from EHC of Nepal. Certification of orthodox tea has been fetching price premium in value chain, It has been realized that certification catalyze export market where as the non-certified organic orthodox tea producing factories had their own tea gardens as well as they were collecting green tea leaves from tea growers; cooperatives and wholesales. Majority of tea processing factories processed non-certified orthodox tea and efficiently exported in

international markets by themselves. The study findings suggests that value chain development in certified market chain need to revise and promote the organic inputs in subsidized rate for improving small scale farmers' livelihoods. Furthermore, strong monitoring and evaluation of third party certification scheme could be done by concerned government agencies to smoothing value chain of certified orthodox tea in Nepal.

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