

From leaves to markets: Assessing trade competitiveness of Nepalese tea in the WTO era

Gaurab Luitel^{a*}, Hari Krishna Panta^b, Kishor Chandra Dahal^{ab}, Tara Prasad Bhusal^c and Krishna Prasad Timsina^d

^aPhD Researcher, Tribhuvan University, Institute of Agriculture and Animal Science, Nepal

^bPhD, Associate Professor, Tribhuvan University, Institute of Agriculture and Animal Sciences.

^bPhD, Associate Professor, Tribhuvan University, Institute of Agriculture and Animal Sciences.

^cPhD, Professor, Tribhuvan University, Department of Economics.

^dPhD, Senior Scientist, Nepal Agriculture Research Council, National Agricultural Policy Research Center.

*corresponding author: agri.science2@gmail.com

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ABSTRACT

Tea is one of the major exportable agricultural commodities of Nepal. This study explores the implications of Nepal's accession to WTO in the tea trade with objectives of identifying potential opportunities and challenges. The study was conducted in Jhapa and Ilam through structured interview on 5 tea processing units in each district. Moreover, secondary data were obtained from the trade portals and database available at the public domains. The data collected were analysed by using quantitative techniques to make comparative analysis of the growth between pre and post WTO accession scenarios. The research also examined the trade measures and market access barriers that affects the export of Nepalese tea. The study found that WTO membership has opened up a plethora of opportunities as the increase in tea exports from Nepal can be attributed to its membership in the WTO, notably seen in the fiscal year 2003/04 when it joined WTO. Moreover, the competitive analysis using Nominal Protection Coefficient (NPC) and Domestic Resource Cost (DRC) illuminated the trade dynamics of CTC and Orthodox teas. While the findings revealed a cost-competitive edge in the export market for Orthodox tea (NPC=0.67), the export market presented challenges in case of CTC (NPC =1.15) due to over-dependence in India. The DRC ratio of 0.86 and 0.80 for CTC and orthodox tea respectively provides strong evidence that Nepal has comparative advantage in producing both types of tea.

KEYWORDS: Competitive analysis, Domestic Resource Cost, Nominal Protection Coefficient, WTO

1. INTRODUCTION

Tea, one of the most important cash crops of Nepal, considerably contributes to the economy of Nepal by offering opportunities for rural employment, income generation and poverty reduction. For the competitive and comparative advantages the sector pose, tea has been identified as a prioritized product by the Nepal Trade Integration Strategy (NTIS), 2016 and its successor NTIS, 2023 (MoICS, 2023). Moreover, the Agriculture Development Strategy (ADS), 2015-2035, a long-term vision for the development of agriculture sector in Nepal, has recommended specific program for the value chain development of tea under the ADS flagship program (MoAD, 2015). These strategic focus by the Government of Nepal on tea underscores its role in Nepal's agricultural trade and its potentiality for further growth and economic contribution.

In the prevailing interconnected world, tea sector is not isolated from the dynamics of international trade. An important milestone was reached when Nepal joined the World Trade Organization (WTO) in 2004, especially in the context that it was the first Least Developed Country (LDC) to join the global trade regulating body. WTO membership is regarded both as an opportunity and challenges as its members both wealthy nations and the developing countries. In addition to giving domestic producers access to international markets, the membership opens door of the domestic market for foreign businesses as well. National and local companies have to be competitive – in both export and domestic market – in order to get advantage of the membership (Sharma & Karkee, 2004).

Against this backdrop, this study is focussed on how Nepal's WTO membership has affected its tea industry. Furthermore, it identifies the unique opportunities and challenges for expanding market access and boosting competitiveness. With a comprehensive analysis of the sector in the past 20 years, this research seeks to identify the trade restrictions and barriers to market access that have an effect on the potential global exports. Additionally, the research will assess the tea industry's global competitiveness.

2. MATERIALS AND METHODS

This study was conducted in Jhapa and Ilam districts of Koshi Province as they are the major tea producing districts of Nepal. Ilam is renowned for producing premium orthodox tea, while Jhapa is the only region in Nepal to produce CTC tea. Primary data was collected through structured interviews with key stakeholders in the Nepalese tea sector. Specifically, interview was conducted with 10 tea processing centres in Jhapa and Ilam (five in each). The purposive selection of processing centres considered the production capacities, ensuring representation from large, medium and small-scale tea factories. Moreover, secondary data was obtained from the trade portals and database of WTO, Department of Customs Nepal, National Tea and Coffee Development Board of Nepal (NTCDB) and other organizations that are available at the public domains. For the comparative analysis, secondary data on tea trade, area and production was collected and compared into two sub-periods: before WTO membership and after WTO membership. For the competitive analysis, Nominal Protection Coefficient (NPC) and Domestic Resource Cost (DRC) ratio were estimated. Method adopted by FAO (2009) was replicated in this analysis.

3. RESULTS AND DISCUSSION

Nepal's accession of the WTO marked a significant turning point in the country's economic history, affecting multiple sectors. Following this substantial global integration, the tea industry found itself navigating both opportunities and challenges.

3.1. OPPORTUNITIES AND CHALLENGES FOR NEPALESE TEA SECTOR AMID WTO MEMBERSHIP

3.1.1. Opportunities

WTO membership has opened up a plethora of opportunities. Firstly, a more efficient export procedure has been made possible by the removal of trade barriers and the adherence to the international trade standards. Nepalese tea exports have increased dramatically as a result of this streamlined process, with notable increases in export volume and value. Error! Reference source not found. highlights a notable increase in exports, demonstrating the positive effect of WTO membership on the Nepalese tea trade.

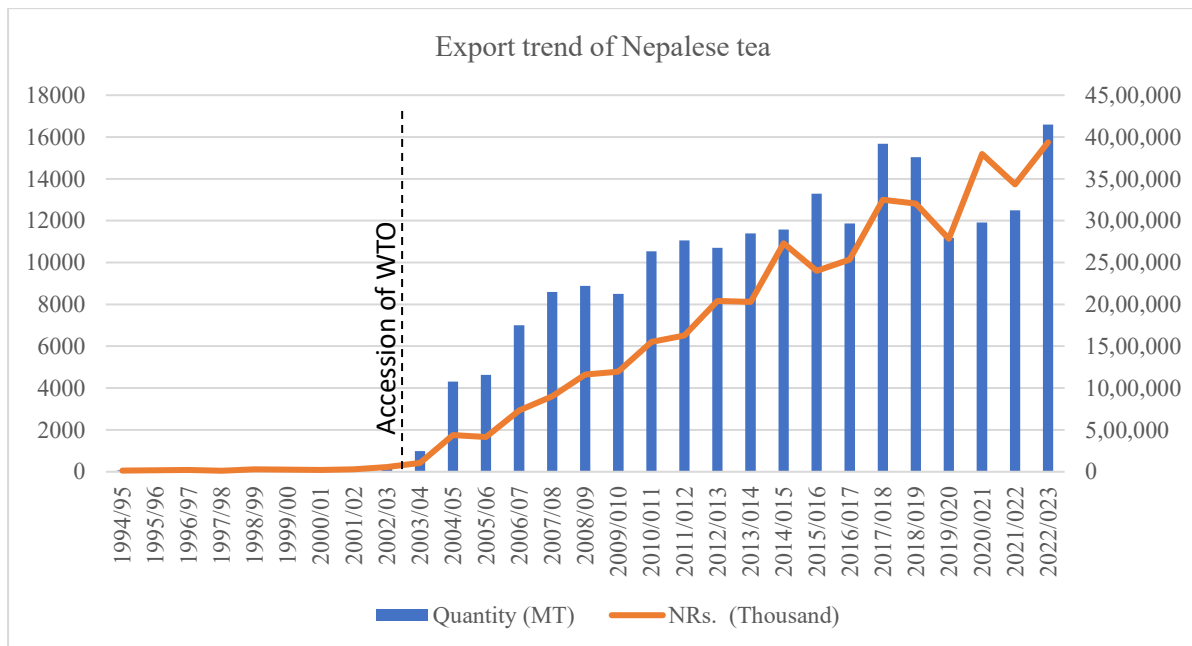


Figure 1 Timeseries data on tea exports from Nepal.

Source: Author’s compilation from “Nepal Overseas trade statistics” over years.

The increase in tea exports from Nepal can be attributed to its membership in the WTO, notably seen in the fiscal year 2003/04 when it joined WTO. The export volume in 2003/04 was merely 884 MT which increased to an unprecedented 4316 MT next year, signalling a substantial increase and marking the beginning of a positive trend. The export volume and value reached significantly as this growth trajectory persisted over time. For instance, Nepal exported 16,595 metric tons of tea worth NPR 3.94 billion in 2022/23, demonstrating the sustained and transformative impact of WTO membership on the nation's tea sector.

Additionally, diversifying export destinations and exploring new markets are made possible by the enhanced market access that comes with WTO membership. Similarly, growth in export volumes in almost all destination markets were observed after Nepal joined WTO. For instance, until 2003/04, it used to export tea to only 20 countries while in 2021/22, the number of countries importing Nepalese tea increased to 39. Despite a decrease in tea exports to Germany and Pakistan, Nepal's overall global market presence has expanded, reflecting the positive influence of WTO membership on the country's tea export (Figure 2). This indicates that the Nepalese tea producers are taking advantage of this favourable trading environment to increase the global presence of Nepalese tea.

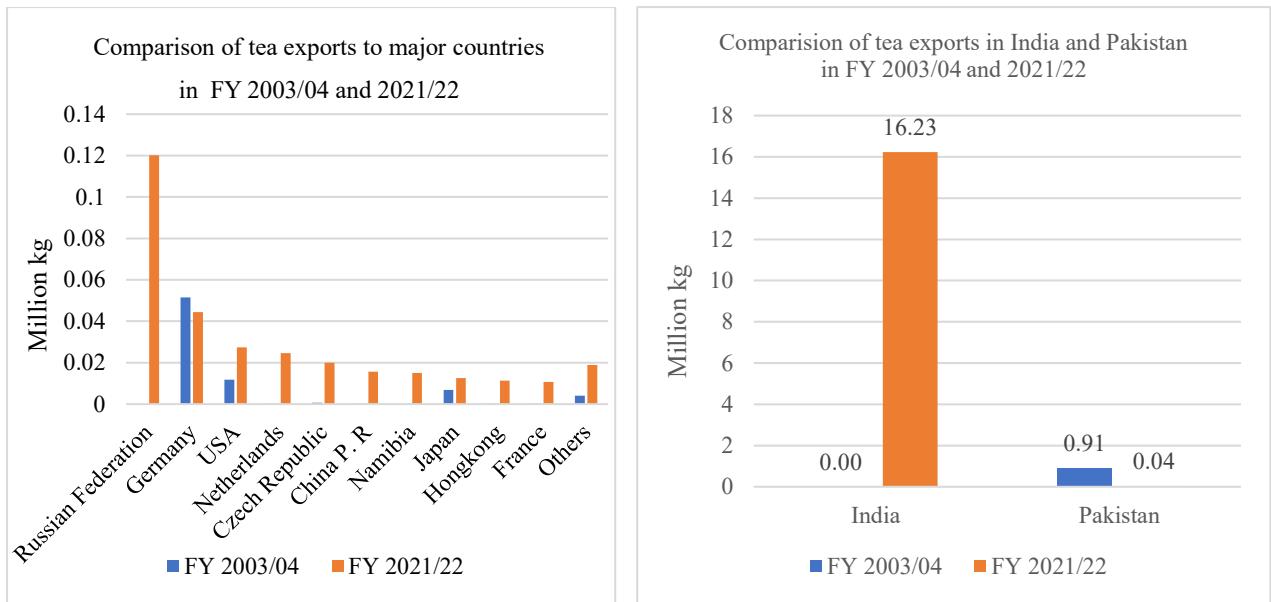


Figure 2 Comparison of tea exports in major countries in FY 2003/04 and 2021/22
Source: Author’s compilation from various issues of Nepal Overseas Trade Statistics (TEPC)

3.1.2. Challenges

Despite the impressive surge in tea exports after Nepal's accession to the WTO, the growth rate of tea plantation area tells a different story (**Figure 3**). The expansion of plantation area and production has not been impressive compared to that of exports. In FY 2003/04, 15,015 ha of land in Nepal was covered by tea plantation. Although the plantation area has increased as high as 28,732 ha in FY 2018/19, the tea coverage has reduced in recent years and reached 20237 ha in FY 2021/22. Similarly, the production figures are also not promising as 11.6 million kg tea was produced in the year 2003/04 compared to 26.38 million kg in recent FY 2021/22.

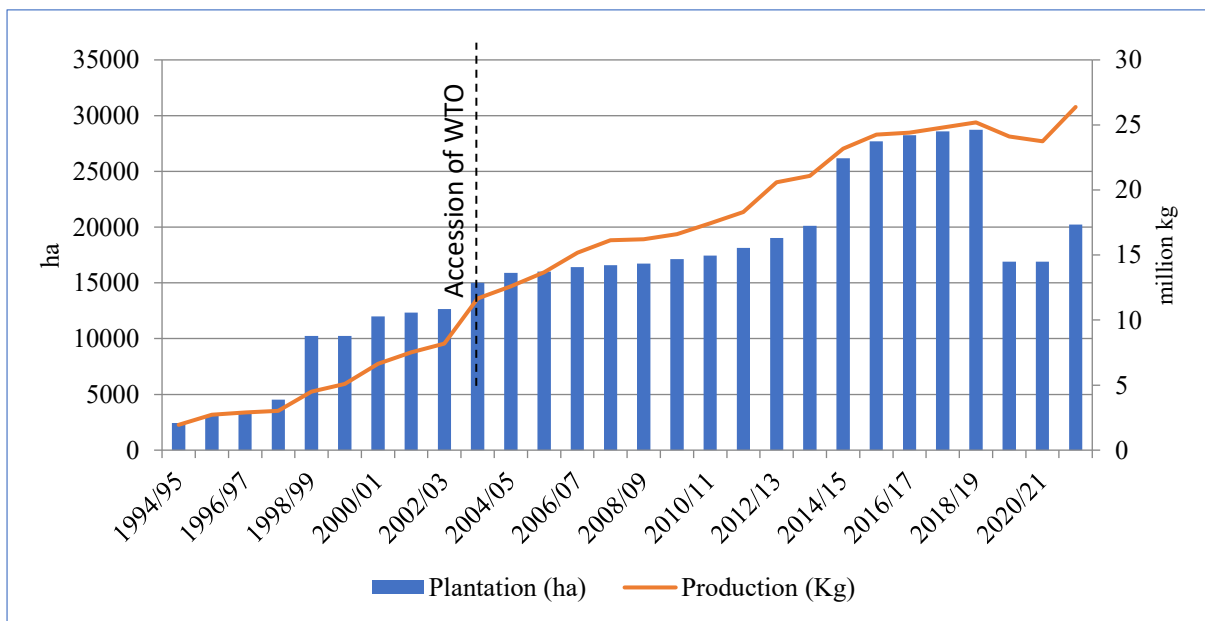


Figure 3 Comparison of growth rate of tea plantation and production in pre and post WTO scenario.
Source: Author’s compilation from the secondary data of NTCDB (2023).

Upon closer observation, it can be seen that in the pre-WTO period, the tea plantation area experienced a robust growth rate of approximately 9.86% per year (

Table 1). However, in the post-WTO scenario (i.e. 2003/04 onwards), the growth rate for tea plantation area slowed down considerably to around 2.37% per year. Similarly, with respect to tea production, the sector experienced growth of 40.35% per year before the WTO membership, while the figures decreased to 7.29% per year after Nepal joined WTO.

Table 1 Average annual growth rate of tea plantation area and production

	Average annual growth Rate in	
	Pre-WTO era (Before FY 2003/04)	Post-WTO era (After FY 2003/04)
Tea plantation area	9.86%	2.37%
Tea production	40.25%	7.29%

Source: Author’s calculation based on the plantation and production data of NTCDB

Given the remarkable improvement in tea exports after WTO accession, this seemingly contradictory trend can be attributed to various factors. A survey was carried out amongst ten tea processing units with the aim of assessing the challenges for expansion of the tea industry (**Figure 4**). The perceived challenges of these problems were measured using the severity index, where problems with a severity index of 1 were considered to be the most challenging and that of 5 denotes least challenging. The survey outcome indicated that inadequate government support was perceived as the most challenging as reported by 80% of the respondents. It was followed by labour shortage and high cost of inputs like coal and firewood which was perceived by 50% of the respondents.

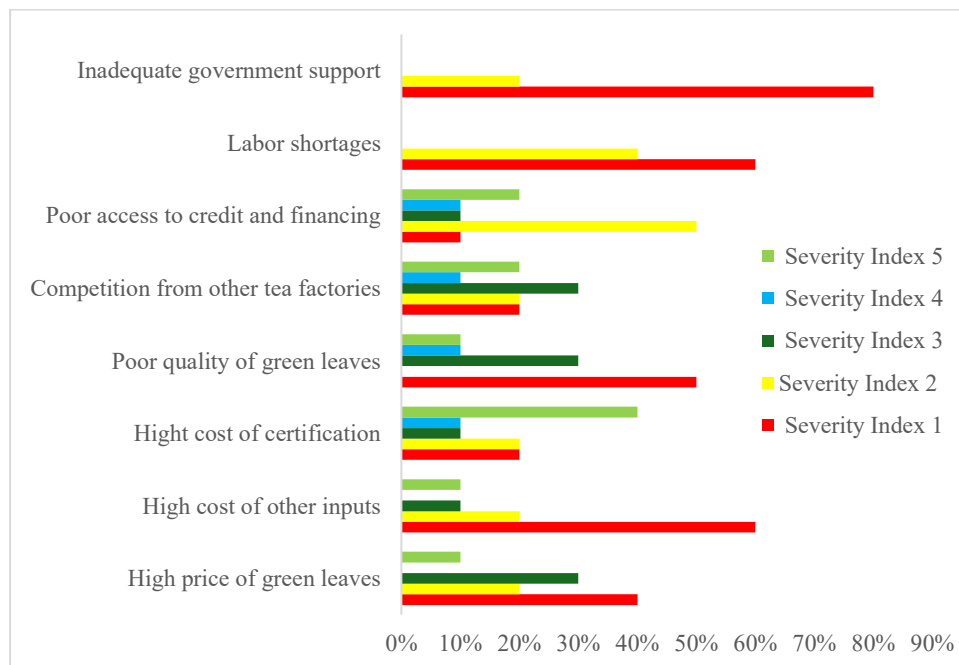


Figure 4 Perception on severity of production challenges of tea producers.

Source: Field Survey (2024)

Although some of the respondents reported that they had received 5% export incentives in previous years, most of the respondents stated that they have received no domestic support from the government. The “Green Box” support of government in Nepalese agriculture

amounted to less than 1% of the value of farm products (WTO, 2018). Therefore, there’s a lot of room to increase the domestic support in the tea sector in the form of targeted policies and incentives. Raising domestic support mechanisms can foster a more conducive environment for tea producers, addressing key challenges such as high production costs and limited access to credit.

3.2. TRADE MEASURES AND MARKET ACCESS BARRIERS TO TEA TRADE

The research examined the trade measures and market access barriers that affects the Nepalese tea's export potential on the international market. This includes analysing factors including tariff and non-tariff measures.

3.2.1. Tariff measures

The average tariff rates applied to the imports of tea vary considerably between nations, which affects Nepalese tea's ability to compete on global markets (**Table 2**). India stands out among the main importing countries with an apparent high average tariff rate of 133.1%. It's important to note that the Free Trade Agreement (FTA) governs tea exports from Nepal to India which implies that Nepalese tea can enter India duty-free. Nepalese tea exporters benefit greatly from this FTA clause, which allows them to enter the Indian market without having to pay tariffs.

In contrast, nations such as Pakistan impose an average tariff of 108.3% on tea imports, which presents difficulties for Nepalese exporters trying to enter these markets. Similarly, other countries with relatively high tariff rates, such as Namibia (65.4%) and Russia (19.8%), China (14.9%) and Japan (13.7%) present barriers to entry for Nepalese tea producers.

With average tariff rates of 5.9%, the USA and the EU offer comparatively favourable trade conditions for tea imports. As an LDC, Nepal enjoys duty-free access to these markets. However, Nepalese tea exporters are facing challenges to enter these markets due to non-tariff barriers like strict quality standards and complex regulatory procedures.

Table 2 Tariff rates imposed in tea imports by Nepal and major importing countries.

Country	Average duty	Duty-free in %	Maximum duty
Nepal	40.8	0	50
India	133.1	0	150
Pakistan	108.3	0	150
Russia	19.8	0	20
United States of America	5.9	27.1	14
China	14.9	0	32
Namibia	65.4	20	170
Japan	13.7	22.2	133
European Union	5.9	27.1	15

Source: *World Tariff Profiles, 2023*

https://www.wto.org/english/res_e/booksp_e/world_tariff_profiles23_e.pdf

Furthermore, Nepal will no more be eligible for duty-free entry as it prepares to graduate from LDC category by 2026. This impending change underscores the urgency for Nepal to enhance the competitiveness of its tea industry effectively.

3.2.2. Non- Tariff measures

Despite comparatively favourable tariff rates in some markets like the USA and EU, Nepalese tea exports face substantial obstacles due to non-tariff barriers. The importing nations

impose certification requirements, phytosanitary restrictions, and strict quality and safety standards. The Sanitary and Phytosanitary (SPS) measures agreement and the Technical Barrier to Trade (TBT) agreement provide framework to ensure that such regulations are necessary for the protection of human, animal, or plant life or health, without unjustifiably restricting trade.

Compliance with SPS and TBT measures is essential for exporting tea to international markets. However, the diverse and evolving nature of these standards across different markets complicates the export process for Nepalese tea producers. While the study didn't find any processing unit certified by a quality management program in Jhapa, 4 out of 5 units in Ilam were certified organic. Because of the absence of internationally accredited local certifying body in Nepal, all the expenses related to external inspection, audit and certification is paid to third party certification agencies operating overseas.

The survey found that organic certification puts an extra burden of around Rs10.33 per kg on the total cost of production. Moreover, 3 out of 5 respondents of Ilam perceived the certification as a burden imposed by the buyers. Although almost all the certified processing units reported that there has been increase in the price of tea after adopting the certification scheme, they responded that the hike wasn't sufficient to cover the expenses associated with the certification.

Furthermore, India is the major trading partner of Nepalese tea which imported 97.80% of the total volume of tea exported by Nepal in fiscal year 2021/23 (DoC, 2023). Almost all respondents expressed concerns about the non-tariff barriers put up by Indian authorities. The tea from Nepal origin needs to be tested at Central Food Laboratory (CFL) in Kolkata to receive custom clearance. Nepalese tea exporters find it more difficult to trade in the Indian market as a result of extra expenses and delays associated with this process. Non-tariff restrictions of this kind impair not just market accessibility but also the competitiveness and expansion potential of tea exports from Nepal.

3.3. COMPETITIVE ANALYSIS

A comparative analysis was carried out, concentrating on both CTC and Orthodox tea manufacturing, in order to evaluate the competitiveness of Nepalese tea in the international market. Important metrics that provide important information about the economics of the tea industry were used in the analysis, including the Nominal Protection Coefficient (NPC) and Domestic Resource Cost (DRC).

3.3.1. Nominal Protection Coefficient (NPC)

The NPC is an indicator that assesses the competitiveness of a product in the international market by assessing the degree of protection provided to domestic producers. NPC analysis was performed on both CTC and Orthodox tea in the context of pre- and post-WTO periods. For the purpose of this analysis, the price of CTC tea was derived from the Indian exports, given that India is the major market for this tea type of Nepal. Similarly, the price of Orthodox tea was estimated based on the average export price in Germany, a significant market segment for Nepalese Orthodox tea.

Summary of the estimates is presented in **Table 3**. With an NPC of 1.22 in the pre-WTO era, CTC tea demonstrated a less competitive position in global markets. Nonetheless, there was a discernible improvement following WTO membership, as evidenced by a decreased NPC of 1.15. Although still above 1, the decrease suggests enhanced competitiveness.

On the other hand, Orthodox tea was already competitive in the pre-WTO scenario with an NPC of 0.86. It saw a substantial improvement in the post-WTO period, reaching an NPC of 0.67 and indicates that unlike CTC tea, the Nepalese orthodox tea is competitive in the global market despite less support received from the government. The outcomes highlight how Nepal's WTO membership has improved its tea industry's competitiveness in the global market

adhering to the principles of WTO in freer trade and reduced domestic support as provisioned by WTO rules.

Table 3 NPC of CTC and Orthodox tea in pre and post WTO scenario

	Nominal Protection Coefficient (NPC)	
	Pre-WTO	Post-WTO
CTC tea	1.22	1.15
Orthodox tea	0.86	0.67

Source: Author’s calculation based on Field survey (2024) and secondary data of TEPC

3.3.2 Domestic Resource Cost ratio

Analysis of DRC ratio measures how well a nation uses its own resources to produce particular items. In this study, cost incurred in sourcing green leaves, labour, firewood, electricity, transportation, staff salary, communication, maintenance of machineries, bank interest, insurance, audit and other costs were considered as the domestic resource cost. Similarly, coal, petroleum, packaging materials, machineries were the inputs that were imported for the production of tea. Moreover, the third-party certification is also done by foreign certifying body. Thus, costs associated with these resources were considered foreign resources cost in this study.

Table 4 summarizes the costs associated with domestic and foreign resources obtained from the survey data. The cost of production of CTC and orthodox tea was 160.93 and 440.79 Rs/kg respectively of which the cost of domestic resources was estimated as 139.68 Rs/kg and 406.07 Rs/kg respectively. With an average price of 183.44Rs/kg and 540 Rs/kg, the DRC ratio of CTC and orthodox tea was computed to be 0.86 and 0.80 respectively. Since the DRC ratio is less than 1, this indicates that Nepal is using domestic resources efficiently in the sense that the opportunity cost of producing tea is less than the domestic value-addition generated by the production process. In other words, Nepal has comparative advantage in producing both types of tea.

Table 4 DRC analysis of CTC and orthodox tea of Nepal.

Particulars	CTC	Orthodox
A Cost of Domestic Resources (Rs/kg)		
1 Green Leaf	87.39 (54.3)	307.08 (69.7)
2 Labor	17.55 (10.9)	29.65 (6.7)
3 Firewood	2.05 (1.3)	3.71 (0.8)
4 Electricity	8.87 (5.5)	8.52 (1.9)
5 Transportation	0.30 (0.2)	6.06 (1.4)
6 Staff salary	4.69 (2.9)	30.77 (7.0)
7 Communication	0.42 (0.3)	0.45 (0.1)
8 Maintenance	2.32 (1.4)	3.54 (0.8)
9 Bank Interest	8.63 (5.4)	7.86 (1.8)
10 Insurance	0.70 (0.4)	4.27 (1.0)
11 Audit	0.06 (0.0)	0.24 (0.1)
12 Other costs	6.71 (4.2)	3.91 (0.9)
<i>Sub total (Ca)</i>	<i>139.68 (86.8)</i>	<i>406.07 (92.1)</i>
B Cost of Foreign Resources (Rs/kg)		
1 Coal	13.50 (8.4)	9.70 (2.2)
2 Petroleum	2.74 (1.7)	6.81 (1.5)

3	Packaging material	3.30 (2.1)	6.57 (1.5)
4	Certification cost	0.00 (0.0)	10.33 (2.3)
5	Depreciation of machineries	1.70 (1.1)	1.30 (0.3)
<i>Sub total (C_f)</i>		<i>21.24 (13.2)</i>	<i>34.72 (7.9)</i>
Total Cost of Production (Rs/kg)		160.93 (100)	440.79 (100)
Average price (P)		183.44	540
DRC = C_d / (P-C_f)		0.86	0.80

Figures in parenthesis indicate percentage of total cost of production.

Source: Author's calculation based on Field survey data

4. SUMMARY AND CONCLUSION

To sum up, this comprehensive analysis examined the various facets of Nepal's tea sector within the framework of its membership with the WTO. The export data demonstrated a significant increase following Nepal's WTO accession, underscoring the positive impact of membership on Nepal's tea trade. But this increase was offset by a sluggish growth in plantations and production.

The research also examined the trade measures and market access barriers that affects the export of Nepalese tea. India stands out among the main importing countries where the FTA grants duty-free access to Nepalese tea. Other countries like Pakistan, Russia, China and Japan with higher tariff rates present barriers to entry for Nepalese tea producers. Although USA and EU have relatively lower tariff rates, Nepalese exporters faces difficulties in meeting the requirements of SPS and TBT measures.

The competitive analysis using NPC and DRC illuminated the cost dynamics of CTC and Orthodox teas. While the findings revealed a cost-competitive edge in the export market for Orthodox tea, the export market presented challenges in case of CTC due to over-dependence in India. The DRC ratio analysis provides strong evidence that Nepal has comparative advantage in producing both types of tea.

In conclusion, this study highlights how the tea exports have increased significantly as a result of WTO membership with increased market access. Despite these encouraging developments, the study also reveals some issues that pose a threat to the long-term viability and competitiveness of the tea industry. These issues include slow expansion in the area, production and domestic support for tea plantations.

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