



**Biotica
Research
Today**

Vol 2:2 **1126**
2020 **1129**

An Appraisal of Constraints Faced by Tea (*Camellia sinensis*) Value Chain Players during COVID-19 Crisis

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Open Access

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Keywords

Constraint, COVID-19, Small tea grower, Value chain

Article History

Received in 07th November 2020

Received in revised form 09th November 2020

Accepted in final form 10th November 2020

E-mail: bioticapublications@gmail.com

How to cite this article?

Das and Mishra, 2020. An Appraisal of Constraints Faced by Tea (*Camellia sinensis*) Value Chain Players during COVID-19 Crisis. *Biotica Research Today* 2(2): 1126-1129.

Abstract

The present study aims at to identify the important stakeholders (Small tea growers, green tea leaf collector, processor, wholesaler and retailer) of the tea value chain, and constraints faced by them during the COVID-19 pandemic. All the stakeholders of the value chain faced different problem according to their way of operation, among them tea growers faced maximum problem regarding growing of green tea leaves. To identify the important constraints, we used Garrett's ranking technique. The study revealed that, unavailability of inputs on peak plucking time was the main constraint faced by the small tea growers with 75.39 average score in garret ranking. In case of leaf collector, processor and wholesaler/retailers the main problems were restricted transportation (81.66), unavailability of quality tealeaves (77.43) and price instability respectively (85.34).

Introduction

World Health Organisation (WHO) on 11th March, 2020 declared the Novel Corona virus (COVID-19) as pandemic due its huge coverage throughout the globe. According to WHO, the Novel Corona virus spreads through human to human by physical contact, so Governments of all over the world took strict action to prevent the spread this Novel Corona virus by imposing lockdown. Indian government also took part in this movement and imposed nationwide "Janta Curfew" followed by lockdown from 24th March, 2020.

There have been a huge disruptions in food supply chain due to potential labour shortages and restricted transportation and logistics services along with changing buying preferences of the consumers (Hobbs, 2020). In many ways, the impact of Novel Corona virus on both demand and supply side of tea value chain is noticeable.

The value chain is a concept, which can be simply describe as the entire range of activities required to bring a product from the initial input-supply stage, through various phases of production, to its final market destination. Value is any activity that increases the market form or function of the product or service; and in today's business climate, there is a need to maximise the value of every process in a business. According to Hill & Jones the term "value chain" refers to the concept that a company's chain of activities for transforming inputs into outputs with purpose to deliver value to the customers.

In the recent past the popularity of green tea leaf production from small tea farms increased manifold. More and more youths were attracted towards production of green tea leaves.

Materials and Methods

Selection of State

The state of Assam covers 55.55 percent area under tea cultivation in India and produces 51.90 percent of country's total production of tea. Hence, we chose Assam purposively for the study.

Selection of Stakeholders

The major identified stakeholders were green leaf collector, processors, wholesalers and retailers. From each group of these intermediaries, 20 green leaf collectors, 15 processors, 20 wholesalers, 20 retailers were randomly selected for detailed study.

Constraints perceived by the stakeholders were prioritized by using Garrett's ranking technique by using the following formula:

$$\text{Percent position} = \frac{100 (R_{ij} - 0.5)}{N_j}$$

Where,

R_{ij} = Rank given for the i^{th} variable by j^{th} stakeholder;

N_j = Number of variable ranked by j^{th} stakeholder.

With the help of Garrett's Table, the percent position estimated will be converting into scores.

The percentage position of each rank converted into score using Garrett's table. For each constraint, score of individual respondents were added together and were then divided by the total number of respondents for whom the scores were added. Thus, the ranking was done on the basis of the mean score after arranging it in descending order.

Results and Discussion

Tea value chain was associated with the role of various players who controlled and added value along the chain. The players were green leaf collector, processors, wholesalers and retailers. There was no role of producers in tea value chain, they only related with cultivation of green tea leaves and the value addition starts from green leaf collector. Consumers were termed as supporters in the value chain as they made decision whether to purchase or not. The details of different actors and their roles in supply chain have been mentioned below.

Different stakeholders and their role in value chain-

- **Small tea grower** – Cultivation.
- **Green leaf collector** - Collection and transportation of green leaves from small tea growers and delivering to processing unit Sorting and quality control.
- **Processor** - Payment for the collected leaves and processing into different types of tea, Processing quality control, Packing and labelling of final product.
- **Wholesaler** - Purchases bulk made tea (processed tea) from different processors, Blending of bulk tea into convenient

packing and value addition.

- **Retailer** - Customer relationship, sorting and advertisements of the product. Quality control and monitoring.
- **Consumer** - Making decision to purchase tea.

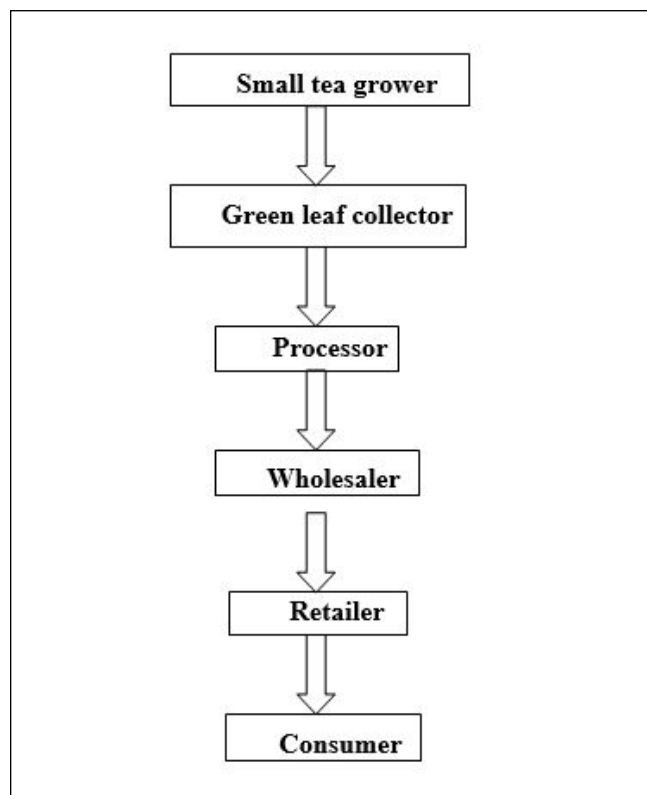


Figure 1: Supply chain of tea

From the supply side, the major players are Small tea grower, Green leaf collector, Processor, wholesaler and retailer; when considered to demand side they are consumer and teashop, hotel & restaurant. The visible impacts of Novel Corona virus on actors of tea sector has been described below.

- **Small tea grower** - They have faced tremendous problem due to unavailability of farm inputs on regular basis. The tea gardens which are located in rural area are suffering from this problem the most (Jhajhria *et al.*, 2020), which is responsible for disruption in tea leaf yield, and unsuitable quality of tea leaf, which are not preferred by leaf collector and ultimately it results low profit to the small tea grower.
- **Green leaf collector** - They are not getting good tea leaf from the small tea growers, in such situation they are not able to maintain the standards of their quality leaves, resulting less sell and low profit (Reddy *et al.*, 2016). Due to restriction in transportation, they are not able to transfer the collected leaves to processors in regular basis, which leads to huge loss.
- **Processors** - They are facing multiple problems during this pandemic; unavailability of work force is one of them. Due to this scarcity they are facing difficulties in running the firm smoothly which creates interruptions in value addition

process (Reddy *et al.*, 2016). Restriction in transportation is also another major issue for the tea industry; due to this, they are not able to transfer their final products to distant market.

- **Wholesaler** - They are not able to maintain the stock of product, as they are receiving less amount from industries due to restricted transportation, which causes vast price fluctuations (Hobbs, 2020).

- **Retailer** - They are also facing problem regarding maintaining the appropriate stock of the product.

- **Consumer, teashop, hotel & restaurant** - Shutting down of restaurants, hotel, teashops, etc. due to nationwide lockdown caused a great impact on the tea sector, as demand for tea reduced drastically.

Novel Corona virus have also affected international trade throughout the globe in all sectors of commodities.

The ranking of constraints faced by small tea growers have been presented on Table 1. The table revealed that, unavailability of inputs on peak plucking time was considered as the major problem faced by small tea growers with 75.39 average score in garret ranking, followed by less demand from tea leaf collector, labour unavailability and restricted transportation with average score of 62.30, 45.72, 40.84 respectively.

Table 1: Constraints faced by sample small tea growers

Constraints	Garrett Mean Score	Rank
Unavailability of inputs on peak plucking time	75.39	I
Less demand from tea leaf collector	62.30	II
Labour unavailability	45.72	III
Restricted transportation	40.84	IV

Table 2 showed that, restricted transportation was the major constraint faced by the tea leaf collector during lockdown with 81.66 average score in garret ranking, followed by getting unsuitable quality of tea leaf from small tea growers, less demand from industry and labour unavailability with average score of 75.37, 72.11 and 62.95 respectively.

Table 2: Constraints faced by sample tealeaf collectors

Constraints	Garrett Mean Score	Rank
Restricted transportation	81.66	I
Unsuitable quality of tea leaf from small tea growers	75.37	II
Less demand from industry	72.11	III
Labour unavailability	62.95	IV

In case of processors, the main constraint was unavailability of quality tea leaves (Table 3) with 77.43 average score in garret ranking, followed by scarcity of labour, unavailability inputs

to run the industry, restriction in transportation with average score of 73.78, 70.22 and 65.20 respectively.

Table 3: Constraints faced by sample processors

Constraints	Garrett Mean Score	Rank
Unavailability of quality tea leaves	77.43	I
Scarcity of labour	73.78	II
Unavailability inputs to run the industry	70.22	III
Restricted transportation	65.20	IV

The problems faced by wholesalers and retailers were kind of same, so we have put their constraints ranking on a single table (Table 4). From the table it revealed that, price instability was the major constraint, followed by limited stock of product on shop and restriction in transportation with average score of 85.34, 72.01 and 60.44 respectively.

Table 4: Constraints faced by sample wholesalers/ retailers

Constraints	Garrett Mean Score	Rank
Price instability	85.34	I
Limited stock of product on shop	72.01	II
Restricted transportation	60.44	III

Conclusion

Though, However, growth rate of Indian agricultural sector is in positive trend during this pandemic, but the effect of Novel Corona virus on both supply and demand side of agrarian value chain is non ignorable. It is clear from the study that, all the stakeholders of the tea value chain is suffering due to lockdown caused by COVID-19 pandemic. Among them small tea growers suffered the most, as there is huge pressure on them to produce the sufficient quantity of green tea leaves but due to unavailability of suitable inputs they are not able to produce sufficient quantity of leaves, which caused total disruption the complete value chain. Therefore, government should look forward in the tea sector so that problems can be minimised.

Acknowledgement

I owe my heartfelt thanks and gratitude to masters' my guide Dr. R. R. Mishra for his plenteous and valuable guidance, constant supervision, constructive criticisms and incessant encouragement through suggestions sailed me through during my entire period of research.

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