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Value Chain and Constraints Analysis of Ginger in West Garo Hills district of Meghalaya

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ABSTRACT

Ginger is usually cultivated on hilly slopes or upland in jhum cultivation by the Garo tribe. The ginger growers follow the traditional dibbling method of cultivation. The planting materials are sown in the months of March and April. The crop takes around 8-9 months to reach its maturity stage. The study was conducted in six different villages with the objective of identifying the value chain in ginger, involving 60 respondents from the district. The study revealed that ginger soft rot or rhizome rot was a major problem for the farmers in the district. During the value chain analysis, it was observed that every year, the price of ginger fluctuated and middlemen earned a profit of Rs. 15-20/kg, wholesalers earned Rs. 5-10/kg, and small processing units, after adding value (ginger powder), earned a profit of Rs. 80-100/kg. However, due to a lack of well-established marketing facilities and value-added industries or facilities in the district, most of the product was exported to neighbouring states.

Key Words : Constraint, Ginger, Garo REGION, Growers, Marketing, Value chain.

INTRODUCTION

India's agricultural system has experienced significant changes in recent decades. The traditional way of food production is being replaced by practices more similar to manufacturing processes, with greater co-ordination across farmers, processors, retailers, exporters and other stakeholders in the agriculture value chain (Kumar *et al,* 2011). The agricultural value chain framework encompasses a series of activities aimed at enhancing value, spanning from production to consumption, encompassing processing and marketing stages. Every segment of this chain is interconnected through backward and forward linkages. Different stakeholder of value chain are Government Agencies/Input Companies which provide support, infrastructure, financial assistance, and regulation for agricultural activities, Farmers who cultivate crops and livestock and performing primary processing and selling mainly to traders, Traders who purchase agricultural commodities directly from farmers, stockpile, and resell to larger traders or processors, Wholesalers who handle large quantities, own storage and transportation, and source from smaller traders or processors, Retailers who sell products directly to consumers, ranging from supermarkets to small shops and Consumers who are end-users who purchase and consume products or use them for manufacturing other goods or services (Arulmanikandan *et al,* 2023).

Ginger is commercially grown in almost all the states of the north eastern region, with Meghalaya, Arunachal Pradesh, and Mizoram as leading ginger-producing states. Prakash (2018) highlighted the value of growing ginger, stating that it is a significant cash crop in the Northeast. Meghalaya is the second-largest producer of ginger in the country after Kerala. Bag (2018) reported that, considering the rising demand for ginger as a health-beneficial item worldwide, emphasis has been placed on various government programs and the export potential of the country. The district is mainly dominated by Garo tribes, who cultivate ginger in jhum areas. For cultivation, they first cut and clear the vegetation in the selected area in the month of January. Cutting vegetation to clear the land is necessary for beginning agricultural operations in shifting cultivation (Singh and Devi, 2020). After cutting the trees and clearing the jungle, they leave the area to dry up.

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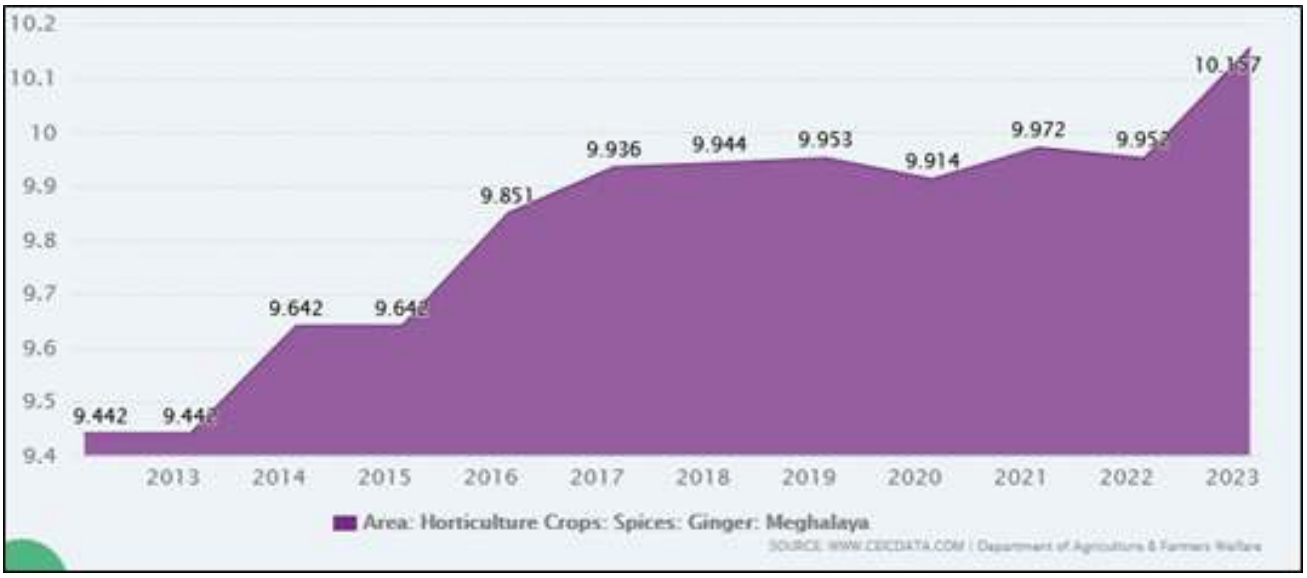
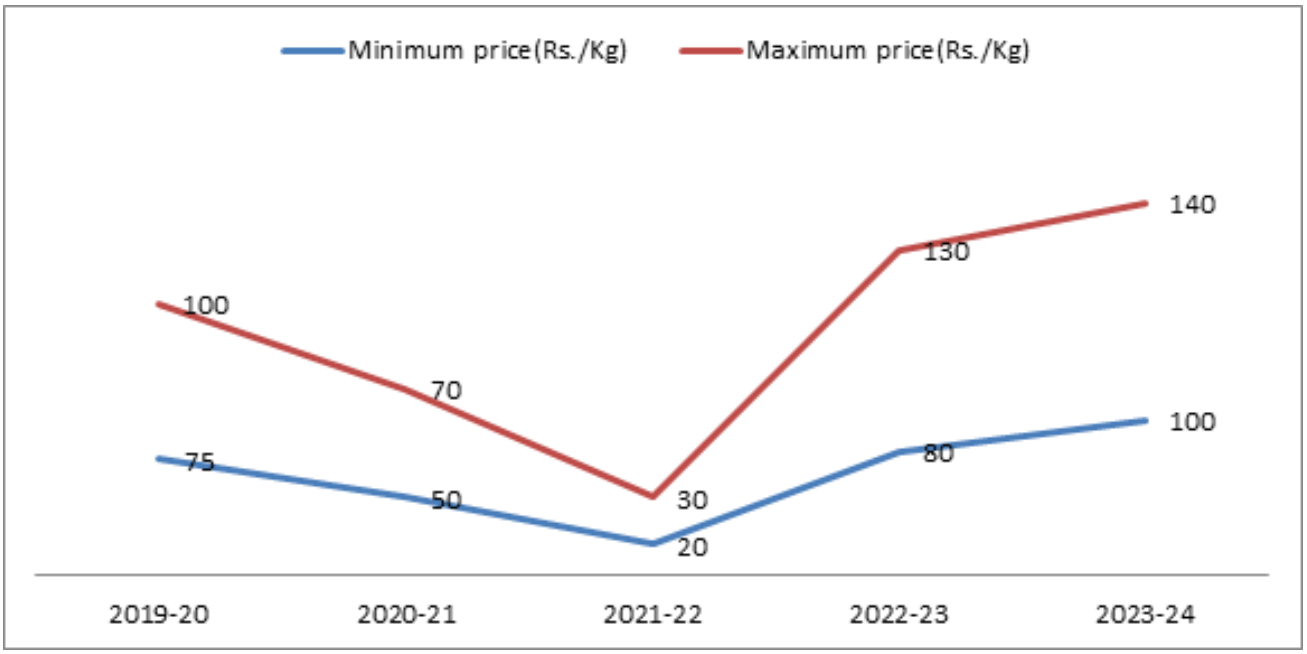
Table 1. Increasing trend of area in ginger cultivation in Meghalaya.



Source: https://www.ceicdata.com

Fig 1. Average Market Price Variance (2019-2024)



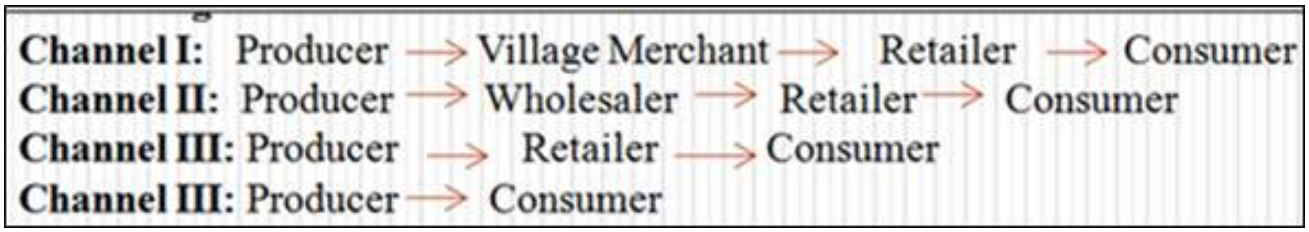
Source: www.miemeghalaya.org/the-meghalaya-institute-of-entrepreneurship and modified

Ginger is grown using the dibbling method with a locally made dibbler during the months of March or April. Ginger is a heavy feeder and demands nutrients continuously in large amounts. However, the use of large quantities of chemically formulated fertilizers is not feasible as it results in a progressive rise in multi-nutrient deficiencies, nutrient imbalance, and deteriorating soil health and productivity over time (Bindu and Podikunju, 2019). In the months of November and December, after harvesting the crop, it is sold in nearby weekly markets to retailers, middlemen, wholesalers, and small and medium processing units. The sale of the produce depends on the quantity harvested by the farmers. Some farmers sell their produce immediately, while others wait for better market prices. Adamade *et al* (2017) claimed that ginger is an essential crop with

Table 1. Marketing Practices adopted by ginger farmers

Sl. Nos.	Channel used by growers	Frequency	Percentage
1.	Selling in the nearest weekly market	49	81.67
2.	Intermediaries/agent procuring form firm/home	11	18.33

Fig 2. Marketing channel of ginger in the district.



Source: Singh and Feroze(2018)

medicinal, therapeutic, and herbal benefits that are beneficial in several facets of human life. However, the markets for ginger in the district always fluctuate. There is scope for improvement through value addition at the growers' level. Farmers can add significant value by processing and diversifying their raw ginger supply (Sangma and Kalita, 2022). The study explored the flow of ginger and its marketing patterns involving different agents or enterprises in the district.

MATERIALS AND METHODS

The study was conducted in six different villages, namely Kamagre, Botegre, and Chandigre under Rongram block, and Amakgre, Nengja Bolchugre, and Aminda Simsang under Gambigre block, purposively. The data were collected through semi-structured interview schedules. Data were collected by randomly surveying 60 farmers, 20 middlemen, 20 retailers, 10 wholesalers, and 3 medium and 10 small processing unit holders. Secondary information was collected from the District Horticulture Office, articles, newspaper reviews, etc. The data were analyzed using simple statistical tools.

RESULTS AND DISCUSSION

Marketing is problem for the growers because there is no established market for it. Producers sell the product to middleman, retailers, wholesalers and small or medium processing units. The price of the ginger depends on place to place and district to district. Transportation is another barrier for lowest price in the villages.

The maximum prize was in the year 2019, 2020,2022 and 2023 but in the year of 2022, farmers were in lost because of fall in prices of ginger. The reason reported for the same were less demand and rhizome rot in ginger. In 2021, some of the farmers did not harvest the crop because the cost of harvesting or production was higher than the selling price in the market. The produce was wasted in the field itself, and the farmers became demotivated.

Marketing pattern

Due to transportation problem, most of the producer sells their produce to nearby market sometime at lowest price also. Only few farmers sell their product in good price because the good extension contact or available transportation facility. This was equally important in the trade and marketing of ginger where it always witnessed that the producers have no genuine fixture of price (Mawlong, 2017).

The above table showed that 81.67 per of the ginger grower sell the produce in weekly market and only 18.33 percent sold to intermediaries/agent who is directly procuring form his/her firm/home. Generally, the growers who sell their produce from his/her firm because of immediate financial needs and afraid to destroy of the crop by wild animal like pigs.

Fig 3. Value chain analysis of ginger with their margin.

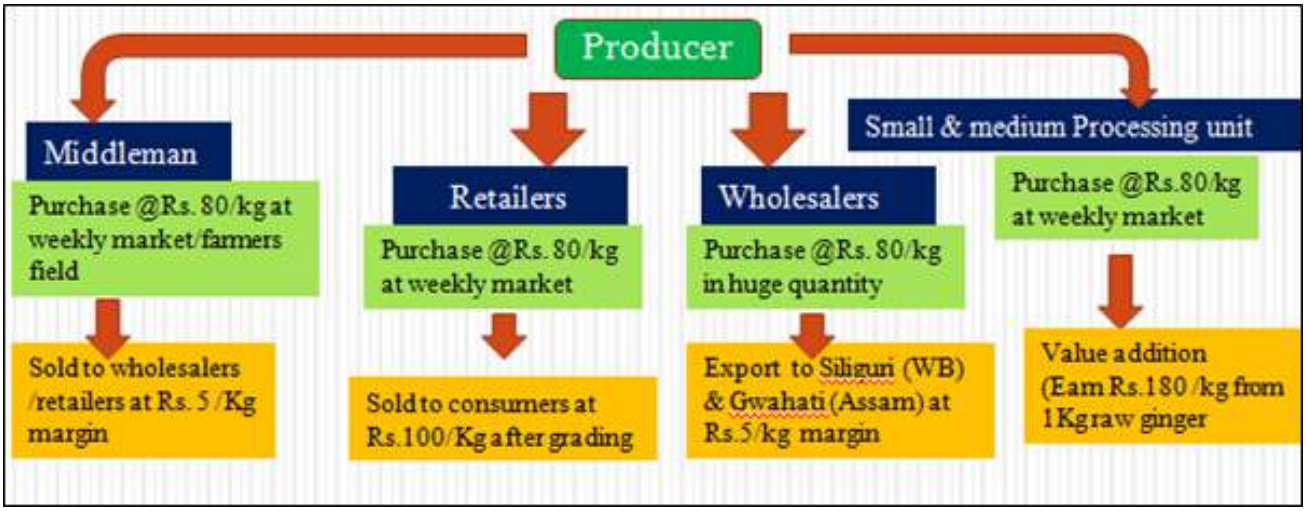


Table 2. Constraints faced by the ginger grower.

Sr. No.	Constrain t	Agree		Disagree	
		No.	%	No	%
A.	**Seed/rhizomes related problems**				
1	Availability of seed/seedlings insufficient quantity	40	66.67	20	33.33
2	Availability good quality seed/rhizome	43	71.67	17	28.33
3	Reasonable price of seed/rhizome	48	80.00	12	20.00
4	No special subsidy on seed/rhizome	58	96.67	2	3.33
5	Problem of rhizome rot	59	98.33	1	1.67
B.	**Input related problems**				
6	Less know -how support from organization	45	75.00	15	25.00
7	Availability of inputs(organic fertilizers/FYM)	57	95.00	3	5.00
8	Availability of labour	35	58.33	25	41.67
C.	**Agronomic practices**				
9	Availability of organic package of practice	40	66.67	20	33.33
10	Availability of extension training facilities	25	41.67	35	58.33
11	Weeds problem	60	100.00	0	0.00
12	Insect/pest problem	52	86.67	8	13.33
13	Availability of Government scheme	4	6.67	56	93.33
D.	**Marketing related problems**				
14	Marketing through middleman/agents	45	75.00	15	25.00
15	Availability of regulated market	5	8.33	55	91.67
16	Un satisfactory market price during selling	40	66.67	20	33.33
17	High cost of production	51	85.00	9	15.00
18	Poor transportation/Own means of transport	58	96.67	2	3.33
E.	**Credit linkage facility**				
19	Acquired loan from bank	3	5.00	57	95.00
20	Availability of credit facility	5	8.33	55	91.67

Value chain analysis

Majority of the remote farmers bring their produced to the weekly market and sell their product before 12.0PM clock at market price set by the different agent/middleman. They are forced to do that because weekly market last upto 12.0PM usually and till this period maximum transaction of buying or selling is over. Ginger farmers have expressed concern over the fact that they were being forced to comply with weight deduction at the hands of traders. The farmers pointed out that out of every ton of ginger sold to traders; they lose around Rs 20,000 worth of ginger due to weight deduction (www.themeghalayan.com).

From the above figure, it was observed that farmers sell ginger to middlemen at Rs. 80 per kg. Middlemen then sell the same ginger to wholesalers or retailers at Rs. 85 per kg. Retailers sometimes purchase ginger directly from farmers at Rs. 80 per kg, and after minimal grading, sell it to consumers at Rs. 100 per kg. Farmers also sell their ginger to wholesalers at Rs. 80 per kg, who then transport it to Siliguri, West Bengal, and Guwahati, Assam for further processing. Wholesalers earn a profit of Rs. 5 per kg through this process. Although their profit per kilogram is small, they buy in large quantities, resulting in significant overall profit. Additionally, small processing units purchase ginger from the market at Rs. 80 per kg and, after some processing, sell it at Rs. 180 per kg, yielding a maximum profit of Rs. 100 per kg. This highlights the importance of value addition and processing in achieving higher income at the farmers' level. Value addition at the farmers' level could significantly increase their profits, considering that the retailers and wholesalers earn only Rs. 5 to Rs. 20 per kg.

Constraints related to Ginger production

In attempting to develop the ginger value chain, a number of constraints have been found which need to be addressed systematically and holistically. Some of the key issues are listed in Table 2

It was observed that 98.33% of respondents identified ginger rhizome rot as the major constraint related to seeds and rhizomes. This was followed by the lack of special subsidies for seeds/rhizomes (96.67%), the reasonable price of seeds/rhizomes (80.00%), and the availability of good quality seeds/rhizomes (71.67%). Regarding input-related constraints, 95.00% of respondents indicated that the availability of organic inputs was a major issue, while 75.00% cited a lack of know-how support from organizations. In terms of market-related constraints, poor transportation and high production costs were reported as major issues by 96.67% and 85.00% of respondents, respectively. It was also seen that all respondent (100%) said that weed problem is the major agronomical constrain followed by insect/pest problem (86.67 %) and availability of organic package of practice (66.67%).

CONCLUSION

The study highlights the various supply chain in respect to ginger in Garo hills. Also, significant constraints faced by ginger farmers in Meghalaya, particularly those in Garo-dominated districts were studied. Major issues include ginger rhizome rot, lack of subsidies, high costs, and poor transportation. The availability of good quality seeds and organic inputs also pose challenges, alongside limited organizational support and fluctuating market prices. Despite these challenges, ginger remains a crucial cash crop for the region. To improve the ginger value chain, targeted interventions are essential. These include providing subsidies for seeds/rhizomes.., improving access to organic inputs, offering better organizational support, and enhancing transportation infrastructure. Addressing these issues can lead to increased productivity, higher farmer incomes, and enhanced market stability. Furthermore, promoting value addition and processing at the farmer level can significantly improve profitability and reduce post-harvest losses, ensuring a more sustainable and resilient agricultural system in Meghalaya. The small entrepreneur having processing unit earn profit of Rs.100 and retailers earn Rs.20 from1 kg raw ginger. The middleman and wholesaler earn profit of Rs.5- 10/Kg. Hence it can be said that ginger-based agro-entrepreneurship should be promoted.

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