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AN ECONOMIC ANALYSIS OF GINGER CROP IN WEST GARO HILLS DISTRICT OF MEGHALAYA

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ABSTRACT
The study was conducted in 2021-2022 to examine ginger's marketing pattern and efficiency in Meghalaya's West Garo Hills district. The study selected 300 farmers using a multi-stage purposive stratified random sampling method to fulfill its objectives.Price spread and marketing margin formula was used for the study. The results indicated that most farmers had marginal landholdings. The study found that the ginger producers used four marketing channels in the district. Channel-I (direct from the producer to consumer) was the most efficient, with an efficiency rate of 13.29%, while channel-IV was the least efficient, with a rate of 3.21%. The producers received the highest share of consumer prices in Channel-I (100%), while Channel-IV had the lowest share of 17.5%. The study concluded that Channel I was the most efficient marketing channel for ginger farmers in the West Garo Hills district. It allowed the producers to receive a fair price for their ginger crop while making it affordable for consumers. This resulted in a maximization of both producer and consumer welfare maximized.
KEYWORDS: *Ginger, Marketing Channels, Price Spread*

INTRODUCTION

The Northeastern hilly region, the green belt of India, which comprises states namely Assam, Arunachal Pradesh, Meghalaya, Mizoram, Nagaland, Tripura and Sikkim harbors rich flora on account of its varied topography, climates, altitudes and has excellent potential for the development of Horticultural crops including spices. It is the hub for significant spices like large cardamom, ginger, ginger, black pepper, chili, bay leaf, etc. which are in great demand and have tremendous potential (Hnamte et al., 2012)[1].

The North Eastern Region of India is known for its rich flora and varied topography, climate, and altitudes. Also, it has great potential for developing horticulture crops like spices. Ginger is the main cash crop amongst the spices that supportlivelihood and increase the economic level of many ginger farmers in the North Eastern region. The other spices in this region are cardamom, chili, coriander, turmeric, black pepper, etc.The northeast region is home to some niche spice crops like Lakadong turmeric, Bird's eye chilli, King chilli and Nadia ginger, which have high market demand for their unique features (Momin et al., 2018)[2]

In Meghalaya, more than 80% of farmers are directly or indirectly dependent upon agriculture.The agroecological condition of the state provides immense opportunity for the commercial ex-plantation of horticultural crops. Among the horticultural crops in Meghalaya state, spices are found an integral place in the socio-economic life of the tribal farmers and recorded an area of 16.82 thousand hectares with the production and productivity of 74.81 thousand tones and 4.44 tones/ha, respectively, during 2011-12 (Anon, 2012)[3].
Ginger, one of the earliest known oriental spices cultivated in the country, is an aromatic perennial rhizome botanically known as Zingiber officinale; India is not only the largest producer but also the major consumer and exporter of spices

[1]*Hnamte, V., Chatterjee, R., Chattopadhyay, P.K. &Pariari, A. (2012). Spices Scenario in the North Eastern States of India with Special Reference to Production and Marketing. J. of Crop and Weed, 8(2):109-112.*
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[3] *Anonymous (2012). Indian Horticulture Database, Published by National Horticulture Board, Ministry of Agriculture, Govt. of India, Gurgaon.*

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in the world (FAOSTAT, 2019)[4].About 24.38 per cent of spices was exported from India during 2013-14, fetching an income of Rs. 116238.22 crore (2482.82$) (Spices Board of India, 2020)[5]. Among the major spices grown, ginger ranked 6th in area and 4th in production in 2015. It contributes about 30 per cent of total global production, followed by China, Nepal, Indonesia, Nigeria, and Thailand. A total of 1047.19 MT of ginger was produced in the country during 2016-17.Assam was the leading spice-producing state in the country, followed by West Bengal and Maharashtra (SpiceBoard of India, 2020).

Meghalaya has a total population (2011 census) of 29.66 lakhs, of which 0.56 lakhs was engaged in the public sector. Total spices production in Meghalaya during 2015-16 was estimated to be 97.82 thousand metric tonnes and ginger alone contributed 65.43 thousand metric tonnes (GoM, 2019). Among the states in NER, Meghalaya is the highest-producing state with a production of 65.43thousand MT, followed by Arunachal Pradesh at 56.58 thousand MT and Nagaland at 55.23 thousand MT (GoI, 2018)[6].

MATERIALS AND METHODS

The present study has been conducted in the west Garo Hills district of Meghalaya state. West Garo Hills district was selected because many farmers are engaged in cultivating ginger. The study was based on primary data collected from ginger farmers through a personal interview method of sampling with the help of a well-prepared, pre-tested interview schedule for the year 2021-22. A sample of 300 farmers and respondents from each intermediary, such as Commission Agent, Village Trader, wholesaler, and Retailer**,**was randomly selected for primary data collection. To determine the costs of marketing, price spread and marketing efficiency for the selected ginger crop, the following formula was employed:

Marketing Channels

Marketing channels are routes through which agricultural products move from producers to consumers.

Marketing Margin

Margin refers to the difference between the price paid and received by a specific marketing agency, such as a single retaileror by any type of marketing agency such as retailers or assemblers or by any combination of marketing agencies such as the marketing system as a whole.

The marketing margin at any stage of marketing was calculated as follows:

$$MM_i = SP_i - (PP_i + MC_i)$$

Where,

MM_i = Marketing margin of the i-th middlemen
SP_i = Selling price of the i-th middlemen
PP_i = Purchasing price of the i-th middlemen

Price Spread

The price spread is the difference between the price paid by the consumer and the price received by the producer. It mainly consists of marketing costs and margins. The price spread analysis will be carried out as follows-(Acharya & Agarwal, 1987)[7]

Producer's share in consumer's rupee = (Producers Share/Consumers Price)X 100

RESULTS AND DISCUSSION

Marketing Channels for Ginger Crop in West Garo Hills District of Meghalaya

Ginger is a spice crop, so farmers usually retain little produce for family consumption. Thus, the maximum quantity of the produce is available as a marketable surplus. In the present study, four channels were identified for marketingGinger. The details of identified marketing channels in ginger marketing in the West Garo Hills district of Meghalaya are as follows:

Table 1: The Marketing Channels for Ginger crop in West Garo Hills District of Meghalaya.

[4]*FAOSTAT. (2019) http://agriexchange.apeda.gov.in.*
[5]*Spices Board of India (2020). Spices area and production. www.indianspices.com.*
[6]*GoI. (2018). National Horticulture Board, Ministry of Agriculture and Farmer Welfare, Government of India, New Delhi. http://www.nhb.gov.in.*
[7]*Acharya, S.S., and Agarwal, N.L. (2011). Agriculture marketing in India (fifth edition). Oxford and IBH publishing Co. Pvt. Ltd., New Delhi, pp 48.*

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Channels	Intermediaries in the Channels
Channel I	Producer → Consumer
Channel II	Producer→Wholesaler →Retailer→ Consumer
Channel III	Producer→ Village Trader→ Retailer→ Consumer
Channel IV	Producer →Commission Agents→ Wholesaler →Retailer →Consumer

Source: Field Survey (2021-22)

Table 1 shows marketing channels adopted by ginger producers in the West Garo Hills district of Meghalaya. There are mainly four channels. Channel-IV has three agents: producer, commission agents, wholesaler, retailer and consumer. The producer is the sole originator of the ginger crop,and the consumer is the ultimate user of that crop. Subsequently, commission agents, wholesalers and retailers are the intermediaries of the marketing channels. However, this channel has the longest supply chain. In channel III, two agent intermediaries, namely the village trader and retailer, had been engaged in addition to the producer and consumer. In the same way, in channel II, two agents, a wholesaler and a retailerwas engaged between the producer and consumer. Finally, in channel I, there was no engagement of intermediaries between producer and consumer, and in this channel, consumers directly purchase ginger crops from producers.

Marketing Margin

Table 2 shows that the highest marketing margin of ginger in the study area was found under channel IV (Rs 61) due to the involvement of many intermediaries in this Channel, followed by channel III with Rs. 53 per kg. The total marketing margin in channel II was Rs. 48 per kg, respectively. Therefore, Channel II was found to be the most efficient channel from the point of view of better returns to the producer-seller. Naik et al. (1995) stated similar results.

Price Spread of GingerCrop in West Garo Hills District of Meghalaya

The price spread is the difference between the consumer's price and the producer's net price for the equivalent quantity of ginger crops. However, it includes the margin of intermediaries and marketing costs at different levels.

Table 2 shows the price spread of ginger crop through marketing channel I in the West Garo Hills district of Meghalaya. In marketing channel, I, there is no intermediary between producers and consumers. Producers directly sell to consumers or consumers purchase from producers. However, it is the most efficient marketing channel for the ginger crop in Meghalaya from the point of view of consumers' and producers' surplus. Consumers pay a minimum price for ginger; producers receive the highest price for their crop. The sale price of the producer or purchase price of the consumer was Rs 50 per Kg. The costs incurred by the producer was Rs 3.5 per kg (i.e., transportation costs and loading charges). Hence, the net price received by the producer was Rs 46.5 per Kg. The price spread was Rs. 3.5per kg, equal to the cost incurred by the producer (Rs.3.5).

The price spread of ginger crops in Table 2 through marketing channel II in the West Garo Hills district of Meghalaya shows the value and cost of production are depicted per kg. In marketing channel II, producers, wholesalers, retailersand consumers are engaged.Further, the sale price of the producer or purchase price of the wholesaler was Rs 21.00 per kg. In the marketing of the ginger crop, the expenses borne by the producer wasRs 6.00 per kg. After deducting expenses borne by the producer (from the ginger crop's sale price), the producer's net price was Rs 15 per kg. Further, expenses borne by the wholesaler was the cost of a market fee of Rs 5.00 per kg. Hence, the total cost borne by the wholesaler was Rs 5.00 per kg. The wholesaler's margin was2. The wholesaler's sale or retailer's purchase price was Rs.28 per kg. Further, the total cost borne by the retailer was Rs 6. Therefore, the sale price of the retailer or purchase price of the consumer (Rs.80) contains the purchase expenses borne by the retailer, i.e., transportation cost, storage, and marketing.Ultimately, in this marketing channel, ginger is supplied by retailers to the consumer. The sale price of the retailer or purchase price of the consumer includes the purchase price of the retailer (Rs 28.00), net margin (Rs 46), and the retailer bears expenses of (Rs 6.00). Hence, the consumer's purchase price was Rs 80.00 per kg.

Table 2 also shows the price spread of ginger crops through marketing channel III in the West Garo Hills district of Meghalaya. In marketing channel III, the main agents are the producer, village trader, retailer, and consumers. Further, the sale price of the producer or purchase price of the village trader was Rs 18.00 per kg. In the marketing of the ginger crop, the expenses borne by the producer was Rs 5.00 per kg. After deducting expenses borne by the producer (from the ginger crop's sale price), the producer's net price was Rs 13 per kg. Further, expenses borne by the village trader

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was the cost of a market fee of Rs 4.00 per kg. Hence, the total cost borne by the village trader was Rs 4.00 per kg. The village traders' margin was 3. The village trader or retailer's purchase price was Rs.25 per kg. Further, the total cost borne by the retailer was Rs 5. Therefore, the sale price of the retailer or purchase price of the consumer (Rs. 80) contains the purchase expenses borne by the retailer, i.e., transportation cost, storage, and marketing. Ultimately, in this marketing channel, ginger is supplied by retailers to the consumer. The sale price of the retailer or purchase price of the consumer includes the purchase price of the retailer (Rs 25. 00), net margin (Rs 50), and the retailer bears expenses of (Rs 5.00). Hence, the consumer's purchase price was Rs 80.00 per kg.

Lastly, Table 2 shows the price spread of ginger crops through marketing channel IV in the West Garo Hills district of Meghalaya. The value and cost of production are depicted per kg. In marketing channel IV, producers, Commission agents,wholesalers, retailers and consumers are engaged. Further, the sale price of the producer or purchase price of the commission agent was Rs 19.00 per kg. In the marketing of the ginger crop, the expenses borne by the producer was Rs 4.00 per kg. After deducting expenses borne by the producer (from the ginger crop's sale price), the producer's net price was Rs 15 per kg. Further, the commission agent's sale price or wholesaler's purchase price was Rs 35.00 per kg. In marketing the ginger crop, the commission agent's expenses was Rs 5.00 per kg, and the marketing margin was Rs 11 per kg.

Further, expenses borne by the wholesaler was the cost of a market fee of Rs 3.00 per kg. Hence, the total cost borne by the wholesaler was Rs 3.00 per kg. The wholesaler's margin was 7. The wholesaler's sale or retailer's purchase price was Rs.45 per kg. Further, the total cost borne by the retailer was Rs 12. Therefore, the sale price of the retailer or purchase price of the consumer (Rs. 100.00 per kg) contains the purchase expenses borne by the retailer, i.e., transportation cost, storage and marketing. Ultimately, in this marketing channel, ginger is supplied by retailers to the consumer.

Table2 Marketing cost, marketing margin and price spread of various market intermediaries involved in the marketing of ginger (Rs per kg)

Particulars	Unit	Channel-I	Channel-II	Channel-III	Channel-IV
Producer					
Price Received	Rs	50	21	18	19
Marketing Cost Incurred	Rs	3.5	6	5	4
Net Price Received	Rs	46.5	15	13	15
Commission Agent					
Purchase Price	Rs	-	-	-	19
Marketing Cost Incurred	Rs	-	-	-	5
Sale Price	Rs	-	-	-	35
Net Marketing Margin	Rs	-	-	-	11
Margin as % of Purchase Price	%	-	-	-	57.89
Village Trader					
Purchase Price	Rs	-	-	18	-
Marketing Cost Incurred	Rs	-	-	4	-
Sale Price	Rs	-	-	25	-
Net Marketing Margin	Rs	-	-	3	-
Margin as % of Purchase Price	%	-	-	16.67	-
Wholesaler					
Purchase Price	Rs	-	21	-	35
Marketing Cost Incurred	Rs	-	5	-	3
Sale Price	Rs	-	28	-	45
Net Marketing Margin	Rs	-	2	-	7
Margin as % of Purchase Price	%	-	9.52	-	20
Retailer					
Purchase Price	Rs	-	28	25	45
Marketing Cost Incurred	Rs	-	6	5	12
Sale Price	Rs	-	80	80	100
Net Marketing Margin	Rs	-	46	50	43

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Margin as % of Purchase Price	%	-	164.29	200	95.56
Consumer's Price	Rs	50	80	80	100
Total Marketing Cost	Rs	3.5	17	14	24
Total Marketing Margin	Rs	-	48	53	61
Total Price Spread	Rs	-	59	62	81
Price Spread as Per cent of Consumer's Rupee	%	-	73.75	77.5	81
Producer's Share in Consumer's Rupee	%	93	26.25	22.5	19

Source: Field Survey (2021-22)

The sale price of the retailer or purchase price of the consumer includes the purchase price of the retailer (Rs 45. 00), net margin (Rs 43), and the retailer bears expenses of (Rs 12.00). Hence, the consumer's purchase price was Rs 100.00 per kg. However, the longer the marketing channel a farm has the greater will be the price spread for that farm produce. In economic terms, existing literature highlighted that the marketing channels should be as short as possible, which benefits both the producers and consumers. Channel IV is the most extended marketing channel, and the price spread is also the highest in this channel.

CONCLUSION

It can be concluded that among the marketing channels adopted by gingerfarmers in the West Garo Hills district of Meghalaya, the channel I (direct from the producer to the ultimate consumer) was the most efficient because, through this channel, the producer receives a reasonable price for their ginger crop. The consumer received ginger at the lowest prices. Hence, both the consumer and producer's surplus was maximized.

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