



## Analysis of Gerbera cut flower marketing in East Khasi Hills district of Meghalaya

Abhishek Prakash<sup>1</sup> • Binodini Sethi<sup>2</sup> • N. Anand Kumar Singh<sup>3</sup>

<sup>1</sup>MBA (ABM) Student, <sup>2</sup>Professor, Agri Business Management and <sup>3</sup>Assistant Professor, Agricultural Economics, School of Social Sciences, CPGS-AS (CAU-I), Umiam, Meghalaya

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### ABSTRACT

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Flowers are represented as beauty, purity, peace, and love. Among the global floriculture industry, gerbera cut flower occupies the 5<sup>th</sup> position in the international flower trade whereas it occupies 6<sup>th</sup> position in India with area and production of 1150.05 hectares and 25554.76 MT respectively. Among the north eastern states of India, the production of gerbera in Meghalaya was found to be 0.02 MT during the year 2021. Floriculture Development scheme and Mission for Integrated Development of Horticulture (MIDH) scheme were proposed by department of agriculture for welfare of farmers to promote the horticulture. Thus, to study profitability of gerbera farmers of Meghalaya, the involvement of different stakeholders in supply chain of gerbera in East Khasi Hills district of Meghalaya has been estimated. Total number of 30 gerbera producers from Mawphlang block and Myllem block and 18 market intermediaries from Bara bazar and Laitumkhrah market from East Khasi Hills district of Meghalaya were selected randomly. Three marketing channels were identified in marketing of gerbera flowers with involvement of wholesalers, retailers and local traders. Marketing efficiency was found to be highest in channel-III (8.52) followed by channel-II (2.67) and channel-I (2.14). The maximum quantity of the produce was disposed of through channel-I (68.53%).

### 1. Introduction

Flowers are represented as beauty, purity, peace, and love. As these are associated with the social belief in a very complex manner and without the use of flower no any social function is complete. As more and many greater numbers of people are showing interest and they are associating themselves with this industry. Thus, in recent times and especially in past three decades, due to change in life styles and increased urban prosperity, floriculture assumed into a specific commercial status. Nearly in 145 countries, the cultivation of cut flower is known. Cultivation of flower is done both in open as well as in protected condition like polyhouses and green houses. The total export of Indian floriculture was around US \$ 103.47 million in 2021-22 (APEDA, 2022). According to national horticulture database published by National Horticulture Board, the area under the floriculture production in India is 322 thousand hectares with a production of 2152 thousand tonnes loose flowers and 828 thousand tonnes cut flowers (APEDA, 2021). On commercial basis, the floriculture is cultivated

among several states with Andhra Pradesh (19.1%), Tamil Nadu (16.6%), Madhya Pradesh (11.9%) and it is going ahead with other producing states like Karnataka, West Bengal, Mizoram, Gujarat, Orissa, Jharkhand, Haryana, Assam and Chhattisgarh (APEDA, 2021). Gerbera (*Gerbera jamesonii* L) is a member of the asteraceae family. It is considered as native to tropical regions of South America, Africa and Asia. Gerbera is also known as transvaal daisy or barberton daisy. In India, gerbera flowers are broadly distributed between heights of 1300 meters to 3200 meters. Gerbera flower has extensive variety of colors among which yellow, orange, cream white, pink, brick red, red and various intermediate colors are available. The optimum day and night temperature of 27°C and 14°C respectively are considered ideal for gerbera cultivation. Sunlight of 400 watts/m<sup>2</sup> for the growth and development of gerbera is necessary. Pune, West Bengal, Orissa, Karnataka, Uttarakhand, Parts of Sikkim, Nagaland, Meghalaya, and Arunachal Pradesh are the states which are involved in commercial production of gerbera and the flowers are being sent to local and non-local market.

\*Corresponding author: [itzabhishekprakash@gmail.com](mailto:itzabhishekprakash@gmail.com)

Among the global floriculture industry, gerbera cut flower occupies the 5<sup>th</sup> position in the international flower trade (Hedauet *al.*,2012) whereas it occupies 6<sup>th</sup> position in India with area and production of 1150.05 hectares and 25554.76 MT respectively (NHB, 2016). Among the north eastern states of India, the production of gerbera in Meghalaya was found to be 0.02 MT during the year 2021 (APEDA, 2022). Considering the natural advantages, total 13 Horti-hubs have been established in the state of Meghalaya. These Horti-hubs works on the hub and spoke model. Hubs are responsible for development of spokes (Syiem and Marak, 2016). Along with a successful status of floriculture in Meghalaya it also involved in the formation of linkage between the producers and markets.

## 2. Methodology

The present study was conducted in Mawphlang block and Myllem block of East Khasi Hills of Meghalaya. Both primary and secondary data were collected for study. Floriculture Development scheme and Mission for Integrated Development of Horticulture (MIDH) scheme were proposed by department of agriculture for welfare of farmers to promote the horticulture. Beneficiaries of these schemes were selected for study. Mawreng and Lyngkhvir village were selected under Mawphlang block and Mawkriah East village was selected under Myllem block purposively. A sample of 13 farmers from Mawreng village, 11 farmers from Lyngkhvir village and 6 farmers from Mawkriah East village were drawn randomly for the study. For studying the marketing aspects, Bara bazar and Laitumkhrah markets were selected purposively. 18 numbers of total market intermediaries with wholesalers, retailers and local traders as stakeholders were chosen as market intermediaries randomly. Totally, the sample size was 48 which consist of both farmers and market intermediaries. Producers' surplus, Marketing cost, Price spread, Farmer's share in consumer rupees, Marketing efficiency, Marketing margin were used as analytical techniques.

### Producers' surplus;

Marketable surplus;  $Ms = P - C$

Where,

$Ms$  = Marketable surplus

$P$  = Total production

$C$  = Personal consumption by growers

Marketed surplus;  $Mt = Ms - Lt$

Where,

$Mt$  = Marketed surplus

$Lt$  = Transportation loss/ Handling loss

### Marketing Cost;

$C = C_F + C_{m1} + C_{m2} + C_{m3} + \dots + C_{mi}$

$C = C_F + \sum C_{mi}$

Where,

$C$  = Total cost of marketing of the commodity

$C_F$  = Cost paid by the producer at the time the produces leave the farm till he sold it

$C_{mi}$  = Cost incurred by the  $i^{\text{th}}$  middleman in the process of buying and selling the product

### Price spread;

Price spread = Price paid by consumer- Price received by producer

### Farmer's share in the consumer rupee;

$Fs = (Fp/Cp) \times 100$

Where,

$Fs$  = Farmer 's share in consumer rupee (percentage)

$Fp$  = Farmers' price

$Cp$  = consumers' price

### Marketing Efficiency;

$MME = Fp/(Mc+Mm)$

Where,

$Fp$  = Net price received by farmer

$Mc$  = Marketing cost

$Mm$  = Marketing margin

### Marketing margin;

$A_{mi} = P_{ri} - (P_{pi} + C_{mi})$

Where,

$A_{mi}$  = Absolute margin of  $i^{\text{th}}$  middleman

$P_{ri}$  = total value of receipts per unit (sales price)

$P_{pi}$  = Purchase value of goods per unit (purchase price)

$C_{mi}$  = Cost incurred on marketing per unit

## 3. Results

### a. Marketing pattern of gerbera flower

Marketing is an important aspect for efficient and successful functioning of any occupational attempt thus it is a crucial feature for any business. Marketing is a feature by which the stem of gerbera flower as a produce is disposed from gerbera farmer to the point of consumption. The markets which are indulge in marketing of flowers are unorganized and primitive. The disposal pattern of gerbera flower through various marketing channel, price spread of the identified channel, marketing cost involved, marketing efficiency of the respective channels *etc.*, have been worked out and presented under the following heads:

## I. Producers' surplus

Total quantity of gerbera stem produced along with quantity of gerbera stem retained by producers for different purposes and estimated marketed surplus and marketable surplus is depicted. The number of gerbera stems retained by producers in the study area were found to be 110, in which stem for personal consumption contributes 4.29 % followed by stem sending to relatives with contribution of 1.61 %. After deduction of gerbera stem retained by farmers from total production, the remaining number obtained were marketable surplus, which was found to be 94.10 % of total production per annum. The losses in handling made further reduction in marketable surplus and made it to the actual quantity marketed. Value of marketed surplus was found to be 91.15 % of the total production per annum. Table below indicating marketable & marketed surplus of gerbera stem per annum:

## II. Marketing channels of gerbera farmers

The gerbera flowers were harvested as stem from the polyhouse of farmers who were beneficiaries of governmental schemes like Horticulture Mission for North East and Himalayan Region (HMNEH) scheme or Floriculture Development scheme. Thus, the major marketing channels for the cut flower gerbera were identified as:

**Channel-I:** Producer → Wholesaler → Retailer → Consumer (68.53%)

**Channel-II:** Producer → Local → Trader → Retailer → Consumer (23.24%)

**Channel-III:** Producer → Consumer (8.24%)

Thus, it can be observed that channel-I was the most leading channel in marketing of gerbera flower under the study area. Table below showing distribution of gerbera stem in different channels from marketed surplus.

**Table 3.1.** Marketable & marketed surplus of gerbera stem (stem/annum)

Particulars	Production
Total Production	1865 (100.00)
Total Consumption (a + b)	110 (5.90)
a. Personal Consumption	80 (4.29)
b. Sending to Relatives	30 (1.61)
<b>Marketable surplus</b>	<b>1755</b> <b>(94.10)</b>
Handling loss	55 (2.95)
<b>Marketed surplus</b>	<b>1700</b> <b>(91.15)</b>

Note: Figures in parentheses indicate percentages to total.

## 1. Marketing cost and margin of gerbera flower

The marketing margin and price spread from the selected markets has been described under three marketing channels.

**Channel-I:** Producer → Wholesaler → Retailer → Consumer

**Channel-II:** Producer → Local Trader → Retailer → Consumer

**Channel-III:** Producer → Consumer

In channel-I, the wholesaler purchased gerbera flower stem from the farmer's polyhouse and further sold to retailer. The retailer after purchasing gerbera flower stem from wholesaler's shop further sold to consumer. Hence, in this marketing channel two intermediaries were involved. The price received by producer was 15.00 ₹ per stem, which was 68.18 per cent of consumer's rupee. The marketing cost incurred by wholesaler on per stem of gerbera flower in packaging, loading & unloading, transportation and shop rent were 3.95 per cent, 3.91 per cent, 2.45 per cent and 0.01 per cent of consumer's rupee respectively. Spoilage loss per stem of gerbera flower by wholesaler was found to be 1.32 per cent of consumer's rupee. Wholesaler marketing margin was found to be 1.44 ₹ per stem which contributing 6.53 per cent of consumer's rupee. Cost incurred on per stem of gerbera flower by retailer in packaging, loading & unloading, transportation and shop rent were found to be 3.59 per cent, 0.18 per cent, 0.09 per cent and 0.03 per cent of consumer's rupee respectively. The spoilage loss per stem of gerbera flower by retailer was accounted to be 0.41 per cent of consumer's rupee. The retailer's margin was found to be 2.05 ₹ per stem which was 9.33 per cent of consumer's rupee. The price paid by consumer in this channel was 22.00 ₹ per stem. In channel-II, the local trader purchased gerbera flower stem from polyhouse of farmer and further sold it to retailer. Hence, two intermediaries were involved in this channel. The price received by producer was 16.00 ₹ per stem, which is accounted to be 72.73 per cent of consumer's rupee. The marketing cost incurred by local trader on per stem of gerbera flower in packaging, loading & unloading and transportation was found to be 1.18 per cent, 1.27 per cent and 0.68 percent of consumer's rupee respectively. The spoilage loss per stem of gerbera flower by local trader was found to be 0.82 per cent of consumer's rupee. The margin of local trader was accounted as 1.13 ₹ per stem which is 5.14 per cent of consumer's rupee. Cost incurred on per stem of gerbera flower by retailer in packaging and shop rent were found to be 6.73 per cent and 0.03 per cent of consumer's rupee respectively. The spoilage loss per stem of gerbera flower by retailer was accounted to be 0.55 per cent of consumer's rupee. The retailer's margin was found to be 2.39 ₹ per stem which is 10.88 per cent of consumer's rupee.

**Table 3.2.** Disposal pattern of gerbera flower through different marketing channels.

Marketing channel	Quantity (no. of stem)	Quantity (%)
Channel-I	1165	68.53
Channel-II	395	23.24
Channel-III	140	8.24
<b>Total</b>	<b>1700</b>	<b>100.00</b>

The price paid by consumer in this channel was 22.00 ₹ per stem.

In channel-III, the consumer is directly purchasing gerbera flower stem from farmer. As no intermediaries are involved here, so this channel was considered as direct marketing. The net price received by gerbera farmer in this channel was found to be 16.11 ₹ per stem, which was 89.50 per cent of consumer's rupee. The marketing cost incurred on per stem of gerbera flower by farmer in packaging, loading

& unloading, transportation and market fee were accounted to be 4.72 per cent, 1.94 per cent, 3.83 per cent and 0.01 per cent of consumer's rupee respectively. The price paid by consumer in this channel was found to be 18.00 ₹ per stem. As the maximum of stem of gerbera flowers were disposed of through channel-I, thus this channel was found to be most popular from the above discussion. Table below illustrating about marketing cost and marketing margin of gerbera flower through different channel in ₹/stem.

**Table 3.3.** Marketing cost & margin of gerbera flower through different marketing channel.  
(₹/stem.)

Particulars	Channel-I	Channel-II	Channel-III
Price received by Producer	15.00 (68.18)	16.00 (72.73)	16.11 (89.50)
<b>Cost incurred by Producer</b>			
(a) Packaging	-	-	0.85 (4.72)
(b) Loading & unloading	-	-	0.35 (1.94)
(c) Transportation	-	-	0.69 (3.83)
(d) Market fee	-	-	0.001 (0.01)
<b>Total (a to d)</b>	<b>0.00</b> (0.00)	<b>0.00</b> (0.00)	<b>1.89</b> (10.51)
Producer's sales price	15.00	16.00	18.00
Wholesaler's sales price	19.00	-	-
<b>Cost incurred by Wholesaler</b>			
(a) Packaging	0.87 (3.95)	-	-
(b) Loading & unloading	0.86 (3.91)	-	-
(c) Transportation	0.54 (2.45)	-	-
(d) Spoilage	0.29 (1.32)	-	-
(e) Shop rent	0.003 (0.01)	-	-
<b>Total (a to e)</b>	<b>2.56</b> (11.65)	-	-

Wholesaler margin	1.44 (6.53)	-	-
Local trader's sales price	-	18.00	-
<b>Cost incurred by Local trader</b>			
(a) Packaging	-	0.26 (1.18)	-
(b) Loading & unloading	-	0.28 (1.27)	-
(c) Transportation	-	0.15 (0.68)	-
(d) Spoilage	-	0.18 (0.82)	-
(e) Market fee	-	-	-
<b>Total (a to e)</b>	-	0.87 (3.95)	-
Local trader margin	-	1.13 (5.14)	-
Retailer's sales price	22.00	22.00	-
<b>Cost incurred by Retailer</b>			
(a) Packaging	0.79 (3.59)	1.48 (6.73)	-
(b) Loading & unloading	0.04 (0.18)	0.00	-
(c) Transportation	0.02 (0.09)	0.00	-
(d) Spoilage	0.09 (0.41)	0.12 (0.55)	-
(e) Shop rent	0.01 (0.03)	0.01 (0.03)	-
<b>Total (a to e)</b>	<b>0.95</b> (4.30)	<b>1.61</b> (7.30)	-
Retailer's margin	2.05 (9.33)	2.39 (10.88)	-
<b>Price paid by consumer</b>	<b>22.00</b>	<b>22.00</b>	<b>18.00</b>

**Note:** Figures in parentheses are percentages to consumer's rupee.

#### iv. Price spread of gerbera flower

It was found that net price received by gerbera farmer was highest in channel-III (16.11 ₹/stem) which contributes 89.50 per cent of consumer's rupee, followed by channel-II (72.73 per cent of consumer's rupee) and channel-I (68.18 per cent of consumer's rupee). The total marketing cost was found to be highest in channel-I (3.51 ₹/stem), followed by channel-II (2.48 ₹/stem) and was found least in channel-III (1.89 ₹/stem). Increase in marketing cost will lead to reduce the farmer's share in consumer's rupee. As less the intermediaries will involve into the channel, the more will be

farmer's share in consumer's rupee because marketing cost will be less and accordingly price spread will be less. In channel-I, high price spread was mainly due to more margins earned by various intermediaries involved in process of marketing. Table below showing channel wise price spread of gerbera flower in ₹/stem.

**Table 3.4.** Channel wise price spread of gerbera flower.

(₹/stem.)

Particulars	Channel-I	Channel-II	Channel-III
Price received by gerbera farmer	15.00 (68.18)	16.00 (72.73)	16.11 (89.50)
Marketing cost	3.51 (15.95)	2.48 (11.27)	1.89 (10.50)
Marketing margin	3.49 (15.86)	3.52 (16.00)	-
Price spread	7.00 (31.81)	6.00 (27.27)	1.89 (10.50)
Consumer's price	22.00 (100.00)	22.00 (100.00)	18.00 (100.00)

**v. Market efficiency of gerbera flower marketing channel.**

Market efficiency for stem of gerbera flower is illustrated in table 4.2.5. It can be observed that channel-I has maximum value (7.00 ₹/stem) of price spread followed by channel-II (6.00 ₹/stem) and least value of price spread was found in channel-I (1.89 ₹/stem). The channel-III was found to be most efficient channel with score of 8.52 followed by channel-II and channel-I with score of 2.67 and 2.14 respectively. Even though channel-III was most efficient than channel-I but the major portion of stem of gerbera flowers were marketed through channel-I. This is because, as the persistent capacity of stem of gerbera flower is less, thus, because of its perishable nature, channel-III restricts producer to sale stem of gerbera flower in large quantity to consumer. Table below indicating market efficiency of gerbera flower in ₹/stem.

**5. Conclusion**

The study found about the marketing of gerbera flower with involvement of different stakeholders. In supply chain of gerbera flower, three major marketing channels were identified in the study area. The marketing efficiency of channel-III is more compare to other channels. But the

gerbera producer could not sell their produce in large quantity to channel-III due to low persistent capacity of cut flower. Thus, channel-I contributes to maximum dispose of cut flower from producer's polyhouse.

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**Table 3.5.** Market efficiency of gerbera flower marketing channels.

(₹/stem.)

Particulars	Channel-I	Channel-II	Channel-III
Price paid by consumer	22.00	22.00	18.00
Total Marketing cost	3.51	2.48	1.89
Total Marketing margin	3.49	3.52	-
Price spread	7.00	6.00	1.89
<b>Market efficiency</b>	<b>2.14</b>	<b>2.67</b>	<b>8.52</b>
Producer share in consumer's rupee (%)	68.18	72.73	89.49

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