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# Annexures

## ANNEXURE I (a)

### Interview Schedule on “Agricultural Marketing Behaviour and Practices of Rural Farmers in Dibrugarh District, Assam”.

Background Information:

Name of the Village ..... Block.....

Gram Panchayat..... Post.....

Name of the Respondent.....

Telephone/ Mobile No.....

Email Id .....

#### A. General Profile of the Farmers

##### 1. Socio-Economic profile of the Farmers

Sl No.	Socio- Economic Factors	Categories	Tick
1	Age (Years)	Less than 35 (Young)	
		35-55 (Middle)	
		Above 55 (Old)	
2	Gender	Male	
		Female	
3	Caste	General	
		OBC	
		MOBC	
		SC	
		ST	
4	Religion	Hindu	
		Muslim	
5	Educational Qualification	Illiterate	
		Primary school education	
		Middle school education	
		High school education	
		Higher secondary education	
		Graduation & above	
6	Marital Status	Married	
		Unmarried	
		Divorced	
		Widowed	
7	Nature of Occupation	Farming as a sole profession	
		Farming + Business	
		Farming + Agricultural labourer	
		Farming + Services (Salaried person)	
	If Agriculture, then	Fully engaged in agriculture	
		Partly engaged in Agriculture	
8	Types of House	Hut	
		Katcha	
		Mixed	
		Pucca	
9	Annual Income	Less than 50,000	
		50,000 – 1 lakh	

Sl No.	Socio- Economic Factors	Categories	Tick
		Above 1 lakh	
		No	
10	Years of Experience in Farming:	0-5	
		5-10	
		10-15	
		Above 15	

## 2. Information on Family Background of the Farmer

S. No.	Family Background Details	Categories	TICK
1	Type of Family	Nuclear	
		Joint family	
		Extended Family	
2	Nature of Occupation	Agriculture	
		Agriculture + Business	
		Agriculture + Agricultural labourer	
		Agriculture + Services (Salaried person)	
3	Family size	2-3 (small)	
		4-5 (medium)	
		6 & above (Large)	
4	Head of the Family	Father	
		Mother	
		Husband	
		Grandfather	
		Grandmother	
5	No. of Family Members engaged in Cultivation	1	
		2	
		3	
		4 & above	
6	Annual Income	Less than 50,000 (Low income)	
		50,000 – 1 lakh (middle income)	
		Above 1 lakh (High income)	

## B. Farming Resources utilized by the Farmers

### 1. Land Details of the Farmers

S. no.	Land Details	Particulars	Tick
1	Ownership of Land	Owned	
		Leased – in (Rent)	
2	Size of Land	Marginal Farmers (0.4-1 Ha)	
		Small Farmers (1-2 Ha)	
		Medium Farmers (2-3 Ha)	
		Large Farmers (3-4 Ha )	
		Very Large Farmers (Above 4 Ha)	
3	Type of land	Wet	
		Arable	
		Dry	
4	Type of soil	Alluvial	
		Black	
		Red	
		Clay	

## 2. Daily Work schedule of the Farmers

Time	Activities

## 3. Material Possession inclusion of Farmers.

### 3.1 Agricultural Implements used by the Farmers

Implements	Yes	No
Bullock		
Tractor		
Power Tillers		
Diesel engine		
Electric motor		
Cultivator		
Plough		
Seed drill		
Yoke		
Spade		
Winnower		
Hoe		
Shavel		
Axe		
Mould board plough		
Leveler		

### 3.2 House Hold items Available at the Farmers Home

Appliances Available	Yes	No
Gas stove		
Clock		
Heater		
Fan/cooler		
Electric Iron		
Pressure cooker		
Sewing machine		
Double bed		
Fridge		
Specify if any		
Transportation Vehicles Owned	Yes	No
Bullock cart		
Cycle		
Trolley		
Bike/Scooter		
Car		

Appliances Available	Yes	No
Auto Rickshaw		
Battery Rickshaw		
Bus		
Truck		
Specify if any		
Communication Media	Yes	No
Radio		
T.V.		
Mobile		
Agricultural magazines		
General Magazines		
Agricultural Books		
News paper		
Specify if any		

#### 4. Village Infrastructure Facilities of the Farmers

Facilities Available	Particulars	Yes	No
Type of road	Mud road		
	Black toper road		
	Concrete road		
	Paver Block		
Condition of the road	Good		
	Satisfactory		
	Poor		
Is toilet facility available in yourhouse?	Yes		
	No		
School Facilities	Primary schools		
	Junior Secondary schools		
	Senior Secondary schools		
Health Facility	Public Health Centre		
	Community Health Centre		
	Private Nursing Home		
	Traditional Practitioner		
Electricity Connection			
Drinking water facilities			
Bank Facility			
Post office facility			
Is Anganwadi Centre available?			
Is e-connection centre available in the village?			

#### 5. Irrigation Pattern followed by the Farmers

Irrigation details	Aspects	Tick
Source of irrigation for Crops cultivation	River	
	Pond water	
	Tube well	
	Open well	
	Tank	
	Others	

Irrigation details	Aspects	Tick
Irrigation method	Traditional ( Manually)	
	Modern (Mechanical)	
Types of Irrigation	Surface Irrigation	
	Localized Irrigation	
	Sprinkler Irrigation	
	Drip Irrigation	
	Centre Pivot Irrigation	
	Sub Irrigation	
Is there any subsidy for water and electricity usage	Yes	
	No	
Do you had/have water scarcity	Yes	
	No	
If yes, reason	Overuse	
	Drought	
	Lack of government planning	
	Urbanization	
	Lack of rain	
How did you avoid water scarcity situation	Storing water	
	Recycling waste water	
	Aquaponics (Aquaculture + Hydrponics)	
	Rain Water harvesting	

#### 6. Cropping practices and Decision making pattern among the Farmers

Particulars		Yes	No
Type of cropping system adopted	Crop rotation		
	Intercropping		
Change of crop pattern from year to year	Yes		
	No		
Selection of crop pattern	Men		
	Women		
	Both men and Women		
By whom is the cultivation done	Self-cultivation		
	Labour		
Source of labour used for cultivation	Family labour		
	Hired labour		
Cultivate seasonal crops	Yes		
	No		
Advices	Experienced farmers		
	Advise of progressive farmers		
	Advise of Agriculture Officers		
	Help of Krishi Seva Kendra		

Particulars		Yes	No
	TV Programmes related to agricultural		
	Internet		
	Attended Agricultural Workshop/Seminars		

#### 7. Varieties of Vegetables cultivated by the Farmers

Types of Vegetables	VARIETIES	Yes	No
Leafy Vegetables			
Cruciferous			
Marrow			
Roots & Tubers			
Bulb			
Pod & Seed			

#### 8. Inputs used by the Farmers for Vegetables Cultivation

Details on Seeds		YES	NO
Type of seeds for Cultivating crops	Local		
	Improved		
Nature of seeds	Nature hybrid		
	Traditional preservative seeds		
	HYV seeds		
Source of improved seeds of crops	Agriculture office or Development agents		
	Known source in market		
	Unknown source in market		
	Cooperatives		
	Fellow		
	NGOs		
Varieties of seeds selected	Others specify		
	Better keeping and processing quality		
	Disease tolerance		
	Low cost		
<b>Details on Fertilizers</b>			
Type of fertilizers used	Organic		
	Inorganic (chemical)		
Reason for organic fertilizers	Cheap and best		
Reason for inorganic	Easily available		
	Good yield		

Details on Seeds		YES	NO
fertilizers	Eco friendly		
	Traditionally used		
	Cheap and best		
Source of fertilizer	Agriculture office or Development agents		
	Known source in market		
	Unknown source in market		
	Livestock manure (from local area)		
<b>Details on Pesticides</b>			
Type of pesticides used	Organic		
	Inorganic		
Reason for inorganic pesticides	Cheap and best		
	Easily available		
	Known source in market		

## 9. Membership details and Training details of the Farmers

### 9.1 Membership Details of the Farmers

Membership	Aspects	Tick
Are you a member of any Organization?	Yes	
	No	
If, Yes where?	Panchayat union	
	Co-operative societies	
	Self-help group(SHG)	
	Farmers discussion group	
	MahilaMandals	
	Farmers market	
	Farmer association	
Involvement in Social Participation	Yes	
	No	
If Yes, where haveyou involved ?	Local Festival Celebration Day	
	Bihu Celebration	
	Caste Group	
	Village Panchayat	
	Farmers Mela	
	Taluka Panchayat	
	Farmers Day	
	School Committee	
	District Panchayat	
	Village Haats	
	Specify if any	
Do you own Kisan Credit Card?	Yes	
	No	
If Yes, what is the purpose?	To meet the short-term credit requirements for cultivation of crops	
	Post-harvest expenses	
	Marketing loan	
	For insurance coverage	

Membership	Aspects	Tick
	Requirements of household	
	Maintenance of farm assets	
	Offering protection against loss of crops due to pest attacks, natural calamities, etc.	
	Others	

## 9.2 Training attended by the Farmers

Training Details	Aspects	Tick
Training Exposure	Yes	
	No	
If yes, how many times you have attended training?	Untrained	
	1 day training	
	2-3 days training	
	5-7 days training	
	Above 7 days' training	
On which area you had training?	Post-Harvest Management	
	Information on Agricultural Marketing	
	Future and Forward Markets and Commodity Exchanges	
	Food Safety, Quality	
	Capacity building, skill development of farmers' groups	
	Organic Farming	
	Medicinal and Aromatics Plants Marketing	
	Contract farming	
	Grading, Standardization & Certification	
	Warehousing and Storage	
	Uses of Agricultural Technology	
Who had given Training	Assam Agricultural University	
	Krishi Vigyan Kendra	
	Agricultural Marketing Board	
	District Agricultural Office	

## 10. Savings and Credit Patterns

Savings and Credit Patterns	Particulars	Tick
Do you own a Bank account?	Yes	
	No	
If yes, which Bank	State Bank of India	
	Allahabad Bank	
	ICICI Bank	
	HDFC Bank	

	Assam Gramin Vikash Bank	
	Lakhimi Gaonlia Bank	
	Overseas	
	Union Bank	
Source of income	Farming	
	Allied activity	
	Livestock Management	
	Labour	
	Other family member	
Satisfied with the income that earn from agriculture	Yes	
	No	
Do you have Debts	Yes	
	No	
Aspects of Debts	Loans from Banks	
	Loan from Cooperative Banks	
	Loan from money-lenders	
	Loan from Relatives	
	Ancestral Loan	
	Jewels Loan or Mortgages	
	L.I.C.	
	NABARD	
Purpose of Loan	House Loan	
	Modernization of farming	
	Purchase of agricultural inputs	
	Education loan	
Purpose of agricultural loan	Development of Land	
	Digging of Well	
	For Tube Well	
	Purchase of Pump Set	
	Purchase livestock	
Type of savings	Cash in hand	
	Commercial bank	
	Insurance policy	
	Postal deposit	
	Chit fund	
	Co-operative Society	
Mention the purpose of savings	Invest in any kind of asset	
	Regular needs	
	Unforeseen events	
	Child education	
	Daughter's marriage	
	Health purpose	
	Specify if any	

## 11. Mass media Exposure and Contact of the Farmers regarding Agricultural Information

### 11.1 Extent of Mass Media Exposure

Mass Media	Particulars of uses	Component	Tick
Newspaper	Frequency of reading	Do not read	
		Once or twice a week	
		Thrice or more per week	

Mass Media	Particulars of uses	Component	Tick
	Source of acquiring newspaper	Buy	
		Borrow from others	
		Borrow from Library	
	Purpose of Use	Agriculture	
		News	
		Entertainment	
	Frequency of Mass media Exposure	Regularly	
		Ocasionally	
		Never	
Agricultural Magazine	Frequency of reading	Do not read	
		Once or twice a week	
		Thrice or more per week	
	Source of acquiring newspaper	Buying	
		Borrow from others	
		Borrow from Library	
		Tea stall	
	Purpose of Use	Specify if any	
		Agriculture	
		News	
	Frequency of Mass media Exposure	Regularly	
		Ocasionally	
Never			
Radio	Frequency of listening	Do not listen	
		Once or twice a week	
		Thrice or more per week	
	Source	Do not own	
		Own	
	Period of Exposure	No exposure	
		One to five years	
		More than five years	
	Purpose of Use	Agriculture	
		News	
		Entertainment	
	Frequency of Mass media Exposure	Regularly	
		Ocasionally	
		Never	
	Television	Frequency of viewing:	Do not view
Once a fortnight			
Once a week			
Twice a week			
Thrice or more per week			
Every day			
Source:		Do not own	
		Own	
Mobile	Currently you own which company?	Nokia	
		Samsung	
		Oppo	
		Vivo	
		Apple	

Mass Media	Particulars of uses	Component	Tick
		Micromax	
		Any other specify	
	How much did you pay for it	1000-5000	
		5000- 10000	
		10000-15000	
		15000-20000	
		Above 20000	
	Why did you choose this model? *	Price	
		Function	
		Size & weight	
		Appearance	
		Trend	
		Advertisement	
		Specify if any _____	
	Frequency of viewing: -	Do not view	
		Once a fortnight	
		Once a week	
		Twice a week	
		Thrice or more per week	
		Every day	
	Which mobile operator do you use	Airtel	
		Jio	
		Bsnl	
		Vodafone	
		Others _____	
	Average time you spend on your phone	Less than 30 minutes	
		30 minutes- 1 hour	
		1 hour- 2 hour	
2 hour – 3 hours			
Above 3 hours			
Features you use on your phone	Internet Browsing		
	Music		
	Camera		
	Text messaging		
	Gaming		
	News		
	Other utilities		
Purpose of Use	Agriculture		
	News		
	Entertainment		

## 11.2 Extent of Urban &amp; Extension Agency Contact

		Urban Contact		Extension Agency Contact	
		Yes	No	Yes	No
Frequency of contact	Occasionally				
	Never				
Purpose of visit	Agriculture				
	Non – agriculture				
	Both				

## 12. Informal Gathering venue of the Farmers

S. No	Chat Corners	Tick
1	Tea Shop	
2	Under the Tree	
3	Temple	
4	Infront of Pnachayat office	
5	Near School	
6	Bank	
7	Agricultural shops	
8	Local Market	
9	Mobile SMS interaction	
10	Specify if any	

## C. Details on Marketing of Vegetables

## 1. Marketing related information on Vegetables Production.

Market Information	Aspects	Tick	
Which markets do you usually use for selling your produce?	Formal markets	Commission agents	
		Wholesalers	
		Retailer	
		Co-operatives	
	Informal markets	Village Haats	
		Roadside	
		Direct selling	
		Moving cart	
What are the main benefits of the market channels you use regularly?	Receive high prices		
	Provide inputs		
	Nearer		
	Contracting		
	Other (Specify)		
Do you always find a market for all the goods you produce?	Yes		
	No		
If No, what happens to the unsold produce?	Store and sell later		
	Eat (family & friends)		
	Sell at low prices		
	Lose to spoilage		
How is price set during the sales?	I set the price		
	We negotiate		
	It is market driven		
	It is dictated by buyers		
	Other (Specify)		
Do you receive market information prior to sales?	Yes		
	No		
If Yes, how often do you receive the information?	Daily		
	Weekly		
	Monthly		

Market Information	Aspects	Tick
	Bi-annually	
	Annually	
	Never	
Farmers collaboration	Yes	
	No	
Market infrastructure	Good	
	Bad	
Price information helps to plan production and sale accordingly	Always	
	Occasionally	
	Rarely	

### 2. Source of information on Agricultural marketing among the Farmers

Source of information	Regular	Occasionally	Never
<b>Input Source</b>			
Relatives			
Neighbors			
Commission agents			
Input dealers			
Local traders			
NGO worker			
Village level extension officer			
Block level extension officer			
<b>Mass contact sources</b>			
News papers			
Radio			
Television			
Farmer fairs / Exhibition			
Agricultural Meetings / Training			
<b>Output Source</b>			
To my family			
To my relatives			
To my neighbors			
To my friends			
To all the person who know me			
To farmers of my area			
To those who are cultivating in my land			
To the farmers of neighboring village			

### 3. Marketing Practices adopted by the farmers in Vegetables Marketing

Practices adopted		YES	NO
Harvesting Time	In the early morning (between 4 am to 9 am),		
	during the early evening (between 5 pm and 7 pm)		
	In the late evening (between 7 pm to 9 pm), and		

Practices adopted		YES	NO
	throughout the night (starting from 10 pm and lasting until 3am).		
Sorting and grading of vegetables	Yes		
	No		
If, Yes mention the reason	Insect attacked and Diseased produced		
	Damaged by mechanical injuries		
	Misshapen of the produced		
	Due to over mature		
	Due to immature		
	Rotten vegetables		
Washing of vegetables is done	Yes		
	No		
If, Yes mention the reason	Removal of cohering dirt		
	Removal of dust		
	Removal of insects		
Trimming of vegetables	Yes		
	No		
If, Yes mention the reason	Remove unwanted particles		
Precooling of vegetables	Yes		
	No		
If, Yes mention the reason	To remove field heat after harvest		
Post-harvest disease control of vegetables	Yes		
	No		
If, Yes mention the reason	Prone to infection by microorganisms		
	Mechanical injuries,		
	Contamination with diseases vegetables		
	Heat and other environmental agencies		
Weighing of produce	Using electronic weighing machine		
	Mechanical scale or balance		
Methods used for storage vegetable produce	Controlled and Modified atmosphere:		
Place of storage	Home		
Periods to store the produce	Everyday		
Distance of market	Within 10 kilometers		
	Between 11 and 20 kilometers		
	Between 21 and 30 kilometers		
Place of sale of the Vegetables produce	In the village itself		
	Nearby Market		
	Nearby Weekly Market		
	Far away Market		
Selling details to consumers	Directly to the consumers		
	Village level middleman		
	Commission agents (Middleman)		
	Local shops		
Middlemen involvement	Yes		

Practices adopted		YES	NO
	No		
If, yes	No involvement		
	Partially		
	Fully		
Package of Vegetables	Jute bags (Gunnybags)		
	Bamboo Baskets		
	Polythene bags		
	Plastic tray		
	CFB (Corrugated Fibre Board) or Corrugated Craft paper cartons		
	Thermocol		
Transport used to carry the vegetables	Bicycle		
	Moped		
	Mini truck		
	Tempo		
Pattern of Payment received	Advance payment done by middleman		
	Getting payment at the time of selling		
	Delayed payment (maintaining account book by the customer to pay later)		
Disposal of produce to market	Quantity by volume		
	Quality by sorting		

#### 4. Marketing Behaviour of the Farmers towards Vegetables Marketing

Particulars		SA	A	N	D	SD
Harvesting of vegetables	Sensory evaluation for flavour and taste of vegetables					
	Assessing through experience on texture and appearance of maturity of vegetables					
	Longer Post-harvest longevity to maintains the quality and freshness.					
	Optimum period of maturity					
	Harvesting at favourable temperature helps to preserve the quality of the produce.					
Sorting and grading for quality	Damaged by physical injuries harvesting in the field					
	Damaged by physical injuries transporting in the market.					
	Insect attacked					
	Affected by Diseased					

	Aesthetic appeal of the produced					
	Ripened produced which leads to spoilage					
	Immaturity of vegetables due to unfavorable weather conditions					
	Rotten vegetables due to mishandling					
Purpose of storage	To get better price later					
	Lack of transport facilities					
	High cost of transport					
	Maintains freshness					
	Optimize market timing to align with the consumer demand					
	Minimize losses due to spoilage, damage, or wastage					
	Improving shelf life avoiding market glut					
	To reduce and control transpiration, respiration and disease infection					
Packaging of vegetables	Assemble the produce into convenient units					
	Transportation efficiency to carry the produce					
	Provide cushioning to fresh produce					
	Protects from any physical and pathological deterioration.					
	Maintains the overall quality of the produce					
	Provides greater attraction to the produce					
Time of sale of the produce	Immediately after the harvest whatever the prices may					
	After initial storage, when it is convenient					
	Immediately after the harvest, if prices are favorable					
Reasons for selecting at a particular period	Immediate financial need					
	Highly perishable					
	Based on Market demand					
	Indebtedness to trader					
	Quality was not good					
	No cold storage facilities available					
Reason for selection of Market	Market demand					
	Market is very near to place					
	More Population in the area					
	Higher Price					
	Better transport facilities available to the village					
	Less Competition in the area					

Criteria for fixing price	Fluctuate based on seasonal variations					
	Based on market demand and supply					
	Quality and grading of produce					
	Based on government policies					
	Competition in the market					
	Based on production cost					

### 5. Factors Influencing Marketing Behaviour of Farmers

Factors	A	N	D
Generating income			
Sustainable livelihood			
Rapid sale of perishable vegetable			
Fluctuation in price			
Input cost is too high			
Competition against other farmers and vendors			
Market demand			
Availability of bank credit			
Inadequate storage facilities			
Lack of access to Market information			
Lack of collaboration with other farmers and traders			
Improved market structure			
Manipulation of middleman/commission agents			
Involvement of more media			
Accessible Transport Facilities for Market Access			

### D. Knowledge of the Farmers on Agricultural Marketing

#### 1. Awareness on the Government Schemes and Programmes in Agriculture

Govt. Schemes and Programmes	A	N	D
Farmer Producer Organization Scheme			
Pradhan Mantri Krishi Sinchayee Yojana (PMKSY)			
Pradhan Mantri Fasal Bima Yojna (PMFBY)			
Paramparagat Krishi Vikas Yojana (PKVY)			
Pradhan Mantri Kisan SAMPADA Yojana (PMKSY)			
PM-Kisan (Pradhan Mantri Kisan Samman Nidhi)			
Rastriya Krishi Vikas Yojana (RKVY)			
National Mission for Sustainable Agriculture (NMSA)			
Mission Organic Value Chain Development in Assam (MOVCD)			
Mukhya Mantri Krishi Sa Sajuli Yozana (MMKSY)			

Credit Guarantee Fund Scheme (CGFS)			
Marketing Research & Information Network (MRIN)			
Horticulture Mission for North East & Himalayan States (HMNEH)			
Equity Grant Scheme (EGS)			
Integrated Scheme for Agricultural Marketing Infrastructure (ISAM)			

## 2. Knowledge among the Farmers on Vegetables Marketing

<b>Knowledge on Vegetable Marketing</b>	<b>A</b>	<b>N</b>	<b>D</b>
Vegetables are produced seasonally, but the market requires them throughout the year			
Local markets sell produce directly to consumers or traders			
Street Hawkers prefer to move around specific localities to sell Vegetables.			
Wholesalers buy vegetables directly from the farmers			
Storage facilities makes it unnecessary to market vegetables immediately after harvest			
Retail Market prices are Higher than wholesale market prices			
Post-harvest losses of vegetables occur at all stages of the value chain from production to consumption			
Retailers buy vegetables from wholesalers to sell to consumers			
Grading and sorting are processes where farmers differentiate commodities based on quality specifications			
Online markets are commercial platforms where multiple third parties provide information on vegetables			

## 3. Knowledge of the Farmers on Digital Marketing

<b>Knowledge towards Digital Marketing</b>	<b>A</b>	<b>N</b>	<b>D</b>
Digital Marketing is the process of marketing a product or service using the Internet.			
National Agriculture Market or eNAM is an online trading platform available for farmers			
Social media is very useful in agricultural marketing			
It helps create awareness about the availability of agricultural products			
ICT is a tool or application that helps in the digital marketing of agricultural produce			
The KISAN RATH Mobile App is available for the transportation of agricultural produce			
Farmers can buy agricultural inputs via e-platforms			
e-Choupal connects rural farmers to the market via the internet for procuring agricultural products			
AGMARKNET caters to the need of farmers by providing agriculture related information			
NAFED supports farmers by ensuring profits and eliminating middlemen			
KisanMandi.com is the online Agricultural Market or Sell or Advertise fruits & vegetables, agri produce or any agri machinery or Tools or Tracto			

#### 4. Knowledge of the Farmers towards Applications & Portals utilization for Agriculture

1. Applications utilization for Agriculture	Aware	Not Aware
AgSpeak		
Agri app		
Kisan Rath app		
APEDA Farmer Connect Mobile App		
Crop Insurance app		
AgMart- Agrimarket App		
IFFCO- Kisan Agriculture app		
Crop Insurance app		
Pusa Krishi app		
Krishi Network: Smart Kisan		
PMKISAN GOI		
Fasal salah Agriculture app		
National Agriculture Market or eNAM		
Kisan Mandi.com		
Agricultural Marketing Information Network (AGMARKNET)		
Any other		

#### E. Opinion of the Farmers towards Vegetables Marketing.

##### 1. Opinion of the Farmers towards Vegetables Marketing.

Opinion	SA	A	N	D	SD
Income is the primary factor in vegetable marketing					
One should produce items that are high in market demand					
A farmer can secure a good price by producing high quality products					
Advertising and promoting vegetables produce can increase sales					
Government support for vegetable marketing is insufficient					
Institutional credit is easily available for growing vegetable produce					
Storage facilities for vegetable produce are sufficient					
One should sell products to the nearest market regardless of price					
Expanding the area of vegetable cultivation helps to achieve higher income					
Marketing of vegetable crops is very simple					
Using digital technology in marketing helps consumers access and understand farm produce, ensuring they get what they need at the right price.					
Farmers can sell the vegetable products online					
Pre and post-harvest losses are high in vegetable production					

Opinion	SA	A	N	D	SD
Standardization and grading increase the burden on farmers					
There is a need for more co-operative agencies to improve market linkages					
The roads are good enough to transport produce to the main road					
Better marketing facilities help farmers get better price for their produce					
Farm women have a lesser role in vegetable marketing than men					
Setting up regulated purchase centre for vegetable produce in nearby localities boost vegetable cultivation					
Knowledge of vegetable preservation is essential during periods of high demand					

## 2. Opinion of the Farmers towards Digital Agricultural Marketing

Opinion	SA	A	N	D	SD
Helps in marketing agricultural products through mobile phones					
Agricultural marketing apps can be highly accepted because of its reliable information					
Easily provides agricultural information whenever needed					
Enhances communication among farmers					
Mobile applications that provide price information can help reduce market distortions					
Offers area-wise reliable price information and aids in marketing.					
Facilitates access to market information and promotes agricultural products.					
Provides good online trading platforms for agricultural commodities in India.					
Helps farmers sell their agricultural products at better prices.					
Assists in evaluating, organizing and facilitating easy marketing of agricultural products					

### F. Barriers Experienced by the Farmers in Marketing Vegetables.

1. **Do you experience any barriers in Marketing Vegetables?** If Yes, Rank the problems in the order of importance.

#### 2. Production Barriers as perceived by the Farmers

Production Barriers	Rank
Non availability of Tractor for ploughing at required time	
Lack of scientific knowledge about vegetable cultivation	
Non-availability of seed and planting material at required time	
High cost of seed, pesticides and fertilizers	
Inadequate irrigation facilities	
Lack of knowledge about the control measures for various pests and diseases	
Minimization of land holdings	
Lack of knowledge about improved method of harvesting	
Lack of post-harvest technology	
Subsistence farming to Commercial Farming	

### 3. Economic Barriers as perceived by the Farmers

Economic Barriers	Rank
High input cost	
lack of remunerative price	
Inadequate credit to purchase inputs	
Lack of input subsidy	
High labour cost	
Cost of cultivation is more than profit	
High cost of packaging material	
Frequent price fluctuation	
Prolonged transaction	
Unevenly rising prices	
Trade manipulations	
Any other specify	

### 4. Communication Barriers as perceived by the Farmers

Communication Barriers	Rank
Less contact with extension agencies	
Inaccessibility to market related information from distributors/retailers/ suppliers/input dealers	
Poor linkage among producers and traders	
Interference of middlemen	
Price fixation by middlemen	
Higher commission rate of middlemen	
Delay in cash payment by the middlemen	
Lack of Proper physical communication	
Any other specify	

### 5. Storage and Transporting Barriers as perceived by the Farmers

Barriers	Rank
Inadequate storage facilities	
Improper storage facilities	
Lack of storage facilities in growing area	
Lack of processing industries in the nearby areas	
Lack of trained personnel and equipments for processing	
Inadequate access to road	
High transportation costs	
Timely inavailability of transportation	
Damage of vegetable during transport	
Any other specify	

### 6. Marketing Barriers as perceived by the Farmers

Barriers	Rank
Low production due to lack of proper marketing facility	
Poorly developed Village Market	
Lack of proper local market yard facilities	
Lack of information about market available	

Lack of marketing skills	
Lack of wholesale market	
Lack of regulated market	
Lack of Market Information	
Non availability of nearby market	
Low level of illiteracy	
Less media coverage	
High Perishability of produce	
Distress sale due to social pressure	
Constant changes in the land tenure system	
Malpractices in trade at unorganized market	
Multi Languages and dialects	
Natural calamities and uneven rainfall	
Any other specify	

G Suggestions offered by vegetable growers to overcome production and marketing problems.

Suggestions	Tick
Setting up local marketplaces (Mandis) in nearby areas	
Organizing training sessions and workshops on marketing aspects	
Encouraging the direct e-marketing of vegetables to consumers	
Formation of Farmer Producer Organizations (FPOs) in the panchayats	
Establishment of marketing Information center	
Cold Storage facilities for vegetables to prevent losses	
Ensuring the availability of quality inputs for producing high-quality goods	
Development of infrastructure for marketing vegetables	
Diversify crops by growing a range of vegetables to appeal to various market segments and mitigate risks.	
Offering weekly government transportation services for marketing the produced goods (Mobile Van Service)	
Engaging in contract farming arrangements or direct marketing initiatives.	
Build a network with other farmers, marketers, and industrial experts to share knowledge and resources.	
Accessing financial support from banks and other sectors for vegetable cultivation	
Provision of export facilities for vegetable produce	
Distribute Electronic Weighing for more accurate weight.	

## ANNEXURE I (b)

**"INTERVIEW SCHEDULE FOR IMPACT ASSESSMENT OF EDUCATIONAL AWARENESS IN AGRICULTURAL MARKETING"**

Name of the Village

.....

Gram

Panchayat.....

Name of the

Respondent.....

Telephone/ Mobile

No.....

Socio- Economic Factors	Categories	Tick
Age (Years)	Less than 35 (Young)	
	35-55 (Middle)	
	Above 55 (Old)	
Gender	Male	
	Female	
Religion	Hindu	
	Muslim	
Educational Qualification	Illiterate	
	Primary school education	
	Middle school education	
	High school education	
	Higher secondary education	
Marital Status	Graduation & above	
	Married	
	Unmarried	
	Divorced	
Annual Income	Widowed	
	Less than 50,000	
	50,000 – 1 lakh	
	Above 1 lakh	
Years of Experience in Farming:	No	
	0-5	
	5-10	
	10-15	
	Above 15	

**C. Knowledge of the Farmers on Agricultural Marketing****1. Awareness regarding the Government Schemes and Programme regarding Agriculture**

Govt. Schemes and Programme	FA	A	N	NA	FNA
Farmer Producer Organization Scheme					
Pradhan Mantri Krishi Sinchayee Yojana (PMKSY)					
Pradhan Mantri Fasal Bima Yojna (PMFBY)					
Paramparagat Krishi Vikas Yojana (PKVY)					

Pradhan Mantri Kisan SAMPADA Yojana (PMKSY)					
PM-Kisan (Pradhan Mantri Kisan Samman Nidhi)					
Rastriya Krishi Vikas Yojana (RKVY)					
National Mission for Sustainable Agriculture (NMSA)					
Mission Organic Value Chain Development in Assam (MOVCD)					
Mukhya Mantri Krishi Sa Sajuli Yozana (MMKSY)					
Credit Guarantee Fund Scheme (CGFS)					
Marketing Research & Information Network (MRIN)					
Horticulture Mission for North East & Himalayan States (HMNEH)					
Equity Grant Scheme (EGS)					
Integrated Scheme for Agricultural Marketing Infrastructure (ISAM)					

## 2. Knowledge among the Farmers about Vegetables Marketing

Knowledge on Vegetable Marketing	SA	A	N	D	SD
Vegetables are produced seasonally, but the market requires them throughout the year					
Local markets sell produce directly to consumers or traders					
Street Hawkers prefer to move around specific localities to sell Vegetables.					
Wholesalers buy vegetables directly from the farmers					
Storage facilities makes it unnecessary to market vegetables immediately after harvest					
Retail Market prices are Higher than wholesale market prices					
Post-harvest losses of vegetables occur at all stages of the value chain from production to consumption					
Retailers buy vegetables from wholesalers to sell to consumers					
Grading and sorting are processes where farmers differentiate commodities based on quality specifications					
Online markets are commercial platforms where multiple third parties provide information on vegetables					

## 3. Knowledge of the Farmers towards Digital Marketing

Knowledge towards Digital Marketing	SA	A	N	D	SD
Digital Marketing is the process of marketing a product or service using the Internet.					
National Agriculture Market or eNAM is an online trading platform available for farmers					
Social media is very useful in agricultural marketing					
It helps create awareness about the availability of agricultural products					
ICT is a tool or application that helps in the digital marketing of agricultural produce					
The KISAN RATH Mobile App is available for the transportation of agricultural produce					
Farmers can buy agricultural inputs via e-platforms					

e-Choupal connects rural farmers to the market via the internet for procuring agricultural products					
AGMARKNET caters to the need of farmers by providing agriculture related information					
NAFED supports farmers by ensuring profits and eliminating middlemen					
KisanMandi.com is the online Agricultural Market or Sell or Advertise fruits & vegetables, agri produce or any agri machinery or Tools or Tracto					

#### 4. Knowledge of the Farmers towards Applications & Portals utilization for Agriculture

S. No	1. Applications utilization for Agriculture	FA	A	N	NA	FNA
1	AgSpeak					
2	Agri app					
3	Kisan Rath app					
4	APEDA Farmer Connect Mobile App					
5	Crop Insurance app					
6	AgMart- Agrimarket App					
7	IFFCO- Kisan Agriculture app					
8	Crop Insurance app					
9	Pusa Krishi app					
10	Krishi Network: Smart Kisan					
11	PMKISAN GOI					
12	Fasal salah Agriculture app					
<b>Portals Utilization for Agriculture</b>						
1	National Agriculture Market or eNAM					
2	Kisan Mandi.com					
3	Agricultural Marketing Information Network (AGMARKNET)					

#### B.. Opinion of the Farmers towards Vegetables Marketing.

##### 3. Opinion of the Farmers towards Vegetables Marketing.

Opinion	SA	A	N	D	SD
Income is the primary factor in vegetable marketing					
One should produce items that are high in market demand					
A farmer can secure a good price by producing high quality products					
Advertising and promoting vegetables produce can increase sales					
Government support for vegetable marketing is insufficient					
Institutional credit is easily available for growing vegetable produce					

Opinion	SA	A	N	D	SD
Storage facilities for vegetable produce are sufficient					
One should sell products to the nearest market regardless of price					
Expanding the area of vegetable cultivation helps to achieve higher income					
Marketing of vegetable crops is very simple					
Using digital technology in marketing helps consumers access and understand farm produce, ensuring they get what they need at the right price.					
Farmers can sell the vegetable products online					
Pre and post-harvest losses are high in vegetable production					
Standardization and grading increase the burden on farmers					
There is a need for more co-operative agencies to improve market linkages					
The roads are good enough to transport produce to the main road					
Better marketing facilities help farmers get better price for their produce					
Farm women have a lesser role in vegetable marketing than men					
Setting up regulated purchase centre for vegetable produce in nearby localities boost vegetable cultivation					
Knowledge of vegetable preservation is essential during periods of high demand					

#### 4. Opinion of the Farmers towards Digital Agricultural Marketing

Opinion	SA	A	N	D	SD
Helps in marketing agricultural products through mobile phones					
Agricultural marketing apps can be highly accepted because of its reliable information					
Easily provides agricultural information whenever needed					
Enhances communication among farmers					
Mobile applications that provide price information can help reduce market distortions					
Offers area-wise reliable price information and aids in marketing.					
Facilitates access to market information and promotes agricultural products.					
Provides good online trading platforms for agricultural commodities in India.					
Helps farmers sell their agricultural products at better prices.					
Assists in evaluating, organizing and facilitating easy marketing of agricultural products					

### C. Marketing Behaviour of the Farmers towards Vegetables Marketing

Particulars		SA	A	N	D	SD
Harvesting of vegetables	Sensory evaluation for flavour and taste of vegetables					
	Assessing through experience on texture and appearance of maturity of vegetables					
	Longer Post-harvest longevity to maintains the quality and freshness.					
	Optimum period of maturity					
	Harvesting at favourable temperature helps to preserve the quality of the produce.					
Sorting and grading for quality	Damaged by physical injuries harvesting in the field					
	Damaged by physical injuries transporting in the market.					
	Insect attacked					
	Affected by Diseased					
	Aesthetic appeal of the produced					
	Ripened produced which leads to spoilage					
	Immaturity of vegetables due to unfavorable weather conditions					
	Rotten vegetables due to mishandling					
Purpose of storage	To get better price later					
	Lack of transport facilities					
	High cost of transport					
	Maintains freshness					
	Optimize market timing to align with the consumer demand					
	Minimize losses due to spoilage, damage, or wastage					
	Improving shelf life avoiding market glut					
	To reduce and control transpiration, respiration and disease infection					
Packaging of vegetables	Assemble the produce into convenient units					
	Transportation efficiency to carry the produce					
	Provide cushioning to fresh produce					
	Protects from any physical and pathological deterioration.					
	Maintains the overall quality of the produce					
	Provides greater attraction to the produce					
Time of sale of the produce	Immediately after the harvest whatever the prices may					
	After initial storage, when it is convenient					
	Immediately after the harvest, if prices are favorable					
Reasons for selecting at a particular period	Immediate financial need					
	Highly perishable					
	Based on Market demand					
	Indebtedness to trader					
	Quality was not good					
Reason for selection of Market	No cold storage facilities available					
	Market demand					
	Market is very near to place					
	More Population in the area					
	Higher Price					
	Better transport facilities available to the village					
Criteria for fixing price	Less Competition in the area					
	Fluctuate based on seasonal variations					
	Based on market demand and supply					
	Quality and grading of produce					
	Based on government policies					
	Competition in the market					
Based on production cost						

## ANNEXURE - II

### SCORING PROCEDURE

#### A. Operationalization and measurement of independent variables

##### 1. Age:

Age was operationalized as the number of completed years of the respondents at the time of enquiry and the chronological age was taken as the measure. The respondents were classified into three categories according to their age as developed by Maratha & Badodiya (2017) as given below.

Sl no.	Category	Age Group	Scoring
1	Young	Less 35 years	1
2	Middle	35 -55 years	2
3	Old	Above 55 years	3

##### 2. Gender

Gender binary scale is categorization of gender into two distinct categories: male and female

Sl no.	Category	Scoring
1	Male	1
2	Female	2

##### 3. Educational Qualification

Educational status in this study was operationalized as the ability of the respondents to read and write or the extent of formal education possessed at the time of enquiry. Scores for different educational levels were given as per the scoring procedure followed by Sharma (2019). The scoring system are given below:

Sl no.	Category	Score
1	Illiterate	1
2	Primary school education	2
3	Middle school education	3
4	High school education	4
5	Higher secondary education	5
6	Graduation	6

##### 3. Land size

Land size refers to the extent of land cultivated by an individual at the time of enquiry. The area was directly taken as a measure and categorized by District Administration Dibrugarh, Govt. of Assam.

SI no.	Category	Area	Score
1	Marginal farmer	(0.4-1 Ha)	1
2	Small farmer	(1-2 Ha)	2
3	Medium farmer	(2-3 Ha)	3
4	Large farmers	(3-4 Ha)	4
5	Very Large farmers	(Above 4 Ha)	5

#### 4. Marital Status

Marital status is an individual's current legal relationship status, typically categorized into several types, such as married, unmarried and widowed. The scoring procedure adopted by Office of the Registrar General & Census Commissioner, India. (2018)

SI no.		Score
1	Married	1
2	Unmarried	2
3	Widowed	3

#### 5. Experience in Farming

This referred to the actual completed years of experience of a respondent in farming. The actual years of experience were considered for analysis. It was operationalised as the number of completed years of experience in farming by the respondents. The scoring procedure followed by Krishnakumar (2002) was used in this study, which is given as follows:

SI no.	Experience	Score
1	Upto 5 years	1
2	Above 5 and below 10 years	2
3	Above 10 years	3

#### 6. Annual income

Annual income was operationalised as the total income obtained by a respondent from farm, off-farm and non-farm activities. The actual income obtained by the respondents was considered for analysis. Sunitha varghese (1998). The scoring procedure followed by was used and given below

SI no.	Annual Income	Score
1	Up to Rs.50000	1
2	From Rs.50001 to Rs.1 lakh	2
3	Above Rs.1 lakh	3

## B. Operationalization and measurement of dependent variables

### 1. Marketing Practices adopted

Marketing Practices Adopted by the Farmers in Vegetables Marketing," likely delves into the actions and procedures that farmers undertake after harvesting their vegetable crops with a particular focus on how these practices impact the marketing and sale of their produce.

Items		Score
<b>Harvesting Time</b>	In the early morning (between 4 am to 9 am),	1
	during the early evening (between 5 pm and 7 pm)	2
	In the late evening (between 7 pm to 9 pm), and	3
	throughout the night (starting from 10 pm and lasting until 3am).	4
<b>Sorting and grading of vegetables</b>	Yes	1
	No	0
If, Yes mention the reason	Insect attacked and Diseased produced	1
	Damaged by mechanical injuries	2
	Misshapen of the produced	3
	Due to over mature	4
	Due to immature	5
	Rotten vegetables	6
<b>Washing of vegetables</b>	Yes	1
	No	0
If, Yes mention the reason	Removal of cohering dirt	1
	Removal of dust	2
	Removal of insects	3
<b>Trimming of Vegetables</b>	Yes	1
	No	0
If, Yes mention the reason	Remove unwanted particles	1
<b>Precooling of vegetables</b>	Yes	1
	No	0
If, Yes mention the reason	To remove field heat after harvest	1
<b>Post-harvest disease control of vegetables</b>	Yes	1
	No	0
If, Yes mention the reason	Prone to infection by microorganisms	1
	Mechanical injuries,	2
	Contamination with diseases vegetables	3
	Heat and other environmental agencies	4
<b>Weighing of produce</b>	Using electronic weighing machine	1
	Mechanical scale or balance	2
<b>Methods used for storage vegetable produce</b>	Controlled/Modified atmosphere:	3
<b>Place of storage</b>	Home	1
	Cold storage	2
<b>Periods to store the produce</b>	Days	1
	Weekly	
	Monthly	

<b>Distance of market</b>	Within 10 kilometers	1
	Between 11 and 20 kilometers	2
	Between 21 and 30 kilometers	3
<b>Place of sale of the Vegetables produce</b>	In the village itself	1
	Nearby Market	2
	Nearby Weekly Market	3
	Far away Market	4
<b>Selling details to consumers</b>	Directly to the consumers	1
	Village level middleman	2
	Commission agents (Middleman)	3
	Local shops	4
<b>Middlemen involvement</b>	Yes	1
	No	0
If, yes	No involvement	1
	Partially	2
	Fully	3
<b>Package of Vegetables</b>	Only Bamboo Baskets	1
	Only Jute bags	2
	Jute bags (Gunnybags) + Bamboo Baskets	3
	Polythene bags + Corrugated Craft paper cartons + Thermocol	4
<b>Transport used to carry the vegetables</b>	Bicycle	1
	Moped	2
	Mini truck	3
	Tempo	4
<b>Pattern of Payment received</b>	Advance payment done by middleman	1
	Getting payment at the time of selling	2
	Delayed payment (maintaining account book by the customer to pay later)	3
<b>Disposal of produce</b>	By volume or weight	1
	Quality	2

## 2. Marketing Behaviour

Marketing behaviour refers to the decisions and patterns exhibited by the farmers involved in the marketing process, which encompasses marketing behaviour of farmers within the market. The responses were obtained on a five-marketing aspects namely 1. Harvesting of vegetables 2. Sorting and grading for quality 3. Purpose of storage 4. Packaging of vegetables 5. Time of sale of the produce 6. Reasons for selecting at a particular period 7. Reason for selection of Market 8. Criteria for fixing price based on 5 point Likert scale.

Number of Statement	Continuum				
	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
47	5	4	3	2	1

### 2.1 Level of Marketing Behaviour

Total score for all the items gave marketing behaviour score of an individual. Based on the total score obtained by the farmers, following categories of marketing behaviour were made by using the formula mean (141.52)  $\pm$  standard deviation (7.687). N=600

Sl. No.	Category	Marketing Behaviour (Score)
1	Low	< 133.83
2	Moderate	133.83 – 149.21
3	High	> 149.21
	<b>Mean= 141.52</b>	<b>SD= 7.687</b>

### 2.3 Factors Influencing Marketing Behaviour

Factors Influencing Marketing Behaviour was examined with a 3 point scale incorporated by providing three response options for each factor: Agree, Neutral and Disagree.

Number of items	Continuum		
	Agree	Neutral	Disagree
15	3	2	1

### 3. Knowledge of the farmers on Agricultural Marketing

Knowledge of the farmers were assessed with a 3 point scale incorporated by providing three response options for each factor: Aware, Somewhat Aware and Not Aware.

Number of items	Continuum		
	Aware	Somewhat Aware	Not Aware
51	3	2	1

### 4. Opinion of the farmers on Agricultural Marketing

Opinion was operationalized as the mental disposition of the farmers. The thirty statement of opinion items selected were arranged randomly in order to avoid biased responses. A five-point continuum of “strongly agree”, “agree”, “Neutral”, “disagree” and “strongly disagree” was used as response categories. The scoring procedure adopted is as follows.

Number of Statement	Continuum				
	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
30	5	4	3	2	1

### 5. Barriers experienced by the farmers in Agricultural marketing

Garrett's Ranking Technique was used to convert the order of barriers experienced by the farmers into numerical scores. Each rank is associated with a percentage position that reflects the proportion of farmers who rated a particular barriers at that rank or higher. To quantify these rankings, the scale value was obtained by applying the scale conversion table provided by Garrett and Woodworth (1973). In this study, barriers was studied under different dimensions viz. production barriers, Economic barriers, Communication barriers, Storage and processing barriers and Marketing barriers. The following procedure was used to quantify the variable.

Particulars	Category	Score
Production Barriers	High cost of seed, pesticides and fertilizers	1
	Lack of knowledge about improved harvesting methods	2
	Lack of post-harvest technology	3
	Lack of scientific knowledge about vegetable cultivation	4
	Non-availability of seeds and planting materials at the required time	5
	Transition from subsistence farming to commercial Farming	6
	Inadequate irrigation facilities	7
	Lack of knowledge about pests and diseases control measures	8
	Minimization of land holdings	9
	Non availability of tractors for ploughing at the required time	10
	Any other specify	11
Economic Barriers	Not enough profit	1
	Inadequate credit to purchase inputs	2
	lack of remunerative price	3
	Frequent price fluctuation	4
	Lack of input subsidies	5
	High labour cost	6
	Unevenly rising prices	7
	High input cost	8
	Trade manipulations	9
	Prolonged transaction	10
	Limited access to affordable credit	11
	High cost of packaging material	12
	Any other specify	13
Communication Barriers	Inaccessibility to market related information from distributors/retailers/ suppliers/input dealers	1
	Less contact with extension agencies	2
	Price fixation by middlemen	3
	Lack of Proper physical communication	4
	Poor linkage among producers and traders	5
	Interference of middlemen	6
	Higher commission rate of middlemen	7
	Delays in cash payment by the middlemen	8
	Any other specify	9
Storage and processing Barriers	Timely unavailability of transportation	1
	High transportation costs	2
	Inadequate access to road	3
	Damage of vegetable during transport	4
	Improper storage facilities	5
	Lack of storage facilities in growing area	6
	Lack of processing industries in the nearby areas	7

	Lack of trained personnel and equipments for processing	8
	Inadequate storage facilities	9
	Any other specify	10
Marketing barriers	High Perishability of produce	1
	Lack of Market Information	2
	Lack of marketing skills	3
	Distress sale due to social pressure	4
	Non availability of nearby market	5
	Low level of literacy	6
	Insufficient market information available	7
	Lack of wholesale market	8
	Malpractices in trade at unorganized market	9
	Natural calamities and uneven rainfall	10
	Low production due to lack of proper marketing facility	11
	Poorly developed Village Market	12
	Lack of proper local market yard facilities	13
	Less media coverage	14
Lack of regulated market	15	
	Any other specify	

#### 6. Educational Awareness of the farmers on Agricultural Marketing

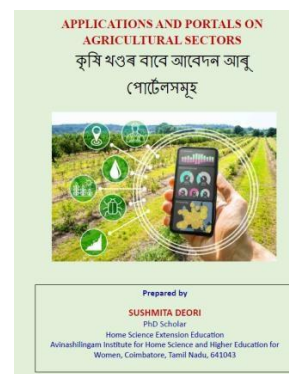
“Awareness as a stage when an individual becomes aware of some new ideas defined by Rogers (1983)”. Awareness in this study means the individual’s knowing about the existence of agricultural marketing and digital agricultural marketing. The awareness on agricultural marketing was assessed on Knowledge, Opinion and Marketing Behaviour with a 5-point likert scale incorporated by providing five response options for each factor: Strongly Agree, Agree, Neutral, Disagree and Strongly Disagree before and after educational awareness.

Educational Awareness	Continuum				
	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Knowledge (51 items)	5	4	3	2	1
Opinion (30 items)					
Marketing Behaviour (47 items)					

## ANNEXURE – III

## HANDOUTS DISTRIBUTED TO THE FARMERS

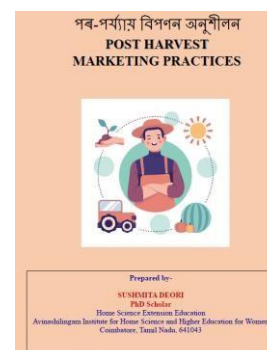
- 1 [https://drive.google.com/drive/folders/1HkLVAlkOFODoPzrtmx6v9h4HEoS5At-r?usp=share\\_link](https://drive.google.com/drive/folders/1HkLVAlkOFODoPzrtmx6v9h4HEoS5At-r?usp=share_link)



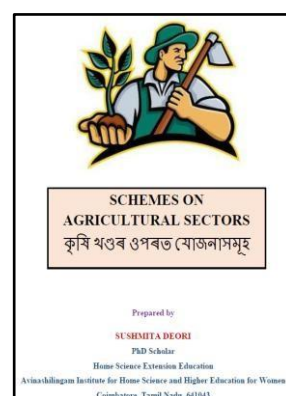
- 2 [https://drive.google.com/drive/folders/1HkLVAlkOFODoPzrtmx6v9h4HEoS5At-r?usp=share\\_link](https://drive.google.com/drive/folders/1HkLVAlkOFODoPzrtmx6v9h4HEoS5At-r?usp=share_link)



- 3 [https://drive.google.com/drive/folders/1u7klJ9EJJpXcFQwKa\\_rNAGHLiKx-SC3V?usp=share\\_link](https://drive.google.com/drive/folders/1u7klJ9EJJpXcFQwKa_rNAGHLiKx-SC3V?usp=share_link)



- 4 [https://drive.google.com/drive/folders/1z3dP1M3dLI3YCbu8gkbhkYw9XDNiKLWi?usp=share\\_link](https://drive.google.com/drive/folders/1z3dP1M3dLI3YCbu8gkbhkYw9XDNiKLWi?usp=share_link)



## ANNEXURE – IV

## INSTITUTIONAL HUMAN ETHICAL COMMITTEE CLEARANCE CERTIFICATE

**INSTITUTIONAL HUMAN ETHICS COMMITTEE****Avinashilingam**

**Institute for Home Science and Higher Education for Women**  
 (Deemed to be university under Category 'A' by MHRD, Estd. u/s 3  
 of UGC Act 1956) Re-accredited with 'A<sup>++</sup>' Grade by NAAC.  
 Recognised by UGC Under Section 12 B  
 Coimbatore- 641043, Tamil Nadu, India

05.01.2023

**Chairman**

Dr. Sudha Ramalingam  
 Director – Research and Innovation  
 Professor- Community Medicine,  
 PSG Institute of Medical Sciences  
 & Research, Coimbatore.

**Member Secretary**

Dr A Thirumani Devi  
 Professor  
 Department of Food Science  
 and Nutrition

**Members**

Mr. K Arulmoli (Legal Expert)  
 Dr. Subashini K. Sripathi  
 Dr. A Saraswathy ( Medical Officer)  
 Ms. D. Kavitha  
 Dr. A R Sudamani Ramasamy  
 Dr. G. Victoria Naomi  
 Dr. Judith Justin  
 Dr. Anitha Subash  
 Dr. K Sampath Rani

To  
 Ms. Sushmita Deori  
 Department of Extension Education  
 Avinashilingam Institute for Home Science and  
 Higher Education for Women  
 Coimbatore- 641043

Dear Sushmita Deori,

Ref: Your proposal No. IHEC/22-23/EXTN-4 entitled  
 "Agricultural Marketing Behaviour and Practices of Rural Farmers in  
 Dibrugarh District, Assam" submitted for approval of IHEC  
 21.11.2022

The Institutional Human ethics Committee of our University  
 hereby grants approval to your research proposal No. IHEC/22-23/  
 EXTN-4 entitled "Agricultural Marketing Behaviour and Practices of  
 Rural Farmers in Dibrugarh District, Assam" submitted by you. The  
 Approval number for the same is AUW/IHEC/EXTN- 22-23/XPD-4.

We wish you all the best in your research endeavours.

Regards

  
 Dr. A Thirumani Devi 5.1.23  
 Member Secretary





**Avinashilingam Institute for Home Science and Higher Education for Women**

(Deemed to be University Estd. u/s 3 of UGC Act 1956, Category 'A' by MHRD  
Re-accredited with A++ Grade by NAAC. CGPA 3.65/4, Category I by UGC  
Coimbatore - 641 043, Tamil Nadu, India

**Appendix L2**

**(Item No 5 of  
Check List) Details of Research  
Publications**

S.No	Article	Journal	Other Details Vol/No/Page No/ Year	Published in UGC- CARE / Scopus Indexed/ Web of Science
1	Factors influencing women farmers in marketing of vegetables in Dibrugarh district of Assam	Indian Journal of Agricultural Marketing	Volume:38, Issue: 1, Page: 64-73 Year: 2024	UGC care Group I
2	Women farmers participation in marketing activities on vegetables: Analyzing the motivational factors and challenges confronted	The Indian Journal of Home Science	Volume:36, Issue: 2, Page: 128-139 Year: 2024	UGC care Group I

\*Proof of list of Journals from Internet to be attached along with copies of reprints.

Scholar

: *Sushmita Das*

Supervisor

: *[Signature]*

Checked By: *R. Faniya*  
10/10/2024

*[Signature]*  
10-10-2024

HoD/Dean of Respective School

The scholar Miss. Sushmita Deori (21PHEXF002) has published her research articles in the following journals:

- 1. Indian Journal of Agricultural Marketing - indexed in UGC Care List Group I from April 2022 to present and
  - 2. The Indian Journal of Home Science - indexed in UGC Care List Group I from July 2020 to present.
- This may be considered.

J. J. Singh  
 30.09.24  
 Asst. Librarian.

## FACTORS INFLUENCING WOMEN FARMERS IN MARKETING OF VEGETABLES IN DIBRUGARH DISTRICT OF ASSAM

Sushmita Deori and S. Rajalakshmi

Home Science Extension Education, Avinashilingam Institute for Home Science and Higher Education for Women, Coimbatore-641043

*This study explores the performance of women farmers towards vegetable marketing in the Barbaruah development block of Dibrugarh District, Assam. A sample of 200 women vegetable farmers was selected purposively for the study during 2022 through face-to-face interaction and data were collected using an interview schedule. The present paper aimed to identify the factors influencing marketing of vegetables among the women farmers, revealing that the immediate sale of perishable vegetable produce emerged as the most influential factor (mean score: 4.50). The study also highlighted the factors influencing women farmer's opinion on vegetable marketing which has shown that the highest-rated opinion was income (mean score: 4.55). Furthermore, the hypothesis tested revealed socio-economic characteristics (age, marital status, education, income) were significantly associated with the factors influencing vegetable marketing, highlighting education as the primary driving force. Also, Educational qualifications showed significant variations in opinions related to income, government support, production strategies, gender roles and other opinions in marketing.*

**Keywords:** Women, marketing, farmers, vegetables, factors influencing

### INTRODUCTION:

Vegetables are integral to daily consumption and essential in human diet but they are highly perishable in nature, fulfilling a consistent demand year-round. The progress and prosperity of a country truly relies on the collaborative efforts of both men and women, with women exhibiting higher involvement in agricultural activities. Women serve as the

fundamental pillar in agricultural sector, essential for ensuring the smooth functioning and well-being of both agricultural activities and family sustenance. Globally, women constitute a majority of agricultural producers, contributing over 50% of the world's food supply (FAO, 1995). Typically, women focus on growing crops for household use and occasional sale, while men primarily cultivate

crops for commercial purposes, leading to an unequal share (Fartyal & Rathore, 2015). In rural areas, women contribute to agricultural productivity, particularly in growing fruits and vegetables, and participating in post-harvest tasks. Their involvement in agriculture varies across regions and communities but remains a crucial aspect in rural economies (Kingdom et al., 2019). The roles and status of women in agriculture are diverse, influenced by factors like region, age, ethnicity, and social class, undergoing rapid changes in some parts of the world (Fartyal & Rathore, 2015). Despite the role of women's participation in vegetable production and marketing it often remains overlooked. Policy frameworks tend to neglect the essential role and level of women's engagement in agriculture (Trivedi et al., 2019).

Women's decisions, particularly smallholder farmers, to join associations for accessing agricultural markets are shaped by personal situations and broader family contexts (Pionetti, 2011). While women significantly contribute to vegetable marketing, their socioeconomic status tends to remain relatively disadvantaged (Trivedi et al., 2019). Successful involvement in vegetable marketing not only supports women's economic empowerment by boosting household income but also benefits the broader community. It creates employment opportunities, stimulates economic growth, and uplifts living standards. Women

excelling in marketing challenge conventional gender roles, fostering gender equality and empowerment within the agricultural sector. Women play a crucial role in both farming and marketing, though it's not always fully recognized. Their efforts don't just benefit their families; they also have a larger impact on the economy and society as a whole.

Understanding the influencing factors of women farmers in marketing promotes gender equality by addressing discrepancies in resource access, markets availability, and decision-making contributing to agricultural development, economic growth, and balanced and equitable societies. Therefore, the study aimed to assess the factors influencing Marketing vegetables, how the socio economic characteristics are associated in influencing marketing Vegetables and examine the factors influencing women farmers opinion towards vegetables marketing.

## **MATERIALS & METHODS:**

### **Selection of the area**

The current study was conducted during the year 2022, the study is primarily empirical and draws on the primary data. The study's focal area encompasses three villages—Bagibill, Tekela Chiring, and Aaitan Dighala — located within the Rajabheta Gram Panchayat of the Barbaruah development block in Dibrugarh District, Assam. The region is known for its agricultural prominence and features a climate and soil conducive

to crop cultivation, particularly vegetables, making it a significant vegetable-growing area within the district.

### **Sample size**

The investigator has purposively selected three villages (Bagibill, Tekela Chiring and Aaithan Dighala) under the Rajabheta Gram Panchayat of Barbaruah development block in Dibrugarh District of Assam. The study involved a sample size of 200 women vegetable farmers selected using a purposive sampling method.

### **Methods and Tools**

The investigator utilized methods such as face-to-face interactions and observations, and the tool used for the study was a well-structured interview schedule. This schedule covered sections on socio-demographic profile, marketing activities adopted, opinion of farmers regarding vegetable marketing, factors influencing vegetable marketing among women farmers, and barriers experienced by the women farmers.

### **Data collection**

The data were collected during the period between August 2022 to December 2022 through personal interview. The interviews took place at the residence of the women farmers.

### **Analysis of data**

After completion of data collection, the responses underwent analysis aligned with the study's objectives. Statistical methods including frequency distribution, percentage, mean,

standard deviation, one-way ANOVA and chi-square test were utilized to describe the study variables. The data underwent analysis through the Statistical Package for the Social Sciences (SPSS version 26).

### **Variables of the study**

The independent variables selected to study the characteristics of rural women farmers included age, marital status, educational qualification, and income. The dependent variables of the study include the factors influencing marketing vegetables among women farmers and opinion of women farmers towards vegetables marketing.

### **Development of opinion of the farmers and factors influencing towards marketing Vegetables statement**

Regarding the opinion of the farmers and factors influencing towards marketing of vegetables, eight statements was prepared, the responses were recorded on 5 -point Likert scale ranging from "Strongly agree, Agree, Neutral, Disagree and Strongly Disagree" and were scored as 5, 4, 3, 2 and 1. Total score was recorded and then ranked based on mean and standard deviation.

### **HYPOTHESIS:**

Hypothesis 1: There is association between Demographic profile and factors influencing vegetables Marketing

Hypothesis 2: There is no significant difference between opinion of the

women farmers and educational qualification among the farmers.

## **RESULTS AND DISCUSSION:**

### **1. SOCIO-DEMOGRAPHIC PROFILE OF THE WOMEN FARMERS**

The socio-economic profile of farmers encompasses a wide array of factors that influence their livelihoods, ranging from demographic characteristics such as age, marital status, educational qualification, and income.

About the age of the farmers which displayed that 36 per cent of the women farmers belongs to 41-50 years, 31 per cent of the farmers belongs to the age group of 31-40 years, 18 per cent of the farmers belongs to less than 30 years and 16 per cent of the farmers belongs to more than 50 years. Age indicates a mix of experience levels and different perspectives, impacting agricultural practices and needs. Regarding the marital status it highlights that majority (77%) of the women farmers were married, 21% of the women farmers were unmarried and three per cent of the farmers were widowed. Thus, married women farmers indicates an active involvement in agricultural activities within their families with shared

responsibilities and collaborative decision-making in household-related agricultural endeavors.

The educational qualification of the women farmers depicts that 48 per cent of the farmers completed high school, 20 per cent completed middle school, 16 per cent completed primary school, seven per cent were illiterate, six per cent completed graduation and above and five per cent completed higher secondary education. Educational diversity is essential for designing educational support and training programs tailored to the varied needs. The income details depicts that 46 per cent of the women farmers earn Rs. 50,000 – 1,00,000, 33 per cent earn less than Rs. 50,000, 20 per cent earn Rs. 1,00,000 – 2,00,000 and three per cent earns above Rs. 2,00,000. This indicates different economic levels and potential varying needs for financial support of the farmers.

### **2. FACTORS INFLUENCING MARKETING OF VEGETABLES AMONG THE WOMEN FARMERS**

The factors influencing the marketing of vegetables among women farmers, highlighting their mean scores and respective ranks are shown in Table I.

**TABLE 1**  
**FACTORS INFLUENCING MARKETING VEGETABLES AMONG THE WOMEN FARMERS**

<b>SINo.</b>	<b>Factors</b>	<b>Mean Score</b>	<b>Rank</b>
1	Immediate sale of perishable vegetable produce	4.50	I
2	Networking opportunities with other farmers, traders or organization	4.48	II
3	Market information	4.12	III
4	Shortage of transport facilities	3.89	IV
5	Training program for improving marketing skills	3.35	V
6	Availability of transport facilities to access market	2.94	VI
7	Insufficient storage facilities	2.84	VII
8	Competition from other farmers and vendors	2.37	VIII

The highest mean score of 4.50 ranked I as this factor signifies about the immediate sale of perishable agricultural produce. Women farmers acknowledge the importance of promptly selling perishable produce to prevent spoilage. Immediate selling ensures that their vegetables reach consumers while still fresh, maximizing their returns. Networking opportunities with other farmers, traders, or organizations ranked II with the Mean Score of 4.48.

Establishing connections with fellow farmers, traders, or organizations is seen as beneficial for exchanging information, accessing markets, and potentially enhancing their marketing strategies. Market information was ranked as III with the mean score of 4.12 as having accurate and timely information about concerning prices, demand and supply dynamics, as well as consumer behavior, empowers farmers to make informed choices regarding selling their produce.

## FACTORS INFLUENCING WOMEN FARMERS OPINION TOWARDS VEGETABLES MARKETING

The perception of women farmers towards vegetable marketing were assessed and the details are given in the Table 2 on the basis of mean score and rank.

**TABLE 2**

### OPINION OF THE WOMEN FARMERS TOWARDS VEGETABLES MARKETING

SI no.	Statement	N=200	
		Mean Score	Rank
1	Income is the main factor for vegetables marketing	4.55	I
2	Better marketing facilities can help the farmer to get better price for their product	3.85	II
3	Setting up regulated purchase center of vegetables produce in nearby localities boost up the production	3.80	III
4	One should produce items which is more in market demand	3.63	IV
5	Storage facilities for vegetables produce are sufficient	3.40	V
6	Standardization and grading increase the burden of the farmers for marketing	3.11	VI
7	Government support for marketing of vegetables is not sufficient	2.55	VII
8	Farm women have lesser role in vegetables marketing than men	1.65	VIII

The statement 'Income is the main factor for Vegetables Marketing' scored the highest mean scores of 4.55, indicating that the women farmers consider income as the primary influencing factor and plays a crucial role in their marketing decisions. It highlights that their decision-making processes in vegetable marketing revolve around the potential for income generation and maximizing income holds a central position in guiding their decisions, potentially influencing different aspects in agriculture.

'Better marketing facilities can help the farmer to get better price for their product', this statement ranks second with a mean score of 3.85. Thus, it emphasizes the importance of

upgrading and optimizing marketing resources and infrastructure to potentially enhance their economic returns in the agricultural marketplace. Investing in and upgrading marketing infrastructure, such as better storage, transportation, or market access, can directly impact the prices they receive for their products.

Regarding the statement, 'Setting up regulated purchase centre of Vegetables produce in nearby localities will boost up the production' ranked 3<sup>rd</sup> with a mean Score of 3.80. Establishing these centres might streamline the process of selling produce, encourage more cultivation, and potentially enhance the productivity.

**HYPOTHESIS TESTING:**

Hypothesis 1: There is association between Socio economic characteristics and factors influencing vegetables Marketing

**TABLE 3**  
**ASSOCIATION BETWEEN DEMOGRAPHIC PROFILE AND FACTOR INFLUENCING MARKETING VEGETABLES**

Demographic Profile	Mean	SD	Chi square	df	P value
Age	2.50	.962	334.026a	36	.000**
Marital Status	1.27	.518	192.071a	24	.000**
Educational Qualification	3.45	1.181	565.373a	60	.000**
Income	1.92	.785	303.645a	36	.000**

Table 3 highlights the P value below 0.01. Therefore, the hypothesis is accepted at a significance level of 1%. Hence, there is an association between demographic profile (age, marital status, educational qualification, and income) and factors influencing marketing of vegetables among the women farmers.

Examining the means within this context, it was observed that educational qualification has the highest mean value, followed by age and income, while marital status has the least mean value. The educational qualification holds the most substantial association with the factors influencing vegetable marketing among women farmers. Higher educational qualifications equip farmers with enhanced skills in marketing. Those with more education possess a deeper understanding of market trends, consumer behaviour, and good marketing skills.

While age and income also

demonstrate a discernible association with these influencing factors, their impact appears to be relatively less pronounced compared to educational qualification. As, age can bring experience, it might not necessarily correlate directly with specific knowledge or skills related to effective marketing strategies. Older farmers have rich experience but could potentially lack exposure to modern marketing techniques and educational advancements. Higher income contribute to certain advantages in marketing, such as access to better technology, transportation, or resources. However, income does not always translate directly into expertise marketing strategies, which could explain its slightly lower impact compared to educational qualifications. Marital status showcases the least influence on the factors impacting vegetable marketing among women farmers as it has less impact and as it is not directly related to marketing

knowledge or strategies. It might be less influential in determining the approaches taken in marketing vegetables compared to factors like education, age, or income.

Thus, educational qualification often serves as a more direct influencer by equipping individuals with skills,

knowledge, and methodologies necessary for effective marketing strategies in the agricultural sector.

Hypothesis 2: There is no significant difference between opinion of the women farmers and educational qualification among the farmers.

**TABLE 4**  
**ANOVA FOR EDUCATIONAL QUALIFICATION AND OPINION OF THE WOMEN FARMERS TOWARDS VEGETABLE MARKETING**

Opinion	Educational Qualification						N=200	
	Illiterate	Primary School	Middle School	High School	Higher Secondary Education	Graduation & above	F Value	Sig
	Mean & SD	Mean & SD	Mean & SD	Mean & SD	Mean & SD	Mean & SD		
Income is the main factor for vegetables marketing	4.00 (.000)	4.00 (.000)	4.38 (.493)	5.00 (.000)	4.00 (.000)	4.00 (.000)	169.265	.000**
Government support for marketing vegetables is not sufficient	1.00 (.000)	1.81 (.397)	2.05 (9.223)	3.56 (.710)	1.00 (.000)	1.00 (.000)	146.954	.000**
Setting up regulated purchase center of vegetables produce in nearby localities will boost up the production.	2.00 (.000)	2.50 (.880)	3.95 (.223)	4.49 (1.040)	2.00 (.000)	4.73 (.905)	52.781	.000**
Standardization and grading increase the burden of the farmers for marketing	4.00 (.000)	4.28 (.457)	4.10 (1.119)	2.00 (.000)	4.00 (.000)	4.00 (.000)	162.422	.000**
Storage facilities for vegetables produce are sufficient	4.00 (.000)	4.34 (.483)	4.95 (.320)	2.23 (.424)	4.00 (.000)	4.00 (.000)	365.519	.000**
Farm women have lesser role in vegetables marketing than men	1.00 (.000)	1.00 (.000)	1.87 (.339)	2.00 (.000)	1.00 (.000)	1.00 (.000)	368.829	.000**
Better marketing facilities can help the farmer to get better price for his product	2.15 (.376)	3.69 (.965)	5.00 (000)	4.07 (.263)	2.00 (.000)	2.00 (.000)	174.303	.000**
One should produce items which is more demand in market	3.00 (.000)	3.00 (.000)	4.26 (1.019)	4.00 (.000)	2.20 (.422)	2.00 (.000)	90.617	.000**

1. The value refers to with bracket refers to mean and within bracket refers to SD

2. \*\* denotes significant at 1% level  
The p value denotes that all the opinion of the women farmers towards vegetable marketing are below 0.01 which indicate rejection of the null hypothesis at a significance level of 1%. This implies significant differences in opinions among women farmers regarding various opinion of the women farmers towards various aspects of vegetable marketing.

When considering about the opinion on 'Income is the main factor for vegetables marketing' there exists a slight variance in mean responses between the women farmers with a middle school and high school education. Regarding the perception of 'Government support for marketing vegetables is not sufficient' there are slight differences in mean responses among the women farmers with educational qualifications in primary school, middle school and high school. Thus, concerning the adequacy of government support for vegetable marketing.

The notion that 'Setting up regulated purchase centre of vegetables produce in nearby localities will boost up the production' shows slight variations in mean responses across the educational qualifications, encompassing primary school, middle school, high school, and graduation & above. Thus, setting up regulated purchase centres on boosting vegetable production.

Concerning the opinion regarding

'Standardization and grading increase the burden of the farmers for marketing' and 'Storage facilities for vegetables produce are sufficient Farm', there are differences in mean responses among individuals with educational backgrounds from primary school to high school. In terms of 'Farm women have lesser role in vegetables marketing than men', there are differences in mean responses specifically among those with educational backgrounds in middle school and high school. Differences in opinions are evident regarding the perceived role of women in vegetable marketing compared to men. The opinion on 'Better marketing facilities can help the farmer to get better price for his product' and 'One should produce items which is more in market demand' shows differences in mean responses among women farmers with educational qualifications ranging from illiterate to high school. Thus, better marketing facilities can improve product prices and the idea of producing items in line with market demand.

Education empowers individuals to expand their resources and capabilities in achieving goals. Additionally, it enhances their comprehension of available choices and the advantages derived from their actions. Consequently, a farmer's satisfaction is positively impacted by their level of education (Meher, 2022). Educational qualifications likely influence women farmers' perspectives on various aspects of vegetable marketing. Higher education levels might lead to different perceptions regarding factors like income, government support,

production enhancements, burdens of standardization and grading, women's role, and marketing strategies. Therefore, women farmers, educational backgrounds appear to play a pivotal role in shaping opinions regarding the core factors impacting vegetable marketing.

### CONCLUSION:

Acknowledging and addressing the influential factors in vegetables marketing empower women farmers, promote gender equality, and drive sustainable agricultural development through effective vegetable marketing strategies. It highlights the diverse socio-demographic profile, shedding light on the influential factors and their opinions on shaping their engagement in vegetable marketing. The study found that the most impactful factor in influencing women farmers' views on vegetable marketing was the immediate sale of perishable vegetables. Moreover, factors like educational qualification significantly influence their perspectives and approaches in vegetable marketing. Higher educational qualifications equip women farmers with essential skills and knowledge, impacting their strategies and decisions in marketing produce. The study suggests that establishment of programs offering financial aid, subsidies, and resources specifically targeted women to be involved in agriculture, specialized training programs focused on marketing skills and modern agricultural techniques tailored for women may be developed and conduct regular workshops with main focus on

marketing strategies and financial management.

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## WOMEN FARMERS PARTICIPATION IN MARKETING ACTIVITIES ON VEGETABLES: ANALYZING THE MOTIVATIONAL FACTORS AND CHALLENGES CONFRONTED

Sushmita Deori<sup>1</sup>, Dr. S Rajalakshmi<sup>2</sup>

<sup>1</sup>Research Scholar, <sup>2</sup>Associate Professor

Dept. of Home Science Extension Education

Avinashilingam Institute for Home Science and Higher Education for Women,  
Coimbatore, Tamil Nadu, India

E-mail: sushmitadeori2@gmail.com

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### ABSTRACT

Women are largely involved in vegetable marketing, contributing substantially to generate additional income to support their families financially. The study was carried out in 2022 within the Barbaruah development block of the Dibrugarh District in Assam, and the primary focus was to comprehensively examine the participation of women farmers in marketing activities. In the context of women farmers marketing activities, the place of sale for their vegetable produce holds the highest mean value of 2.74, indicating its significant importance whereas, the time for harvesting has a lower mean value of 1.79, indicating it is less of a concern in comparison. The study identified motivational factors participating in marketing activities that depicts majority 96% of the women farmers mainly participate due to the 'Contribution for additional household income'. Remarkably, significant differences were observed between various age groups and the nature of marketing activities engaged in by these women farmers. All four selected attributes of women farmers showed a positive and significant relationship with motivational factors while participating in marketing activities, with a coefficient of determination ( $R^2$ ) of 0.794. The key challenges confronted by these women farmers, particularly revolving around intermediaries and traders in the marketing process was ranked I with a mean score of 6.16.

**Keywords:** Activities, Challenges, Farmers, Marketing, Motivations, Women

### INTRODUCTION

Women are essential contributors to agriculture, actively participating alongside men within farm families. They play a vital role and are heavily involved in cultivating crops, managing livestock and ensuring agricultural sustainability and productivity. From the initial stages of soil preparation to post-harvest activities and marketing, rural women play a crucial role, engaging with full passion and commitment (Satyavathi et al., 2011).

Despite their significant contributions, many rural women are unskilled, illiterate and bound by traditional roles, limiting their productivity. In many farming communities, women farmers are

driven to sell vegetables for several reasons, including the desire for financial independence and the need to support their families. Moreover, by engaging in vegetable sales, women often aspire to assume leadership roles within their communities. Through their entrepreneurial endeavors, they not only enhance their social standing but also exert influence in decision-making processes, thereby shaping community development initiatives and fostering positive change.

Even though their contributions are significant, they often go unnoticed and they face numerous challenges. These include societal restrictions, restricted mobility and time constraints which results in lower productivity compared to men. Despite these challenges, women farmers show remarkable determination and adaptability. They leverage personal networks, develop innovative marketing strategies and continually seek to enhance their farming knowledge. Addressing the challenges, women face in marketing forms the basis for advocating gender-sensitive policies. This analysis becomes instrumental in promoting equal opportunities and dismantling challenges that impede women's active participation in the agricultural sector. The full potential of women farmers can be unlocked to create a more inclusive and prosperous agricultural community.

The motivational factors that encourage women farmers for participation in marketing activities encompass the desire to achieve economic independence, generate additional household income and secure a better future for their families which contribute to local economic growth. By supporting women through training, exposure visits and group activities, women can be empowered to take on more significant decision-making roles in agriculture.

### **OBJECTIVES**

1. Investigate the Socio Demographic characteristics of Women Farmers.
2. Analyze the Marketing Activities adopted by the women farmers.
3. Identify the Motivational factors in adopting marketing activities among the women farmers.
4. Evaluate the Challenges confronted by the Women Farmers.

### **REVIEW OF LITERATURE**

Agriculture stands as a fundamental sector crucial for human survival, and the undeniable contribution of women. In both small and large-scale farms, women are essential contributors to food production, dedicating themselves to cultivating crops that sustains not only their households but also extending beyond local boundaries (**Gabriela Lozano, 2023**). Women represent approximately 43% of the global agricultural labor force (**Doss, 2011**).

**Swamikannan D et al, (2015)** stated that in the economies of many developing countries, including India, rural women form a vital part of the workforce. About four-fifths of women are economically active in the country are engaged in the agricultural sector.

**Monalisa Patra et al. (2018)** explained that in the agricultural sector, women serve as farmers, workers and entrepreneurs, which ensures the smooth operation and productivity of farms, forming the foundation of India's rural and agricultural economy. Even though women play a crucial role in farming and rural economies, their work often goes unnoticed and undervalued. In addition to women indispensable contributions to households and communities by supplying food, water and fuel, and tending to the needs of children, the elderly, and the ill, women also play a crucial role in agriculture. Women play direct or indirect roles in agriculture and related activities, with a primary

focus on vegetable production. The establishment of gender equality is vital for the development of a nation because it ensures that all individuals, regardless of gender, have equal opportunities to contribute to and benefit from the nation's progress. Acknowledging women's contributions and granting them access to knowledge, extension services, credit facilities, land, facts, resources, advanced technologies, and other innovations are crucial measures. These measures not only attract women to agricultural pursuits but also contribute to reducing poverty among women farmers

Achieving gender equity is essential for realizing sustainable development goals and ensuring the overall well-being of women and their families (C. Leigh Anderson, 2019). Despite constituting nearly half of the agricultural workforce comprises women in many developing nations, their production potential faces constraints due to barriers related to financial access, inputs, extension services and issues surrounding land ownership and rights (World Bank, 2018).

(Patil, Basavaraj, 2018) informed that women encounter various challenges that hinder their productivity and full participation in agricultural development. Obstacles such as limited mobility, a lack of information and gender-based discrimination often impede women in agriculture from accessing markets. Facilitating access to markets and providing market-related information can empower women to enhance their income, reduce reliance on subsistence farming and contribute significantly to economic growth.

## **HYPOTHESIS**

H01: There is no significant difference among age group with respect to marketing activities.

H1 : There is association between attributes i.e., Age, Marital status, Educational qualification and Income with the motivational factors for participation in marketing activities among the women farmers

## **METHODOLOGY**

### **Area Selection:**

The study focused on Rajabheta Gram Panchayat and Bagibill Gram Panchayat within the Barbaruah development block in the Dibrugarh District of Assam. Within Rajabheta Gram Panchayat, the study selected two villages, namely Bagibill and Tekela Chiring, and within Bagibill Gram Panchayat, two villages—Walkhabi and Lengapather—were chosen. This chosen area is characterized by conducive climate and soil conditions, especially suitable for crop cultivation, particularly in the domain of vegetable farming, establishing it a key vegetable-growing area in the district.

### **Sample Size:**

The study encompassed a sample size of 200 women vegetable farmers, with 50 women farmers selected from four villages using simple random sampling method.

### **Methods and Tools:**

The researcher employed methods such as face-to-face interactions and observations, utilizing a well-structured interview schedule as the primary tool. This schedule covered sections on socio-demographic aspects, adopted marketing activities, motivation behind involvement of marketing activities by women farmers and challenges confronted by women farmer in vegetable marketing.

**Data Analysis:**

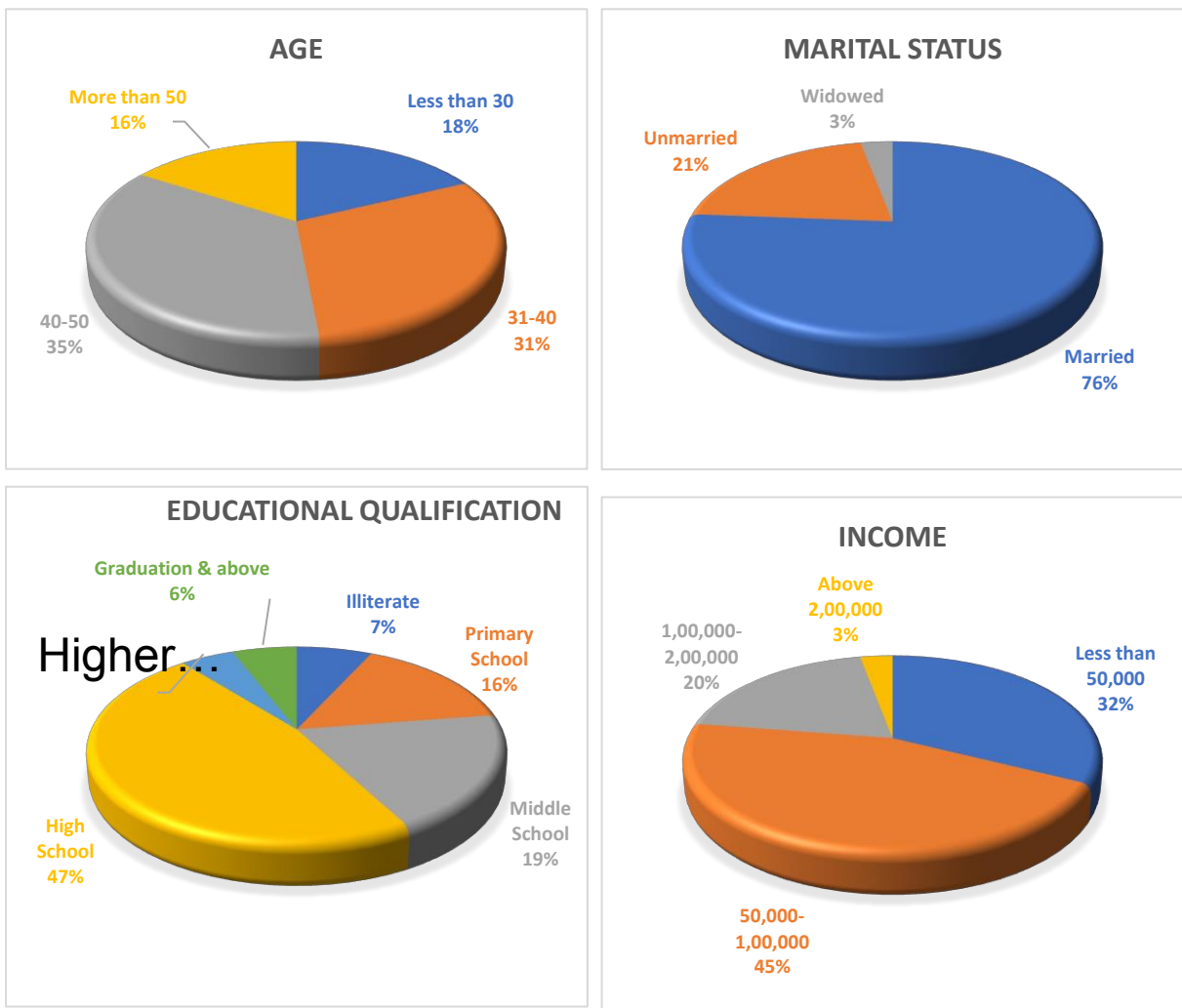
Following data collection, responses were analyzed in alignment with the study's objectives. Statistical methods, including frequency distributions, percentages, means, standard deviations one-way ANOVA tests, Correlation and Multiple Regression were employed to describe the study variables. The data underwent analysis using the Statistical Package for the Social Sciences (SPSS version 29).

**Study Variables:**

The Independent Variables chosen to examine the characteristics of rural women farmers include age, marital status, educational qualification, and income. Dependent variables encompass marketing activities, motivation behind women farmers' involvement in vegetable marketing, and challenges encountered by women farmers in vegetable marketing.

**FINDINGS AND DISCUSSION**

**Socio-Demographic Characteristics of the Women Farmers**



**Fig- 1 Socio demographic Characteristics of the farmers**

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Regarding the age of farmers, the distribution reveals that 35 per cent of women farmers are in the 41-50 age group, 31 per cent falls in the 31-40 age group, 18 per cent are under 30 years, and 16 per cent are above 50 years. The diversity in age signifies a mix of experience levels, older women farmers bring traditional knowledge and skills, while younger ones may introduce innovative approaches. Examining marital status, the majority (76%) of women farmers, are married, while 21 per cent are unmarried, and three percent are widowed. Married women farmers actively participate in agricultural activities and have access to additional social support networks through their families.

Educational qualifications show that 47 per cent of women farmers completed high school, 20 per cent completed middle school, 16 per cent completed primary school, seven per cent are illiterate, six per cent have a graduation degree or above, and five percent completed higher secondary education. Educated women farmers inclined to adopt innovative and sustainable farming techniques, contributing to increased productivity and environmental sustainability. Income details indicate that 45 per cent of women farmers earn between Rs (50,000 and 1,00,000), 32 per cent earn less than Rs 50,000, 20 percent earn between Rs (1,00,00 and 2,00,000), and three percent earns above Rs. 2,00,000. These income disparities reflect different economic levels among farmers, a stable income ensures their financial well-being. Higher incomes provide women farmers with the capacity to invest in improved agricultural inputs, technologies, and training, leading to increased productivity and contributes to the overall economic development.

### Marketing Activities Adopted by the Women Farmers

The marketing activities adopted by women farmers encompass various actions to promote and sell their agricultural produce are displayed in the table 1.

**Table 1. Marketing Activities Adopted by the Women Farmers**

S. No.	Marketing Activities	N=200			
		F	%	Mean	SD
<b>1</b>	<b>Time for Harvesting</b>			1.79	1.088
	Dawn (4 am to 9 am)	111	56		
	Dusk (5 pm and 7 pm)	54	27		
	Late evening (7 pm to 9 pm)	2	1		
	Nighttime (10 pm and extending until 3 am)	33	16		
<b>2</b>	<b>Distance of market</b>			2.74	.585
	Within 10 kilometers	15	8		
	Between 11 and 20 kilometers	21	10		
	Between 21 and 30 kilometers	164	82		
<b>3</b>	<b>Place of sale of the Vegetables produce</b>			2.74	.796
	Within the Village	13	7		
	Local Market	56	28		
	Weekly Market	100	50		
	Distant Market	31	16		
<b>4</b>	<b>Details of sales to consumers</b>			2.18	.991
	Directly sales to consumers	54	27		
	Village-level intermediaries	85	43		

	Commission agents (Intermediaries)	32	16		
	Sales through Local shops	29	15		
<b>5</b>	<b>Storage for preserving of Vegetables</b>				
	Household storage	123	61	1.98	1.307
	Warehouses	7	4		
	Cooperatives store	21	11		
	Shared storage facilities near market	49	24		
<b>6</b>	<b>Package of Vegetables</b>				
	Jutebags (Gunnybags)	112	56	2.15	1.498
	Bamboo Baskets	23	12		
	Wooden Boxes	12	6		
	Polythene bags	30	15		
	Plastic trays	23	11		
<b>7</b>	<b>Transport used to carry the vegetables</b>				
	Bicycle	56	28	2.47	1.207
	Bike	58	29		
	Mini truck	22	11		
	Tempo	64	32		

Table 1 outlines about the marketing activities adopted by the women farmers. Regarding the Time for Harvesting, it shows highest fifty six percent of the farmers harvest vegetables in the dawn i.e. early morning (between 4 am to 9 am). This shows women farmers harvest early morning, indicating factors such as cooler temperatures or a strategic approach to ensuring freshness and quality of the vegetable for market sales.

Majority 82 % of the farmers predominantly sell their produce in markets situated within a distance ranging from 21 to 30 kilometres which may be associated with better economic returns and ease of transport for the farmers.

Place of Sale of the Vegetables Produce depicts fifty percent of the women farmers prefer selling their produce in the weekly market, potentially due to factors like increased foot traffic or better sales opportunities. About details of sales to consumers, it shows that forty three percent of the farmers sell to village-level intermediaries due to convenience and established relationships. Storage for Preserving Vegetables indicates that sixty one percent of the women farmers store at house which indicate limitations in external storage facilities for more immediate access to their harvested vegetables.

Fifty-six percent of women farmers prefer packaging their vegetables in jute bags (also known as Gunny bags) due to factors such as durability, affordability, or their eco-friendly nature which reflect environmental consciousness. Regarding the transport used to Carry the Vegetables it indicates thirty two percent of the women farmers preferred mode of transport for carrying vegetables is tempo due to suitability for smaller quantities of produce, accessibility in rural areas, cost-effectiveness for transportation.

H01: There is no significant difference among age group with respect to marketing activities.

**Table 2. Anova for significant difference among Age group with respect to Marketing Activities**

S.No.	Marketing Activities	N=200					
		Age (In Years)				F Value	P Value (Sig)
		Less than 30	31 – 40	41 – 50	More than 50		
		Mean & SD	Mean & SD	Mean & SD	Mean & SD		
1	Harvesting Time	1.00 (.000)	1.00 (.000)	2.44 (.857)	2.72 (1.464)	65.271	.000 **
2	Distance of market	3.00 (.000)	3.00 (.000)	2.28 (.796)	3.00 (.000)	34.796	.000 **
3	Place of sale of the Vegetables produce	3.00 (.000)	3.00 (.000)	1.86 (.487)	3.94 (.246)	380.428	.000 **
4	Details of sales to consumers	2.00 (.000)	2.21 (.410)	1.69 (1.260)	3.41 (.499)	33.555	.000 **
5	Storage for preserving of vegetables	1.00 (.000)	1.00 (.000)	3.66 (.559)	1.22 (.420)	746.483	.000 **
6	Package of Vegetables	1.00 (.000)	1.00 (.000)	3.97 (.956)	1.56 (.504)	341.115	.000 **
7	Transport used to carry the vegetables	4.00 (.000)	3.06 (1.114)	1.86 (.457)	1.00 (.000)	144.278	.000 **

1. The value refers to mean and within bracket refers to SD

2. \*\* denotes significant at 1% level

As the data in the table 2 shows that the P value is below 0.01, the null hypothesis is rejected at a significance level of 1% with regard to marketing activities and signifies that among women farmers, there are significant differences across age groups in their approaches to various marketing activities related to vegetable farming such as harvesting time, distance of market, place of sale of vegetables produce, selling details to consumers, Storage for preserving of vegetables, package of Vegetables and transport used to carry the vegetables.

Regarding harvesting time, distance of market, place of sale of the vegetables produce, storage for preserving of vegetables and package of vegetables it shows that there is no difference mean between less than 30 and 31-40 years but there is slight difference mean in selling details to consumers and transport used to carry the vegetables between less than 30 and 31-40 years. The age group between 41-50 years and more than 50 years shows that there is significant difference between the means of all the activities i.e harvesting time, distance of market, Place of sale of the Vegetables produce, selling details to consumers, storage for preserving of vegetables, Package of Vegetables and transport used to carry the vegetables.

The results suggesting that age groups have an influence on various marketing activities related to vegetable produce, as indicated by the significant differences in mean responses across different age categories and age plays a significant role in shaping how women farmers approach and execute their marketing activities. Younger farmers (less than 30 and aged 31-40) may exhibit different marketing practices and tendencies compared to those in the middle age (41-50) and older farmers (above 50). Women farmers do different activities compared to the men farmers with varying degrees of age have distinct strategies and preferences when engaging in vegetable marketing.

**Motivational Factors for Participation in Marketing Activities**

Participation in marketing activities for women in the vegetable industry can bring about several positive outcomes, contributing to both individual empowerment and the growth of the agricultural sector.

**Table 3. Motivational Factors for Participation in Marketing Activities**

S. No.	Motivational Factors	N=200			
		Yes		No	
		F	%	F	%
1	Contribution for additional household income	191	96	9	4
2	Based on own interest	174	87	26	13
3	Desire for financial independence	159	80	41	21
4	Encouragement from others (family, friends or other members)	152	76	48	24
5	Presence of Financial support	112	56	88	44

*\*Multiresponse*

Table 3. illustrates the motivational factors for participation in marketing activities by women farmers. The data indicates that majority (96%) of the women farmers primary reason for participation is the desire to contribute for additional household income. This emphasizes the economic importance of engaging in marketing activities as a method to improve the financial resources of families. Following, 87% of women farmers are engaged in marketing based on their personal interest as women farmers derive fulfilment and satisfaction from the marketing dimension of their agricultural pursuits, aligning economic activities with individual interests. While 80% of the women farmers expressed involvement due to the desire for financial independence which signifies women farmers' aspiration to achieve self-sufficiency by actively participating in the marketing domain and least fifty six percent of the women farmers involved due to the presence of financial support which shows the role of external financial support in participation of women farmers in marketing activities for the broader economic advancement.

**H1 :** There is an association between attributes i.e., Age, Marital status, Educational qualification and Income with the motivational factors for participation in marketing activities among the women farmers

**Table 4. Correlation Coefficient of Motivation behind Involvement of Marketing Activities with their selected Attribute**

S.No.	Attribute	Correlation Coefficient ‘r’ Value
1	Age	-.619**
2	Marital status	-.802**
3	Educational qualification	.272**
4	Income	.600**

\*\* denotes significant at 1% level

The study aimed to examine the association between various attributes of women farmers and their motivational factors for participation in marketing activities, as indicated by the zero-order correlation coefficients presented in Table IV. The analysis revealed that certain variables significantly impact women farmers motivations behind adopting marketing activities. **Age;** Age is a key factor impacting the motivations and decisions of women farmers when it comes to adopting marketing activities. Older women farmers tend to prioritize the preservation of family traditions and the maintenance of stability, while younger women are increasingly inclined towards embracing innovative marketing strategies to achieve economic independence. **Marital status;** Married women view marketing activities as a means to contribute to the household income ensuring a brighter future for their families. Additionally, being married provides them with decision-making flexibility and has the potential to mold the responsibilities, priorities, and individual aspirations of women farmers, shaping their approach to embracing marketing activities. **Educational qualification;** Educational qualifications play a crucial role in shaping the knowledge, skills, and confidence to exploring new avenues among women farmers. Education acts as a pivotal factor, broadening an individual's horizon of thinking and action. Consequently, it can be inferred that education is a highly critical variable in this context (Maratha, P., 2017). **Income;** For women with lower household incomes, the adoption of effective marketing strategies becomes a necessity for economic survival and livelihood enhancement. Resource full farmers with higher incomes may feel compelled to explore new technologies, aiming for both profit maximization and increased security.

**Table 5. Multiple Regression Analysis of Predictor Variables with motivational factors for participation in Marketing Activities among the Women Farmers**

S.No.	Attributes	‘b’ value	S.E. (b)	‘t’ value	Sig.
1	Age	-.668	-.416	-10.635	<.001
2	Marital status	-1.527	-.512	-11.187	
3	Educational qualification	-.339	-.259	-7.342	
4	Income	.684	.348	7.794	
<b>Multiple R2 (Coefficient of determination) = .794 **</b>					

Multiple regression analysis was conducted to determine the contribution of selected attributes i.e., age, marital status, educational qualification and income of women farmers with motivational

factors for participation in marketing activities. The study utilized motivational factors for participating in marketing activities as the dependent variable, while age, marital status, educational qualification, and annual income served as independent variables. Results from the regression analysis, as presented in Table 5, demonstrated that 79.40 per cent of the variation in motivations behind adopting marketing activities among women farmers was accounted for by these four attributes. A multiple R<sup>2</sup> value of 0.794, with a highly significant 'F' value, revealed the significance of the regression equation in predicting motivations. All four attributes—age, marital status, educational qualification, and income—showed positive and significant relationships with the motivational factors for participating in marketing activities among the women farmers.

**MAJOR CHALLENGES CONFRONTED BY THE WOMEN FARMERS**

The Challenges are barriers that affect the livelihoods, productivity, and well-being of women engaged in farming activities. The challenges confronted by the women farmers are presented in the table 6.

**Table 6. Major Challenges Confronted by the Women Farmers**

SL NO.	Challenges Confronted	Mean Score	Rank
1	Exploited by the middleman and traders	6.16	I
2	Non- membership of women’s group	3.57	II
3	Lack of cold storage and warehousing facilities	2.77	III
4	Limited access to information and communication technology	2.64	IV
5	High cost of input	1.35	V
6	Inadequate Banking and Credit facilities	1.22	VI
7	Lack of a proper transportation system	.72	VII

*\*Multiresponse*

Table 6 indicates the challenges confronted by the women farmers were assessed based on the mean scores. The highest mean score of 6.16 was attributed to the challenge of being exploited by middlemen and traders. This implies that unfair dealings and exploitative behaviour severely impact their agricultural activities, potentially affecting their income, market access, and overall autonomy in trade transactions. (Raahinipriya & Jansi Rani, 2018) The lack of institutional markets and the prevalence of private markets have facilitated the middlemen to flourish in marketing the product of the farmers.

Following the second highest challenge reported by these farmers was non-membership in women's groups with a mean score of 3.57, This indicates that the absence of membership in these groups was considered a substantial hurdle impacting their farming activities and Women's groups often serve as vital platforms for knowledge sharing, access to resources, and mutual support within agricultural communities. The lack of membership might hinder their access to crucial resources, support networks, and agricultural information, and impacting their overall agricultural productivity.

The third challenges confronted by the women farmers was Lack of cold storage and warehousing facility with a mean score of 2.77. As access to proper storage solutions is helps to preserve their produce, reducing wastage, and maintaining quality, all of which directly impact their economic returns and market participation.

## **SUMMARY AND CONCLUSION**

Women farmers participating in vegetable marketing are primarily motivated by the need to contribute additional income to their households and to pursue their individual interests. These motivations drive their active involvement in marketing activities, seeking financial stability and personal fulfilment. However, they face significant challenges that hinder their efforts. Exploitation by middlemen, non-membership in supportive women's groups and the lack of essential infrastructure like cold storage facilities are major obstacles that limit their effectiveness and profitability in the market.

The study conducted a multiple regression analysis, revealing a significant association between specific attributes—such as age, marital status, educational qualification and income and the motivational factors driving these women farmers. These attributes play a crucial role in shaping their motivations and participation in marketing activities. To address these challenges and enhance the participation and success of women farmers, the study emphasizes the need for targeted interventions. These include organizing workshops for skill development, promoting the adoption of relevant technologies, providing financial support, and fostering strong community networks. Such measures are essential to overcome the identified barriers and empower women farmers, leading to sustainable agricultural development in the region.

## **SUGGESTIONS**

- Conduct training cum capacity-building programs for the women farmers to improve their marketing skills and financial literacy
- Vegetable growers association for women should be strengthened in village level.
- Create platforms for connections between farmers and potential buyers (wholesalers, retailers and food processing companies).
- Educate farmers on digital tools usage to access market information and sell their produce online.

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