

## Identification of Different Information Sources Utilized by the Selected Horticultural Growers of Tripura

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### ABSTRACT

The state of Tripura has favorable agro-climatic conditions for growing diverse horticultural crops. Though various agricultural technologies are introduced periodically by the government, many technologies do not reach the farmers field in due time. Therefore, a research study was conducted to identify different information sources utilized by the horticultural growers of Tripura. To find out this four districts of Tripura state were purposively selected

namely, West Tripura, Khowai, Dhalai and South Tripura during the year 2021-22 using ex-post facto research design. Twenty four farmers were selected randomly from each village to make a sample size of 240 farmers. Primary data were collected from the respondents by personal interview method. Findings revealed that majority (65.83%) of the respondents belonged to 35- 50 years, 44.58% of them belonged to ST category and majority (37.08%) of them had education up to secondary school. Majority (81.25%) of the farmers had nuclear family, 77.08 % of them had medium family size with 4-8 members, majority (61.25%) had low level of social participation, 36.25% of them had marginal land holdings, 44.58% of them had annual income of Rs 30,000-70,000 from farming, 86.25% of them had low level of extension contact, 63.75%, 66.25%, 84.58% of them had low level of training exposure and 64.17 of them had medium level of information sources utilization, farming experience. The variables age, education, size of land holding, annual income, extension contact, farming experience and training exposure had significant association with the dependent variable 'sources of information utilization'.

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### INTRODUCTION

India has emerged as world leader in the production of a variety of fruits. Besides, India has maintained

its dominance in the production of few-number of spices. Horticulture is considered as the best option to bring diversification in agriculture to address the issue of employment, profitability and environmental concerns and there is much scope for agribusiness. The economic importance of horticultural produce has been increasing over the years due to increasing domestic and international demand. Area, production, productivity, availability and export have increased manifolds.

India has made a fairly good progress in horticultural crops with a total annual production of 326.58 million tonnes (2020-21). Known as the fruit and vegetable basket of the world, India ranks second in fruits and vegetables production in the world, after China. According to the advance estimation report published by the National Horticulture Board (NHB), during 2020-21, India produced 102.03 million metric tonnes of fruits and 188.91 million metric tonnes of vegetables. The area under cultivation for fruits was about 6.96 million hectares while that of vegetables was 10.71 million hectares (NHB 2021). India has been bestowed with wide range of climate and physio-geographical conditions and as such is most suitable for growing various kinds of horticultural crops like fruits, vegetables, flowers, nuts, spices and plantation crops. With the focused attention given to horticulture, there has been a spectacular change in terms of adoption of new technologies, production and availability of horticulture product (Roy *et al.* 2013).

The trends of area and production of horticultural produce like fruits, vegetables, spices and plantation crops in India are increasing in rate. Cultivated area of horticultural produce increased from 12.77 million ha (1991-92) to 27.17 million ha (2020-21) and the production increased from 96.60 million MT (1991-92) to 326.58 million MT (2020-21) (NHB 2021). Vegetables, fruits and spices are the most important components of Indian agriculture because of their nutritional, industrial and medicinal values and also for their export potentiality. Most of the Indians depend on vegetables, fruits and spices for bulk to meet their nutritional requirements. Growing of vegetables is an important source of income. The net return of vegetables from per unit is more compare to other crops

which gives more economic return to the growers. The demand of vegetable, fruit and spices is increasing in the national and international level.

Today horticultural crops cover about 35.00% of the total agricultural exports of the country. The corporate sector is also showing greater interest in horticulture. A major shift in consumption pattern of fresh and processed fruits and vegetables is expected in the coming century. There will be greater technology adoption both in traditional horticultural enterprises as well as in commercial horticulture sector (APEDA 2021). Diversification and value addition will be the key words in the Indian horticulture in the 21<sup>st</sup> Century. India's major exports include onions, mango pulp, fresh mangoes, dried walnuts, fresh grapes. India's biggest export markets are South Asian and Middle East countries (NHB 2021). However, off late the emergence of South East Asian countries like Vietnam and Thailand in the hi-tech horticulture poses a challenge to India's supremacy in the traditional crops. Poor transport infrastructure, inadequate storage facilities, and a fragmented supply chain are eroding India's advantage as a low cost producer. Poor logistics lead to delays and wastage and weaken farmers' incentives to improve the quality of produce.

NE region of the country in general and the state of Tripura in particular, are endowed with the favorable agro-climatic conditions for growing diverse horticultural crops including vegetables, fruits and spices. Horticulture Technology Mission has taken many initiatives to promote higher productivity. This development has brought new technologies and investment, which has impacted production, productivity and availability of horticultural produce. Though various agricultural technologies are introduced periodically by the government, many technologies do not reach the farmers field in due time, some are rejected by the farmers because of lack of proper information about the technology and information about some technologies which are not suitable in the prevailing situations may not reach to the farmers. Thus, there exist a wide gap in information communication channel between the source and receiver. This information gap needs urgent attention and needs to be minimized. Information gap is a major limiting factor among the farming community in India and in the state of Tripura in particular. Keeping these

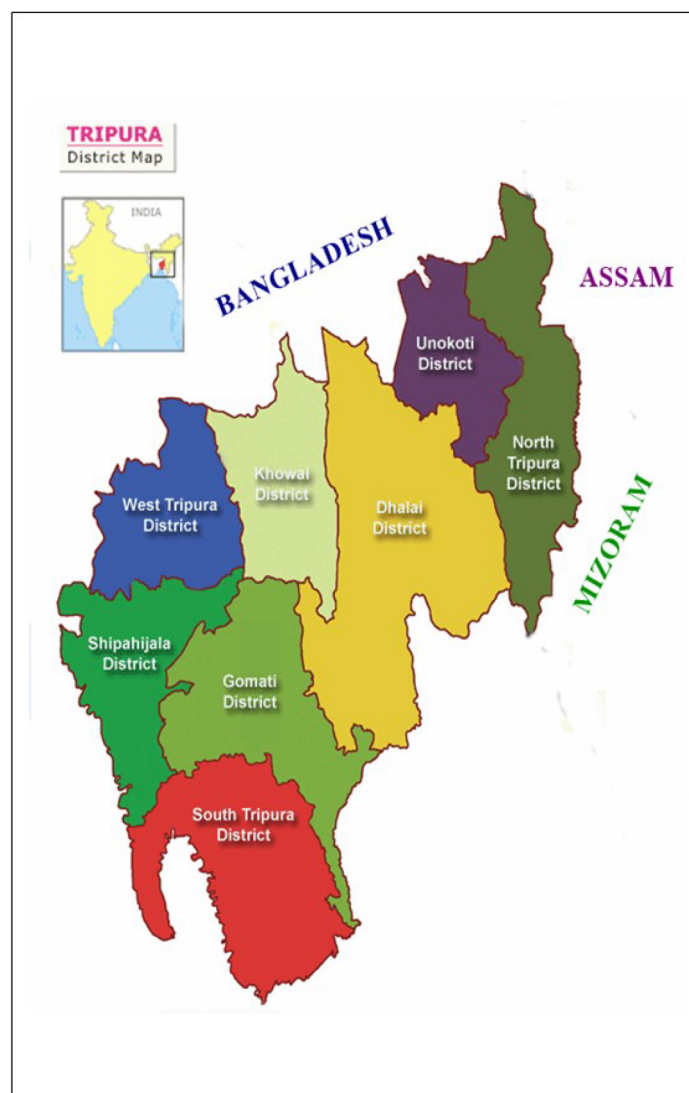


Fig. 1. Selection of districts.

points in view the present study was undertaken to identify the different information sources utilized by the selected horticultural growers of Tripura.

#### MATERIALS AND METHODS

The study was conducted in four districts of Tripura viz., West Tripura, Khowai, Dhalai and South Tripura during the year 2021-22. These districts were purposively selected based on the criteria of highest and lowest area and production of the selected hor-

ticultural crops. From the selected districts, one RD block having highest and the other RD block having lowest area and production in relation to Pineapple, Turmeric, Potato, Ginger and Green Chilli was selected purposively. Thus, Ambssa and Teliamura RD blocks were selected under Dhalai and Khowai Districts respectively for the pineapple as well as turmeric crops. Similarly, Rajnagar and Mohanpur RD blocks were selected under South Tripura and West Tripura Districts respectively for the potato crop. Further Satchand and Manu RD blocks were

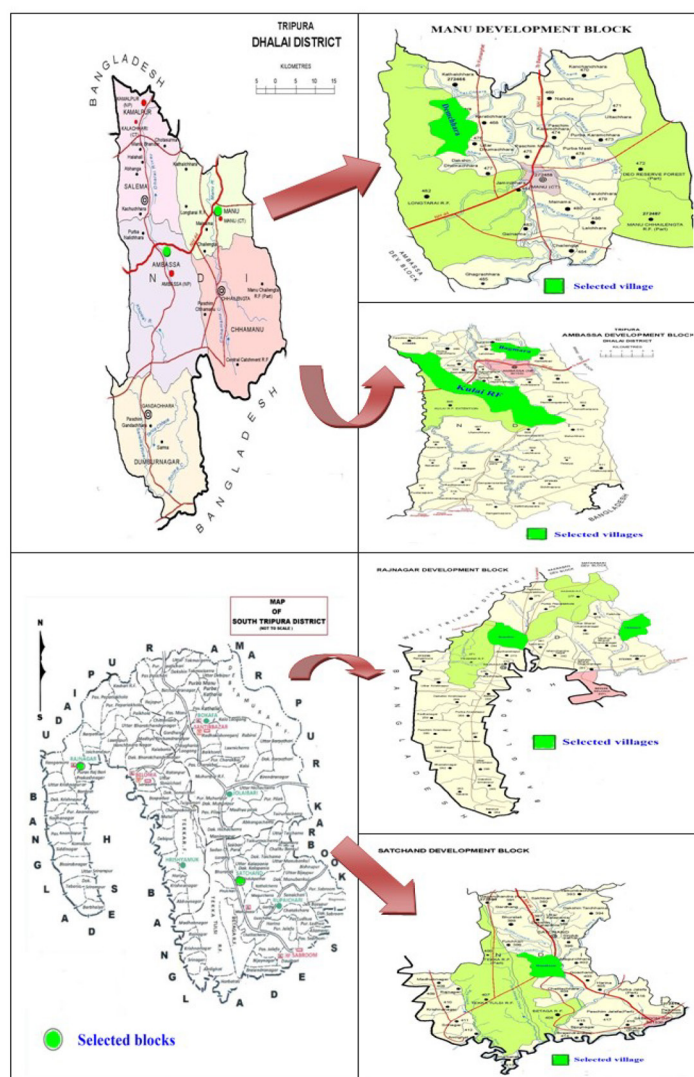


Fig. 2. Selection of rural development (RD) blocks from Dhalai and South Tripura districts.

selected under South Tripura and Dhalai Districts respectively for the ginger crop. Rajnagar and Padmabil RD blocks were selected under South Tripura and Khowai Districts respectively for the green chilli crop for the present study. One village from the high and other from the low group in terms of the area and production of the respective crops under these RD blocks were selected randomly. Thus a total of ten villages namely Bagmara, Kulai RF, Demcharra, Gayamanibari, Tuichindrai, Hawaibari, Manubazar, Barpathari, Chittamara and Bamutia were selected

for the present study (Figs. 1, 2, 3). 3.40 % of the total households (7105) engaged in horticultural crop cultivation among the selected villages were included as sample for the present study. Thus 240 farmers were selected as sample respondents by selecting 24 farmers randomly from each of the selected villages (Fig. 4.)

Sources of information utilized was the dependent variable whereas independent variables like age, caste, education, family type, family size, social

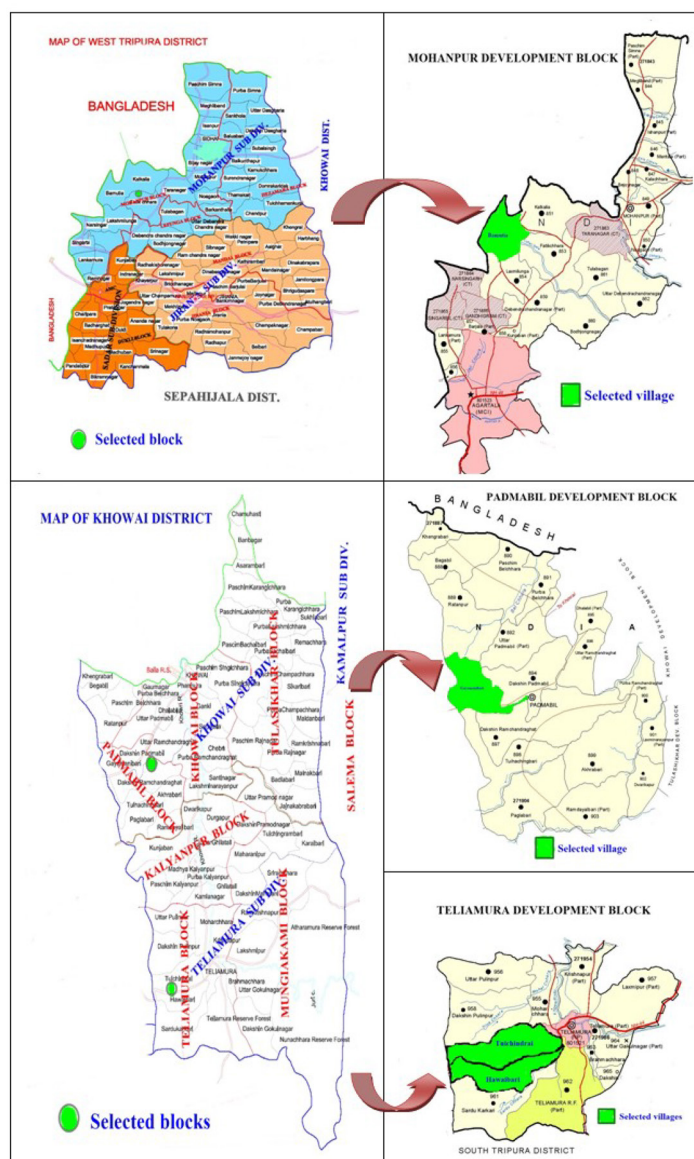


Fig. 3. Selection of rural development (RD) blocks from west Tripura and Khowai districts.

participation, size of land holding, annual income, extension contact, farming experience, training exposure were selected for the present study. The required data were collected from the respondents in an informal atmosphere by using a pre-tested interview schedule by conducting personal interview. Statistical tools like frequencies, percentage, mean, standard deviation and correlation were used for getting the relevant inferences.

## RESULTS AND DISCUSSION

### Socio - economic, personal and psychological characteristics of the respondents

From the Tables 1-12, it was found that majority (65.83%) of the selected horticultural farmers belonged to the age group of 35-50 years followed by 30.42 % of them in the age group of more than 50





**Table 4.** Distribution of respondents based upon family type.

N=240

Sl. No.	Types of family	Pineapple growers		Turmeric growers		Potato growers		Ginger growers		Green chilli growers		Total farmers	
		No	(%)	No	(%)	No	(%)	No	(%)	No	(%)	No	(%)
1	Joint	22	(45.83)	9	(18.75)	4	(8.33)	5	(10.42)	5	(10.42)	45	(18.75)
2	Nuclear	26	(54.17)	39	(81.25)	44	(91.67)	43	(89.58)	43	(89.58)	195	(81.25)
3	Total number of farmers	48	(100)	48	(100)	48	(100)	48	(100)	48	(100)	240	(100)

**Table 5.** Distribution of respondents based on family size.

N=240

Sl. No.	Family size	Pineapple growers		Turmeric growers		Potato growers		Ginger growers		Green chilli growers		Total farmers	
		No	(%)	No	(%)	No	(%)	No	(%)	No	(%)	No	(%)
1	Small (< 4)	1	(2.08)	10	(20.83)	4	(8.33)	6	(12.50)	9	(18.75)	30	(12.50)
2	Medium (4-8)	38	(79.17)	33	(68.75)	39	(81.25)	39	(81.25)	36	(75.00)	185	(77.08)
3	Large (>8)	9	(18.75)	5	(10.42)	5	(10.42)	3	(6.25)	3	(6.25)	25	(10.42)
4	Total farmers	48	(100)	48	(100)	48	(100)	48	(100)	48	(100)	240	(100)
5	Mean family size	6.14		5.50		5.45		5.02		5.06		5.44	
6	SD	2.19		3.21		1.98		1.62		2.55		2.39	

**Table 6.** Distribution of respondents based on social participation.

N=240

Sl. No.	Level of social participation	Pineapple growers		Turmeric growers		Potato growers		Ginger growers		Green chilli growers		Total farmers	
		No	(%)	No	(%)	No	(%)	No	(%)	No	(%)	No	(%)
1	Low	24	(50.00)	23	(47.92)	34	(70.83)	29	(60.42)	37	(77.08)	147	(61.25)
2	Medium	17	(35.42)	21	(43.75)	11	(22.92)	16	(33.33)	10	(20.83)	75	(31.25)
3	High	7	(14.58)	4	(8.33)	3	(6.25)	3	(6.25)	1	(2.08)	18	(7.50)
4	Total farmers	48	(100)	48	(100)	48	(100)	48	(100)	48	(100)	240	(100)
5	Mean	0.69		0.62		0.35		0.46		0.25		0.47	
6	SD	0.85		0.70		0.60		0.62		0.48		0.68	

years and 3.75 % of them belonged to less than 35 years age group, majority (44.58%) of the horticultural farmers belonged to the ST, followed by 22.08 %, 14.58 %, 13.33 % and 5.42 % of them belonged

to SC, OBC, general and most other backward caste groups, most (94.58%) of the farmers were literate and 37.08 % of them had education up to secondary level, majority (81.25%) of them had nuclear family

**Table 7.** Distribution of respondents based on category of land holding.

N=240

Sl. No.	Category of land holdings	Pineapple growers		Turmeric growers		Potato growers		Ginger growers		Green chilli growers		Total farmers	
		No	(%)	No	(%)	No	(%)	No	(%)	No	(%)	No	(%)
1	Marginal (< 1 ha)	13	(27.08)	16	(33.33)	19	(39.58)	17	(35.42)	22	(45.83)	87	(36.25)
2	Small (1 – 2 ha)	13	(27.08)	11	(22.92)	14	(29.14)	13	(27.08)	9	(18.75)	60	(25.00)
3	Semi medium (2-4 ha)	18	(37.50)	14	(29.17)	10	(20.83)	10	(20.83)	13	(27.08)	65	(27.08)
4	Medium (4-10 ha)	2	(4.17)	7	(14.58)	5	(10.42)	7	(14.58)	4	(8.33)	25	(10.42)
5	Big (> 10 ha)	2	(4.17)	0	(0.00)	0	(0.00)	1	(2.08)	0	(0.00)	3	(1.25)
6	Total farmers	48	(100)	48	(100)	48	(100)	48	(100)	48	(100)	240	(100)
7	Mean	2.60		2.25		2.02		2.30		2.00		2.23	
8	SD	2.42		1.89		1.83		2.28		1.95		2.08	

**Table 8.** Distribution of respondents based on the different sources of annual income. Mean annual income = Rs 167283.33, SD = Rs 123562.41. N=240

Range of annual income (Rs)	Pineapple growers n=48	Turmeric growers n=48	Potato growers n=48	Ginger growers n=48	Green chilli growers n=48	Total farmers N=240
	No (%)	No (%)	No (%)	No (%)	No (%)	No (%)
Salary ( Mean = Rs 9412.50 , SD = 25793 )						
Below 30000	42 (87.50)	40 (83.33)	36 (75.00)	47 (97.92)	46 (93.75)	211 (87.92)
30000-70000	2 (4.17)	4 (8.33)	6 (12.50)	1 (2.08)	1 (2.08)	14 (5.83)
70000-110000	2 (4.17)	3 (6.25)	6 (12.50)	0 (0.00)	1 (2.08)	12 (5.00)
110000-150000	2 (4.17)	1 (2.08)	0 (0.00)	0 (0.00)	0 (0.00)	3 (1.25)
Above 150000	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
Wages ( Mean = Rs 13054.39 , SD = 14727.25 )						
Below 30000	42 (87.50)	33 (68.75)	46 (95.83)	44 (91.67)	44 (91.67)	209 (87.08)
30000-70000	6 (12.50)	13 (27.08)	2 (4.17)	4 (8.33)	4 (8.33)	29 (12.08)
70000-110000	0 (0.00)	2 (4.17)	0 (0.00)	0 (0.00)	0 (0.00)	2 (0.83)
110000-150000	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
Above 150000	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
Farming ( Mean =Rs 115716.67 , SD = 94052.44 )						
Below 30000	1 (2.08)	1 (2.08)	0 (0.00)	0 (0.00)	1 (2.08)	3 (1.25)
30000-70000	15 (31.25)	15 (31.25)	32 (66.67)	19 (39.58)	33 (68.75)	107 (44.58)
70000-110000	7 (14.58)	7 (14.58)	7 (14.58)	14 (29.17)	9 (18.75)	53 (22.08)
110000-150000	7 (14.58)	7 (14.58)	4 (8.33)	6 (12.50)	2 (4.17)	25 (10.42)
Above 150000	18 (37.50)	18 (37.50)	5 (10.42)	9 (18.75)	3 (6.25)	52 (21.67)
Other sources of income ( Mean = Rs 171491.70 , SD = 140601.10 )						
Below 30000	37 (77.08)	46 (95.83)	31 (64.58)	28 (58.33)	26 (54.17)	168 (70.00)
30000-70000	6 (12.50)	1 (2.08)	14 (29.17)	10 (20.83)	14 (29.17)	45 (18.75)
70000-110000	3 (6.25)	1 (2.08)	1 (2.08)	7 (14.58)	5 (10.42)	17 (7.08)
110000-150000	1 (2.08)	0 (0.00)	0 (0.00)	2 (4.17)	2 (4.17)	5 (2.08)
Above 150000	1 (2.08)	0 (0.00)	2 (4.17)	1 (2.08)	1 (2.08)	5 (2.08)

**Table 9:** Comparative account of land and farm income from the different horticultural crops grown. N=240

Sl. No.	Attributes	Type of horticultural farmers					Overall
		Pineapple farming	Turmeric farming	Potato farming	Ginger farming	Green chilli farming	
1	Average land under cultivation (ha)	2.26	3.35	1.66	1.75	1.37	2.08
2	Average income from farm (Rs)	156604.2	152916.70	81145.83	106145.80	78229.17	115008.33
3	Average farm income/ha (Rs)	69293.88	45624.07	48883.03	60770.52	56962.98	55336.81

**Table 10.** Distribution of respondents based on their extension contact in the selected crops. N=240

Sl. No.	Level of extension contact	Pineapple growers	Turmeric growers	Potato growers	Ginger growers	Green chilli growers	Total farmers
		No (%)	No (%)	No (%)	No (%)	No (%)	No (%)
1	Low (< 2)	4 (8.33)	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	4 (1.67)
2	Medium (2-3)	43 (89.58)	39 (81.25)	40 (83.33)	40 (83.33)	45 (93.75)	207 (86.25)
3	High (> 3)	1 (2.08)	9 (18.75)	8 (16.67)	8 (16.67)	3 (6.25)	29 (12.08)
4	Total farmers	48 (100)	48 (100)	48 (100)	48 (100)	48 (100)	240 (100)
5	Mean score	2.14	2.75	2.54	2.73	2.33	2.50
6	SD	0.58	0.81	0.82	0.84	0.59	0.77



**Table 11.** Distribution of farmers based on their farming experiences.

N=240

Sl. No.	Level of experience	Pineapple growers No (%)	Turmeric growers No (%)	Potato growers No (%)	Ginger growers No (%)	Green chilli growers No (%)	Total farmers No (%)
1	Low (< 6 years)	3 (6.25)	14 (29.17)	2 (4.17)	12 (25.00)	1 (2.08)	32 (13.33)
2	Medium (6-18 years)	32 (66.67)	34 (70.83)	35 (72.92)	29 (60.42)	27 (56.25)	159 (66.25)
3	High (>18 years)	13 (27.08)	0 (0.00)	11 (22.92)	7 (14.58)	20 (41.67)	49 (20.42)
4	Total farmers	48 (100)	48 (100)	48 (100)	48 (100)	48 (100)	240 (100)
5	Mean	13.87	8.02	12.96	10.29	15.58	12.15
6	SD	6.25	3.04	6.05	6.00	6.13	6.20

**Table 12.** Distribution of respondents based on number of days of training received.

N=240

Sl. No.	Number of days of training received	Pineapple growers No (%)	Turmeric growers No (%)	Potato growers No (%)	Ginger growers No (%)	Green chilli growers No (%)	Total farmers No (%)
1	< 3 days	41 (85.42)	30 (62.50)	45 (93.75)	41 (85.42)	47 (97.92)	203 (84.58)
2	3-5 days	0 (0.00)	18 (37.50)	3 (6.25)	3 (6.25)	1 (2.08)	25 (10.42)
3	> 5 days	7 (14.58)	0 (0.00)	0 (0.00)	4 (8.33)	0 (0.00)	12 (5.00)
4	Total farmers	48 (100)	48 (100)	48 (100)	48 (100)	48 (100)	240 (100)
5	Mean	1.02	1.25	0.19	0.77	0.06	0.69
6	SD	2.50	1.69	0.73	2.03	0.43	1.77

**Table 13.** Distribution of the respondents based on their information sources utilization.

N=240

Sl. No.	Mass-media information sources	Frequency of use						Mean score	Rank
		Most often		Sometimes		Never			
		No	%	No	%	No	%		
1	Radio	0	(0.00)	0	(0.00)	240	(100)		
2	Television	130	(54.17)	104	(43.33)	6	(2.50)		
3	Exhibition	0	(0.00)	56	(23.33)	184	(76.67)		
4	Printed media (Poster, Folder, Leaflet etc)	0	(0.00)	46	(19.17)	194	(80.83)	4.44	I
5	Newspaper	34	(14.17)	105	(43.75)	101	(42.08)		
6	Internet	1	(0.42)	6	(2.50)	233	(97.08)		
7	Mobile	189	(78.75)	41	(17.08)	10	(4.17)		
Sl. No.	Formal sources of information	Frequency of use						Mean score	Rank
		Most often		Sometimes		Never			
		No	%	No	%	No	%		
1	VLW	180	(75.00)	60	(25.00)	0	(0.00)		
2	Horticulture Officer	39	(16.25)	187	(77.92)	14	(5.83)		
3	SMS of KVKs	0	(0.00)	19	(7.92)	221	(92.08)		
4	ATMA functionaries	0	(0.00)	0	(0.00)	240	(100)	2.93	II
5	NGOs	0	(0.00)	0	(0.00)	240	(100)		
6	Any other	0	(0.00)	0	(0.00)	240	(100)		
Sl. No.	Informal sources of information	Frequency of use						Mean score	Rank
		Most often		Sometimes		Never			
		No	%	No	%	No	%		
1	Friends	21	(8.75)	171	(71.25)	48	(20.00)		
2	Relatives	0	(0.00)	12	(5.00)	228	(95.00)		
3	Neighbours	1	(0.42)	66	(27.50)	173	(72.08)	1.90	III
4	Progressive farmers	44	(18.33)	75	(31.25)	121	(50.42)		

**Table 14.** Comparative account of level of information sources utilized by the respondents.

N=240

Sl. No.	Respondents	Level	Information sources utilized		Mean	SD
			Frequency	%		
1	Pineapple growers	Low (<5.5)	9	18.75	8.94	3.41
		Medium(5.5-12.35)	32	66.67		
		High (>12.35)	7	14.58		
2	Turmeric growers	Low (<7.35)	6	12.50	9.92	2.55
		Medium (7.35-12.5)	33	68.75		
		High (>12.5)	9	18.75		
3	Potato growers	Low (<6.5)	12	25.00	9.62	3.12
		Medium (6.5-12.75)	27	56.25		
		High (>12.75)	9	18.75		
4	Ginger growers	Low (<6.35)	9	18.75	9.48	3.15
		Medium(6.35-12.65)	30	62.50		
		High (>12.65)	9	18.75		
5	Green chilli growers	Low (<5.90)	4	8.33	8.42	2.52
		Medium (5.90-10.95)	34	70.83		
		High (>10.95)	10	20.83		
6	Overall farmers	Low (<6.25)	49	20.42	9.27	3.00
		Medium (6.25-12.25)	153	63.75		
		High(>12.25)	38	15.83		

**Table 15.** Correlation of selected independent variables with the dependent variable –'Information sources utilized'. \*\* Significant at 1% level of  $\alpha$ ; \* Significant at 5% level of  $\alpha$ ; NS-Non-significant.

Sl. No.	Independent variables	Co-efficient of correlation (r)
1	Age	-0.401**
2.	Caste	0.0175 <sup>NS</sup>
3.	Education	0.392**
4.	Family type	-0.010 <sup>NS</sup>
5.	Family size	0.046 <sup>NS</sup>
6.	Social participation	-0.0175 <sup>NS</sup>
7.	Size of land holdings	0.177**
8.	Annual income	0.129*
9.	Extension contact	0.360**
10.	Farming experience	0.317**
11.	Training exposure	0.129*

and remaining 18.75 % of them had joint family and 77.08 % of the total farmers belonged to medium family size of 4-8 members, followed by 12.50 % of them having small family size less than 4 members. Further it was found that (61.25%) of the overall farmers had low level of social participation, 36.25 % of the horticultural famers belonged to the marginal land holding category, followed by 27.08 %, 25.00 %, 10.42 % and 1.25 % of them who belonged to semi-medium, small, medium and big land holding categories, majority (87.92%) of the farmers had income from salary which was found below Rs 30000 followed by

87.08 % of them deriving income from wages below Rs 30000 and 44.58 % of them had annual income in the range of Rs 30000- Rs 70000 from farming and 70.00 % of them received income from other sources which included rubber plantation, animal husbandry majority (86.25%) of the overall horticultural farmers had medium extension contact followed by 12.08 % and 1.67 % who had high and low extension contact, majority (66.25%) of the horticultural farmers had medium level of faming experience followed by 20.42 % of them having high and 13.33 % of them having low level of farming experiences, majority (84.58%) of the horticultural farmers, had low training exposure of less than three days and majority (64.17%) of the horticultural farmers had medium level of scientific orientation followed by 22.08 % of them having low scientific orientations and the remaining 13.75 % of them had high scientific orientations.

#### Sources of information utilized by the horticultural farmers of Tripura

From the Table 13 it was found that in case of using the different mass media sources, majority (78.75%) of the selected horticultural farmers used mobile phones most often as mass media information source. Further, majority (43.75%) of them used newspaper sometimes, while 100.00 % of them never used radio.

In case of using formal information sources majority (75.00%) of the respondents made contact with VLW most often. Further, 77.92 % of them contacted Horticulture Officers sometimes while 100.00 % of them had never contacted with NGOs, ATMA functionaries or any other formal information sources. In case of using informal information sources only 18.33 % of the respondents made contact with progressive farmers most often. This finding was in similar to the findings of Shailesh *et al.* (2013). Further, 71.25 % of them contacted their friends for information sometimes and 95.00 % of them never contacted their relatives for getting information related to crop production and management. Overall analysis revealed that mean score of using mass media sources was highest (4.44) among the other sources of information utilized by the farmers.

Table 14 revealed that 66.67 % of the pineapple growers had medium level of information sources utilization; followed by 18.75 % and 14.58 % them had low and high level of information sources utilization respectively. In case of turmeric growers 68.75 % of them had medium level of information sources utilization, followed by 18.75 % and 12.50 % of them having high and low level of information sources utilization. In case of potato growers, majority (56.25%) of them had medium level of information sources utilization, followed by 25.00 % and 18.75 % of them having low and high information sources utilization respectively. In case of ginger grower's majority (62.50%) of the respondents had medium level of information sources utilization while 18.75 % of them had both low as well as high information sources utilization. In case of green chilli growers 70.83 % of them had medium level of sources of information utilization, while 20.83 % and 8.33 % of them had high and low level of sources of information utilization.

It was also found from the Table 14 that majority (63.75%) of the selected horticultural farmers had medium level of sources of information utilization, while 20.42 % and 15.83 % of them had low as well as high level of sources of information utilization respectively. This might be due to less perceived utility of the concerned information sources. These

findings were in accordance with the findings of Jha (2012) and Shailesh *et al.* (2013).

#### **Correlation of selected independent variables with the dependent variable –‘sources of information utilization’**

Table 15 revealed that the independent variables like Education, Size of land holdings, Extension contact, Farming experience had positive and age had negative and significant association with the dependent variable ‘information sources utilization’ at 1% level of probability. This inferred that uses of different information sources were higher who have high education, more land holdings, high extension contact, more experience and respondents who are young in age. Independent variable like annual income, training exposure had positive and significant relationship with dependent variable ‘information sources utilization’ at 5% level of probability. It means farmers those have higher annual income and high training exposure they have higher utilization of information sources. Similar findings were observed by Chavai *et al.* (2015) and Marak and Bandyopadhyay (2015).

Based upon the findings, the null hypothesis ( $H^0_1$ ) which states that there is no association between the variables age, education, size of land holding, annual income, extension contact, farming experience and training exposure with the technological gap of the selected horticultural farmers about improved crop cultivation aspects.

$H^0_1$ : There is no association between the variables age, education, size of land holding, annual income, extension contact, farming experience and training exposure with the technological gap of the selected horticultural farmers was rejected.

The independent variables caste, family type, family size and social participation were found non-significant. Hence, the following null hypothesis  $H^0_b$  was accepted.

$H^0_b$ : There is no association between variables caste, family type, family size and social participation with the technological gap of the respondents.

## CONCLUSION

1. Majority of the respondents were educated, middle aged medium level of overall utilization of information sources with respect to technological gap in recommended practices of the selected crop.
2. Majority of the horticultural farmers had less extension contact with the extension personnel.
3. Majority of the horticultural farmers were literate and had education upto secondary level.
4. It was found that majority of the horticultural farmers belonged to the marginal land holding category
5. The variables like age, education, size of land holding, annual income, extension contact, farming experience, training exposure found important with respect to the information sources utilization by the selected horticultural crop cultivation.
6. Most of the horticultural farmers belonged to the lower caste category and had less social importance in the society.
7. Among the different horticultural farmers, maximum pineapple growers belonged to the middle aged group, ST category and had maximum farm income per hectare and attended highest number of trainings.
8. Green chilli growers led among the other horticultural farmers in terms of having education up to secondary level, social participation, possessing marginal land holding, maximum annual income from farming, highest extension contact and level of information sources utilized.
9. Both ginger and green chilli growers had maximum respondents having nuclear family type.
10. Potato and ginger growers had maximum respon-

dents under medium family size.

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## REFERENCES

- APEDA (2021) India Export statistics. <https://agriexchange.apeda.gov.in/indexp/reportlist.aspx> accessed on 24.05.2022 at 17.50 hours.
- Chavai AM, Makar HB, Barange PK (2015) Adoption of potato production technology by the farmers of Maharashtra. *J Agric Res Tech* 40(1): 94-97.
- Jha KK (2012) Entrepreneurial behavior of pineapple growers. *Ind Res J Exten Educ* 9(3): 75-77.
- Marak BR, Bandyopadhyay AK (2015) Analysing the factors contributing towards technological gap of scientific rice cultivation in west Garo Hills District of Meghalaya. *J Crop Weed* 11(1): 124-132.
- Nagesh P (2006) Study on entrepreneurial behavior of pomegranate growers in Bagalkot District of Karnataka. MSc (Agric) thesis. University of Agricultural Sciences, Dharwad.
- NHB (2021) Horticultural crops first advance estimation. <http://nhb.gov.in/StatisticsViewer.aspx?enc=FdhWKi1URASyNAM+4mV5hQpJDviTxMmPkSfD97hsCEQ+Z+J11zLFoleG88JyPsUQ>
- Roy D, Bandyopadhyay AK, Ghosh A (2013) Identification of technological gap in pineapple cultivation in some selected areas of West Bengal. *Int J Sci Environ Technol* 2(3): 442-448.
- Shailesh K, Gyanendra S, Yadav VK (2013) Factors influencing entrepreneurial behavior of vegetable growers. *Ind J Exten Educ* 13(1): 16-19.