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Farmers Information Seeking Behavior in Relation to Organic Vegetable Production in Assam

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ABSTRACT: The study was undertaken in the North Bank Plains Zone and the Central Brahmaputra Valley Zone of Assam, primarily to understand the farmers' information seeking behaviour in relation to organic vegetable production and identify the factors influencing the information seeking behaviour of farmers. It appears that research activities in the areas of information seeking behaviour have mostly been confined to the cultivation of different crops. However, the number of studies focused on information seeking behaviour of farmers on organic vegetable cultivation was very small. Providing information to the farmers on existence of different sources of information on different aspects of organic vegetable production is important to enrich their information seeking behaviour. There is dearth of information in this context and that is why this study is planned. A multi-stage, purposive-cum- proportionate random sampling design was adopted for the study in order to select 120 respondents. The study revealed that majority of the respondents had a medium extent of the information seeking behaviour. The study also revealed that majority of the respondents used friends/relatives/neighbours/fellow farmers/input dealers as the source of information. A sizeable number of respondents received information from NGO personnel and progressive growers, AEAs, ADO/block extension personnel/SDAO/DAO. A small proportion of respondents were found to use agricultural scientist as a source of information. Among the mass media sources, a majority of the respondents used the internet as a source of information. Another proportion of respondents received information from radio, T.V., newspaper and farm publication as a source of information regarding organic vegetable production. Findings of correlation analysis indicated that educational level, the area under organic vegetable production, economic motivation, management orientation, risk bearing ability and scientific orientation showed significant and positive relationship with information seeking behaviour of farmers in relation to organic vegetable production. The major findings of the present study have a number of implications for policy makers, NGOs, KVKs, various development workers and extension agencies.

Keywords: information seeking behaviour, organic vegetable, factors, Assam.

INTRODUCTION

Research activities in the areas of information seeking behaviour have mostly been confined to the cultivation of different crops. Relevant research studies were conducted pertaining to the area of information seeking behaviour of farmers such as Information seeking behaviour of farmers of Nalbari district of Assam with reference to climate change adaptation (Kalita, 2016) and Information seeking behaviour of small tea growers in relation to organic tea cultivation in North Blank Plains Zone of Assam (Mahanta, 2018).During the last ten years no such study has been conducted on information seeking behaviour of farmers in relation to organic vegetable production. There is a time gap in the research study as no such study has been conducted in this context and against this backdrop the study has been undertaken.

Information is an essential and basic need of mankind. Information is required for problem-solving and decision making. Random collection of data when used, manipulated or interpreted to serve a certain purpose is called information. For anything and everything, information is required. Information can be obtained or retrieved from a variety of sources (Bankapur and Naik, 2018). The role of information in improving agricultural development cannot be overemphasized because the information is vital for increasing food production, improving marketing, and distribution Information is also regarded as an important input in agriculture. The economics of most developing countries is agriculture-based and an easy flow of information can play a decisive role in the development of this section (Mahapatra, 2016). Information is defined as data presented in readily comprehensible

form to which meaning has been attributed within a context for its use. In a more dynamic sense, it is the message conveyed by the use of a medium communication or expression (Kovacevic *et al.,* 2014). The information usually provided is reported to be focused mainly on students, researchers, policymakers, and those who manage policy decisions with little or no consideration to the information needs of farmers who are the targeted beneficiaries of the policy decisions (Omenesa, 2007). In a country like India agriculture constitutes the most significant part of the economy. The Indian agricultural sector accounts for 13.5% of India's gross domestic product (GDP) and employs about 54.6% of the country's workforce (Dongree *et al.,* 2016). Information is a powerful tool in addressing the agricultural needs of the farmers. When information is utilized properly it could change a nation's economy (Bachhav, 2012). In agriculture, relevant, accurate, and timely information helps farmers to make the right decision towards its sustainable growth. The use of relevant information in the agricultural sector is enhancing farm productivity in ample of ways. Information on weather trends, cropping pattern, package of cultivation, integrated management of pests and diseases, market linkages, etc. helps the farmer to make correct decisions about what crops to grow, when to grow, how to grow, where and when to sell their produce.

Information use is a behaviour that leads an individual to use collection of factual knowledge about something in order to meet his or her information needs. Information use is an indicator of information needs, which vary from one individual to another (Deribe, 2020). Information seeking is a natural mechanism necessary for the existence of human (Kumar and Satyanarayana, 2012). Information seeking is a conscious effort to acquire information in response to a need or a gap in one's knowledge. Information seeking behaviour encompasses information behaviour as well as the totality of unintended or passive behaviour as well as purposive behaviour that doesn't involve seeking, such as avoiding information. Farmers use different information sources and channels for seeking information on improved agricultural practices (Kumar, 2014). Information-seeking behavior is the process in which one goes about seeking information that will meet his or her need (Emmanuel, 2012). Information seeking is a natural mechanism necessary for the existence of human (Kumar and Satyanarayana, 2012). Information seeking behavior entails the activities involved for a person to get information from various sources (Deribe, 2011). The concept of information seeking is the result of a felt need of information by a user who may depend upon various formal and informal information sources or services in order to fulfill and satisfy the felt information needs (Boadi and Letsolo 2004). Information seeking behaviour is something that involves seeking information for personal reasons, the kind of information which is sought, and the ways with which needed information is being sought (Wilson, 1997). Information seeking behaviour is mainly concerned with who needs what kind of information and for what reasons; how information is found, evaluated, and used, and how their needs can be identified and satisfied (Kumar, 1990).

The concept of organic farming is not new as it was the only way of agriculture of ancient people. With the burgeoning population, the aim should be such that agricultural production should not only be stabilized but also increased by taking a sustainable approach. The Green revolution in the 1960s, though helped India to be a food exporter; it is now sustained with diminishing return of falling dividends. While more and more conventional farmers are opting out of farming and mouths to be fed are exponentially increasing day by day, it has become crucial that more individuals should take up farming that avoids the use of synthetically produced fertilizers, pesticides, growth regulators and livestock additives. It is the ecological production management system that promotes and enhances biodiversity, biological cycles and biological activity of the soil. Assam is home to some niche crops like Assam lemon, Aromatic rice (joha rice), passion fruits, ginger, turmeric, ghost chilli, etc. which have high market demands. Assam is "naturally organic by default" which can be gauged from the extremely low consumption of chemical fertilizers in the region. The state uses 0.040kg of chemical pesticides per hectare against the all-India average of 0.448 kg. Farmers in these areas often use organic manure as a source of nutrients that are readily available either in their own farm or in their locality. With the sizeable acreage under naturally organic/default organic cultivation, Assam has tremendous potential to grow crops organically and emerge as a main supplier of organic products in the world's organic market (Saikia, 2009). Assam tea which is famous worldwide is grown organically in most parts of the state. Assam holds the third position among the northeastern states in the area under organic farming. Presently, Assam has an area of about 28234.66 ha under organic certification (Anonymous 2019).

Besides having tremendous potential to grow crops organically, organic farming is yet to taste success in the state of Assam. Most farmers are not aware of the various aspects of organic cultivation of various crops. Lack of information among the farmers regarding organic farming is the main factor which limits the growth of the organic sector in the state. Hence, there is need to equip the farmers with the necessary information related to the organic cultivation and certification process with respect to important crops. It is against this backdrop that the present study was undertaken to understand the farmers' information seeking behaviour in relation to organic vegetable production and identify the factors influencing the information seeking behaviour of farmers

METHODOLOGY

The study was conducted in North Bank Plains Zone and the Central Brahmaputra Valley Zone of Assam. The Sonitpur district which belongs to the North Bank Plains Zone and the Nagaon district which belongs to the Central Brahmaputra Valley Zone were selected randomly for the study. The Sonitpur district consists of two sub-divisions, *viz.,* Tezpur and Dhekiajuli and the

Nagaon district consists of two sub-divisions, namely Nagaon and Kaliabor. Out of these, one sub-division from each of the two districts, *viz.*, Tezpur from Sonitpur district and Nagaon from the Nagaon district were selected at random for the present investigation. From each of the selected subdivisions four numbers of villages were selected at random. Thus, a total of eight villages, namely, the Nonoideori village, Gomariati village, Kothiatali Lalung Village, and Deodhar Pakhimoria village from Nagaon sub-division were selected and likewise, Noghoria village, Araliloga village, Bharalisaporia village, and Murhadol village were selected at random from Tezpur sub-division. A list of farmers of each of the selected villages was prepared with the help of the concerned AEAs. Then from each village, farmers were selected by adopting proportionate-cum-random sampling method (probability proportionate to size) to obtain a sample size of 120 respondents. The data for the study was collected by the personal interview method with the help of a structured research schedule.

Keeping in view the objectives of the study a set of 15 independent variables and 1 dependent variable were included in the study. The dependent variable selected for the study was information seeking behaviour of organic vegetable production. The scale developed by Gogoi, (1988) with slight modification was used for measuring data on information seeking behavior of farmers. The independent variables included in the study were age, educational level, family type, family size, occupational status, social participation, experience as an organic vegetable grower, the area under organic vegetable production, annual net income from organic vegetable production, exposure to training on organic vegetable production, working capital availability for organic vegetable production, economic motivation, management orientation, risk bearing ability and scientific orientation.

Data on age, family type, family size, experience as organic vegetable grower, area under organic vegetable production, annual net income from organic vegetable production, exposure to training on organic vegetable production, the working capital availability for organic vegetable production and degree of information needs were collected with the help of structured schedule. The SES scale (Rural) developed by Trivedi and Pareek (1964) was used for measuring the data on educational level and social participation of the respondents. The scale developed by Salim, (1985) was used for measuring the occupational status of the respondents. The scale developed by Samanta, (1977) was used for measuring the management orientation of the respondents. The scale developed by Supe, (1969) was used for measurement of economic motivation, risk bearing ability and scientific orientation of the respondents. The statistical techniques and tests used in the study for analysis and interpretation of the data were frequency, percentage, mean, standard deviation, co-efficient of variation, multiple correlations, multiple regression and t-test

FINDINGS AND DISCUSSIONS

A. Information seeking behaviour of farmers in relation to organic vegetable production

The information seeking behavior was dependent variable of the study and conceptualized as the extent to which grower approached different sources for information and advice to solve his/her farm problems in relation to organic vegetable production. The extent of information seeking of a grower consisted of two dimensions *viz.*, the frequency of information seeking i.e. the number of times a grower approached one or the other sources, in a given period of time and number of sources consulted in a given period of time. While considering the number of sources, an additional dimension was added to it, the competency levels of the sources. The information seeking behaviour was operationalized as the cumulative score obtained by a respondent in terms of his/her frequency of contact with specified sources of information, multiplied by the weightage given to the respective sources on the basis of their level of competency.

Data presented in Table 1 reveal that the majority of the respondents (90.83%) used friends/relatives/neighbours/fellow farmers/input dealers as the source of information followed by 74.16 per cent of respondents received information from NGO personnel and progressive growers. 69.16 per cent of farmers received information from AEAs and 40.83 per cent of farmers received information regarding organic vegetable production from ADO/block extension personnel/SDAO/DAO.

Table 1: Frequency distribution of respondents according to use of various sources of information.

Sources	Number	Percentage
1. **Personal sources**		
i. Friends/Relatives/Neighbours/Fellow farmers/Input dealers	109	90.83
ii. Progressive Growers/NGOs	89	74.16
iii. AEAs	83	69.16
iv. ADO/block extension personnel/SDAO/DAO/	49	40.83
v. Agricultural Scientists	8	6.66
2. **Mass media sources**		
i. Radio	38	31.66
ii. TV	63	52.50
iii. Newspaper	51	42.50
iv. Farm Publications	29	24.16
v. Mobile Phones	75	62.50
vi. Internet	79	65.83

A small proportion of respondents (6.66%) were found to use agricultural scientist as a source of information.

Among the mass media sources, the majority of the respondents (65.83%) used the internet as a source of information followed by 62.50 per cent of respondents received information from mobile phones, 52.50 per cent of respondents received information from T.V. and 42.50 percent of respondents received information from newspaper. Another proportion of respondents (31.66%) received information from radio and 24.16 per cent of respondents were found to use farm publication as a source of information regarding organic vegetable production. Data presented in the Table 2 reveals that majority of the respondents (70.00%) had a medium extent of information seeking behaviour followed by 15.83 percent of respondents had low extent of information seeking behaviour. The remaining 14.16 per cent of respondents had a high extent of information seeking behaviour. The mean value of 32.95 indicated that on an average the respondents had a medium extent of information seeking behavior with standard deviation of 10.10. The value of co-efficient of variation (30.65%) indicated that the respondents were homogeneous with respect to their information seeking behavior.

Table 2: Distribution of respondents according to the extent of information seeking behavior.

Category (Score range)	Frequency	Percentage	Mean	S.D	C.V
Low extent of information seeking behaviour (0-23)	19	15.83	32.95	10.10	30.65
Medium extent of information seeking behaviour (24-43)	84	70.00			
High extent of information seeking behaviour (44-84)	17	14.16			
Total	**120**	**100.00**			

B. Factors influencing information seeking behaviour of farmers in relation to organic vegetable production

In order to identify the factors influencing information seeking behaviour of farmers in relation to organic vegetable production, the correlation of selected independent variables with information seeking behaviour was found out with the help of Pearson Product- Moment Correlation Co-efficient (r). A total of 15 independent variables *viz.,* age, educational level, family type, family size, occupational status, social participation, experience as an organic vegetable grower, the area under organic vegetable production, annual net income from organic vegetable production, exposure to training on organic vegetable production, working capital availability for organic vegetable production, economic motivation, management orientation, risk bearing ability and scientific orientation were selected for examining their relationship with information seeking behaviour of farmers in relation to organic vegetable production. The significance of the observed correlation co-efficient was ascertained with the help of "t" test. The decision criterion was stipulated at 0.01 and 0.05 level of probability. It is evident from the Table 3 that 10 independent variables were significantly correlated with the information seeking behaviour of farmers in relation to organic vegetable production. Among 10 variables, 6 variables *viz.,* educational level, the area under organic vegetable production, economic motivation, management orientation, risk bearing ability and scientific orientation showed significant and positive relationship with the information seeking behaviour of farmers in relation to organic vegetable production at 0.01 level of probability. Another 4 variables age, social participation, experience as organic vegetable grower and exposure to training on organic vegetable production showed significant and negative relationship with the information seeking behaviour of farmers in relation to organic vegetable production at 0.01 level of probability. Hence the corresponding null hypothesis stating that these independent variables have no significant relationship with the information seeking behaviour of farmers in relation to organic vegetable production were rejected and the alternative hypothesis were tentatively accepted.

Table 3: Correlation co-efficient between information seeking behaviour and selected independent variables.

Sr. No.	Independent variables	Correlation coefficient (r)	t-value
$X_{1.}$	Age	-0.680**	10.075
X_2	Educational level	0.581**	7.769
X_3	Family type	0.052	0.566
X_4	Family size	0.131	1.437
X_5	Occupational status	0.153	1.685
X_6	Social participation	-0.539**	6.962
X_7	Experience as organic vegetable grower	-0.772**	11.357
X_8	Area under organic vegetable production	0.589**	7.932
X_9	Annual net income from organic vegetable production	0.205	2.277
X_{10}	Exposure to training on organic vegetable production	-0.572**	7.592
X_{11}	Working capital availability for organic vegetable production	0.032	0.351
X_{12}	Economic motivation	0.518**	6.592
X_{13}	Management orientation	0.523**	6.666
X_{14}	Risk bearing ability	0.683**	10.182
X_{15}	Scientific orientation	0.573**	7.609

* indicates Significant at 5% level of probability > 1.96 (118d.f.); ** indicates Significant at 1% level of probability > 2.57 (118d.f.); Degrees of freedom= (n-2) for all cases

The variables which were found to have significant correlation with the information seeking behaviour of farmers in relation to organic vegetable production were further selected for multiple regression analysis with a view to determining the relative influence of those variables in predicting the variation in the information seeking behaviour of farmers in relation to organic vegetable production. The prediction power of multiple regressions was estimated with the help of coefficient of multiple determination (R^2) and adjusted R^2. A perusal of the Table 4. reveals that out of 10 independent variables, only 9 variables, *viz*. age, social participation, exposure to training on organic vegetable production, experience as an organic vegetable grower, economic motivation, management orientation, risk bearing ability and scientific orientation were found to contribute significantly towards the variation in the information seeking behaviour of farmers in relation to organic vegetable production.

Table 4: The relative contribution of the selected independent variable towards information seeking behaviour of farmers in relation to organic vegetable production.

Sr. No.	Independent variables	Regression coefficient (b_i)	Standard error of b_i	t-value	R^2	Adjusted R^2
X_1	Age	-1.504**	0.522	2.879	0.812	0.795
X_2	Educational level	0.780	0.647	1.205		
X_6	Social participation	-1.759**	0.562	3.128		
X_7	Experience as an organic vegetable grower	-1.201**	0.274	4.383		
X_8	Area under organic vegetable production	1.693**	0.623	2.715		
X_{10}	Exposure to training on organic vegetable production	-1.693**	0.623	2.715		
X_{12}	Economic motivation	0.823**	0.302	2.725		
X_{13}	Management orientation	1.457**	0.412	3.536		
X_{14}	Risk bearing ability	0.268*	0.120	2.231		
X_{15}	Scientific orientation	0.192*	0.095	2.020		

*indicates Significant at 5% level of probability>1.96 (118d.f.); **indicates Significant at 1% level of probability> 2.57 (118d.f.); Degrees of freedom= (n-k) for all cases

The value of R^2 (0.812) indicated that 10 independent variables selected for the study were efficient in predicting the information seeking behaviour of farmers in relation to organic vegetable production. The 10 independent variables used in the regression analysis could predict 81.20 per cent of the variation in the information seeking behaviour of farmers in relation to organic vegetable production. The adjusted R^2 (0.795) indicated the actual measure of R^2 which meant that all the variables included in the regression equation was not equally efficient in explaining the variation in the dependent variable. The value of adjusted R^2, thus, indicated that the independent variables fitted in the regression equation could actually explain 79.50 per cent of the variation in the information seeking behaviour of farmers in relation to organic vegetable production.

The findings of the study is supported by the earlier studies pertaining to the area of information seeking behaviour of farmers conducted by Kalita (2016); Mahanta, (2018).

IMPLICATIONS AND CONCLUSIONS

The major findings of the present have a number of implications for policy makers, NGOs, KVKs, various development workers and extension agencies.Massive training/capacity building programmes should be undertaken in the study area to develop and enhance the knowledge and skills of farmers on different aspects of organic vegetable production practices. Keeping the educational level and farming experience of organic vegetable growers into consideration, concerned agencies/departments and extension functionaries should use appropriate information and communication technologies for meeting the information needs of the growers in relation to organic vegetable cultivation. Since organic cultivation is very much popular and eco-friendly, therefore, emphasis may also be laid on popularizing the role of organic cultivation among the vegetable growers. Adequate training and capacity building programmes should be undertaken to develop their knowledge along with timely and reliable delivery of information which is important to improve their information search strategies. Findings revealed that the majority of the respondents used friends/relatives/neighbours/fellow farmers/input dealers as the source of information. A small proportion of them received information from ADO/Block extension personnel/SDAO/DAO/. Only 8 respondents were found to use agricultural scientist as a source of information. This implies that existing extension educational efforts made in the study area need to be strengthened and streamlined to enhance growers' contacts with different institutionalized personal sources of information. Moreover, the information generated by these sources should be communicated in localized languages and technologies easily understood by organic grower communities. New and innovative means of communication should be used for dissemination of relevant information on various aspects of organic vegetable production to farmers.

Conflict of Interest. No competing interests exist.

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