

Information Seeking Behavior of the Farmers to Ensure Sustainable Agriculture

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Abstract:

The purpose of the study was to explore the information seeking behavior of the farmers. Data were collected from randomly selected 80 farmers of selected two upazilas of Tangail district in Bangladesh from 10-30 March, 2013. The findings indicate that information related to crop protection (SINI-77.08), marketing (SINI-74.16) and climate (SINI-74.16) was the prime of the farmers. Among fourteen selected information sources, pesticide dealer (IUI-172), seed dealer (IUI-171), and mass media (IUI-152), was used more by the farmers. The findings also indicates that the farmers were interested to

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new knowledge (63%) and 55% of the respondents collect information personally from various sources, sometimes from their neighbors or friends (53%). It was found that the collected information, in case of knowledge upgrading, 53.8% of the respondents perceived as completely effective while in case of understanding (51.2%) and in case of application (43.8%) is completely effective, respectively. So, it is necessary to provide the farmers with useful agricultural information for their betterment and it is also need to motivate farmers seeking more information from different sources.

Key words: Sustainable Agriculture, Farmers, information seeking behavior

Introduction

Sustainable agriculture has environmental, social, and economic dimensions and for sustainable development the three dimensions should be considered. Protecting and improving the natural environment is the fundamental, and issues like climate change, energy, water scarcity, soil degradation and biodiversity need to be addressed. In many developing countries, agriculture plays a vital role in the economy, and sustainability in the agricultural sector must address the issues of poverty alleviation, food security, and stable income generation for a rapidly growing population (Lee 2005; Bhutto and Bazmi 2007). To ensure environmental, economic, and social sustainability, farmers must adopt different farm-level practices such as judicious use of chemicals, integrated pest management, adequate irrigation and proper care of plant and animal health (Fusun *et. al.*, 2008).

Information is the collection, storage, processing, and dissemination of new data, pictures, facts, messages, opinions, and comments required to understand and react accurately to personal, environmental, national, and international conditions, as well as to be in a position to take appropriate

decisions (David, 2006). Information seeking behavior is a broad term which includes a set of actions that an individual takes to express information needs, seek information, evaluate and select information, and finally, use this information to satisfy his/her information needs (Majid and Kassim, 2000). For farmers to increase their agricultural production, they must have good information-seeking behavior that will enable them to adopt improved production technology (Ali-Olubandwa *et. al.*, 2010). Agricultural information is useful for farmers covering up their inadequacies in knowledge of certain basic practices that may include technical, marketing, social, and legal agricultural information. It often involves face-to-face communication, as well as passive reception through advertisements in print and electronic media (Yahaya, 2003).

Bangladesh is a developing country of which a core of national economy depends of agricultural activities. So, for the development of the nation it is important to emphasis the sustainable agricultural productivity. Agricultural information play very important role in enhancing crop production as well as economic development of Bangladesh (Hasan *et. al.*, 2009). On the other hand, the farmers of Bangladesh have the inevitable need for various types of information concerning different aspects of agriculture. For consistent growth of agricultural production, it is essential to equip the farmers with need-based, accurate, reliable and timely information (Naveed *et. al.*, 2012). With the passage of time, different agricultural technologies have been developed for the welfare of the farmers but a few of them are found at farmer's field overtime. It is very important to disseminate useful agricultural information to the farmers for growing crops sustainably. On the other hands, the farmers should have good information seeking behavior to take their farming decisions efficiently to ensure sustainable crop production.

The main purpose of the present study was to ascertain the information seeking behavior of the farmers with the view

of improving the access to information that will help to produce crop production sustainably.

The specific objectives of the study were to:

- investigate the selected socio-economic characteristics of the farmers;
- determine the information need of the farmers;
- identify the sources of information available to the farmers;
- determine the way of gathering and sourcing information by the farmers; and
- examine the effectiveness of collected information from various sources.

Methodology

The study was conducted in two upazilas of Tangail District of Bangladesh. The primary data was collected directly using a structured interview schedule from 80 (eighty farmers) of the study area. The respondents were selected by simple random sampling technique. Personal characteristics of the respondents (such as age, level of education, farm size, annual income, farming experience, training exposure and social mobility), information need, use of information sources, manner of gathering and sourcing of information and effectiveness of the collected information were assessed in the study. Descriptive statistical tools such as frequency count and percentage were used to analyze the collected data.

Findings and Discussion

Socio-economic background of the farmers

Table 1 shows the salient features of the selected characteristics of the farmers. Age distribution of the respondents revealed that majority of the farmers were old aged (43.8%) while 37.5% and 18.8% of them were middle aged

and young, respectively. The considerable proportion of the farmers (38.8%) had their primary education and 26.2% and 12.5% of them had secondary and above secondary education, respectively while, 22.5% of the farmers could not read and write. Data revealed that the highest proportion of the farmers (57.5%) had small farm size and 37.5%, 2.5% and 2.5% of the respondents were marginal, landless and medium, respectively while no farmer (0%) was in large farm size category. Data related to income revealed that most of the farmers (70%) were in low income category while 22.5% and 7.5% of the respondents had medium and high income, respectively.

Table 1: Salient features of the selected characteristics of the nursery owners

Characteristics (measuring units)	Score ranges		Categories	Respondents n=80		Mean	SD
	Possible score	Observed score		No.	%		
Age (Years)	-	18-80	Young (up to 30) Middle aged (31-50) Old aged (above 50)	15 30 35	18.8 37.5 43.8	47.34	16.1
Education (Total years of schooling)	-	0-20	Can read and write (0) Primary education(0.5-5) Secondary education(6-10) Higher education(above 10)	18 31 21 10	22.5 38.8 26.2 12.5	5.05	4.22
Farm size (Hectare)	-	.02-1.50	Landless (<0.02 ha) Marginal (0.02-0.2 ha) Small (0.21-1.0 ha) Medium (1.01-3.0 ha) Large (>3.0 ha)	2 30 46 2 0	2.5 37.5 57.5 2.5 0	0.327	0.302
Annual family income	-	7.5-195	Low(up to 65) Medium(66-	56 18	70 22.5	58.72	4.29

('000' TK)			130 High(above 130)	6	7.5		
Farming Experience (Years)	-	5-50	Low (up to 17) Medium (18-34) High (above 34)	18 33 29	22.5 41.2 36.2	23.8	11.6
Training Exposure (Days)	-	1-7	Low exposure (up to 3) Medium exposure(4-6) High exposure(above 6)	21 59 0	26.25 73.78 0	4.48	2.61
Social Mobility (Scores)		1-18	Low(up to 6) Medium(7-12) High(above 12)	16 52 12	20 65 15	9.42	3.40

The majority of the farmers (41.2%) had medium farming experience while 36.2% and 22.5% of them had high and low experience, respectively. The highest proportion of them (73.78%) had medium exposure to training programs and 26.25% of them had low exposure while no farmer (0%) was in high category. Data related to social mobility indicate that the majority of the farmers (65%) had medium social mobility and 20% and 15% of the respondents had low and high social mobility, respectively.

Information need of the farmers (n=80)

Information need of the farmers was measured by placing fifteen information dimensions and making rank order of the dimensions. For rank order Standardized Information Need Index (SINI) was computed by the following formula.

$$INI = IN_{vh} \times 3 + IN_m \times 2 + IN_l \times 1 + IN_n \times 0$$

Where,

INI = Information Need Index

IN_{vh} = Number of respondents with very high information need

IN_m = Number of respondents with medium information need

IN_l = Number of respondents with low information need

Inn = Number of respondents with no information need

As the total number of the respondents was 80, the INI of each dimension thus could range from zero (0) to 240. But, to express the INI in a meaningful way, it was necessary to convert as Standardized Information Need Index by using the following manner.

$$\text{SINI Index} = \frac{\text{Computed INI}}{\text{Possible highest INI}} \times 100; \text{ where, SINI= Standardized Information Need Index}$$

SINI of each of the dimension could range from 0 to 100, while 0 indicating no need and 100 indicating highly need of the farmers.

Table 2: Rank order of the dimensions of information on the basis of SINI

Dimensions of Information	Extent of Need				INI	SINI	Rank order
	High	Medium	Low	Not ever			
Crop protection related information	42	26	7	5	185	77.08	1
Market related information	37	29	9	5	178	74.16	2
Climate related information	34	36	4	6	178	74.16	2
Credit source related information	27	38	5	10	162	67.5	3
Crop production related information	22	28	17	13	139	57.91	4
Crop processing and post-harvest related information	18	30	16	16	130	54.16	5
Expert labor related information	12	23	27	18	109	45.41	6

Note: Scale; High=3, Medium=2, Low=1 and Not ever=0

The SINI presented in the Table 2 indicated that among seven dimensions, information related to crop protection ranked first with SINI 77.08. Market related information and climate

related information combined ranked second in the rank order with the next highest SINI 74.16. Table 2 also shows that credit source related information ranked third with SINI 67.5 while crop production and crop processing and post harvest related information ranked fourth and fifth with SINI 57.91 and 54.16, respectively. On the other hand, expert labor related information had the lowest SINI value (45.41) and thus, ranked sixth in the rank order.

Use of information sources by the respondents (n=80)

Use of information sources by the farmers was measured by placing fourteen information sources and making rank order of the sources. For rank order Information Use Index (IUI) was computed by the following formula.

$$IUI = IU_a \times 3 + IU_f \times 2 + IU_o \times 1 + IU_n \times 0$$

Where,

IUI = Information Use Index

IU_a = Number of respondents with always used information source

IU_f = Number of respondents with frequently used information sources

IU_o = Number of respondents with occasionally used information sources

IU_n = Number of respondents with never used information sources

The IUI of each dimension thus could range from 0 to 240 where, 0 indicating no use of information sources and 240 indicating highly use of information sources.

Table 3: Rank order of the Information Sources according to the use of farmers during their need of different agricultural information

Information Sources	Degree of Use				IUI	Rank order
	Always	Frequentl	Occasionally	Neve		
Pesticide dealer	30	36	10	4	172	1
Seed dealer	33	30	12	5	171	2
Mass media (TV, Radio)	20	39	14	7	152	3

NGO's worker	20	37	15	8	149	4
Extension worker	26	24	17	13	143	5
Friends, Neighbors	23	28	16	13	141	6
Farmers association	18	23	19	20	119	7
Local leader	12	29	22	17	116	8
UAO	16	12	30	22	102	9
Honorable person in society	9	18	26	27	89	10
UFO	8	16	31	25	87	11
VS/ULO	5	8	38	29	69	12
Newspaper	4	9	32	35	62	13
Internet	1	7	12	60	29	14

Note: Scale; Always=3, Frequently=2, Occasionally=1 and Never=0

Table 3 indicated that among fourteen information sources, farmers were used to collect necessary information from pesticide dealer hence, it ranked first in the rank order with IUI 172. Another important source seed dealer ranked second in the order with IUI 171. Mass media, NGO worker and Extension worker ranked third, fourth and fifth, respectively. On the other hand, internet use for necessary information had the lowest IUI value (29) and thus, ranked fourteenth in the rank order.

Manner of gathering and sourcing of information (n=80)

The respondents were asked to give their opinion about their wary gathering and sourcing of information in dummy questions. Table 4 shows that majority of the respondents (63%) were interested to get new information from different sources where 55% of the respondents gather information personally from the sources.

Table 4: Way of gathering and sourcing of information by the respondents

Way of gathering and sourcing information	Yes (%)	No (%)
Usually I go to the source personally for information	55	25
Usually I don't go to the source personally for information but I am interesting to new information	63	17

Usually I gather information from my friends and neighbors	53	27
For information related to agriculture I watch TV	43	37
For information related to agriculture I read newspaper	14	66
I collect information using mobile phone from different sources	23	57
For information I attend different group discussion meeting	48	32

About 53% of the respondents gather information from their friends and neighbors and 3% of them watch agriculture related program in TV. Table 4 also revealed that 48% of the respondents attain different group discussion meeting for information and 23% and 14% of the respondents use mobile phone and read newspaper for information, respectively.

Effectiveness of collected information (n=80)

The effectiveness of collected information was measured based on three dimensions i) up gradation of knowledge, ii) understanding of knowledge and iii) application of knowledge. A three points rating scale was used viz. completely, partially and not yet.

Table 5: Effectiveness of the collected information from various sources

Dimension of effectiveness	Degree of Effectiveness					
	Completel y	(%)	Partiall y	(%)	Not yet	(%)
Collected information helps to upgrade my Knowledge	43	53.8	33	41.2	4	5.0
Collected information helps to improve my level of understanding	41	51.2	33	41.2	6	7.5
I can apply the collected information in my field	35	43.8	33	41.2	12	15.0

Data presented in the Table 5 indicate that in case of knowledge upgrading 53.8% of the respondents opined completely effective where 41.2% and 5% of them opined as partially and not yet effective. Majority of the respondents

(51.2%) opined completely effective while 41.2 % and 7.5% of the respondents opined partially and not effective, respectively in case of understanding of knowledge. Table 5 also shows that in case of knowledge application 43.8% of the respondents opined as completely effective while 41.2% and 15% of them opined as partially and not effective, respectively.

Conclusions

The study was conducted to explore the information seeking behavior of the farmers. It was found that the respondents use variety of information sources to meet their agricultural problems. Among the different information sources pesticide dealer, seed dealer, mass media, NGO workers, and extension workers were found to be more important. It was also found that the farmers were interested to new information and the information were collected by the farmers personally from different sources, sometimes from friends or neighbors etc. The study also demonstrates that the collected information by farmers is more or less effective in terms of knowledge upgrading, understanding and application. Moreover, the respondents have need of further information about different aspects of crop production, marketing of agricultural products and so on. So, it is necessary to ensure adequate information supply to the farmers for their betterment as well as for the betterment of agriculture.

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