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# INFORMATION NEEDS AND SEEKING BEHAVIOR OF FARMERS IN SOUTHERN ETHIOPIA

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#### ABSTRACT

Information is an important factor in agricultural development. The study investigated farmers' agricultural information needs and seeking behavior in the Southern Regional State of Ethiopia. A cross-sectional research design was employed and the study population included all household heads of the eight sampled villages in four administrative zones. A multi-stage sampling procedure was employed to obtain a sample of 320 farmers. Quantitative data were collected and research adopted descriptive statistics. The results revealed information on crop production technologies; information about diseases, pests and weather forecasts, and market information were identified as the top three most important types of agricultural information. Similarly, crop production technologies; animal husbandry technologies, and information about agricultural inputs were the information farmers seek frequently. Farmers use development agents as the first source of agricultural information. All of the respondents communicate with development agents face-to-face.

Keywords: Agriculture, Farmers, Information need, Information-seeking behavior, Ethiopia

# 1. INTRODUCTION

Agriculture remains the cornerstone of the Ethiopian economy and it is a sector with great potential for stimulating economic growth and employment. Agriculture accounts for almost 48% of the country's Gross Domestic Product (GDP) and 85% of export earnings and it is the main income earner, livelihood, and way-of-living for 85% of Ethiopians living in rural areas (World Bank, 2012). For this reason, the Government of Ethiopia has articulated a clear vision for the sector, placing it at the center of the countries transformation agenda (Bwalya et al., 2012). Therefore, the country's development depends to a great extent on the speed of agricultural development (Davis et al., 2010).

The present age has been rightly called an Information Age because the information has become the most important element for progress in society. Progress in Agriculture is linked to several keys and often interrelated factors such as rese as well as agricultural information provision for modern scientific ways of farming for farmer's accessibility. The provision of these services should lead to self-sufficiency in food and Sustainable Agricultural Development. In the agricultural production environment, relevant and timely information helps farming communities to make the right decisions (Acheampong et al., 2017).

Information is one of the key factors in enhancing agricultural development because it is now regarded as a factor of production just like other factors such as labor, capital, and land (Rao, 2007). When appropriately combined with other factors of production, information can enhance productivity (Dralega, 2007). According to (Siyao, 2012), information is regarded as one of the most valuable resources in agricultural and rural development programs and can assist small-scale farmers in making informed decisions and taking appropriate action. It is also regarded as an important input in agriculture (Tologbonse et al., 2009). In addition, Dralega (2007) views it at the level of decision making and he argues that those who possess appropriate and timely information will make a more rational decision than those who do not.

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Even though scholars define agricultural information differently, they have many things in common and all of them emphasise the importance of information in agriculture.

Several studies highlighted the importance of information in agricultural development and its potential in improving the efficiency of rural development in general. For instance, Information is viewed as one of the key inputs in agriculture (Kishore & Gupta, 2011). Also (Dey et al., 2008)state that with the access to information, small scale farmers are better able to compete with the larger operators.

According to (Thuo & Njoroge, 2018), access to agricultural information influences the farming practices adopted by farmers. Inefficient access and dissemination of agricultural information can negatively affect agricultural development.

Agricultural information has been defined as all published or unpublished knowledge on all aspects of agriculture (Adio et al., 2016), and that the quality of such information depends on three attributes which are accuracy, timeliness, and relevance. Therefore, consideration of farmers' information seeking is very vital in the provision of need-based and relevant information (Anwar, 2007).

Agricultural information is useful for farmers because it helps them to overcome their inadequacies in the knowledge of certain basic practices that may include technical, marketing, social, and legal agricultural information (Owolade & Kayode, 2012). Farming is one profession that depends on the constant flow of information. However, most farmers find it difficult to identify when they require information.

According to (Emmanuel, 2012), information-seeking behavior is the process in which one goes about seeking information that will meet his or her need. The information needs of farmers often revolve around the resolution of problems related to various agricultural activities. Other users of agricultural information include researchers, extension workers, policymakers, financial institutions and investors, and the business community. Information seeking behavior entails the activities involved for a person to get information from various sources (Deribe, 2011). 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, but they are not identical. A better understanding of farmers' agricultural information needs and information-seeking behaviors could support the extension system to better target specific groups of farmers according to their preferences. Therefore, the extension system has to play its major role by knowing the information that farmers need to provide reliable, relevant, and timely information to support farmers' decision-making and thereby increasing productivity.

In Ethiopia, the task of providing agricultural information to farmers is primarily vested with government agencies or the public extension system. The Ministry of Agriculture (MoA), Ethiopian Institute of Agricultural Research (EIAR), and Non-Governmental Organizations (NGOs) are responsible for disseminating technologies and agricultural information to the farmers. The information needs of the farming community are partly addressed by the public extension system in Farmers Training Centres (FTCs) supported by trained Development Agents (DAs) assigned at FTCs (Davis et al., 2010). FTCs were designed as local-level focal points for farmers to get information, training, demonstrations, and advice, and included both classrooms and demonstration fields.

#### 2. OBJECTIVES OF THE STUDY

To serve the farmers better, the need to know their information needs and seeking behavior cannot be overemphasized. This paper reports on the agricultural information need and seeking behavior of farmers in Ethiopia particularly in the Southern regional state. The study specifically sought to i) assess the types of information that farmers considered relevant and wish to get; ii) identify information that farmers sought most frequently; iii) ascertain the

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sources of information farmers usually attain as relevant; and iv) determine the preferred communication medium between farmers and the source of information.

#### 3. MATERIAL AND METHODS

This study was carried out in Ethiopia in the Southern Nations Nationalities and People's Region (SNNPR). The regions' 89.72% of the population were estimated to be rural inhabitants and this makes SNNPR Ethiopia's most rural region. This is the reason for selecting the SNNP Region as a study area. Cross-sectional research design was employed because it focuses on studying and drawing inferences from existing differences between people, subjects, or phenomena. This design generally uses survey techniques to gather data, which is relatively inexpensive and takes up little time to conduct. The population for this study included all household heads for both male and female-headed households who are members of the four Zones in eight sampled villages. A multi-stage sampling procedure was employed to select respondents. To select representative zones, a stratified random sampling technique was employed. This stratification was done based on agro-ecologies and similarities in the farming systems, road networks, and contiguity of zones and Districts. From these major zones, four sub-zones namely Sidama (currently established as the national regional state), Wolaita, Gamo Gofa, and Bench Maji that are one from each stratum. This was followed by a random selection of four Districts, one from each stratum. Two sample villages were selected from each sample District based on the distance to the nearest town (one close to the nearest town and the other far away from the nearest town) making a total of eight villages. Finally, 40 household heads were randomly selected from each village, making a total of 320 respondents as a whole study sample. Primary data were collected using an interview schedule. Quantitative data were analyzed using Statistical Package for Social

Sciences (SPSS) computer software which involved descriptive statistics such as averages, ranges, and percentages used to make cross-tabulations, and frequency tables.

# 4. RESULTS AND DISCUSSION

# 4.1. Demographic and socio-economic characteristics

The study findings in Table 1, indicates that more than three-quarters (76.9%) of farmers were 40 years of age or younger. The majority (95%) of the respondents were males and the rest (5%) were females. The smaller number of females is due to a few numbers of female-headed households (FHHs) in the study area. More than half (54.4%) of the household heads had attended secondary school education followed by those with primary school certificate (26.6%). Nearly three-quarters (72.8%) of households had a family size of 4 - 9. In terms of income level, 42.5% of the respondents were earning less than 5,001 ETB (i.e. less than 138 USD) annually followed by those who were getting 5,001-10,000 ETB (138-278 USD) (35.3%). Those who were earning 10,001-15,000 ETB (278-417 USD) per annum were 10.6%. Only 11.6% of the respondents were getting more than 15,000 ETB (more than 417 USD) average income annually. This indicates that the majority of the respondents are in the lower category of income groups. The study results also indicate that slightly more than half (52.2%) of the respondents had more than 10 years of experience in farming activity.

Variables	Response	Frequency	%
Age	30 and below	124	38.8
	31-40 years	122	38.1
	41-50 years	51	15.9
	51 and above	23	7.2
Level of education	Illiterate (no formal schooling)	15	4.7
	Can read and write (adult education)	16	5.0
	Primary school certificate (grade 1-6)	85	26.6
	Secondary school certificate (grade 7-	174	54.4
	12)		
	Diploma or equivalent (tertiary)	30	9.4
Household size	1-3	61	19.1
	4-6	137	42.8
	7-9	96	30.0
	10 and above	26	8.1
Farming experience	below 5 years	38	11.9
	5.1-10 years	115	35.9
	10.1-20 years	78	24.4

Table 1: Farmer's demographic and socio-economic characteristics

The distance between farmers' residence and the nearest town varies considerably in the study area. The average distance between residence and the nearest town was 8.5 km. The maximum distance was 22 km and the minimum was 0.5 km. Those respondents who were in the range of less than or equal to the mean distance were categorized as close to the nearest town and those who are traveling more than the average distance were categorized as far away from the nearest town. Accordingly, 54.7% of the respondents' residences were close to the nearest town and 45.3% live far from the nearest town. This implies that more than half of the respondents live close to the nearest town where there is a District office of agriculture or development centers.

# 4.2. Farm characteristics of the respondents

The size of a farm owned is one of the most important factors in agricultural production in Ethiopia. In the study area, the land is scarce mainly due to the population pressure hence, about 72.8% of respondents reported owning one or less than one hectare of farmland (Table 2).

Farm characteristics		Total	
		Frequency	%
	Below 0.5 ha	103	32.2
Total farmland size in a hectare	0.51-1 ha	130	40.6
	1.01-1.5 ha	46	14.4
	Greater than 1.5 ha	41	12.8
Total			320

# **Table 2: Farm characteristics**

# 4.3. Behavioral characteristics

In this study, information needs and seeking behavior were defined as the degree to which the respondent was eager to get information from various sources on agricultural activities. Information-seeking behavior varies considerably from one individual to another according to age, gender, level of education, household size, farming experience, and income(Emmanuel, 2012). This was measured in terms of what agricultural information, how much and, how frequently they seek. The information needs and seeking behavior of farmers were classified into three categories (low, medium, and high). Out of 320 respondents, 86.3% were in the category of those who need and seek information at higher level (Table 3). This shows that farmers in the study area are highly in need of agricultural information and this behavior in turn helps them to use technologies such as mobile phones for accessing agricultural information.

Behavioral characteristics		Total	%
	Low	8	2.5
Information needs& seeking behavior	Medium	36	11.25
	High	276	86.25
Total		320	100

#### **Table 3: Behavioural characteristics of the respondents**

# 4.4. Types of information farmers wish to get

Twelve different types of agricultural information were adapted from previous related research to identify those that farmers wished to get. The characteristics of a good information source are timelessness, accuracy, relevance, cost-effectiveness, trustworthiness, usability, exhaustiveness, and aggregation level. The study findings indicate that the top three most important types of agricultural information that farmers wished to get all of them or some of them were information on crop production technologies; information about diseases, pests, and weather forecasts as well as market information particularly current output prices (Table 4). This implies that if farmers are constantly reached with agricultural information and more specific information on the top most important, they will utilize it to improve their productivity and hence their incomes and livelihoods. Other highly ranked types of information that farmers wished to get were agricultural inputs, animal husbandry technologies, forecast of market trends, harvest and post-harvest technologies, government policy, and plans, farmers training, and extension participation. The least information types farmers wished to get were agricultural credit facilities, terms of loans and mode of repayment, and farm business and management. This implies that, the types of information where to focus when providing agricultural technologies and information to farmers.

S N	Type of information	AllSomeinformationinformwish to getwish to(value2)(value1)		rmation to get	to get n wish to			Rank	
		f1	%	f2	%	f3	%	_	
1	Crop production technologies	277	86.6	41	12.8	2	.6	595	1 <sup>st</sup>
2	Weather forecast, disease and pest	268	83.8	48	15.0	4	1.3	584	2 <sup>nd</sup>
3	Current output prices	264	82.5	54	16.9	2	.6	582	3 <sup>rd</sup>
4	About agricultural inputs	265	82.8	49	15.3	6	1.9	579	$4^{th}$
5	Animal husbandry technologies	260	81.3	54	16.9	6	1.9	574	5 <sup>th</sup>
6	Forecast of market trends	255	79.7	62	19.4	3	.9	572	$6^{th}$
7	Harvest and post-harvest technologies	252	78.8	66	20.6	2	.6	570	$7^{th}$
8	Government policy and plans	249	77.8	67	20.9	4	1.3	565	8 <sup>th</sup>
9	Farmers training and extension participation	236	73.8	82	25.6	2	.6	554	9 <sup>th</sup>
10	Agricultural credit facilities	218	68.1	84	26.3	18	5.6	520	$10^{\text{th}}$
11	Terms of loans and mode of repayment	219	68.4	82	25.6	19	5.9	520	10 <sup>th</sup>
12	Farm business and management	195	60.9	121	37.8	4	1.3	511	11 <sup>th</sup>

# Table 4: Type of information respondents wish to get

§ score calculated as (f1\*2) + (f2\*1) + (f3\*0) f= frequency

# 4.5. Frequency of seeking information

The study findings revealed that the frequency of seeking agricultural information varied among different categories. For instance, among the twelve different types of agricultural information, farmers sought information on technologies of crop production; technologies of animal husbandry, and information about agricultural inputs most frequently and they are ranked as first, second, and third respectively as presented in Table 5. This indicates that such information has a higher level of importance to farmers, hence emphasis could be placed on.

S	Type of	Most	ly Sometimes		Rarely Never						
Ν	information	(valu	e3)	(valu	e2)	(value1)		(value0)		<b>Score</b> §	Rank
		f1	%	f2	%	f3	%	f4	%	-	
1	Crop production technologies	259	80.9	56	17.5	5	1.6	-	-	894	1 <sup>st</sup>
2	Animal husbandry technologies	240	75.0	63	19.7	13	4.1	4	1.3	859	2 <sup>nd</sup>
3	About agricultural inputs	242	75.6	58	18.1	15	4.7	5	1.6	857	3 <sup>rd</sup>
4	Government policy and plans	231	72.2	75	23.4	12	3.8	2	.6	855	4 <sup>th</sup>
5	Harvest and post- harvest technologies	231	72.2	68	21.3	19	5.9	2	.6	848	5 <sup>th</sup>
6 7	Current output price Farmers training and	225	70.3	75	23.4	18	5.6	2	.6	843	6 <sup>th</sup>
	extension participation	218	68.1	88	27.5	12	3.8	2	.6	842	7 <sup>th</sup>
8	Forecast of market trends	226	70.6	70	21.9	19	5.9	5	1.6	837	8 <sup>th</sup>
9	The weather forecast, disease, and pest	253	79.1	59	18.4	6	1.9	2	.6	817	9 <sup>th</sup>
10	Farm business and management	155	48.4	138	43.1	22	6.9	5	1.6	763	$10^{\text{th}}$
11	Agricultural credit facilities	175	54.7	109	34.1	18	5.6	18	5.6	761	$11^{\text{th}}$
12	Terms of loans and mode of repayment	176	55.0	101	31.6	25	7.8	18	5.6	755	12 <sup>th</sup>

# Table 5: Frequency of seeking information on different agricultural issues

§ score calculated as (f1\*3) + (f2\*2) + (f3\*1) + (f4\*0) f= frequency

# 4.6. Sources of agricultural information

Farmers are not a homogenous group and they thus need different types of information from different information sources. In order to assess the sources of agricultural information, farmers were asked to state where they regularly got agricultural information for their needs. The various sources of agricultural information available to farmers were shown in Table 6. In analyzing respondents' preferred information sources, the results indicate that farmers use Development Agents as the first source of agricultural information in the study area and local

leaders served as the second source of agricultural information. Thirdly, neighbors, family, or friends were indicated as sources (Table 6). According to (Acheampong et al., 2017), similar information sources reported for farmers. However, reliance on such unpredictable sources has always led to appalling results such as low yielding, poor harvesting techniques, bad financial, and credit decisions. This has always led to these farmers failing to meet their target output/production.

Source of agricultural information	Frequency*	%	Rank
Development agents	293	91.6	1 <sup>st</sup>
Local leaders	200	62.5	$2^{nd}$
Neighbors, family, and friends	195	60.9	$3^{rd}$
TV	146	45.6	$4^{\text{th}}$
Radio	131	40.9	5 <sup>th</sup>

#### **Table 6: Source of agricultural information**

\* Each frequency were calculated from the total respondents

Even though radio was relevant means of communicating agricultural information to the farmers and as such an effective tool in bridging the gap of unawareness of improved agricultural information most especially among farmers in the rural areas (Ango et al., 2013). Many of the farmers do not obtain information from either TV or radio (Table 6). The study results also show that 40.9% of the respondents were listening to FM handset radio for agricultural purposes. However, the frequency of listening to FM radio also differed among farmers. It was discovered that a few 7% of the respondents listened regularly, whereas 34% listened occasionally (Fig. 1).

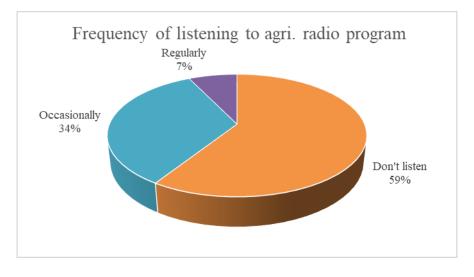


Figure 1: Frequency of listening to agri. radio program

# 4.7. Means of communicating with the source of information

Respondents were also asked how they communicated with the major sources of agricultural information. It was reported that 80% of the respondents communicated with DAs through telephone calls (Table 7), in addition to face-to-face communication. The face-to-face communication with DAs was reported to be either often or sometimes depending on their availability. This signifies the important role of mobile phones as a major source of agricultural information.

Means of communication		Frequency	%
Do you communicate development agents	Often	153	47.8
through telephone calls as your information	Sometimes	103	32.2
source?	Never	64	20.0
De vou communicate develorment agente	Often	230	71.9
Do you communicate development agents	Sometimes	90	28.1
face-to-face as your information source?	Never	-	-

#### 5. CONCLUSIONS

The information needs of farmers vary from farmer to farmer due to various factors. Different farmers also have different search behaviors. It could be concluded based on the finding of the study that, the majority of the farmers in the study area were found in a category of those who need and seek agricultural information at a higher level. This behavior in turn helps farmers to use technologies such as mobile phones for accessing agricultural information. Farmers used DAs as the major source of agricultural information, and most of the farmers contact DAs through mobile phones in addition to face-to-face contacts. This indicates the importance of mobile phones in connecting two major partners in the agricultural extension system (source of information and the beneficiaries).

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