Preferred Sources of Information among Sorghum Farmers in Awbere District of Somali Regional State, Ethiopia

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ABSTRACT

The main purpose of this research was to identify the information sources used by sorghum farmers and to determine the relative importance of different information sources to farmers in the Awbere district of Somali Regional State. Individual interviews were conducted to collect data from 180 households in eight *Kebeles*. Data were analyzed using descriptive statistics and a rank order assessment technique. The results revealed that the three most important sources of information, in order, were fellow farmers, family members and the Office of Agriculture. Strengthening the utilization of information from a variety of sources by farmers is required. This is possible through establishing community radio stations, starting adult education programs and building the capacity of extension agents in terms of skills and the provision of transportation facilities.
Keywords: agricultural communication, information source, sorghum farmers, Ethiopian farmer

บทคัดย่อ

การวิจัยนี้มีวัตถุประสงค์เพื่อศึกษาแหล่งข้อมูลข่าวสารและจัดอันดับความสำคัญของแหล่งข้อมูลของเกษตรกรผู้ปลูกข้าวฟ่างในเขตอาวบาเร รัฐโซมาลี เก็บข้อมูลโดยการสัมภาษณ์รายบุคคลจากเกษตรกรผู้ปลูกข้าวฟ่าง 180 ครัวเรือนใน 8 หมู่บ้าน วิเคราะห์ข้อมูลด้วยสถิติเชิงพรรณนาและเทคนิคการจัดอันดับ ผลการวิจัยพบว่าแหล่งข้อมูลข่าวสารที่สำคัญที่สุด 3 อันดับแรกคือ เพื่อนเกษตรกร สมาชิกในครอบครัว และสำนักงานเกษตร เกษตรกรมีความต้องการใช้ข้อมูลข่าวสารจากแหล่งข้อมูลที่มีความหลากหลาย ถ้าเป็นไปได้ควรมีการตั้งสถานีวิทยุชุมชน การจัดโปรแกรมการศึกษาผู้ใหญ่ และการเพิ่มความรู้ความสามารถให้กับเจ้าหน้าที่ส่งเสริมการเกษตรในด้านทักษะและจัดหาสิ่งอำนวยความสะดวกในการเดินทาง
คำสำคัญ: การสื่อสารทางการเกษตร แหล่งข้อมูลเกษตรกรผู้ปลูกข้าวฟ่าง เกษตรกรเอธิโอเปีย

INTRODUCTION

The majority of households (85%) in Ethiopia are smallholders who live in rural areas and depend on agriculture as their major economic activity. They are involved in crop and/or livestock production, where livestock provide draft power for crop production, and crop residues are used as animal feed (CSA, 1999).

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Sorghum is a major staple crop in the semi-arid regions of Ethiopia, particularly in Somali Regional State. Sorghum not only provides grain for human consumption but also stover which is used as forage for livestock, as building material for housing, and as fuel for cooking (IIRR, 2002). Even though sorghum has multiple uses, its production is constrained by traditional farming techniques, poor complementary services (such as extension, credit, and marketing), and infrastructure.

Information and technology dissemination is a critical tool for promoting agricultural development. Based on this understanding and to boost agricultural production, in the early 1990s, a large extension program was started in Ethiopia with the introduction of modern agricultural technologies and agronomic practices. In order to accelerate the pace of dissemination of technologies to farmers, communication channels such as extension agents, television, and radio were used.

Agricultural extension service providers in the region assumed that access to agricultural information through extension services and radio has helped in enhancing the adoption of improved sorghum varieties among the small-scale subsistence farmers in the region in general and in the Awbere district in particular. Even though extension activities on improved sorghum varieties dissemination have been accomplished over the past years in the region, no study on the importance of these information sources compared to other information sources used by farmers has been carried out in the district. Therefore, the objective of this study was to identify the information sources used by sorghum farmers and to determine the relative importance of different information sources to farmers in the Awbere district of Somali Regional State.

LITERATURE REVIEW

Extension is an educational process which aims to bring about desirable changes in people's knowledge, attitude, and skills, which will contribute to better farm and home practices and better family living. It focuses on giving people the latest information on agriculture, equipping them with necessary skills, and developing their attitude toward modern agriculture. This depends upon effective use of various information channels for the transmission of the messages to audiences (Van den Ban and Hawkins, 1998). Agricultural extension organizations have the primary task of educating farmers and disseminating the latest agricultural technologies to them, using a wide variety of extension teaching methods including individual, group, and mass contact. The extension worker is basically the source of new information that often uses individual and group contact methods to reinforce the learning process of farmers. The extension agents are few, however, and reach only a fraction of the farmers (Van den Ban and Hawkins, 1998; Leeuwis, 2004; Muhammad *et al.*, 2004). Thus, mass media such as radio, television, and newspapers have the potential to provide greater extension coverage to rural farming communities (Muhammad *et al.*, 2004; Farooq *et al.*, 2007), and are particularly useful in making the communities aware of new ideas and practices, or alerting them to sudden emergencies at a faster rate than personal contacts (Irfan *et al.*, 2006).

Radio is a broadcast medium that is the most appropriate for the rural population of developing countries. It can overcome long distances and thus has immediate effect. It has been identified as the only medium of mass communication with which the rural population is very familiar because a battery-operated radio set is cheap to obtain and is common in most households in rural areas (Okwu *et al.*, 2007; Ponniah *et al.*, 2008). Television is also an effective medium among the mass media and can be used effectively for the transfer of information on agricultural technology among the farming community. It has been acclaimed as one of the most important communication tools available today (Muhammad *et al.*, 2004; Ponniah *et al.*, 2008). Moreover, print media such as newspapers, magazines, newsletters,

leaflets, pamphlets, and posters can convey precise and clear information, and so they are useful for disseminating information among literate farmers (Van den Ban and Hawkins, 1998; Irfan *et al*., 2006; Farooq *et al*., 2007). The cost of providing extension advice through mass media is considerably lower than individual and group methods (Oakley and Garforth, 1985). However, the amount of detailed information that can be transmitted by mass media is limited; nonetheless, the media can serve an important and valuable function in stimulating farmers' interest in new ideas. Once farmers have been stimulated or made aware through mass media, they may seek additional information from neighbors, friends, extension workers, or progressive farmers in the area.

Even though mass media are information sources that have proven their power to improve farmers' decision-making by providing them with relevant information and sharpening their analytical perspectives (AFRRI, 2008), radio, television, and newspapers are considered less reliable since many believe the information disseminated via these means is influenced by the government's interests and it has limitations in its execution such as bad timing, the wrong language and the poor quality of messages. Hence, informal means of farmer-to-farmer exchange of knowledge and information are considered to be reliable sources of information among farmers (Leeuwis, 2004; Dutta, 2009). Typically, markets, funerals, tea shops, rituals, celebrations, and community meetings provide opportunities for farmers to talk about agriculture, while observation of other farmers' practices is also an important mechanism for horizontal exchange (Leeuwis, 2004; Ponniah *et al*., 2008). This shows the existence of diverse information sources that farmers can use to obtain their information and the extension organizations play a role in satisfying farmers' diverse needs for information. Hence, farmers make use of widespread and diverse information sources to obtain the information needed to manage their farms (Engel, 1997).

Information sources will attract the attention of the end users when they address the real problems faced by the farmers and provide feasible solutions to their needs and interests as well as offering options and facilitating decision making. Moreover, information can be used effectively if it encourages the adaptation of technology to the local situation, provides a more explicit treatment of sustainability in relation to the technical content, and provides guidance on the economic and financial implications of any recommended technologies (Ponniah *et al*., 2008).

METHODOLOGY

The Study Area

The Awbere district is one of the six districts in the Jijiga zone of Somali Regional State (Figure 1). Its altitude ranges from 1200 to 1660 meters above sea level. The climate of the district is semi-arid marked by seasonal variations with an annual rainfall that varies from 400 to 900 mm. The area experiences a bimodal type of rainfall marked by a main rainy season (April to June) and a short rainy season (October to December) (Devereux, 2006). The mean temperature is 14 °C with minimum and maximum temperatures of 20 and 25 °C, respectively (JZOA, 2001). According to CSA (2008), roughly 88 percent of the inhabitants of Awbere district are agro-pastoralists with a population of 299,336 persons (165,148 male and 134,188 female). The people in the Awbere district are mainly from the Somali tribe and are Muslims.

The farming system of the Awbere district is mainly agro-pastoralism. Increasingly, agro-pastoralists are becoming settled farmers. Agro-pastoralists in the district produce sorghum, maize, and wheat through traditional agronomic practices by using oxen plough, seed broadcasting, hand thinning, and threshing with animals. The average production of sorghum and maize in the district is 1,500 and 1,900 kg/ha, respectively (Teka and Azeze, 2002). The low amount and erratic distribution of rainfall, and high evapotranspiration limit the crop production to

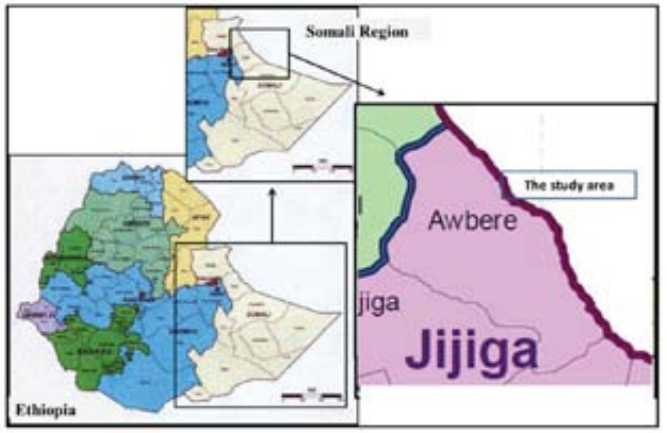

Figure 1 Study area (Awbere District)

drought-tolerant crop varieties (Eshetu and Teriessa, 2000).

Sampling, Data collection, and Analysis

Primary data were collected during January and February 2010 by interviewing 180 sampled household heads from eight randomly selected *Kebeles*[a] in the Awbere district. A random sampling technique based on probability proportional to size was used to select sampled households[b]. Enumerators were trained on the contents of the interview schedule and data collection methods, and pre-testing of the interview schedule was conducted on some randomly selected non-sampled farmers. On the basis of the pre-test, some modifications were made to the interview schedule. Individual interviews with sorghum growers were carried out by trained enumerators using the structured interview schedule. Finally, the collected data were analyzed using descriptive statistics (percentage and mean) and a rank order assessment technique.

FINDINGS AND DISCUSSION

Socio-economic characteristics of respondents

All respondents were males[c] and 92.7 percent were married while the rest were single. Polygamy is a common practice in the study area. The studied households had an average total family size of 5.32, while 40.6 percent had a family size of zero to four persons, 53.8 percent had five to nine persons and the rest had above nine persons, which indicated that most households had sufficient labor force that could be distributed between crop and livestock production. The ages of respondents varied between 20 and 65 years with an average age of 38.26 years. Of the respondents, 20.6 percent were within the age range of 20 to 30 years, 51.1 percent were between 31 to 40 years, 20.6 percent were 41 to 50 years, and 7.7 percent were above 50 years. The majority of the respondents (71.7%) were below 41 years. The results show that most of the respondents were mature and fell within the economically active age group, and were able to understand information on improving their farming practices. None of the

[a] The lowest administrative unit at the village level.

[b] A Somali household is defined as a man, his wife, their children and any other people who are dependent on that family for a living.

[c] Household heads are male and farming is carried out based on their decisions.

respondents had any kind of formal education. Approximately, 82.8 percent of the respondents were illiterate and 17.2 percent were able to read and write. Thus, the group consisted of illiterate and semi-literate members and therefore they did not have the capacity to understand written information. The crop land holding of the sampled respondents ranged from 0.5 to 12.5 ha. The crop land holding distribution of respondents indicated that 61.7 percent of the respondents had from 1 to 4 ha, 33.8 percent had 5 to 9 ha, and only 4.5 percent had above 9 ha. Thus, the majority of the respondents were found to be smallholders.

The mean number of livestock owned by respondents was 4.63 cattle, 7.64 sheep, and 2.72 goats. The livestock were predominantly female animals. All respondents kept a mixture of livestock species. The main sources of income were from the sale of milk and animals while the crops produced were used mainly for household consumption (Table 2).

Table 1 Percent distribution of socio-economic characteristics of respondents

n=180

Socio-economic characteristic	Number	Percent
Age (years)		
20–30	37	20.6
31–40	92	51.1
41–50	37	20.6
Above 50	14	7.7
Family size (persons)		
0–4	73	40.6
5–9	97	53.8
Above 9	10	5.6
Education		
Illiterate	148	82.8
Literate	32	17.2
Farm size (ha)		
0–4	111	61.7
5–9	61	33.8
Above 9	8	4.5

Table 2 Mean distribution of socio-economic characteristics of respondents

n=180

Socio-economic characteristic	Minimum	Maximum	Mean	Standard deviation
Age	20.0	65.0	38.26	8.898
Family size	0.0	11.0	5.32	2.614
Farm size	0.5	12.5	3.83	2.559
Livestock				
Cattle	0	23.0	4.63	4.403
Sheep	0	75.0	7.64	9.872
Goat	0	35.0	2.72	4.196

Preferred information sources

Farmers obtained information regarding farm practices and technologies from various sources. Information sources available to farmers in the study area included extension agents, the Office of Agriculture, *Kebele* administration, radio, family members, fellow farmers, and market centers. Television and print media were not used due to a lack of electricity and the low level of literacy, respectively.

The results showed that fellow farmers (96.7%) and markets (88.3%) were the most used information sources by the respondents, followed by the Office of Agriculture (81.1%), family members (76.1%), and radio (68.3%). However, the extension agent was the lowest among the information sources of the respondents. Few respondents (23.3%) mentioned NGOs as the source of information. It is clear that the respondents used more than one source to meet their agricultural information needs (Table 3). This was due to the low number of extension agents in the district and few NGOs working in limited areas.

The ranking given to information sources by respondents, in order of their importance, is presented in Table 4. The results clearly demonstrated that fellow farmers (neighboring farmers) and family members were the most important sources of information. This indicates a snowball effect in which a few farmers are reached through initial efforts, and then more and more farmers will get the information, because communication with their peers

Table 3 Distribution of the respondents according to their information sources

n=180

Information source	Number	Percent
Extension agent	57	31.7
Office of Agriculture	146	81.1
Kebele	92	51.1
Family member	137	76.1
Fellow farmers	174	96.7
Radio	123	68.3
Market	159	88.3

Table 4 Importance of different information sources based on rank order assessments by respondents

n=180

Rank	No. of respondents						
	Extension agent	Office of Agriculture	Kebele	Family member	Fellow farmers	Radio	Market
1	2	22	28	45	76	21	10
2	8	34	33	39	45	35	18
3	5	40	21	17	26	31	60
4	1	33	7	14	24	21	34
5	17	7	3	15	2	5	24
Total weight*	76	439	355	469	688	385	394
Rank position	7	3	6	2	1	5	4

* The total weight score is the sum of rank order frequencies multiplied respectively by 5 for the first position, 4 for 2nd position, 3 for 3rd position, 2 for 4th position, and 1 for the 5th position.

seems to be one of the best sources of information at their disposal. The study conducted by Ali *et al.* (1992) reported similar results. The data further showed that the information obtained from the *Wereda* Office of Agriculture and markets were also important whereas extension agents and the *Kebele* administration were the least important sources of information in the study area. Only 31.7 percent had contact with extension agents. This was due to the *Wereda* Office of Agriculture giving less emphasis to extension service delivery. The extension agents in the study area did not have any transportation such as a motorcycle or bicycle to travel to *Kebeles* far away from their base. Extension agents were then forced to travel a few kilometers on foot to deliver extension information and advice; due to this limitation most of the farmers had never had any contact with the extension agents. Consequently, farmers were used to obtaining information, when it was required, through a direct visit to the agricultural office.

Among the mass media, radio was the only medium used in the study area. There are three radio broadcasting stations in the country (the Addis Ababa, Fana and Harar radio stations), which air agricultural development programs in the Somali language. Respondents who owned radios constituted 37.8 percent of the sample. Sixty two percent of radio owners, even though broadcasting time was very limited, preferred listening to the agricultural program broadcast in Somali by Radio Fana and Addis Ababa Radio once and twice a week, respectively. This could present a good opportunity to provide extension information to farmers and to broadcast through radio. Discussion with a group of farmers also revealed that they did not listen to Harar Radio since the BBC and Harar radio programs were broadcast at the same time. This meant that farmers preferred listening to the BBC rather than to Harar Radio. The listening culture was essentially individual; moreover listening in groups could occur every day, especially around 5:00 p.m. while listening to BBC Radio at tea shops.

CONCLUSION AND RECOMMENDATIONS

Farmers obtained information regarding farm practices and technologies from various sources such as extension agents, the Office of Agriculture, the *Kebele* administration, family members, fellow farmers, radio programs, and market centers. The three most important sources of information, in descending order, were fellow farmers, family members, and the Office of Agriculture, which confirmed that farmers in the study area lived in a naturally oral society that spread information by word of mouth and preferred listening and talking rather than reading.

The best way to reach such a society could be through radio programs in order to initiate discussion among farmers. Television and print media were not a source of information due to the lack of electricity and the low level of literacy, respectively. Thus, illiteracy was the primary barrier to fulfilling information needs. Moreover, the rate of adoption of improved technologies varied from farmer to farmer depending upon the situation and availability of information sources. Therefore, to boost the utilization of information from a variety of sources, it would be necessary to establish community radio stations, start adult education programs, and build the capacity of extension agents in terms of skills and provision of transportation facilities.

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