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Farmers' Access to Information on Improved Wheat Technology Package: The Case of Digalu Tijo of Arsi Zone, Ethiopia

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ABSTRACT: *Wheat is one of the most important staple crops of the country in terms of production and consumption. The study was conducted to investigate farmers' access to information on improved wheat technology package of Digalu Tijo of Arsi Zone, Ethiopia. The study went further to examine the level of information dissemination for farmers and the benefits information users gain. Focus group discussion guide, interview checklist and observation checklist were employed to gather information required. The collected data analyzed using descriptive analysis. A large number 91.7% of the respondents were those who can read and write. The finding of the study indicated that men have more access to extension education programs than women. Similarly, the primary sources of information for respondents were development agents (70%). The study finding revealed that respondents benefited more from the adoption of improved wheat technology. Further and regular study need to undertaken so that farmers' information and technology needs can be identified in order to provide improved and up dated information and technology for overall improvement of livelihood of farming community the study areas.*

KEYWORDS: access, improved wheat, information, Ethiopia

INTRODUCTION

Wheat (Triticumaestivum L.) is one of the globally produced and marketed cereal crops which covers 15% of the total sowing areas of cereal crops in the world (Kiss, 2011). It is an important industrial and food grain which ranks second among the most important cereal crops in the world after rice and traded internationally (Asadallah, 2014; Falola *et al*., 2017). In sub-Saharan African countries, wheat is also a strategic commodity which generates farm income and improves food security status (Amentae *et al*., 2017; Minot et al., 2015; Negassa *et al*., 2013). Agriculture in general and cereals in particular are the means of livelihood for millions of households in Ethiopia (Dessale, 2019). Wheat is one of the most important staple crops of the country in terms of production and consumption (Rashid, 2010). Wheat (Triticum aestivum) is one of the most important cereal crops cultivated in wide range of agro-ecologies in Eastern Africa. However; wheat productivity has remained low (Zerihun *et al.*, 2014). This is attributed to the low adoption of currently released improved wheat varieties.

Since farming in Ethiopia is often precarious and usually at the mercy of nature, it is invariably an arduous struggle for the holders to make ends meet (UNDP, 2014). The low yield has made Ethiopia unable to meet the high demand and the country is net importer of wheat (Rashid, 2010). To feed the rapidly growing population and meet the high demand of wheat in the country, it needs to increase the production and yield of wheat. However, increasing yield requires successful adoption of improved agricultural technologies (Dorosh & Rashid, 2013). Kathleen (2010) reported on his study that a well-designed impact assessment study can provide insight in to the causal factors behind the success and failure of various improved variety adoption activities. Increasing wheat yield in Ethiopia, through narrowing yield gaps, is important to reduce the import dependency for this crop while avoiding area expansion . The application of Master Data Management (MDM) techniques , as discussed in a separate research paper , is particularly relevant to the Agtech industry . It highlights the importance of recognizing and defining the quality requirements of master data for decision -making in Agtech companies , where effective data management is essential to drive agricultural improvements . Different MDM approaches , including consolidation , centralized , registry , and coexistence , can be applied in Agtech companies . The steps involved in implementing MDM in the Agtech industry , such as data identification , cleaning , and enrichment , align with the challenges of increasing wheat yield in Ethiopia.

Objective of the Study

The general objective of the study was to assess the access of farmers to information on improved wheat technology packages in the study areas.

Specific Objectives

To identify the access of information for wheat growing farmers in the study areas.
To investigate the level of information dissemination for farmers in the study areas.
To explore the benefits farmers, obtain from improved wheat technology adoption.

RESEARCH METHODOLOGY

Description of the Study Areas

Digalu Tijo District is one of the twenty-five Districts of Arsi Zone Oromia regional states of Ethiopia and located 198 km to South East of Addis Ababa and it has 92,700 ha of land. The district is situated at the coordinate between 7º19’22” and 7º36’54” N and 39º20’59” and 38º33’26” E and it has 23 kebeles and divided in to two major agroecology. These are mid land 6 kebeles and highland 17 kebeles. The district has minimum temperature of 15°C and maximum temperature of 20°C. It has 1000mm minimum and 1500mm maximum annual rainfall.

Sampling Method

From each of the selected three Kebeles, 20 farmers, 2 key informants and one focus group and a total of 60 respondents, 6 key informants and three focus group participants were selected purposively and based on the willingness of the farmers for the study. Total of 96 respondents were selected for the study.

Data Type and Data Collection Method

Both qualitative and quantitative data were collected using mixed methods like key informant interview, focus group discussion and individual household interview. Focus group discussion Guide, interview schedule and observation checklist were used for data primary data collection.

Data Analysis Method

The recorded and wrote down qualitative data was transcribed to Micro Soft- word and coded and organized to meaningful text document and triangulated with quantitative data. Categorization was employed. The collected quantitative data was entered to SPSS software version 20 and analyzed using simple descriptive statistics like frequency and percentages.

RESULTS AND DISCUSSION

Demographic features

First section of the interview schedule dealt with the personal information about respondents. of the 60 individual respondents, 71.7% were male while 28.3% were women. The acquired data confirmed that a large number of respondents 41.7% were in the age range of 31-40 years old. Out of total interviewees, only 10 0% were more than 60 years old. Majority of respondents, 88.3% were married. 10% were widowed and only 1(1.7%) of the respondents were single and divorced in terms of marital status. A large number 91.7% of the respondents were those who can read and write and 8.3% of them were those who cannot read and write. All 100% of the respondents were farmers and majority of them have a large family size ranging from 8-10 in the household.

Table 1. Demographic features of respondents

Features	variables	Frequency	Percentage
Age	20-30	9	15.0
	31-40	25	41.7
	41-50	12	20.0
	51-60	8	13.3
	>60	6	10.0
Sex	male	43	71.7
	female	17	28.3
Marital status	single	1	1.7
	married	53	88.3
	widowed	6	10.0
	divorced	1	1.7
Educational level	literate	55	91.7
	illiterate	5	8.3
Primary occupation	farming	60	100.0
Family size	3-4	2	3.3
	5-7	19	31.7
	8-10	26	43.3
	11-13	13	21.7
Relationship with household head	wife	6	10.0
	son	1	1.7
	household head	53	88.3

Source: survey, 2018

Out of the 30 focus group participants, 10 were women, 10 were men and 10 were men and women participants. Of the key informants, 3 were men and 3 were women, and all of them were educated and can read and write. Overall, the respondents were wheat producers.

Access to Information on Improved Wheat Technology Packages

Respondents were asked about participation in extension education programs like field days, training and community meetings. Table result indicated that most of the time men are involved in such programs by 73.3%. Data obtained from focus group discussion also revealed that men have more exposure to different extension education programs than their women counter parts. 78.3% of the respondents revealed that men were the primary contact for receiving the new wheat packages in the household as far as he is a husband. The group participants and key informants confirmed that men had prioritized to expose participation. A number of respondents 70% stated that their source of information on new wheat technology packages were Development Agents of the kebeles followed by 26.7% access information from BOARD.

Table 2. Information Access of Respondents

Parameters	Variables	Frequency	percentages
Participation on extension educations	Husband	44	73.3
	Wife	7	11.7
	Husband and wife	9	15.0
Information sources available	DAs	42	70.0
	BOARD	16	26.7
	Radio	2	3.3
Decision to use or not to use the packages	Husband	37	61.7
	Wife	8	13.3
	Husband and wife	15	25.0
Access to several information sources	Husband	8	13.3
	Wife	3	5.0
	Husband and wife	23	38.3
	Family	26	53.3

Source: Survey, 2018

Benefits Farmers Obtained from Improved Wheat Technologies

Majority of respondents 93.3% revealed that the new wheat packages contain all packages while some of them accessed only seed, fertilizers and others only training with percentages of 1.7, 3.3 and 1.7 respectively. The respondents were asked about the usefulness of new wheat packages and responded as if all of them 100% have benefited from new wheat packages. The group participants and key informants confirmed that they benefited from new wheat packages. Men and women said that the benefit of new wheat technology packages was more than mere consumption, they were capable to produce surplus for market supply after they adopted new wheat packages. Describing the benefit of new wheat technology packages, a woman key informant brought forward her views as follows “We really benefited from the new wheat packages. Before the introduction of these packages (meaning improved wheat technologies) we used to harvest/ gain fewer products which

were even not enough for home consumption. We were suffering much before we get the new packages; we used to face food shortage in household as a result of less production of wheat grain. Currently we are able to produce surplus for sale in addition to our home consumption."

The respondents confirmed that new wheat packages improved their living standards and situation very well. Over all the respondents and participants of current study confirmed that new wheat technology packages helped them in many ways. They experienced yield improvements, income development and food self-sufficiency after the adoption of new wheat technology packages. Some of them confirmed that they solved the old age production problem after the introduction of new wheat technology packages.

Table 3. Benefits of new wheat technology packages

Parameters	**Variables**	**Frequency**	**Percentage**
Contact for receiving packages	husband	47	78.3
	wife	9	15.0
	Husband and wife	4	6.7
Package contents	Seed	1	1.7
	Fertilizers	2	3.3
	Training	1	1.7
	all	56	93.3
Control of packages	Husband	18	30.0
	Wife	9	15.0
	Husband and wife	32	53.3
Satisfaction on packages	Yes	56	93.3
	No	4	6.7

Source: Survey, 2018

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