

# The Use of Agricultural Extension Agents to Communication Technology and Extension Methods in Extension Work in Kassala State-Sudan

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**Abstract:** This study was conducted in Kassala State eastern Sudan, about 480 Km from Khartoum capital. The study was designed to assess the degree of using communication technologies and extension media in extension working by Extension agents in Kassala State. Simple random sample of 90 respondents of extension agents were selected about 5% of the total extension agents in the state. Data was collected by questionnaire techniques and interviews during march 2015. The objective of the study to determine the degree of the use of knowledge and communication technologies in extension working by extension agents e. g radio, television, internet and computer system and to determine the limitation of these technology used in the agricultural extension work. the study results shows that, variation in the degree of communication technologies according to the availability of network and computers and extension media majority of localities not used communication technologies and extension media 45%, 59% respectively low degree specially the northern localities due to the lack of extension units 27%. The use of knowledge and communication technologies in high degree in New Hlafa and Kassala localities 4% 5% respectively. The most technologies availability of visual aids, computers, and internet in the localities extension units, and training program. The results shows that, establishment of extension centers in each extension units availability of communication network, and audio-visual aids computers, training programs to the extension workers.

**Keywords:** Agricultural Extension Agents, communication technologies.

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## 1. INTRODUCTION

Visual communication is the communication between people through expression and action without using words (Adeokun et al., 2006). According to Agbamu (2006) the visual forms of communication appeal to the eyes, to the sense of sight of a given audience or target person. Visual relates to seeing. Some examples of visual methods of communication include posters, slides, chart, flannel-graphs and flash cards. It also involves result demonstration conducted by a participating farmer, under extension worker's guidance to prove by evidence that the demonstrated practice, particularly on a farmer's farm is superior to an existing practice and appeals to our sense of sight (Agbamu, 2006).

In the communication process extension teaching methods or channels of communication are the tools in the hands of extension workers in transferring new ideas. The word audio-visual aids comprises three words namely audio refers to sense of hearing, visual refers to sense of seeing and aids instructional device.

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Visual communication is reinforced in written or oral communication. Oral communication is carried out by words of mouth. This has much to do with hearing and as such is referred to as audio form of communication. Audio

communication method appeals to the sense of hearing. Audio refers to sound waves that can be heard by the human ear (Agbamu, 2006). Examples of this method are telephone, radio, farm and home visits, meetings, discussion groups, office calls, recorded audio messages and agricultural clinics. Audio-visual form of communication appeals to the senses of sight and hearing. Agbamu (2006) opined that audio-visuals are devices that transmit ideas and experiences through eyes and ears; they lay emphasis on the use of non-verbal experience in a learning process. The term audio-visual aids mean materials used by a communicator in order to facilitate the understanding of learners by involving more of their senses, especially those that relate to hearing and seeing (Agbamu, 2006). They are used in the teaching-learning process to enhance the understanding of subject matters.

The term audio-visual aids refers to anything that an extension agents uses to help to convey the message when communicating with farmers. The spoken word is the agents main communication tool but whether the agent is speaking to large villages meeting or discussing problems in the field with a group of farmers it is impact and effectiveness cab be greatly increase by the use of suitable audio-visual aids when selected and used properly its can help in the interest of the audience to maintained if the agent varies the mode of presentation. Audio visual aids are called instructional material audio literally hearing and visual means that which is found by seeing disadvantages technical, expensive, time consuming and convenience.

Films color slides, filmstrips and overhead projector, TV, internet they all required specific equipments, electricity and technicians cadre. The extension agents likely to use them in extension centers these equipments still available in the urban areas and not widely in rural areas.

**Objectives:**

- 1- To examine the demographic characteristics of extension workers that have influence on their use of audio and visual information resources;
- 2- Identify the types of audio-visual media commonly utilized by extension agents in the communication methods.
- 3- Determine the effective types of audio and visual in the diffusion of innovation

**Research hypothesis:**

- 1-The demographic characteristics of extension workers have positive significant relationship with the extension communication technologies.
- 2-The training courses can effect positively on extension communication technologies.
- 3-To identify the constrains of extension communication technologies.

**Study area:**

Kassala State is situated in eastern Sudan latitudes between 12-14 \* 12-17 longitudes and 34-12. 36-57 east. . It is also borders east Eritrean hills in the east and River Nile and Red Sea State in the North and Khartoum and Gadaref State in the West and South. Covers an area of about 42. 285KThe four major towns of the State are Aroma, Kassala, Khashmel Girba and New Halfa Due to its location the Kassala State has various types of climatic conditions. The State can be broadly divided into arid climatic in the northern parts, semi –arid in the southern parts and arid and semi arid in the central parts. The rainfall is unreliable for domestic and economic uses; the average annual rainfall is about 225 mm.

**2. PERSONAL CHARACTERISTICS OF RESPONDENT**

**Table 1-Distribution of respondent by age categories**

Age group	Frequency	Percentage
25-30	9	10
31-35	26	28. 8
36-40	32	35. 5%

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41-50	17	18. 8
Above 50	6	6. 6
Total	90	100

Source: own survey data 2015

Table (1) shows that, majority of respondents in 36-40 age group 35. 5% more one third of the study sample in middle and active age group. 31-35 about 28. 8% of total sample size 25-30 it is the working start 10% above 50 years 6. 6%. The table indicated that majority of extension workers active age groups more involved in extension training programs

**Table 2- Distribution of respondents by education level**

Education level	Frequency	Percentage
Secondary	4	4. 4
Diploma	7	7. 7
Graduate	71	78. 8
Post graduate	8	8. 8
Total	90	100

Source: own survey data

Table (2) reveals that, majority of respondents agricultural graduates 78. 8%but not in agricultural extension option 7. 7% agricultural diploma 4. 4% secondary schools and 8. 8 % post graduates they head of agricultural extension units.

**Table 3- Distribution of respondents by experience in agricultural extension working**

Experience	Frequency	Percentage
1-5 years	11	12. 2
6-10	8	8. 8
11-15	44	48. 8
16-20	14	15. 5
Above 20	13	14. 4
Total	90	100

Source: own survey data 2015

Table (3) shows that half of respondents 11-15 experience in extension work indicated that recent establishment of agricultural extension units in Kassala State 12. 2 % less than five years experience 14. 4% more than 20 years experience. The study indicates that, weak of extension cadre

**Table 4- Distribution of respondents by training programs**

Training Courses	Frequency	Percentage
Non-trained	62	68. 8
1-3	19	21. 1
More than four	9	10
Total	90	100

Source: own survey data 2015

Table (4) indicates that, 68. 8% of respondents untrained 21. 1% have 1-3 training courses 10% more than four. The study shows that all respondents graduates, medium age, untrained, and less experience.

**Table 5 Distribution of respondents according to the use of communication technologies and extension media**

Communication technologies	Frequency	percentage
High use(more than 10)	5	5. 5
Medium use(5-10)	13	14. 4
Low use(1-5)	24	26. 6
Rarely	5	5. 5

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No use	43	47.7
Total	90	100

Source own survey data 2015

Table (5) indicates that 5. 5% have use more than 10 devices 14. 4% of respondents have use 5-10 devices 30 % of respondents have use 1-5 devices half of respondents not use any extension device may be due to the lack of electricity.

**Table 6 Distribution of respondents according to the use of extension media**

Network services	Frequency	Percentage
Available	4	4.4
To some extent	27	30
Not available	59	65.5
Total	90	100

Source own survey data 2015

Table (6) shows that about 65. 5% of respondents not use extension media like television, printers, video and leaflets may be due to lack of electricity 30% use it to some extents may be they in rural localities 4. 4% full use to extension media may be big localities Kassala and New Halfa.

**Table 7 Ranking of frequency use of audio-visual aids by extension workers**

Media	Very frequent(5)	Frequent(4)	Occasionally(3)	Seldom (2)	Not use(1)	Total score	Mean	Score
Radio	66	7	13	-	4	401	4.4	1
TV.	13	25	9	6	37	241	2.6	2
Computers	3	19	13	9	46	194	2.1	4
Internet	-	-	16	-	74	122	1.3	5
Video	5	17	8	25	35	202	2.2	3
Film show	3	-	-	9	78	99	1.1	6

Source own survey data 2015

**Table(8) Ranking of constrains facing extension workers in extension working**

Constrains facing respondents	Frequency	Percentage	Rank
Non availability of extension media	86	95.5	1
Non availability of computers	85	94.4	2
Non availability of internet	83	92.2	3
Non availability of extension laborites	81	90	4
Non availability of trained cadres	80	88.8	5
Non availability of maintained cadres	77	85.5	6
Electricity	73	81.1	7
Non availability of Computers accessories	71	78.8	8
Lack of funding	66	73.3	9

Source own survey data 2015

**Table (9)The relationship between the dependent and independent variables**

Dependent variables	Correlation vales
Age	0.822Ns
Education level	0.175**
Experience in extension working	0.105**
Lack of Training courses	0.117*

Significant level 0.01. Ns. non significant

### 3. DISCUSSIONS

The effectiveness of information or technology delivery system is dependent on efficient application and effective combination of various audio and visual media materials and resources they have access to.

Majority of extension agents in middle age 35. 5% indicated that they easy to trained also most of them graduated 71% but they not extensions' there experience in extension is lower they need qualifying training courses 68. 8% in audio-visual aids like communication technologies, computers, and internet about 65. 5% of them said that the audio visual aids and communication technologies unavailable. The available communication methods in the study areas is radio because it is cheap, portable and easy to operate to some extent TV expensive, need electricity which is unavailable in the rural areas and difficulties in the program design.

The most important constrains or barriers lack of extension centers, weakness of internet, untrained of extension cadres, and credit services. Finally there is correlation between the extension agents personal characteristics and dependent variables at 0.05 and 0.01

This has significant implication for extension delivery with respect to the fact that intensification is required in the application of television programmers', film shows and video., while using appropriate or combination of media materials and resources, it is recommended that: – all extension teaching process should be reinforced with adequate and appropriate visual aids, this enhances rapid comprehension and adoption of innovations; – for the fact that knowledge is not static, but dynamic, in-service training, workshops, and seminars should be organized for extension agents. Through this, extension officers will improve on their knowledge in order to be abreast and able to cope with changing communication technologies; State Agricultural Development Programme's extension programmers' should be well funded and encouraged with the provision of audiovisual aids to facilitate extension services.

### 4. RECOMMENDATIONS

- 1- To the agricultural ministry, availability of computers and distribution of internet points on the extension centers in the study areas
- 2- To the training centers adequate and appropriate training approach programs to develop extension workers skills in communication methods, messages insertion and save
- 3- To establishment of training and development extension centers and deportation with communication equipments tools with expert and qualification cadres of extension agents to facilitate the education process
- 4- To the rural electrification and internet penetration points to transmit the useful knowledge and technologies to help the farmers in solving the problems in his future life.

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