

# Effect of some personal characteristics in communication level of Dairy cattle Milk Production Farmers in Kassala State –Sudan

1-Bashir Osman Awad Elkarim e-mail bashirabass12@yahoo.com

2-Elbadawi Khalid Haj Khalifa

1-Agricultural Extension and Rural Development Department-Faculty of Agricultural and Natural Resources University of Kassala

2-Agricultural Extension and Training Department –Faculty of Agricultural Sciences –Gazeira University

## المستخلص

أجريت هذه الدراسة بولاية كسلا شرق السودان التي تضم إحدى عشر محلية تم إختيار أربعة محليات وهي كسلا-حلفا الجديدة- نهر عطبرة -وريفى اروما بها قطاع مروى ومكاتب أرشاد زراعي وكادر ارشادي متخصص وعلى اتصال بالمزارعين تهدف الدراسة لمعرفة العوامل التي تؤثر على مستوى الاتصال بين المربين والمرشدين الزراعيين استخدمت الطريقة العشوائية البسيطة على حسب معادلة (1983) Smith بلغت عينة الدراسة 414 مبحوث استخدم المنهج الإستنباطي الإستقرائي تم جمع البيانات الأولية عن طريق الإستبيان والبيانات الثانوية من المقابلات الشخصية والنشرات وباستخدام برنامج الحزمة الإحصائية للعلوم الإجتماعية (SPSS) لحساب التكرارات والنسب المئوية مربع كاي لمقارنة المتغيرات الإجتماعية والإقتصادية مع مستوى الإتصال كما تم إستخدام علاقة الإرتباط لإيجاد المتغيرات بين العوامل التابعة والمستقلة. من أهم النتائج اغلب المبحوثين أعمارهم تتراوح بين 40-49 سنة ارتفاع نسبة الأمية 33% يعتبر الراديو الوسيلة الإتصالية التي يستخدمها اغلب المبحوثين 61% أعلى مستوى إتصال 7.5% من المبحوثين كما توجد علاقة معنوية 0.01 بين المتغيرات أهم توصيات الدراسة رفع معدل الوعي بأهمية الإرشاد البيطري لتدريب المربين وتبنى التقانات الحديثة التي تزيد الإنتاج كذلك اختيار الطرق والوسائل الإرشادية التي تناسب الخصائص الشخصية للمربين تدريب عدد من المرشدين من أبناء القرى للعمل مع المربين

## Abstract

This study was conducted in Kassala State Eastern Sudan, the State was divided into eleven localities four localities was chosen Kassala- Half Elgededa-Nahir Atbara-Aroma Rural because they consist of irrigated sectors ,extension offices, and specialist of extension staff cadre and they continuously communicated with their farmers. The study objective is to examine the factors affecting communication level between farmers and extension agents

.The study sample was selected by Smith equation (1983) 414 respondents, detective and inductive approaches used. Questionnaire technique were used to collect data. The collected data were statistically analyzed by Statistical Package of Social Science (SPSS), percentages and frequency distribution, Chi-square test, and correlation coefficient to determine the significant value between dependent and independent variables. The study revealed that majority of respondents in 40-49 years, high illiteracy rates (33%) major extension methods was radio (61.%) only (7.5%) high communication level, correlation significant level at (0.01) between communication level and independent variables. the study recommended that, raise awareness of agricultural and veterinary extension to the role and importance of increasing production. to chose the proper extension methods to farmer personal characteristics finally training more extension agents to work with farmers, training of villages extension agents.

## **Introduction**

Kassala State was a biggest of eastern Sudan states characterized by large agricultural and veterinary sector, different ethnic groups, high illiteracy rates and lack of agricultural and veterinary cadres that affects of diffusion and adoption of new technologies of breeding and milk production. The state characterized by large population herd size an acute shortage of milk produces. Majority of localities have no veterinary and extension cadres that affects of extension communication level of breeders and diffusion and adoption of new veterinary technologies and the importance of the veterinary roles.

Communication is essential for social change. Social change is the process by which alternation occurs in the structure and function of a social system. Communication is the process by which message are transferred from source to receiver. A simple communication model consist of a source, message, channel, receiver and effect of communication. Some personal characteristics and demographic variables effects on communication level Aniane(2002) reported that age of the farmers has positive significant on communication level a younger generation is more responsive to scientific technology Haji (2003) reported that education level have positive relation with the communication behavior and adoption behavior. Habt emarian(2004) reported that livestock size influence communication level and adoption positively. Rahmeto (2007) reported that farming experience had no significant relationship on the communication behavior and adoption of dairy technologies.

According to Samuel(2001) reported that agricultural extension institutions of development countries faced many constrains in their activities of information generation and use most of the problems caused due to the poor socio-economic conditions and weak infrastructural and institutional development of the areas some factors make communication difficult farmers in most cases illiterate, weak and adequate infrastructural and institutional development in rural areas. Finally the problems in livestock extension lack of adequate trained and qualified

staff at level of dairy production and non-availability of extension materials and narrow farmers coverage and weak extension linkage to research and policy making bodies . The research objectives is to examine the effects of the personal characteristics on the farmers communication level to agricultural and veterinary extension.

### **Study Area.**

New Halfa town is the administrative and commercial centre and it is situated at It stretches at 100 kilometers in a N-NW direction and has a width of 20 to 35 kilometers. The climate is semi-arid with rain falling from June until September up to 150 mm more. . Temperatures are generally high: the mean daily temperature is c. 29OC with a mean daily maximum of c. 41°c in May. Humidity is highest in August (c. 45%) and lowest in April (c. 10%). From November until April there are strong northerly winds; during the rest of the year southerly winds prevail.

### **Research Problem**

The State characterized by large population size of dairy cattle but suffers from an acute shortage of milk produced may be due to weak extension infrastructural , one of the main factors affecting communication level of the farmers was personal characteristics e.g. age, education level, herd size ,experience .The research question will be addressed , how can personal characteristics effects on communication level of livestock farmers in Kassala State?

### **Research Objectives**

1. Examine the personal characteristics of the farmers in the study area.
2. Determine the major communication methods used .
3. To determine the effects of personal characteristics on communication level of farmers .

### **Research Hypothesis**

1. The farmers personal characteristics will significant influence on framers communication level.
2. The extension methods has a positive significant on the framers communication level.
3. The availability of agricultural extension communication methods has negative significant on the frequent communication level.

### **Data Collection and Analysis**

Data collected from four localities ( Halfa Elgadeeda, Nahir Atbatra ,Aroma Rural and Kassala Locality ) each of them consist of agricultural and veterinary infrastructural extension and qualified extension cadres .The research sample determine by using Smith equation (1983) about 414 respondents .Questionnaire conducted to collect the data which consist of two section , one includes the respondents personal characteristics two include the extension methods .Data analyzed by Statistical Package of Social Science (SPSS) of

frequency and percentage calculated . Chi-square and Correlation Coefficient were used.

### Research sample size

$$n = 1 + \frac{n_0}{\frac{(n_0 - 1)}{N}}$$

Localities	Population Size	%	Study Sample	%	Research Sample	%
Kasslala	424	20,99	89	17.14	71	17.14
Nahir Atbara	652	32.27	210	40.46	168	40.5
Halfa Elgadeeda	482	23.86	115	22.15	92	22.22
Aroma Rural	462	22.87	105	20.23	84	20.28
<b>Total</b>	<b>2020</b>	<b>100</b>	<b>519</b>	<b>100</b>	<b>414</b>	<b>100</b>

### Results

Table (1) Frequency Distribution of Respondent by Age Categories

Age categories	Frequency	%
Less than 40 year	151	36.5
40-49 year	217	52.5
More than 50 year	46	11
<b>Total</b>	<b>414</b>	<b>100</b>

Field survey 2014

Table (1) indicates that (36,5%) of respondents their age about less than 40 years.

Younger farmers are more receptive than older farmers Kelsey(1963)

1- Table (2) Frequency Distribution of Respondent by Educational level.

Education level	Frequency	%
Khalwa	87	20
Illiterate	137	33
Primary	98	23.5
Secondary	78	19
Graduate	14	3.5
<b>Total</b>	<b>414</b>	<b>100</b>

Field survey 2014

Table (2) indicates that majority of respondents illiterate (33%) Rogers higher schooling have more communication level to dairy extension office ( Feder et al., 1985,).

Table (3) Frequency Distribution of Respondent by Farm Experience

Experience years	Frequency	%
Less than 5 years	83	20
5-10 years	178	42.9
Above 10 years	153	36.9
<b>Total</b>	<b>414</b>	<b>100</b>

**Source Felid survey 2014**

Table (3) replied that (36.9%) of respondents were above than 10 years farmer experience

**Table (4) Frequency Distribution of Respondents by Communication level**

Communication level	Frequency	%
Low communication level 1-4 frequency per year	265	64
Medium communication level 5-10 frequency per year	118	28.5
High communication level more than 10 frequency per year	31	7.5
<b>Total</b>	<b>414</b>	<b>100</b>

**Source Felid survey 2014**

Table (4) indicates that, only( 7.5%) of respondents have high communication level may be they high education level communication creates awareness ,help in identifying problems and suggests alternative and solutions (Elbadwi 2014)

**Table (5) Frequency Distribution of Respondent by Age Categories**

Farm size	Frequency	%
Less than 10 cows	132	31.8
10-20 cow	117	28.26
Above 20 cows	165	39.8
<b>total</b>	<b>141</b>	<b>100</b>

**Felid survey 2014**

Table (5) replied that (31.8) of respondents have less than 10 cows this mean that majority of respondents in smallholders, Haggblade (2012) found that large commercial farmers have high communication level and adopted new technologies than small scale

**Table (6) Availability of Agricultural Extension Communication Methods**

	Communication Source	Rarely		Continuously		None	
		F	%	F	%	F	%
1	visit of extension agents to the farmers in their farms	97	23.5	73	17.5	244	59
2	visits the extension agents in his office	27	6.5	172	41.5	215	52
3	Fallow –up farmers to T.V programs provided by State T.V	161	39	162	39	91	22
4	Fallow –up farmers to Radio programs provided by State Radio	114	22.5	254	61.5	46	11
5	Looking at Leaflet	21	5	109	26.5	284	68.5
6-	Participation of Farmers in Seminars and Extension Meetings	44	11.5	130	31.5	24	58
7	Participation in Field Days	0	0	163	39.5	251	60.5
8	Participation in Training Courses	15	3.5	72	17.5	327	79
9-	Looking at Agricultural Newspaper and Magazines	23	5.5	155	37.5	235	57
10	Farmers Participation in Farmer Schools	28	7	141	34	245	59

Table (6) indicates that,( 39%) farmers rarely fallow- up T.V agricultural extension programs they tend to entertainment series (59%) of respondents said that, extension agents none visited the farmer in his farm (59%) of the respondents none-participated in school farmers

**Table(7) Chi-Square Test Between Communication level and Education Level**

Farmer communication level	Framer education level									
	Ill irate		Khalwa		Primary		Secondary		Graduate	
	F	%	F	%	F	%	F	%	F	%
Low communication Level	85	62.1	21	24.5	45	45.9	19	24,5	0	0
Media communication	30	22.7	42	48.8	26	26.5	43	54	5	33.3
High Communication Level	21	15.1	23	26.7	27	27.5	17	21.5	10	66.6

Table (7) replied that, graduated farmers have high communication level (66.6%) this results agreed with Emenyonu (1987) established that the use of level of education were all positively associated communication level

**Table (8) Chi-Square Test Between Communication Level and Age Categories**

Farmers communication Level	Age Categories					
	Less than 40 year		40-49		Above 50 year	
	F	%	F	%	F	%
Low communication level	17	11.9	45	20.7	31	68.1
Medium Communication Level	46	30.1	138	63.5	10	21.7
High Communication Level	88	58.9	34	15.6	5	10

**Table (9) Correlation between the dependent and independent variable**

Dependent Variables	Correlation Coefficient
Age	0.723 Ns
Education Level	0.133**
Farm Experience	0.105**
Farm Size	0,114*

**Significant level 0.01 \*\* None Significant Ns**

## Dissection

The study showed that the personal characteristics of farmers affected the level of communication level with agricultural and veterinary extension this results agree with (Hassan et al 2003) The personal characteristics of the respondents include age- educational level–experience–farm size etc. and these characteristics exert their pressure on the attitude and behavior of an individual .The study found that younger farmers Young people are more likely to be affected by new ideas than older people 52.5% of respondents in middle age CTA (1998) has identified limited access to agricultural and veterinary extension agents as one of the most serious constraints to agricultural and dairy sector development in Africa .Majority of respondents (33%) illiterate . The results as presented in Table 5 show that farmers' level of education, , farm size, farming experience were significantly related to at 5% level of probability. These results, are to some extent, in agreement with those of Yahaya (2000) which showed significant relationship between farmers education level, experience and farm size.

The study indicates that with the increase in the educational level of the respondents, there was an increase in their communication level and access to information table (7) indicated that chi value 66.6% of graduated have high communication level . The results of the present study are.

in line with those of Katungi (2011) who found in his study” that more educated farmers had more access to information and high communication level . Education guide them into adult life by being open to discuss behaviors allow them to learn from their mistakes and

correct self-destructive behavior.

The individual learner is faster in responding to the illiteracy of ideas, values and good methods. Farming experience of the respondent had effect on their communication level and access to information the study indicated that (42.9%) of respondents have 510- farming experience years .The study shows that, farmers communication level very lower only( 7.5%) have more than 10 frequented to the extension agents. Correlation coefficient between personal characteristics and communication level at 0.01 significant value.

### **Conclusions:**

It can be concluded that most of respondents were middle age, (52.5%) illiterate (33%), farming experience 5 to 10 years,(42.9%) and farm size above 20 cows (39.8%). The State radio were the major sources of agricultural information,(61.5%) followed by visit to the extension agents in his office (41.5%) followed by field day and State T.V (39.5%) farmers and television. Farmers' experience, educational levels as well as size of land holding were found to influence their access to agricultural information, while age had no influence on their access to agricultural information and communication level

### **Recommendations**

1-to the agricultural and veterinary administration to raise farmers awareness to the importance of the dairy extension to increase their production and improve their standard of living

2-to the training State centre availability of will trained qualified cadres of dairy extension agents in each localities with communication channels because farmers preferred mass media

3-To the agricultural and veterinary administration Establishment of local extension lab in each locality equipped with audio - visual aids to attract farmers and increase their communication level with extension agents .

### **References**

Aniane: Loum( 2002) Effect of socio-economic aspects of Economic Development and Cultural Chang 33 Production, developing countries pp. 117 - 132

CTA (1996). The role of information for rural development in ACP countries: review and perspectives. Proceedings of an international seminar, Montpellier, France, 12 – 16 June, 1995.

Elbadawi(2014) Agricultural Extension , Sudan Currency Printing Press

Emenyeonu, U., Danell, B. & Philips son, J. (1987)Genetic Parameters for Clinical Mastitis, Somatic Cell Counts, and Milk Production Estimated by Multiple-Trait Restricted-Maximum Likelihood. Journal of Dairy Science 71(2), 467476-.

Feder, G., R.E. Just and D. Zilberman. (1985).“Adoption of Agricultural Innovations in

Developing Countries. A Survey.” Economic Development and Cultural Change. 255298-..

Hassan R.M.J.D.Corbett ,(2003) Integrated Farmers Information With Geographic Information System Library of Congress.

Haggblade,S,Hazell,P.and Brown (2012)Improving of Agricultural Extension . Rome FAO.

Habtemariam Kassa,(2004).Agricultural Extension with Particular Emphasis on Ethiopia .Ethiopia Economic Policy Research Institute ,Addis Ababa ,pp80.

Haji Biru, (2003).Adoption of Cross Bred Dairy Cows in Aris Zone .The Case of Tiyo and Lemu Bilbilo Woreds .M, Sc.Thesis (Unpublished), School of Graduate Studies of Alemya University.

Kelsey,L.D. and Hearne,C.C.(1963) . Cooperative Extension Work Ithaca , N.Y. Comstock mango growers on the adoption of Needs and Skills..

Rahmeto Negash, (2007). Determinants of Adoption of Improved Haricot Bean Production Package in Alaba Special Woreda, Southern Ethiopia. An M, Sc.Thesis Submitted to School of Graduate Studies of Haramaya University.

Salamuel, G.Selassie,(2001).The development of integrated management information systems for Agricultural Extension Institutions of Development Countries:The case of Oromia Agricultural Development Bureau of Ethiopia ,Aachen:Shaker .pp.1833-.

Smith, N.E.(1983),Quantitative versus qualitative research:An attempt to clarify the issue. Education Researchers, 12(3),613-

Karungi, J., Kyamanywa, S., Adipal,a E. & Erbaugh, J.M. (2011).

Pesticide utilization, regulation and future prospects in small scale horticultural crop production systems in a developing country. In: Stoytcheva, M. (Ed.), Pesticides in the modern world – pesticides use and management, Chapter 2, 17pp.

Yahaya M.K.(2000) Prospected of Integrated Multi-Media mmunication Model in Mobilizing farmers for the Adoption of innovation Saravanan Computer Rome –FAO.