

The Role of Extension Officers in Delivering Agricultural Services to the Small-Scale Farmers, Gezira State, Sudan

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Abstract

This research was carried out in Gezira State, Sudan. The objective of this research is to assess the role of extension officers in transferring agricultural services and innovations to the farmers. Field survey was used to collect the data by using structured questionnaire which designed and pre-tested. Secondary data was collected from books, scientific journals and relevant documents. Based on Steven Samson equation the sample size were 36 extension officers selected by using quota sample technique. Statistical Package for Social Sciences (SPSS) was used for data analysis depends on descriptive statistics, correlation, and Regression analysis. The findings indicated that the high percentages (47%) of extension officers their experiences between 11 to 15 years and 33% had no training courses. 81% of the respondents had strong-direct links with the farmers, and their source of information of inputs and technical packages was the research centres (75%). The extension officers explained that they had high cost in transferring information to the farmers, required information and more interested partners on the feedback was research institution (83%). Correlation test shown personal characters, business career had significant correlation with the link with the research (.031) the value ($R=.359$), high significantly correlated between the nature of the relationship with farmers and link with research sig (.001) value of correlation (.534). The results of regression test indicated that the link with research had impact with significant value (.427beat) sig (.049) other partners had no significant. Recommendations: Based on the findings the research recommends: clear direct link for the extension officers with all agricultural partners in order to facilitate the delivery of information to the farmers. Private sector should involve in designing the extension policy and continuing training sessions have to be held to all extension officers.

Keywords: Agricultural Services, Extension Officers, Small Scale Farmers, Sudan.

1. Introduction

Agricultural extension and advisory services are defined as systems that should facilitate the access of farmers, their organizations and other market actors to knowledge, information and technologies (Chipeta et al, 2008). Public extension systems were established in most developing countries during the twentieth century and organized under ministries of agriculture (Ameur, 1994). As a result, the majority of these agencies became top-down, multifunctional, resource-constrained systems that lacked adequate operational resources as well as competent technical specialists (Khatam et al, 2013). In addition, these public extension systems lack the necessary resources (especially training and program funds as well as information and communication technologies, or ICTs) to keep their staff up to date and able to actually carry out more innovative extension program activities in the field (Swanson & Rajalahti, 2010). To achieve the goal of extension, hold regular information-sharing meetings at the district level to discuss production problems, research findings, and recommended practices before and during each growing season (Riaz, 2010). In Sudan at national level, the Technology Transfer and Extension Administration are responsible for agricultural extension services (el Hadi Omer, 2013). Wad Medani office was the first extension office established in Gezira State in 1974. In 1983 the adoption of regional governance reflected in agricultural sector by restructuring the agricultural administration which is headed by director general and includes many administrations one of them agricultural extension administration in region as the first level at region, and the second level is agricultural extension specialist in province level, and the third level is agricultural extension unit in Rural Area Council, and the lowest level is extension workers in different sites of Rural Council (Hassan & Khalil, 2008). Main responsibilities are pursuing the general agricultural extension policy which set by the Technology Transfer and Extension Administration (TTEA) (Alla & Yass, 2009). Until 1992, the Government largely controlled the marketing of agricultural inputs and outputs. However, as part of the economic reforms in the 1990s, it removed most of the controls in favor of private traders. Many obstacles facing public extension systems today are not capable to increase farm income and to improve farmer's technical knowledge; this may be due to their top-down organizational structure and their lack of adequate financial resources. Agricultural services centers (ASCs) are well financed and they have facilities to contact farmers, but their capability to make extension advice to the farmers is low due to their commercial view, lack of technical recommended information and lack of qualified agents than that of the extension system.

2. Materials and Methods

2.1 Area of the Study

This study is carried out in Gezira State- Wad Medani Greater Locality, lies in the center of the Sudan and represents one of the largest states with higher population density, and contributes much to agriculture of Sudan. Gezira State is located between latitude 13° 32' South 15° 30' North, and longitude 32° 22' West 34° 20' East (Annual report, 2016) it is bordered by Khartoum State from the North, Sinnar State from the South, Gadarif State from the East and the White Nile State from the western side. The area of Gezira State is estimated by 275,492 square kilometers, which is equivalent to less than 20% of the total area of the Sudan. The total number of the population in the Gezira State is about 4.244.000 (in year 2009). The State comes second to Khartoum State of the population number. Wad Medani is the capital of the state, population of Wad Medani is 386.000 (in year 2009).

Wad Medani Greater Locality is one of the eight Localities constituted Gezira State namely: (Wad Medani Greater Locality, South of Gezira Locality, East of Gezira Locality, Um Elgura Locality, Elkamileen Locality, Alhasahisa Locality, Almanaqil Locality and Al Qurashi Locality). It is well-populated area suitable for agriculture and considered as very important agricultural area in the state and most of the population are working directly or indirectly in agricultural sector. In Wad Medani Greater locality there are four extension offices in the sub administrative units (Wad Medani East complex, Hantoob complex, Alshabarga complex and Fadasi complex).

2.2 Population and Sampling Procedures

According to agricultural managements in the Locality in season 2016-2017 the number of the extension officers was estimated to be 40 extension officers in the records of the Ministry of Agriculture.

Population of the Study was the extension officers in Wad Medani Greater Locality; those were 40 extensionists in season 2015-2016.

Based on Steven Samson equation a general formula for sample size selection was used as follows:

$$n = \frac{N \times p(1-p)}{\left[\left[N - 1 \times \left(d^2 \div z^2 \right) \right] + p(1-p) \right]}$$

Where: N = total population n = sample size d = proportion of error (.05) p = proportion of availability of particularity and neutralization (.50) z = degree of normative meeting to level of mark 0.95 (1.96) So according to the previous mentioned equation samples size was 36 extension officers selected by quota sample technique.

2.3 Data Collection and Analysis

Field survey was used to collect the data by using a questionnaire constructed for this purpose through personal interview techniques. While secondary data collected from different sources as references, previous studies, reports, internet and relevant sources.

The collected data was fed in to the computer and statistically analyzed by using Statistical Package for Social Sciences (SPSS). Descriptive analysis used such as percentage and frequencies distribution, More over Correlation and Regression analysis were used to get out the relationship and the effect between different variables.

3. Results and Discussions

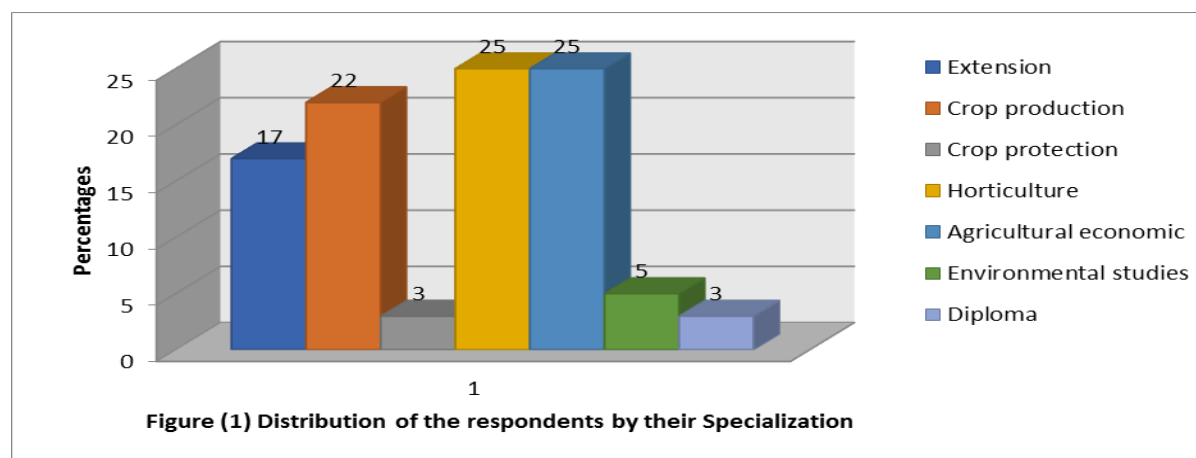
3.1 Results of Descriptive Analysis

Table 1. Distribution of the respondent's according to social characteristics

Social characteristics		Frequency	Percentages (%)
Sex	Male	10	28
	Female	28	72
Age group	25- 45 years	35	97
	46- 65	1	3
Education	Diploma	1	3
	Bachelor	25	69
		10	28
	Master		
Total		36	100

Indicating by SPSS; descriptive statistic, Source; field research

Results in table (1) shows that the majority of the extension officers were females (72%) while only (28%) were males, majority of the extension officers (97%) their age group between 25 to 45, and (69%) of them their educational level was bachelors. From the above results we comment that females were dominant in the agricultural work in the extension, the age is high effective factor in work, and most of them considered as in youth age and ready for work especially the agricultural work that need more physical effort.



The above figure (1) shows the academic specialization: 25% of the extension officers their specialization was horticulture, 25% their specialization was agricultural economics, 5% of the extension officers had the same specialization, 22% of them their specialization was crop production, 17% of the extension officers their specialization was extension and only 5% of the extension officers, also only 3% of the extension officers their specialization was crop protection and diploma degree without specialization.

The result indicated that the extension specialization that the not the extension officers had, most of the extension officers diverted their specialization. In conclusion the majority of extension staff their educational level was bachelors and this indicate workers were qualified to do their jobs.

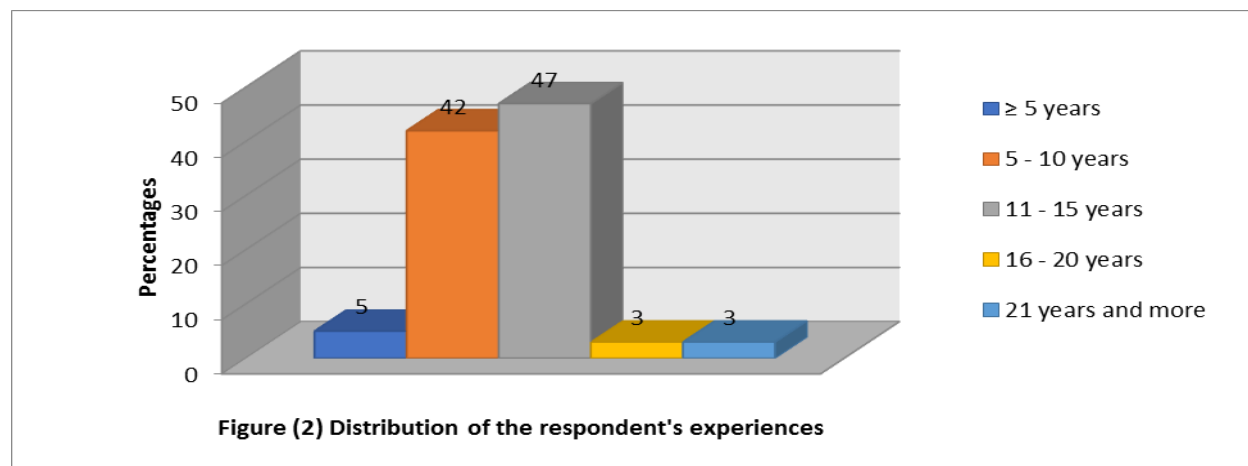


Figure (2) showed that the high percentages (47%) of extension officers their experiences was between 11 to 15 years, 42% of the extension officers their experiences years between 5-10 years, only (5%) of the extension officers their experiences 5 years and less. and 6% of the extension officers their experiences years 16 years and more.

It revealed that the majority of the extension officers (89%) their experiences between 5 to 15 years, these results indicated that the extension officers were more stable in their jobs, and then acquired more experiences in their work.

Table 2. Training courses accessed, organizer, and approaches

Training courses	Frequency	Percentages (%)
number of training courses		
no training	12	33
1-2	9	25
3-4	11	31
5 and more	4	11
Organizer		
None	12	33
ministry of agriculture	24	67
Approaches of training		
no training	12	33
lectures and seminars	18	50
Demonstration fields /and field days	6	17
Total	36	100

Indicating by SPSS; descriptive statistic, Source; field research

Table (2) shows training courses that the respondents had: number of training courses: high percentages (33%) of extension officers had not trained, the second percentages 31% for the extension officers had 3-4 training courses, 25% of the extension officers and (12%) had only 1-2 training courses, and only (11%) of them had 5 and more training courses.

The result indicated that the high percentage of the respondents had no training courses, the majority of the extension officers which had training their training organized by ministry of agriculture, the methods of training as mentioned were lectures and seminars. In fact, the results indicated that high percentage of the extension officers out of training, but the training is highly important for them and must by organized from the source of the recommended information and by the specializing personal and by the appropriate methods.

Table 3. Links between extension officers and farmers and type of inputs distributed

Relationship with farmer		Frequency	Percentages (%)
Nature of the link with farmers	Direct	29	81
	Indirect	7	19
Type of the relation with farmers	Personal	7	19
	Formal	6	17
	Social	2	6
	Functional	21	58
Visit as between service delivers and farmers	reciprocal visits	20	56
	from components to the farmer	16	44
	From farmer to the components	0	0
Communication through repeated visits	very strong (repeated)	12	33
	strong (spaced)	15	42
	weak (rare)	9	25
Following up farmers in their work	continuing follow up	10	28
	medium follow up	16	44
	weak follow up	8	22
	no following up	2	6
Receiving opinion of farmers and feedback	continuously collected	19	53
	Total	36	100

Indicating by SPSS; descriptive statistic, Source; field research

Table (3) showed the links with farmers and nature of the link: the majority of both 81% of the extension officers were explained that the nature of the link with farmers was direct link and 19% of the extension officers explained the link was indirect.

Type of the link: the majority of extension officers 58% had functional link with farmers, 19% of the extension officers and (20%) sited that they had personal link with the farmers, 17% of the extension officers and only (5%) agreed that there had formal link with farmers and 6% of the extension officers their link with farmers was social link.

Visits with farmers: the majority (56%) of the extension officers explained that the visits between them and the farmers was reciprocal visits, 44% of the extension officers explained the visits from them to the farmers, and no one of the extension officers explained that the visits from the farmers to them.

Communication through repeated visits: high percentages (42%) of the respondents explained that the communication strong, 33% of the extension officers explained that the communication is very strong, 25% of the extension officers explained that the communication was weak.

The following up: the majority (72%) of the extension officers explained that the following up to the farmers continuing and medium following, 22% of the extension officers explained that their following up was weak and only 6% of the extension officers explained they did not follow up the farmers.

Receiving the opinion and feedback from the farmers: the majority (53%) of the extension officers explained that they continually collected the opinion and the feedback of the farmers, 30% of the extension officers explained that they poorly collecting the opinion and the feedback from the farmers and only 17% of the extension officers explained that they did not collecting the opinion and the feedback of the farmers.

Table 4. Distribution of the respondents by their sources of inputs and innovations:

		Frequency	Percentages (%)
Sources of inputs	no thing	1	3
	research center	16	44
	imported companies	2	6
	center services	17	47
Sources of inputs information	no thing	2	6
	research center	27	75
	University	3	8
	imported companies	1	3
Sources of innovations information	center services	3	8
	no thing	5	14
	research center	14	39
	imported companies	14	39
	center services	3	8
	Total	36	100

Indicating by SPSS; descriptive statistic, Source; field research

Table (4) shows the source of inputs, information and innovations: source of inputs that provided to the farmers: 6% of the extension officers explained that their inputs source was imported companies, 44% of the extension officers explained that research centre their source of inputs, 3% of the extension officers explained that they had no source of inputs, the majority (75%) of the extension officers explained that research centre was their source of inputs information that provided to the farmers also (8%) of the extension officers explained that their source of inputs information was university, 6% of the extension officers explained that they had no source of inputs information, 3% of extension officers explained that their source of inputs information was imported components.

Source of innovations and information of the innovations: 39% of the extension officers explained that research centre was their source, also 39% of the extension officers explained that the imported components was there, 14% of extension officers explained that they had no source of information, 8% of the extension officers explained that centres services was their source of innovations and information that provided to the farmers.

From the above result the high percentages of the extension officers their source of input that provided to the farmers was service centres, the majority of extension officers their source of input information was research centers, about the source of innovation information the research centre and the imported companies had the same percentage as the source of innovation information to the extension. This result indicated there were other partners in agricultural works like imported companies and the services centres that aid in delivering information to the farmers via extension officers.

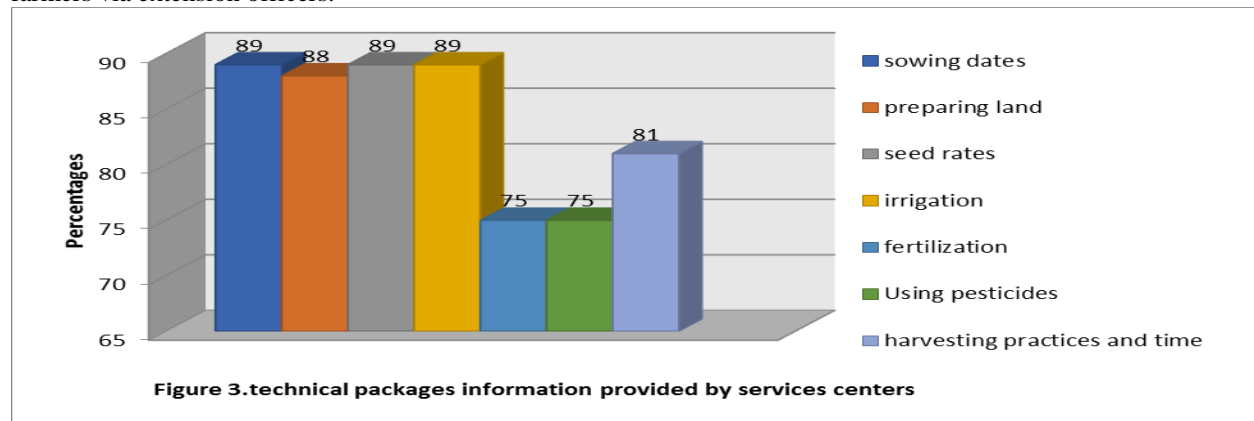


Figure (3) showed the source of technical package information: the majority (89%) of the extension officers explained that they provided application information to the farmers, 11% of the extension officers explained that they did not provided any application information to the farmers.

Source of information about sowing date: the majority of the (89%) of the extension officers explained that their source about sowing date was the research. (88%) of the extension officers explained that their source of information about preparing land was the research. (89%) of the extension officers explained that their source of information about seed rate was the research institution, 11% of the extension officers explained that they did not provided any information about seed rate or information about irrigation: the majority (89%) of the extension officers explained that their source of information about irrigation was the research. 75% of the extension officers explained that their source of information about fertilization was the research centre. Also 75% of the extension officers explained that their source of information about pesticides used was the research institution.

Source of information about harvesting practices and time: the majority (81%) of the extension officers explained that their source of information about harvest practices and time was research institution

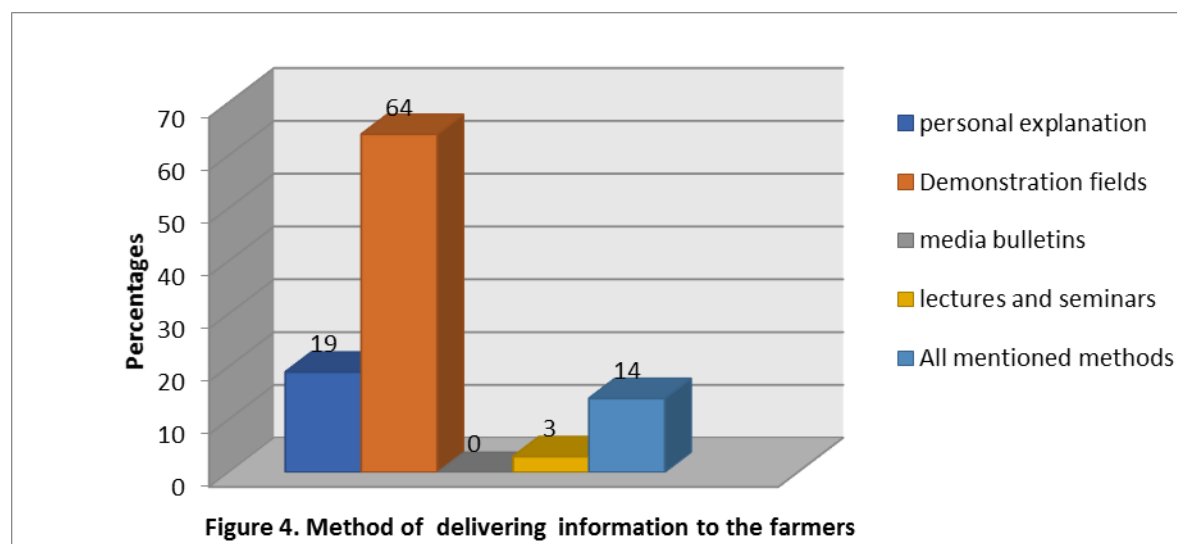


Figure (4) shows the method of conducting information to the farmers: the majority (64%) of the extension officers explained that their method to present the information to the farmers was demonstration field, 19% of the extension officers explained that their method to present the information was personal explanation, 14% of the extension officers explained that they used all the available methods (personal explanation, demonstration field, media bulletins, lectures and seminars), 3% of the extension officers explained that they used lectures and seminars as presenting methods.

From these results the majority of the extension officers used demonstration fields as a method of presentation of information to the farmers.

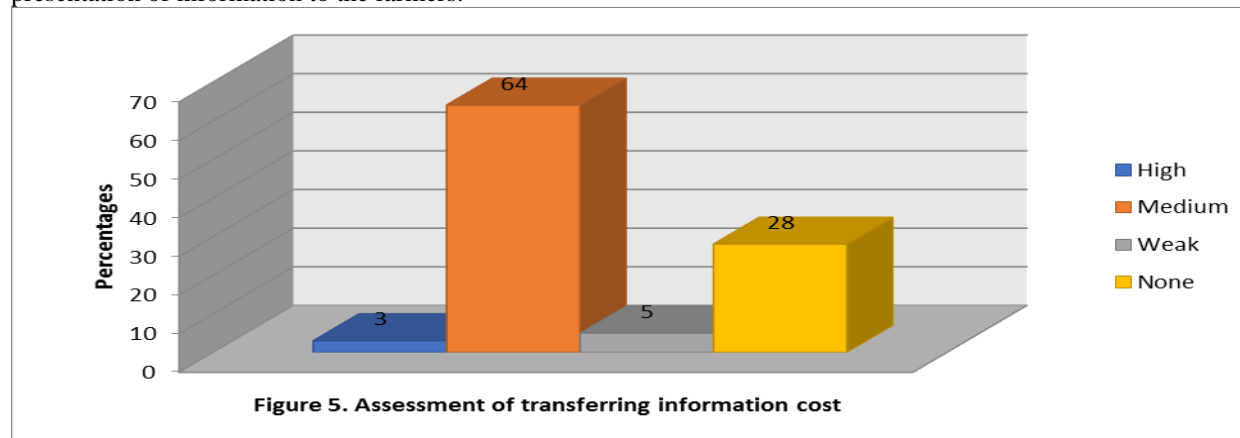


Figure (5) showed the assessment of the cost of transferring information: The majority (64%) of the extension officers explained that the cost was medium, 28% of the extension officers explained that they was no cost for transferring information to the farmers, 5% of the extension officers explained that the cost was weak while and 3% of the extension officers explained that the cost for transferring information to the farmers was. From these results the majority of the extension officer explained that there was a medium cost for transferring information to the farmers, therefore the costs for transferring information can be reduced by involving other partners in the extension work, that will reduce the cost of transferring information.

Table 5. Distribution of the respondents by the types of the links with the agricultural partners:

Type of link with the agricultural partners		Frequency	Percentages (%)
Type of the link with research	no relationship	1	3
	Direct	27	75
	Indirect	8	22
Type of the link with university	no relationship	1	3
	Direct	3	8
	Indirect	32	89
Type of the link with imported companies	no relationship	1	3
	Direct	3	8
	Indirect	32	89
Type of the link with services centers	no relationship	1	3
	Indirect	35	97
	Total	36	100

Indicating by SPSS; descriptive statistic, Source; field research

Table (5) shows the link with agricultural partners: type of the link with research institution: the majority (75%) of extension officers explained that there had direct link with the research institution, 22% of the extension officers explained that their link with the research institution was indirect, only 3% of the extension officers explained that they had no any relation with the research institution.

Type of the link with university: the majority (63%) of the respondents consecutive that their link with university was indirect, 8% of the extension officers explained that their link with the university was direct and 3% of the extension officers explained that they had no link with the university.

Type of the link with imported companies: the majority (89%) of the extension officers explained that their link with the imported companies was indirect, only 8% of the extension officers explained that their link with imported companies was direct.

Type of the link with services centres: the majority (97%) of the extension officers explained that their link with services centres was indirect while only 3% of the extension officers explained that they had no link with the services centres.

Table 6. Distribution of the respondents by their communication with agricultural partners:

Degree of Communication		Frequency	Percentages (%)
Research institutions	strong (3-5 visits in the season)	22	61
	weak (less than 3 visits in the season)	13	36
	none (no visits)	1	3
communication with university	very strong (more than 5 visits in the season)	1	3
	strong (3-5 visits in the season)	15	42
	weak (less than 3 visits in the season)	18	49
communication with imported companies	none (no visits)	2	6
	strong (3-5 visits in the season)	14	39
	weak (less than 3 visits in the season)	21	58
communication with services centres.	none (no visits)	1	3
	strong (3-5 visits in the season)	14	39
	weak (less than 3 visits in the season)	20	56
	none (no visits)	2	5
	Total	36	100

Indicating by SPSS; descriptive statistic, Source; field research

Table (6) showed the communication with the other agricultural partners: communication with research institution: the majority (61%) of extension officers explained that the communication with research institution was strong, 36% of the extension officers explained that the communication with research institution was weak, only 3% of the extension officers explained that they was no communication with research. The high parentage (49%) of the extension officers explained that the communication with university was weak, 42% of the extension officers explained that the communication with university was strong, 6% of the extension officers explained that they was no communication with university and only 3% of the extension officers explained that the communication with university was very strong. (58%) of the extension officers explained that the communication with imported companies was weak, 39% of the extension officers explained that the communication with imported companies was strong only 3% of the extension officers explained that there was no communication with the imported companies. Communication with the services centres: the majority (56%) of the extension officers explained that they had weak communication with the services centres, 39% of the extension officers explained that the communication with services centres was strong and only 5% of the extension officers explained that there was no communication with the services centres.

From these results the majority of the extension officers explained that their communication was strong with the research and with other partners (university, imported companies and services centres) was weak. That indicted the clear relation with clear linked between the entire partners will active the extension process.

Table 7. Distribution of the respondents by their opinion of the effective agricultural partners:

		Frequency	Percentages (%)
Cost-effective partners for access information	Researcher	21	58
	University	3	8
	imports companies	5	14
	services centers	7	19
Availability of partners in case of emergency	Researcher	22	61
	imports companies	6	17
	services centers	8	22
The interested partners in the feedback of the farmers	Researches	30	83
	imports companies	5	14
	service centers	1	3
	Total	36	100

Indicating by SPSS; descriptive statistic, Source; field research

Table (7) showed the effective agricultural partners: the less cost partners: the majority (58%) of the extension officers explained that the partners had less cost was the research institution, 19% of the extension officers explained that service centres was the less cost partners, 14% of the extension officers explained that imported companies was the less cost, and 8% of the extension officers explained that university was the less.

The more available partners: the majority (61%) of the extension officers explained that the research was the more available partners while, 22% of the extension officers explained that services centres was the more available partners and 17% of the extension officers explained that the imported companies was the more available. The interested partners on the feedback: the majority (83%) of the extension officers explained that the research institution was the more interested partners on the feedback, 14% of the extension officers explained that the imported companies was the more interested on feedback and 3% of the extension officers explained that the more interested on feedback was services centres.

From these results the opinion of the extension officers explained that the research centres had some of the effective partners characters like the less cost and efforts to get information, the more available partners in case of problem, the partners had the required information, the faster response partners and the interested partners in the feedback of the farmers, while service centres had some effective partners characters as the opinion of the extension officers like the partners had the required information and the more relevant partners.

Table 8. Reasons to include the services centres in the extension activities:

		Frequency	Percentages (%)
Reasons	Facilitate transferring the information to the farmers	6	17
	Integral of the agricultural operation and necessity of coordination	30	83
	Total	36	100

Indicating by SPSS; descriptive statistic, Source; field research

Table (8) showed the agree of the responders with the reasons for including services centres in extension activities as the following: the majority of the extension officers (83%) and consecutively explained that the integration of the agricultural operations and necessity of coordination between the partners of highly important, 17% of the extension officers explained that cooperation ease the transferring of information to the farmers. From these result services centres had been very effective partners in the extension work, so it should be involved in the extension activities.

Table 9. Correlation test to measure the relationship between the extension officers and ASCs links with partners and personal characters of extension officers and ASCs:

Personal characters of the respondents		Extension officers			
		Link with research	Link with university	Link with imported companies	Link with center services
Gender	Correlation	.111	-.187	. ^a	-.150
	Sig	.519	.275	.	.381
	N	36	36	36	36
Age	Correlation	-.076	.051	. ^a	.041
	Sig.	.661	.768	.	.812
	N	36	36	36	36
Education level	Correlation	-.171	.115	. ^a	.092
	Sig.	.320	.504	.	.592
	N	36	36	36	36
type of education	Correlation	. ^a	. ^a	. ^a	. ^a

	Sig.	.	.	.	.
	N	36	36	36	36
Specialization	Correlation	.019	-.170	. ^a	.200
	Sig.	.911	.321	.	.242
	N	36	36	36	36
Experience	Correlation	-.326	.220	. ^a	.177
	Sig.	.052	.198	.	.302
	N	36	36	36	36
Occupation	Correlation	. ^a	. ^a	. ^a	. ^a
	Sig.	.	.	.	.
	N	36	36	36	36
satisfaction of business career	Correlation	.359*	.170	. ^a	.253
	Sig.	.031	.323	.	.136
	N	36	36	36	36
The constant evaluation	Correlation	-.022	-.074	. ^a	.083
	Sig.	.899	.669	.	.631
	N	36	36	36	36
the follow up and evaluation	Correlation	.090	-.134	. ^a	.010
	Sig.	.600	.435	.	.955
	N	36	36	36	36

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

c. Cannot be computed because at least one of the variables is constant.

Table (9) shows that there was some significantly correlated between the links with the others partners and the personal character of the Extension officers and the center services workers.

The extension officers' personal characters, business career had significant correlation with the link with research (.031) the value (R=.359) and other personal characters had no significant correlation.

Table 10. Distribution of correlation test to measure the relationship between extension officers and ASCs links with the partners and the link with farmers:

The relationship with farmers		Extension officers					
		Link with research	Link with university	Link with imported companies	Link with center services	Link with	Link with
nature of the relationship with farmers	Correlation	.534**	-.106	. ^a	-.494**		
	Sig.	.001	.539	.	.002		
	N	36	36	36	36		
type of the relationship with farmers	Correlation	.352*	-.237	. ^a	-.191		
	Sig.	.035	.164	.	.265		
	N	36	36	36	36		
vistas between extension and farmers	Correlation	.200	.217	. ^a	-.337*		
	Sig.	.242	.204	.	.044		
	N	36	36	36	36		
communication through repeated visits	Correlation	.049	.099	. ^a	-.027		
	Sig.	.776	.565	.	.878		
	N	36	36	36	36		
method of presenting information to farmers	Correlation	-.164	.144	. ^a	.062		
	Sig.	.339	.403	.	.718		
	N	36	36	36	36		
the cost of transforming information to	Correlation	-.016	.138	. ^a	-.197		
	Sig.	.927	.421	.	.250		
	N	36	36	36	36		

farmers following up	Correlation	.059	-.099	. a	.016
farmers in his works	Sig.	.734	.567	.	.927
	N	36	36	36	36
collected opinions of farmers and feedback	Correlation	-.083	.123	. a	-.117
	Sig.	.632	.476	.	.498
	N	36	36	36	36

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

c. Cannot be computed because at least one of the variables is constant.

Table (10) shows that the extension officers had high significantly correlated between the nature of the relationship with farmers and link with research sig (.001) value of correlation (.534) and the link with center services sig (.002) value of correlation (-.494) and was opposed direction. also, there was low significantly correlated between the vistas between extension and farmers and the link with center services sig (.044) value of correlation (-.337) and was opposed direction.

While the service centers worker only had low significant correlation between the cost of transforming information to farmers and the link with centers service sig (011) value of correlation (.335)

Table 11. Correlation test to measure the relationship between the extension officers and ASCs links with the partners and the source of technical packages information:

		Extension officers			
source of agricultural application information		Link with research	Link with university	Link with imported companies	Link with center services
source of information about sowing dates	Correlation	.158	-.107	. a	-.086
	Sig	.357	.536	.	.619
	N	36	36	36	36
source of information about preparing land	Correlation	.158	-.107	. a	-.086
	Sig.	.357	.536	.	.619
	N	36	36	36	36
source of information about seeds rate	Correlation	.158	-.107	. a	-.086
	Sig.	.357	.536	.	.619
	N	36	36	36	36
source of information about irrigation	Correlation	.158	-.107	. a	-.086
	Sig.	.357	.536	.	.619
	N	36	36	36	36
source of information about fertilization	Correlation	.131	.071	. a	.057
	Sig.	.445	.681	.	.741
	N	36	36	36	36
source of information about pesticides used	Correlation	.131	.071	. a	.057
	Sig.	.445	.681	.	.741
	N	36	36	36	36
source of information about grossing operation	Correlation	.158	-.107	. a	-.086
	Sig.	.357	.536	.	.619
	N	36	36	36	36
source of information about harvest dates	Correlation	-.037	.025	. a	.020
	Sig.	.829	.884	.	.907
	N	36	36	36	36

source of information about harvest methods	Correlation	-.037	.025	. ^a	.020
	Sig.	.829	.884	.	.907
	N	36	36	36	36
source of information about post-harvest	Correlation	-.037	.025	. ^a	.020
	Sig.	.829	.884	.	.907
	N	36	36	36	36
source of information about marketing	Correlation	. ^a	. ^a	. ^a	. ^a
	Sig.	.	.	.	.
	N	36	36	36	36

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

c. Cannot be computed because at least one of the variables is constant.

Table (11) shows that the extension officers had not significantly correlated between the source of technical package and other partner's links

While the service centers worker had low significant correlation between the link with imported companies and some technical package (source of information about sowing dates, source of information about preparing land, source of information about irrigation and source of information about clearing operation

Table 12. Correlation test to measure the relationship between extension officers and ASCs links with the partners and the opinion of the on the other partners:

the opinion of the extension officers and center services workers		Extension officers		with	Link with imported companies	with	Link with center services
		Link research	Link university				
Costs of transferring information	Correlation	-.277	.187	.	. ^a	.	.150
	Sig.	.101	.275	.	.	.	.381
	N	36	36	36	36	36	36
Components that you consider more useful in giving information	Correlation	-.040	.299	.	. ^a	.	-.284
	Sig.	.815	.076	.	.	.	.093
	N	36	36	36	36	36	36
The available components in case of problem	Correlation	.085	.228	.	. ^a	.	-.367*
	Sig.	.624	.181	.	.	.	.028
	N	36	36	36	36	36	36
The components had the required information	Correlation	.164	.102	.	. ^a	.	-.260
	Sig.	.339	.555	.	.	.	.126
	N	36	36	36	36	36	36
The faster response components	Correlation	.260	-.231	.	. ^a	.	-.186
	Sig.	.125	.176	.	.	.	.278
	N	36	36	36	36	36	36
The more relevant components	Correlation	.171	-.185	.	. ^a	.	-.149
	Sig.	.317	.280	.	.	.	.386
	N	36	36	36	36	36	36
The interested components in get and register the comment and feedback	Correlation	.247	-.225	.	. ^a	.	-.181
	Sig.	.146	.186	.	.	.	.290
	N	36	36	36	36	36	36
Need to establish	Correlation	. ^b	. ^a	.	. ^a	.	. ^a

relationship between center series and other components	Sig. N	.	.	.	.
		36	36	36	36

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

c. Cannot be computed because at least one of the variables is constant.

Table (12) shows that the extension officers had not significantly correlated between the links with the others partners and the opinion on the other partners.

While the service centers worker had low significant correlation between the link with extension and the assets of costs of transferring information sig (.012) value (.331) and high significant correlation also with the link with extension and Components that you consider more useful in giving information sig (.000) value (.772) and the available components in case of problem sig (.000) value (.774).

Table 13. Regression test to measure the effective of the link between the extension officers and other partners on information exchanging:

Model	Un standardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	-4.667	10.107		-.462	.647
the link with research	2.167	1.926	.427	1.125	.049
the link with university	2.667	2.187	.389	1.219	.232
the link with center services	2.613E-15	2.320	.000	.000	1.000

a. Dependent Variable: The components had the required information

b. Predictors: (Constant), the relationship with center services, the relationship with university, the relationship with research

Table (13) showed that the regression test measure the effective of the relationship between the partners and the extension officers on the information exchanging, the relationship with research had impact with significant regression (.049) low value (.427 beta) but was moor effect than the impact of the relationship with university which was no significant regression (.232) low value (.389 beta) and the relationship with the service centers had not impact with no significant regression (1.00269) and no value the value was (.000 beta).

4. Conclusion and Recommendations

Extension system has been established to develop and/or adapt technologies that would help agricultural development to improve production and bridge the gap of food security. Since 1992 a lot of partners had talked their place in the agricultural work like the import's companies and the services centers with public extension. To give effective delivery of information to farmers i.e. (adequate, updated recommended information, in the right time, by the best methods, with less cost to increase the best profit of all) the extension officers should be coordinate with other partners in delivering of agricultural services to the farmers. The study recommends that clear direct link to all agricultural components, Private sector should involve in designing the extension policy and continuing training sessions have to be held to all extension officers. Put a clear direct linkage to agricultural partners. Private sector should be involving in the designing of the extension policy. Sufficient information should be transferred to extension officers. In-service training has to be held for extension officers. A clear linkage with other partners especially the (ASCs) has to be established.

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