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Investigation Restrictions and Preventive Components Effectiveness of Agricultural Advisory Services Companies in Iran

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Abstract: Technologies and farming methods are constantly changing. Farmers should be informed about how to use these innovations in their fields. Utilizing the competence of the graduates in agricultures in the form of Agricultural Advisory Services companies (AASC) is one of the best solutions to transfer knowledge and technology to farmers and accelerating in agricultural development. The main purpose of this study is to identify the problems is faced by AASC. Statistical population of the study consisted of Agricultural Consultants (N=1731). Using the formula Cochrane, sample size was determined at 306. Questionnaire was the data instrument. The appearance and content validity of questionnaire was obtained by comments of extension experts. Reliability coefficient of the questionnaire of 0.89 was obtained by Cronbach alpha. The results showed that AASC increased participation of stakeholders in decision making and planning. AASC also provided the specialized context fields in agricultural extension. Results showed that AASC increased accountability and responsibility in extension services. By using exploratory factor analysis barriers are classified in four factors, including Infrastructure, Policy-making, Socio - cultural and Financial. These factors could explain 62.86 % of variance in reduced effectiveness of AASC Services among farmers in West Azerbaijan province.

Key words: Limitations · Agricultural Advisory Services Companies · Factors · Effectiveness · Iran

INTRODUCTION

Access and use of information plays a crucial role in any activity [1,2]. Despite importance of information, farmers don't have access to new technologies expect through direct contact between researchers. But new organizations should be responsible for transferring information and technologies to the farmers [3]. Commercialization in agriculture requires demands for technical consulting services [4].

Shaffril *et al.* [5] stated that agriculture is generally used as a tool to overcome poverty and unemployment problem in the world. In Iran agriculture is one of the most important economic sectors. The agricultural sector provides about a quarter in employment and 33% of exports in Iran and Iran has advantages in producing almost of agricultural goods [6,7]. Despite the important role of agriculture in food production, employment and exports, unfortunately rural community is faced with numerous problems. These involves issues such as poverty, unequal income distribution, unemployment, low productivity, unskilled labor force and lack of appropriate extension system in the agricultural sector [8].To increase agricultural production, farmers need to have access to extension services. But despite the long term of starting agricultural extension programs, in Iran, numerous of farmers have not been covered by public extension services. Because the extension agents are very low and don't access to all farmers. FAO statistics in Africa show that two of every three farmers do not have access to public services. This ratio in Asia is three of every four people, Latin America six of the every seven people and five of the six people in the Middle East [9-11]. Agricultural Extension Services have been widely criticized due to inability to perform assigned functions and the absence of expected effectiveness and efficiency. Therefore, major changes such as structural reform, decentralization and privatization are essential to

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agricultural extension [12]. Rivera [13] assumes that the agricultural extension in the public sector has been seriously criticized in many countries due to its inefficiency.

Today, the role of agricultural public extension in transferring of technology in agriculture has been questioned [14]. Ahmadi [15] pointed out that negligence to capital and human factors in agriculture, lack of covering comprehensive stockholders in agricultural extension, limited resources, manpower and funds in public extension system, dearth of fitness levels of staffing and professionalism to the needs of farmers are the main problems existing in agricultural knowledge and information system of Iran [15]. Other countries have different strategies to cover defects and weaknesses of public extension [16]. Policy-makers in these countries have reached an important consensus to find other alternatives to public extension. One of these alternatives is the use of private companies to provide information and transfer technologies to farmers. Privatization of extension services refers to the services that extension staff in private organizations provides for those farmers who pay the cost of services. These services are being considered as supplement for public extension service [17,18,19].

Amirani [20] states that the solution of these problems would be possible through consulting services. Privatization of extension services by contracts to farmers has been introduced as one of the strategies of restructuring the public extension system [4]. Application of AASC integrated with other techniques to produce effective access to financial facilities and marketing for the product would increase production and improve performance of farmer's production in fields [21].

Benin *et al.* [22] stated that the main purpose of an agricultural consulting service is to increase agricultural productivity by strengthening the technical skills of farmers and also to monitor their activities through delivery information and consulting services to them [22]. Anderson [23] believes that consulting services are critical elements which provide key information and improve the welfare of farmers. He believes that the term "consulting services" refers to a complete set of agricultural organizations that facilitate and support participation of farmers and solve their problems in agricultural sector with transmission of information, skills and techniques.

Transferring to agricultural consulting services and conventional extension systems could enhance productivity in production organization like agricultural farms [24]. Application of consultancy companies is meant to achieve goals such as: increased efficiency and faster economic growth, agricultural development and a decrease in government intervention in the executive of decisions [14]. One of the important challenges that extension Planners are faced with is the issue of how to increase the level of effectiveness and efficiency of technical consulting services [25]. Designing effective extension systems has always been indispensible to system designer and policy-makers. Sundberg asserted that effective counseling services have significant impact on performance and efficiency of farmers [26].

The Ministry of agriculture in 2009 reported that West Azerbaijan province has a high capacity in agriculture production [27]. But due to its geographical situation (being mountainous) and scattered villages farmers have limited access to public extension services and a large number of farmers are deprived of obtaining extension services. Accordingly, using AASC can solve many of this structural problems and bottlenecks of public extension system. Based on the statistics of Agricultural Engineering Organization over 1900 AASC have been formed and established in Iran. The largest of AASC was based in West Azerbaijan and informed in 162 AASC companies [28]. Considering the important role of AASC in providing extension services to farmers, it is necessary to identify obstacles and barriers that influence the effectiveness of these companies. These obstacles will reduce the effectiveness of services [29]. Therefore, the main goal of this study was identifying obstacles factors that reduce effectiveness of AASC in Iran. By identifying this problems, policy-makers and extension planners could have suitable strategies to solve their. This could result to increasing their effectiveness in process of delivering agricultural services to farmers.

MATERIALS AND METHODS

The methodology used in this study involved a combination of descriptive and quantitative research and included the use of correlation and descriptive analysis as data processing methods. A questionnaire was developed based on interviews and relevant literature. The questionnaire included both open-ended and fixed-choice questions. A 5-point Liker scale ranging from 1 (strongly disagree) to 5 (strongly agree) was applied as a quantitative measure. Content and face validity were established by a panel of experts consisting of faculty members and experts in the Ministry of Agriculture. A pilot study was conducted with 30 rural people who had not been interviewed before the earlier exercise of

determining the reliability of the questionnaire for the study. Cronbach's Alpha coefficient was 0.86 which demonstrated that the questionnaire was highly reliable. The research population included Agricultural Consultants that offered advisory services to farmers in the Provinces of West Azerbaijan (N = 1731). Using a Cochran formula, sample size was determined at 306. Factor analysis statistical methods were used, with the aid of Statistical Package of social Science (SPSS).

RESULTS

The results of descriptive statistics show that the average age of consultants was 28.53 years, with 3.8 years work experience. The majority of them (72.2%) were male. Majority of respondents (81.4%) had a B.Sc in agriculture majors. Consultants have announced that a major method to earn income was monitoring the farmers' farm (49.3%). In addition 38.6 percent of the consultants preferred the method of "visit farms' farm". The results showed that (81.4%) of consultants have suitable place in AASC. The average distance of AAS center from city is 17 kilometers (Table1).

Priorities of Advantages of AASC: Priorities attitudes of consultants about advantages of advisory services companies indicated that improving farm management skills of farmers was ranked as the first advantage (CV=0.184), also increasing access to demand-driven extension services (CV=0.185) was ranked as the 2th and increasing participation of farmers in planning and decision-making process (CV=0.187) was in the next rank. Other findings are shown in Table 2.

Factor analysis is a general term for some multivariate statistical methods whose main purpose to reduce the number of variables in a data set into smaller number of dimension. This method examines internal correlation in a large number of variables and eventually is explained in the form of general operating and restricted categories. Performed calculations display that internal coherence is proportional (KMO=0.94) and the Bartlett statistics is significant (÷^{2}= 2467.047 and P=0.000). To determine the number of factors, special amount and percentage of variance was used.

Table 3 shows the classification of the factors into four latent variables using the ordinal factor analysis. The variables were classified into infrastructure,

Table 1: Descriptive statistics of Consultants

variables		n	%	Mean	SD.
age				28.53	3.8
Age experience			3.22	1.55	
Distance from city			17.5	89.9	
Sex	Female	85	27.8		
	Male	221	72.2		
Education	Bachelor of science(B.Sc)	249	81.4		
	Master of Science	54	17.6		
	PhD	3	1		
Methods to obtain income	Inputs sale	55	18		
	Delivery advisory	151	49.3		
	Farm monitoring activities	35	11.4		
Educational methods	Office visit	9	2.9		
	Farm visit	118	28.6		
	Group methods	89	29.1		
	Use telephone	21	9.6		
Suitable office place in AASC	Yes	249	81.4		
	No	57	18.6		

Table 2: Advantages of AAS from Consultants perception

Advantages	mean	SD	(CV)	Rank
Increasing farm management skills of farmers	4.33	0.80	0.184	1
Improving access to Demand-Driven extension services	4.32	0.80	0.185	2
Increasing participation of farmers in planning and decision making process	4.26	0.80	0.187	3
increasing the specialty of extension services	4.36	0.82	0.188	4
Increasing responsibility of extension consultants	4.28	0.86	0.200	5
Increasing bargaining power of farmers for acquire information and services	4.15	0.90	0.216	6
Providing rural development fields	3.66	0.84	0.229	7
Increasing the extension services to farmers	3.78	0.87	0.230	8
Reducing cost in public sector	3.84	0.97	0.252	9
Increasing quality of extension services	3.79	1.02	0.269	10
increasing incomes of farmers	3.41	0.93	0.272	11
Improving in public extension situation	3.66	1.04	0.284	12

Strongly agree=5,agree=4, intermediate=3, Disagree=2, Strongly disagree=1

Table 3: Total variance explained

	Rotation sums of squared loading		
Factor	Total	% of Variance	Cumulative %
1	3.985	22.13	22.13
2	2.930	16.27	38.40
3	2.344	13.02	51.42
4	2.057	11.42	62.84

Table 4: Classification of factors by using ordinal factor analysis

Factor name	Variables	Variance by factor (%)	% of Variance
Structural	Lack of cooperation of other institutions and organizations(public) with AASC	0.642	
	Lack of expert and technical personnel in AASC	0.671	22.13
	Lack of coordination in the activities of public and private sector	0.666	
	Lack of necessary facilities (vehicle) by the consultants	0.601	
Policy-making	Lack of services to marginal farmers	0.623	
	Lack of subsidies and grants from the government for companies and farmers	0.731	16.27
	Lack recognition signed of AASC	0.713	
	Lack of executive power of AASC	0.590	
	Lack of monitoring and evaluation activities of AASC	0.664	
Socio-cultural	Unhealthy competition between advisory agencies	0.652	
	Lack of trust in advisory services companies	0.541	13.02
	Illiteracy of farmers	0.662	
	Little attention to the needs of women farmers	0.540	
Financial	High cost of consultancy services	0.715	11.42
	Lack of credit and financial power of farmers	0.719	

policy-making, socio-cultural and financial. The basic idea of factor analysis is to find a set of latent variables that contain the same information. The classic factor analysis assumes that, both observed and the latent variables are continuous variables. But, in practice, the observed variables are often ordinal. Results show that the four factors explain 62.86% of the total variance in reduces effectiveness of AASC (Table 3).

The first factor referred to "structural factors" with a principal component of (3.985), which is higher than other factors, explains 22.13% of the total variance. The second factor was named policy-making. This factor according to the specific amount 2.93 could explain 16.27% of total variance. The third factor was named socio-cultural factors. These factors according to the specific amount 2.344 could explain 13.20 % of total variance. The fourth factor was named financial factor. This factor according to the specific amount 2.057 could explain 11.42% of total variance. Between these factors structural factors can cause the most to explain the variance in the reduce effectiveness of AASC by respondents. So should increase the effectiveness of AASC among farmers, necessary will be done some practices and pointed to items mentioned by policy-making and extension-planners (table 3).

Table (4) explained variance by each of the factors reducing effectiveness of AASC. As it can be seen structure factors, policy-making factors, socio – cultural factors and financial factors were identified as main barriers in the effectiveness of AASC (Table 4).

DISCUSSION

The improving farm management skills and enhancing productivity of farmers are the main advantages of using AAS. Also offering consulting services based on demand of farmers and increasing participation of farmers in decision- making and program planning were identified as other advantages of counseling services. Therefore considering the cases and factors on the strengthening and developing of consulting services is very crucial. These findings also accord with studies of [23, 18, 11, 30, 31].

Results from factor analysis shows that barriers were infrastructure components, policy-making and socio - cultural and financial factors. The most important barrier factor is infrastructure. Factors such as lack of cooperation with AASC from other organizations (public organization), lack of specialists in the AAS structure, tasks interference with public extension sector, lack of communication infrastructure (roads and ICT) and also shortage of vehicles and equipment have been identified as barriers for infrastructure. Therefore to increase efficiency of AASC these issues should be resolved. Therefore it is necessary that the consultants should increase their technical competences. Finally the missions and tasks of each sectors (public, private) should be explained and determined. These finding also pointed by several authors, such as [24, 32, 33, 34,35].

Another obstacle is the policy-making factor, faced by AASC. There are issues such as lack of livelihood and subsistence farmers to advisory services, lack of subsidies and financial assistance from the government to provide services to marginalized groups such as women and rural youth, lack of executive power of advisory companies and lack of credit the signing of AASC. On the other hand lack of assessment and a monitoring sector has caused many problems for AASC. Undoubtedly providing appropriate plans and programs of government can enhance AASC. Use of specialized assessment and evaluation committees to review the performance of consultants and the increase of the executive power of AASC through obtaining funding and recognition of the sign companies could reduce the problems that are classified as obstacles factors in policy. Research findings are in line with these studies [36, 37,38].

The third factor that acts as barriers to the effectiveness of AASC among farmers is socio-cultural factors in nature. Unhealthy competition between AASC, Lack of trust in advisory services companies, the low educational levels of farmers and the problem of having access to women in order to deliver advisory services are considered as socio-cultural barriers. In order to solve this problem, AASC should increase their technical competences about farmers' issues in order to increase farmers' confidence and trust toward them. Also it is highly crucial that female consultants provide services to rural women. This finding is also pointed by several authors [14,15,39,40, 41].

Financial factors such as high cost of consultancy services for farmers and lack of access to financial resources by farmers were identified as other barriers to the effectiveness of AASC. The governments should be considering strategies to provide funding sources to farmers (such as loans), so to reduce the financial barriers. Moreover evaluation committee should be monitoring the services offered to farmers. Consultants should also use other methods to provide cost of services such contract among farmers at the end of the production process. Agricultural advisory services as a private sector were establishment to reducing problems of public extension sector and improving farm management skills of farmers. Providing information and consulting services to farmers cause the increase of quality and quantity of agricultural products [14,35]. According to these issues the following suggestions will be presented to reduce problems that faced by AASC. Some of preventing problems will be solved through reform and changes in the structure of AASC activities. Therefore acquiring professional and technical skills by consultants and employing female consultants was necessary. Furthermore the policy-makers should develop facilitate mechanisms such as (providing supportive policies and infrastructure development) to AASC.

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