



Assessing the Process of Extension Program Development in Iranian Agricultural Extension System

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Abstract

The purpose of this study was to assess the process of extension program development in Iranian Agricultural Extension System (IAES). The research instrument was a structural questionnaire with close-ended questions which its validity and reliability was confirmed by using expert panel and Cranach's alpha test, respectively. The target population of this research included all extension managers who were responsible for doing extension activities in Iran's townships (N=334). According to Krejcie and Morgan's table, a number of 191 persons selected as statistical sample in a stratified sampling method, and finally 198 questionnaires were gathered and analyzed (n=198). Overall, the use of the process of extension program development in IAES was at less than moderate level. The other results also indicated there was the significantly positive relationship between selected demographic characteristics of extension managers with their viewpoint on the use of the process of extension program development in IAES. These results highlight the need for the reform of the process of agricultural extension program development in IAES.

Keywords:

Extension Manager, Extension Program Development, Agricultural Extension System, Iran

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INTRODUCTION

A program is defined as a set of orchestrated educational experiences purposefully selected to address a locally identified need or issue of broad public concern (Rennekamp, 1995). Israel *et al.* (2012) define an extension program as a comprehensive set of activities that are intended to bring about a sequence of outcomes among the clientele groups. Rennekamp (1999) states the process of program development serves several useful functions in today's extension organization. A few of these functions are identified below:

- **Direction:** Program planning helps to identify what is important to the people of a particular area;
- **Intent:** A plan of work helps communicate to the public what the organization intends to focus on over a specified period of time;
- **Commitment:** The best way to ensure follow through on intentions is to put those intentions in writing. A plan of work makes a commitment to act in accordance with intentions;
- **Evaluation:** The planning process encourages us to define what success will look like and how it will be measured;
- **Accountability:** A comprehensive plan of work lets decision-makers know how the organization plans to allocate valuable resources and the results it intends to be accountable for producing.

Developing an effective extension program is not easy. Boyle (1985) points out that the majority of researches which have been done in this field are similar in that they divided the program development process into three phases: 1) program planning, 2) implementation, and 3) evaluation and accountability. In the first step, extension educators work with stakeholders to scan the environment and determine issues and needs to be addressed by Extension (Franz *et al.*, 2008). The planning phase focuses on determining what needs to be done and usually includes using one extension educational approach or model for developing extension program planning (Franz *et al.*, 2008), engaging stakeholders (Diehl and Galindo-Gonzalez, 2011), assessing the educational needs of stakeholders

(Iowa State University, 2008), and developing program goal and objectives (Diehl and Galindo-Gonzalez, 2011). The design and implementation phase usually involves the identification of desired outcomes, selecting appropriate learning experiences and activities, mobilizing and deploying resources, and conducting the experiences and activities that are planned (Boyle, 1985). Finally, educators and stakeholders determine the level of success realized in terms of technically feasible, economically feasible, socially acceptable, and environmentally safe and sustainable from these educational efforts through program evaluation and accountability (Franz *et al.*, 2008; Campbell and Barker, 1997).

By considering the evolution of agricultural extension system and its functionality in Iran, it is indicated that this system has been analyzed and criticized in terms of all aspects. One of the main criticisms against it is the ineffective extension program development. Extension programs in IAES include either the one-day programs which increase the knowledge level of clients or the seven-day ones which improve the skill level of clients. It is essential to remind that the process of extension program development is the process in which the first and the second phases of extension program development namely program planning and evaluation and accountability are done by governmental extension organizations and extension programs are implemented by non-governmental extension organizations namely the agricultural advisory services firms. Shabanali Fami *et al.*, (2007) point out the personnel of Iranian agricultural extension organizations, both governmental and non-governmental organizations, perform the non-extension duties such as distribution of chemical fertilizers, pesticides, insecticides and herbicides than perform extension duties, and as a result they have not adequate time for developing effective extension program. A few of the other causes of ineffective extension program development in IAES are identified below:

- **Non involving stakeholders** in the process of extension program development (Ommani and Chizari, 2010; Karbasian and Mulder, 2004; Noori Vandi and Ommani, 2009; Ommani and

Chizari, 2010);

- Not assessing the educational needs of clients in the beginning of the process of extension program development (Ommani and Chizari, 2010; Karbasion, 2007; Ommani and Chizari, 2010);

- Low attention to the environmentally issues in the design of extension programs (Noori Vandi and Ommani, 2009);

- Low attention to the indigenous knowledge of clients in the process of extension program development (Noori Vandi and Ommani, 2009);

- Not using one extension educational approach or model in the process of extension program development (Anonymous, 2008);

- Low evaluation of extension programs in terms of process formative and product summative (Soori *et al.*, 2008; Mirzaei *et al.*, 2006);

- Low use of information technologies in the design and the implementation of extension programs (Farajallah Hosseini and Niknami, 2009).

The main purpose of this study was to assess the process of extension program development in IAES. The specific objectives of this study were:

- To describe demographic characteristics of extension managers;

- To assess the use of the process of extension program development in IAES;

- To examine the correlation between extension managers' viewpoints on the use of the process of extension program development in IAES and their demographic characteristics.

MATERIALS AND METHODS

The study represented descriptive-correlation research. The target population included all extension managers who are responsible for doing extension activities in Iran's townships (N=334). Sample size were determined and supported by Krejcie and Morgan (1970) which offer a table for determining sample size for a given population. Based on the classification of the Ministry of Agriculture which has divided Iran's provinces into six regions, sample taking has been conducted using proportional stratified sampling technique (n=198).

According to the review of literature, the researchers developed an instrument to collect data. The instrument was divided into two sections. Section one was designed to gather data about respondents' viewpoints on the extension program development (13 items). The five-point Likert-type scale was used to quantify responses for this section which ranged from 1=very low, 2=low, 3=moderate, 4=high, and 5=very high. Section two was designed to gather data about the respondents' demographic characteristics such as age, years of agricultural work, and extension work, and years of working in the agricultural office, and of doing extension activities, level of education, and major.

The research instrument was a structural questionnaire with close-ended questions whose content and face validity were established by a panel of experts consisting of faculty members at Agricultural Extension Department of Tarbiat Modares University, Tehran, Iran and agricultural officers of the Ministry of Agriculture. A pilot test was conducted with 30 extension specialists who work in Deputy of Extension and Education of Iran's Ministry of Agriculture (Jihad-e-Keshavarzi) in Tehran. Minor changes in wording were made as a result of the pilot test. The questionnaire reliability was estimated by calculating Cronbach's alpha. Reliability for the instrument was estimated 0.90.

Data were collected from April to August 2012. The data were coded and analyzed by using the Statistical Package for the Social Science (SPSS, 16) for windows. Descriptive statistics (frequencies, means, standard deviations, minimum, and maximum) were used to describe data. Spearman correlation coefficient and Independent-sample t test were employed to analyze the relationships and the differences among variables.

RESULTS

Objective one: To describe demographic characteristics of extension managers

Extension managers who participated in this study ranged in age from 20 to 58 years old. The mean age of respondents was 44 years old (SD=6) that the majority of them (f=113 or

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Table1: Demographic characteristics of extension managers (n=198)

Variable	Category	Frequency	percent	Mean	Standard Deviation	Min.	Max.
Age (year)	26-36	32	16.20	43.53	6.49	26	58
	37-47	113	57.10				
	48-58	53	26.80				
Years of working in the agricultural office	3-15	54	27.30	19.24	7.28	3	40
	16-28	126	63.60				
	29-40	18	9.10				
	2-11	79	39.89				
Years of doing extension activities	12-21	83	41.91	14.05	7.35	2	30
	22-30	36	18.20				
	High school diploma	2	1				
Level of education	Junior college diploma	18	9.10	-	-	-	-
	Bachelor of science	122	61.60				
	Master of science	55	27.80				
	Ph.D student	1	0.50				
	Agricultural extension and education	39	19.70				
Major	The others	159	80.30	-	-	-	-

57.10%) ranged from 37 to 47 years old. Extension managers were asked to indicate the number of years of working in the agricultural office. Years of working ranged from three to 40. On average, extension managers had 19 years of working in the agricultural office (SD=7) that the majority of them (f=126 or 63.60%) ranged years of working in the agricultural office from 16 to 28 years. In addition, extension managers had, on average, 14 years of doing extension activities (SD=7) that the majority of them (f=83 or 41.91%) ranged years of doing extension activities from 12 to 21 years. Extension managers were asked to report their highest level of education: Only 1% of them had high school

diploma, 9.10% of respondents had Junior college diploma (14 year education), 61.60% of respondents had Bachelor of Science degrees, 27.80% of respondents had Master's degrees and one of them was a Ph.D. student. Unfortunately, only nearly 20% of extension managers stated that studied agricultural extension and education major at university as a main subject while nearly 80% of them did not (Table 1).

Objective two: To assess the use of the process of extension program development in IAES

Extension managers were asked to indicate their viewpoints on the use of the process of extension program development in IAES for 13 items. Means, standard deviations and coefficient

Table 2: Ranking the process of extension program development in IAES (n=198)

Item	Mean*	Standard Deviation	Rank
Assessing the educational needs of clients	3.92	1.15	1
Being proportionate the programs with the clients' farming systems	3.20	0.98	2
Implementing programs by various educational methods	3.03	1.01	3
Being proportionate the programs with the clients' knowledge	3.02	1.04	4
Using one extension educational approach or model	2.87	1.03	5
Being proportionate the programs with the environmental issues	2.83	1.06	6
Being proportionate the programs with the clients' social norms	2.77	0.96	7
Using the participatory approaches	2.76	1.09	8
Being proportionate the programs with the clients' economic status	2.70	0.95	9
Using information technologies	2.55	1.15	10
Evaluating outputs, outcomes, and impacts of program	2.53	1.06	11
Using feedbacks getting from evaluation to improve the current program	2.33	0.86	12
Using feedbacks getting from evaluation to improve the future program	2.03	0.80	13
Overall Mean	2.81	0.58	-

Note*: Very low=1, low=2, moderate=3, high=4, and very high=5

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Table 3: Correlation between extension managers' viewpoints on the use of the process of extension program development in IAES and their demographic characteristics (n=198)

	Viewpoints of extension managers	
	r_s	P
Age	0.242**	0.001
Year s of working in the agricultural office	0.158*	0.028
Year s of doing extension activities	0.063	0.380
Level of education	-0.054	0.451

of variation for the 13 items are reported in table 2. Extension managers reported the use of the process of extension program development in IAES had mean 2.81 indicating less than moderate level ($M=2.81$, $SD=0.58$). Furthermore, four of the 13 items had a mean value of over 3.00 indicating more than moderate. Another nine items had mean score between 2.00 and 3.00 indicating less than moderate. It is clear from table 2 that item of "assessing the educational needs of clients" ($M=3.92$, $SD=1.15$) and item of "using feedbacks getting from evaluation to improve the future program" ($M=2.03$, $SD=0.80$) have been placed on the first and the last rankings in the process of extension program development, respectively.

Objective three: To examine the correlation between extension managers' viewpoints on the use of the process of extension program development in IAES and their demographic characteristics

Spearman coefficient was also employed for measurement of the relationships between extension managers' viewpoints on the use of the process of extension program development in IAES and their demographic characteristics. Table 3 showed that there was no significant statistically relationship between extension managers' viewpoints on the use of the process of extension program development in IAES and their demographic characteristics such as level of education ($r_s = -0.054$, $P = 0.451$) and years of

doing extension activities ($r_s = 0.063$, $P = 0.380$). Table 4 also showed that there was the significantly positive relationship between extension managers' viewpoints on the use of the process of extension program development in IAES and their age ($r_s = 0.242$, $P = 0.001$) and years of working in the agricultural office ($r_s = 0.158$, $P = 0.028$). Of course we also know, we must not neglect this subject which the extent of low coefficients and their meaningful relationships might be as a result of effect of the sample size (Table 3).

An independent-sample t test was conducted to evaluate the differences between extension managers' viewpoints who studied agricultural extension and education major and the others regarding independent variable. As shown in table 4, there was no statistically significant difference between extension managers' viewpoints who studied agricultural extension and education major and the others regarding the use of the process of extension program development in IAES ($t = -0.310$, $P = 0.757$).

DISCUSSION

Extension program planning is the very essence of being an extension professional. Unfortunately, the results of this research indicated the use of the process of extension program development in IAES was less than moderate that this issue

Table 4: Comparison of extension managers' viewpoints who studied agricultural extension and education major and the others regarding independent variable

Categories	n	M	SD	t	P
Extension managers who studied agricultural extension and education major	39	2.80	0.44	-0.310	0.757
The others	159	2.82	0.60		

resulted in ineffective extension program development. The cause of this issue can be either lack of being agricultural extension policy and theoretical foundation in this field or lack of use of the available agricultural extension policy in developing extension programs. Besides, investigating this issue indicated in detail that the program planning phase such as assessing the clients' needs was the main item which is paid attention by extension program planners in IAES. Iowa State University's guideline (2008) in this field illustrates every extension professional, regardless of position, must assess the needs of stakeholders and give priority ones at the beginning of the process of agricultural extension program. In spite of importance and the role of program evaluation in identifying ways to improve a program (what works/doesn't work and why); being accountable to key stakeholders (funders, clientele, volunteers, staff, and community); assessing the economic efficiency of a program (cost benefit/cost effectiveness); and guiding development of dissemination materials (for promotion, advocacy, fundraising); the use of evaluation phase in the process of extension program development in IAES was at less than moderate indicating inappropriate status. This issue means that there is an urgent need for the reform whether in developing agricultural extension policy in this field such as using one extension educational approach or model, using feedbacks getting from evaluation to improve the current program, using the participatory approaches, etc. or in the more use of available agricultural extension policy in this field. This result supports the previous study of Soori *et al.*, (2008) and Mirzaei *et al.*, (2006).

The significantly positive relationship was also identified between extension managers' viewpoints on the use of the process of extension program development in IAES and their age and years of experience in working in the agricultural office. According to this result and Free form effect of the sample size on the meaningful relationship, it seems that extension managers who had more age and years of experience in working in the agricultural office showed more

desirable viewpoint on the use of the process of extension program development than the others. This issue can be as a result of the gradual attention and the use of the process of extension program in IAES. Besides, the other result revealed there were no significant relationship between extension managers' viewpoints on the use of the process of extension program development in IAES and their level of education and years of experience in doing extension activities. These results mean that in spite of being different among extension managers in terms of level of education, major, and years of experience in doing extension activities, they had like viewpoints on the use of the process of extension program development.

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