



EFFECTIVE EXTENSION METHODS IN IMPROVING SUSTAINABLE FOREST MANAGEMENT IN IRAN

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ABSTRACT

Forest and range managers were surveyed in order to explore their perception about effective extension methods in improving the sustainable forest management in Iran. The methodology used in this study involved a combination of descriptive and quantitative research. The total population for this study was 154 manager of forest, range and watershed organization in which 105 responded to the questionnaire. Based on the perception of the respondents, the result of regression analysis by stepwise method indicates that 73% of the variance in the perception of managers could be explained by four variables of providing material incentives for managers, knowledge about indicators of sustainable forest management, extension/education classes and working experience. Respondents indicated that visiting successful projects and practical training were the most effective method in improving sustainable forest management.

Keywords: sustainable forest management, extension methods, Iran.

INTRODUCTION

Human being has caused much of the destruction of forests and policy makers have realized that they should look for involving local population in protecting the forests.

Based on a report by Forest, Range and Watershed Organization of Iran, in every second about 300 square meter of forests are destroyed annually (Hosseini, Sabouri, 2010).

The total area of forests in Iran is 12.4 million hectares which constitute about 7.4 percent of total areas of the country. Iran is ranked 57th in forest resources in the world and this number is alarming for policy makers to emphasize more on preserving and restoring forests (Shamekhi and Erfani Fard, 2004).

Increasing community knowledge and awareness about importance and benefits of forests in long term would have positive impacts in preserving natural resources and achieving sustainable development goals (Khosrowshahi and Ghavami, 2006).

The sustainable management of forest requires a greater understanding of current and potential future value of forest ecosystems as a complete chain of benefits for public and private sector, and this would limit utilization of forests for short-term benefits (De Montalembert and Schmithussen, 1994).

Bare (2005) pointed out that sustainable forest management is a realm of activities and processes in providing services and products in long term and at the same time is considered a long approach which brings a balance in comprehensive goals of social, economic and ecological in managing natural resources.

Empowerment of people should be basic element of any programs regarding protection of natural resources. It should include clear rules and guideline for decentralization in decision making, management and empowerment of local people and institutional development to ensure good governance at local level (FAO, 2006).

Agricultural Extension by its nature has an important role in the empowerment process of rural population. Extension by informing and educating the beneficiaries could encourage them to change their behaviors regarding utilization of natural resources especially forests.

The realm of extension activities has covered issues related to more than agriculture and conservation and appropriate utilization of natural resources is one new aspect of extension function (Garforth and Lawrence, 1997).

Okwu and daudu (2011) citing Israel and Wilson (2006) indicated that developing an understanding of extension sources and channels used by clients to obtain information is a pre-requisite for efficient educational programs because message that go unheard or unseen can not lead to change.

Extension communicators and educators who design extension programmers that account for contextual effects can increase coverage of the targeted audience and subsequently, the impact of their programs (Okwu, Daudu, 2011).

The extension teaching methods are the tools and techniques used to create situations in which communication take place between rural people and the extension workers. The extension teaching methods can be classified based on their use: individual contacts, group contacts and mass contacts. They can also be classified based on their forms: written, spoken and audio visual. (Hosseini, Soltani, 2010).

The results of study by shariati and others about participating in protection of forests in northern and western forests in Iran show that there was relationship between variables of attending in extension classes, using printed extension materials, contact by extension agents, using educational films and using radio and television and participation of local people in protecting forests. (Hosseini, Sabouri, 2010).



Results of study by Hosseini and Saboonchi (2010) indicated that extension classes increase the participation pasture owners in protecting pastures in Iran.

Hosseini and others (2010) citing the Chizari and others (1998) that the majority of extension agents indicated that results demonstration were the most effective method for teaching their clientele. Okunade (2007) also pointed out that skills better acquired through group contact methods.

The highest preferences rating for extension agents may be attributed to the interpersonal interaction and immediate feedback enjoyed by the farmers. The less preference shown for newspapers, poster/handbills and extension bulletin/news letter may be probably due to the high illiteracy level among respondents (Okwu and Daudu, 2011).

In a study by Ali-Olubandwa and others (2011) about effective extension methods for increase production in Kenya, extension staff preferred group meetings and group demonstration, because it is cost effective with less constraints.

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. The total population for this study was 154 managers in FRWO in Iran and 105 respondents completed the questionnaire. Data were collected through interview schedules.

A series of in-depth interviews were conducted with some senior experts in the Forest, Range and Watershed Organization to examine the validity of questionnaire. A questionnaire was developed based on these interviews and relevant literature. The questionnaire

included both open-ended and fixed-choice questions. The open-ended questions were used to gather information not covered by the fixed-choice questions and to encourage participants to provide feedback.

Content and face validity were established by a panel of experts consisting of faculty members at Islamic Azad University and experts in Forest, Range and Watershed Organization. A pilot study was conducted with 20 managers who had not been interviewed before the earlier exercise of determining the reliability of the questionnaire for the study. Computed Cronbach's Alpha score was 91.0%, which indicated that the questionnaire was highly reliable.

Dependent variable in the study included factors improving the sustainable forest management. The independent variables in this research study extension mechanisms which influence the sustainable forest management. For measurement of correlation between the independent variables and the dependent variable correlation coefficients have been utilized and include Pearson test of independence.

RESULTS

It was reported that 96 percent of respondents were male and the average age of managers was 45 years. More than 50% of the respondents had earned 4 year degree and 42% had earned a master degree. The average working experience in management position was 15 years

Response numbers for the 13 perception statements are displayed in Table-1. As can be seen from this Table, the highest mean refers to participation of people in sustainable forest management (mean = 4.41) and the lowest mean to conflict resolution among local population (mean = 3.95).

Table-1. Mean score of the perception of managers about factors which improve the sustainable forest management (1 = strongly disagree; 5 = strongly agree).

Perception	Mean	SD
Participation of people in sustainable forest management	4.41	0.65
Developing the regulation regarding sustainable forest management	4.24	0.64
Knowledge about importance of forest	4.14	0.66
Using experienced managers	4.17	0.77
Providing resources for projects	4.09	0.79
Allocating financial resources	3.98	0.77
Increasing the decision making roles of managers	4.18	0.82
Conflict resolution among beneficiaries	3.95	0.79
Respecting to the local beliefs and habits	4.13	0.87
Increasing linkages between managers and local population	4.35	0.92
Emphasizing the utilization of indigenous knowledge	4.26	0.92
Material incentives for managers	4.07	0.85
Mutual trust between beneficiaries and authorities	4.36	0.93



Table-2 shows the means of respondents' views about effectiveness of extension methods in improving sustainable forest management. As can be seen from this

table, the highest mean refers to visiting successful sustainable forestry projects (mean = 4.26) and the lowest mean to using posters (mean = 2.60).

Table-2. Means of respondents' views about effectiveness of extension methods in improving sustainable forest management (1 = very little; 5 = very much).

Extension Methods	Mean	SD
Visiting successful sustainable forestry projects	4.26	0.77
Practical training	4.21	0.80
Group discussion	3.71	0.76
Magazine and printed materials	3.40	0.76
Classes	3.57	0.90
Educational films	3.22	0.90
Radio programs	3.06	0.77
Television programs	3.16	1.09
Posters	2.60	0.91
Lectures	2.66	0.97

Spearman coefficient was employed for measurement of relationships between perceptions of managers about effective extension methods in improving the sustainable forest management. Table-3 displays the results which show that there was relationship between

perception of respondents about sustainable forest management and educational level, working experience, extension and education classes, group discussion, visiting forestry projects, practical training and magazine and printed materials.

Table-3. Correlation measures between dependent and independent variables.

Independent variables	Dependent variable	Agricultural professional	
		R	Sig.
Educational level	Sustainable forest management	0.334	0.004**
Working experience	Sustainable forest management	0.291	0.013*
Extension and education classes	Sustainable forest management	0.627	0.000**
Group discussion	Sustainable forest management	0.257	0.028*
Visiting forestry projects	Sustainable forest management	0.246	0.036*
Practical training	Sustainable forest management	0.242	0.039*
Magazine and printed materials	Sustainable forest management	0.268	0.023*

** $p < 0.01$, * $p < 0.05$.

The result of regression analysis by stepwise method indicates that 73% of the variance in the perception of managers could be explained by four variables of providing material incentives for managers, knowledge about indicators of sustainable forest management, extension/education classes and working experience. Based on the perception of managers, variables "providing material incentives for managers" (Beta coefficient: 0.40, sig.: 0.000), "knowledge

about sustainable forest management indicators" (Beta coefficient: 0.340, sig.: 0.002), "extension/education classes" (Beta coefficient: 0.29, sig.: 0.000), and "working experience" (Beta coefficient: 0.25, sig.: 0.000) influence the sustainable forest management positively.

DISCUSSION AND CONCLUSIONS

A wide range of extension methods influence the adoption of sustainable management of natural resources.



Based on the perception of managers, regression analysis showed that 73% of the variance in the perception of managers could be explained by four variables of providing material incentives for managers, knowledge about indicators of sustainable forest management, extension/education classes and working experience. The results is consistent with Hosseini, Sabouri (2010) in which extension classes would encourage local people to participate in forest protection programs.

Respondents indicated that visiting successful projects and practical training were the most effective method in improving sustainable forest management. The results is in accordance with study by Okunade (2007) in which skill is better equipped through practical demonstration. This method would help clientele from desire stage through conviction and probably into taking action.

Based on the results of the mean score, respondents indicated that the main factor in improving the sustainable forest management was participation of beneficiaries in related projects and programs. The result is consistent with Blay (2007) and Shifly (2006) that sustainable forest management requires a long term approach which emphasizes on participation of beneficiaries.

In regard to public awareness, the results show that extension/education classes could inform public about importance and benefits of sustainable forest management. The public should be educated about the importance of protecting forests. It is well known that lack of knowledge about sustainable management of forest would have negative consequences in protecting and would impede the process of involvement of local people.

There is need for more training and education to change the attitude of managers about sustainable forest management and enhance their role in managing the natural resources.

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