

**PERCEPTIONS OF FORESTRY AND RANGE ORGANIZATION MANAGERS OF
THE ROLE OF EXTENSION IN PROTECTION OF FORESTS IN IRAN**

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Abstract

The purpose of this study was to determine the perceptions of forestry and range organization (FRO) managers in selected provinces and townships in Iran of forest protection and forestry extension. The population included all administrators, their associates, and heads of forest dwellers=cooperatives. Data were collected by mail. Major conclusions were that well-trained extension personnel are needed to provide forest owners and dwellers with information and education on forest protection; that youth in schools need to be taught the importance of forests and natural resources; that specific forest use and land use legislation is necessary to conserve forestry resources; that FRO managers need better knowledge of extension management, program and resource monitoring, and the value of involving rural women; and that FRO managers perceive that a variety of methods would be effective in extension work on forestry protection.

Introduction

The loss of large expanses of forests is a serious threat to human welfare and the global environment. Houghton (1990) reported that between 1950 and 1980 about 15% of the earth's forests and woodlands disappeared as a result of human activities. The largest decline was in North Africa and the Middle East (60%), followed by South Asia (43%), Tropical Africa (20%), and Latin America (19%). In the 1980s more forest was lost than in any decade in history (FAO, 1993).

Factors responsible for this loss are the conversion of forestland to produce food for a burgeoning world population, especially in developing countries (FAO, 1993; Swanson, 1997), as well as logging for timber and fuel. These are legitimate human needs and uses of forestland. But, lack of knowledge, and legal

and social systems often encourage excessive, non-sustainable land clearing resulting in long-term adverse social and environmental impacts (Jones, 1987). The challenge is to manage forests without degrading them and the natural resources associated with forest lands (FAO, 1993). Sharma (1992) maintains that people around the world want natural forests to be protected, and insists that nations must manage forest resources more efficiently to benefit present and future generations. Education and involvement of people in wise management of forests are important considerations in this effort (Jones, 1987).

The forestry situation in Iran is no different than other vulnerable areas in the world. A diverse genetic pool of some 12,000 plant species and a forest reserve of 12.4 million hectares are threatened by unsound forest management activities, including overgrazing of pastures,

intensive agricultural operations, and indiscriminate forest activities and timber use (Report of the Islamic Republic of Iran on Forestry Development and Key Events 1996; Khosrowshahi & Ghavamie, 1994). As a result, between 1971 and 1991, soil erosion is reported to have increased by 250% in various parts of the country due to lack of care for natural resources (Khosrowshahi & Ghavamie, 1994).

The Forest and Range Organization (FRO) of Iran and its Research Institute are responsible for the management of 64 forest reserves. FRO managers are charged with the task of managing these forest reserves. An Office of Extension and Training was established in the FRO in 1990 to educate and work with these managers and with target audiences of forest landowners and forest dwellers (indigenous inhabitants of forest areas deriving income from wood and non-wood forest products) in supporting and participating in forestry protection measures. Farhadian (1998) studied the FRO's mission and recommended that a strong linkage should be forged between the Office of Extension and Training and the Research Institute. He emphasized that a key responsibility of managers and staff of the FRO was providing for the participation of people in the planning and implementation of forestry development.

Lanly (1992) supports the view that rural people should be involved in proposals for forest management because they are keenly aware of the value of forests and often have solutions to forest management and protection problems. He further contends that what rural people need is not exhortation or advice but help in doing what they know needs to be done. Extension systems can perform this task, but they need to be sensitive to the culture of indigenous people and not just purveyors of technological information (Child, Heady, Hickey, Peterson & Pieper, 1984). Regardless of a project's logic, scientific soundness, management desire, or possibilities of economic enhancement, local people can implement or destroy a project, depending on whether or not they see it as beneficial to them. According to FAO (1993), most forests in the developing world are on land on which indigenous groups and rural

communities depend for their livelihood. Therefore, it is essential that they be involved in forest management programs. In a similar vein, Sharma (1992) emphasized that attitudes of people influence how they manage and use forests.

Mohseni (1994) commented on the lack of belief and knowledge among extension organization managers for developing and implementing extension activities in the Central Province of Iran and argued that proper routine evaluation of the managers could result in overall development of extension personnel as well as programs. Farhadian (1998) observed that a problem with most FRO extension managers was that they had agricultural degrees and little or no pre-employment extension training. He indicated this was a problem worth further study. In a Report of the Islamic Republic of Iran on Forestry Development and Key Events presented to the Twelfth Session of the Near East Forestry Commission, it was stated that while forests in different regions of the country are important, those of the Caspian Sea Region are the only economically productive forests in Iran (1996). Considering this situation, a study of FRO managers in selected provinces and townships falling in the Caspian Region forests was considered worthwhile.

Purpose and Objectives

The purpose of this study was to determine the perceptions of forestry and range organization managers in selected provinces and townships in Iran regarding the role of extension in protecting forests. Specific objectives of the study were:

1. Determine factors perceived by forestry and range organization managers to contribute to deforestation.
2. Determine factors perceived by forestry and range organization managers to be effective in protection of forests.
3. Determine forestry and range managers=perceived knowledge of forestry extension.
4. Determine forestry and range organization managers= perception of the effectiveness of extension methods.

Methodology

Population

The population included all administrators, their associates, and heads of forest dwellers= cooperatives (N = 72) in Gilan and Gorgan-Gonbad Provinces, and Noshahr and Sarie townships. These individuals are listed in the forestry and range organization directory for the selected provinces/townships.

Research Design and Data Analysis

The research design used for this study was a descriptive survey. The survey instrument had five sections. The first section included demographic data on the target population. The remaining four sections contained questions related to the study's objectives. A 6-point Likert-type scale from strong agreement (6) to strong disagreement (1) was used to elicit responses to specific statements about forestry protection and conservation, and importance of extension teaching methods. A 6-point scale prevents respondents from taking a neutral position (Clason & Dormody, 1994). A 5-point Likert-type scale was used to assess managers= self-perceived knowledge of extension work. Content and face validity were established by a panel of faculty and graduate students in the Department of Agricultural Extension and Education at Tarbiat Modarres University, Tehran, and the extension specialist in the Forestry and Range Organization. The instrument was piloted with 16 FRO managers

in Tehran Province two weeks prior to the study, and needed modifications were made. Cronbach's alpha reliability coefficients for sections 2-5 of the instrument ranged from .68 to .90.

Data were collected from FRO managers by mail. First-round nonrespondents were sent a postcard reminder. Where this did not elicit a response, a follow-up letter and duplicate questionnaire were mailed. The final response rate was 90%. Early-late respondents= comparison was done to determine if non-response was a threat to the validity of the study (Kerlinger, 1986; Miller & Smith, 1983). No statistically significant differences were found, and it was concluded that results could be generalized to the population.

Results

Objective 1

Table 1 shows the rank importance of 26 factors contributing to deforestation as perceived by managers. The number and percent of managers who strongly agreed or agreed that these were important contributory factors are included.

A majority of managers agreed that 14 of 26 factors were important contributors to deforestation. The top five factors were lack of adequate, well-trained personnel, lack of understanding of the economic importance and value of forestry, and appropriate land use, and lack of money. Inappropriate productivity by cooperatives and government companies, lack of forestry mandates, fires, and threat of pests and diseases were considered to be the least important factors.

Table 1

Rank of Factors Contributing to Deforestation as Perceived by Forestry and Range Organization Managers.

Rank	Factor	Number ¹	Percent ¹
1	Lack of adequate well-trained personnel	49	72
2	Lack of understanding and concern regarding the role of forests in economic development among forest dwellers	48	70
3	Lack of understanding of the value of forestry	46	68
3	Lack of money	46	68
5	Lack of knowledge regarding pastures, appropriate land use and grazing among forest dwellers with livestock	45	66
6	Presence of livestock in forests	44	65
7	Illiteracy among forest dwellers	42	62
8	Lack of stable policy in administrative (executive) and developmental tasks	39	57
9	Lack of laws or related laws regarding preservation	38	56
10	Inappropriate use of forests by rural people living near forests	37	54
10	Changing forestlands to agricultural fields	37	54
12	Inappropriate productivity (too much) from forest by private-sector organizations	35	51
12	Continuous changes in policies, legislation, and programs	35	51
14	Cutting trees by women for fuelwood	34	50
15	Making roads inside forests	33	48
15	Population increase and the need for more productivity from Forests	33	48
17	Need of forest dwellers for wood fuel	32	47
18	Lack of education among personnel	31	45
19	Lack of independent right in decision making regarding executive tasks	30	44
19	Lack of participation by forest dwellers in protection of Forests	30	44
21	Cutting trees by rural people for building houses	29	42
21	Inappropriate productivity by cooperatives	29	42
23	Lack of forestry mandate	26	38
23	Inappropriate productivity by government companies	26	38
25	Natural and unnatural fires	16	23
26	Threat of pests and diseases to plantations	15	22

¹ Number and percent of managers strongly agreeing A6@ or agreeing A5@ to factors.

Objective 2

Table 2 shows the rank of 18 factors perceived by managers to be effective in protecting forests. The number and percent of managers who strongly agreed or agreed that these factors were effective are included.

Over one-half of the respondents agreed that 15 of the 18 factors were effective in protecting forests. Educating youth and students about

natural resource benefits was the top-ranked factor. Also considered effective were measures such as having foresters reside outside forests, making livestock areas illegal, legislating protected areas, and evacuating-resettling farmers and nomads. Three factors rated as least effective were stopping forest productivity licenses, delegating the responsibility of forestry to people by using a participative approach, and continuity of staff and provision of equipment.

Table 2

Rank of Factors Effective in Protection of Forests as Perceived by Forestry and Range Organization Managers.

Rank	Factor	Number ¹	Percent ¹
1	Diffusion of information on natural resource benefits to youth, especially students	57	84
2	Placing (residing) foresters outside of forests	55	81
3	Making livestock presence in the forest illegal	55	81
4	Law of forests as protected area	52	76
5	Delegation of all lands outside of forests to farmers, nomads, and their evacuation from forests	51	75
6	Providing fuel for foresters	51	75
7	Increasing the general knowledge of rural people	50	73
8	Appropriate planning regarding forest productivity by specialists with government supervision	48	70
9	Establishing productivity factories by using forest inputs in creating jobs	48	70
10	Designating and fencing a place for livestock, as well as providing inexpensive feed	47	69
11	Establishing and strengthening special army units for protection of forests	46	68
12	Planting of trees	44	65
13	Implementation of forestry projects by the government	44	65
14	Delivering educational programs in raising livestock	44	65
15	Delegating the responsibility of forest protection and preservation to cooperatives	37	54
16	Stopping forest productivity licenses	32	47
17	Delegating the responsibility of forestry to people by using participative approach	28	41
18	Continuity of staff and provision of equipment	22	32

¹ Number and percent of managers strongly agreeing A6@ or agreeing A5@ to factors.

Objective 3

Managers were asked to indicate their knowledge of forestry extension work (concepts) on a 5-point Likert-type scale from know nothing (1) to know very much (5). Table 3 shows the means and standard deviations of the managers=perceived knowledge of 18 extension concepts.

Using a mean value of 3.50 and above to represent high knowledge , 3.49-2.50 intermediate knowledge, and less than 2.50 low knowledge, the data reveal that managers perceived themselves to have high knowledge

of 4 concepts, and intermediate knowledge of the remaining 14 concepts. Managers had high knowledge of the objectives, philosophy and tasks of forestry extension, extension responsibilities of FROs, and extension linkages with research and education. Among the concepts that managers had least knowledge of were extension policy formulation, evaluation and monitoring, improving rural women=s access to extension services, and extension systems in other countries.

Table 3

Self-perceived Knowledge of Extension Concepts Among Forestry and Range Organization Managers.

Rank	Concepts	Mean Awareness ¹	SD
1	Objectives and philosophy of forestry extension	3.70	0.82
2	Tasks of forestry extension	3.64	0.90
3	The reasons for having an extension department in FRO	3.52	0.96
4	Linkage of extension, research and education	3.51	1.12
5	Use of educational technology in extension	3.47	1.08
6	Process of making contacts with rural people in extension	3.45	1.02
7	Considering various target audiences in extension programs	3.45	1.02
8	Leadership in extension	3.32	0.99
9	Rural sociology, and its importance in extension activities	3.31	1.22
10	Alternative approaches to organizing extension	3.27	0.96
11	Planning extension programs	3.25	1.08
11	Using rapid or participatory rural appraisal	3.25	1.01
11	Management in extension	3.25	1.05
14	Formulating extension policy	3.21	1.00
15	Evaluating extension programs	3.19	1.01
16	Improving rural women-s access to extension services	3.06	1.26
17	Monitoring extension programs and resources	3.03	1.09
18	Extension systems of other countries	2.84	1.04

¹ Mean computed from responses on a scale: 1= Aknow nothing@ to 5= Aknow very much.@

Objective 4

Managers were asked to indicate on a 6-point scale their agreement-disagreement with the effectiveness of 18 extension methods in teaching forest dwellers about forest protection.

The ranking of these methods according to number of managers strongly agreeing or agreeing that they were effective is shown in Table 4.

The most effective method was use of local leaders as teachers, followed by television programs, videotapes/slides, study tours/field visits, and result demonstrations. The least effective methods were lecture presentations, method demonstrations, and farm/home visits.

Table 4

Rank Effectiveness of Extension Methods as Perceived by Forestry and Range Organization Managers.

Rank	Methods	Number ¹	Percent ¹
1	Local leaders as teachers	56	82
2	Television programs	51	75
3	Videotapes/slides	50	73
4	Study tours/field visits	50	73
5	Result demonstrations	44	65
6	Symposium/conferences	43	63
7	Forest days	39	57
8	Informal discussions	36	53
9	Group discussions	35	51
10	Posters	31	45
11	Extension publications	31	45
12	Exhibitions	30	44
13	Radio programs	28	41
14	Workshops	27	40
15	Role playing	26	38
16	Lecture presentations	21	31
17	Method demonstrations	18	26
18	Farm/home visits	8	12

¹ Number and percent of managers strongly agreeing A6@ or agreeing A5@ that methods are effective.

Conclusions and Implications

An adequate number of well-trained extension personnel is needed to provide forest owners and dwellers with information and education on forest protection and conservation. This conclusion is supported by the finding that managers viewed lack of well-trained forestry and extension personnel and a lack of understanding among forest dwellers of the economic importance and value of forestry and appropriate use of land as the most important factors contributing to the problem of deforestation in the study area. Swanson (1990) has reported that 40% of extension personnel worldwide are inadequately trained in technical subject-matter and extension methodology. Salmanzadeh (1988) emphasized that competent personnel, constantly updated, are required to plan and carry out education programs to meet people's needs and accomplish educational objectives.

Education of youth at the elementary and secondary school level is also necessary and important in forest protection and conservation. This conclusion is supported by the finding that managers felt that an effective factor in protecting forests is to provide information to youth, especially students, regarding the benefits of natural resources. It is recommended that managers emphasize to the Ministry of Education in Iran the need for including an appropriate course on natural resource conservation in the school curriculum.

Legal and organizational considerations are impacting forest protection and conservation. This conclusion is supported by the finding that managers perceived that making foresters live in the forest areas, and enacting legislation to ban livestock from forests and to protect forests would be effective measures in protecting forests. Currently, resources of foresters and extension personnel are inadequate to monitor forest dwellers. A sound and effectively implemented system of land use in which forest

areas are demarcated and set aside as permanent forest estate is necessary for sustainable forest management.

While managers have high knowledge of most concepts that are important in extension work, they need to improve their understanding of such concepts as management, program and resource monitoring, evaluation, and policy formulation in order to carry out their job responsibilities. They also need to better understand the need for and implement education programs to reach rural women. According to Sharma (1992), women have a central role in providing and using fuelwood for the home and can best understand fuelwood problems, what interventions are likely to succeed, and which groups in the community should be involved in designing and implementing interventions. Pezeshki-Raad, Yoder and Diamond (1994) confirmed that extension specialists and agents in Iran lacked some of these needed professional competencies and recommended that they receive training.

A range of extension methods was considered by managers to be effective in teaching clientele. Surprisingly, farm and home visits were rated lowest on effectiveness. Perhaps, managers were reflecting financial and personnel constraints in their response. The literature, on the other hand--for example Van den Ban and Hawkins (1996) and Swanson (1997)--indicates that farm and home visits are very effective. These authors also suggest that local leaders can be useful in supplementing the efforts of extension personnel. This was also the view of managers in the study who perceived use of local leaders as the most effective extension strategy.

The study showed that FRO managers have a good understanding of factors influencing forestry production, management, and conservation, and extension concepts and methods needed to educate forest landowners and dwellers in forestry practices. Some shortcomings in the knowledge and managerial competencies of FRO managers revealed in the study need to be addressed by the Forestry and Range Organization and appropriate

government organizations and agencies. FRO personnel--managers, researchers and extension workers--have a key role in the wise management of the country's forest reserves. It is vital that this role be appropriately supported and strengthened.

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