



Factors influencing on forests development viewpoint of experts natural resource in Iran

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Abstract

The purpose of this study was to determine effect of factors on forests development in Iran. The research population consisted of 471 experts in natural resources organization, which were selected using sampling method (n=220). The methodological approach of this study was descriptive-correlative. Validity of the instrument was established by a panel of experts consisting of senior faculty members and research committee advisors. Reliability analysis was conducted by using Cronbach alpha formula and result was 0.95. The results showed that 33.6, 41.4 and 25 percent of experts expressed that situation of forests development in Iran were weak, moderate and good respectively. Also the results of the multiple regression analysis (stepwise method) revealed that educational and management factors explained a variation of 16.1 percent of forests development.

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Introduction

Natural forests are dynamic systems which enjoy a very diverse and complex structure. A simplistic view to consider a forest as an economic resource to supply wood has caused a great deal of deforestation in the present century. However, scientifically, the vegetation cover of the forest is worth far more than its economic value to produce wood. Since forests are the only resource of the wood species on earth, and the vegetation cover of the forests is essential for the existence of a wide range of animal species, the existence of forest is pivotal to economic development of all human and plant societies (Salehi Shanjani, 2005). Therefore, to survive and to provide the humans' need in the present and future, we have no alternative but to save, develop and restore the natural resources. It won't be possible unless there is cooperation among all walks of societies and the experts to use the natural resources in such way that we can retain these blessings for the future generations (Noubakht, 2010).

The lack of awareness of the value of all goods and services provided by forest resources leads to environmental and social impacts are ignored and conversion of forests to construction, infrastructure, industrial areas, houses and agriculture (Amirnejad, 2005).

The main purposes in forests development are to increase the quantity and quality of production per unit area, to create a variety of products, to enrich the assisting forests and to restore the ruined areas in the northern forests. It is worth mentioning that the forest areas in the north reduce from 2088589 acres in 1955 to 1847886 in 1994 (Anonymous, 2001). An average of % 36.85 percent of the forests in the north, have a volume less than 200 cubic meters per hectare, which is an average volume compared to their production potential. Old trees account for % 83.52 of the mass of trees in the northern forests which is an averagely 10 percent of all trees. Also, an average of % 51.15 of the forest area in north of the country lacks natural regeneration or reproduction, which is

undesirable. The current forest condition in the north part of Iran shows the urgency to conserve and develop the natural resources, increase the forests development areas and determine the effect of planting on sustainable development (Mirzaei *et al*, 2007).

In their research entitled "An investigation of the role of non-governmental organization in the conserving and restoring Mazandaran forests and pasturelands", Mirdamadi and Salehi (2004), concluded that %38 of the members in NGOs deal with conservation and restoration of forests and pasturelands. In educational-promotional field, %37 of the members participates in executive jobs and %30 do surveys and researches.

In a research entitled "an analysis of the role of members of forest cooperatives in restoring and the forest resources in Western part of Mazandaran province" which was conducted by Heidarpour *et al* (2010), the role of forest cooperatives membership on restoring forest resources was investigated. The results revealed that there is a significant difference in the recovery of forest resources in the rate of participation among members and non-members. Also, it revealed that there is a significant difference in the rate of individual's participation in restoring forest resources. A finally it revealed that the exploitation, restoration and income variables determines % 57.1 of the changing variables of the restoration.

Arayesh and Mami (2010) conducted a study entitled "The role of prioritizing psychological factors in the process so group corporation to conserve and restore and exploit the natural resources". The results showed that natural resources in terms of psychological variables to encourage exploiters, the rate of commitment to people's need, account for the highest priority been restoration and conservation and development of natural resources. The second highest priority in individual's participation in psychological variables was the awareness of benefits

in natural resource projects and their attitudes towards teamwork.

Malekmohammadi and Mirbod (2005) Conducted a study entitled “The role of a governmental environmental organizations in promoting natural resource management “and analyzed the attitudes of those organizations to their level of success in promoting natural resource management focusing on forestry . In comparing the different levels of success every activity of promoting natural resources management promotional education in awareness, conservation, restoration and exploitation of natural resources were respectively the first to the fifth priorities.

Coke and Dong (2004) conducted a study entitled “the role and activities of NGOs in restoring forest in northern east parts of Asia”. They found that the most important activities of this organization are to organize national seminars and regular conferences, issue newsletters and books, set up educational programs and facilities and corporate in empowering social groups about the discussions on forests development.

Results of research of Azuma *et al* (2014) demonstrate that forest ownership (public vs. private), structure density, and proximity of development are critical factors in explaining variation in forest attributes.

The results of a single-tree forest simulator were used to indicate local opportunities for the supply of round wood, and the demand for roundwood was estimated via the resource matrix of the input–output model for each alternative development path. The study reveals that both even-aged and uneven-aged forest management would be technically possible in order to satisfy the mills' demand for wood in the tested instances (Lehtonena and Tykkyläinen, 2014).

Forests are one of the most mismanaged resources in many countries. This is partly because forests are

seriously undervalued and many of their environmental benefits are not captured by market values. Uncoordinated policies (for example agriculture, energy, mining and transportation policies) also affect forest cover. And poor governance has fueled corruption, rent-seeking and illegal activities. At the same time, forests have a critical role to play in green growth. Forests can help meet the growing demands for food, fiber, biofuel, shelter, and other bio-products as the world population increases to 9 billion people by 2050. Because forest resources are solar-powered, renewable, and store carbon as they grow, they also have the potential to reduce greenhouse gas emissions and mitigate climate change by taking the place of nonrenewable materials and substituting for fossil fuels. The forest sector is also an important source of both formal and informal jobs, particularly in remote areas where there are few economic alternatives. The purpose of this study was to determine effect of factors on forests development in Iran. In order to achieve this objective, specific objectives are presented as below:

- Study of situation of forests development in Iran
- Relation of social- cultural, economical, management, participatory, information technology and educational factors with forests development
- The role of social- cultural, economical, management, participatory, information technology and educational factors on forests development

Materials and methods

Research Method

In relation to objective, this research is applied, since the results can be employed by programmer and policy makers. In order to reach precise and reliable data we used quantitative method. Because this research simply investigates existed conditions and defines them and there is no possibility to control or manipulate the variables, it is descriptive. Because the gathering of information about the views, beliefs, thoughts and behaviors or group characteristics of a society is statistical and also it is under recognition, so it is measuring. Furthermore, because it

investigates and analyzes the relations between independent and dependent variables, it is correctional.

Statistical population

A population of the study includes 481 experts of natural resources in Iran. In this study stratified sampling method was applied and the population will be sampled using Cochran formula (n=220).

Validity and Reliability

Content and face validity were established by a panel of experts consisting of faculty members and some specialists. Minor wording and structuring of the instrument were made based on the recommendation of the panel of experts, and also established early exam for determining the reliability of research equipments. We gave the questionnaire to 20 experts which were similar to statistical society in regional, economical, cultural and social conditions. After gaining the data concluded the Cronbach alpha coefficient for all the variables with degree scale of 95%.

Table 1. Reliability of research variables.

Variables	Cronbach alpha
Social- cultural factors	0.90
Economical factors	0.86
Management factors	0.80
Participatory factors	0.78
Information technology factors	0.88
Educational factors	0.90
Situation of forests development	0.93

Variables

The independent variables were: Social- cultural, economical, management, participatory, information technology and educational factors. Dependent variable was situation of forests development. In order to determine the Social- cultural factor we measured 10 questions, 11 questions for economical factors, 11 questions for management, 9 questions for participatory, 6 questions for information technology and 7 questions for educational (none=0, very low=1, low=2, average=3, high=4, very high=5). Consequently, the minimal score for Social- cultural, economical, management, participatory, information

technology and educational factors was zero and the maximal was 50, 55, 55, 45, 30 and 65 respectively.

Results and discussion

Situation of forests development in Iran

The forests development was measured by 6 questions including: 6 pieces spectrum of likret. Score giving to the mentioned spectrum was as follows: none=0, very low=1, low=2, average=3, high=4, very high=5. Then, the maximum score was 30, and the minimal was zero. Table 2 illustrates the mean, coefficient of variance (C.V) and the rank of each question related to forests development from the viewpoint of experts. According to the table, identifying and developing potential of water resources for forest development, create of green space and planting trees in the forest and no coating had been important related to forests development. Table3 shows the situation of forests development. According to results, 33.6 percent of experts that situation of forests development was inappropriate, 41.4 answered that it was moderate and the last 25 percent answer was appropriate. The mean of situation of forests development was 15.4 and its measure standard deviation (SD) was 4.3.

Table 2. Priority of related questions with forests development.

Items	M	SD	C.V	Rank
Identifying and developing potential of water resources for forest development	3.75	1.07	0.286	1
Create of green space	2.43	1.00	0.411	2
Planting trees in the forest and no coating	2.53	1.06	0.418	3
Wood and tree planting agricultural development through integrated and multi-cultured	2.21	1.14	0.518	4
Increasing the forest with local varieties	2.25	1.22	0.541	5
Development of standard seedlings	2.19	1.30	0.595	6

None=0, very low=1, low=2, average=3, high=4, very high=5.

Table 3. situation of forests development viewpoints of experts.

Situation	Frequ- ency	Perce- ntage	Cumulative percentage
Very bad(0-6)	3	1.4	1.4
Bad(7-12)	71	32.2	33.6
Moderate(13-18)	91	41.4	75
Good(19-24)	55	25	100
Very good(25-30)	0	0	100
Total	220	100	-

M = 15.4 SD = 4.3

Relation of Social- cultural, economical, management, participatory, information technology and educational factors with forests development

Fourth table showed intensity, relation orientation and a meaningful level of Social- cultural, economical, management, participatory, information technology and educational factors with forests development. As the table shows the above mentioned factors except information technology have 99 percent of meaningful and positive relation with forests development.

Table 4. The relation of Social- cultural, economical, management, participatory, information technology and educational factors with forests development.

Variables	Pearson correlation coefficient	Significant level
Social- cultural factors	0.246**	0.000
Economical factors	0.260**	0.000
Management factors	0.258**	0.000
Participatory factors	0.226**	0.000
Information technology factors	0.006**	0.933
Educational factors	0.334**	0.000

*p<0.05

**p< 0.01

The role of Social- cultural, economical, management, participatory, information technology and educational factors on forests development

In order to predict the role of research variables on forests development, we used step by step regression. Analyzing the regression enables the researcher to predict the variance of dependent variable through independent variables and determine the role of every independent variable in explanation of dependent variable. In step by step method, the strongest variables enter the equation one after another. This

process goes on until the errors of meaning exam reaches to 0.05 errors.

Step 1: in the first step of the analysis the Educational factors were considered. The rate of multiple correlation (R) equaled 0.334 and the coefficient (R²) equaled 0.112 (table 5). It means % 11.2 of the forests development variations is explained by this variable.

Step 2: in the second step of regression, management factors were considered. The rated of multiple correlation coefficient (R) equaled 0.401 and the coefficient of determination (R²) equaled 0.161 (table 5). In fact the coefficient of determination is 0.49, which means this variable accounts for %4.9 of the variations regarding forests development.

Table 5. Analyzing the regression of forests development.

Steps	R	R Square	Adjusted R Square	F	sig
1	0.334	0.112	0.108	27.44	0.000
2	0.401	0.161	0.153	20.75	0.000

Table 6. The standardized and non- standardized coefficients of forests development.

Variables	B	Beta	t	Sig
Constant	5.86	-	5.63	0.000
Educational factors	0.15	0.31	4.93	0.000
management factors	0.12	0.22	2.55	0.000

According to the amount of beta in table 6, we can write the regression equation as follows:

$$Y = 0.31X_1 + 0.22 X_2$$

X₁ educational factors

X₂ = management factors

Conclusions and Suggestions

The results show that the socio cultural factors have % 99 positive correlation with forests development. In fact as the socio cultural factors increase, the forests development process goes up. The rate of the correlation with forests development is 0.246, which is considered low based on the Davis Table.

Regarding the economic factors, they have % 99 positive correlations with forests development, and as the economic condition improve the rate of forests development increases. The rate of the correlation with economic factor is 0.260, which is considered low based on Davis table.

Management factors %99 positive correlation with forests development, and as the management improves, the rate of forests development increases. The rate of the correlation with Management factor is 0.258, which is considered low based on Davis table. The results indicate that the participatory factors have % 99 positive correlations with forests development. In fact as the participatory factors increase, the forests development process goes up. The rate of the correlation with forests development is 0.226, which is considered low based on the Davis Table.

Educational factors also have %99 positive and significant correlation with forests development, in other words, as the educational factors increase, the forests development process improves. The rate of correlation is 0.334 which is moderate according to Davis Table.

The results of stepwise regression show that the educational and management factors started a regressive equation which determine % 16.1 of the forests development process variations. The findings of Heidarpour (2010), Mirdamadi and salehi (2004), Arayesh and Mammi (2010) and Kook and Dong (2004) are in line with the findings of this study. They concluded that there is a positive relationship between participatory, economic and social- cultural factors with forests development. Furthermore, the results of regression are consistent with the findings of Sugimoura (2006), Bozorgmanesh and Bashirzadeh (2011), salam and Naguchi (2006) and Agrawa (2009).

1. To improve the forests development operation, it is recommended to increase the forest species, remove the old and useless bases from forests,

implement maintenance operation, and plant native seedlings adapted to regional conditions.

2. To improve the forests development suggested identifying and developing potential of water resources for forest development. Also create of green space and planting trees in the forest and no coating.

3. Since % 11.2 of the forests development is done through educational factors, it is recommended that the natural resource organization consider some educational programs including need and potential analysis. This organization can also start public education through mass media and implants some educational programs for farmers and ranchers to increase their knowledge and skills to use natural resources moderately.

4. Since % 4.9 of the forests development changes are determined by management factors, it is recommended that the natural resource organization pave the way for NGOs to cooperate with plans and projects. This can be done through making cooperatives and encouraging people to participate in group work. Also there lay the groundwork for a comprehensive and consistent application of the woods provide.

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