



RESEARCH PAPER

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## Investigating the role of NGOs in rural environmental protection in Mazandaran Province, Iran

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### Abstract

The present study investigated the role of Non Government Organizations (NGOs) in rural environmental protection in Mazandaran province. The study adopted a descriptive and correlation approach. The population for the study was 896 people. The stratified random sampling using the Cochran test was applied and 205 subjects were selected for the study. The research instrument was a researcher-made questionnaire, the content validity of which was confirmed by the agricultural and extension experts and its reliability was calculated with Cronbach's alpha formula which was 0.95. The results of data analysis indicate that the environmental protection level was 88.1% striking high and very high level. Considering the research findings, there was a significant positive relationship between the variables of technological, social, economic, management and cultural factors and the respondents' environmental protection level; therefore, all these variables have a positive impact on environmental protection. But the organizational factor had a reverse effect on the environmental protection. Also, comparing the respondents' mean scores of environmental protection, there are significant differences concerning their jobs. Therefore, career type has an impact on environmental protection. Based on the results of the stepwise regression analysis, 88% the respondents' environmental protection changes were due to different variables of social factors, cultural factors, technological factors, organizational factors and income which are the best predictor of NGO members' environmental protection level in rural areas of Mazandaran province.

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## Introduction

Nowadays, the issue of environment has changed to be a global crisis and if functional and serious measures are not taken to address this problem, the world and especially the human will be faced with an extreme kind of tragedy making his life on Earth impossible. More than 20 serious threats have been listed and raised by scientists including rapid population growth, resource depletion, destruction of the ozone layer, the greenhouse effect, the destruction of species and types of pollution which are all considered as the most important ones (Makhdoom, 2005).

Now, the environment in rural areas becomes a sensitive and vulnerable issue which has been less affected by various pollutants of the cities. But the increasing consumption patterns of urban areas and urban pollution resources spread in rural areas and the change in villagers' consumption patterns have expanded environmental degradation in rural areas. On the other hand, environment protection is a national duty and all the individuals and organization should sensitively observe it as their personal and social duties and responsibilities to protect the environment (Amirani and Zarifian, 2003). Although there are various organizations and institutions in this field, the most important and most original ones are the non-governmental organizations (NGOs) as the third sector as well as private sector (the market) and the government (the public) which are involved in administering the community (Rezvani, 2004).

NGOs have dramatically expanded throughout the world which strengthens the community participation in the development process (Saidi, 2002). NGOs are defined as the independent, non-governmental, non-profit and voluntary groups of people who have got together with explicit goals and objectives around a common shared social need (Rezaie Ghaleh Taki, 2004). Here in this study, government organizations are the NGOs participating in the field of environmental protection in rural areas in Mazandaran. Aukly and Marsden considered

participation as a multidimensional process taking different forms in response to the specific conditions at various points having two dimensions of increasing individuals' capabilities and responsibility. People's real participation in all stages of development including environmental, cultural, educational aspects and sharing resource based on sustainable development must be established. People's cooperation can enhance the success of environmental initiatives. The essential fact to realize such objective relies on increasing people's knowledge and awareness and resolving such an important issue to a large extent depends on training people (Azmi and Motiei Langroodi, 2011). It is worth mentioning that various studies have been conducted on environmental protection participation some of which will be referred in the following part:

Azmi and Motiei Langroodi (2011) in a study on "evaluating the environmental problems in Iranian villages and providing solutions for the problems" have come to the conclusion that major environmental problems of these villages include soil erosion, lack of waste disposal systems and sewage system and water shortages. They also believed that environmental management, land use and land management, education, participation, using environmental friendly farming techniques, sustainable patterns with organic crops cultivation are among different countries' approaches throughout the world regarding the rural environment protection and rural development.

Astani and Zarrabi (2011) conducted a study on "Analyzing the role of community NGOs and environmental NGOs on culturalization and public training on preserving the environment and reducing urban pollution (A case study in Hamadan)". The results indicated a positive relationship between the education level and awareness of international non-governmental organizations performance and the use of communication means with the environmental protection agency in the success of these

organizations in promoting educational activities in reducing urban pollution.

Golshiri Esfahani *et al.*, (2010) in a study entitled as “the effect of social integration on the participation of the villagers: A case study in Gandoman in Borojen” have found that statistically there is a significant positive relationship between social integration and social participation of rural people. Rafiee and Amirnejad (2009) in a research on “evaluating the role of education on increasing the people’s willingness to protect the environment” showed that education, income level, education level, family size and age had a positive effect on the marine environment protection of the Caspian Sea. Plaud (2010) in a study as “environmental protection” stated that the prevention principle considers the fact that people take preventative measures to avoid and reduce damages to the environment. In general, regarding the principle of prevention, there is a scientific certainty and truth while, on the contrary, there is no certainty in the environment caution and notice (quoted by Azmi and Motiei Langroodi, 2011). Vesi & Majdodin (2010) in a research on “studying the mechanism of public participation in environmental protection” reached the conclusion that religious leaders, local administrators, teachers, extension agents, industry leaders and the media managers have the greatest possible participation in environmental protection and their most important areas of participation are in preventive, cooperative and management activities of protected areas.

Tor (2009) in his study conducted in Turkey showed that the NGOs and the media can play an important role in raising awareness of women in the fields of soil and water pollution.

Shariati & Ziadbaksh, (2006) in their study on “the factors affecting the villagers’ participation dwelling the forest in protecting the forest” showed that there was a significant relationship between the awareness of the importance and benefits of forest, participation

in education and extension workshops and fuels provided by the government and supporting facilities. Abedini (2002) in his research showed that there was a relationship between the sense of ownership, a sense of job security, land under cultivation, pasture area and socioeconomic status with herders’ participation.

Effati (1992) evaluated the factors influencing the villagers’ participation in rural development plan aiming at clarifying the parameters affecting the full participation of villagers in rural development projects. The results of this study indicated that there was a positive significant relationship between jobs, use of media, and the benefits of rural projects awareness with villagers’ participation.

Considering the expansion of environmental issues, the significance of using technologies and compatible methods with environmental protection and also using capabilities of social capital in the areas of environmental issues can substantially increase the environment protection in the country. Therefore, the results of this research can be an effective strategy for NGOs’ planning in environmental protection and can be used by students, administrators and researchers interested in this field for further review and analysis. Therefore, the researcher tried to analyze the role of NGOs in environmental protection in rural areas of Mazandaran province in order to accurately predict it, so that it can provide the ground for a comprehensive investigation in the future. In this regard, the study will focus on the role of NGOs in environmental protection in rural areas of Mazandaran province.

In this research a questionnaire was distributed among the environmental protection NGO members in rural areas of Mazandaran and to investigate the effect of the cultural, social, economic, technological, organizational and managerial factors on the rural environmental protection in Mazandaran.

## Materials and methods

### *Study Area*

The research geographical location refers to the Mazandaran Province. Mazandaran has 16 townships and 299 villages (Pureskandar *et al.*, 2006).

### *Methods*

The research adopted an applied, descriptive correlation approach. The statistical population refers to all the environment protection NGO members in rural areas of Mazandaran in 2013 comprising to 896 people out of whom 205 subjects were selected through Cochran formula and 20 other subjects were added to the group making it 225. The stratified sampling was also used for selecting the subjects and finally 210 subjects responded to the questionnaire.

In order to analyze the research background and having access to the researches, the library research was used and also a field study was used in order to obtain the required data through researcher-made questionnaire. The content validity was applied by going through experts and agriculture extension experts and researchers. To assess the reliability of the questionnaire, a pilot test, 30 questionnaires were given to some environment protection NGO members in Golestan province and the filled questionnaires were analyzed through SPSS software using Cronbach's Alpha formula and the result was 0.96 showing that the questionnaire had a high reliability.

The dependant variable for the study was the rural environmental protection in Mazandaran which was assessed using 10 questions with 5-choice scale; and the independent variables were the cultural, social, economic, technological, organizational and managerial factors.

### *Analysis of data*

The results were assessed through inferential and descriptive statistics and in order to show the relation between the variables the Spearman correlation coefficient was used and for the correlation of the independent variable on the dependant variable, the stepwise multiple regression coefficient were used.

## Results

### *Demographic features of the respondents*

Based on the results obtained from the questionnaire and table (1) on the demographic features of the respondents, most of the people in the study were male who were between 26 and 35. Nearly all the respondents were married. Almost 60% of the respondents had bachelor degree. %57.1 of the respondents was born in the village. Also, 35.7% was self-employed and the mean monthly income was equal to 176 USD.

### *Ranking the research factors*

In order to prioritize the questions related to the variables from the respondents' viewpoints, the coefficient of variation was used. From the respondents' view, the role of media (TV, radio, newspaper), internet and satellite in increasing the information on the environment pollution, the role of TV programs on environment protection and the use of educational programs in environment preservation were the most important technological factors which had the highest impact on environment protection, respectively. Also, cooperation in group working on environment protection, participating in seeding and drilling, following the issues and informing officials upon cutting the trees in the streets have the highest priority among the social factors.

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upon cutting the trees in the streets have the highest priority among the social factors.

**Table 1.** Demographic features of the respondents.

Variable	Mean	Minimum	Maximum	SD
Age (Year)	37.35	20	59	9.44
The mean monthly income (USD)	176	33	333	66

**Table 2.** Ranking the environment protection options based on the respondents' viewpoints.

Variable	M <sup>1</sup>	SD <sup>2</sup>	C.V <sup>3</sup>	R <sup>4</sup>
the participation protection of the cultivating areas soil	3.9	0.66	16.81	1
applying non-chemical procedure to fight the diseases	3.95	0.69	17.38	2
the participation rate in forest and natural protection for environment protection aspects	3.95	0.69	17.38	3
Participating in collecting the garbages and waste material	4.48	0.8	17.76	4
Cooperating in implementing the environment protection plans	4.21	0.82	19.38	5
Teaching others to protect the environment and villagers' culturalization	4.21	0.82	19.38	6
Cooperating in cleaning the village streets	4.14	0.84	20.29	7
preserving the rivers and drinking water resources	4.14	0.84	20.29	7
Protecting underground water	3.28	0.73	22.34	8
participation rate in collecting animals mess in the villages	4.17	1.09	26.2	9

1- Mean 2- Standard Deviation 3- Coefficient of Variation 4- Rank

Likert scale: very Low (1), low (2), average (3), high (4), very high (5)

Regarding the cultural factors, making villagers familiar with their responsibility on environment protection and preservation, helping to plan and implement the environment protection activities, and teaching, informing and guiding the villagers in environment protection had the highest priority.

Considering the economic factors, the financial incentive for villagers' participation, banks cooperation in providing the credits for NGOs and their income for their members have the highest priority in terms of economic factors.

Taking direct measures against villains' action, the NGOs' observation and control and the NGOs' obedience form the rules and regulations are the main organizational factors which have the highest priority.

Improving the relations and communication among the NGOs, NGOs access to the resources and facilities to provide services, the adaptability of the NGOs

environment protection programs and plans with the villagers' needs are among the high priority managerial factors.

As it is witnessed in table 2, based on the respondents' viewpoint, the participation in protecting the cultivating areas soil, applying non-chemical procedure to fight the diseases and the participation rate in forest and natural protection for environment protection aspects had the highest priority and the participation rate in collecting animals mess in the villages and also protecting underground water and preserving the rivers and drinking water resources had the lowest priority.

The environment protection aspects have 10 questions. Regarding the data in table (3), it is realized that most of the respondents (61.9%)

estimated their environment protection at “very high”, 26.2% of the respondents expressed “high” and 11.9% stated it to be “mean”. Therefore, 88.1% of the

respondents stated their environment protection at “high” and “very high”.

**Table 3.** The frequency distribution and the level of environment protection based on the respondents’ viewpoint.

The environment protection level	Frequency	Valid percent	Cumulative percent
Very low	0	0	0
Low	0	0	0
Average	25	11.9	11.9
High	55	26.2	38.1
Very high	130	61.9	100
Total	210	100	

Ranking mean=4.5, median= 5 (very high)

Likert Scale: very low (1), low (2), average (3), high (4), very high (5)

*Normality test*

Based on the results of table (4), the result of Kolmogorov–Smirnov test (K–S test) test was

significant for all variables (Except for age and income).

**Table 4.** Determining the normal distribution of the variables by the Kolmogorov–Smirnov test (K–S test).

Variables	Mean	SD	K-S test	Sig level
Environment protection level	40.44	5.99	2.68	0.000
Technological factor	35.72	4.97	2.87	0.000
Social factor	31.60	4.36	2.81	0.000
Cultural factor	23.20	3.19	1.95	0.000
Economic factor	20.17	3.27	3.02	0.000
Organizational factor	48	6.37	2.61	0.000
Managerial factor	23.92	3.86	2.94	0.000
Age	37.35	9.44	1.19	0.121
Income	176	66	1.35	0.052

*Correlation coefficient*

In order to determine the relation between the selected research variables and the respondents’ environment protection level, the Spearman correlation coefficient was used. As it becomes clear in table (5), there is a significant relation between the respondents’ environment protection level and the

technological, social, cultural, organizational, economical and managerial factors and income at significance level of 0.01, therefore, the research hypothesis that there is no relation among variables is rejected.

**Table 5.** Correlation between the selected research variables and the respondents' environment protection level.

Variables	Correlation coefficient	Significance level
Age	0.115	0.098
Income	0.210**	0.002
Technological factor	0.725**	0.000
Social factor	0.618**	0.000
Cultural factor	0.610**	0.000
Organizational factor	0.674**	0.000
Economical factor	0.768**	0.000
Managerial factor	0.762**	0.001

\*= significance level of 1%, \*\*= significance level of 5%

**Regression**

In order to determine the different factors role on the respondents' environment protection level at agricultural vocational schools, the stepwise linear regression was used. From all the selected variables used in regression, the social, cultural, technological and managerial factors and income were put in five steps in the regression equation. The results reveal the fact that 88% of the changes related to the

respondents' protection level was determined by the social, cultural, technological and managerial factors and all the other changes are explained by the other factors which are not mentioned in this study. Regarding the coefficient in table (6), the multiple linear regression equation in the final step would be measured through the following formula:

$$Y = -2.383 + 1.235x_1 + 1.017x_2 + 2.332x_3 - 2.165x_4 + 1.55x_5$$

**Table 6.** The variables coefficient on regression equation.

Variables	B	Beta	t	sig
(Constant)	-2.383	-	-2.007	0.046
Social factor	1.235	0.897	14.524	0.000
Cultural factor	1.017	0.540	15.575	0.000
Technological factor	2.332	1.933	12.460	0.000
Organizational factor	-2.165	-2.3	-11.958	0.000
Income	1.55	0.051	2.088	0.038

Sig= 0.000      F= 306.369\*\*      R2 AD=0.880      R2=0.882

**Discussion**

The result of data analysis showed that the environment protection level was at "high" and "very high". Also, considering the result of the research, regarding the independent variables, there is no significant correlation between age and environmental protection which is inconsistent with the results obtained with findings by Rafiee and Amirnejad (2009).

There is a significant correlation between income and environmental protection. There is also a significant positive correlation between technological factors and environmental protection at 1% error level which is consistent with the results obtained by Astani and Zarrabi (2011). Correlation between social factors and environmental protection at 1% error level which is consistent with the results obtained by Golshiri Esfahani *et al* (2010). Considering the result of the research, there is a significant positive correlation

between cultural factors and environmental protection at 1% error level which is congruent with the results of the study by Shariati & Ziadbakhsh (2006). Also, there is a significant positive correlation between economic factors and environmental protection at 1% error level which is in line with the results of the studies by Shariati & Ziadbakhsh (2006), Abedini (2002) and Effati (1992). There is a significant positive correlation between management factors and environmental protection at 1% error level.

The organizational factors had a reverse effect on environmental protection level indicating that organizational factors such as (rules and regulations, coercion and compulsion) negatively affected the environment protection which deemphasizes the role of these factors in environment protection.

### Suggestions

Suggestions are offered in this section based on the results of descriptive and inferential statistics which are as follows:

The respondents' income had a positive effect on environmental protection level which merits attention.

Based on the results of environment protection options, the participation in protecting the cultivating areas soil, applying non-chemical procedure to fight the diseases and the participation rate in forest and natural protection for environment protection aspects had the highest priority, therefore, it is suggested that programs to encourage members to be more involved should be highly considered.

Also, the participation rate in collecting animals mess in the villages and also protecting underground water and preserving the rivers and drinking water resources had the lowest priority, as a result, it is suggested that some training be provided for the members for protecting underground water and fresh water and cleaning the animal mess and the

consequences of failing to protect these resources should be made clear to members.

It should also be noted that, based on the results of multiple regression, among different variables of social factors, cultural factors, technological factors, organizational factors and income, social factors were the most predictive variable in the environmental protection level.

Also, as cooperation in group working on environment protection, participating in seeding and drilling and following the issues of cutting the trees in the streets increase the environment protection level, therefore, It is recommended that training programs on TV , radio , etc be planned to increase the group working culture. Besides, on preserving and restoring the environment, seeding and drilling classes should be held and members must be encouraged to participate in the class.

It is also suggested that a duty and responsibility be established to pursue the tree cutting issue among villagers through training programs and brochures

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