

Role of rural women in operation, protection and restoration of natural resources in desert plains; Case study: Khuzestan province

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Abstract

Non-renewable natural resources play an important role in sustainable development of developing countries such as Iran. However, since the natural resources should be preserved for future generations, proper use of such resources seems mandatory. Women are one of the prime users of natural resources in developing countries. The purpose of this study is to assess the conservational behavior of rural women and factors influencing such behaviors regarding destruction, protection, and restoration of desert areas of Khuzestan province in Iran in a one-year period from Sep 2006 to Sep 2007. Rural women living in desert areas were interviewed in the process of data collection using multi-stage random sampling techniques. The results revealed that rural women played an essential role in the protection, restoration and destruction of natural resources. Moreover, there was no significant relationship between rural women's personal characteristics and their activities in utilization of natural resources. This implies that destruction of natural resources is not attributed to rural women's intentions. However, human basic needs such as searching for a place to live, unpredictable weather conditions, unawareness of conservational facts, financial difficulties, large-sized families, overgrazing, and using woods as fuel were the main reasons for destruction.

Keywords: Rural women; Natural resources; Sustainable development; Destruction; Restoration; Desert

1. Introduction

In spite of the fact that women form one third of the world's human work power, they earn only 10% of world income and 2/3 of them are illiterate (Jamshidi & Karami, 2003). Women are ignored in many of developmental programs for various reasons (Momsen, 1995), and most of the governing policies in many countries, especially in third world countries, are executed by men (Fami et. Al. 2004).

New development policies pay more attention to women and their roles in country development. Nowadays rural development, for particular reasons, pays more attention to special groups of rural community such as youths (Ghanian, 2002). In Iran, 60% of

agricultural activities, 63% of animal husbandry activities and most of the gardening activities are undertaken by women (Bina, 2003), but what they do is not noticed from the view point of social and economical life (Gholizadeh, 1999). Despite this percentage of work activities among rural women, they have few educational classes and programs. For instance, in the field of agriculture, only 1% of promotional services are designed and performed for women (Ghanian, 2002). Gaining a constant development requires special attention to this part and will be possible via changing the women's perspectives by informing them about destruction of agricultural lands, and protection of environment and natural resources (Bina, 2003).

Rural women were considered as one of the main groups in management of natural resources and sustainable development discussions, from the view point of

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environmental planners and policy makers. In this regard, and in order to attract their cooperative attention, making these groups powerful- as a large section of human work power living in villages- is the main program of development organizations in different countries (Ghanian & Zarafshani, 1996). It can be said that rural women, because of their responsibilities, have the most contact to and relationship with natural resources, and since they lack enough information about such resources and role of these resources in maintaining a stable environment, they destroy them (Ghanian, 2002).

As rural women's activities are wood gathering, grazing animals, preparing water etc. they can understand the significance of damage to such resources better, and we can, therefore, guide them to protect and restore these natural resources more easily (Bina, 2003). It is important to consider finding the reasons of natural resources destructions by those who benefit from them, finding their needs, demands and abilities, and also finding the ways to attract the contributing activities of these factors to accept the protection and restoration plans of natural resources management. Executing more economical activities and investments in rural places and decreasing the pressure on natural resources can be very useful in this regard (Ghadiri Masoum, 2005).

This paper has evaluated the role of rural women in protection, restoration and destruction issues in natural deserts of Khuzestan province. Women constitute half of the active population who work with men together. Without using the power of these women, social development goals seem unreachable. Around 350,000 hectare of Khuzestan province lands are sandy and every year, because of wind erosion, these lands become eroded (Shafiee, 2001). Since most of the destructions have been done by rural people, especially rural women, this paper aims at evaluating the relationship between women and natural lands, and then presenting proper solutions to prevent these destructions.

This paper particularly aims at:

- evaluating the degree of women knowledge about renewable natural resources;
- determining the degree of women's contribution in natural resources protection issues;
- evaluating the degree of rural women's contribution in natural resource restoration;
- recognizing those women's activities which accelerate and intensify the destruction of natural resource;

- studying the reasons of women's willingness and unwillingness to replace fossil fuels with natural ones;
- finding the barriers in the way of teaching and educating rural women regarding natural resources.

2. Materials and methods

Research method was sectional measurement and the main tool for gathering information was a questionnaire which contained 52 questions. Questions in the mentioned questionnaire consisted of multiple choice questions allowing the participants to choose more than one choice, open questions, discussion questions and questions in the form of Likert scale with 5 choices spectrum. This questionnaire was confirmed structurally and superficially by experts and scholars in the field. We used observation, interview and library search to complete the information needed in this research. In order to choose statistical samples we used a two-staged, random method to choose a total of 130 rural women from Ahwaz, Shoosh and Dasht-e-Azadegan cities to complete the questionnaire as statistical samples. Hypothesis of this study were as follows:

- Women's unawareness of the importance, place and role of desert in constant development can influence the women's destructive actions;
- Lack of related basic facilities can intensify the women's destructive actions;
- There is a relationship between age, job, education and family size of samples and their participation in different activities related to natural resources such as destruction, protection and restoration activities;
- There is a significant difference between age, education and family size of women who really like to participate in educational classes on natural resource and those who do not.

2.1. Study area

2.1.1. Physical and human features of Khuzestan

Khuzestan province, with an area of 67234 square kilometers, is located in the southwest of Iran. Izeh city with the average of 630.9 mm precipitation per year (10 years average), has the most precipitation in Khuzestan province and Abadan city with the average of 159.7 mm per year (10 years average) is the least. In this province the temperature varies from -2 C in winter to +50 C in summer. Around 350,000 hectares of Khuzestan lands are sandy and every

year the extension of these lands increases because of wind erosion, and this is observable in forms of active sandy hills and approximately flat sandy lands that is limited between groups of sandy hills.(4). According to census in the year 2006, the population of Khuzestan has been 4274979, 2090010 of which are women, and of which 673829 live in villages (Iran Statistic Center, 2007).

3. Results and discussion

Samples were chosen from different groups of people aged 10 years or above. Some of their related particulars are as follows:

- Age: 70.8% belonged to the group aged of 10 to 30 years old (57 people), 24.6% were in the group aged 31 to 50 years old (32 people), and 3.8% were aged more than 50 years old (5 people).

- Job: 76.2% of women were housewives and engaged in an activity directly related to desert, and the others were involved indirectly.
 - Education: 78.4% of the samples were illiterate and only 3 women had a university degree.

3.1. Rate of natural resources knowledge

Which one of forest, pastures, deserts or shrub lands are regarded as natural resources? Distribution of answers to the above question shows that only 33.7% of people regard desert as a natural resource (Table 1).

Since all of the resources mentioned in the question are renewable natural resources, the negative answers to this part show the lack of knowledge about introductory information related to natural resources.

Table 1. Women's awareness condition & knowledge of renewable natural resources

Choices	YES		NO	
	frequency	Percentage	frequency	percentage
Natural resource fields				
Forest	81	62.3	36	27.7
Pasture	62	47.7	55	42.3
Desert	44	33.8	73	56.2
Shrub land	14	10	103	79

Differences in frequency from 103 (total statistical sample) is because of those who did not answer this question.

Desert plains in this area are used in different ways and with different purposes; table 2 shows the different usages that women under study do in rural desert plains. As it is observed, trees and shrubs are the main forest cover in the region and are mainly used as shady places because of the weather conditions in these areas. The rate

of using these plants as fuel, pharmaceutical usage and grazing is also high. The important thing is that top young branches and green parts of the trees are used most, and just because of that they cut the whole tree and use other parts of it as fuel.

People are eager to use fossil fuels and 84.6 % of them believe that using this kind of fuel is inevitable in villages because there is lack of suitable places for selling and storing this fuel.

Table 2. Different utilizations of regional trees and shrubs by rural women

Kind of usage	Wood & fuel		Pharmaceutic al-cal		Grazing of livestock		Building materials		Shady place		edible	
	F	P	F	P	F	P	F	P	F	P	F	P
Variables												
Eucalyptus	58	44.6	66	50	15	11.5	11	8.5	107	82.3	--	--
Palm	9	6.9	6	4.6	--	--	--	--	94	72.3	110	84.6
Cedar	26	20	30	23.1	4	3.1	3	2.3	92	70.8	92	70.8
Acacia	25	19.2	--	--	12	9.2	2	1.5	66	50.8	--	--
Screw bean	34	26.2	--	--	36	27.7	2	1.5	--	--	--	-

* In this question participants could select more than one choice

Grazing is the most important activity in this regard and those who answered the questions did not pay attention to the destructive role of livestock to natural plains because of the important role of animals in economical matters in such regions. Direct observation and formal reports from related organizations show that this factor has so much influence on destructing natural resources. This can be seen from the

results of evaluation in Table 3. One of the other forms of extra usage of natural resources is excessive grazing of animals. About half of the women or their daughters (49.5%) graze livestock in pastures, and almost all of them (93.1%) have no knowledge about grazing license and 95.4% of them do not have this license.

Table 3. Common methods of grazing animals in areas under study

Preparing hay way	Grazing livestock in postures or forests		Pastures or under forests freely animal		buying hay from market		Planted hays	
	F*	P*	F	P	F	P	F	P
Done	81	62.3	49	37.7	57	43.8	68	52.3
Not done	17	13.1	49	37.7	41	31.5	30	23.1
Missing	32	24.6	32	24.6	32	24.6	32	24.6

* "F" = frequency **"P"= percentage

The destructive role of these women becomes clearer when we find out that they have no information about the permitted period for grazing in Khuzestan province from 19th December till the end of March in the next year.

They graze animals all along the year without considering permitted period and other factors. As they themselves state, they even use pasture and graze animals in them during the absence of pasture keepers.

Table 4. The degree of women's participation in natural resource protection & restoration

Kind of participation	Very little		Little		Medium		Much		Very Much		Missing	
	F*	P*	F	P	F	P	F	P	F	P	F	P
Mulching	114	87.7	2	1.5	2	4.5	--	--	--	--	12	9.2
Preventing animal entrance	112	86.2	4	3.1	2	1.5	--	--	--	--	12	9.2
Shrub production	104	80	2	1.5	10	7.7	2	1.5	1	0.8	11	8.5
Shrub planting	109	83.8	3	2.3	5	3.8	2	1.5	--	--	11	8.5
Hoing	112	86.2	--	--	4	3.1	1	0.8	--	--	13	10
Composting	116	89.2	1	0.8	--	--	--	--	--	--	13	10
Seed gathering	114	87.7	2	1.5	1	0.8	--	--	--	--	13	10
Sowing	117	90	1	0.8	--	--	--	--	11	8.5	11	8.5

* "F" = frequency **"P"= percentage

Since there are so many important industries such as oil, steel, planting and other major ones in desert areas or near them, more attention is paid to protection and restoration activities in recent years. For this reason, degree of regional women's contribution to these industrial planners were evaluated and the results showed that almost all of the women have little participation in this activities (table 4), and this is one of the reasons that these programs have not been successful up to now.

Natural resources organization of Khuzestan province broadcast and show different programs for people, especially for users of natural resources, from radio and TV, in order to heighten their knowledge about the related issued. But unfortunately because of various reasons these programs do not have desirable results and have not been successful. Some of these reasons are:

- Unsuitable time of broadcast;
- Unsuitable content of program;
- Not considering cultural matters such as the dialect and accent of rural people in these programs;
- Poor notification and announcement about such programs to people; because if there were god announcement, women show their eagerness to participate in related educational classes provided that the teacher of such classes is a woman. Unfortunately only a one-day class has been held in one village so far.

3.2. Evaluation of the relationship between variables

In order to find the relationship between protection, restoration and destruction activities done by women, the correlation test was done (Table 5).

Table 5. relationship between age, education, family size and women's protective, restorative and destructive activities

Dependent variable	Restoration activities		Protection activities		Destruction activities	
	Pierson correlation coefficient	Significance level	correlation coefficient	Significance level	Pierson correlation coefficient	Significance level
Age	-%6	%54	-15%	%49	%11	%41
Education	%5	%60	-3%	%87	%24	%6
Family size	%5	%60	10%	%66	%23	%9

Since there is no significant relationship among the above mentioned cases, this shows that independent variables do not have any influence on women's protective, restorative and

destructive activities. This is because of women's unawareness of protective- restorative activities; therefore, to prepare their primary living needs, they do destructive activities.

On the other hand, all of the people, regardless of their personal characteristics and family status, need to use these resources in order to prepare their primary living needs. So lack of these resources, people's unawareness of protective-restorative activities and also having no information about the importance of constant usage of such resource cause them not to go

toward protecting, restoring and suitable usage of these resources.

There is a reversed significant difference between the average age of women who are eager to attend the classes and those who do not. Becoming older, they become less willing and eager to attend the classes. This result is the same for the eagerness of women to cooperate with natural resource organizations (table 6).

Table 6: Comparing the average age of under study women with each of the independent variables

Independent variable	Age average	Statistics T
Eagerness to participate in classes	29.76	-5.27**
Non-Eagerness to participate in classes	43.78	
Eagerness to cooperate with natural resource organizations	25.29	-5.47**
Non-Eagerness to cooperate with natural resource organizations	38.30	

** Level of significance is 1%

4. Conclusion

The results show some points related to the research theories such as follows:

- Most of women were young but they were illiterate due to non-existence of school for girls in these villages and literacy education classes for villages are sectional and not permanent.
- Rural women's lack of knowledge about natural resources and different related programs makes it necessary to establish educational classes with the women as teachers, and to use women in the establishment of protective-restorative activities.
- By doing the above-mentioned methods, women's literacy and knowledge improves, and becoming educated, they can work in different positions and beings a significant relationship between rural women and natural resource organizations.
- Lack of welfare facilities is one of the other reasons that women do the destructive activities; so, if such facilities are prepared for rural women, they do not destruct the natural resources anymore.

In this regard, here are some suggestions for solving such problems:

- 1) Attending to rural women as the main users of natural resources and their needs in planning and programs.
- 2) Performing educational programs related to natural resources in villages and making those programs easily accessible for rural women in such regions.
- 3) Supporting the women organizations for natural resources and providing them with the existing lands, dedicated to cooperative plans, to women for planting shrubs and cultivation of summer crops.
- 4) Establishing the educational classes in villages by natural resource organization in

order to familiarize women with environmental problems.

- 5) Employing local persons or those who are familiar with culture and traditions of region as teachers of the classes.
- 6) Providing special facilities, long-term credit and banking loan with low interest rates for women activities in protective-restorative designs, which makes them more motivated.
- 7) Preparing fossil fuels for villages by vehicles, preparing suitable and permanent places for selling fuel, and considering the fact that this province is original oil source.
- 8) Adjusting the time of Radio and TV programs with free and leisure times and of rural women.

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