

The Role of Environmental Traditional Knowledge on Biodiversity Conservation in the Shir-Ahmad Wildlife Refuge- Iran



Environment

KEYWORDS : Traditional knowledge, Biodiversity conservation, Floristic study

Roohollah Behzad

PhD student of Department of Environmental Science, University of Pune-India

Dr. R. G. Jaybhaye

Professor assistant, Department of Geography, University of Pune

ABSTRACT

Traditional knowledge, indigenous knowledge or even local knowledge's are refer to those kind of knowledge's that local community are in believes and these are critical and necessary for surviving, over those region.

The aim of this research is regarding to understanding the role of these traditional knowledge in environmental protection and biodiversity conservation in the Shir-Ahmad wildlife refuge in Sabzevar- Iran with the help of questionnaire survey and floristic study of this wildlife and the villages near the study region.

Introduction

Traditional Knowledge (TK) or Indigenous Knowledge (IK) or even Local Knowledge refer to that knowledge that embedded to the cultural traditions or local community. Traditional knowledge are includes those type of knowledge that local community are in believe, for example the ways and techniques that used for Cultivation, Agriculture, Hunting, Ecological knowledge, Environmental Knowledge and etc. This kind of knowledge are critical and important for surviving of local people of each region and generally are based on stockpile and empirical observation and interaction with the natural Environment and resources (Acharaya and Shrivastava, 2008). The local people traditional knowledge are necessary for conservation of natural resources like forest, water, flora and fauna species near residential area if they are accordance with the environmental conservation. Totally increasing population in the cities and villages and destroying natural habitats for construction purpose, is cause of uncontrolled eroding of natural resources (Chapin and Et al, 2001).

The Aim of this research is to find out that how much traditional knowledge could be helpful in conservation of environment in the Shir-Ahmad wildlife refuge villages in Iran.

Study site: The Shir-Ahmad wildlife refuge is situated in North East of Iran and West part of Razavi Khorasan Province with the area of 25000 ha. Sabzevar and Neyshabour are biggest cities near this wildlife and Jolein, Saleh-Abad, Cheshmeh-Avash, Nazl-Abad, Saqieh, Dowlat-Abad, Ali-Abad and Hashem-Abad are most important villages that have direct or indirect affect to this wildlife. Knowledge's are divided into two parts;

1. International knowledge,
2. Traditional knowledge,

In case of international knowledge, most of the people in the world are aware of them and even they promote this kind of information but traditional knowledge is only known to those people that living there (Kolawople, 2001). To understand this traditional knowledge in the Shir-Ahmad wildlife refuge local people and to find out role of this traditional knowledge on conservation of natural environment, questionnaire had been given to resident of 9 villages around the Shir-Ahmad, face to face. Beside that floristic study of the region has been done to understand effect of local people on flora species of the Shir-Ahmad.

Methodology:

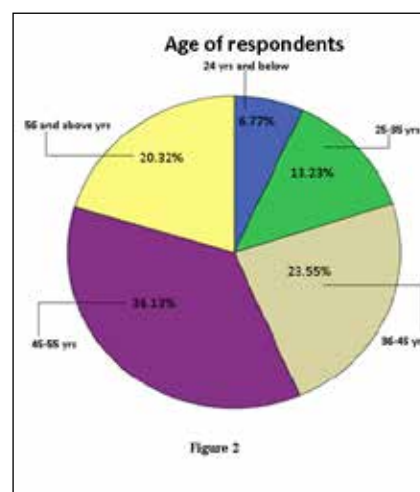
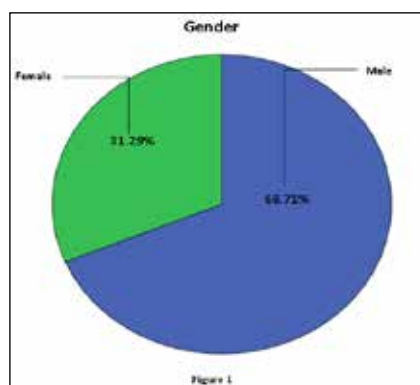
310 questionnaires were given between 20% of total population of 9 villages closed to this region to determine perception of local people regarding socio-cultural, economical and their information regarding environmental and tourism. The results have been analyzed by SPSS 20. The items were developed from various related literature (Lankford and Havard, 1994; Haralambopoulos and Pizam 1996; Andriottis, 2002; Choi and Sirakaya, 2005) to design the questionnaire for the present study. Also floristic study of the region had been done by dividing area in to three sections:

1. Highly disturbed area (HD)
2. Mildly Disturbed area (MD)
3. Undisturbed area (UD)

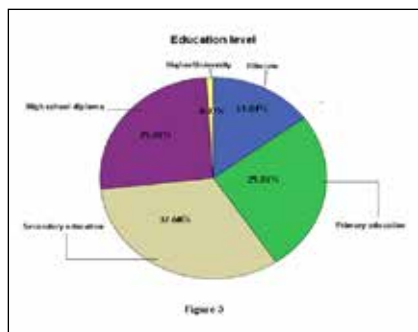
To find out impact of local people to this wildlife Total 23 quadrats of size 100x100 cm's were laid down in three different area as UN, MD and HD area.

Results and discussion:

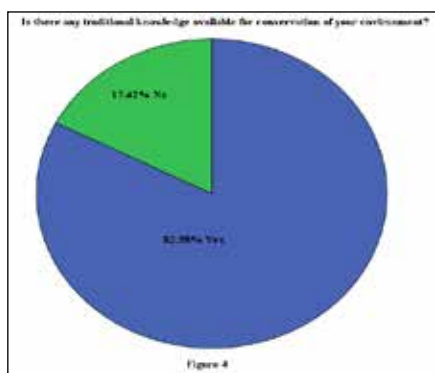
Almost 68% of respondents were male and 31% of the rest were female. Only 6% of respondent were 24 years old and under and the rest, 25-35 years, 36-45, 46-55 and 56 and above were 13.23%, 23.55, 36.13 and 20.32%.



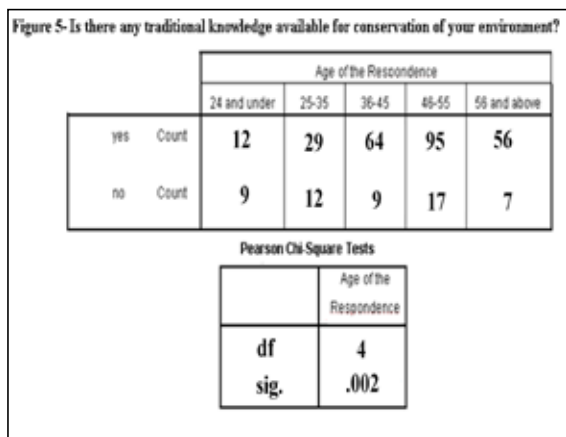
59% of the local people respondents had primary and secondary education and 14.84% of them even were illiterate when only 25.80% had high school diploma and less than 1% had higher education or university qualification.



Usually discussion on local knowledge or traditional knowledge regarding biodiversity conservation is useful to understanding the lore of these knowledge's on environmental conservation (Pielke, 2002). The local people of the Shir-Ahmad wildlife refuge were asked regarding if any traditional knowledge are available for conservation of environment. 82.58% of respondents mentioned that traditional knowledge's are available for biodiversity conservation.



The Chi-Square technique was used to analyze the questions. The local people responds were comparing with the age and education level (figure 5). Local knowledge regarding environmental conservation was strongly in relationship with age of local residents near the Shir-Ahmad wildlife. According to the alpha level, education of the respondents were slightly in relation with the traditional knowledge (figure 6) which means that local residents with any education level also were in believed in traditional knowledge but with higher education they were mostly in believed of science.



In this research local residents near this wildlife asked regarding the hunting of species of this region and their responds also analyzed with the help of Chi-Square in SPSS. 67.75% or 210 of respondents were believed that hunting of species in this wildlife is more profitable than their own business (figure7). Chi-square analyze also reveals that their respond was not I relation

with age, Gender or even any level of education, which means most of the local people in this region prefer to hunting species.

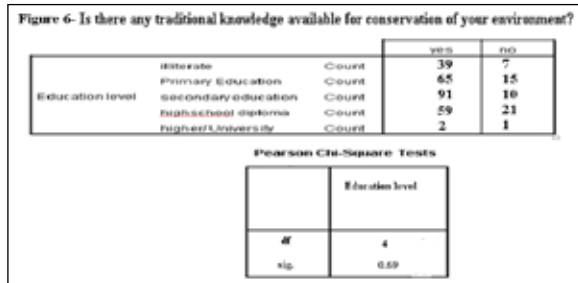
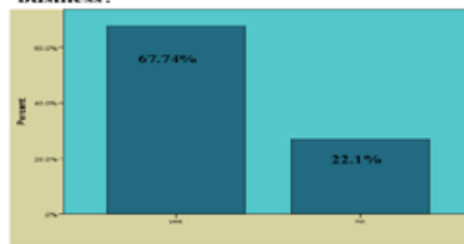
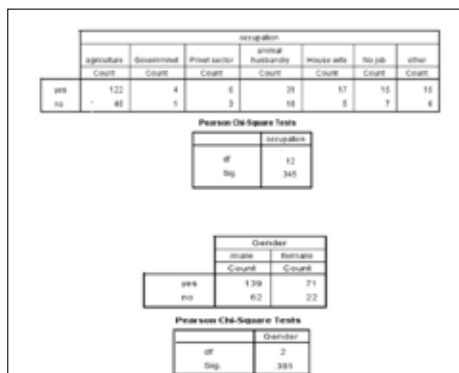
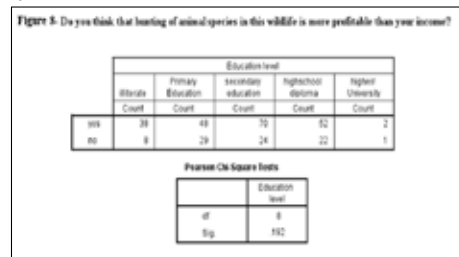


Figure 7- Do you think that hunting of animal species in this wildlife is more profitable than your business?



As the results of Chi-square shows, willing to hunting of species from this wildlife doesn't have any relationship with the Age, Gender and the level of the education of the respondents and even those respondents that had opinion to the Environmental traditional knowledge and believed that must protect their natural resources, also had will to hunting for more profit (Figure 8).



To find out how much local people are protecting their surrounded flora the floristic study of the Study area had been done. For this purpose three different areas with three different level of disturbance by local people had been considered and the results were compared together. Floristic study of The Shir-Ahmad wildlife refuge was carried out by quadrat sampling method. Total 23 quadrats of size 100x100cms were laid down in three different areas as Undisturbed area, Mildly disturbed area and Highly disturbed area (Figures 9, 10 and 11) a to find

out the parameters like Frequency, Density and abundance (Curtis and McIntosh, 1950).

Figure 8- Density indices of all species in the 3 study area site

All species			
Parameters	UD	MD	HD
Total no of species (S)	38	27	21
Total no of individuals (N)	727	380	186

Figure 9- Diversity indices of herbaceous species in the 3 study sites

Herbaceous species			
Parameters	UD	MD	HD
Total no of species (S)	19	11	9
Total no of individuals (N)	955	165	87

As the results reveals here, Highly disturbed area (HD) that situated near local people residential area has minimum species with compare to the two other area as a Mildly disturbed (MD) area and Undisturbed (UD) area. Total number of species in the HD area is 38 and 27 in MD area when only 21 are total number of species in the HD area (Curtis, 1959). For herbaceous species

and Shrub species also HD area had minimum number of total species and total number of individuals.

Conclusion:

Recently indigenous knowledge and place of them in human life is known to everyone and role of these kind of knowledge’s in agriculture, cultivation, environmental conservation and etc. (Lery on trap,

1981). But these traditional knowledge’s could not be helpful without supporting of science and local people cooperation. (Emadi, 2002). This research reveals that traditional knowledge’s are not helpful for conservation of environment and biodiversity of the Shir-Ahmad residential area. As results shows local people have willing to hunting animal species of this wild-life to get more profit or even they are destroying flora near their residential area by over grazing, construction and even excessive harvesting and these are causes of destroying flora species near their residential area. Also traditional knowledge’s are not in related with Education level of respondents and local people in the Shir-Ahmad area with any education level have the same feel regarding hunting and looking for more profit.t

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