

Environmental Literacy and Awareness among the women of Mountain Region of Uttarakhand, India: A Situational Analysis

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Abstract: The anthropogenic environmental hazards those frequently occur in the mountain region of Uttarakhand, India were identified and enlisted. With an objective to find out the literacy and awareness among the women on the various aspects of the identified hazards, a test was administered on 1000 women (500 urban & 500 rural) of eleven mountain districts of Uttarakhand. The data revealed that 59.6% urban and 34.4% rural women were environmentally literate. 3.6% urban and 13.6% rural women were environmentally aware. The study concluded that the rural agrarian economy of this mountain region rests on the shoulders of the women folk. In addition to their household obligations they have to work in their fields. They scarcely get time to make them environmentally informed. Therefore, they are environmentally less literate in comparison to their urban counterparts. The study also concluded that though the rural women were less literate yet they were more aware than the urban women folk. The chief reason was that they understand their immediate needs those mainly depend on the natural resources. Therefore, they make their efforts to sustain these resources. The study suggested that before framing any policy regarding literacy & awareness or developmental programme for the women folk in the region; it must be analyzed whether that is relevant to their immediate and most essential needs.

Notes:

- 1: In this paper Environmental Awareness refers to the sense, motivation and action taken towards the sustainability of nature & natural resources and mitigation of the environmental problems and disasters of one's surrounding.
- 2: The term Environmental Literacy refers the knowledge of common environmental aspects, phenomena and related problems of one's region with special reference to man-made environmental problems & disasters

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INTRODUCTION

The mountain region of Uttaranchal comprises of the eleven hill districts (Almora, Bageshwar, Chamoli, Champawat, Dehradun, Nainital, Pauri, Pithoragarh, Rudraprayag, Tehri and Uttarkashi) segregated in the two administrative divisions of Kumaun and Garhwal. It is a well known fact that this mountainous region has a fragile ecosystem. The widespread environmental degradation which has been the consequence of faulty and insensitive economic policies and poor management of resources is a normal feature of the region. The social conditions have not been dealt within an imaginative manner with the result that the productive potential of mountain communities has not been realized (Dhar, 1996). The economy of the region is agrarian and money order oriented and 60% of family income is generated outside by migrant males and remitted their homes. The rural agrarian economy rests on the shoulders of the women folk. Therefore, women constitute an important component of work force in the rural areas. In addition to their household obligations they have to work in their fields.

Taking into account the role of women in rural economy and their dependence on natural resources, a study was carried out during the years 2004-2006 with the following broad objectives:

1. To enlist the anthropogenic environmental hazards frequently occurring in the region.
2. To find out the percentage of environmental literacy & awareness among the women of hazards sites.

MATERIALS AND METHODS

Identification of the Environmental Hazards and Hazardous Zones in the Study Region:

To identify the frequently occurring environmental hazards and hazards prone zones in the study region the following methods and techniques were adopted:

Field Survey & Observation: An analysis of the relevant content was done to identify, enlist and classify the frequently occurring environmental hazards & ecological problems by collecting the related news from various sources like print and electronic media. Thus, a list of sites was prepared for field observations and survey. The various kinds of man-made environmental hazards & ecological problems were identified through field observations from the sites listed earlier.

Investigation into Environmental Literacy and Awareness of the women:

An intensive survey was done to find out the environmental literacy and awareness among the women inhabiting the identified hazardous areas. To measure the environmental literacy and awareness of the women, the “Environmental hazards Community Literacy & Awareness Scale (EHCLAS)”, a pedagogical tool prepared by the investigator (Tewari, 2004) was used. This is a three-point scale. It contains 40 statements on the various aspects of man-made environmental problems, disasters & ecological hazards those frequently occur in the Central Himalayan Mountainous Region.

The reliability coefficients of the scale are:

N of Items = 40

Correlation between forms = .9769

Equal-length Spearman-Brown = .9883

Guttman Split-half = .9879

Unequal-length Spearman-Brown = .9883

20 Items in part 1 20 Items in part 2

Alpha for part 1 = 1.0000 Alpha for part 2 = 1.0000

(The statistical procedures to calculate reliability coefficients of the scale were performed by using SPSS for Windows Version 9.0(1998).

Method of Scoring: this scale measures two variables (1) Environmental Literacy on the aspects of Anthropogenic Environmental Hazards. (2) Environmental Awareness on the aspects of Anthropogenic Environmental Hazards. In this scale 24 items measure the 'Environmental Literacy' and rest 16 items measure 'Environmental Awareness'. This is a three-point scale. Every item has "Yes", "No" & "Don't know" options.

Scoring of Environmental Literacy: For every correct response the weight is "One" (1) and for every incorrect response the weight is "zero" (0). Don't know responses are also marked as "Zero"(0). The difficulty level of this scale is 0.5. Respondents who have scored above median i.e. who correctly answered 12 items out of 24 environmental literacy-showing items were marked as Environmentally Literate.

Scoring of Environmental Awareness: The present study on the basis of the intensive observations assumes that there are three basic essentialities to become an "environmentally aware person". These essentialities are:

- Opinion Awareness on environmental protection and sustainability.
- Motivation towards environmental protection and sustainability.
- Action taken towards environmental protection and sustainability.

Scoring formula:

Awareness= (product of weights in positive Opinion showing items) + (product of weights in positive Motivation showing items) + (product of weights in positive Action showing items). If the sum = 3, then environmentally aware and If the sum is < 3, then environmentally not aware.

Sampling Design:

Stratified sampling was adopted in order to obtain a representative sample from the 'Identified Disasters Prone Areas of the Mountain Region of Uttarakhand'. The sampling spots (rural and urban) were deliberately chosen on the basis of their sensitiveness and random sampling was done in these places. The test was administered on the 500 rural and 500 urban inhabitants of the eleven mountain

districts (Almora, Bageshwar, Chamoli, Champawat, Dehradun, Nainital, Pauri, Pithoragarh, Rudraprayag, Tehri and Uttarkashi) of Uttaranchal

ANALYSIS OF THE DATA:

The environmental literacy and awareness data collected from the various spots were tabulated and analysed through percentage analysis.

THE RESULTS

Table-01: Group of man-made Environmental Hazards & Ecological Problems identified in the Study Region

Sl. No.	Groups of Man-Made Environmental Hazards & Ecological Problems	
1.	Land Related	Landslides, Debris Flow, Land degradation, Desertification. & Soil erosion.
2.	Forest Related	Forest fires, Deforestation, Removal of Vegetal cover of Land & Extinction of Biodiversity
3.	Water Related	Water crisis, Water-table Decreasement, Drying of Micro-Water Resources & Ground water contamination, Eutrophication of Lakes & Water Bodies.
4.	Miscellaneous	Other Ecological Problems & Degradation: Mountain Flash Floods, Silting of River Beds, Loss of fertile top soil & low agricultural yield, Scarcity of Fuel wood & Chronic Scarcity of Fodder.

Environmental Literacy among the women of the Study Region:

Table-02: Environmental Literacy among the women of the study region

Sl. No.	Subjects	Sample Size	No. Of Literate Respondents	Percentage. Of Literate Respondents
1.	Rural Women	500	172	34.4%
2.	Urban Women	500	298	59.6%
3.	Total	1000	470	47.0%

Environmental Awareness among the women in the Study Region:

Table-03: Environmental Awareness among the women of the study region

Sl. No.	Subjects	Sample Size	No. of Aware Respondents	Percentage Of Aware Respondents
2	Rural Women	500	68	13.6%
4	Urban Women	500	18	3.6%
5	Total	1000	86	8.6%

CONCLUSIONS

1. Analysing the content and through observations it was concluded that the anthropogenic environmental hazards and ecological problems can be classified as: Land Related, Forest Related, Water Related and Miscellaneous. Landslides, forest-fires, land degradation, water-crisis, deforestation and extinction of biodiversity are the major anthropogenic environmental hazards in the mountain region of Uttaranchal. Water-crises and degradation of the forest cover were identified as the primary environmental problems. Certain other environmental problems, increasing aerosols in the atmosphere, rapid rate of top soil erosion, silting of river beds, ground water depletion etc. and economic or livelihood problems like, fodder and fuel crises, decreasing milk and crop yields and decreasing forest products were also identified.

2. The following conclusions were drawn from the environmental literacy & awareness data:

A. The data revealed that 47%(Table-02) women of the region were environmentally literate. 59.6% urban and 34.4% rural women were environmentally literate. The study concluded that the level of the education, communication and information determines the level of environmental literacy here. It is a well known fact that the rural agrarian economy of this mountain region rests on the shoulders of the women folk. In addition to their household obligations they have to work in their fields. They scarcely get time to make them environmentally informed. Therefore, they are environmentally less literate in comparison to their urban counterparts. Considering the infrastructural facilities available here, it can be concluded that the

environmental literacy among the women is satisfactory.

B. The study further concluded that a negligible part (i.e. only 8.6%, Table-03) of the women population in the study region is environmentally aware on the various aspects of environmental hazards and ecological problems. 3.6% urban and 13.6% rural women were environmentally aware. Though the rural women were less literate yet they were more aware than the urban women folk. The chief reason is that they understand their immediate needs those mainly depend on the natural resources. Analysing the history of environmental movements and protests in the study region it revealed that women of Garhwal region had pioneered because they suffered severely the adverse effects of environmental degradation, which affected their economic benefits and routine life. Therefore, they make their efforts to sustain these resources. The study suggested that before framing any policy regarding literacy & awareness or developmental programme for the women folk in the region; it must be analyzed whether that is relevant to their immediate and most essential needs.

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