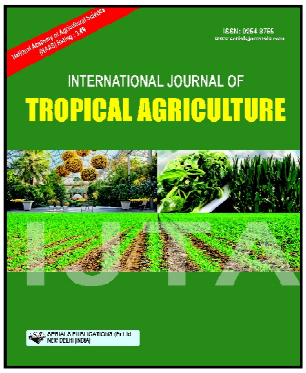

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Impact of Water Crisis on Women, a Pillar of Hill Agriculture

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Abstract: It is well known that hill women are the backbone of Uttarakhand. They have dependence on water and forest resources to collect fodder and fuel and a wide range of products for consumption and trade as the food and water security of the entire region depends on natural resources. The management of water resources is an important issue for societal health and well being. As the population is continuously growing, the need for water will grow tremendously. This research was undertaken to develop a deep understanding of women in water resource management practices with the objectives like to study the type of water resources available in the selected villages, their ownership and uses and to assess the drudgery faced by the women in fetching water for domestic purposes. Four villages from the mid hills of Kalsi block, Dehradun were selected in which about 100 respondents including male members were interviewed. It was found out that all the villages have 2-3 water resources available within 3-4 km away from their location. But except 1 or 2, other water resources have been dried up. The reasons for drying up of resources are lesser number of rainy days, more intensity of rain accompanied with heavy runoff losses, increase in climatic temperature etc. In village 1, the women had to carry water most of time as water is rarely available through pipeline. In other villages, normally water was available, but in rainy season women brought water from the source, as pipelines got damaged due to debris coming from the hills. The mode of carrying water was on head. In a day, they took about 3-4 rounds (sometime 4-5) to bring water and about ½hr – 1hr was the time cost for 1 round. The capacity of the water container was 15 lit. Likewise, for fodder and fuelwood also, women had to travel a long distance. Among the three tasks (Carrying water, fuel and fodder), fuel wood collection was the most difficult work as women had to travel a long distance in search of fuel wood. The major health problems faced by the women were headache, backache etc.

Key words: Drudgery, Hill agriculture, Natural resources, Water, Women,

INTRODUCTION

It is well known that hill women are the backbone of Uttarakhand. They have dependence on water and forest resources to collect fodder and fuel and a wide range of products for consumption and trade as the food and water security of the entire region depends on natural resources. Agricultural production system is entirely stand upon the natural resources viz. land (over 55% of non-forest land), water (about 80 percent of total fresh water), bio diversity, forests, pastures and wildlife. Farm activities can also give major threat to the quality and availability of these resources well beyond the boundaries of production system (downstream pollution and soil erosion). Thus, rural farm families are closely linked to the conditions of natural resources particularly for those people who are living on fragmented land holding. The Uttarakhand state is well bestowed with the natural resources i.e. water and forest resources. The Himalayan watershed of this state are under continuous threat of damage to natural resources due to overcutting of forest, unscientific agronomical practices, hydrological imbalance and natural calamities. The fast increasing population, the need for a better quality of life to the people and thus the pressure on natural resources is further complicating the problem. Women have the intrinsic knowledge of different farming activities. Generally women have knowledge both about the environment and about the natural resource base and its uses with responsibility for providing a significant share of household income and basic needs all of which will have influence on the state of natural resources. Mostly women work more in the environment, they are the one who suffer more from the adverse changes/ pollution/ environmental degradation but they are the one who knows the management tactics for these problems.

OBJECTIVES

With this in background, this research was undertaken with the following objectives:

- To study the type of water resources available in the selected villages, their ownership and uses.
- To assess the drudgery faced by the women in fetching water for domestic purposes.

METHODOLOGY

Four villages from Kalsi block of Dehradun district were selected. From each village 20 female and 5 male respondents were interviewed. Thus, total sample was 100 respondents. The Research design was exploratory in nature. The data were collected through survey and In-depth discussion/Focused group discussion. Primary data were collected through Interview schedule (structured /semi-structured). The secondary data were collected through reports, literature published by various government/ non-government agencies and other sources.

The information on various aspects like type and number of water resources available in the village, different uses of water resources, association and ownership of water resources, status of water resources and the practices followed by users for water conservation and its management were collected. Besides information on distance travelled by the women for collection of water, fuel and fodder, weight of the commodity carried by women, mode of carrying commodity, time involved and the related health issues and degree of difficulty perceived in above mentioned tasks.

RESULTS

The villages were surveyed for the availability of water resources. It is quite clear from the table that in village 1, out of 7 water resources, only 3 are functional during last 5 years. Similarly in other villages also, out of 4, 10 and 4 villages, 1, 3 and 2 are survived. These water sources are generally owned by the village panchayat. The main usage of

sources is for drinking purposes and household consumption. Similarly Etta, F.E 1999 also pointed out that Spring water, mountain streams, or man-made rainwater harvesting structures were used for household purposes. Open ponds and tanks provided water for animals, irrigation, and washing. For human consumption, water was tapped from underground seepages (in baoris / naulas) or springs (dharas). All these structures were usually common property resources, which were largely owned, used, and maintained by local communities. However, an increasing number of guhls have been taken over by state government agencies.

Table 1
Type of water resources available in the selected villages, their ownership and uses

S. No.	*Villages*	*Water resource (Spring)*	*Status (Functionality)*	*Ownership*	*Uses*
1	V1	7	3	Village panchayat	Drinking and household consumption
2	V2	4	1	-do-	-do-
3	V3	10	3	-do-	-do-
4	V4	4	2	-do-	-do-

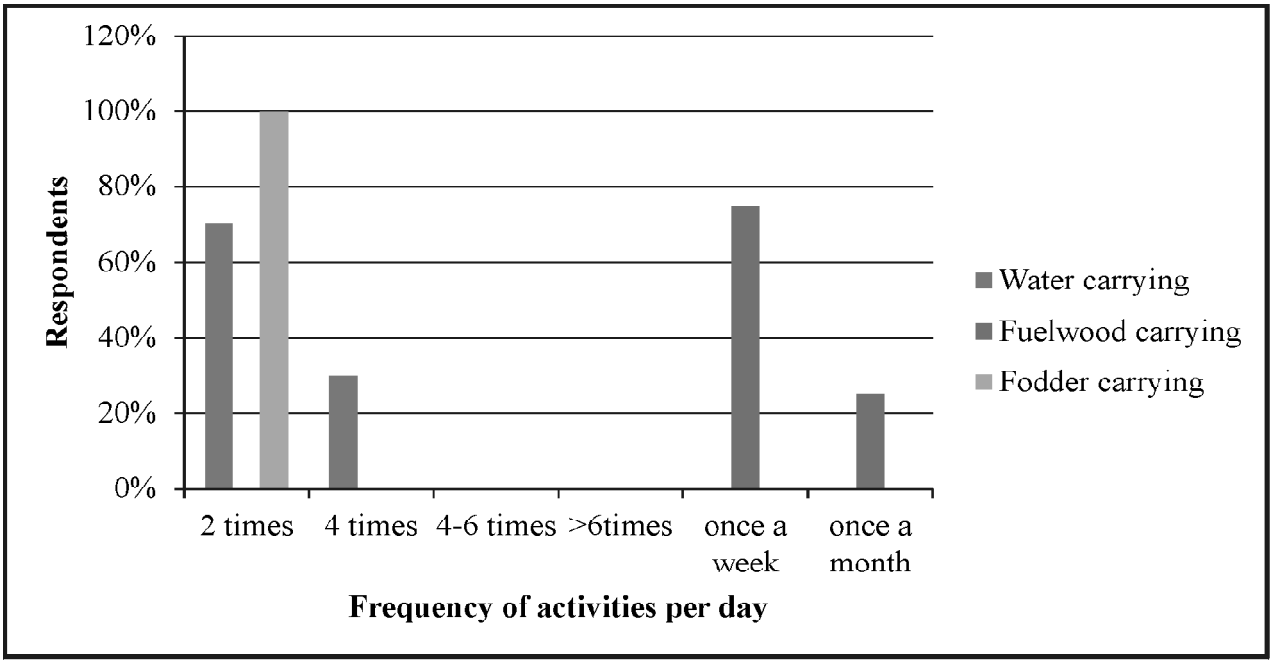

Figure 1: Frequency of activities carried out by rural women

Regarding frequency of activities by rural women, it is shown in fig. 1 that most frequently carried out activity was fodder carrying which was performed 2times per day, followed by water and fuelwood carrying (2-4 times). The results can be supported by study of Geere *et al.* 2010 who reported that water carrying was mainly performed by women or children carrying containers on their head (mean

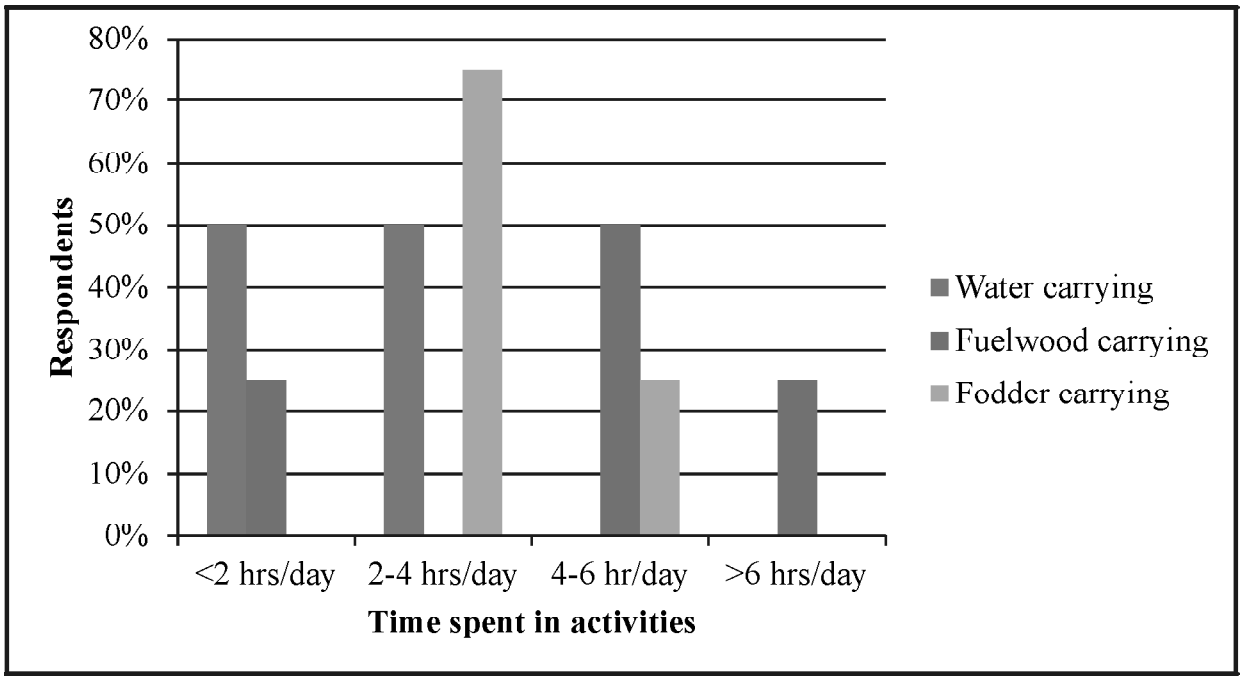

Figure 2: Time spent in activities carried out by rural women

container weight 19.5 kg) over a mean distance of 337 m. The prevalence of spinal (neck or back) pain was 69% and back pain was 38%.

It is shown in fig 2 that women spent most of their daily time in fodder carrying activity (2-4 hrs/ day) followed by water and fuel wood collection.

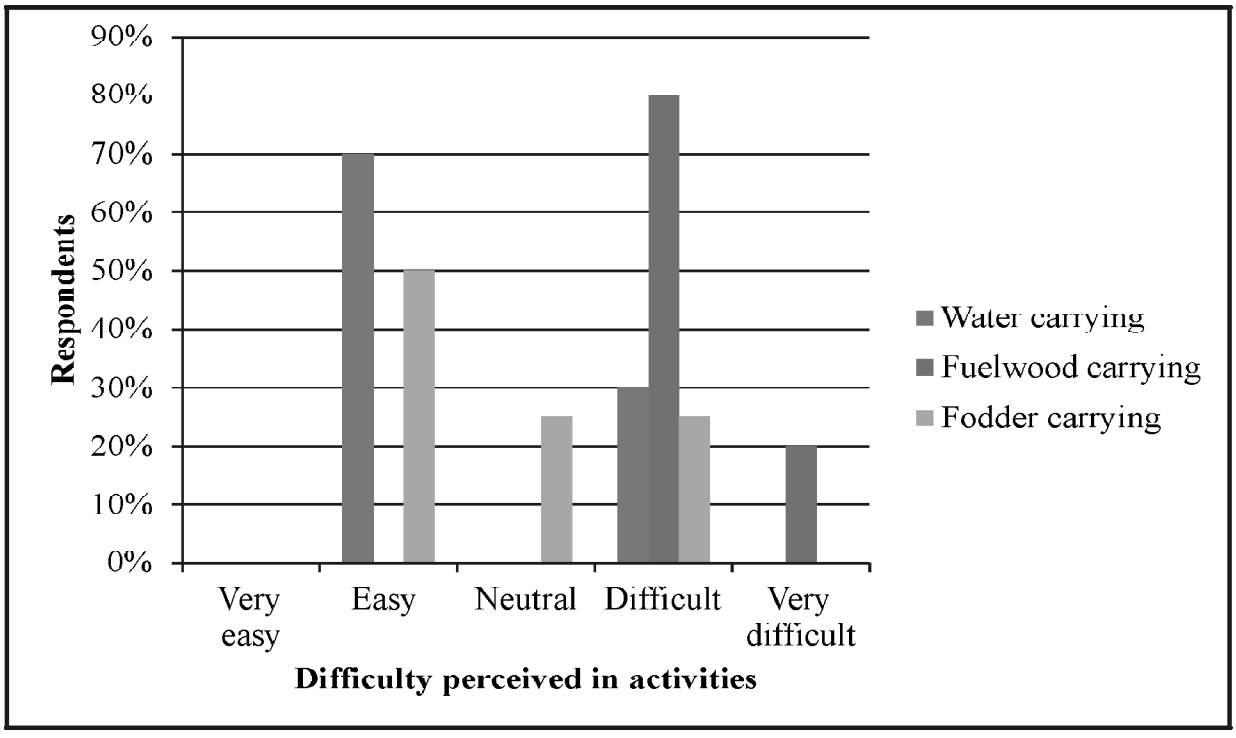

Figure 3: Difficulty perceived in activities carried out by rural women

From Fig 3, it is clear that fuelwood carrying activity was classified as difficult activity followed by water and fodder carrying activity.

CONCLUSIONS

- All the villages have enough water resources available within 3-4 km away from their location. But except 1 or 2 water resources, rest have been dried up.
- The reasons for drying up of water resources, as told by the respondents, are lesser number of rainy days, more intensity of rain accompanied with heavy runoff losses, increase in climatic temperature etc.
- In village at highest altitude, the women have to carry water most of time as water is rarely available through pipeline.
- In other villages normally water is available through pipeline, but in rainy season women bring water from the source, as pipelines are damaged due to debris coming from the hills.
- The mode of carrying water is on head. In a day, they take about 3-5 rounds to bring water and about ½hr – 1hr is the time cost for 1 round. The capacity of the water container is 15-20 lit.
- Likewise, for fodder and fuelwood also, women have to travel a long distance.
- Among the three tasks (Carrying water, fodder and fuelwood), fuel wood collection is the most difficult work as women have to travel a long distance in search of fuel wood.