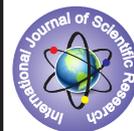


The Fire Wood Problems in Rural Communities of Uttarakhand



Geography

KEYWORDS: Fuel wood, domestic requirements, forest resources, energy sources.

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ABSTRACT

For rural population and poor households domestic requirements including cooking food and heating the homes fuel wood is a necessity which puts direct pressure on the forests. Their importance is even higher for a state like Uttarakhand that has about sixty-five percent of its land area under forests. The selected villages lie in the higher or upper region in the hill state of Kumaun Himalayas. The remote areas of the hill state are untouched to the development activities. The female is the nucleus of the family and they have to fulfill the requirements related with the collection of firewood in which most of time and energy goes. If alternative means for fuel are provided the time and energy can be better utilized in some other activities that can lead this economically poor area towards development. The present study aims to analyze the energy sources and related problems in the study area.

Introduction:

Wood, if consumed continuously, as a source of energy for cooking and heating homes will ultimately put pressure on the forests. As far as the Himalayan region is concerned, for almost a decade, there has been a slow but sure marshalling of concern over developments. The ecological and geographical system of Himalaya is under great stress due to growing pressure of human and livestock population and unscientific use of natural resources. The energy sources and their management is an integral part of socio-economic development of any society. Extensive research work in related field showed that in 1980 about three quarters of the population of the developing countries had traditional type energy consumption and hence depended on fuel wood and other solid components to complete their daily domestic energy requirements. Pant, (1981) explained how wood can alleviate India's fuel crisis Dangwal, D. (2005) has presented a realistic picture of the firewood consumption in the ninetieth and twentieth century in the region. The situation has not changed much up to the till date. Increased time taken by households to collect firewood needs to minimize. Availability of energy substitutes will induce households to rely less on forests. Domestic requirements, essentially for cooking food and heating the homes, usually account for the biggest percentage of overall energy consumption in the developing countries. This is even more marked for rural population and poor households. More than 67% of rural households in India still depend on firewood or wood chips for cooking. Forests are among the most important support system of our life. Their importance is even higher for a state like Uttarakhand that has 64.79 % of its land area under forests. The inhabitants of the region are using this natural resource to fulfill their day-by-day need. The result of misbalanced use of resources is marginal lands are being cultivated, forested land have become barren and somewhere disappeared. Joshi, J. (1998) has revealed through experimental studies that anthropogenic activities affect the life of people in Himalayan Drainage Basins. The study of consumption pattern of fuel in the selected villages reveals that 70-80 % households are still using firewood for cooking purpose. However, there seems a tendency of using kerosene and LPG as a substitute of firewood in such villages, where most of nearby forests are badly damaged. Joshi, J. (2015) has highlighted that deforestation is one of the major causes accelerating the mass wasting processes in the drainage basin of Kumaun Himalaya.

Study Area

The selected villages lie in the higher or upper region in the hill state of Kumaun Himalayas. The development of the region is only possible by managing time. Selecting the remote area villages is one of the reasons, which can help for a better understanding of the practical problems specifically related to the mountainous region.

The area selected includes the five villages that lie in one of the most remote area in Munsyari block (district Pithoragarh) located in the eastern most part of Uttarakhand. (Figure 1). The selected villages are most affected areas within the region because they have to cover long distances to fulfill their day-to-day needs. The major part of the whole day is consumed in collecting drinking water, fuel and fodder. Requirement of fuel is a basic need for the villagers. The number of females is higher than the males in every village. The need is to reduce time related to their daily requirements. The field investigation reveals that use of firewood by households is continuing at the present. With time, other fuels like kerosene, LPG etc are slowly but steadily also being used for the fuel requirements. This is need of the hour as pressure on forestland can lead towards many environmental problems not only in the selected villages but also in the sensitive region like the Himalayan Mountains. Five villages selected for the present study lie in such part of the Himalayan domain where a minor change in the natural system leads towards manifold adverse changes. Geographical location and altitude of the selected villages is shown in Table 1. Among the selected villages Gini is the largest one comprising an area of 200.158 hectare and out of which 86.550 (43.24%) is forested and the smallest one is Bhandarigaon (64.73 hc.) in which 11.15 (17.22%) is forested.

Table 1. Locations of Selected Villages in Munsyari Block

Village name	Latitude	Longitude	Elevation (ft.)
Bhandarigaw	30°02'12" N	80°09'35" E	6125
Gini	30°01'28" N	80°01'11" E	5285
Dor	30°00'18" N	80°04'53" E	4271
Modham	29°55'34.52" N	80°00'52.41" E	3280
Timtiya	29°56'20.58" N	80°08'37.53" E	3208

Source-primary data

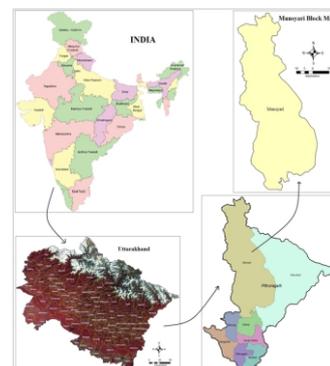


Figure 1: Location Map of the study area.

Objectives:

The aim of present study is to analyze the energy sources of the selected villages and related problems in the study area which focuses on the following objectives –

- 1). Identification of villages, which face the main problems of fuel.
- 2). Find out the problems focused by the local people in collecting firewood.
- 3). To find out role of physiography, vegetation and human activities and their combined effect in accelerating the above-mentioned problem.
- 4). As a final aim, the investigation and alternative solution is to find ways to reduce environmental damage and time management of village people.

Methodology:

The survey-based study conducted in Munsyari block of Pithoragarh district includes both primary and secondary data collection with the help of govt. and non-govt. departments and extensive field observation and measurement as follow –

- 1). Base map of the study area has been prepared with the help of Survey of India topographical sheet.
- 2). Secondary data collection from different books, institutes, websites, articles etc.
- 3). Selection of villages in the study area which have to face problems in the collection firewood and need alternate means fulfill their fuel requirement.
- 4). Preliminary field observation through surveying and personal interview.

Results and discussion:

The present study reveals some significant facts and problems faced by the people living in the remote areas of the higher Himalayan region. Firewood is in short supply. Energy requirement for household activities is one of the major problems faced by the residents of the area. The factors related to the physical and socio-cultural environment of the study area reveals that at present, the villagers depend on forests for their daily energy requirements. The firewood consumption at the present rate and increasing demand it is a serious problem for future. Table 2 shows the physiographic characteristics, socio-cultural aspects, dependency of the village population on forest and firewood consumption by the people. In the Himalayan region the woman is the nucleus of the family. The female members have to fulfill the requirements related with the collection of firewood and others. All these processes require a lot of time and energy. Among all the traditional sources of fuel wood is generally the most preferred. Out of the five villages, Gini has the maximum-forested area. Whereas a major part of the villages in Bhandarigaon, Dor, Modham and Timtiya have been deforested. Due to the continuous demand for fuel, these villages are facing scarcity of even collecting firewood. The average distance to be travelled and time spent in collection of firewood is 4.5 km. and 6 hours in Bhandarigaon, 3 km. and 4 hours in Gini, 3.5 km. and 4.5 hours in Dor, 4 km. and 5 hours in Modham and 3 km. and 4 hours in Timtiya. This time reduced can be utilized for development if the village people use the alternative means for fuel.

Table-2: Fire wood consumption in selected villages

Name of the village	Bhandarigaon	Gini	Dor	Modham	Timtiya
Physio-cultural aspects					
Physiography	Upper slope	Ridge	Mid slope	Mid slope	Mid slope
Village area (Hec.)	64.734	200.158	175.588	72.380	123.125
Forest area (hec.)	11.15	86.550	28.500	12.400	12.00
Demographic aspects					
Total population	175	512	620	169	134
Sex ratio (M/F)	81/94	255/257	300/320	77/92	51/83
Consumption pattern of fuel					
Firewood (% of total fuel)	82	98	83	86	85
Kerosene (%)	10	02	16	10	13
LPG (%)	8	-	01	04	02

Time management with the help of alternate energy means is

required, so that the villagers could plan their priorities. In all the selected villages, the things observed were poverty and policies that effects productivity which wastes both time and energy. The villagers specially women start their day early and have no time to take off from work. Because of the rules and regulations of the forest department, they have to collect the dried pieces and twigs of wood that takes a lot of time. They have to get up early in the morning before sunrise to fulfill the task. It needs at least 4 hours to collect firewood. The Himalayan villages due to differences in altitude and social cultural and economic activities differ from each other. Extensive study with an increased number of villages in different parts of the Himalayan terrain can help to solve the problem. Women of the higher Himalayan region, especially in the remote areas have to work very hard for their livelihood. A small number of villagers are using kerosene and LPG at present as alternate fuel options. The study area lies in the cold and sunny climatic zone and solar energy can be a better option in many villages. The need is to promote the use of Non-conventional energy such as solar energy, biogas energy.

To check the use of traditional energy and the possibilities for other alternative sources more effective step can be to create awareness. The local people need to be mobilized to improve and enrich the environment. Uttarakhand, though a small state, has several micro climatic zones. The people of the hill region work very hard to earn their livelihood. To save time of people living in the mountainous environment is required for the development of this hill state. We can conclude with the remarks that although there is a greater consciousness of the deteriorating environment both in government and the people, concrete efforts need to implement in this direction by government organizations and self help groups. The substitute materials made available by government as well as nongovernmental organizations at reasonable costs can somehow help.

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