

The Diurnal Function Profile of Rural Women and Effect of Altitudinal and Temporal Variation : A Study of Lesser Himalayan Agro-Ecological Zone in Kumaon Himalaya

Dharmendra Kumar Dube

School of Natural Resource Management and Environmental Science, Haramaya University, Ethiopia

Abstract

Environmental conditions of an area serves as the joystick for outdoor operations, particularly agriculture and collection of fuel and fodder. These prime outdoor activities determines the functional profile of the farmer. Present study deals with the functional profile of the rural women-the de facto farmer in Lesser Himalayan agro-ecological zone of the Kumaon Himalaya. Descriptive research design following survey method was used for study. House hold survey, focus group discussion and interview of resource persons were used as tools for collection of primary data. For the comfort of farmers and accuracy of time, Hindi month calendar was used for numeration and analysis of data. Taking into account the vastness of the study area and their large altitudinal variation, the study area was sub-divided into three subzones- Ridge Top (RT), Mid Hill Slope(MHS) and River Valley (RV). 20 Villages with 20 households each were surveyed, giving due representation to each sub zone. Total waken up hours were calculated and divided into three categories-indoor, out door and recreational activities and month wise division of the work profile was plotted under these three categories. Average annual waken up period for overall LH was calculated as 17hours and 13 minutes with a variation of 16hrs.29mnts in RT to 18hrs 6mnts in MHS villages. Monthly variations shows two tops in graphs, during the harvesting of summer crop (Kharif), and the winter Crop season (Ravi); and also two dips- during winter months (Push & Magh) and dry summer months (Jaisth & Ashad). In the MHS villages except the month of Margsheersh (16.30) it never goes down than 17hrs/day-shows the tough conditions and deterioration of natural resources. Contrary to this RT village having single crop cycle (Kharif) are having wake up period of 18hrs 30mnts for summer months of Sawan, Bhandon, Ashwin and Kartik; while during cold winters in Push and Magh it sharply dips down to 14 hrs and 30 minutes. The breakup of average waken up period (17.13hrs) into three activities shows a share of 67%, 30% and only 3% for Outdoor, in door and recreational activities. These shares of activities demonstrate perceptive variations according to zones and months. It is nicely synchronized with the pressure of outdoor activity, predominantly the agricultural activities. Outdoor activities were further categorized into six activities and the share of these six activities was worked out. Agriculture takes the lion share and largely determines the shares of other activities. Certain seasonal activities take place only during the lean period of agriculture, like fuel wood and fodder collection during winter month; and they too have significant zonal and monthly variations. They Indoor activities have an average Of 5.08hrs for LH. Ranging from lowest of 4.46 hrs in RV villages to high of 5.55hrs in RT. The average recreational activities range from 0 to 2hrs 40 minutes/day with an annual average of 44minuts per day. Both indoor and outdoor activities are nicely reversed-synchronized with annual agriculture cycle. The functional profile shows that the rural women in Lesser Himalaya in general and MHS in particular are already

suffering with a high work pressure which is going to escalate in future due to the impact of deteriorating environment. The study recommends a modification in their cropping system, by introducing commercial crops with better market value and lesser workload. And extensive conservation activity for restoration of natural resources.

KEYWORDS: functional profile, indoor activity, outdoor activity, recreational activity, rural women, Lesser Himalaya

Introduction

Women are central to the development of rural areas and to national economies. They make up at least 43 percent of the agricultural workforce worldwide and more than 70 percent in some countries. By improving rural women's access to resources and opportunities, food security and nutrition can be enhanced for current and future generations. (FAO 2016a). But the ground conditions shows that this role of women in rural and national development is well recognized more in academic and research throughout the globe rather on the ground. Women unending hard work get less recognition and mostly taken as granted (Joshi NC, 1995). This gender gap is found for many assets, inputs and services such as land, livestock, labour, education, information services, and technology, all affecting their capacity to protect their communities from crises. Responsible for securing fuel wood, water and fodder, they spend increasing time in these activities and are often exposed to heightened protection risks. (FAO, 2016)

Though Indian economy is growing and Sensex is touching the high marks yet the this impact is less visible in the rural areas. The rural India not only shows a less developed economies but also been characterized by gender inequality and marginalization of women in every walk of life, is particularly significant in the rural societies. Here women constitute one of the most important and dynamic but deprived and long neglected section of Indian societies. Their deprivation becomes more acute with their poverty in terms of education, health, nutrition, socio-economic, political and demographic aspect. These factors become more sharp and drudgery of rural women become more deep rooted in rural Kumaon. Traditionally mountain women are accustomed to less significant level of resource control and a clear voice in the affairs of the household and partially in the community. Never the less, there exist strong dichotomies between men's work and women's work, which was aggravated due to the large scale male dominated outmigration, primarily for recruitment in armed forces and later on to join the work force at the cities and industrial centers in the Plains on Northern India. In agriculture their role is much more important than man. In this way women have been the pivot of the Kumaoni village economy, as hill agriculture is absolutely dependent on them. (Agrawal C.M. 1996; Pandey G.C. 1998). In the present trend of small isolated families, deteriorating environmental conditions and depleting natural resources, the excess burden of domestic workload has been often transferred from mother to daughter. Resulting bad impact on their education and outcome is a higher dropout rate of girls in specially beyond junior high school slandered (Dube,). Migration to urban centers within or out of nation is a global phenomenon and is seen as one solution for survival and development. Remittance send back to home by migrants could be a strong indicator to understand the mammoth volume of this phenomenon. According to FAO (2016c) International

remittances are estimated at three times the size of official development assistance. 40% of international remittances are sent to rural areas, reflecting the rural origin of a large share of migrants.

The economic benefits and survival strategy for stressed rural family cannot be ruled out, but the tragedy of de-facto head of the left over family-the women cannot be and must not be ignored. The initially started as single male dominated out migration follows the outmigration of youngsters of the family, leads to outward approach of development, considering village life as a sign of backwardness and burden, and not a place to any input or investment (Pandey,P N,1996; Dube, 2003). In such scenario the entire process of development faces a big problem. It is a globally accepted fact that the women headed rural households' get less access and benefits of the developmental. FAO (2016) also says that worldwide women access less than 10% of agricultural extension services. After the food price crisis of 2007-08, Women-headed households were 1.6 times more likely to be food insecure than those headed by men. One point is coming strongly that the development of villages in rural Lesser Himalaya banks upon the upliftment of the rural women. And to any such action it is must to know what they are doing, their life style and top of all their work profile. What are the temporal variations and sectorial deviation and contrasts in their work profile?

Some scattered and isolated studies done on the parts of Indian Himalaya were confined to the entire transverse extension from foothills (Shiwalik) to Great or Trans Himalaya as one single entity; or confined to one zone of Himalaya. It was realized that an integrated study for all zones of Kumaon Himalaya which should give due weightage to all ecological zones and sub zones, and finally come out with a complete picture of work profile of rural women of Kumaon Himalaya is needed. Present paper covers the second zone-The Lesser Himalaya.

1.i. Study Area: The Lesser Himalaya of Kumaon:

The lesser Himalayan or Himachal belt of Kumaon falls between Siwalik zone in south, Great Himalayan belt in north, Nepal in the west and Garhwal division on the west Its northern border is delimited by the Main Central Thrust against the Great Himalayas, with an approximate width of 75 km. It has an interesting geological setting. Lesser Himalaya is a massive mountain tract. The ranges are mainly composed of highly compressed and altered rocks varying in age from the Algonkian to the Eocene (Singh,1971). The Eocene beds of the lower Himalaya have been separated from lower Siwalik (Nahan) by a great thrust known as 'Main Boundary Fault (Valdiya K S, 1987).The entire zone of Lesser Himalaya is full of series of ridges, separated from each other by deep valleys. The average relief of ridges in this zone ranges between 1500 and 3000m and of valley bottoms between 500 and 1200m.

In simple way The Lesser Himalayan forests could be divided into two groups of forests broad leaves (represent by different varieties of Oak like- 'Banj oak' (Quercus leucotrichophora), 'Tilong' oak (Q. dilatata) and 'Kharsu' oak (Q. semelarpifolia); while the chir pine representing the main conifer species. The forest land scape of Lesser Himalaya is predominantly occupied by Chir pine while high tops of the hills are dominated by the Oak forests.

1.ii. Working Pattern and General Characteristics of Indoor, Outdoor and Recreational Activities: All the activities performed by the women could be categorized into three categories, depending upon their modus-operandi. They are Indoor, Outdoor and Recreational activities.

Outdoor Activities are those activities which are performed outside the house and involved maximum amount of physical labour. These activities are related to agriculture and livestock operations and collection of fuel, fodder and water fetching.

Indoor Activities are confined to daily household work of routine nature. It includes kitchen work, washing of clothes, grinding and husking of corn and attending to work of children and aged persons.

Recreational Type Activities: The activities of leisurely and recreational type. These activities include, attending to religious and social work (puja) at household or village level, marriage and other rituals. Fairs and festivals and in certain occasions the traditional group dances locally known as “Jhora & Chanchari”. Listening radio and watching TV is also present day popular recreational activity.

The women work profile of Lesser Himalaya has two interesting dimensions first-the monthly/seasonal variation following an annual oscillation and second the altitudinal variation;

The study of women’s working routine and their respective time disposal is a first strong step towards knowing the grassroots problem of rural women, and the most important primary data for their developmental planning. The main objective of study is to calculate the diurnal work profile of rural women and their monthly/seasonal variation; with specific objectives to know the total waken up hours and their division into in-door, out-door and recreational activities, and their monthly/ seasonal variation. To know the variation of all these factors of work profile among the intra-altitudinal zones of Lesser Himalaya of rural Kumaon.

2. Research Methods

Present study follows the descriptive research design with survey method, banking upon the empirical data numerated through the extensive field survey. Both qualitative and quantitative data acquired through the primary and secondary sources. Primary data were collected from 20 purposively selected villages from the vast area of Lesser Himalayan belt giving due representation to spatial expansion and altitudinal zones. Eight villages were selected from the district of Almora, four each from Bageshwar, Nainital and Pithoragarh. On altitudinal zones Total three villages were selected from ‘Ridge Top’ villages, twelve from ‘Mid Hill Slope’ villages and five from ‘River Valley’ villages. Following the random sampling technique twenty households from each village were surveyed (giving due weightage to economy status of the family), a total of 400 households were surveyed, using structured schedules. Total twenty focus group discussions (one in each village) were conducted and 32 resource persons were interviewed with semi structured interview. Data was analyzed using descriptive statistical techniques and representative through the different diagrams and graphs.

To know the seasonal variation in their work profile an inventory of their activities were prepared and the crop cycle with reference to major activities was prepared. It was observed that that work profile varies with the variation in major agricultural activities, and in absence of such change in agricultural activities, it significantly remains steady. Keeping in view this observation the year was divided into five to six sets of months where activities are almost same. Therefore each set of the month represent a set of same work profile. A Pilot survey was conducted and observed that using Indian Hindu calendar “samvat sar” was more usefull in gathering the correct information from the respondents. The household survey was conducted ones at each major set of months. Daily activities were asked with the respondents and required corrections were done based on the observations. Finally by clubbing of the monthly data together an annual work profile of rural women of Lesser Himalayan villages with respect to their sub zones were prepared.

2.i. Using Indian Hindu Calendar ‘samvat sar’ for research and it’s Justification: In the earlier studies it was observed that the data was collected as per the Gregorian calendar and it creates some serious discrepancies in the result. During pilot survey it was clearly observed that respondents face problem with the Gregorian calendar. Actually the farmers follow the Indian Hindu Calendar for all its agricultural operations and socio-cultural activities; and it deviates significantly from Gregorian, not just by a fixed days but variation varies annually. Keeping in view it was decided to follow the ‘samvat sar’ calendar for present study. An approximate conservation table is given in appendix.

2.ii. Limitations of the study It is a data for daily work profile which is averaged for month and set of months, though it is more or less same but it could not cover the short term big fluctuations. For getting the perfect work profile each household should be numerated 365 days in a year, which is extremely difficult in terms of requirement of money and time.

3. Result and Discussions

Lesser Himalaya is geographically the largest belt of Kumaon Himalaya, which is highly peopled and having most dense population. It is the ‘core zone’ and of course the cultural heart of Kumaon, and no doubt the eye of the storm-called environmental deterioration. This extensive and intensive field survey end up with generating an enormous data with its multi dimension characteristics, the information were put under following subheadings to plot a comprehensive image and draw useful conclusions.

3.i. Waken up period: This is the time of a day when a woman perform all her activities. It is the time which stretches from morning wake up time to till the time of sleeping in the night.

The annual average of the waken up hours of rural women of Lesser Himalaya comes to 17 hours and 13 minutes; however it ranges from 15 hours 10 minutes to 18 hours and 35 minutes. Fig-1(a) shows that the waken up hours for over all Lesser Himalaya is almost 72% while sleeping hours are only 28% of their total diurnal time. But the data further specify that is not same for all altitudinal sub zones Lesser Himalaya. The bar diagram in Fig-1(b) depicts the variations in the overall waken-up hours. It goes down to

16.29hrs/day at RV villages to 18.06hrs/day in MHS villages. Two points are striking here-

- The average waken-up period is higher in overall Lesser Himalaya.
- Impact of altitudinal zone on waken up period is perceptible.

The variations on the waken-up hrs are not only visible on altitudinal basis but also in annual temporal span. On temporal aspect the data was plotted on monthly basis and interesting variations were observed.

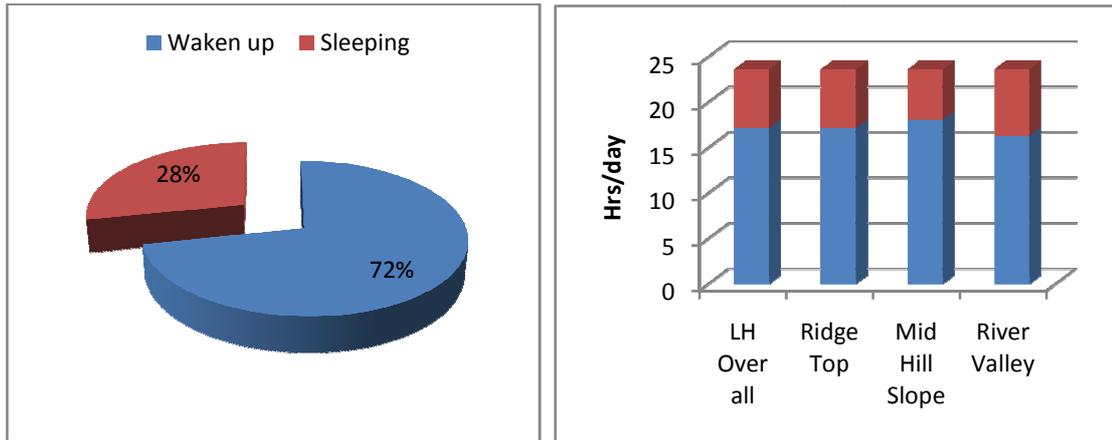
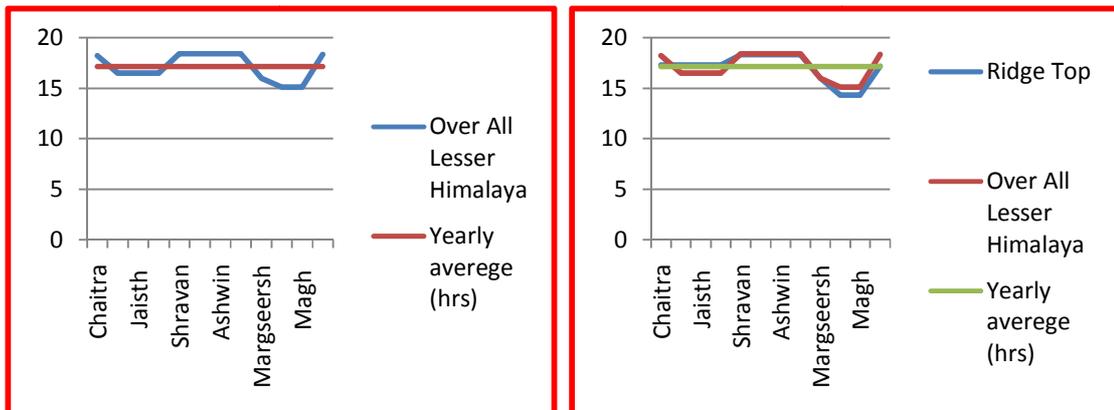


Fig-01: (a). The overall daily wake up and sleeping hours (in %) (b). their variations according to the altitudinal zones.

3.ii). Month wise variation of daily wakeup period: Though the average daily waken up hours are 17hrs 13minutes/day which is ranging from 16hrs 29minuts to 18hrs 06minuts. Again it is not the same round the year it shows a month wise variations.

Fig-02 nicely shows the month wise variation of the waken up period in over all Lesser Himalaya and its three sub altitudinal divisions. The variation of the overall LH showed in Fig-02(a) have two tops and two drops with reference to the yearly average. They are tuned up with the two cropping seasons and their respective activities. More of less all three sub zones also



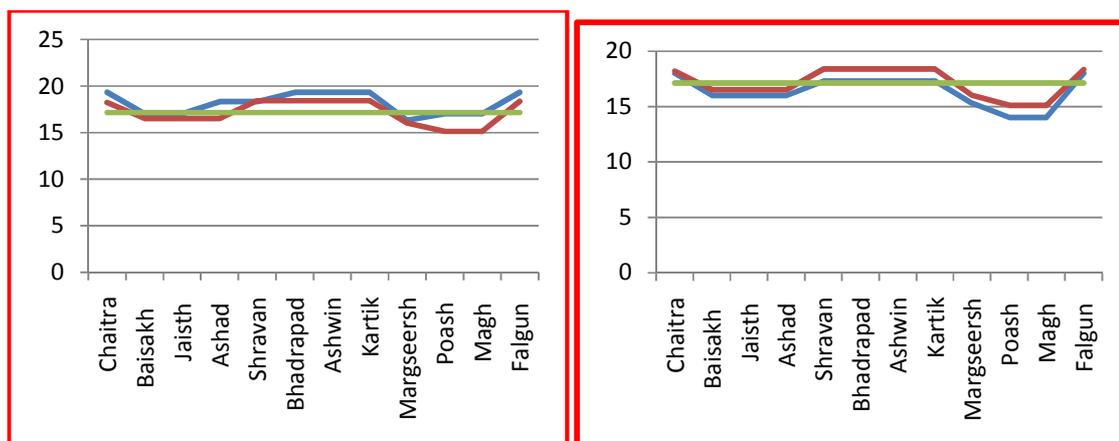


Fig-02. The Monthly variation of the daily waken-up period of rural women in (a). Over all LH Villages (b). RT Villages (c) MHS Villages and (d) RV Villages.

follow the similar pattern with some variations caused by the local factors, The salient points of the month wise variation of waken up hours are as follows-

- After sowing of summer Kharif crop, and after harvesting of Kharif and sowing of winter Ravi crop rural women are getting some lean period which is leading to the increase of their sleeping period ranging from 7 hours 10 minutes to 8 hours, and 8 hours and 50 minutes. As per the FGDs and interviews- these long sleeping hours are not only because of the long winter nights but of the activity resulting of excessive fatigue (collation and stocking of fuel wood and fodder from far distance forests)
- In contrary to this during sowing and harvesting period of the summer (Khari) and winter (Ravi) crop the work load is very high and they hardly get a time span of 5 hours 20 minutes to 5 hours 40 minutes only.
- Ridge Top village shows a striking variation from the average, the very long sleeping hours during winters, which is mainly due to the excessive cold climate and almost no agricultural activities.
- Mid Hill Slope villages shows a quite disturbing image, as the waken up hours are almost all months higher than the annual average and most of the time average waken up hours of Lesser Himalaya. It shows that in MHS villages women are under maximum work pressure and most of the time they fail to get adequate sleep.
- In case of River Valley villages the situation is certainly better than MHS and wake up period is most of the time less than the annual average and the average of LH.

The overall scenario for waken up and sleeping hours depicted by the Fig -02 gives a very gloomy picture. If we consider a 7 hours sleep for women in working age group with hard work the situation is not good. It is showing a significant variation within the altitudinal sub zones of one ecological zone-Lesser Himalaya. The situation is very critical for the women of MHS villages. It is particularly important because the largest number of villages are located in mid hill slope.

3.iii. The breakup of daily waken up hours into indoor, out door and recreational activities. The breakup of waken up ours is an important factor of the women work profile and is must to understand the drudgery of rural women. The drudgery largely depends on the share of outdoor activities in total waken up period.

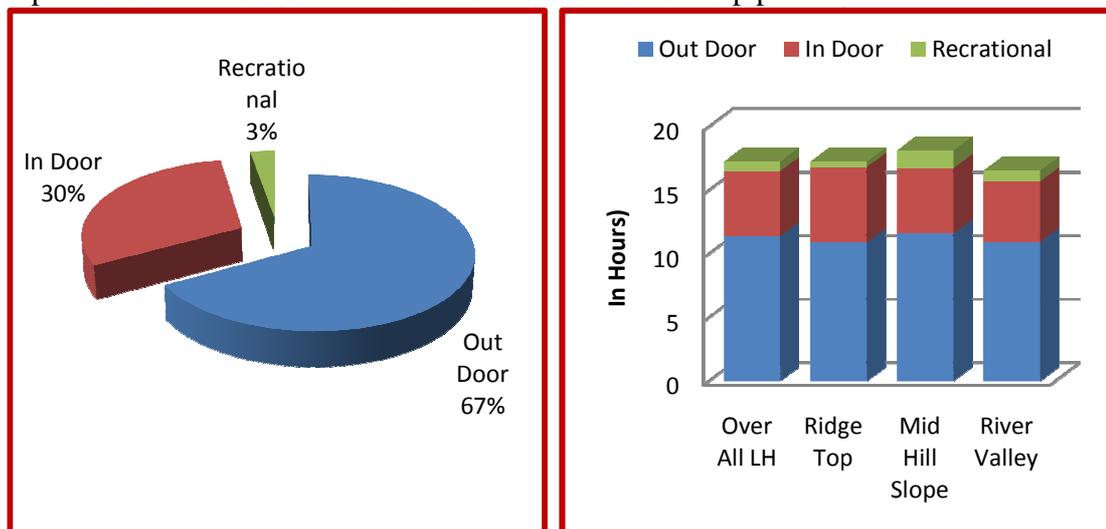


Fig-03, The breakup of total waken up period into In door, Outdoor and Recreational activities, (a).Over all Lesser Himalaya (in %) and (b). Sub zonal variation (in hours and minutes).

The annual (monthly) averages of the breakup of daily waken up period for over all Lesser Himalaya is shown in Fig-03(a) and sub zonal break up with Fig-3(b). Figures shows following important points-

- It shows that largest chunk of the working hours are going for the outdoor activities (67%), while indoor activities consumes 30% of the waken up time and only a meager share of just 3% goes to recreational activities. Means women activities are pre dominantly outdoor activities, which demands more energy and are tiring.
- The sub zonal variation among activities shows synchronization with the type of agricultural activity and the micro climatic conditions of particular sub zone.

The variation in the share of the three group of activities are not confined up to the sub zones but

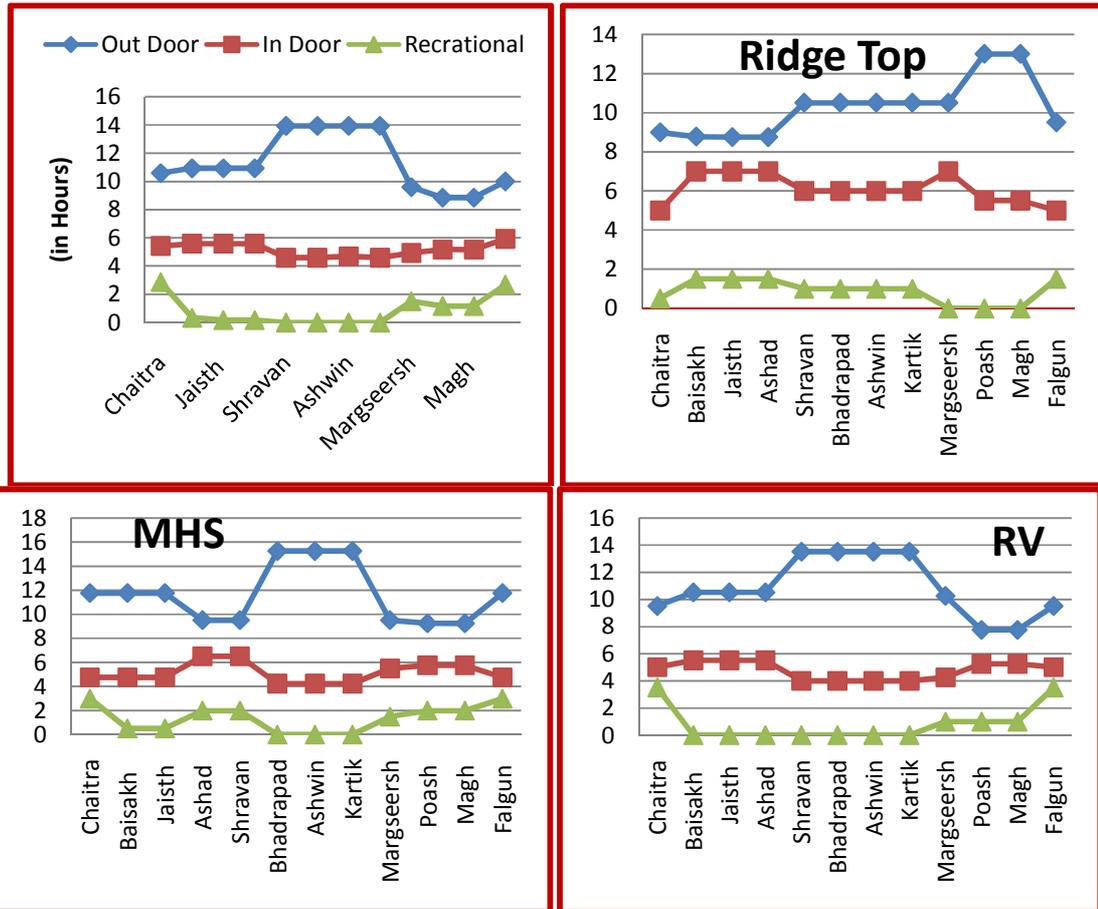


Fig-04. The Annual-monthly scenario of daily variation of In door, Out door and Recreational activities. (a). Over all Lesser Himalaya. (b). Ridge top. (c). Mid Hill Slope (d). River Valley.

Note: The legends are same for all figures.

temporal also. The month wise variation is clearly visible as shown in Fig-04. Following points could be concluded from the data depicted in the graphs-

- Graph 4a (over all Lesser Himalaya) shows that the share of the three group of activities are largely controlled by the Outdoor activities, as it grows the other two shrinks. In other words women manage to devote additional time spared from outdoor activities into first in door activities and lastly to recreational activities.
- The main four months of the summer Kharif crops are of the major period for Outdoor activities. It is particularly longer for River Valley villages because of the transplanting of the paddy crop (irrigated), while for MHS it the forecasted paddy (rain fed), consumes less time. For Ridge top this is the only major crop as winters are very cold so maximum efforts are put for it.
- Winter months of falgun and Chait, besides being on the higher side of the Outdoor activities is also the time of festivals and of group songs and dance (Jhora and Chachari). It increases the share of recreational activities and also increases the overall waken up period. Only in case of Ridge top villages it is not

so, which is because of their isolated character of settlements and very cold temperature.

- A striking variation is observed in the Ridge top villages in case of Outdoor during coldest months of Push and Magh. It is not because of any agriculture activity but to get fodder and fuel. Due to heavy frost and occasional snow fall getting of the green fodder is difficult and this the time to collect the fuel wood specially broken by the snowfall. Ridge top villages needs additional fuel wood to keep their houses warm.

3.iv). Outdoor activities and their overall and month wise breakup:

The outdoor activities are the major component of women’s work schedule and it shows an interesting variation as per the seasons. They are also the labor intensive work and consumes the

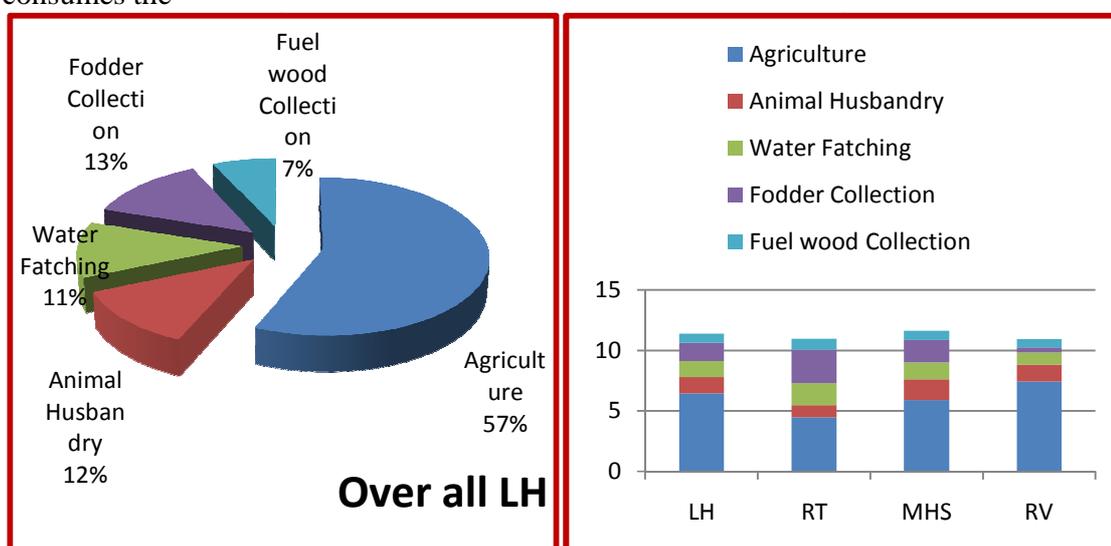


Fig-05: The breakup of daily time devoted on Outdoor activities into different sub activities, (a) At Overall Lesser Himalaya (b). At overall and sub zones level.

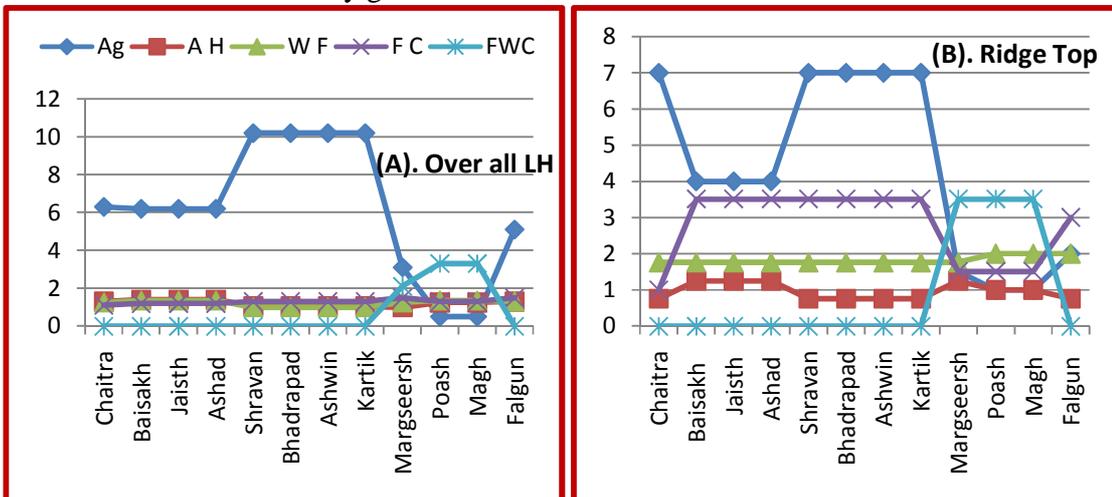
largest chunk of their daily calories consumption (Pandey P.N. 1996) The outdoor activities are categorized under five categories- agriculture, animal husbandry, water fetching, fodder collection and fuel wood collection. Here agriculture is concerned with the crop production and field activities; though fodder collection is part of animal husbandry, yet keeping in view its importance it is kept in a separate category.

To know the clearer picture of the outdoor activities-their breakup with special reference to the monthly average variation the data was plot in graph. Fig-06 gives a month wise annual scenario of the components of outdoor activities, which raise some salient points which are as follows-

- In case of OLH Agriculture (crop cultivation) shows the largest variation among all the components, ranging from 50 minutes to 10 hours and twenty minutes per day. This variation shows even more striking variations among altitudinal zones- RT follows almost same pattern except one additional high during Chaitra, which is due to the preparation for summer crop during Chaitra after a long dormant winter period. MHS shows two distinct tops corresponding to the two crops-

Summer (12.30 hrs) and winter(7.00hrs) with a one month dip to nil. RV villages also depict the same trend except it does not show sharp decline during rainy season month of Asad & Sawan. This variation is due to the summer crop type, RT do to go for paddy rather they go for pulses and millets, MHS goes for paddy but of forecasting method while RV villages goes for paddy crop with transplantation method and makes the women busy throughout the cropping period.

- The three months of winters are like lean period for cultivation, normally the fields are left fallow in case of RT and MHS or the winter crop needs least to almost nil care.
- The animal husbandry (except fodder collection) is more or less a steady activity showing not much variation except during winters and during acute dry month of summer when fodder is difficult to get and animals are set free to the fallow fields. Monsoon season is full of fodder and not much attention is required.
- Fodder collection is one of the activity shows maximum fluctuation (both diurnal and intra zonal) and so kept separately (from animal husbandry). Normally it is considered a seasonal activity to cut, sundry and pile up into typical pyramid shaped heap of dry grass over the wooden plate form with support of a wooden pole (Luta). In case of RT this is interesting because of two reasons- longer winter with snow fall and heavy frosting leading to zero fodder in surrounding area, second during other time of the year also these areas are surrounded by Oak forest and have to go down to pine forest area for the fodder. In case of MHS and RV it follows the finishing the field activities till Kartik or Margsheersh and continues till the dry grass are stored.



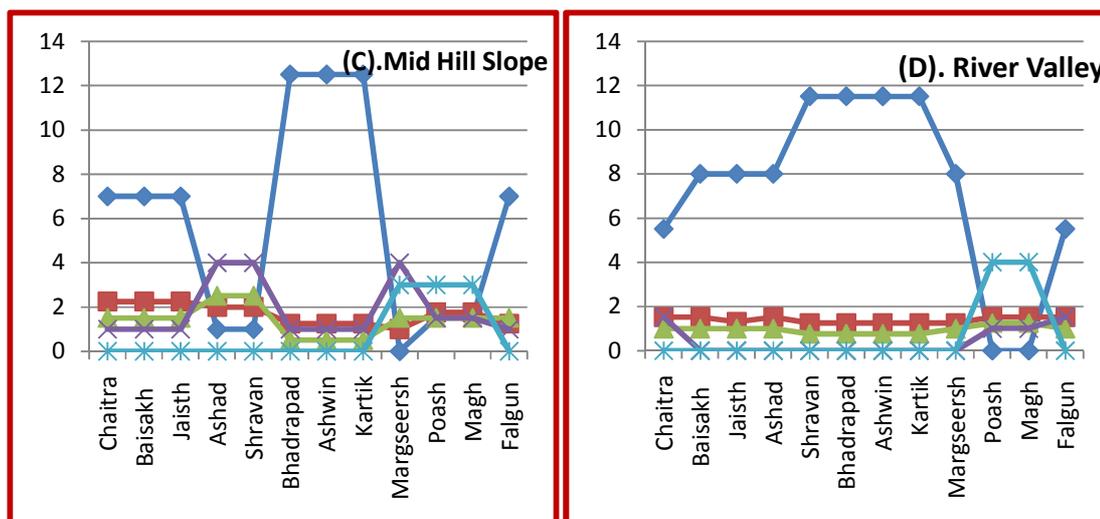


Fig-06. Month wise disposal of daily time on outdoor activities under different component, (A).Over all LH. (B).Ridge Top Villages. (C). Mid Hill Slope Villages and (D). River Valley Villages.

- Fuel wood collection is an exclusive seasonal activity confined to the winter months, an outcome of relive from agriculture activity. Depending upon the clouser of the field activity and fodder collection, it ranges from the month of Kartik to Falgun. Women goes for long walk (up to ten Km and more) to the forests (own villages and/or far villages/ civil forests) to collect branches of trees and are dried up and piled at courtyard for the annual use.

The scenario of outdoor activities and their month wise variation shows that the working hours are largely controlled by the agricultural activities. Even when there is a lean period they are engaged in the seasonal activity like collection and storing of fuel wood and fodder for the use in off seasons. It is a glaring fact that on average women in LH are over occupied for the outdoor activities and largely responsible for their drudgery. The situation is particularly difficult for the women of MHS villages; besides their larger time span for the work their terrain is even more difficult than the RV villages.

3.v. Month wise distribution of indoor activities: Though the responsibilities concerned with the indoor activities are almost same round the year yet it shows some variation from the overall average. Fig-07 shows that for OLH, the monthly average graph of indoor activities meanders

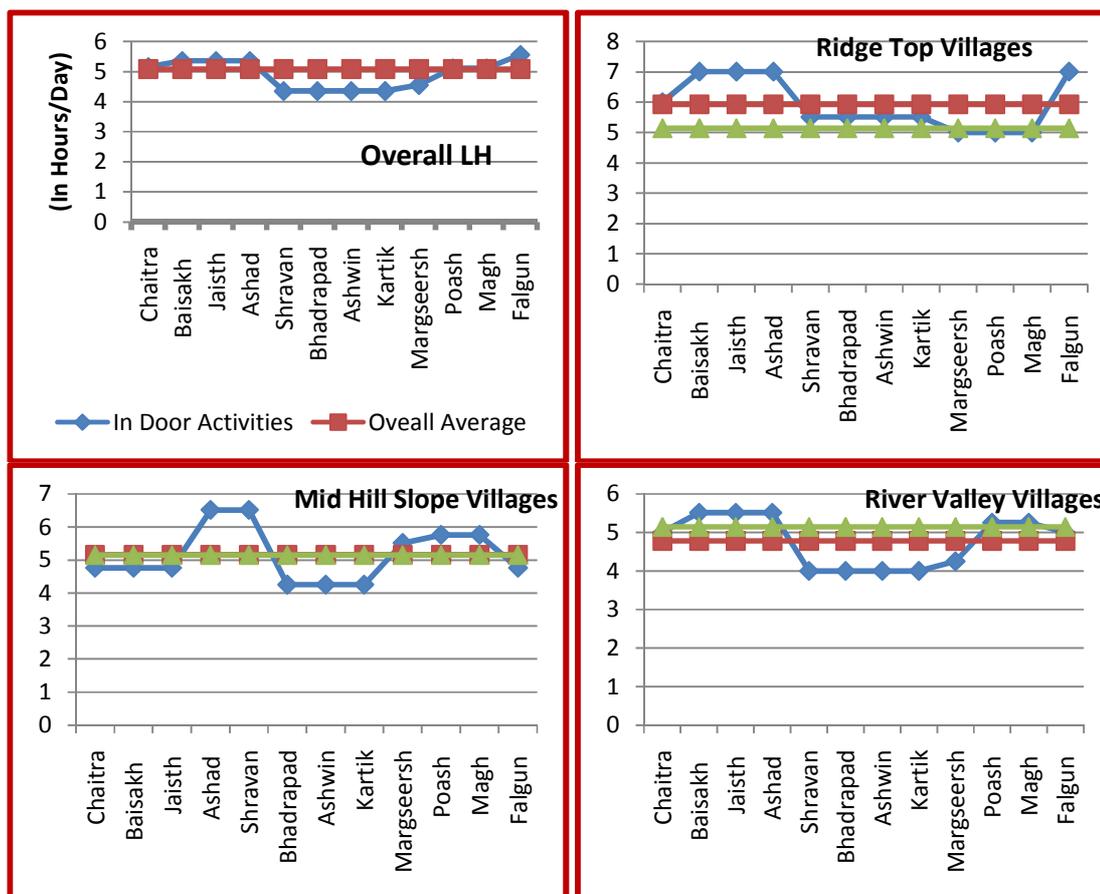


Fig-07: Month wise daily time engaged of rural women in indoor activities. (A). Overall Lesser Himalayan Villages (B). Mid Hill Slope Villages (C). River Valley Villages.

around the line showing the annual average of LH. This tendency is almost similar for all altitudinal zones. The salient outcome of these chart are as follows-

- In case of Overall LH the four month of monsoon from Sawan to Kartik the indoor activities are below the overall average, which is improving further month and remaining higher than average during rest of the year. It shows a reverse synchronization with the outdoor activities. The Kharif cropping season consumes the major share of the total waken up period and press to compromise with the indoor activities. FGDs and Interviews of resource persons highlighted that this is the time when family children, especially girls share much of the responsibilities of their mothers and other women of the family who are already suffering badly with the heavy workload.
- Another interesting aspect is the fluctuation from the annual average of their respective zones, which shows a continuous variation in time devoted. Though the activities are somewhat mandatory on daily basis yet they are compromised for outdoor activities especially the agriculture.
- RT villages are unique in this regard as the time devoted for indoor activities is less than the overall LH, even during winter season. Only here the zonal average of outdoor activities is less than the overall average of LH. It shows that here

besides agriculture, other outdoor activities like collection of fuel and fodder are also pressing down the indoor activities.

- Here also important that during the winter lean period from Baisakh to Ashad the indoor activities touch the highest mark of 7 hours/day, because of the least outdoor activity including agriculture and cold weather conditions.

3.vi. Month wise distribution of Recreational Activity:

Recreational activities are the smallest portion of the daily time budget yet are the most crucial for the drudgery of women. During these activities they get physical rest, amusement and get emotional recharge. This is the part of their daily activity which is best for their personal health and emotional strength (Pandey P.N 1996). Unfortunately it covers a very short time yet has certain interesting variations. Fig-08 shows following vital points-

- Recreational activities range from 0 to 2hrs 40 minutes/day with an annual average of 44m/ day.
- They are nicely reversed-synchronized with annual ‘waken up hours’, and waken up hours follows the annual agriculture cycle.
- During main agriculture season the recreational activities are nil, reflects that the pressure of outdoor activities pressurizes the indoor activities (Fig-07) but do complete compromise with recreational activities.

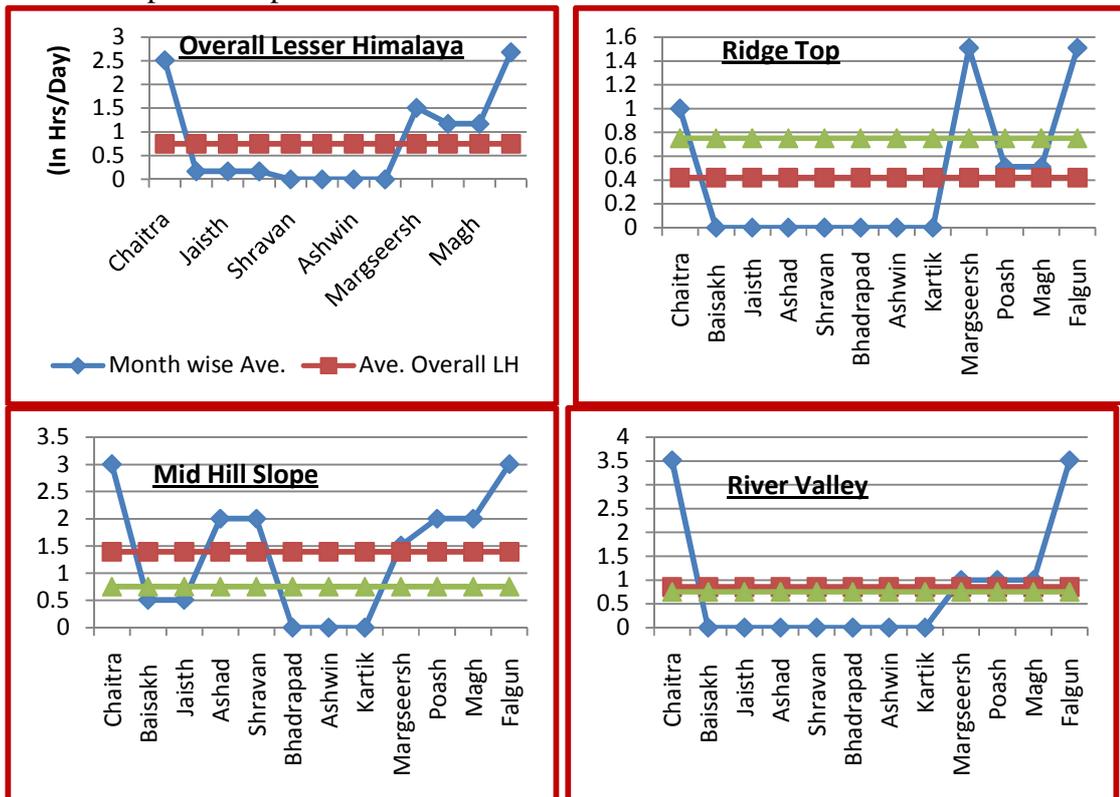


Fig-8: Month wise daily recreational activity of rural women (A) Overall Lesser Himalaya. (B) Ridge Top Villages. (C). Mid Hill Slope Villages. (D) River Valley Villages.

- Months of Falgun-Chait-Baisakh, shows high time under recreational activities this is due to the Hindu festival of Holi and Nayratri. When folk songs and dance are common and much time is devoted to religious activities. In case of MHS in the month of Posh the tradition of folk cultural event Ramleela is conducted and leads to mass participation of rural mass.
- Here it's worth mentioning that though the MHS is falling under the highest waken up period and outdoor activity zone yet they have the highest time devoted for the recreational activity, specially the community based, like Jhoda and Ramleela etc, which shows their cultural richness and community action, while just reverse to this the small, scattered and isolated settlements of RT villages fail to enjoy the free time they have.

4. Impact of Environment on work profile of rural women: Present study of the Lesser Himalaya- the main peopled and cultural core of the Kumaon, brings out the some attention-grabbing outcomes. Normally in all earlier studies the intra-zonal variations were ignored, but this study deals with the spatio-altitudinal variation and depicts the glairing impact of the altitudinal zones on the women work profile. Study shows that the three zones bears three different environments, having different impact and controls on the woman activity and shows significant monthly variations on them. During study it was observed that the River Valley villages are comparatively prosperous, having better resource base but engage women for round the year in hard slog. The satisfaction is that they get benefits of their hard work. Ridge Top village are though rich in natural resources but their isolated smaller settlements, colder climate and comparatively difficult terrain confine their benefits. Mid Hill Slope Villages, which represent the actual Lesser Himalaya, actually suffering with the sever resource crisis. Here environmental deterioration is quite high and perceptible in terms of soil erosion, deforestation, depletion of water resources, crises of fodder and fuel wood continuously diminution of crop production etc. Though male dominated outmigration is a common problem in entire Lesser Himalaya but it is particularly alarming in the Mid Hill Slope villages. All these deterioration of production and depilation of resources could be nicely reflected on the work profile of rural women, particularly their high share of outdoor activities and drastically shrinking recreational activity.

5. Conclusion: Being the largest and most populated belt of Kumaon Himalaya the entire LH was divided into three altitudinal zones, representing three distinct environments. In the villages of Lesser Himalaya of Kumaon, women are having a very long waken up hours and much of it is devoted for the tough outdoor activities. The wake up hours shows a seasonal fluctuation which is very much follows the cycle of agriculture activity, in case of RT villages the other activities like fuel and fodder collection were other additional factors. During lean period of fields the time is devoted for other outdoor activities like collection and pilling up of the fodder and fuel wood from forests, for the rest period of the year. Though Indoor activities are mandatory, yet they were compromised during the months of high pressure of agricultural activities. This was particularly high in MHS villages and work load was often passed on to the girls of the family. The recreational activities, which is the best time for women and must for their better health, gets least to nil share in their time budget. But it was also observed that the

besides having a very high waken up period and high share in the outdoor activities , the women in the MHS manage to participate in the community based religious and cultural activities. The study concludes that the present economic setup leads for a very high drudgery for rural women in Lesser Himalaya and it strongly demands for modification in the ongoing rural economic system. Rural setup, particularly agriculture has to be more profitable and less work intensive for the survival of rural system in rural Shiwaliks of Kumaon Himalaya; and so there should be a strategy to fight out the situations created by the changing environment. Particularly in the MHS villages the restoration of the natural resources are very much desired.

6. References

- Agrawal, B. (1988) Nither sustainable nor Sustainability: Agricultural Strategies, Ecological degradation and Indian Women in Poverty in structures of Patriarchy. Kali for women. New Delhi.
- Agrawal C.M. (Ed) 1996- Man culture and society in the Kumaon Himalaya, ABD, Almora. India.
- Dixon, P.B. (1982). Women in Agriculture: Counting the labour force in developing countries. Population and Development review. Vol 8. No 3, PP. 539-566.
- Dube S.C. (1990). Tradition and Development. Vikas Publishing House Pvt. Ltd. New Delhi.
- FAO IFPRI (2014). Gender in Agriculture, closing the knowledge gap. Food and Agriculture Orgination. Rome.
- FAO (2014). Women's resilience to food price volatility: A policy response. Food and Agriculture Orgination. Rome.
- FAO (2016). Gender Mainstreaming as a key strategy for building resilient livelihoods. Food and Agriculture Orgination. Rome. www.fao.org/gender/en/ (Data retrived-18.3.2017)
- FAO (2016a). Scaling-up gender-responsive rural development interventions. Food and Agriculture Orgination. Rome. Bulletin no. 15626E/1/05.16
- FAO (2016c). Migration, agriculture and rural development. Food and Agriculture Orgination. Rome. Bulletin no. 16064E/1/09.16
- Gulati, L. (1993). In the Absence of their men. Sage Publications, New Delhi.
- Joshi, N.C. (1995). "Occupational Transition in Rural Kumaon" in Ed. Joshi, M.P. et al. "Uttaranchal Himalaya" Sri Almora Book Depote, Almora.
- Pandey, D.C. (1996). "Hill Agriculture: Issues in incompatibility and improvement". Ed. Nautiyal R. and Nautiyal, A. Gyanoday Prakashan, Nainital.
- Pande, G.C.(1998). Role and Status of Women in Kumaon. In Valdiya, K.S. (Ed.) Kumaon Land and People, Gyanodaya Prakashan, Nainital, India.
- Pandey, P.N. (1996): The Drudgery of Hill Women, Indus Press. Delhi,
- Pandey, R.K. and Singh, A.K. (1994). " Women, Fuel and Forest: The experience of Central Himalaya. India is the Indian Girls (Eds) Dhoundiyal, Dhoundiyal and Shukla PP. 303-307.
- Shiva, V. (1988). Staying Alive Kali for women New Delhi.
- Valdiya, K.S. (1987). Environment Geology: Indian Contentet, Tata McGraw Hill, New Delhi.
- Valdiya, K.S. Ed (1988). Kumaon Land and People. Gyanoday Prakashan, Nainital.

- Valdiya, K.S. Ed (1988). Kumaon Land and People. Gyanoday Prakashan, Nainital.
 Valdiya, K.S. (1988). Geology and Natural Environment of Nainital Hills of Kumaon Himalaya. Gyanodaya Praksdhan Nainital.
 Valdiya, K.S. and Bartarya, S.K. (1991). “ hydrogeological Studies of Springs in the catchment of the Gaula River, Kumaon Lesser Himalaya, India”. Mountain Research and Development. Vol 11, PP 239-258.

Appendix:

Appendix -01: The Months in Hindu (Vikram Samvatsar) Calendar and their corresponding Dates in Gregorian calendar in the Year 2009-10 and 2017-2018.

Months in Hindu calendar ((Vikram Samvat)	Largely Matching Months in Gregorian calendar	Matching dates of month in Gregorian Calendar	
		Year 2009-2010	2017-2018
CHAITRA	March-April	12 March - 9 April	13 March-11April
BAISAKH	April-May	10 April - 9 May	12April- 10 May
JAISTH	May-June	10 May - 7 June	11May-9June
ASHAD	June July	8 June – 6 July	10June-9July
SHRAVAN	July-August	7 July – 5 August	10July-7August
BHADRAPAD	August-September	6 August – 4 September	8august-6Sept
ASHWIN	September-October	5 September – 4 October	7 Sept-5October
KARTIK	October-November	5 October – 2 November	6Oct-4Novemb
MARGSHEERSH	Nov-December	3 November– 2 December	5Nov-3December
POSH	December-January	3December– 31 December	4 Decemb- 2 January
MAGH	January-February	1 January – 30 January	3 January- 31January
FALGUN	February-March	31 January – 28 February	1 February- 1 March

Source: Rupesh Panchang (2009-10 & 2017-18) Rupesh Thakur Prashad Prakashan, Kachuri Gali, Varanasi (U.P.) India

