

Regional Environment and Diurnal Function Profile of Rural Women: A Study of Shivalik Agro-Ecological Zone of Kumaon Himalaya

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Abstract

Environment controls agriculture, and agriculture controls the functional profile of a farmer. Present study deals with the functional profile of the rural women-the de facto farmer in Shivalik 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 of data. Total waken up hours were divided into three categories-indoor, out door and recreational activities and month wise division of the work profile was plotted under these three categories. The monthly deviations of functional profile were observed in each category and possible causes were observed. The annual average of the diurnal waken up period was calculated 16 hours and 30 minutes, out of which 62.75%, 33.75% and 3.55% goes for outdoor, indoor and recreational activities. Month wise large fluctuations were observed in outdoor and recreational activities. Entire functional profile, particularly outdoor activity is controlled and regulated by the agriculture activities. An outdoor activity ranges from 15 hours 30 minutes to 18 hours per day with two sharp plateau tops in the graph. First, at the time of the harvesting of winter (Ravi) crop during Chait-Baisakh, accompanying with festivals, leads for the highest average of 18 hrs/day, while second is during the harvesting of monsoon crop during Asauj-Kartik. Out of the annual average of 10 hours and 18 minutes per day, 41.75% time goes for crop cultivation and 26.69% for fodder collection. Crop cultivation dips down during winters when fields are fallow and is supplemented by the seasonal activities like fodder and fuel wood collection from forest. Recreational activity which is quite low of only 35minutes per day, reversely oscillates with the outdoor activities specially crop cultivation. The functional profile shows that the rural women in Shivalik 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. In place of quantity a quality livestock is needed; and modern sustainable fuel sources are needed, to reduce the drudgery of rural women and enhancing the rural economy.

KEYWORDS: functional profile, indoor activity, outdoor activity, recreational activity, rural women Shivalik,

Introduction

Since ages, women played a vital role in shaping of the family and the society. Her dedicated hard labor towards nation building in general and family in particular often gone unnoticed.

The developing country like India has not only less developed rural 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)

With the deterioration in agriculture, forest and water resources, women are experiencing very hard life. There are various covert and overt problems generated by the deterioration in environmental condition which are further hampering the life of women in Kumaon. Women usually work longer hour and more than their normal capacity and daughters are often taken out of school to render help to their overburdened mother (Gulati L 1993).

The major question is 'what to be done' for the upliftment of women, and the solution starts with to know 'what they are doing now' or to know 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 finally come out with a complete picture of work profile of rural women of Kumaon Himalaya is needed. Present paper covers the first zone-The Shiwalik.

1.i. The Shiwalik: also known as Sub Himalayan Belt or the Foothills of Himalayas is the southernmost belt of Kumaon hills in Central Himalaya. Geologically it is the youngest and is of lowest altitude among all Himalayan longitudinal belts. As a long chain of narrow and low hills, stretching in NW-SE direction, lying almost parallel to the major ranges of Lesser Himalayas, forms the outer range of the Himalayan system (Singh-1971). The foothill belt of Kumaon is built of Siwalik strata of late tertiary to Quaternary ages; Siwalik has been separated from the main Himalayan ranges by the main boundary thrust (MBT). The Siwalik ranges have a remarkable even crest between 750-1200m, and are profusely forested on northern slopes. On southern slopes they have steep scarps while on the north they descend gently to flat-floored structural valleys called 'dune'. The transverse rivers such as Kosi, Dabka, Baur, Nihal, Bhakhra, Gaula etc. have highly dissected the terrain of the Siwalik belt (Jalal-1988). Shiwaliks was characterized as an area of humid tropical climate-vegetation zone with predominantly

alluvial soil (Kausic S.D 1962). Villages are surrounded with thick moist deciduous tropical forests and except Dunes fields are stretched to the entire slope of the hills; continuity is frequently dissected by the streams, patches of thick forests and steep scarps; villages are normally small, following scattered type settlement. Mixed agriculture with partial use of machines in Dunes and subsistence agriculture at hill slopes are common. Crops like wheat, paddy, maize, millets and pulses are common. Mixed type agriculture and mixed cropping system is prevalent.

1.ii. Working Pattern and General Characteristics of Indoor, Outdoor and Recreational Activities: The women of rural Shiwaliks have to lead a tough life due to the geo-physical conditions of the region. They are the backbone of the village society and de-facto head of the families. Their activities range from kitchen to fields and from rituals to social activities. All the activities performed by the women could be divided into three groups, 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. Compared to outdoor work, this work is less burdensome in terms of physical stress yet it absorbs a substantial portion of daily time.

Recreational Type Activities: The residue of the daily routine work is reserved for performing 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 "Johora". Listening radio and watching TV is also present day popular recreational activity. More or less these activities are a good change from their tough routine work. However, round the year women do not get the required time for such activities as they are busy elsewhere in household or non-house hold work.

The most interesting dimension of the women work profile is the annual oscillation; obviously this oscillation is tuned-up with their seasonal activities, largely the agriculture. This oscillation of time is not only confined up to the working hours but also to the share of outdoor, indoor and the recreational activities in daily waken up hours.

The study the 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 objective of present study was to study the daily work profile of rural women, the breakup of the work profile and to know their round the year seasonal (monthly) variation in the environment of the Shiwalik of Kumaon Himalaya.

2. Research Methods

Present study follows the descriptive research design banking upon the empirical data enumerated through the extensive field survey. Both qualitative and quantitative data acquired through the primary and secondary sources. Primary data were collected from 5

purposely selected villages, following the random sampling technique, a total of 125 households were surveyed, using structured schedules. Total five focus group discussions (one in each village) were conducted and 9 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 sets of months where activities are almost same. Therefore each set of the month represent a set of same work profile. The household survey was conducted ones at each 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 Shivaliks villages was prepared.

2.i. Using Hindi Calendar 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 Hindi calendar for all its agricultural operations and socio-cultural activities; and it deviates distinctly from Gregorian, not just by a fixed days but variation varies annually. Keeping in view it was decided to follow the Hindi 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

Siwalik villages are situated on a lowest altitude among all ecological zones. They are the hottest and moist among all. They are mostly surrounded with dense Sub-Tropical deciduous forests, and for most they are best connected with the cities and service centers located at Bhabar and Tarai. Through culturally they are the essential part of Kumaon hills but economically they are much influenced by the adjoining Bhabar and "Tarai belt of plains. It is also reflected in their agriculture pattern and disposal of daily time in different activities.

Being an intensive field, generating 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 (overall): The waken-up period is that time of a day when a woman in awaken (other than the sleeping hours) and 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 Shiwalik’s rural women comes to 16 hours and 30 minutes; however it ranges from 15 hours 30 minutes to 18 hours. As the figure 01 show that women waken up period is almost 68.40% of the day while 31.25% of their daily time goes for sleeping. Though in comparison

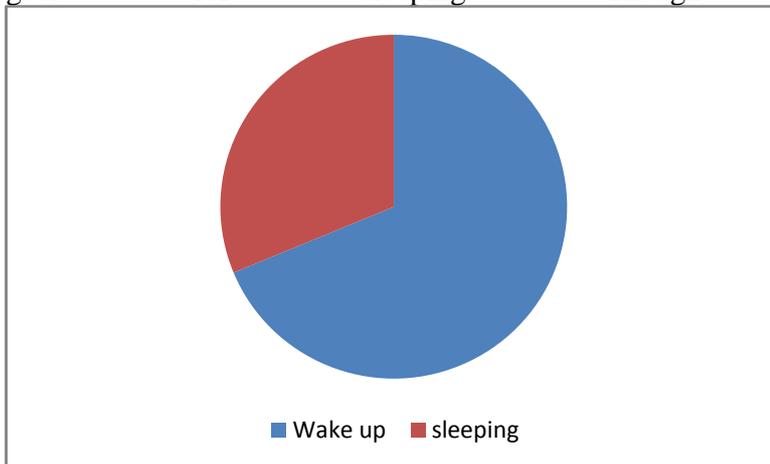


Fig-01: The overall daily wake up and sleeping hours (in %) of the day.

to the other zones of Himalaya it seems to be somewhat better but still it is quite high. After such a rigorous work a women needs a continuous sleep of seven hours a day.

3.ii). Month wise distribution of Daily wakeup period: Though fig-01 shows that the 69% of the daily time disposed for various activities as waken up period yet the annual average is not

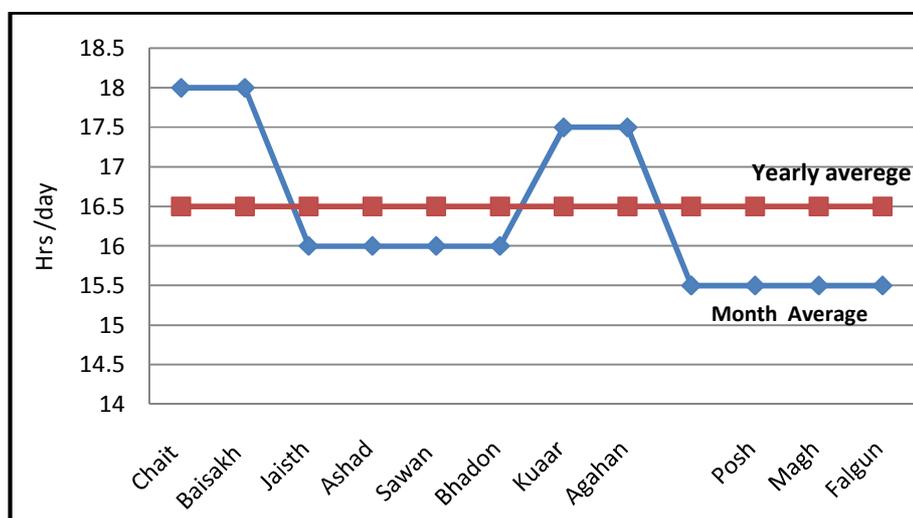


Fig-02 Month wise distribution of daily waken up period of rural women of Shiwaliks.

sufficient enough to clear the scenario. A month wise sleeping and waken up hours were calculated and depicted in Fig-02 which shows sharp deviation from the annual average. Actually not a single month follows the annual average. The monthly average ranges from 15.5 hrs/day to 18 hrs/day.

The longest waken up hours are at two slots, Push-Magh, and Kuar-Agahan. Both the slots are the period when one crop is harvested and fields are prepared for the next crop. Push Magh is the period of harvesting of Ravi crop and preparation for the fields, additionally this is the time of festivals and women devote some time for folk songs and dances; while Kuar-Aghan slot is for the harvesting of Kharif (monsoon) crop. Which makes women busy in the fields for longer periods and so the waken up period is shorter. The winter months from Mangseer to Falgun are the time of long winter nights and low farm activities, which leads for the shorter waken up period.

3.iii. The Annual and Month wise 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 annual average of the breakup of daily waken up period (Fig-03) shows that largest chunk of the working hours are going for the outdoor activities (62.74%), while indoor activities consumes 33.74% of the waken up time and only a meager share of just 3.55% goes to recreational activities. Three-fifth of the total waken up time is consumed by the outdoor activities, and it is the main source of drudgery of Shiwalik rural women. The time devoted for the outdoor activities mainly agriculture also shows the key role of rural women in agricultural activities.

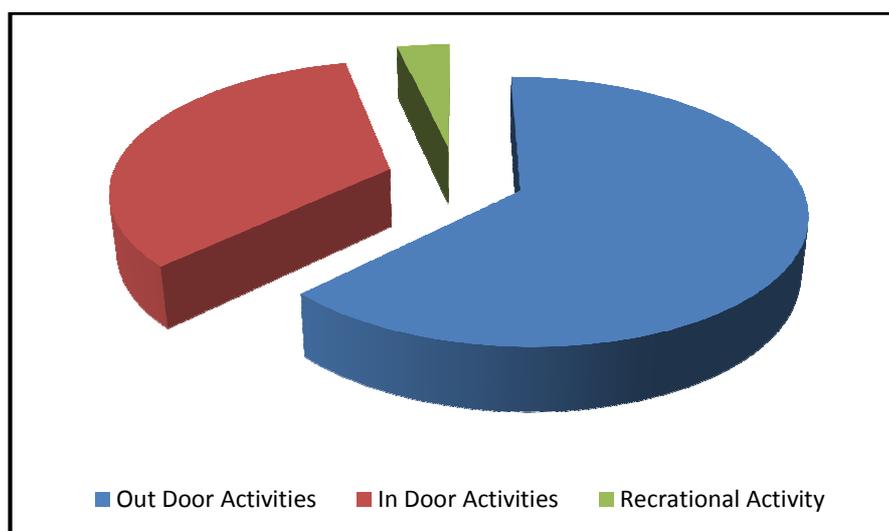


Fig-03: The Annual breakups of daily waken up hours into indoor, out door and recreational activities.

Another dimension of the breakup of waken up hours is its temporal variations. The breakup of the 'indoor-outdoor-recreational' activities are not constant, rather all three variables shows sharp variation in the different sets of the months. These sets are primarily controlled by the agricultural activities. Fig-04 depicts an interesting account of these variations, which could be described under following points-

- Outdoor activities consumed highest time during the two slots (Chait-Baisakh & Kuaar-Agahan) which are the main harvesting period and the preparation of fields for the next season.

- Jaith to Bhadon, the four months spell is for the mild field operation and so the outdoor activities time is at the lowest edge.
- During winters the fields are almost fallow, but this is the time for the collection and drying of fodder (green grass from forest and closed grazing lands) and fuel wood from the village forest. Both demands long walk with heavy head load.
- Indoor activities are consuming almost same time with a little variation, except in the month of Mangsheer, which is the time of some relief from the highest work pressure due to the harvest of the paddy crop, but high time for the local cultural activities.
- Recreational activities are round the year on the lowest edge, but even here also two dips are significant- the Kuar-Agahan and the Chait-Baisakh. Both are the highest time for the agricultural activities and no scope for recreation; yet in the second slot there is some time devoted for it, which is because of the famous holi festival and a tradition of cultural activities during this period. Rest of the year it inversely proportional to the outdoor activities.

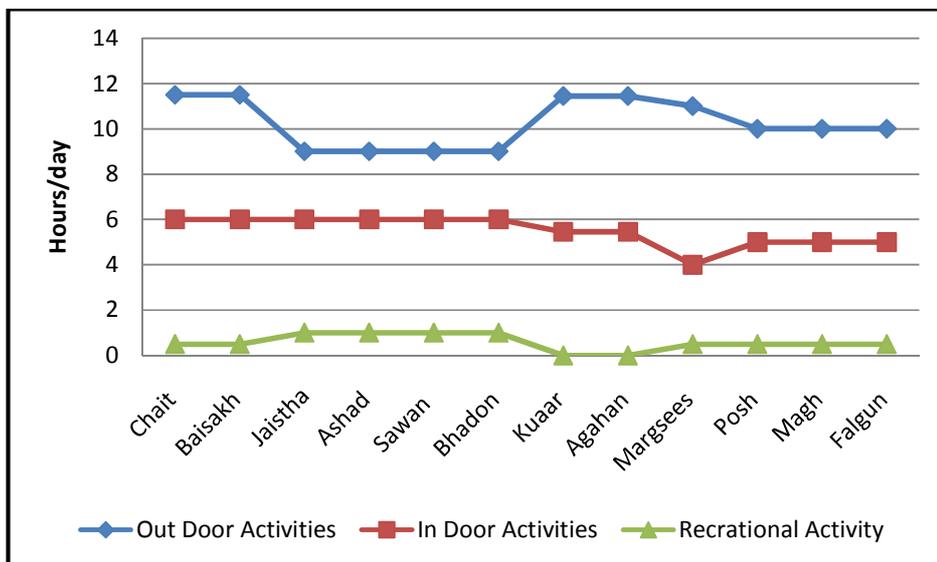


Fig-04. The disposal of net waken up hours into Indoor, Out door and Recreational Activities

The earlier two figures shows the breakup of total waken up ours into the three major components and it shows the lion share of the outdoor activities, yet it is desired to know the components of outdoor actives and details of their share.

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 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.

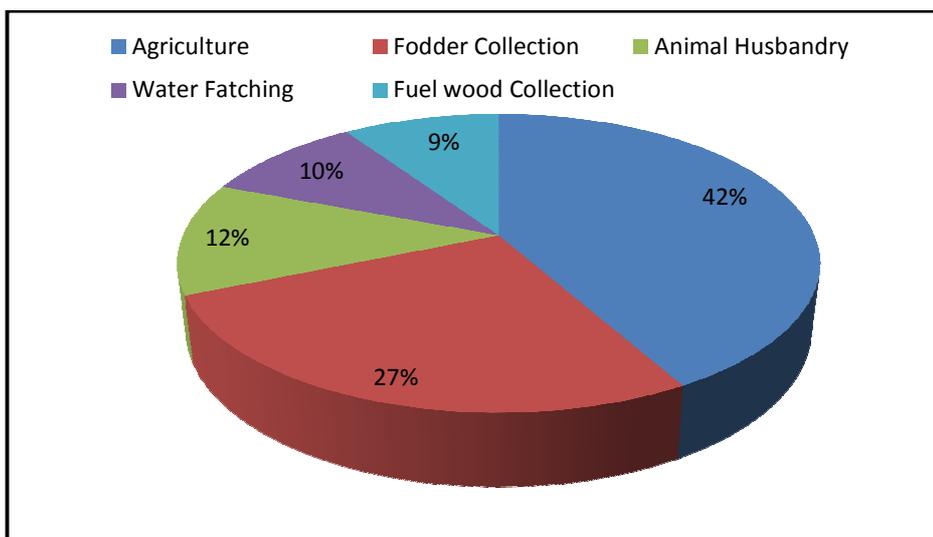


Fig-05: The overall annual breakup of the working hours under outdoor activities.

The overall annual average of rural women shows that in Siwalik village, out of the total waken up period of 16hours and 25 minutes the outdoor activities account for 10 hours and 18 minutes. This outdoor activity contributes for 65.05% of daily working hours and 62.74% of daily waken up period (Fig-04). Going down to it componential breakup Fig-05 shows that largest components are agriculture actives (42%) and fodder collection (27%) followed by animal husbandry (12%). If we put agriculture activities, fodder collection and animal husbandry together as a broad integrated factor of Agriculture, it consumes 81% of the total outdoor activities. This is not only enough to show that agriculture is the prime activity of rural work schedule but also that the contribution of women in agriculture is decisive. Several scholars earlier also put forth the same thought (Joshi N.C. 1995, Pandey P.N. 1996; Pandey G.C 1998). Fuel wood collection and water fetching consumes almost similar time but have different sessional pattern.

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-

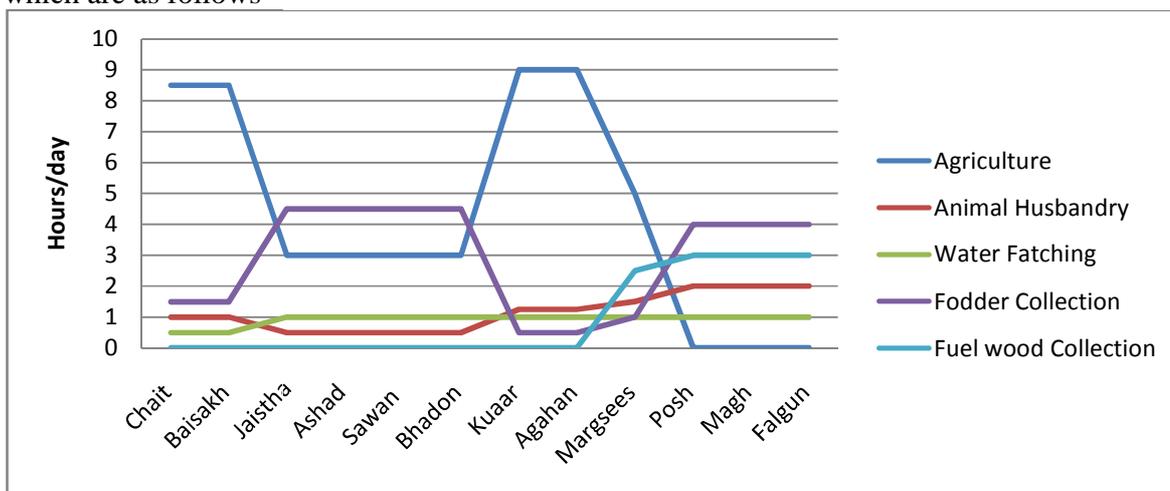


Fig-06: Month wise disposal of daily outdoor activities under different component

- Agriculture (crop cultivation) shows the largest variation among all the components, ranging from 8hours 30 minutes to nil per day.
- The two tops of Chait-Baisakh and Kuaar-Agahan shows the highest per day activity (8.5hours/day) are the outcome of the harvesting season and preparation of field for the next crop.
- The three months of winters are like lean period for cultivation, normally the fields are left fallow or the winter crop needs almost nil care.
- The animal husbandry (except fodder collection) is more or less a steady activity showing not much variation except during winters when fodder is difficult to get and animals are set free to the fallow fields.
- Fodder collection is one of the activity shows maximum fluctuation and so kept separately. Two slots of higher hours were observed, the first is of summer (Jaith-Ashad-Sawan-Bhadon) when there is an acute shortage of fodder and fields are closed due to the standing crops. Women have to walk longer for getting the green fodder for stall animals, specially the mulching cows and buffaloes. The second slot is of winter (posh-Magh-Falgun) when relieved pressure of agriculture is used to collect green fodder from the forests (often longer distances), dried up and piled up on vernicle heaps (luta) with a base of wooden poles.
- Fuel wood collection is an exclusive seasonal activity confined to the winter months, an outcome of relive from agriculture activity. Women goes for long walk 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 sessional activity like collection and storing of fuel wood and fodder for the use in off seasons. It is clear they are always under heavy workload and suffer with drudgery.

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. Fig-07 shows

that from Chait to Bhadon it is constant as 6 hours per day. In Kuaar –Agahan it goes down due

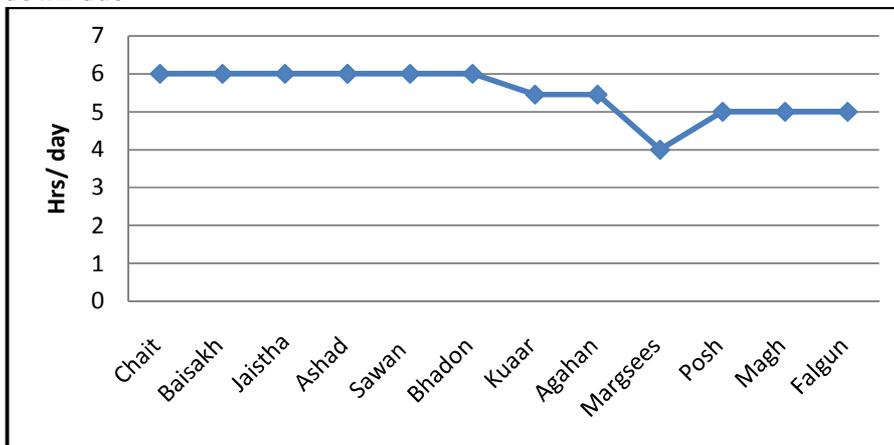


Fig-07: Month wise distribution of the time engaged in indoor activities.

to excessive work load of agricultural activities. Margsees is the month when agriculture work load goes down and it is the time for local religious-cultural activities (Ramleela, etc) till late night. This is the time when much time is devoted for such recreational activities. Rest month are winter month and family stay longer hour at home so family care is shared by other members of the family.

3.v. 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. Fig-08 and 09 shows that-

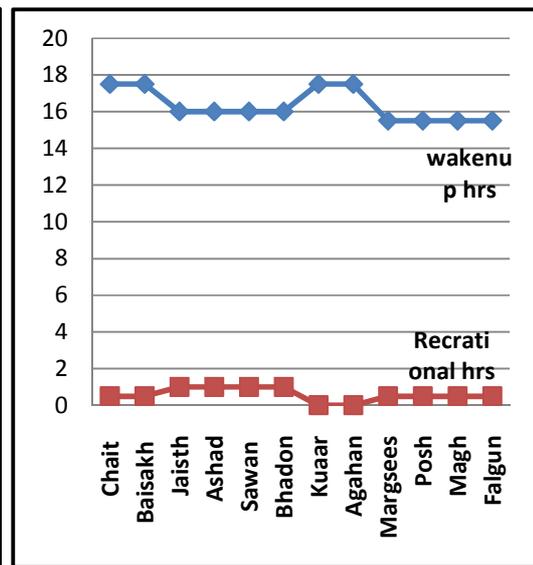
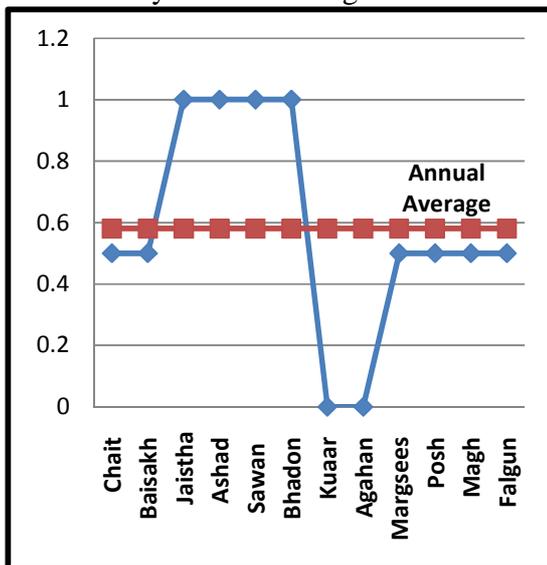


Fig-8: Month wise daily recreational activity and recreational hours

Fig-9 Month wise waken up hours

- Recreational activities range from 0 to 1 hr/day with an annual average of 35m/day.
- They are nicely reversed-synchronized with annual ‘waken up hours’, and waken up hours follows the annual agriculture cycle.
- Only at Chait-Baisakh it deviates, which is due to the local festival of Holi and Nayratri. When folk songs and dance are common and much time is devoted to religious activities.

4. Impact of Environment on work profile of rural women: The problem does not stops there that their working hours are quite high and much of it is devoted to the outdoor activities; but changing natural and human environment puts forth even a bigger challenge for the future of the survival of rural villages. Due to the widely accepted factors of climate change, population growth, increasing pressure on natural resources and their reducing productivity have put continuously increasing workload on women. The delay of monsoon, erratic rainfall, increase in the frequency of natural disasters, increasing frequency of forest fire and drying up of the water sources are some of the major environmental problems in the area. On the other the educated rural girls wants to skip from taking-up the treacherous responsibility of being a rural women.

5. Conclusion: In the villages of Shiwaliks of Kumaon, women are having a longer 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 activities. 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. 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. The high pressure of outdoor activities is being compensated from the recreational activities, which leads for the drudgery of rural women and their poor health. Experts strongly believe that there is a need of change 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.

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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-11 April
BAISAKH	April-May	10 April - 9 May	12 April- 10 May
JAISTH	May-June	10 May - 7 June	11 May-9 June
ASHAD	June July	8 June – 6 July	10 June-9 July
SHRAVAN	July-August	7 July – 5 August	10 July-7 August
BHADRAPAD	August-September	6 August – 4 September	8 August-6 Sept
ASHWIN	September-October	5 September – 4 October	7 Sept-5 October
KARTIK	October-November	5 October – 2 November	6 Oct-4 Novemb
MARGSHEERSH	Nov-December	3 November– 2 December	5 Nov-3 December
POSH	December-January	3 December– 31 December	4 Decemb- 2 January
MAGH	January-February	1 January – 30 January	3 January- 31 January
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

