CHAPTER IV

TRADITIONAL DOMESTIC FUELS AND WOMEN

The literature on the hardships being faced by the women of the Third World in collecting fuelwood is not inconsiderable, but much of it is published in newspaper and popular magazines and cannot be used in a thesis for the purposes of conceptualisation and comparison. One point highlighted in all these writings focuses on the gradual increase in the distance travelled by women to collect fuelwood and the increasing frequency of these movements. The women alone shoulder the entire burden of collecting and transporting fuelwood and in general managing all the elements of the domestic fuel system. Even this is a traditional bind. One can conceive of women’s role in fuel collection activities as an integral part of the general discussion of women and environment and her contribution to the strategies of survival in the engulfing environmental crisis.

Research has been published more on the latter than on the former. One refrain running through the entire discussion suggests that the worst sufferers of the existing environmental situation are the women. These and the related matters have been the focus of research. (1, 2, 3, 4, 5, 6, 7, and 8) It must be stated without any reservation that there is little in the literature on environmental stress that clearly indicates the extent and nature of burden of the operation of fuel system in the Himachal area on women. Again and again it has been highlighted that fuel and food as indeed fodder and water are the concerns of women. It is their job to
collect them, transport them, process them, and use them. The women in the Himalayan villages literally feed their families and the burden is their's alone. It is widely known that fuel and food management are exclusively the work of women in all parts of India. What makes it really torturous in the Himalayan setting is the difficulty in daily movement, cutting and bringing the headload to the house, and storing the same for daily use and specially for the long and harsh winters in the Greater and Trans-Himalayan zones. The rugged terrain, treacherous slopes, high ridges, and unreliable streams further add and enormously to the drudgery of women.

Why do the women in the Himachal region as indeed in the Himalayas in general ( and of course even in the plains ) have to walk over increasing distances to collect fuel ? The straight and simple answer would of course be that the forests and natural woodland and vegetation cover are receding and they are getting more and more depleted within, the cover is getting thinner every day. ( Plate 4.1) The basic chain of actions and effects runs like this : Increase in human and livestock population, mining and quarrying, forest felling, cultivation area, and diverse construction activities have caused extensive deforestation which have led to the longer distance to the fuelwood resources.

It is not generally recognised that women play an equally important role in the collection of dung from wherever the cattle has excreted it and in the collection of agricultural straw and residue of all kinds and then bring all of these fuels as headloads from the fields and footpaths
and forests where the cattle go for grazing. Although the main fuel energy comes from fuelwood livestock residue and agricultural residue also play an impressive role in fulfilling the fuel requirements. If the modernisation of the Himalayan domestic fuel system had made any real progress the women's drudgery level would have been drastically reduced. This has not happened and hence the burden on the women continues. Another aspect of the women's role in the system, in the present circumstances, is the increasingly longer time that the women have to devote to collect fuelwood and hence a distortion of the existing, traditional daily life cycle of women in which fuel-related activities had a definite slot of time at particular periods.

While we understand the hardships of women in coping with environmental crises and in engaging themselves in the imperatives of the fuel-related activities, the hardships can be analysed and to some extent, understood only through operationalising them through the study of some data integral to them. Here it must be noted that it is practically meaningless and perhaps impossible and unrealistic to construct some kind of composite index of the hardships on the basis of which we can compare the different villages located in the altitudinal-ecological zones of the state. We are suggesting that this operationalising can be attempted by answering even tentative some straightforward questions: has the distance walked to the source of fuel increased through the years? is there any perceptible difference in the zones in this distance? what has been the extent of this increase? what is the impact on the daily life cycle, if any,
of such increase, of women? What is the present situation like regarding the distance walked to fuelwood sources and the time spent in collecting fuelwood? What is the seasonal variation in the frequency of the travel? We are not only concerned with the increasing distances to fuelwood sources but also the entire gamut of fuel collection, transportation, cooking, the weight of the bundle the women are carrying to their houses. The hardships are made more backbreaking by the large amount of consumption of fuelwood in every season. The biomass and energy equivalent of the residual fuelwood collected by the women is rather small and hence the quantity needed has to be large. Add to all the fuelwood drudgeries the long hours of cooking with the traditional chullah emitting smoke and the times, the women have to cook. (Plate 4.2) It is suggested that an analysis of these data however limited in quantity, operationalise the hardships.

First it is essential to discuss the details of fuelwood collection and transportation. (Table 4.1) Let us look at the time of collection, that is, the time when women go out and are in the source lands of fuelwood. In the Trans-Himalayan zone the entire village population goes for the whole day to collect fuelwood and bushes for one household. This interesting feature certainly indicates an organisational support within the village community to a single household which would otherwise on its own could not have collected all the fuel that it needs and eventually would starve. This community participation in the collection of fuelwood is unique to the zone for this particular purpose. In the Greater Himalayas the forests are guarded closely and in order to escape the eyes of the guards people go to the forests either at any time or even before the dawn so that they could
carry the collected fuel as headload to their homes before the sun rises. This is obviously an illegal activity but it certainly is a response to a necessity. By and large in all the villages the women go to the fuelwood collection point around noon or a little before, after finishing their morning cooking and finishing several other domestic chores slated for the morning slot of time. They almost always return by a little after mid-day or by afternoon. The morning cooking and other chores require the females to rise early and actively involve themselves in these activities which consume time and energy. Cooking starts in the morning itself which means that the females start inhaling smoke right from the time. Conjunctive, obstructive lung disease resulting from the inhalation of smoke is rampant in all the zones, households, age groups, and economic classes. Afternoon travel as is done in the village of Banhwin to collect fuelwood could be terribly tiring and exhausting because on any day the temperature is at its maximum at this time and the sky in the hills and mountains being clear the insolation is sharp and hits the face and eyes. (Plate 4.3)

There used to be a time, as the oral history of the villages tells us, when the females had to go only as far as their doorsteps or the village boundary to pick up the fuelwood then needed which because of the presence of the forests literally 'the next-door neighbour' surrounding the village. That time is gone, pretty much gone. Now in the Outer, Lower and Lesser zones the females have to walk for 3 to 4 kilometres one way to the fuel source that entails a total walk of 6 to 8 kilometres, and that has to be covered in a single day. In the Greater Himalayas because of the relatively
Table 4.1

Fuelwood Collection and Transportation

<table>
<thead>
<tr>
<th>Village</th>
<th>Time of collection</th>
<th>Distance travelled (kms.)</th>
<th>Collection time (hrs.)</th>
<th>Average frequency of collection per week</th>
<th>Mode of transportation</th>
<th>Bundles collected per week</th>
<th>Weight per bundle (kg)</th>
<th>Seasonal frequency of collection per week</th>
<th>Persons involved</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Moginand</td>
<td>Around 10 A.M.</td>
<td>3</td>
<td>3</td>
<td>4</td>
<td>FHL+V</td>
<td>10</td>
<td>30</td>
<td>6, 6, 2, 2</td>
<td>1 F + 0</td>
</tr>
<tr>
<td>2. Mahsa Tibba</td>
<td>Before Noon</td>
<td>3</td>
<td>4</td>
<td>2</td>
<td>FHL</td>
<td>4</td>
<td>20</td>
<td>4, 2, 1, 1</td>
<td>1 F + 0</td>
</tr>
<tr>
<td>3. Gopalpur</td>
<td>10-12 A.M.</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>FHL+MHL+CHL</td>
<td>12</td>
<td>25</td>
<td>7, 5, 2, 2</td>
<td>2-3 F+0</td>
</tr>
<tr>
<td>4. Banhwin</td>
<td>Afternoon</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>FHL+CHL</td>
<td>9</td>
<td>25</td>
<td>6, 4, 1, 1</td>
<td>2-3 F+0</td>
</tr>
<tr>
<td>5. Keoli</td>
<td>10 A.M. Sundernagar</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>FHL+M</td>
<td>16</td>
<td>35</td>
<td>2, 5, 2, 7</td>
<td>1 F + 0</td>
</tr>
<tr>
<td>6. Bael</td>
<td>Before Noon</td>
<td>3</td>
<td>4</td>
<td>3</td>
<td>FHL+MHL</td>
<td>14</td>
<td>35</td>
<td>4, 3, 2, 3</td>
<td>1 F + 0</td>
</tr>
<tr>
<td>7. Batseri</td>
<td>Any time</td>
<td>1</td>
<td>1</td>
<td>4</td>
<td>VCW</td>
<td>19</td>
<td>30</td>
<td>1, 3, 5, 7</td>
<td>1 F + 0</td>
</tr>
<tr>
<td>8. Neul</td>
<td>Early morning</td>
<td>2</td>
<td>2</td>
<td>4</td>
<td>FHL</td>
<td>14</td>
<td>30</td>
<td>2, 3, 4, 7</td>
<td>2-3 F+0</td>
</tr>
<tr>
<td>9. Nako</td>
<td>Whole day</td>
<td>6-7</td>
<td>8-10</td>
<td>2</td>
<td>VPHL</td>
<td>28</td>
<td>9</td>
<td>Nil, 1</td>
<td>VP</td>
</tr>
<tr>
<td>10. Tabo</td>
<td>Whole day</td>
<td>6-7</td>
<td>8-10</td>
<td>2</td>
<td>VPHL</td>
<td>21</td>
<td>8</td>
<td>Nil, 1</td>
<td>VP</td>
</tr>
</tbody>
</table>

Source: Field enquiries. Notes: 1. FHL stands for female headload, V stands for vehicles, MHL for male headload, CHL for children headload, M for mules, VCW for village cooperative work, VPHL for village population headload, VP for village population, W for winter, PrM for pre-monsoon, MS for Monsoon, and PM for post-monsoon.

2. 0 stands for others that includes children, males, and old women. F stands for females.
less accessible high forested slopes external onslaught has been limited and these forests are still around in every sense. The villagers (females) mainly have to walk only up to 1 or at the farthest 2 kilometres one way. In sharp contrast the people (the general rule is however for the entire village population to go) have to go 6 to 7 kilometres one way which means that every one in the village has to walk 6 to 7 kilometres. Considering that the total population of the villages Nako and Tabo is 82 and the community travels as one group for from 6 to 7 kilometres, the total household-distance covered is about 580 kilometres in one single day. These enormous distances being travelled by the females must be the single greatest drudgery for them to suffer and then comes the time spent in collecting the fuel.

Fuel here should mean lopped branches, twigs, cactus, bushes, and scrubs. (Plate 4.4) Any thing that is living or dead in the world of vegetation is a potential fuel and any of these that hands can reach must be cut and brought home to replenish the uncertain store of fuel. One observes that almost 3 to 4 hours spent in collection. Here collection includes both the felling and headloading and then walking back home. The two-way journey time is added to the time of collection. Most often there is no felling at all but just picking up and cutting of the bushes by a simple sickle. In most zones the time spent in the entire process comes to 3 to 4 hours but in the Trans-Himalayas contrary to our expectation the time involved is 8/10 hours. This is simply because it is not one or two females of a single household who has to walk to the fuelwood source but the entire village population that goes to collect for one household. Since the forest cover is very meagre and patchy the groups have to spend long hours.
The accounts of Spiti as a cold desert and other parts of the Trans-Himalayan zone would prompt an imagination of a bleak and barren landscape with no vegetation but rocks. We would have thought that people would be struggling even for a bush for the whole day. (Plate 4.5) As a matter of fact if we consider that 88 households spend 16/20 hours (total), the per household spending of time would come to only 0.20 hours. The Himalayas throw up tricky situations, unexpected facts.

Account of average frequency of collection per week reveals an uneven pattern through the zones. By and large the villages located in the Outer, Lower, Lesser zones but in the erstwhile feudal organised territory and resource the frequency is large simply because the forests have been felled extensively and thinned and certainly have been poorly managed. Even where the forests are located near the villages their total biomass and vegetation cover from within is not compact. As we go up the elevations in the Greater Himalayas the frequency increases, a fact basically related to the protection of the forests more vigorously and rigorously by the forest guards. An increased frequency obviously is necessitated by the small time (1 or 2 hours) available on each journey to the forest and ensures the required amount of fuelwood to be picked up. Overall, however, the frequency is 3 to 4 times per week. This suggests that fuel-related activities have to be given slots of time in both daily life cycle and weekly life cycle.

An interesting question is directed at the mode of transportation in the domestic fuel system. As a matter of fact transportation is not only an integral part of the entire system it causes untold miseries on the women.
Come winter, snow, blizzard or rain women must transport the collected fuel back home as soon as the collection is over to assure the household of its next meal. A look at the relevant column immediately tells us that out of 10 villages in the 7 the females have to carry the fuelwood as headload. When one considers that the females have to transport their headloads within the afternoon, the time of the day that is the hottest, one realises the utter compounding of miseries. In some villages males also carry fuels as headloads. Only in one or two villages are mules, vehicles, or children employed in transporting the fuelwood. Children's engagement in this activity obviously means that they cannot go to school or study at home. Two interesting facts thrown up by this column need to be noted: in the Trans-Himalayan zone the entire village population goes to collect fuelwood for only one household and then brings it back to the home of the household, this is unique to the region; and the role of the village cooperative in the Greater Himalayas which transports the fuelwood to the houses of all the member households. Whether one looks at the time allotment, in the daily or weekly life cycle, to the whole fuelwood system or only at one of its elements, transportation, the miseries of the womenfolk are in every way bitter. The indigenous domestic fuel system is indeed an integral part of the entire complex of domestic chores and modernisation of fuels, if at all it is possible, is the only hope for the women to be relieved of this unending life-long drudgery.

How much fuelwood is collected by the household per week should be the next question. It is not possible to hold back the females when with their headloads walking back to their homes in order to perform weight
measurement on the spot. It was not practicable and none of the females would have agreed. As it is the entire fieldwork was conducted under a cloud of suspicion as the people of the village everywhere at first suspected the investigator as a government official collecting data on the trees felled by them to be used as fuelwood. Hence, instead of adopting the cumbersome and unpractical method of weighing the headloads on the spot I found out the data on the number of bundles of firewood collected per week and brought home and later at each village for sample bundles I weighed the bundles but never while the females were walking home with headloads on. Here again there are wide variations among the villages and no clear pattern can be identified. However, the bundles (per week) collected in the Lesser and Greater Himalayas are as high in number as 16, 14, and 19. In the Trans-Himalayas the number of bundles collected is higher in comparison to other zones because here human and livestock excreta are widely used as fuel. Similarly in the Greater Himalayan zone a larger number of fuelwood bundles are required to heat water and warm the room.

The number of bundles on their own also indicate the availability of fuelwood as the resources must indeed be plentiful. Associated with the number of bundles must be the weight per bundle. More or less the bundles weight about 20 to 35 kilograms per bundle. This is the load that the females have to carry as headloads. Let us now consider a concrete example. In the two Lesser Himalayan villages the women are carrying 16 bundles, each of 35 kilograms per week, which means that they are carrying about 80 kilograms per day. However, when we think of the bundles and of
their weight we must also note that several members of the household are involved in the task. In a situation where the children, young women, men, and old women are involved in the task and even if 8 of a household of 10 are engaged in it, the per person headload works out to be a staggering 10 kilograms per day and if this is multiplied by the distance travelled, 3 to 4 kilometres, the approximate level of drudgery, 10 x 4, 40 kilograms per day. Of course, the rural folk in the Himalayas are used as they are taught to do it from their childhood, to this kind of labour. We also have to note that 3 or 4 kilometres we are talking of are not on dead flat plains but in extremely rugged lands and high and steep slopes on paths as wide as about 100 centimetres and in most areas the line the females walk on become paths. (Plate 4,6) Each bit of the system adds to their miseries.

The seasonal frequency of collection of fuelwood is rather complicated in terms of the data presented. However, certain features can be noted. For all the villages combined the collection frequency during winter and monsoon (per week) are the smallest while the pre-monsoon and post-monsoon frequencies are the highest. During the winter in all the zones except the Outer Himalaya there are varying amounts of snowfall and in the Greater Himalayas and Trans-Himalayas for several months the land is covered with snow and even ice, the latter condition is a treacherous one in every respect. Similarly the heavy rains during the monsoon reduce the frequency by limiting the frequency of movement and the distances as well. Rains on slopes render their extremely treacherous indeed. The slippery ground simply does not permit any movement at all at its worst or only in limited patches at its best. The pre-monsoon and the post-monsoon are the real seasons for
the collection of fuelwood. There is little snow and little rainfall. The ground is relatively dry and reliable for the females to walk on with their heavy headloads. There is an interesting fact about the Trans-Himalayan zone. In this zone the per week frequency is the highest in the post-monsoon seasons. The monsoon effects are practically negligible in this zone because of its rain-shadow location, to the north of the Great Himalayan ranges. During the season of pre-monsoon also the land is free of snow cover and there is little precipitation. But fuel collection is limited as the people are engaged in agricultural activities. However, during post-monsoon in the Trans-Himalayan zone the wind attains the speed of blizzard and, the air being clear and thin, the insolation rays are hard, sharp, and biting. Movement is not easy but it is better than in the condition of continuous snowfall or a land-cover of snow. Everywhere in every zone at least one female member plus several other members are engaged in the task of fuel collection.

Often a question, and a very relevant question, is asked about the fuelwood collection problem as related to deforestation or at least shrinking or receding of the forests. An extensive fieldwork revealed that 9 out of 10 villages reported the shrinking of forests and all but 2 of the 298 households interviewed reported the same status of the forests. The government records, all published, must either be a total lie or at least should be considered with great deal of caution. Now, since there is universal recognition of the shrinking and recession of the forests one would expect that over the years there has been a perceptible increase in the distance walked to the fuelwood sources. (Table 4.2)
Table 4.2
Distance Walked to Fuelwood Sources During Different Years (kilometres)

<table>
<thead>
<tr>
<th>Village</th>
<th>1940</th>
<th>1947</th>
<th>1965</th>
<th>1990</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Moginand</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>2. Mahsa Tibba</td>
<td>0</td>
<td>0.50</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>3. Gopalpur</td>
<td>0</td>
<td>0.25</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>4. Banhwin</td>
<td>0</td>
<td>0.25</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>5. Keoli Sundernagar</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>6. Bael</td>
<td>0</td>
<td>1</td>
<td>2.5</td>
<td>3</td>
</tr>
<tr>
<td>7. Batseri</td>
<td>0</td>
<td>0</td>
<td>0.25</td>
<td>1</td>
</tr>
<tr>
<td>8. Neul</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>9. Nako</td>
<td>6-10</td>
<td>6-10</td>
<td>6-10</td>
<td>6-10</td>
</tr>
<tr>
<td>10. Tabo</td>
<td>6-10</td>
<td>6-10</td>
<td>6-10</td>
<td>6-10</td>
</tr>
</tbody>
</table>

Source: Field enquiries.

Note: 0 stands for a situation in which the forests extend along the village.
We begin with a situation when in 1940, except for the Trans-Himalayan households, every household in every village went to the shamilat (commons) and the boundary of the village to find a sprawling forest and then picked up as much as they wanted. In 1940 there were not many roads within the state or between the state and the adjacent plains, as a consequence there were little exploitation of the forests and felling of the trees by the outside agencies and the forests had a reasonably good spread. Both the levels of urbanisation and industrialisation needing wood as a principal raw material were low and the wood consumption in the plains was small. Even though much of the forest cover was either protected or reserved or restricted, this was so only in the British areas and there too the restrictions were applied rather loosely. Forests everywhere therefore were open to utilisation for fuelwood. In 1940 however, as the condition persists up to the present in the Trans-Himalayan zone the distances were 6 to 10 kilometres, seems formidable in that area but the villages are all located in the valleys along the rivers and on the river terraces and glacio-fluvialite terraces which permit people to move on the lower slopes but the movements are completely terminated during the long winter when the ground is covered with snow for more 7 to 8 months.

At the time of India's attaining Independence in 1947 and before the introduction of five-year development plans and indeed before any radical development could take place the picture of the distance travelled to the forests had changed somewhat but not really dramatically. Leaving aside the Trans-Himalayas where the vegetation situation remained totally
the same in some villages at least the distance increased to 250 to 500 metres. Only in two villages in the Outer and Lesser zone do we find the distance extending upto 1 kilometre.

In 1965 after two five-years plans had been implemented and that means wide ranging developments had taken place what one finds is an increase in the distance over 1940 and 1947. It may be noted that the major developments in the state really occurred after it was created as a separate administrative unit in 1966. At this time the state comprised of both the New and Old territories, representing the British and princely areas. So our time frame is one year prior to the creation of a full-fledged state with all developmental activities in progress. In all the zones there is substantial increase in the distance travelled to collect fuelwood, from 0 to 1 and now to 2 kilometres and even 2.5 kilometres. However, the situation in the Trans-Himalayan zone remained unchanged because the condition was pretty bad even before 1965. It means therefore that the women's drudgery on account of fuelwood began to increase from 1965 onwards. In 1990 one can note major increase in distance to fuelwood sources. At most places it stretched out to 3 kilometres. In every village it increased on the 1965 values. Only in the Trans-Himalayan zone the distance remained constant.

After a time-series detail it will be relevant to compare the existing pattern of movement of females of different age groups. (Table 4.3) Regardless of the zones the female children of less than 10 years age are walking the smallest distance, only upto 250 to 500 metres. This is as one would expect. In most villages these children are walking to the fields,
<table>
<thead>
<tr>
<th>Village</th>
<th>Children less than 10 age</th>
<th>Females 11-35 age</th>
<th>Females 50-50 age</th>
<th>Old females more than 50 age</th>
<th>Distance to Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Maginad</td>
<td>Forest</td>
<td>F</td>
<td>0.25</td>
<td>F</td>
<td>2.5</td>
</tr>
<tr>
<td>2. Mahsa Tibba</td>
<td>Forest</td>
<td>F</td>
<td>0.25</td>
<td>F</td>
<td>2.5</td>
</tr>
<tr>
<td>3. Gopalpur</td>
<td>Forest</td>
<td>F</td>
<td>0.25</td>
<td>F</td>
<td>2.5</td>
</tr>
<tr>
<td>4. Bhainpur</td>
<td>Forest</td>
<td>F</td>
<td>0.25</td>
<td>F</td>
<td>2.5</td>
</tr>
<tr>
<td>5. Koli Sundemagar</td>
<td>Forest</td>
<td>F</td>
<td>0.25</td>
<td>F</td>
<td>2.5</td>
</tr>
<tr>
<td>6. Bael</td>
<td>Forest</td>
<td>F</td>
<td>0.50</td>
<td>S</td>
<td>3.5</td>
</tr>
<tr>
<td>7. Batseri</td>
<td>S+GL</td>
<td>F</td>
<td>0.25</td>
<td>F</td>
<td>2.5</td>
</tr>
<tr>
<td>8. Nale</td>
<td>Forest</td>
<td>S</td>
<td>0.50</td>
<td>S</td>
<td>3.5</td>
</tr>
<tr>
<td>9. Nake</td>
<td>Forest</td>
<td>S</td>
<td>0.50</td>
<td>S</td>
<td>3.5</td>
</tr>
<tr>
<td>10. Tabo</td>
<td>Forest</td>
<td>S</td>
<td>0.50</td>
<td>S</td>
<td>3.5</td>
</tr>
</tbody>
</table>

Note: F stands for fields, S for Shamilat, 0 for ponds and GL for grasslands.
only in some villages they are going to shamilat, orchards, and grazinglands, all of which kinds of land are located within the villages or adjoining to it. The females of the age-group 11 to 35 years, of course, are walking to greater distances, 1.5 to 3.5 kilometres but in the Trans-Himalayan zone they are already walking up to 8 to 10 kilometres. One must note that quite a few of this age-group are those who should be going to schools but because of the lack of adequate number of hands even they have to suffer the drudgery. Again, this needs to be emphasised that the fuelwood activity, collection and transportation, is entirely a family activity. Hardly ever in a household agricultural labourers would be shifted to perform the fuel-related activities. Here also most of the households in practically all the villages go to the forest, in the Trans-Himalayan zone they go to the shamilat but in some villages in the Greater and Lesser Himalayas the females go to the Satluj river to 'capture' the floating logs. A lot of trees felled in the forests by the government contractors at higher elevations within or beyond the Greater Himalayas and then floated in Satluj and Beas to be intercepted at the points where timber depots are located. This is a very risky method of collecting wood and transportation do have indeed many severe problems. It can be transported as such as headload and if being transported in the vehicle has a fair apprehension of being intercepted by the forest guard or even the local police.

The females of the age-group 36 - 50 are entirely in the working age group. Some of this group at least are advanced in age and would begin to feel the burden a little more than the other members of the group. In
this age-group females are walking up to impressively increased distances to collect fuelwood. Now, in some villages they are walking up to 2.5 kilometres in the zones outside of the Trans-Himalayan, where of course they are walking 6 to 8 kilometres. One cannot discern any pattern, the situation varies from one village to another but, on the whole, the distances are smaller than those being walked by the previous, younger age-group females. In the villages where the females have to walk only short distances they generally go to the orchards or shamilats. In order to reach the forests, however they must walk many times more distant.

The old age distance and travel patterns are pretty much the same as that of the age-group less than 10 years. Many of them are going to orchards, shamilats, and rivers as well. When they were of 10 years age in 1950 or around that they were walking just about that distance as they are doing now. There is some reduction in the distance for this age-group.

A look at the table and a careful reading of its data raises some intriguing points. At the present time, in 1990-1991, different age-group females are travelling different distances. How do we explain it? If the female children are walking only 250 to 500 metres to a forest to collect fuelwood how is it that younger age-group females have to travel much longer distances? Forests are found everywhere around the villages. But the forests near the villages have been exploited for a long time and have been drastically thinned out, with mainly twigs and branches which are dried or rather fallen on the ground on their own. This suggests that the girls and children are bringing poor quality of fuelwood and only in small quantity. The family's requirements are much too larger to be fulfilled by
the headloads by the females of this group. Moreover, they are bringing stuff which are lighter and also far less amount of biomass. The females who are travelling to greater distances belong to higher age-groups. They can with a certain degree of self-confidence and security walk deeper into the forest where the cover is thicker and the wood is of superior quality and has larger amount of biomass. Further the females at this age-grown have much greater strength for lopping the branches and cutting them as well as the thorn scrub, bushes, and cactus. The sickle held by a girl and a child can barely cut some soft green foliage or grasses but cutting branches which are dry and strong is beyond their capacity. Besides they cannot, as noted earlier, carry heavy headload of fuelwood in the technical sense. One could as well raise the point as to why should the females of higher age-groups not go to only shorter distances as the girls and children. The reason, as explained earlier, is that the family's requirements are much larger than can be collected from the forests of much poor conditions near the villages. The table does clearly emphasise one point: the females, whatever be their age, from childhood to old age, have to walk over distances to the sources of fuelwoods, cut them, collect them, and transport them. There is no respite in the seasons of hardships caused by weather. There is some evidence in the table that regardless of the age-groups to which they belong the females have to walk longer distances in the Outer and Trans-Himalayan zones where the percentage of forestland area is much less than that in the Greater Himalaya. This macro-difference gets reflected in the walking distances at the village level as well. Although females of all age-groups are walking over distances to fuelwood sources what is really alarming is that the children, girls, and members have also to participate in the process.
It is surprising that no environmentalist in general and the 'feminist environmentalists' have cared either to document or to comment on this phenomenon. When we talk of environmental crises there is not enough emphasis on these intrinsic elements of the process and although there is some bias towards the women's drudgery there is no attempt to operationalise it for the purposes of analysis and possible comparison in terms of zones and age-groups, perhaps also in terms of the economic classes. That females have to risk their lives in order to intercept the floating or even the logs struck astray at the river banks, walking down the slippery steep slopes, dangerous bravery, is enough commentary on the extent the women folk have to shoulder the responsibility for feeding the family.

The time spent in cooking, the number of times the hearth is lighted and fuel consumption levels are obviously inter-related. Eventually the latter will determine the total quantum involved in the collection of fuelwood. One could as well say that the fuelwood collected determines the fuelwood consumption. However, the fuelwood used in hearth and in other domestic needs is really controlled by the size of the family and the number of time the hearth is lighted is a part of tradition. In most villages in India cooking is done only 2 times a day; the third lighting the fire and cooking to the majority would be a luxury. These are the questions we will discuss now. (Table 4.4) We must begin by saying at the outset that this series of points are being discussed within the larger context of women's role in coping with the fuelwood problem as an integral part of the continuing environmental degradation. Basically we have highlighted the burden of responsibility that the women must shoulder in the fuel-related activities.
### Table 4.4

<table>
<thead>
<tr>
<th>Village</th>
<th>Cooking Time Schedule and Fuel Consumption Account</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Winter Pre-monsoon</td>
</tr>
<tr>
<td>Day (hours)</td>
<td>Time per Week</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Tabo</td>
<td>2</td>
</tr>
<tr>
<td>8. Neul</td>
<td>2</td>
</tr>
<tr>
<td>7. Bastaent</td>
<td>2</td>
</tr>
<tr>
<td>5. Keetal</td>
<td>2</td>
</tr>
<tr>
<td>3. Gregopur</td>
<td>2</td>
</tr>
<tr>
<td>2. Mhasan Thapa</td>
<td>2</td>
</tr>
<tr>
<td>1. Hottenuad</td>
<td>2</td>
</tr>
</tbody>
</table>

**Source:** Field enquiries.
Except for the villages of the Greater and the Trans-Himalayan zones in all other households cook three times a day. The first cooking in the morning is basically done to prepare light morning meals which will be equivalent of breakfast. Since it is a small meal the time spent for cooking and the fuel consumed are both small. In general these meals precede in time to go for work on the fields. Only in the higher elevations and cold desert regions the meals are cooked only twice. It must also be noted that basically in these zones there are almost always only two dishes, both involving little boiling. The other methods of frying, baking, and roasting are not very popular. Invariably in all the zones the late noon and early night meals have a little more elaboration. The entire trait of the frequency of cooking, the level of elaboration of dishes, and the methods of cooking really is a part of an old tradition and the availability level of fuelwood does not affect them. The cooking schedule is fully integrated into the daily farming activity cycle and has remained so perhaps for centuries. By and large the farmers go out to their fields early in the morning even though not before the day is fully set in. This is the time for cultivation, weeding, harvesting, or sowing or several minor activities connected with the preparing of the draft cattle for fieldwork. The farmers work without any major break till about the noon when the ladies of the households having finished with the cooking of the mid-day meals bring the prepared food on their heads to the fields themselves. After a little rest the farmers again start working on the fields and the ladies return to the domestic chores. It is at the sundown (godhuli) when the farmers return to their homes along with their cattles. A little later they have their last meal of the day.
With the poor quality of fuelwood, dung-cakes, and straw from the harvested crops the amount of energy produced is small and hence even though they are preparing meals only 2 or 3 times a day the hours spent on cooking are many. It is not true to say that the women are cooking and collecting the fuel and doing nothing less. As a matter of fact their daily life cycle clearly shows a heavy preoccupation with the domestic chores. Hence even the 7 or 6 or 5 or 4 hours spent on cooking certainly means that the womenfolk have no respite from the daily grind. Since the level of modernisation is low, although modernisation has indeed taken place, the drudgery on account of the long hours spent on cooking is real and painful. If we consider that any average working day for a typical farming household woman stretches from 4 in the dawn to about 8 in the night, it amounts to 16 hours almost 25 to 50 per cent of which have to be devoted to one activity only, cooking. And to top it all, there are quite a bit of preparations before the actual cooking gets started; chopping of wood, splintering of wood, bringing the fuelwood and other kinds of fuel from the store, cleaning the victuals and arranging for the implements needed for cooking near the hearth. They do seem innocuous but they certainly do take time and energy. The hours devoted to cooking are also determined by the method of cooking. Steaming, frying, boiling, baking, and roasting all take time with such inferior kinds of fuelwood and inefficient types of hearths (stoves or chullah), but among the methods consuming the most time (many hours) are boiling and steaming and as the tradition prevails and demands, most cooking in every zone involves boiling for at least one of the two or three dishes. In many
households of every zone the staple cereal during winter is maize but during most part of the year boiled rice is the main element of meal. The number of hours the women has to spend on cooking and related activities will continue to remain as such for long long time. Third World, as Smith has appropriately remarked, will take a long time to enter the age of fossil fuels for domestic purposes. In the Trans-Himalayas the cooking time is also reduced by most dishes being prepared by steaming which takes lesser time than boiling. In the Outer Himalayas, the zone nearest to the plains, the fuel quality is really inferior because much of the tree forests are gone and secondary forests consists of poor timber/wood trees and scrubs with little wood in them. Thus, the energy available from the inferior biomass is little and the time for cooking stretches over as many as 7 hours. Cooking such long hours on smoke-emitting chullahs also causes several eye and respiratory diseases and these must be added to their miseries.

The average fuel consumed per week in kilograms reveals an interesting patterns of zonal variations. By and large the Trans-Himalayan zones need much smaller amount of fuelwood for their hearths than the households in the other zones. This corresponds very well with smaller frequency of cooking per day and much smaller cooking time used up here. The amount of fuel consumed here is only 168 to 252 kilograms as compared to even 740 kilograms in Batseri, a Greater Himalayan village and 560 kilograms in a Lesser Himalayan village. During the long, 7 to 8 months, winters people are for the most part of the day and night held back in their homes and do not even take regular bath. An interesting finding from the fieldwork is the lack of personal hygiene consequent upon rare baths and very infrequen
handwashing. As a consequence the process of heating water that is so common in other zones inhabited mainly by the Hindus to whom the daily bath first thing in the morning is a *sine qua non*. These are the kinds of details that, unfortunately, the foreign 'environmentalist' reports almost always miss. Since it is a part of a way of life, even integral to the Hindu religion buckets of water in every household have to be heated, if not altogether boiled, resulting in huge consumption of fuelwood. One should add the dung and straw and several types of crop residue to the fuelwood consumed. In the Outer zone the consumption of fuel is much less because other fuels such as kerosene are also used in larger share.

Let us now have a brief discussion of the seasonal consumption of fuel/wood per week (which also obviously includes the livestock and crop residues) in kilograms. The data on the seasonal consumption of indigenous fuels reveal at once that the consumption in all the four seasons separately in the Trans-Himalayan zone is consistently much lower than in any other zone. But in the wintersones, compared to the other seasons in every region the consumption is the highest as it certainly is in the Trans-Himalayan zone. Winter is the season in every zone when room heating and heating water are necessary, both enhancing considerably the levels of consumption. Compare, for example, the level of consumption in the Outer zone in winter, 120 kilograms in Mahsa Tibba and 410 kilograms in Moginand, with 40, 70 and 50 in the pre-monsoon, monsoon, and post-monsoon seasons in the former village. The difference is immediately striking. There are impressive differences in the level of consumption in any of the four
seasons between the different zones. Overall however the Outer zone display much less consumption in every season than the Lesser and Greater zone villages. One of the reasons is that kerosene is also used here in quite some quantity along with fuelwood and the winter regime of daily living that characterises the latter zones is missing here. Another fact that explains the differences is the much greater cover of good timber and fuelwood forests in the Lesser and Greater Himalayas than in any other zone. If we total up for all the seasons we find that in the Greater Himalayas the levels of consumption in the two villages are 35,520 and 20,116 kilograms while in the Outer Himalayas they are 13,440 and 3,360 kilograms only. When one gets down to the level of analysis of individual villages the explanations are not quite clear as are the complexities of the variations. However, the locations of the individual villages do matter. For example, Mahsa Tibba is located in the Dun, an integral part of the Outer zone that is by and large devoid of any standing forests that have been for long removed for cultivation while Moginand is just adjacent to the rather well wooded southern slopes of the Lesser Himalayan zone. Lastly in most of the villages the post-monsoon level of consumption is higher than monsoon.

References


