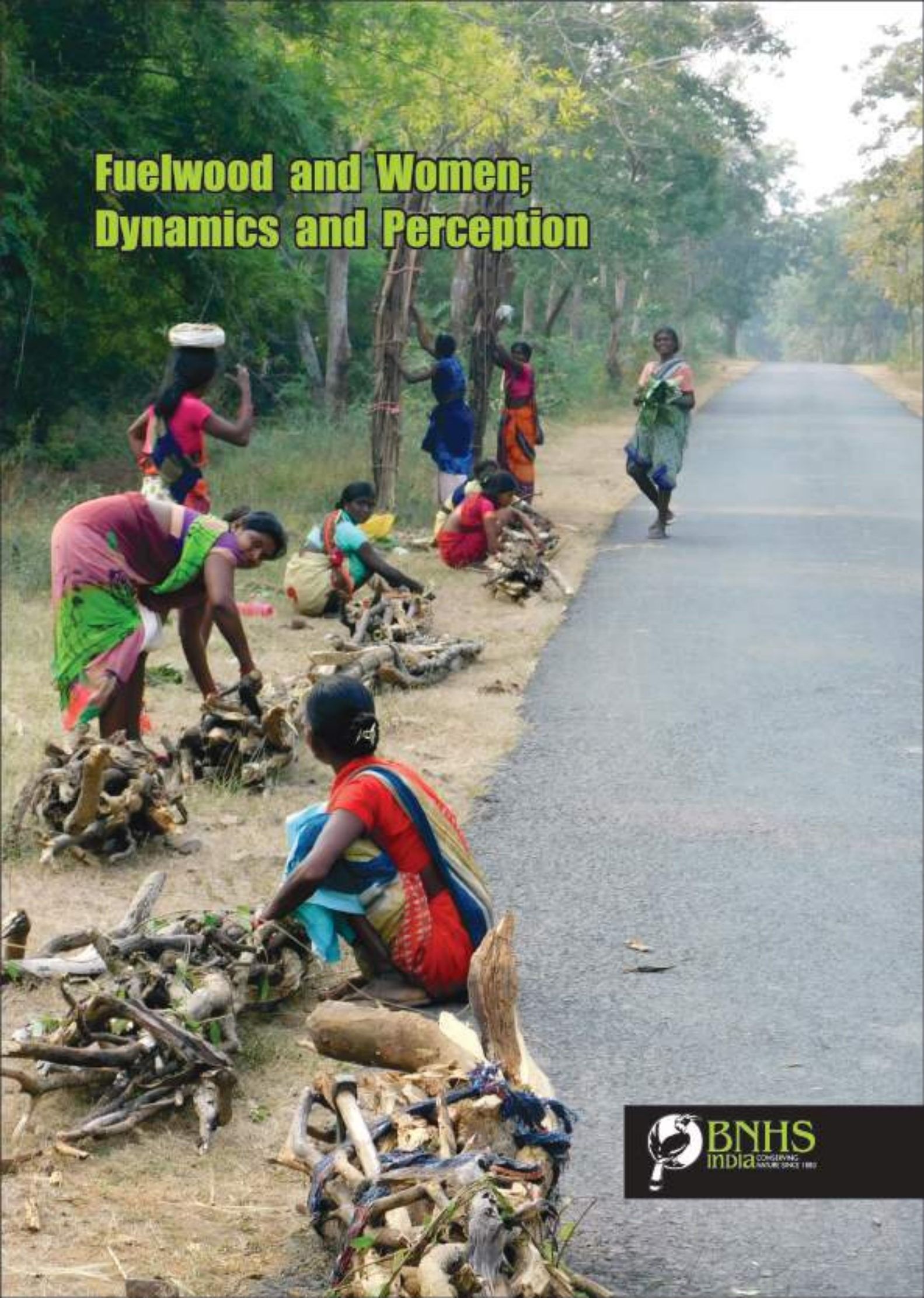


# Fuelwood and Women; Dynamics and Perception





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### Report layout and design: Sanjay Karkare

*About the pictures: All the pictures in this report were captured by the BNHS team in the field when they accompanied villagers in the forest for resource collection. We took permission for the photographs, for the study.*

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# **Fuelwood and Women; Dynamics and Perception**

**This study was conducted under the project title  
Human-Wildlife Coexistence in Central India Landscape:  
Challenges and opportunities**



## EXECUTIVE SUMMARY

Through the forest department intervention, and the Ujwala scheme of the Central government, (Liquefied Petroleum Gas- LPG cylinders have reached almost every house in the forested villages of eastern Vidarbha. Eventually, it is observed that women are using LPG and became habitual to using the cylinders, and refilling subsidy by the forest department has boosted the use of LPG on a large scale. The objective of saving the forest and addressing the human-wildlife interface is achieved to some extent. Women also accepted that their visits for fuelwood have been reduced due to LPG use.

But in recent times, due to the unavailability of funds in the Shayama prasad Mukharjee Jan-Van Yojana -SPM for refilling, the forest department could not continue refilling and on the other hand, the price of cylinders has been hiked. Ultimately the women continue to use chulha for cooking regularly. Besides this, the chulha is 100% used for heating water for bathing. So, the women have sufficient stock of fuelwood in their houses. They do not have to bother when the LPG cylinder gets over as they have sufficient stock of fuelwood in their house for cooking. LPG is not their priority as fuelwood resource is on their doorsteps.

Women are busy with agricultural activities in the monsoon, so they primarily prefer to cook food on LPG as preparing food on chulha requires more time than LPG. After Diwali, agricultural activities are mostly completed in rain-fed agriculture in this landscape. The women prefer to use both LPG and chulha. In winter they use chulha for cooking, which also prevents them from the cold. In summer both chulha, as well as LPG, are used. All these are observations in our detailed household survey.

It is noticed in the BNHS survey that, the villages of Chandrapur district near the forest use more fuelwood than the villages in Bor, Pench, and Navegaon-Nagzira Tiger Reserve area. Although there is fuelwood stored in their houses, women go to the forest to collect wood regularly. Women mainly go for fuelwood in the forest after the end of the paddy season. Women traveled 2 to 8 km in the forest to collect fuelwood. They know the winding paths of the forest. These strategies are used to avoid the main road and sidestep forest department staff also. Fuelwood collection time also varied according to travel time. Though they are in the group while collecting the wood they scatter which consequences them in conflict with the tiger and the leopards. In the Chandrapur district, 18 villagers died in a tiger attack during collecting fuelwood in the forest. These incidents are reported for the last 8 years. In recent years, in this district, women avoid venturing deep inside the forest and covering long distances due to fear of the tiger. A decade ago, they had travelled a lot to collect this resource.

While collecting qualitative data, women from Umred-Paoni-Karhandala Sanctuary, were frustrated. They believe that by obtaining an LPG connection from the forest department,

they have put themselves in trouble. Because the sanctuary lacks a buffer, the villages are completely reliant on it for fuelwood harvesting. They cannot pay the full cost of refilling the cylinder once the subsidy scheme has ended, and to balance this gap, they must use more fuelwood. However, the forest department has prohibited them from entering the sanctuary to obtain fuelwood. As a result, pressure arises between the forest department and the locals. In the Pench Tiger Reserve periphery, the view of women about the forest department was not that harsh. Family size also plays an important role in fuelwood utilization. Even after receiving cylinders, women want to use fuelwood for cooking to save money on cylinders by supporting them with fuelwood.

Fuelwood collection significantly disturbs the surrounding wildlife habitat of the village. Though women collect dry twigs, and fallen branches they also cut trees as well. This was experienced by the BNHS team in the forests. Compare to territorial forest divisions in all east Vidarbha landscapes, fuelwood is not the main earning source for the buffer villagers of the tiger reserve. Some villagers sell the fuelwood to nearby tehsil places for their daily sustenance. Women sell the wood on headloads where as men sell the fuelwood by bicycle.

The fuelwood gathering has a social aspect too, as women share their thoughts, and sorrows while collecting the fuelwood. So, the collection is significant for village women.



*WOMEN TRAVELED 2 TO 8 KM IN THE FOREST TO COLLECT FUELWOOD. THEY KNOW THE WINDING PATHS OF THE FOREST*



## INTRODUCTION

Mainly fuelwood is used in chulha for cooking and heating water in rural areas. Village women also use crop residues (cotton, pulses), cow dung, and in some places, trees from the agricultural farms for the chulha. In India, the percentage of using wood for chulha is 64 %. The use of wood for cooking in forested areas is almost double that of ordinary rural villages. The amount of fuelwood used varies depending on how close or far the forest or the area from the village is. The closer the forest, the more fuelwood can be used. The use of wood also varies depending on the season. There is a common sight of women carrying headloads of fuelwood from the fringe forest in all the protected areas. Men are also seen carrying fuelwood on bicycles for commercial trade in some areas. In all the landscapes, fuelwood is mainly collected from forest edges, farm embankments, scrub forests as well as the core areas of the tiger reserves or protected areas.

Previously, the forest department provided LPG cylinders to the fringe villages under Eco-development schemes. From 2015, under the Shayama prasad Mukharjee Jan-Van Vikas Yojana, the Maharashtra Forest department provided LPG cylinders to most of the fringe villages and the sensitive villages which are facing conflict. The Forest department also provided a refill subsidy to make people habitual to the use of cylinders. The Forest department is driven hard to minimize the visit of women for fuelwood collection in the forest to avoid conflict. The distribution of cylinders by the agencies became easy as the villagers got LPG at their doorsteps. Eco-development committees (EDC) and Joint Forest management committees (JFMC) are incorporated into this distribution system.

Interacting with the women, in sensitization programs conducted by BNHS, it is experienced that, the women from fringe villages of forests regularly use fuelwood for the preparation of



food. The proportions of this most collected forest resource required to be visualized on a vast scale, and it needs an hour to appreciate its dynamics and perception from the perspective of village women. To find out the exact scenario of fuelwood consumption of the perception of the women regarding the use of LPG and chulha, the BNHS team carried out a detailed survey.

## METHODOLOGY

A quantitative and perception-based questionnaire was devised to better comprehend the circumstances and interactions with the women. The questionnaire includes details of family size, occupation, income, resources used in the meal preparation and water heating, LPG schemes and their use, fuelwood collecting dimensions, and a comparison of LPG and fuelwood perceptions. Qualitative findings covered perceptions of LPG, the forest department, wildlife, and the forest. The quantitative data was acquired using the KoBo toolbox application. Following that, the data was processed for analysis.

A total of 527 women from 56 villages were interviewed from the landscape. The interviews were carried out at random at the village level, with the help of a *Panchayat Samiti* Community Resource Person (CRP). CRP is working to put several government schemes into action, particularly for the women's Self-Help Group. With the assistance of this woman, the BNHS team visited 8-10 houses in each village to meet with the women and understand the situation. Along with the interview, the team investigated several types of chulha, food preparation methods, and fuelwood storage.



*DISTRIBUTION OF THE CYLINDERS BY THE AGENCIES BECAME EASY AS THE VILLAGERS NEAR THE FORESTS GOT LPG AT THEIR DOORSTEPS*

## SURVED VILLAGES

For the fuelwood study, villages from 5 districts of east Vidarbha were considered. All the villages are from the fringe of the forests and where man-animal conflicts happened in the last five years. The villages are Alewahi, Jivnapur, Ekara, Borda, Dhamangaon, Gaidongari, Murpar, Jatlapur Piparheti, Devpayli from Bramhapuri forest division, Ashti, Salori, Khemjai, Varvat, Chichla from Chandrapur division, Karwa, Chintaldhaba, Bhatari, Vihirgaon from Central Chanda division, Piparheti, Singadzari, Piparda, Satara, Talodhi, Sitarampeth, Bhamdeli, Halda, Doni, Katwan from Tadoba buffer, Tangala, Belda, Mararwadi, Wagholi, Kolari, Thana, Manora, Navegaon Sadhu from Nagpur forest division, Bori, Salaikala, Maraksur, Vitpur, Bramhanwada, Tamaswadi from Wardha forest division, Mangerazi, Sarra, Jabbarkheda, Kolargaon, Bagheda, Telankhedi from Gondia forest division, Wadegaon, Sarpewada, Ukara, Walmazari, Samewada, Garada from Bhandara forest division.

These 56 villages are from 8 divisions and buffer of Tadoba, Bor, Navegaon-Nagzira, Pench, and near Umred Sanctuary.



*BNHS TEAM VISITED 8-10 HOUSES IN EACH VILLAGE TO MEET WITH THE LADIES AND UNDERSTAND THE SITUATION. ALONG WITH THE INTERVIEW, THE TEAM INVESTIGATED SEVERAL TYPES OF CHULHA, FOOD PREPARATION METHODS, AND FUELWOOD STORAGE*

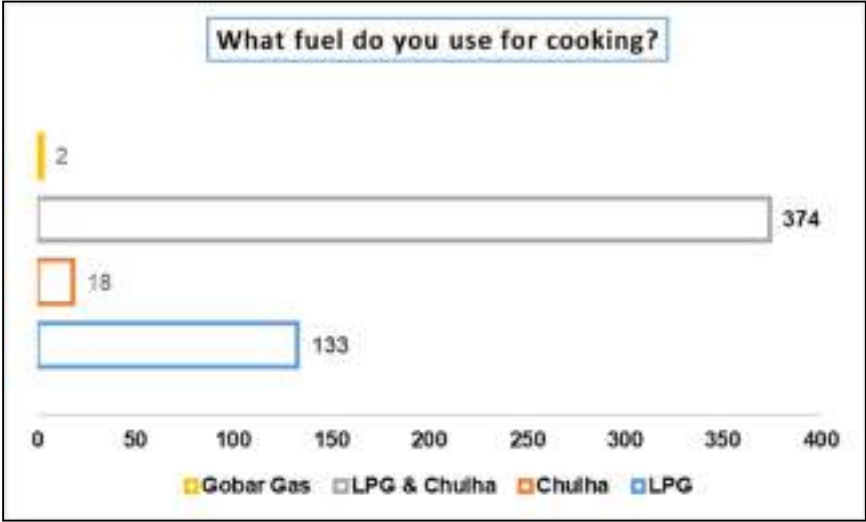


*MANY TIMES,  
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BUT ALSO CUT  
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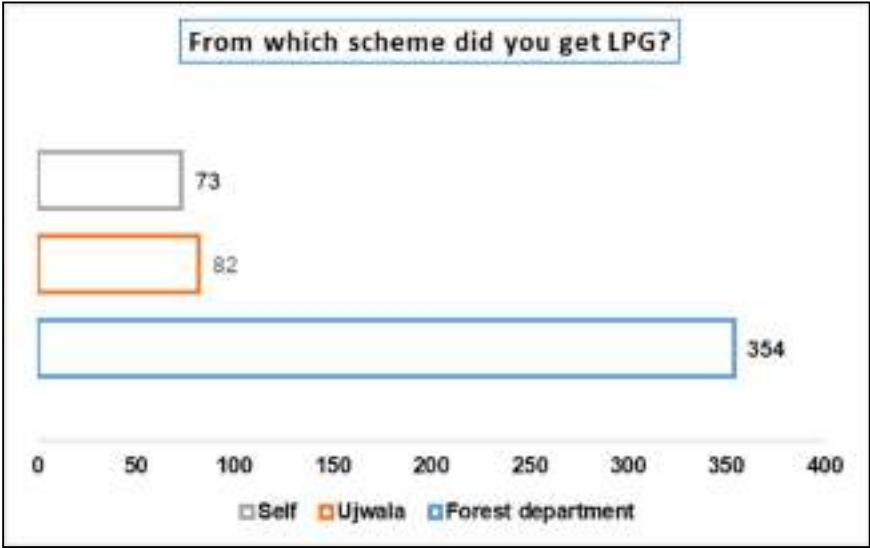
RESULTS

Fuelwood and LPG usage



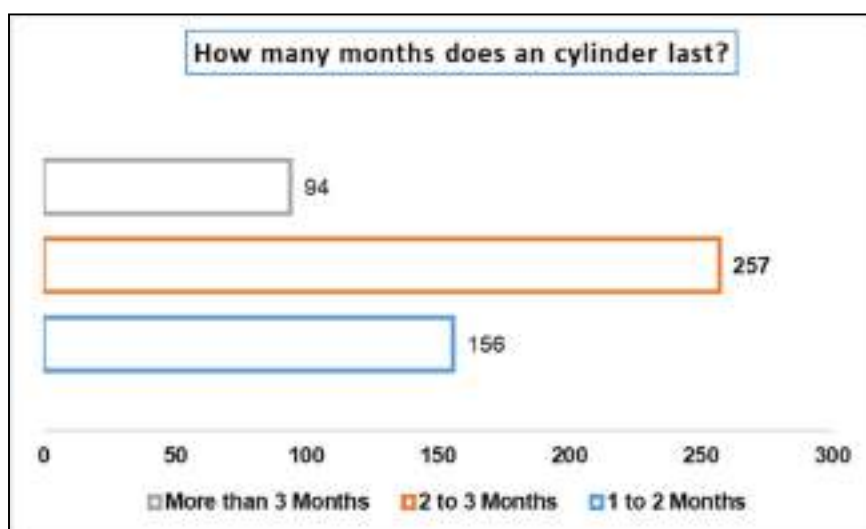
From sampled 527 households 133 households are using LPG for meal preparation, whereas 18 households use chulha only. Only 2 households were using gobar gas for the preparation of meals. 374 households use LPG & chulha simultaneously for cooking. Women are using chulha for meal preparation regularly.

LPG distribution scheme



354 households received the LPG from the forest department scheme. The forest department distributed LPG through EDC and SPM Jan Van Vikas Yojana. 82 families from the Ujwala scheme of the Central government. 73 households purchased LPG on their own. The table suggests that the distribution of LPG has been done on a vast scale through different schemes.

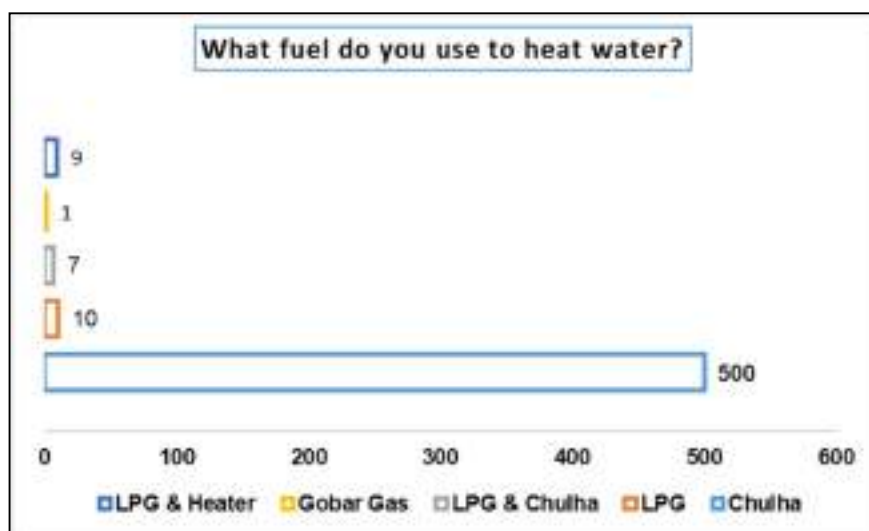
### A cylinder duration



The above chart depicts the duration of the LPG cylinder usage. Among the sampled households, LPG lasted for 1 to 2 months in 156 households, and for 257 households it lasted for 2 to 3 months. 94 households said that it lasted for more than 3 months.

The duration of LPG is primarily depending on the family size. The more people more usage is obvious. According to the women, the LPG cylinder lasts for 2-3 months on average. In rest of the 20 households have no LPG.

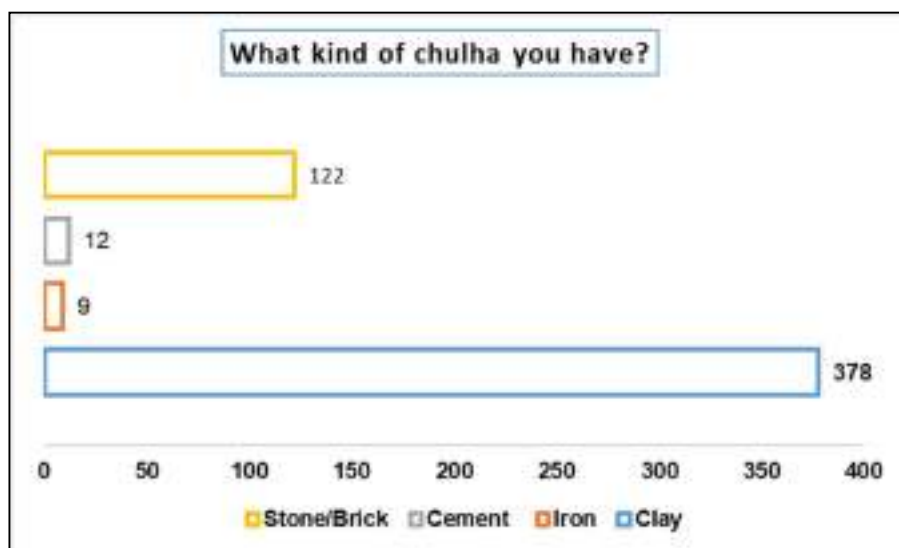
### Fuel for heating water



Out of 527 households, 500 families utilize Chulha to heat water. In 10 households LPG is primarily used for the hot water for bathing purpose, 7 households use LPG & Chulha simultaneously, 1 household use gobar gas and 9 households use LPG & heater for water heating.

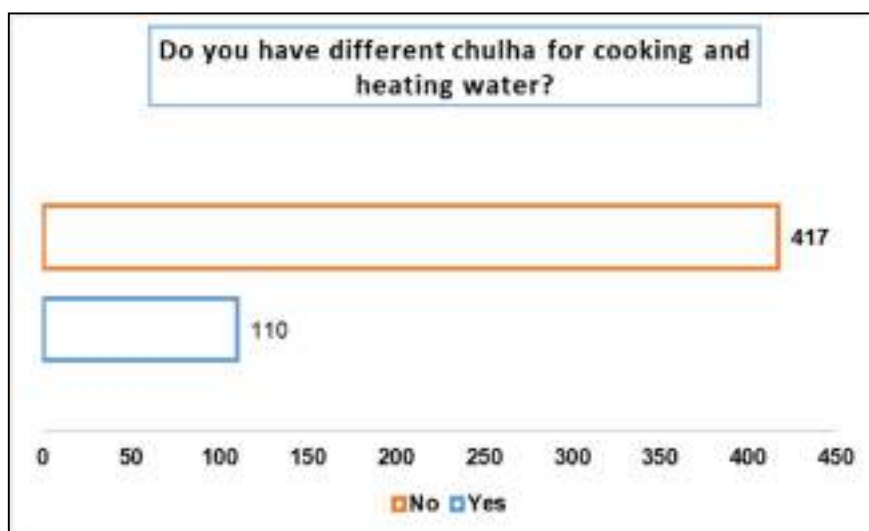


### Chulha type



378 households use clay chulha, whereas 122 households use stone or brick chulha. 12 households have cement chulha whereas 9 households have iron chulha. The art of making chulha from clay is mastered by old age women, so the usage of it is higher where the household has old-aged women.

### Single or double Chulha

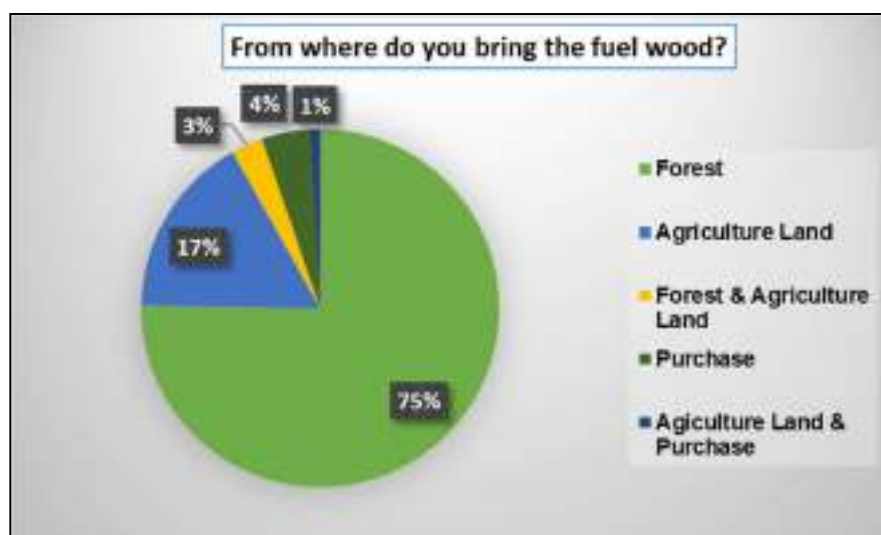


In the above figure, from the total sampled households only 110 households have two different chulha for water heating and cooking, whereas 417 households use the same chulha for both purposes. This phenomenon is mostly observed in cement houses but not necessarily. When the smoke of chulha is stuck on the wall it gets stained smoke, so most young women avoid having chulha in the kitchen. The chulha is placed in the backyard where the tent-like structure is for the chulha and the storage of fuelwood.



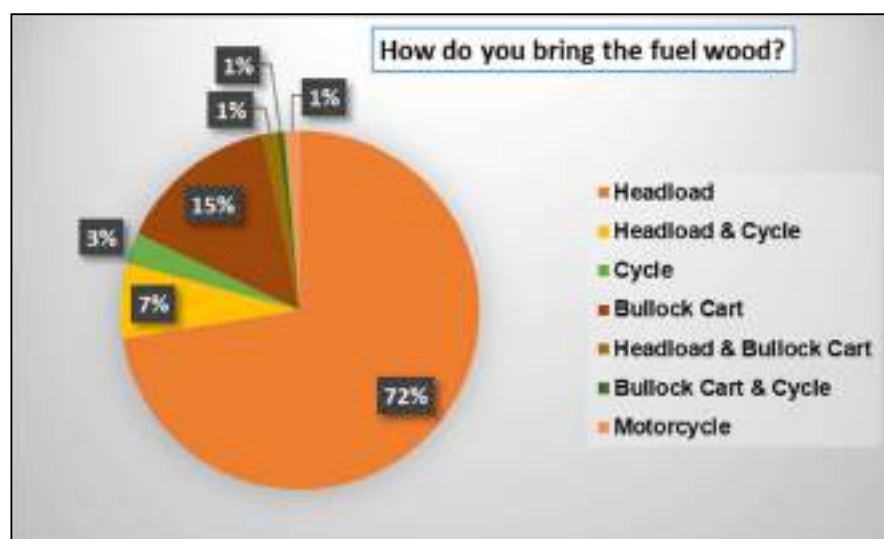
### Various types of Chulha

### Fuelwood collection pattern



Of the total sampled households 75% of households bring the fuelwood from the forest. 17% of households bring fuelwood from the agricultural area. 4% of households purchase fuelwood from other villagers or sellers. 3% of households collect the fuelwood from both forest and agricultural land. The data suggests that the majority of fuelwood is harvested from the forest.

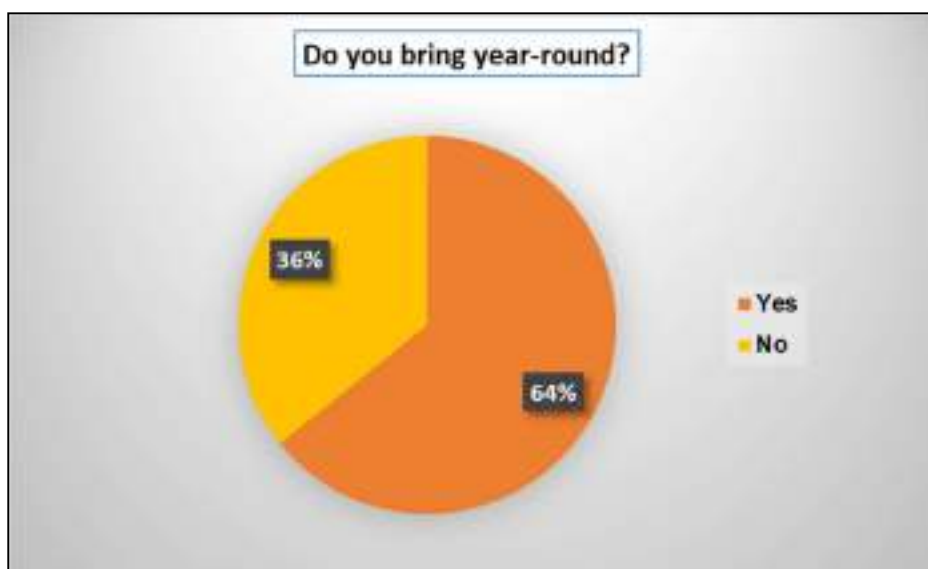
### Mode of transport



The above chart depicts the methods by which fuelwood is carried by the villagers. The most popular method for carrying fuelwood is headload, 72% of the total sampled households gather fuelwood by this method. The fuelwood is carried on headloads by the women only. The cycle is used by men only. The headload and cycle are used in 7% of households, however, 15% of households use bullock carts for the collection. 3% of households purely use cycles to collect fuelwood. The bullock carts were used in territorial forest areas mostly.

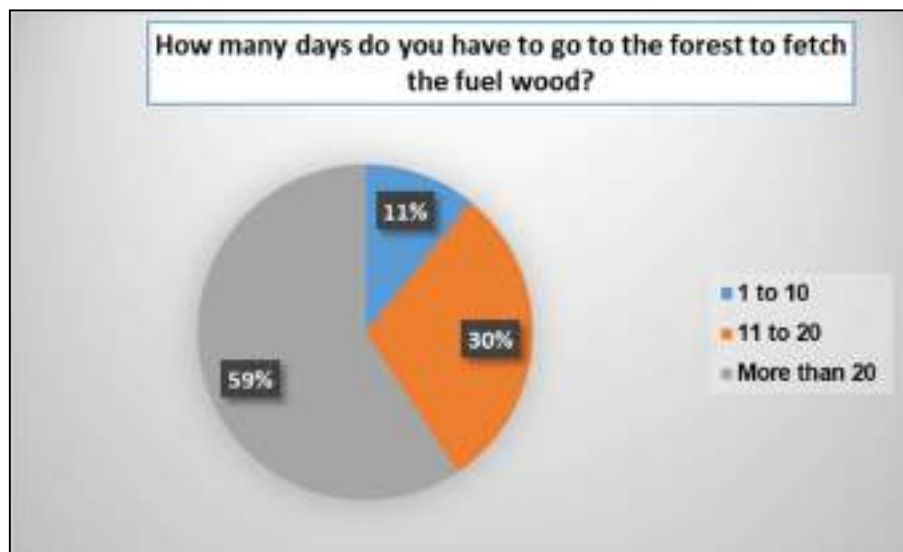


### Fuelwood collection season



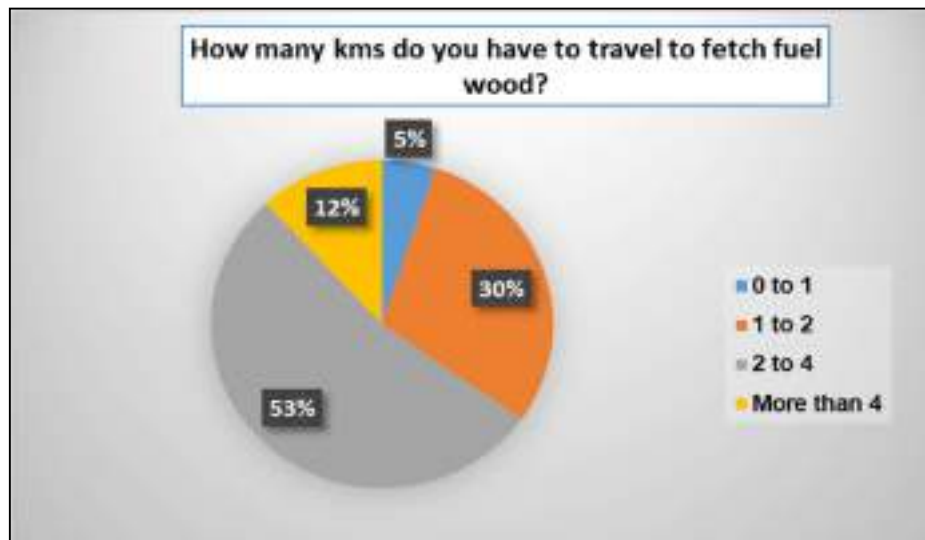
64% of households bring the fuelwood year-round, whereas 36% do not collect the fuelwood throughout the year. There is a pattern in the fuelwood collection. After paddy season most of the women are free. In December they started collecting fuelwood step by step. They collect fuelwood till March. In the second round after harvesting Mahua and Tendu patta, they again start to collect fuelwood which lasts for the next monsoon season.

### No. of days for collection



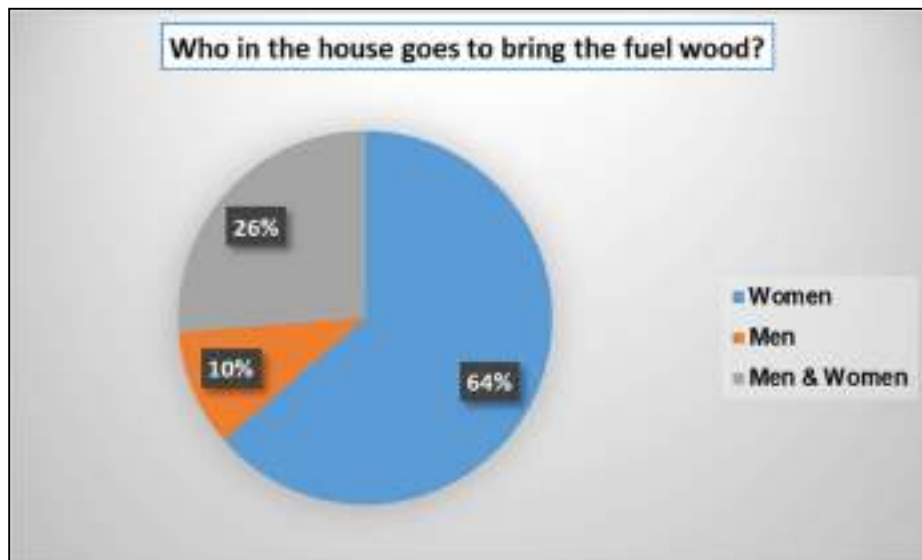
59% of households visit the forest for more than 20 days in a year to collect fuelwood. 30% of households visit for 11 to 20 days to collect fuelwood whereas 11% visit for 1 to 10 days for the collection. Even after having LPG, the frequency of visits to the forest for fuelwood collection has not been reduced dramatically as for hot water, only fuelwood is the option in the villages.

### Distance traveled for collection



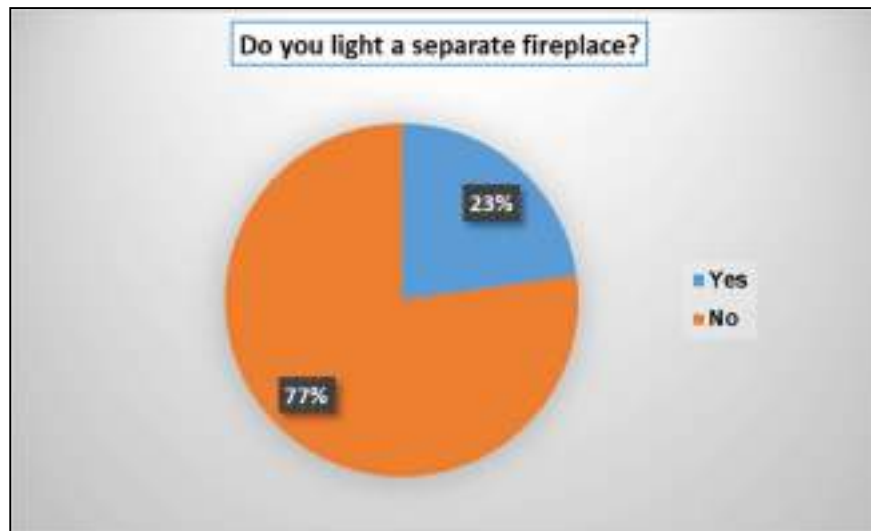
In the above chart, the distance covered for the fuelwood collection is depicted. 53% of households cover 2 to 4 km for the collection. 1 to 2 km distance is covered by 30% of households. 12% of households stroll more than 4 km. The remaining 5% of households cover 0 to 1 km to gather fuelwood. In the Chandrapur landscape, the distance covered for fuelwood collection is reduced due to the fear of tigers as per the information from the women.

### Gender collection



In the total sample, 64% of households have only women collecting fuelwood, whereas, in 10% of households, only men collect fuelwood. 26% of households have both men and women collecting fuelwood. The sampled households confirmed a trend of maximum women participation in fuelwood collection than men. The women collected fuelwood by headload, whereas men carried the fuelwood on bicycles, motorcycles as well as on bullock carts.

## Fuelwood for fireplace



In 77% of households from the total sample, the fireplace is not lightened separately, wherein in 23% of households it does. In winter, most of the households lit a fire in the evening to heat water and achieve both goals of hot water and getting warmness through chulha. The women mostly cook the roti on this chulha in the evening of winter and achieve both goals. Hence the percentage of having a separate fireplace is low.

*FOR HEATING  
WATER,  
CHULHA IS  
MOSTLY USED  
THROUGHOUT  
THE YEAR IN  
ALL THE  
LANDSCAPES*

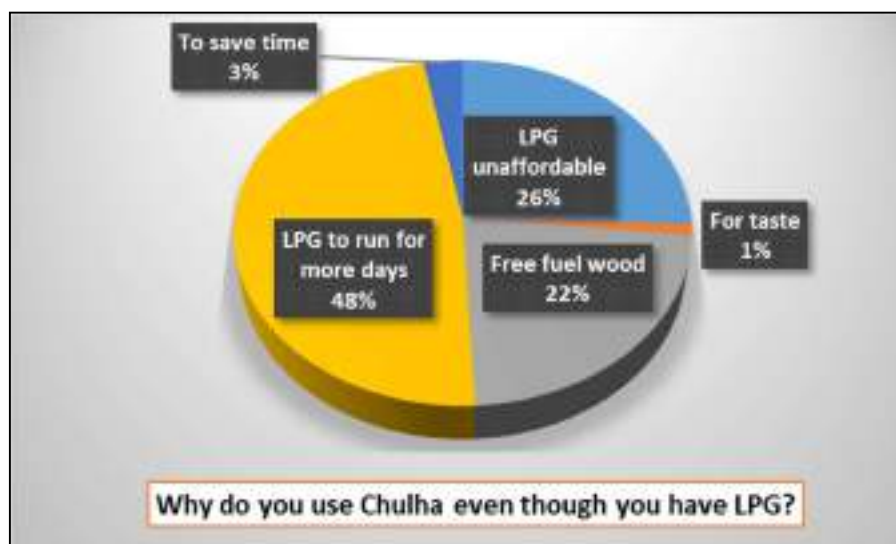




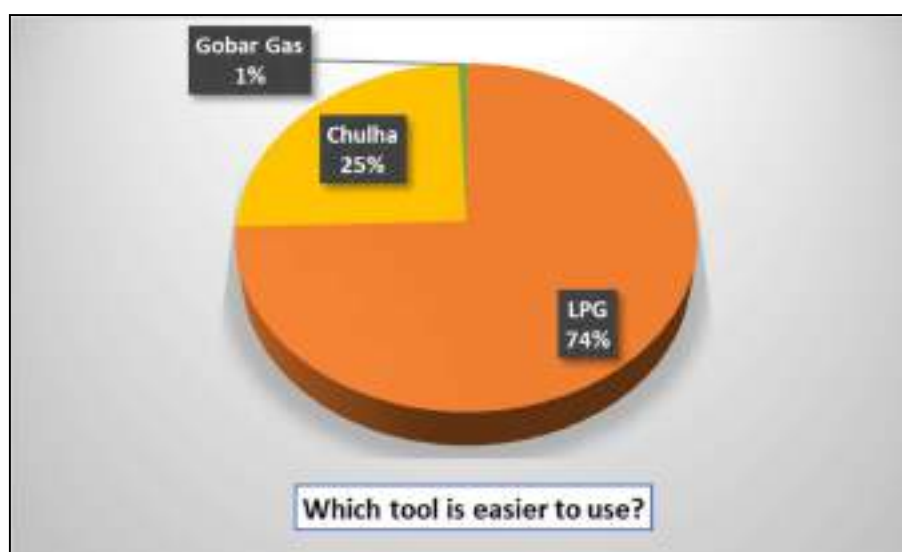


*BULLOCK  
CARTS AND  
CYCLES ARE  
USED BY  
MEN ONLY  
TO  
TRANSPORT  
FUELWOOD.  
WOMEN  
MOSTLY  
CARRY  
HEADLOADS*

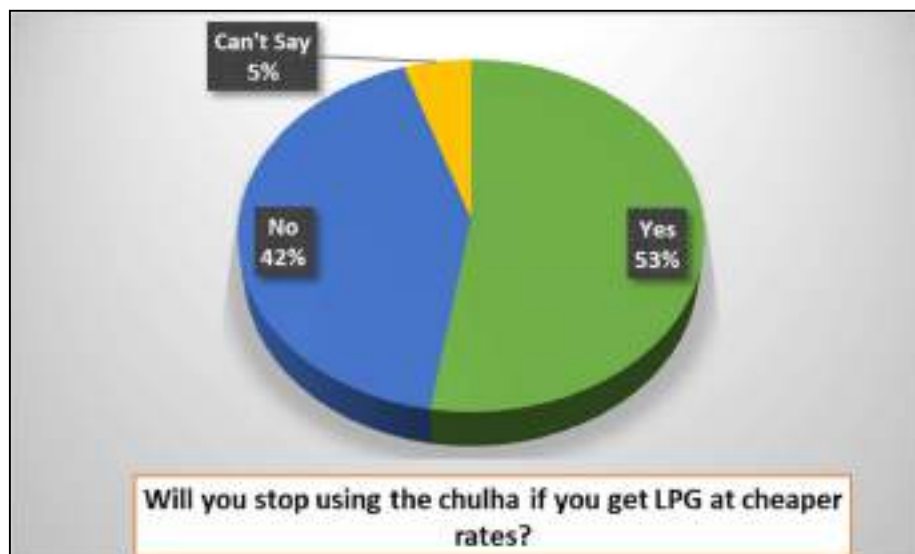
## Perception about LPG and Fuelwood



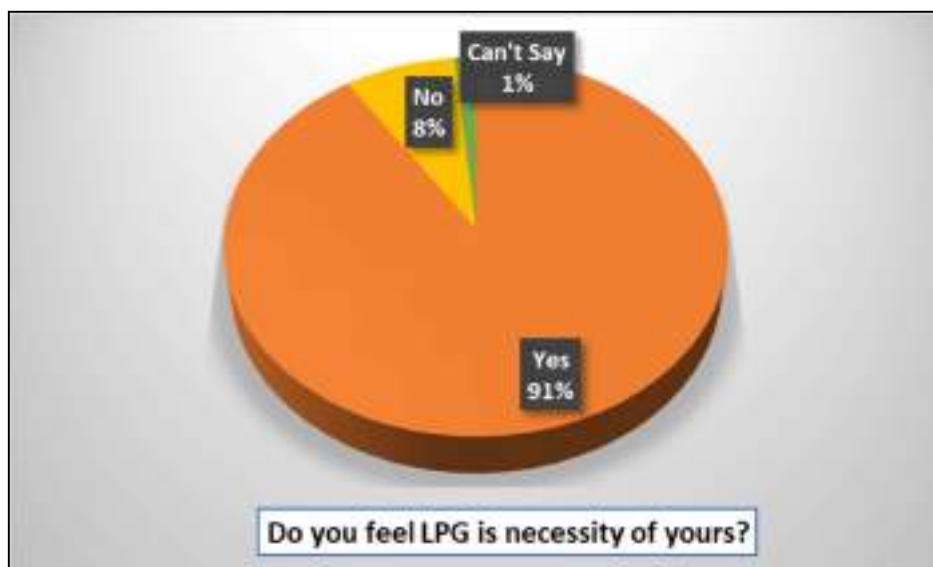
In the above pie chart reasons behind the use of chulha even though having an LPG connection are depicted. 48% of households said that they were using chulha to run LPG for more days. 26% of households said LPG is now not affordable for them. 22% of households said the fuelwood is free so they prefer to use chulha. 3% of households said to save time they use chulha. 1% of households use chulha for taste.



74% of women consider the LPG to be more suitable for use, where 25% of women consider chulha to be an easier tool and 1% of women think the gobar gas is easy to use. Even after continuously talking negatively about LPG due to hiked rates, women think of LPG as an easy, fast, and more convenient tool for meal preparation.

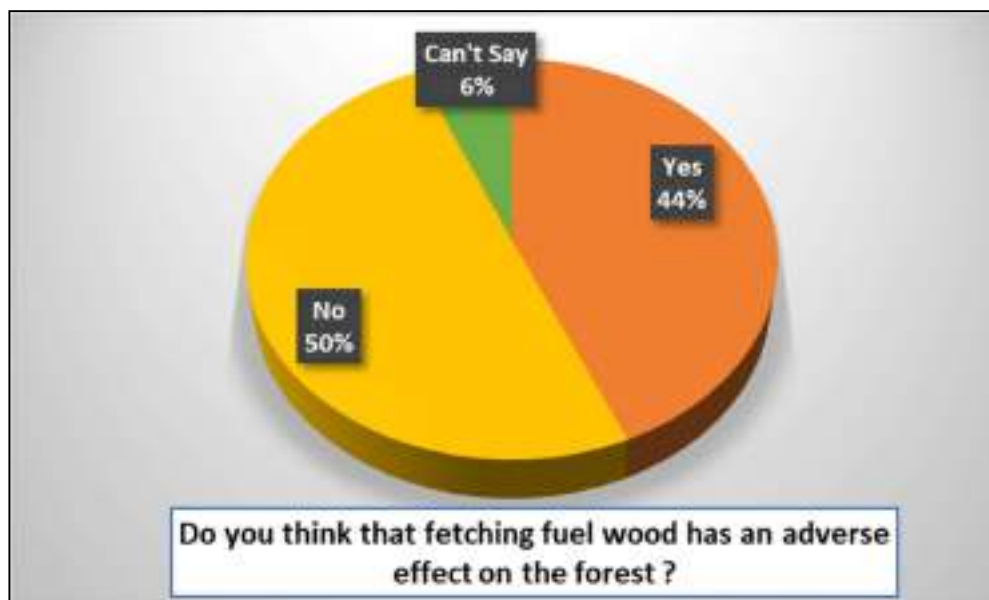


53% of women agreed that if the LPG rates get cheaper, they will stop using chulha, but on the other hand, 42% of women disagreed with the same. 5% of women had a neutral view of the question. Interestingly, some young women opt for chulha than cylinders.

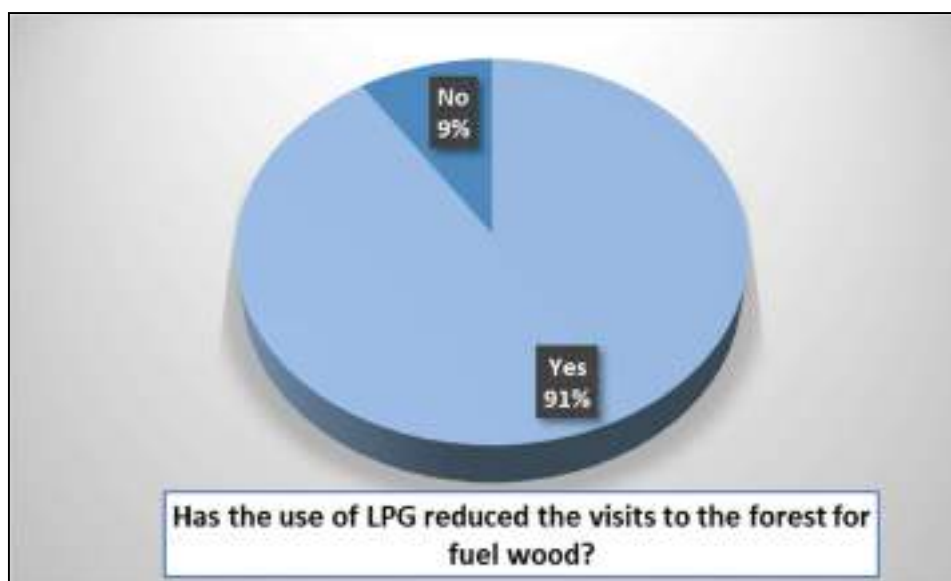


In the above figure perception of the necessity of LPG is depicted. 91% of women from the total sample consider LPG as a necessity, whereas for 8% of women, it's not. 1% of women had a neutral view of this. Even if most of the women consider it a necessity, the right to have LPG in-house every month is not in their hands, in most of the sampled households men decide the fate of LPG in-house or the economy involved in it.

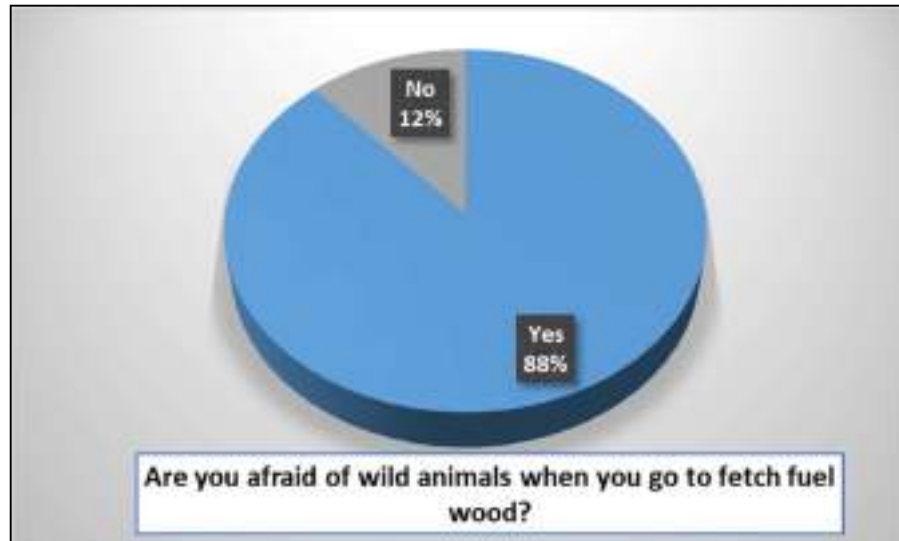




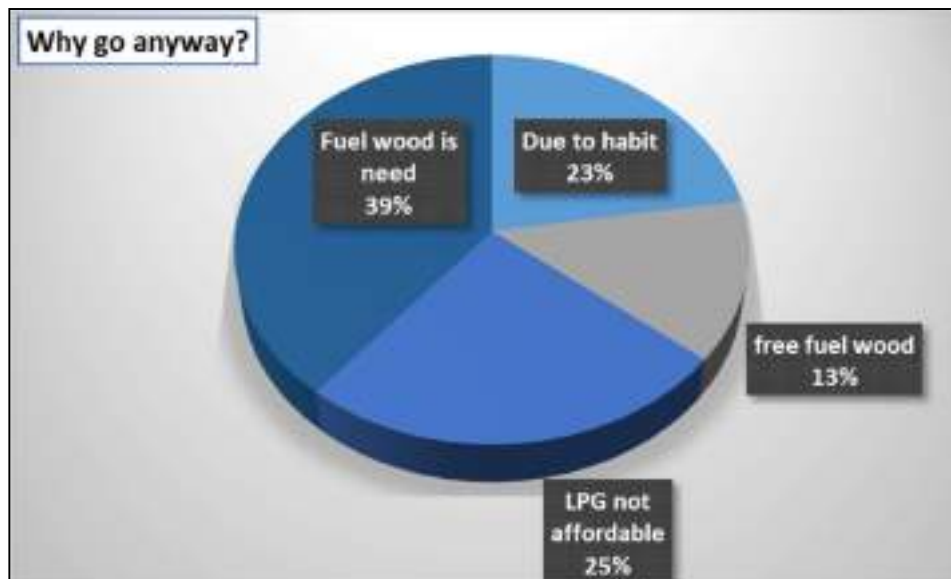
The above figure shows the perception of the impacts of fuelwood collection on the forest. 44% of women agreed that fuelwood collection hampers the forest, whereas 50% of women consider it as non-harmful for the forest as they collect the broken branches. 6% of women had a neutral view of this.



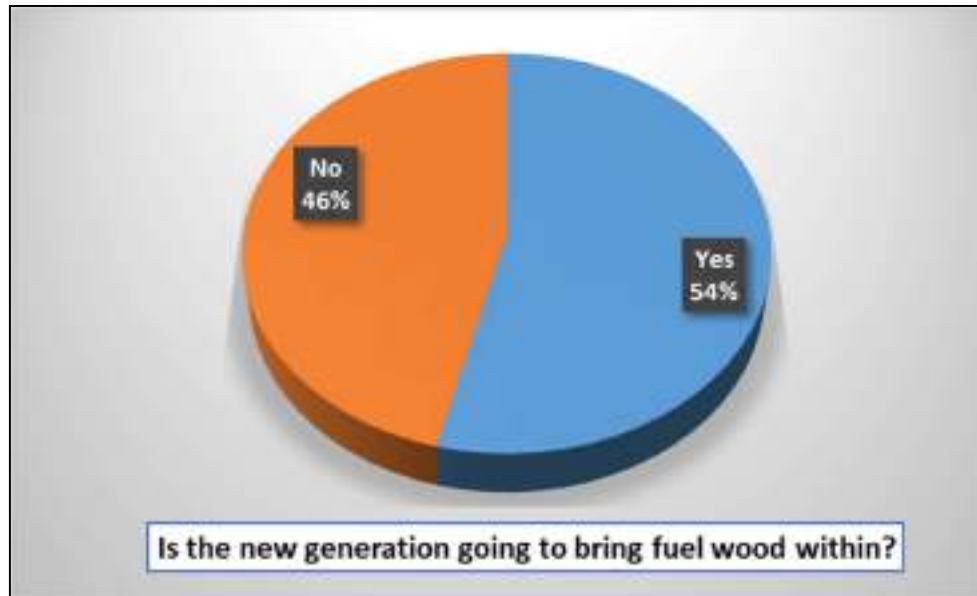
The above figure depicts the reduction in the frequency of visits for fuelwood collection after the introduction of LPG. 91% of women agreed that after getting LPG, the frequency of collection has been reduced. 9% of women disagreed the same.



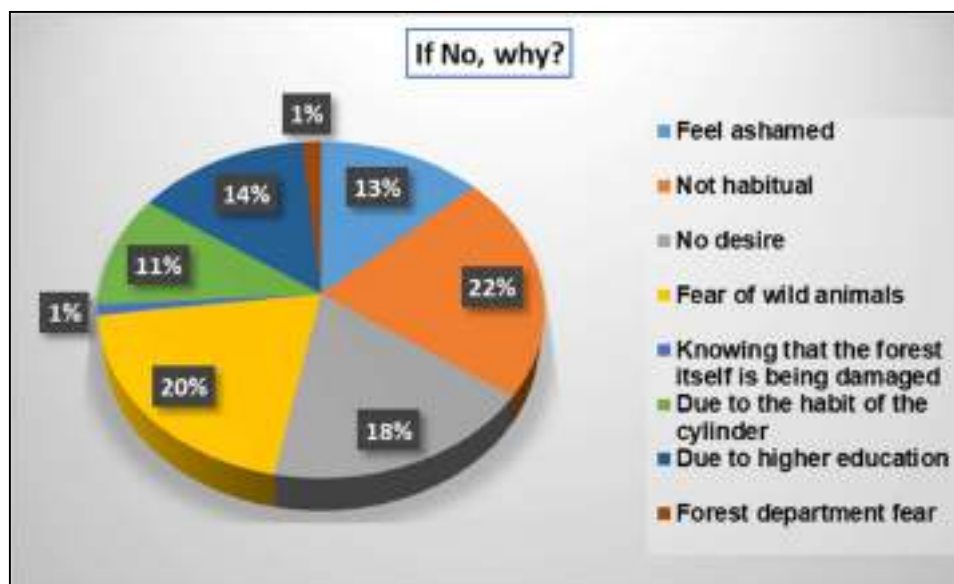
The perception about wild animals while going for fuelwood collection depicted. 81% of women from the total sample have fear of wild animals while collecting fuelwood from the forest, whereas 12% of women don't.



In the above figure, the reason for collecting fuelwood is spite the fear of wild animals. According to 39% of women, fuelwood is their need, and for 25% of women, LPG is not affordable so they need to collect fuelwood. 23% collect fuelwood as they are habitual of collection and 13% of women collect fuelwood as it is free of cost.



The pie chart depicts the view of a new generation. 54% of women agreed that the new generation also visits the forest for fuelwood collection, whereas 46% of women disagreed on the same.



There is a mixed reaction to this question. From the total sample, 22% of women think that the new generation avoids collecting fuelwood because they are not habitual to this process. 20% of women think it is due to the fear of wild animals. 18% of women predict that the new generation is not wilful to collect fuelwood. 14% of women think it is due to higher education, 13% of women think that the new generation feels ashamed to collect fuelwood, and 11% of women predict it is because of the habit of LPG. 1% of women think the new generation avoids fuelwood collection because of forest department fear and 11% of the new generation thinks that the forest is getting hampered due to fuelwood collection.



## RECOMMENDATIONS

The Forest department provided subsidies for refilling LPG to the families who were residing near the forests. After four years (2020) this subsidy was finished. In every discussion with women, this issue arose. The cost of the refill is going high and women are trying to save the cost of refilling and use fuelwood for cooking.

BNHS had installed the Improved Cook Stove- ICS in Bor -Umred corridor. It was noticed that the families had used this unit very short time and later shifted to their traditional chulha. The villagers were reluctant to opt for the new chulha model. This was a lesson for the team and for those who were working in this field.

1. The government must consider this issue a priority and start the refilling subsidy.
2. All the households in the villages used chulha for hot water bathing.
3. In some villages of Bramhapuri forest division, Wildlife Conservation Trust-WCT installed 'Bamba' (hot water drum). This unit is run on a small amount of fuelwood or agricultural residue for hot water bathing. The unit is accepted by the villagers. The government must replicate this model in villages for addressing this important issue. This unit should be provided at a subsidized rate to the villagers.
4. The forest department should start 'beat' depot in selected villages on a pilot basis. The women SHGs should involve in these depots to run this business in the villages. This will help to address this issue and the possibility of success of this initiative will be maximum as women are involved in it.
5. The project tiger should take strict action against the collection in the core area.
6. The forest department and social forestry jointly should plant fuelwood species in community wastelands, marginal farmlands, and other vacant lands to increase the production of fuelwood, fodder, and small timber in rural areas.
7. The participation of EDCs and JFMc in the management of the protected area should be promoted by developing a participatory management plan.
8. The existing joint forest management policies should be revived and their efforts should be accelerated for tackling the fuelwood problem.
9. The implementation of rural development policies and intervention of private institutions in forest areas that address the issues and provide cheaper and clean alternatives to fuelwood should be increased.

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