

# An Assessment of Forest Product Harvesting in Community Forests: A Case from Community Forest of Mid-hills, Nepal

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**Abstract:** Proper harvesting of forest products is crucial for sustainable management but due to low level of skill in and awareness of harvesting, forest is deteriorating and harvesting forest products is wasteful. As harvesting is one of the important factors in minimizing waste and damage and achieving forest sustainability, this study was essential. This case from community forest (CF) of mid-hills region demonstrated the status of existing harvesting practices, tools and techniques used and recommended appropriate mechanism for improving such practices. Semi-structured questionnaire survey was performed with 40% of the total households, five key informant interviews and field observations during the harvesting process at the study site for gathering data. Data were analyzed using descriptive statistics and presented in charts and tables. The study revealed the use of traditional harvesting methods and conventional tools like sickle, bill-hook, and axe but limited use of modern tools. Deviation from the operation plan during block selection and harvesting of trees were observed. Appropriate tools and training to users along with regular monitoring by forest officials are needed. This study will help policy makers, planners and forest officials to make necessary provisions for improving harvesting practice in community forests of Nepal.

**Key words:** *harvesting, community forest, forest products, operational plan, traditional methods*

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## **Introduction**

Community forestry is the program initiated in mid 1970s in an effort to curb deforestation and forest degradation by involving local people for forest conservation in the country (Ojha et al. 2009). Community Forest (CF) which is approximately 27.5% of the country's total forest area managed by Community Forest Users Group (CFUGs) (DoF 2018) has largely been focused in mid-hills in Nepal (Springate-Baginski 2003) and is considered as the most successful program in mid-hills (MoFSc 2016). The primary objective of managing CF is to ensure sustainable harvest to meet the user's needs. Harvesting of forest products (FPs) deals with the process of felling allowable forest products to deliver to the depot (Shrestha 2017). Sustainability harvesting implies that whatever implement, tool or machine is added to a system to improve efficiency, it should be locally adapted, available, or can be produced locally; also it refers to the probable damage to, or disturbance of, the biodiversity (Jurvelius et al. 1997). Unsustainable harvesting practices is one of the causes of forest degradation; so it is important to ensure sustainable harvesting (FAO and UNEP 2020; Chaudari et al. 2016). Appropriate technology can be used for this, as this can be defined as fulfilling the criteria of sustainability (Jurvelius et al. 1997). Likewise, there emerged a code of practice demarcating reduced impact logging (RIL) concept for defining and implementing sustainable harvesting by FAO (1999) in the battle of fulfilling FPs' growing demands and sustaining ecological integrity.

Wood being the most affordable source of energy is predominantly used by poor rural households in much of the developing world, especially in Africa and South Asia. One-third of wood is still harvested unsustainably (FAO and UNEP 2020). In Nepal, harvesting practice in CF is conservative and protection oriented, least directed by science and this is affecting the forest stand condition (Rayamajhi 2019), which is not a good sign in achieving sustainable forest management (SFM) as achieving SFM through improved harvesting is one of concerns made in recent forest strategy 2016-2025 of Nepal. Likewise harvesting planning is one of the indicators for defining SFM as per ITTO (2016). Similarly, there exists a huge gap between the demand and supply for wood as given by Federation of Forest Based Industry and Trade Nepal. Around 29.3 million cubic feet of timber was imported into the country from East Asian and other countries in 2015, while 37.6 million cubic feet of timber were not utilized or decayed in the country's forests (Baral and Vacik 2018). Additionally, in the fiscal year of 2018-2019, Nepal spent Rs 6.61 billion against 5.56 billion in the previous year in the import of FPs (My Republica 2019). All this shows that there is a need to conduct research for assessing harvesting practice and technique in Nepal to recommend better ways to halt the importing issues and also to increase the utility of Nepal's FPs through better harvest within Nepal.

CF harvesting has been guided by community forest timber/fuel wood collection and sales-distribution guidelines, 2071 and has been assisted and supported by different other policy, strategy, plan and guidelines. Achieving forest sustainability with the application of appropriate harvesting technology is the main theme of all the above mentioned documents. Forest Policy 2075 has considered SFM in CF a major policy assisted by strategy. Likewise the forest sector strategy has mentioned existence of a huge gap between the demand and supply for wood products. So, it has aimed to achieve sustainable production and supply of FPs as one of the major outcomes by the year 2025. It has pointed out that improving harvesting and developing tools and techniques could assist in achieving SFM by giving harvesting training even to poor, women, and disadvantaged community engaged in harvesting. Additionally, one of the intentions in 15<sup>th</sup> plan by National Planning Commission is to increase the production and productivity by increasing timber production from existing 1.5 crore cubic feet per year to 3 crore cubic feet annually through sustainable forest management and this can be achieved through an appropriate harvesting practice (NPC 2019; ITTO 2016).

CFUGs carry out harvesting mostly using traditional local tools such as the axe, sickle, and *Khurpa* (Shrestha 2000) which is locally called as "*ban godne*". Forest harvesting is carried out to increase productivity and to fulfill the FPs needs of the users. The basic FPs needed by the local people include firewood, fodder, timber, cattle bedding materials and NTFPs (Pokharel 2000). Three kinds of harvesting practices: Collective, Paid labor and Contractor system are commonly adopted in CF. In collective system, all the users participate in harvesting operations in a volunteer way. In case of paid labor system, an individual is hired to carry out forest management activities and the number of individuals to hire depends on the workload to be carried out in the forest. Users get paid if they work as a labor. In contractor system, an enforceable agreement is made between an individual and users to carry out harvesting activity in the forest. Here lower bidder gets the contract of management and contractor can be an outsider or from users (Pokharel 2000).

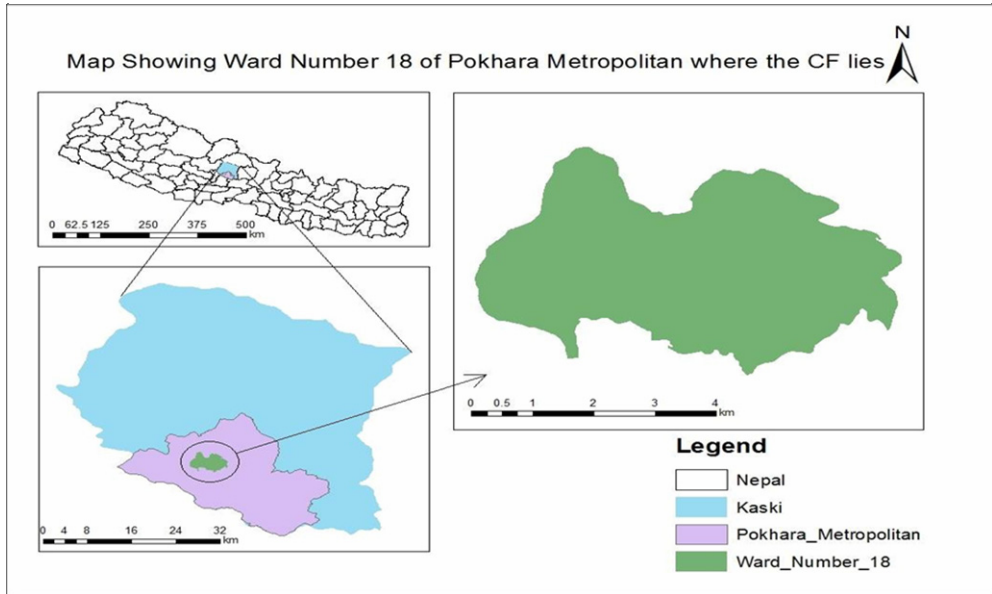
Users can get sustainable benefits from their forest only when FPs harvesting is performed scientifically (Heinrich 1996). CF is required to follow a forest management plan (FMP) to ensure sustainable management of forests. However, the role of FMP in guiding harvesting decisions and the resultant effects has not been explored. In many cases, harvesting techniques adopted by CFUGs have not been as per the operational plan and do not follow scientific approaches (Baral and Vacik 2018). If sound technology with efficient modern tools is not used, then valuable timber will be wasted. Harvesting should be sustainable with sound and effective harvest planning and this should support forest ecosystem, health and resilience, ensure forest investment, yield adequate financial, economic and social returns while minimizing environmental degradation (ITTO 2016). It should enable good technical

control, provide safe and healthy working conditions, and minimize costs (ITTO 2016). In the context of Nepal, out of total forest area, mid hill region has the highest percentage of forest area, i.e., 37.8% (DFRS 2015) and greatest proportion of CF (DoF 2014 as cited in DFRS 2015). However, due to high demand of FPs, there is increasing import from the outside. In such a gap of demand and supply, sustainable forest management through proper harvesting techniques could be better option in achieving the objectives. So the research is contextual and useful to know the status of harvesting practices and associated problems. There are many users who are dependent on forest resources for their livelihood, but limited study has been done in mid-hills regarding the harvesting of FPs; thus, a CF representing similar socioeconomic and biophysical aspects to other CF in mid-hills region was selected to assess the provision and actual practice in forest harvesting. Since a good harvesting plan is the essence for managing forest in a sustainable way, there is a need to assess and evaluate CF harvesting practice, tools & technique used and to find out common problems and constraints associated with them to give suitable suggestions and recommendation to the CFUGs about the scientific harvesting technique.

## Materials and Methods

### *Study Area*

The study was carried out in Andheri Ambot Lausibot CF of Pokhara Metropolitan, ward number 18 of Kaski district in which community forestry programme has been successfully implemented since the fiscal year 1990/1991 (Figure 1). This CF in mid hills with an area of 24.64 hectare has slope of 15-50 degree with an altitudinal range of 900 - 1400 m above sea level and harvesting practice has been done each year. The major species found were Chilaune (*Schima wallichii*), Katus (*Castanopsis indica*), Masurekatus (*Castanopsis spp*), Tiju, etc. The forest was divided into 4 blocks for ease in management work. The CF had 160 Households (HHs) with total population of 861. According to the constitution of the CFUG, there are 12 HHs of 'A' category (rich), 128 HHs of 'B' category (medium), and 20 HHs of 'C' category (poor). The CFUGs have obtained different FPs, i.e. timber, pole, firewood, wood for agriculture implements, ground grasses, foliage, and leaf litter by performing tending operations like thinning, pruning, cleaning, singling, and removal of dead, dying, diseased, and deformed trees. The major reason for selecting this study area was that this CF performs regular harvesting operation and shows the similar practice as of other CFUGs mid-hill region.



**Figure 1: Study Area**

### ***Data Collection and Analysis***

The research applied direct field observation along with quantitative and qualitative methods of data collection for the study. Likewise, thorough and in-depth interactions and discussions were held with concerned CFUGs members, committee members, officials and other stakeholders as required. Primary data were collected for systematic examination of quantitative phenomenon which could not be incorporated through secondary sources. Household survey was conducted to determine the quantity of FPs they get from the CF. In-depth questionnaire was designed based on the operational plan of the CF to find out available FPs, season and method of harvesting, annual harvesting quantity, and major problems associated with harvesting. The questionnaire survey was carried out by using structured and semi-structured questions. Out of 160 HHs, 60 HHs were selected through stratified sampling method by using well-being ranking as a stratum for selecting HHs so that there would be proportionate representation of HHs from each well-being category. Furthermore five key informant interviews with chairperson, female secretariat of CF, *ban heralu*, treasurer of the CFUG and school principal were held to get information on the process followed during harvesting operations as such information could not be gathered from direct field observation. Also, CF was visited during harvesting process in order to observe and gain insight about the harvesting practice followed by the users.

The qualitative data were analysed in descriptive texts while quantitative data were analysed by using MS-excel and SPSS. Priority ranking using non-parametric Friedman test was done to test differences between groups; the dependent variable being measured was ordinal. It compared the mean ranks between the related

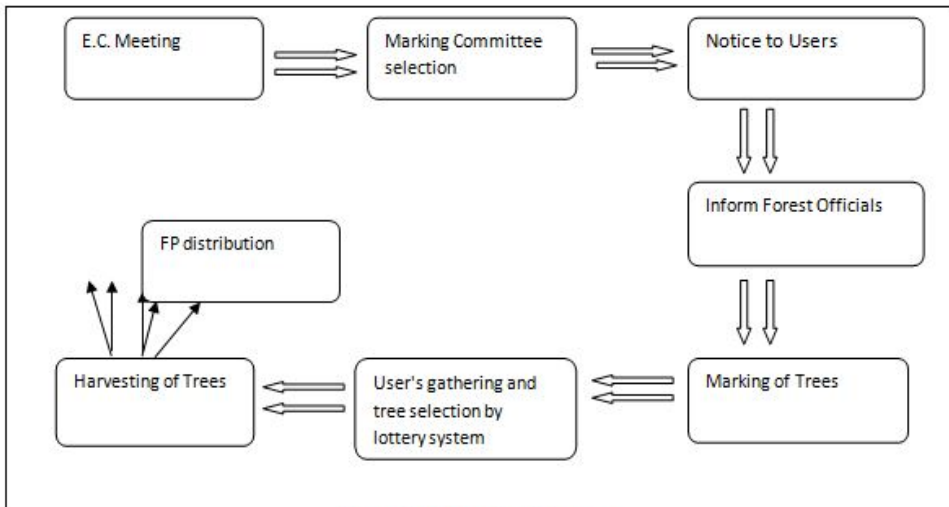
groups and indicated how the groups differed, in which mean rank meant the average of the rank. Here, users were asked about the priorities they would give during harvesting of FP and were asked to rank them accordingly, 1 being the top priority and 4 being last. The test was used to analyze preferences of households on the harvesting factors such as safety, geographical condition or requirement of high quality timber during harvesting.

## Results and Discussion

### Results

#### *Harvesting Practice*

Harvesting was generally practiced once a year for maximum of three months, from December to February. For harvesting purpose, the executive committee (EC) formed a sub-committee which performed tasks like marking trees for harvest (Figure 2). This sub-committee consists of members from either EC or users as per availability of time and interest. The notice for harvesting posted in various places to inform the users. The CF chairperson also informs forest officials about harvesting often through phone. The forest official, based upon the necessity of technical support, visit the CF. Since 2073, the users had allocated one tree for one HHs through common consensus. The trees were selected and marked by the marking committee for felling. Regarding the provision of single tree, selection was performed using lottery method; such that, each tree marked had a number and each HH had to choose one number by lottery method. For fuelwood, trees were marked in such a way that each HH would derive at least 10 *bhari* (1 *bhari* =30 Kg) of fuel wood. Mostly traditional equipment and few modern tools were used during harvesting process. Since CF did not sell FPs to outside CFUGs, users themselves performed harvesting operations, without hiring external skilled manpower, as hiring skilled personnel would cost money. Some users carried harvested products themselves; others used vehicles for transporting to a longer distance. Fodder trees were extracted every year, by performing tending operations like thinning, pruning, cleaning and weeding. Besides fuel wood, users need to submit application for FPs like timber, poles, and agricultural implements.



**Figure 2: Harvesting Process**

### *Selection of Trees for Marking*

The trees marked for harvesting were dead, dry and standing, dying, fallen, diseased, and deformed trees. Trees were marked also considering tree competition factor. But for the marking committee, it was very hard to mark trees in difficult terrain as some areas were in sloppy and steep terrain. During the field observation, it was found that some green trees holding the sloppy land anchoring the soil at the edge of steep was marked for felling.

### *Directional Felling*

During direct field observation, users were found knowledgeable about directional felling when felling with axe alone, as the first cut was made in the felling direction and the back cut was made in the opposite direction leaving some distance above from the first cut. But while using saw, most of them were not exactly sure about the first cut to be made on the opposite side of felling direction while felling tree. This sometimes led to a hazardous situation. The users lacked sound knowledge of using a saw. Some were unaware of the techniques followed while felling tree using both axe and saw and thus, the felling took more time than it would take if directional felling technique was applied. Users generally felled trees keeping the stump height more than 30 cm in contrast to the recommended 15 cm stump height. Likewise, the regenerations were found affected during the felling.

### *Harvesting Practice of Various FP*

**Small dry fuel wood:** As per OP, 1 *bhari* per day per HHs of the small dry fuelwood (*jhijhadaura*) could be collected every month for free at any time, without using

weapons. But, as per HH and key informant interview the same was not practiced in the CF and users were only allowed to collect the small dry fuel wood once a year, after a month of main felling but in case of urgency of the fuel wood, they could collect without using any weapon from any part of the forest.

**Green fuel wood:** The green fuel wood could only be obtained during tending operation from prescribed block, from December up to March as mentioned in OP. Here the practice of harvesting green fuel wood was compatible with that mentioned in OP; however, the block selected for harvesting was decided by EC. Those trees that were old enough, diseased, dead, dying, deformed, leaning were selected for harvesting. The number of green fuel wood tree to be harvested was equal to the number of HHs such that, every household would get one green tree every year.

**Timber:** For harvesting timber, there is no any specific period. If any user needs timber, they need to submit an application to the EC mentioning the reason behind timber demand. The EC after investigating the requirement of the user can give 1-2 trees. And the application should be submitted by December 1<sup>st</sup> by paying the price as declared by the E.C. The timber is generally harvested from November 1<sup>st</sup> to April 28.

**Other FPs (such as *dada, balo, bhata*):** For other FPs, user need to submit the application mentioning the purpose, by 1<sup>st</sup> December and the *dada, bhalo, bhata* could be harvested from the prescribed block in which tending operation will be carried out which is generally performed from November 1<sup>st</sup> to January 29.

**Agricultural implements:** For this, user needed to submit the application mentioning the purpose, within December, and then only wood for agricultural implements can be harvested from prescribed block in which tending operation will be carried out.

### ***Tending Operation Practiced in CF***

Thinning was done once a year, simultaneously, at the time of *ban godney* for better growth of limited number of trees and for improving regeneration condition. Thinning was done after the group selected by executive committee member, marked the trees for thinning. Similarly, pruning was done once every 4-5 years as per requirement with the objective to improve the tree condition and increase availability of fuelwood. Generally thinning was not done in the year when pruning was done and it was done with the participation of all users, using sickle. Likewise, weeding and cleaning were done once every 4-5 years, when the forest was found to be covered with bushes and shrubs disturbing the desired species of the area. Users used to cut, uproot and remove the invasive species, undesired shrubs growth, climbers and thorny species occurring and disturbing the tree species using locally available harvesting tools.



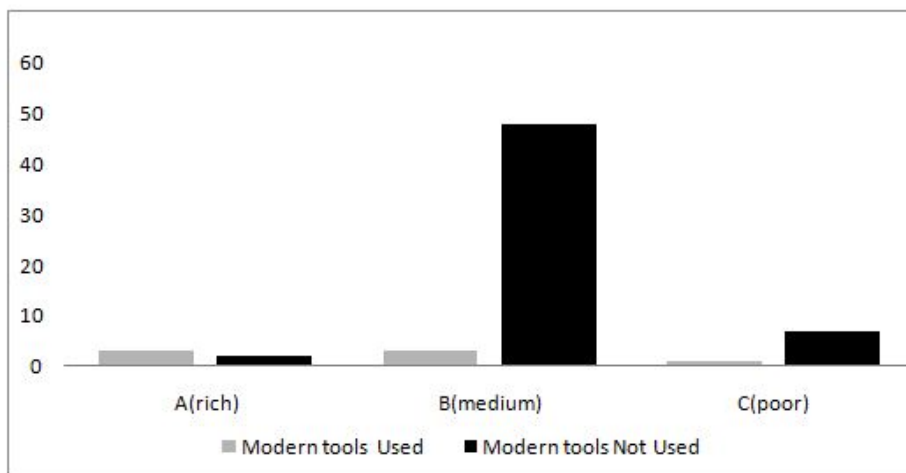
## Tools and Techniques for harvesting

### Tools and Their Usage

CFUG uses their own traditional tools for harvesting FPs but they had started using modern tools like cross cut saw (Table 1). Users claimed that modern tools felled tree faster but required skills while using, but they were more comfortable with traditional tools which they had been using for ages. Looking at the relationship of well-being ranking and usage of tools, it was found that rich users were using modern tools more often than traditional tools, as they have tools purchasing capacity whereas users from poor and medium rank preferred to use traditional tools as they were less costly but more comfortable (Figure 3).

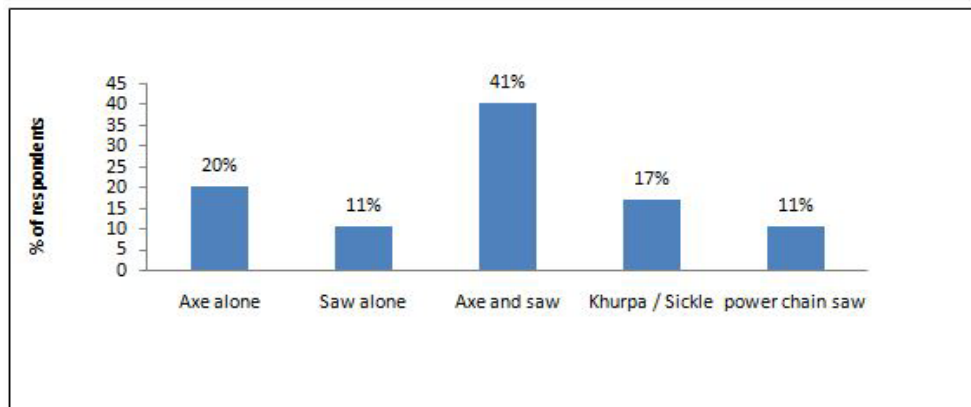
**Table 1: Tools Used by Users**

SN	Tools Used	Purpose
1.	Sickle	Firewood cutting, bush cutting, pruning, cleaning, vines cutting
2.	Axe	Felling tree, splitting, bucking, trimming and limbing
3.	Bill hook	For looping and limbing
4.	Cross cut saw	Felling large diameter tree mainly for timber, Logging, bucking



**Figure 3: Modern Tools Used as per Well Being Rank**

While asking about their preference, 41% respondents preferred axe and saw as they found it easier to fell big sized trees with these tools. Only 11% respondents preferred saw alone or power chain saw because tools are costly and require skills (Figure 4). Though the semi mechanized equipment, i.e. power chain saw, had not been used in the studied CF, 11% respondents preferred using it because they believed that power chain saw has high performance. The users who used traditional weapons, i.e. 37 percent, too showed willingness for modern tools if supported.



**Figure 4: Tools Preference**

### *Harvesting of FP*

While asking about the priority on factors during harvesting, users selected different priorities. The priorities ranking done by Friedman test showed that user selected their own safety as a first priority whereas consideration of quality of harvested wood received lowest priority (Table 2). Since the wood obtained from the forest was mainly used as firewood, users generally didn't give much priority to the quality of wood which can be damaged due to improper harvesting practice.

**Table 2: Priorities Ranking During Harvesting**

Priorities	Mean Rank	Priority
Safety	1.3	1 <sup>st</sup>
Regeneration	1.8	2 <sup>nd</sup>
Terrain condition	2.9	3 <sup>rd</sup>
Harvested wood quality	4.0	4 <sup>th</sup>

### *Compliance with CFOP in Terms of Harvesting*

The forest was divided into four blocks for its management and harvesting should be carried out in the specified blocks as stated in OP, but there were some deviations in a practice Table 3.

**Table 3: Compliance with CFOP**

S.N.	Practice Stated in OP	Actual Practice
1	Harvesting should be done block wise.	Not exactly as mentioned in OP. It is more subjective.
2	During harvesting, marking should be done using <i>Taccha</i> with the help of forest technician.	Marking was usually done by users and EC (no forest official) and without <i>Taccha</i> .

3	Marked trees are to be cut after the recommendation of forest technician from sub-division Forest office and approval of DFO.	Marked trees were cut informing forest official mainly through phone after cutting or sometimes before harvesting. It's a kind of informing rather than taking approval.
4	Harvest monitoring committee needs to be formed from among E.C. (5 members) to take details like time of harvest, tree number, species, size, and monitor the harvest.	Marking Committee was formed from among E.C. and users (8 members) to mark trees for cutting. Only Species was noted during marking but not the size, and monitoring was not done. No separate monitoring team formed for harvesting purpose.
5	After preparing depot register, it has to be submitted to sub-division forest office, and only then, sales and distribution have to be done.	Depot register were not prepared, therefore no submission to DFO.
6	"Chappan" register, "Kataan" register and "Depot" register have to be maintained.	Only the marked trees were noted in a copy, with the name of the trees species.
7	Marking should be done on two sides, one just above 6 inch from ground and other, above 4.5 feet from ground.	Marking was done only on one side, at comfortable height.
8	During tending operation, bush clearance, fodder tress and <i>amlisho</i> plantation, fire line construction, erosion control activities needs be done.	The main activities performed was cutting of fuelwood during tending operation.
9	Harvesting of timber and fuel wood should be done considering Annual Allowable Cut (AAC) from the particular block as mentioned in the OP.	AAC was not taken into account, as no any calculations were made while harvesting FP.

Also, the tending operation has to be performed in the selected blocks mentioned in OP however the blocks were randomly selected based upon the interest of marking committee over the years (Table 4).

**Table 4: Deviations in Tending Operation from OP**

Year	Block Number for Tending Operation as per OP	Block Number for Tending Operation in Practice
2071	2, 3	4
2072	3,4	3
2073	1,4	1,4
2072	1, 2	2,4
2075	2,3	3,1

The silvicultural operation was found to be done without following OP and annual increment of the available stock. In contrast to AAC mentioned in OP, no any calculation was done while selecting trees and performing harvesting operation. Users revealed that timber is harvested very rarely, and done as per the requirement of the users. Fuel wood is also harvested considering necessity of HHs regardless of the actual practice in OP. Furthermore, clearly maintained records of forest management activities, harvested products, sale and financial statements was lacking.

## Discussion

This study found that harvesting system and selection practices were largely governed by the users rather than OP. In contrast to the collective harvesting system of FPs and their distribution as per users' demand followed in most of the CF (Pokhrel 2000; Toft 2013; Bhattarai 2016), the studied CF did not follow the process, rather users would individually harvest the allocated tree. The former process of collective harvesting was not found justifiable by the users of the studied CFUG because some individual would contribute more effort in harvesting process. Likewise, there was a problem of favorable time for harvesting as every member could not allocate their time to participate at the same time. Due to this reason, the studied CFUG have been following this system of harvesting FPs i.e., individual harvesting of the allocated tree, so that they could harvest at their suitable time within the harvesting period given by EC. Similarly, harvesting is done in other CF according to actual demands of the FPs (Yadav 2003), but in the selected CF, users generally determine the harvesting quantity in the study sites following equality.

Similarly, marking of trees for harvesting generally was done by CFUG through sub-committee; however, other studies found that marking is decided by the forest officials as per the OP of the CF (Baral and Vacik 2018). The process of marking and felling without consulting forest technician might affect the quality and effectiveness of tree marking (Baral and Vacik 2018). This was further supported by Chaudari (2016) stating that one of the causes of unsustainable harvest was insufficient technical inputs. Baral (2018) concluded that forest officials were more engaged in CFs which had high commercial tree species. This might also be the reason of absence of forest officials at the study site as the study site's forest was at pole stage

having species of low commercial value. However, the busy schedule of forest officials working in mid hills could be a reason for not attaining harvesting process including marking time. Chaudari (2016) mentioned that weak law enforcement, impunity and insufficient technical inputs as the reason for unsustainable harvesting practice. Chaudari (2016) further mentioned that regular assessment of CF by forest official would make mid hill's CF a better managed forest.

Directional felling which is a better tree-felling technique limits the damage to the remaining stand linked to tree fall and this practice reduces forest degradation. In this scenario, directional felling is seen as an important aspect (Tritsch et al. 2020) but users were not following direction felling in the studied CF due to lack of knowledge. As a result, there is a huge chance of damaging regeneration and trees in the periphery. Therefore, users are required to be aware about the systematic felling, the importance of reduced impact logging, and controlled harvesting which is very important (Tristsch et al. 2020).

So many incompatibilities were observed between the harvesting practices in real field and those mentioned in OP regarding harvesting practice in the blocks, use of marking system, quantity and deposition of harvested products. Our findings resonate with that of Toft (2013) and Baral and Vacik (2018), whose result depicts that, harvest may take place in any of the blocks, independent of the AAC in case of CF and whatever in the OP, users act only after the committee decision. In the studied CF the same case was observed as users and committee members were not aware of the need and importance of harvesting in a block wise manner. So, the E.C. would decide the block which needs silviculture treatments based on their judgment while inspecting forest and on that basis, the blocks were selected for harvesting. Similarly, our results depict the deficient of *Kataan*, *Chhapaan*, and depot register and lack of clearly maintained records of forest management activities, product harvest, sale and financial statements. This is in line with the results found in Gentle (2000) since the study shows that record keeping and documentation functions of the CFUGs are very weak as financial record and record of FPs harvesting, distribution and sale are not properly maintained. On the other hand the Toft (2013) supports the need of this kind of records as this regulate the activities of the users and avoid haphazard extraction and harvesting above the permitted volume. Similarly, according to Yadav (2003), harvesting practices destroyed under-growth as a result of poor handling of harvested logs while extracting from forests to the log yard. The same result was found in the studied CF as most of the regeneration was affected during the felling of the tree because users were felling trees without lopping the tree prior to felling. During tending operations, various activities such as bush clearance, fodder tree and *amlisho* plantation, erosion control activities need to be done, but such activities were not found done, as most of the users, were concerned only with cutting the trees, making of *bhari* for them and utilizing the FP, rather than doing any tending activities.

Users were found using traditional tools more often than modern tools (cross cut saw and chain saw were considered modern tools as per CF's OP). The reasons for this were: modern tools were in limited number and most importantly require skills. Axe and saw were the most preferred tools, whereas saw and power chain saw were least preferred. Thus the traditional tools are still the most used tools in CF, and this finding resonates with the conclusion made by Yadav (2003). Here, rich users were using modern tools more often than traditional tools as they could purchase these expensive tools but poor users were using traditional tools as they were experienced in using them and these tools were affordable for them. Talking about the priorities made by users during cutting, they seem aware of the priority given to regeneration while cutting but still in the field, regeneration was found affected unintentionally, as most of them were unknown and unplanned about the direction of the felling. Thus, training is required for all users of the CF to aware and train them about systematic harvesting.

As mentioned in CF's OP, OP should be referred while performing various management activities including the selection of blocks for carrying out harvesting operation but deviation was seen in the studied CF regarding the block selection. During initial years of handover (about 4-5 years), forest technicians used to guide CFUG members in selecting blocks and providing technical assistance physically however users performed block selection and other harvesting by themselves in recent years. It was found that many users were less aware of the provisions mentioned in OP regarding block management, therefore they used to follow the general logic of selecting the block and the logic they mentioned was: "block that is selected this year will not be selected next year". While observing their records, block number "4" was selected more frequently as this block was easily accessible compared to other blocks located in steep and unapproachable terrain.

## **Conclusion**

Subsistence harvesting was practiced in the study site with the application of traditional methods. The harvesting practices, however, did not comply with OP and the decisions are primarily guided by the executive committee members. Traditional tools were preferred to modern tools due to budget and skill constraints. Due to efficiency in felling larger trees, users showed willingness to use modern tools; therefore provision of support with modern tools and training to operate them is crucial in order to make tree harvesting process less damaging to the regeneration and plants around and less damaging to harvested wood itself. Since this CF in mid-hill is the forest with low value timber species which derives less interest of the stakeholder, it is the user's dedication, interest and innovative management practice that are safeguarding the forest attributes. Therefore, blend of the innovative indigenous knowledge with scientific and technical involvement of forest official with their field frequent is indispensable.

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