CONTRIBUTION OF PRIVATE FORESTS TO LIVELIHOOD IMPROVEMENT OF LOCAL COMMUNITIES: A CASE STUDY OF BHOJPUR DISTRICT

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Contribution of Private Forests to Livelihood Improvement of Local Communities: A Case Study of Bhojpur District

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Declaration

I, Janak Sapkota, hereby declare that this project paper entitled "Contribution of Private Forests to Livelihood Improvement of Local Communities: A Case Study of Bhojpur District" is based on primary work and all the sources of information used are duly acknowledged. This work has not been submitted to any other university for any academic award.

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CERTIFICATE OF ACCEPTANCE

This is to certify that **Mr. Janak Sapkota**has completed his Bachelor's degree research thesis entitled **"Contribution of Private Forest to Livelihood Improvement of Local Communities: A Case Study in Bhojpur District"** under my supervision is hereby approved.

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Abstract

Private forest plays an important role in supporting rural livelihoods by supplying timber, fuelwood, fodder, leaf litter, and income to farming households. This study was carried out in selected municipalities and rural municipalities of Bhojpur District to examine the contribution of private forest to the livelihood of rural communities. The specific objectives of the study were to analyze the contribution of private forest to financial and selected livelihood assets of households, to assess users' perception towards private forest, and to identify the major challenges faced in the management and use of private forest. Both primary and secondary data were used for the study. The collection of primary data through household survey was done in which structured questionnaire, with field observation and review of relevant records was conducted. The data was analyzed using MS Excel and SPSS.

The finding of this research showed the meaningful contribution made by private forest in the livelihood of rural communities. The contribution of private forest was reflected through timber and firewood sale from privately owned land, earning from households, and support during difficult times of their life. Most of the respondents considered the private forest as a important assets of their daily life. This study has also shown the contribution of private forest to the national GDP through province fees, taxes and VAT amount. Overall, the study concludes that private forest is an important livelihood asset in rural Bhojpur by contributing in household welfare and to economic activity in the household level.

Keywords: Private forest, livelihood contribution, rural communities, Bhojpur District

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Chapter 1: Introduction

1.1.Background

Private forestry is one of the familiar forest management regimes in Nepal, but it has historically received much less policy and research seeking than community forestry. The Forests Act, 2019 defines private forest as forest established, nurtured, or conserved on privately owned land under prevailing law, thereby placing both land tenure and tree tenure primarily in the hands of the landholder (Government of Nepal, 2019). This legal recognition is important because it formally recognizes the right of households and local livelihood to grow, manage, harvest, transport, and market tree products from their own land. Though practical procedures remain influenced by administrative rules and local governance procedures (Amatya & Lamsal, 2017; Ranjit, 2019). In the context of Nepal, private forestry can be seen in multiple forms, including trees on own field areas, home gardens, agroforestry plots, and naturally regenerated tree on abandoned or marginal land (Dhakal et al., 2012; Ghimire et al., 2024; Ministry of Agriculture and Livestock Development, 2019). Because of this wide varieties of forms, private forest can't be separated from the broader system of farming and from the day-to-day livelihood strategies of local households in the middle hills and other rural regions of Nepal (Pandit et al., 2014; McGunnigle et al., 2023).

Private forest contributes to livelihoods through both support use and market-oriented production in the context of Nepal. From Privately managed land, households get timber, poles, fuelwood, fodder, leaf litter, fruits, and other tree-based materials from their, minimizing the pressure on cash exchange and helping sustain their traditional farming systems (Pandit et al., 2014; Dhakal et al., 2012). Several evidence from the Mid-hills shows that private forests and trees are an important aspect of household-level living income, alongside community forests (Oli et al., 2016). Further studies on trees outside forests indicate that privately managed trees can contribute to rural income, diverse production, and strengthen resilience by providing products that can be used directly or sold during a time of need (Baral et al., 2013; Ghimire et al., 2024). From the perspective of sustainable livelihood's, such resources are closely related with natural, financial, and physical assets and can also support to stabilize socially by buffering rural households against shocks and seasonal uncertainty (DFID, 2000; FAO & IFAD, 2015). In this sense, private forest should not be viewed only as a collection of trees on private land; it is better

understood as a livelihood-supporting system that connects with agriculture, environment, household welfare, and rural production (Atreya et al., 2021; Pandit et al., 2014).

The private forest is important more than just household subsistence. Recent research shows that agroforestry and privately owned land forests provide larger economic benefits, including the support in biodiversity, soil and water conservation, carbon storage, and raw material supply for forest-based enterprises (Jose, 2009; Acharya, 2006; Ghimire et al., 2024). In Nepal, the private forests have raised as a major source of soft and hardwood in recent years. As road access has expanded everywhere and demand for wood construction has been increased (Amatya & Lamsal, 2017; EnLiFT, 2022). Policy discussions and analysis mainly highlight the role of forest-based private production in income generation, employment creation, and wider forestry-sector growth (Subedi et al., 2014; Paudel, 2024). National Agroforestry Policy of Nepal links agroforestry expansion with commercialization, climate resilience, land productivity, and national prosperity, which suggests that private tree resources are recognized increasingly as a development asset rather than just a subsistence reserve (Ministry of Agriculture and Livestock Development, 2019). Similarly, wider forestry-sector assessments shows that forestry and timber-based production continue to hold importance for rural energy use, employment, and economic contribution in the context of Nepal (FAO, 2009; Bhatt et al., 2021).

These issues are especially relevant in the eastern hilly region of our country, where agriculture, migration, labor shortage, and land-use change are shaping local production systems. In such areas, private forests majorly support livelihoods by supplying materials for daily use, generating cash through forest product sale, supporting livestock and crop production, and functioning as a reserve asset during difficult periods. At the same time, the level of contribution seems to vary by landholding size, trees stock, market access, household labor, and the extent to which private forest is linked into the traditional farming system (McGunnigle et al., 2023; Rajeev et al., 2024). Recent reviews of agroforestry and private forestry in Nepal also shows that privately managed trees can strengthen climate adaptation and livelihood diversification, particularly in farming system in hilly region where households combine crops, livestock, and woods on limited land (Ghimire et al., 2024; Atreya et al., 2021). Yet compared with community forestry, detailed specific studies on private forest contributions to household welfare, perception, and contribution of such products towards provincial GDP remain limited. This gap is particularly visible in

districts such as Bhojpur, where rural households continue to depend heavily on private land-based livelihoods and where private trees and products are part of everyday life.

Against this background, the present study majorly focuses on the livelihood contribution of private and privately owned forests in rural communities of Bhojpur District. Hence, by considering the information on timber trade and related revenue. The study also shows the wider economic significance of private forest products far than the household scale (Amatya & Lamsal, 2017; Bhatt et al., 2021; Subedi et al., 2014).

1.2.Objectives

General objective:

General objective of the research is to study the contribution of private forests to the livelihood of local community people of Bhojpur District.

Specific objectives:

The specific objectives are:

- To examine the contribution of private forest products to the financial assets of local households in Bhojpur District.
- To analyze the role of private forest management in strengthening the social assets of livelihood among local communities.
- To assess the contribution of private forests to the national economy through taxes and revenue generated from forest products.

1.3.Rationale of the study

Private forests in Nepal have increasingly been recognized as an important component of the forestry sector, along with community, leasehold and government-managed forests. Under the policy provision, Ministry of Forests and Environment encourage individuals to register, regulate and manage private forests to enhance household income, timber supply, and contribute towards environmental conservation. Previous studies have shown that forest resources has contributed significantly to rural livelihoods by providing timber, fuelwood, fodder, non-timber forest products, and cash income, strengthening different livelihood assets (Chambers & Conway, 1992; Ellis, 2000). In the context of Nepal, most of the research has mainly focused on

community forestry as a successful model of participatory resource management (Agrawal & Gibson, 1999; Paudel & Paudel, 2017), while comparatively less attention has been given to the role of private forests in supporting household-level livelihood of the people. Despite their growing area and economic importance, the contribution of private forests to social capital (such as networking, cooperation, and local institutions) and financial capital (such as income generation and savings) remains unexplored, particularly in hilly regions like Bhojpur district.

However, there is a lack of comprehensive studies that examine the social and financial assets of livelihood that are contributed by private forests, particularly in Bhojpur district. The private forest, managed by local people, is an important source of livelihood for local communities in the district. There is limited research on the social and financial assets of livelihood that are contributed by this forest products on the livelihoods of the local people. Therefore, this study aims to fill this knowledge gap by assessing the social and financial assets of livelihood that are contributed by the forest products on the livelihoods of its local people in Bhojpur district. The findings of this study will provide insights into the effectiveness of community forest, private forest, and other forest products in contributing to social and financial assets of livelihood, and its impact on the livelihoods of the user group. Overall, this study is important because it addresses a gap in the literature on the contribution of forest products to livelihoods, particularly in Bhojpur district. The study will provide valuable insights into the social and financial assets of livelihood that are contributed by private forests, and the factors that contribute to the success of private forest management in enhancing these assets.

Chapter 2: Literature Review

2.1 Private Forest

A forest patch planted, or protected on private land that is officially owned by a person or group is called private forest. According to Forests Act, 2019 private forests are a separate type of land tenure which leads Government of Nepal to help private forest owners with services and marketing. This is important because it sets private forests apart from national forest regimes and encourage people invest in trees, agroforestry, and manage forests for the long term (Government of Nepal, 2019). Nepal's private woods are becoming more important as the country's forests change. Private forests are more than just small patches of trees around homesteads, as policy and research has shown. They are becoming an important source of firewood, fuelwood, fodder,

and tree-based income There is a lot of field forestry and tree planting on farms, especially in the middle hills and eastern districts. According to Amatya and Lamsal (2017), private forestry in Nepal has not been given enough attention in policy discussions for a long time, even though it is very important for rural households, the local timber supply, and business decisions made by households. Private forests are very important in rural hill towns where people take care of trees on bari land, khet risers, marginal slopes, homesteads, and woodlots. These privately managed tree resources help people become less reliant on public forests, make sure they always have access to forest products, and be more flexible when market chances come up. For more information on forestry in Nepal, see Laudari et al. (2024). New research shows that trees on private land now provide most of the wood and firewood used in homes. This shows that Nepal is now not only relying on the forests managed by gevernment but also moving towards self managed forrest by households for diverse forest products.

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2.2 Livelihood

Livelihood refers to the skills, resources, and actions that re needed for basis fulfillment for living Chambers, R., & Conway, G. (1992). According to sustainable livelihood strategy, sustainale life is that type of life which can handle and recover from shocks and stress while the skills and assets keeps improving without any harm to the natural resource. This concept is important because in Nepal private forest is not only used for income generation but also to fulfil the daily basic needs , keep the land productive, and deal with seasonal changes (DFID, 1999).

In the remote area of Nepal, people are still dependent on land, farming, animal husbandry, migration, and forest supplies for their living. Forests products help people directly and indirectly. Direct products like wood, fuel, food, leaf litter, poles, flowers, medicienes and goods that can be sold. These help the local people in lowering household spending, help farmers grow crops and raise animals, makes people resilient in time of cash shortage, also it is emergency assets that can be sold when required. This, livelihood importance private forests include much more than just market income. It should include assets for basic needs, saving on input bought, and safetry for households (DFID, 1999; Shrestha & Shah, 2020).

2.3 Sustainable Rural Livelihood System Analysis Framework

A lot of people use the Sustainable Rural Livelihoods Framework that DFID made to look at how assets for making a living, vulnerability, institutions, strategies, and results all affect each other. The framework is especially helpful for studying forests because it links resources from forests to the overall well-being of households instead of just looking at forest products as separate goods. So in this view, forests not only provide natural capital but also serve as a base for physical, social, and sometimes financial capital by allowing people to use, trade, and organize their resources (DFID, 1999).

The framework is good for a study on how private forests help rural people in Bhojpur district make a living for at least three reasons. The first thing it does is help separate the different ways that private forests help families, like by providing cash, food, building materials, and safety nets. Second, it shows how institutions and policies, such as forest laws, transport permits, and the way the local market works, affect how households gain from private forests. Third, it lets us see how households see and deal with management problems as part of bigger plans for making a living, rather than as separate factors.

2.4 Capitals of Livelihood and Pentagon Capitals

Five main types of capital are mentioned in the writing on sustainable livelihoods: natural, human, social, physical, and financial. These are often shown together as a triangle for making a living. The pentagon is useful for forest-based rural studies because families depend on a mix of these capitals, and the condition of one capital often depends on the condition of others (DFID, 1999; Kollmair & Gamper, 2002).

In a private forest, natural capital includes the size of the forest, the number of trees that are still standing, the variety of species that live there, and the ease of getting fuelwood, food, logs, and other forest products that aren't wood. Money from selling wood and non-wood goods, savings from making your own materials, and the ability to sell wood products when you need money are all examples of financial capital. Social capital can be seen in things like trade, sharing work, following local tree-planting rules, and joining savings or forest-related groups. When private forests provide poles, wood and other building materials for homes, barns, fences and farm buildings, they can change physical capital. All of these are affected by human capital, which includes management skills, understanding of how to choose species, harvesting techniques, and

markets and rules.A lot of the research that has been done on Nepalese forestry and employment has focused on community forestry, but the same ideas can be used for private forests as well. The major difference is that in private forest systems, we focus more on the benefits of the households. Thus, the family income increases obviously but they may not be as clear as in the official accounting systems. So, a study on private forests and livelihoods should look at both the obvious financial benefits and the less obvious social or survival benefits.

2.5 Private Forest and Livelihood

The literatures from Nepal about livelihoods shows that forest products contribute to the livelihoods of rural communities through a mix of subsistence and the commercial functions. The fuelwood is important for household energy and fodder supports in the livestock-based farming, leaf litter helps to compost and soil fertility, and timber or poles provides construction materials. The studies of Nepalese forest product have shown that non-timber products from forest play a major role in household use, local trade, and supplementary income in rural and mountain areas (Shrestha & Shah, 2020; Paneru et al., 2024).

The Private Forest can contribute to livelihood of people more directly than community-managed systems because the household controls harvesting timing, allocate the production, and decision in sale. This control improve flexibility. Households may harvest timber for house repair, sell trees to meet emergency cash needs, or manage fodder species to support year-round livestock feeding. Where markets exist, private forest can also become a small but meaningful enterprise asset. At the same time, the actual size of the contribution varies by landholding, species composition, market access, labour availability, and household management capacity.

Although many published studies in Nepal focus on community forestry rather than private forestry, they still offer useful insight. Research from Bhojpur on community forest and rural livelihood shows that forest products remain closely linked with social, economic, and management dimensions of rural life, and that the relationship between forest use and livelihood remains strong in the district context (Rai, 2023). Likewise, participation studies from Bhojpur have highlighted the centrality of local people in forest management, suggesting that household-level forest engagement is an established feature of the district's rural economy (Sapkota, 2015).

Regional value-chain analysis from the Koshi hill districts, including Bhojpur, further indicates that forest products have economic potential beyond subsistence use, but this potential depends on market organization, enterprise development, and the removal of bottlenecks in processing and trade. This is highly relevant for private forest studies because it suggests that livelihood contribution is not determined by resource availability alone; it also depends on whether households can convert forest products into reliable value (ForestAction Nepal, 2014).

Chapter 3: Materials and Methods

3.1 Study Area

The study area of this research is Bhojpur District, located in hilly region of Nepal. The latitude and longitude of the district ranges from 26°53′N to 27°46′N and 86°53′E to 87°17′E with an area of 1507sq.km**.** The elevation range of the district is from 153m to 4153m covering all 3 regions of Nepal which supports high biodiversity and variation in flora and fauna. However, the dominant species of vegetation found are Sal, Salla, Uttis, Sisso etc. The district has strong forest-dependent communities whose major sources of income are community forests and private forests. There are total of 9 local units in Bhojpur district among which only two are municipalities where other 7 are rural municipalities. Majority of the population depends on agriculture and forest products for their daily life.

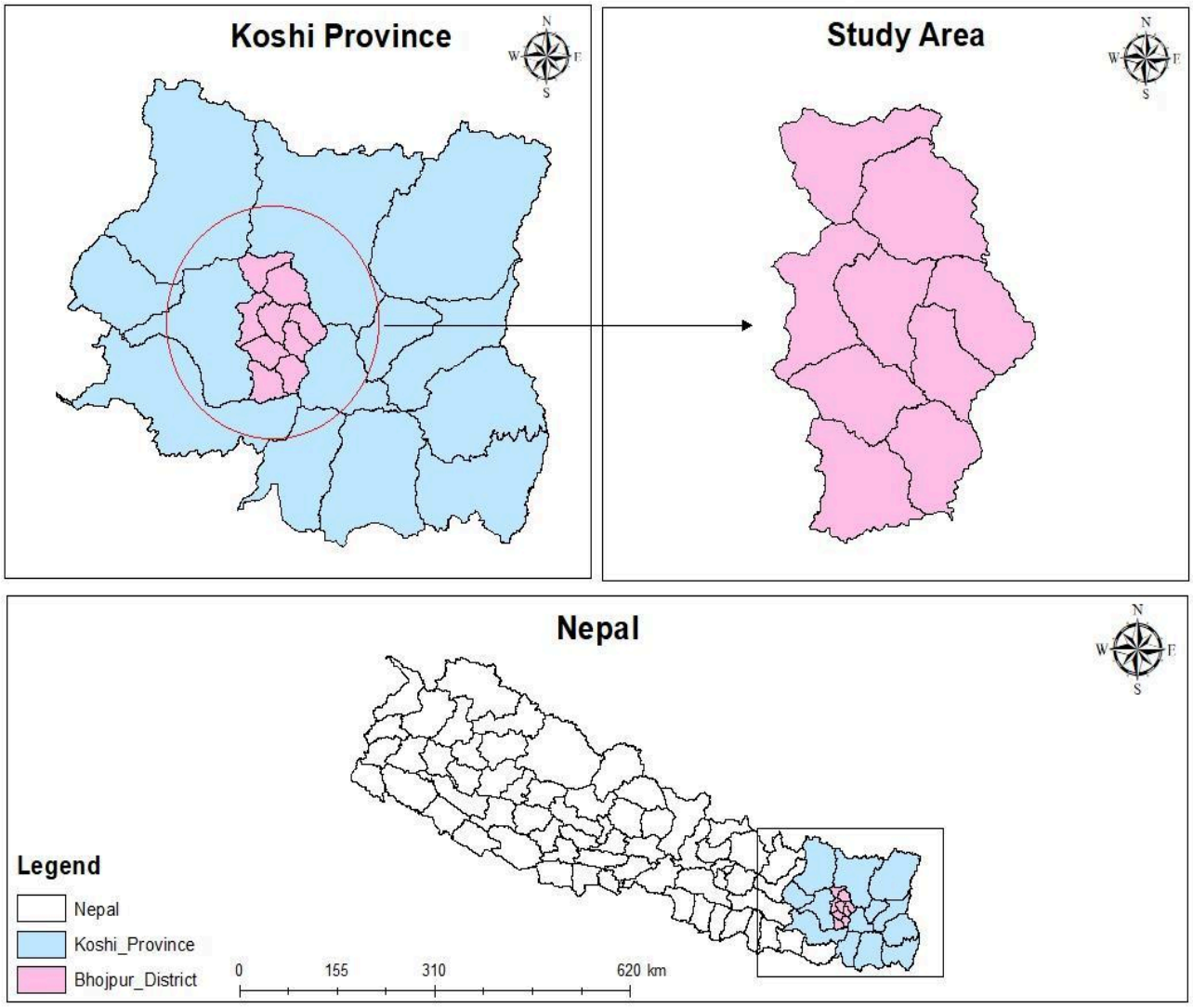
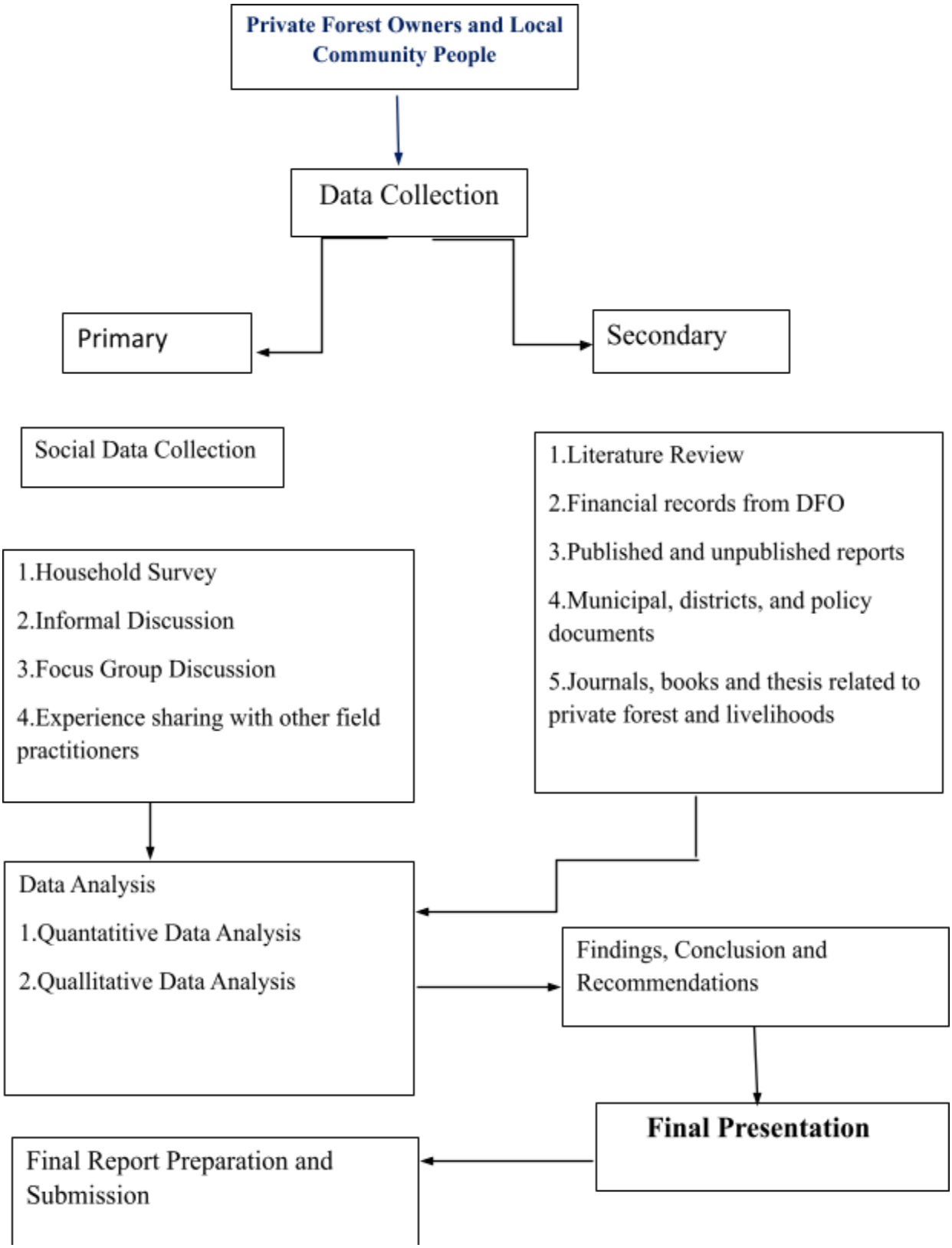


Figure 3.1 Study Area Map

3.1. Research Design



3.2. Data Collection Methods

The study was carried out through the collection of both Primary and Secondary data.

3.2.1. Primary Data Collection

3.2.1.1. Sampling methodology

Purposive sampling was used for the selection of households. Minimum of 10 households were selected as sampling units from each sub-division. In total, 60 households were purposively selected for the questionnaire survey.

3.2.1.2. Household Survey (HHS):

The survey was conducted by using semi- structured questionnaires. The questionnaire survey was carried out on a purposive basis with the local community people in the field. 60 of the total households were surveyed.

3.2.1.3. Focus Group Discussion (FGD) and Interview with Key Informants:

5 informal interviews were performed with key informants (Mayor, ward president, local experts), to learn more about the history, process, and contribution of the private forest in the households of the local people.

3.2.1.4. Direct Observation

Direct observations were done to learn about the biophysical characteristics of the forest, the local government developmental efforts, and to cross check the data collected via focus group discussions, interviews, and questionnaire surveys.

3.2.2. Secondary Data Collection

The records related to private forest product trade and revenue collection, including timber sale records, VAT records, province tax records, and other relevant administrative documents, were taken from DFO to show the net contribution of private forest in the national GDP.

3.3. Data analysis methods

The data obtained was both qualitative and quantitative in nature. Simple statistical tools such as mean, percentage etc. were used for analysis. Computer software such as MS Excel, SPSS etc.

were used for data processing and interpreted in the form of tables, graphs, weighted mean, charts etc.

Chapter 4: Results and Discussion

1.4.Results

1.4.1. Socioeconomic characteristics of respondents

Among surveyed 60 households, 81.7% were represented by male while remaining 18.3% were female respondents. It shows that the surveyed households were dominated by male. The age structure was focused in the economically active groups: 31–40 years and 41–50 years each observed for 28.3%, while another 21.7% fell in the 51–60-year class. Altogether 78.3% of respondents were between 31 and 60 years of age, showing that the analysis dominantly reflects households in their active production years.

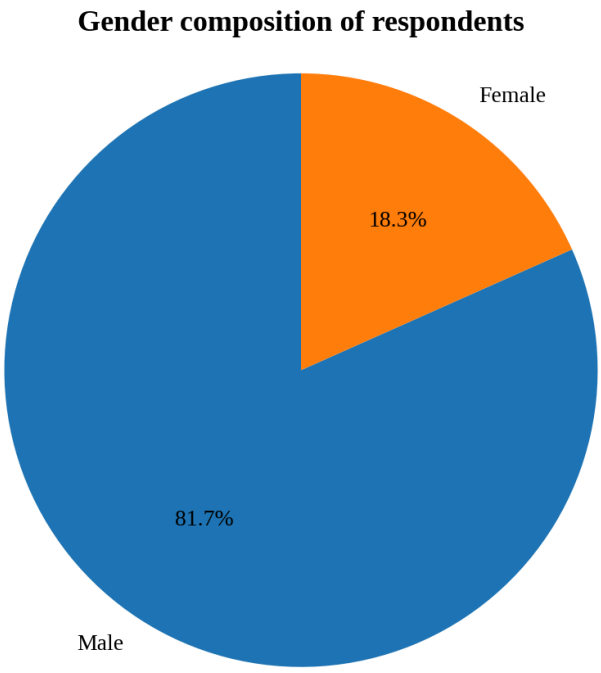


Figure 4.2 Gender composition of respondents.

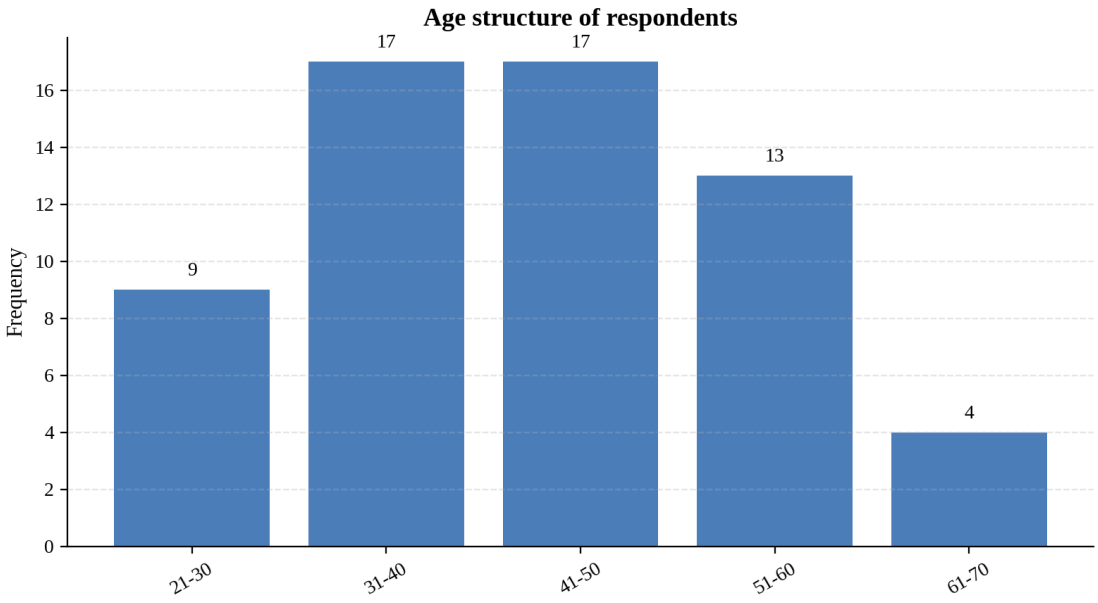


Figure 4.3 Age structure of respondents.

Educational status is seen moderate. The largest group was found to be secondary education(35.0%), followed by primary education (30.0%). Similarly, 18.3% of the respondents had higher education, while 16.7% were illiterate. This suggests that most households have basic education, i.e. necessary or adopting improved management practices and market engagement. Similarly, looking into the occupation, agriculture has highest livelihood base (35.0%) and then business has (25.0%) and then forest-related work (16.67%). This majority of agriculture and forest-related work confirms that private forest is the important part of rural productions system than working as an isolated income source.

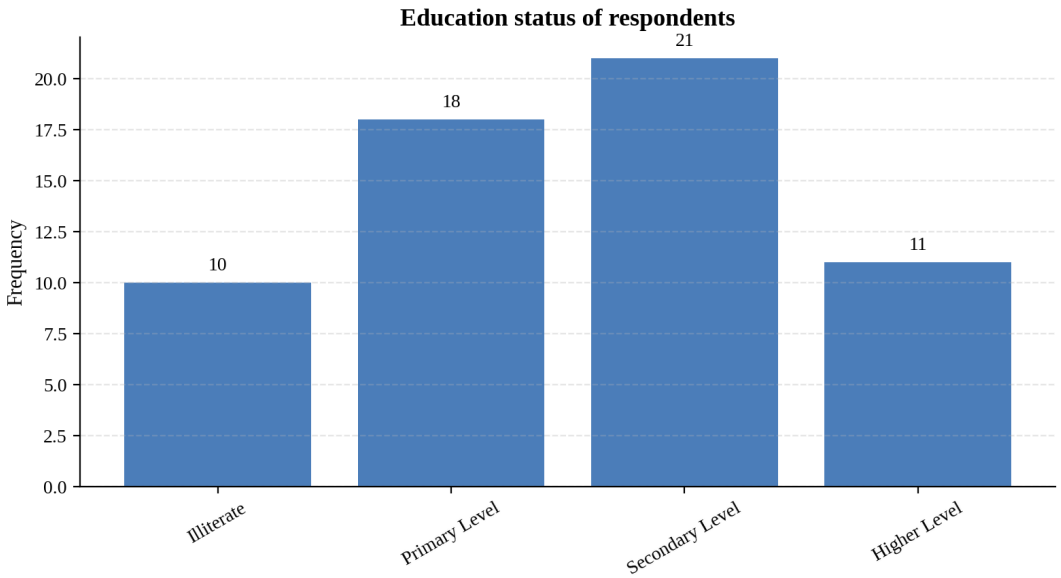


Figure 4.4 Education status of respondents.

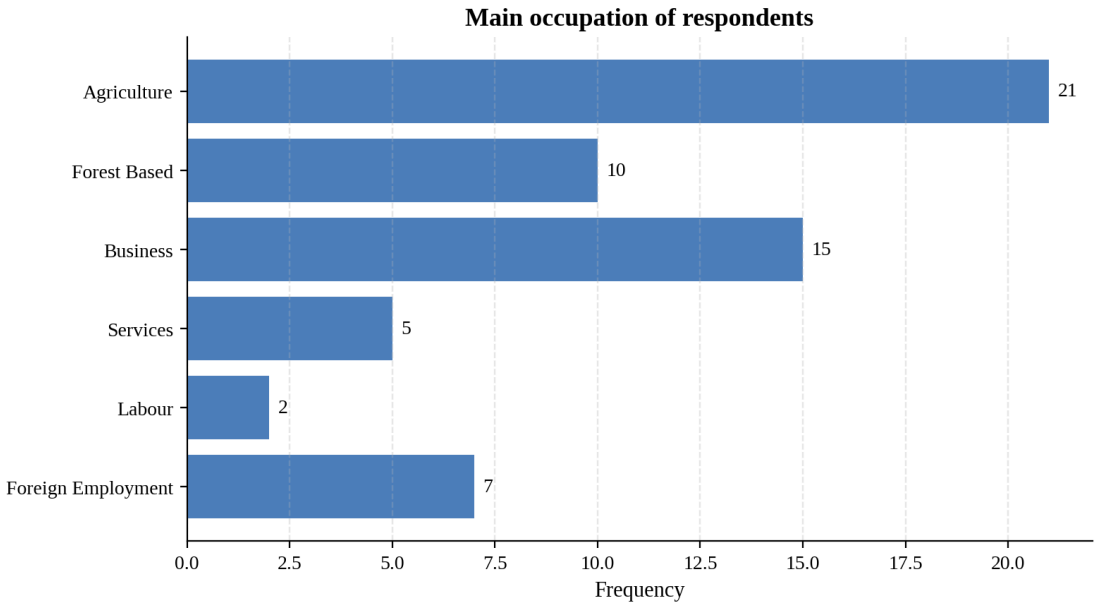


Figure4. 5 Main occupation of respondents.

Table 4.1 Summary profile of surveyed households.

Indicator	Category	Frequency	Percent

Gender	Male	49	81.7
Age group	31-40	17	28.3
Age group	41-50	17	28.3
Education	Secondary level	21	35.0
Household size	4-6 members	34	56.7
Ethnicity	Janjati	44	73.3
Occupation	Agriculture	21	35.0

1.4.2. Private Forest holding and production characteristics.

Private forest ownership is specific to small to medium scale. Households having 0-5 ropani and 6-10 ropani consists of 26.67% and 28.3% respectively. Just small fraction holds above 25 ropani of land as private forest. Also 56 responses show middle range concentration for tree-stock distribution. 201–300 trees class had the largest share (35.7%), followed by 0-100 trees and 101-200 trees (i.e. 23.2% each). This all indicates that private forest resources are widely distributed, but mostly at middle range scale.

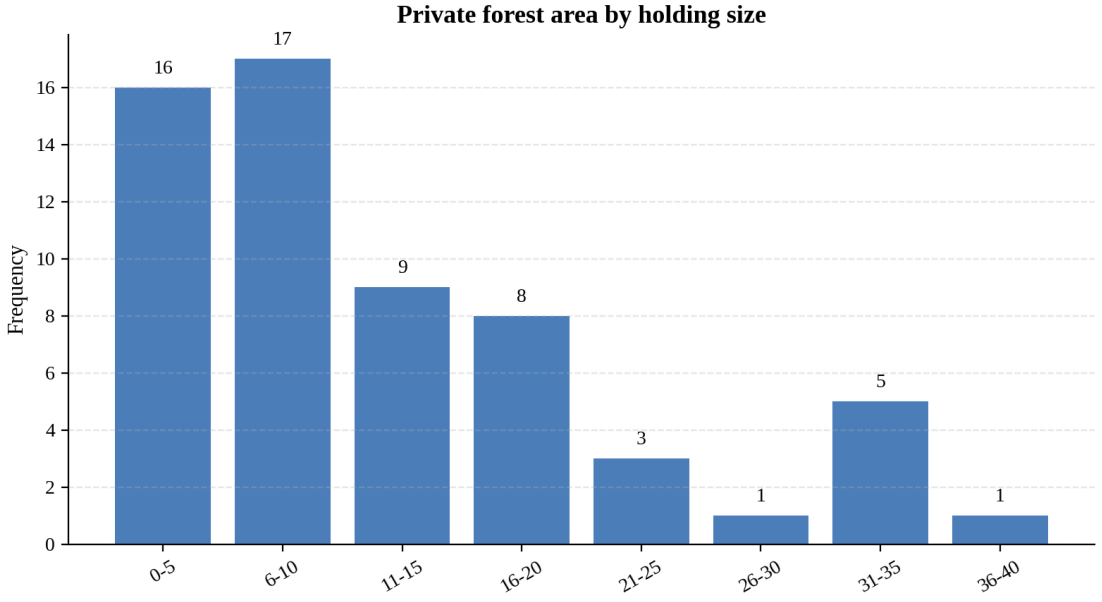


Figure 4.6 Distribution of private forest area by holding size.

Commercialization of timber in cubic feet (cft) sold is shown in the lower and middle classes. 76.6% of respondents sold less or equal to 15000 cft. While few of the households reported sales above 25000cft. This production structure tells that there is broad base of small to medium private forest producers along with few/limited number of higher volume sellers.

Table4. 2 Dominant classes of private forest resource variables (*valid percent)

Variable	Class with highest share	Frequency	Percent
Private forest area	6-10 ropani	17	28.3
Number of trees (valid n=56)	201-300	20	35.7*
CFT sold	0-5000	16	26.7

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4.1.3 Financial contribution of private forest to household livelihood

Income obtained from private forest during the last one year formed an important component of household economies. More than half of the households (55.0%) earned up to NRs. 500,000 from private forest, and another 35.0% earned between NRs. 500,001 and 1,000,000. This means that 90.0% of households remained below the NRs. 1 million thresholds, while a small but important minority achieved substantially higher returns. In parallel, net household income was concentrated in the lower to middle ranges: 31.7% earned up to NRs. 1,000,000 and 28.3% earned NRs. 1,000,001–2,000,000. However, the presence of households in the higher net-income classes indicates that private forest-based earnings can combine with agriculture, business, and services to create stronger livelihood portfolios.

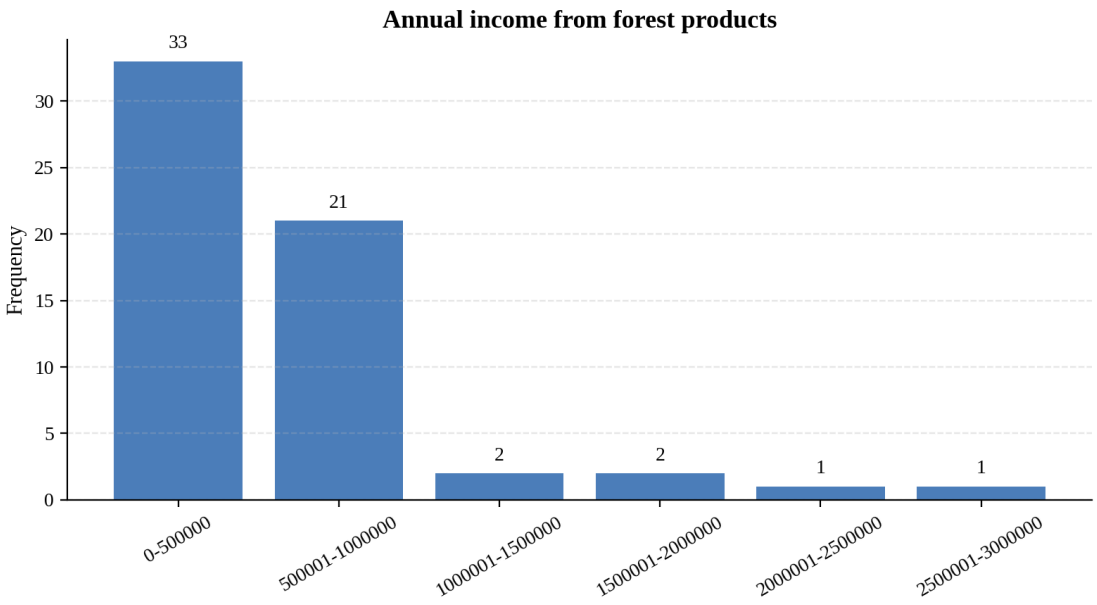


Figure 4.7 Income from private forest during the last one year.

The relative dependence on private forest is even more revealing than absolute income. Forty percent of respondents reported that 21–40% of their household income came from private forest, and another 35.0% fell within the 0–20% class. Thus, three-quarters of households received up to 40% of their income from private forest, while 25.0% derived more than 40%. This shows that private forest is not merely supplementary for every household; for a meaningful share of respondents, it functions as a major income pillar.

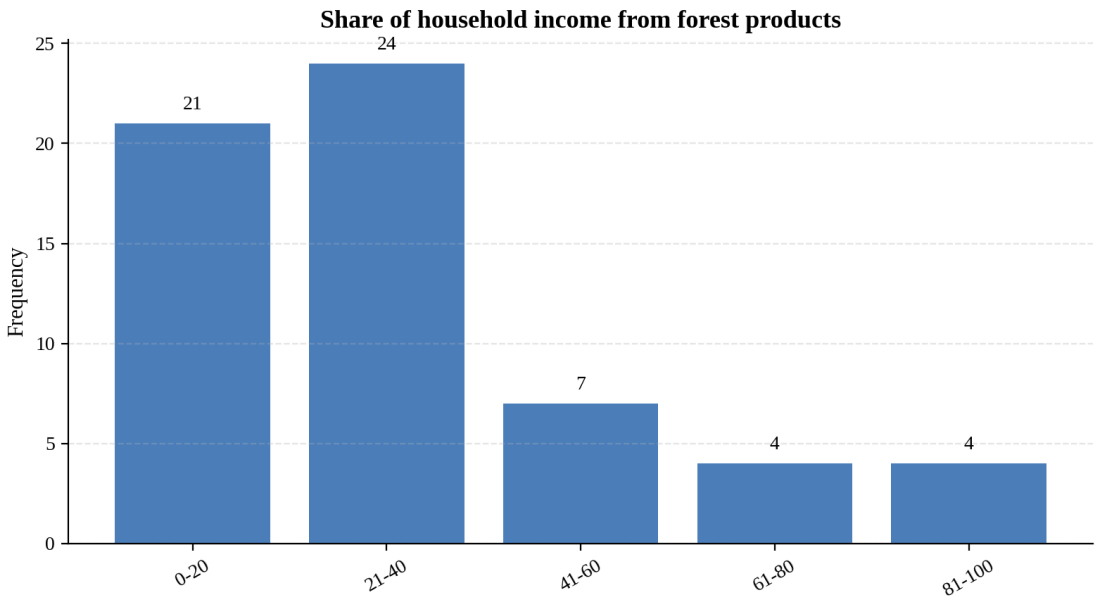


Figure 4.8 Share of household income derived from private forest.

Table 4.3 Financial contribution profile of private forest during the last one year.

Financial indicator	Leading class	Frequency	Percent
Income from private forest during the last one year	NRs. 0-500,000	33	55.0
Net income	NRs. 0-1,000,000	19	31.7
Income shares from private forest	21-40%	24	40.0
Households earning >40% from private forest	41-100%	15	25.0

4.1.4 Perceived livelihood support and resilience value of private forest

Perception-based variables demonstrate that private forest plays a strong livelihood-support role. Most of the respondents (55.0%) described private forests as very important to their livelihood, while another 21.7% considered it important. Combinedly, 76.7% of households placed private forest within the top two important classes. Only 3.3% regarded it as less important. This indicates that the financial value of private forests is complemented by a strong subjective sense of livelihood security.

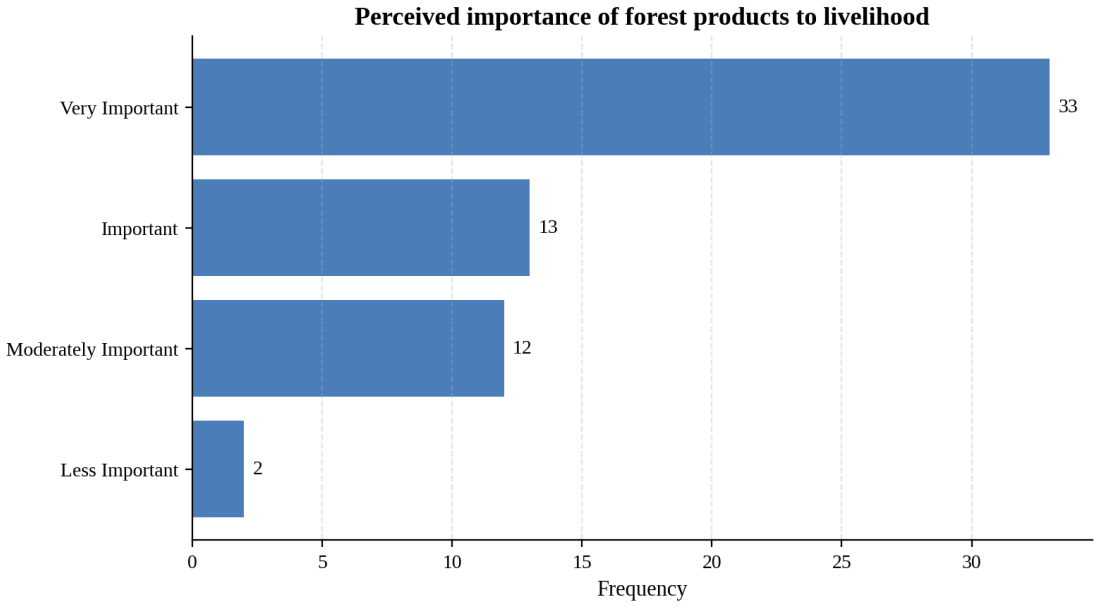


Figure 4 9 Perceived importance of private forest to livelihood.

The resilience function of private forest is particularly clear. All 60 respondents reported that private forest helps during difficult times through emergency cash. 90.0% of the respondents reported that income from private forest had decreased over the last five years, while only 10.0% reported to increase.

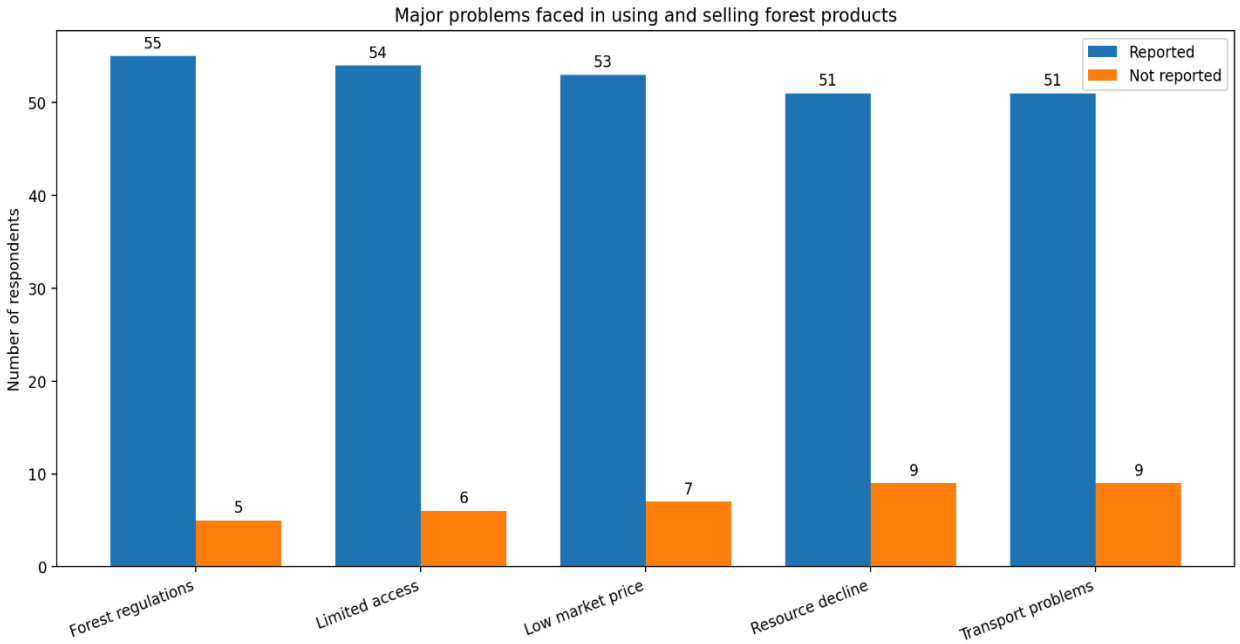
Table 4.4 Key livelihood-support perceptions associated with private forest.

Perception indicator	Dominant response	Percent
Importance of private forest to livelihood	Very important / Important	76.7

Support during difficult times	Emergency cash	100.0
Change in forest income over five years	Decreased	90.0

4.1.5 Challenges faced in using and managing private forest.

The multiple-response analysis shows that the marketing and regulatory environment is a major constraint on private forest-based livelihood improvement. Forest regulations were the most frequently reported problem (91.7% of cases), followed closely by limited access (90.0%) and low market price (88.3%). Transport problems and resource decline were each cited by 85.0% of households. These responses indicate that the main barriers are not confined to one stage of the value chain; they span regulation, physical access, market return, and resource sustainability.



The most common recommendation was amendment of forest policies and laws (25.0%), followed by revision of forest laws (20.0%) and then technical support from the Division Forest Office (18.3%). Respondents also suggests for changes in restrictive rules (13.3%), more opportunities for local people through institutional support (10.0%), and transport-related support (10.0%). Analyzing the measures together, these responses show that households are seeking a

combination of policy reform, technical extension, and market facilitation rather than a single isolated intervention.

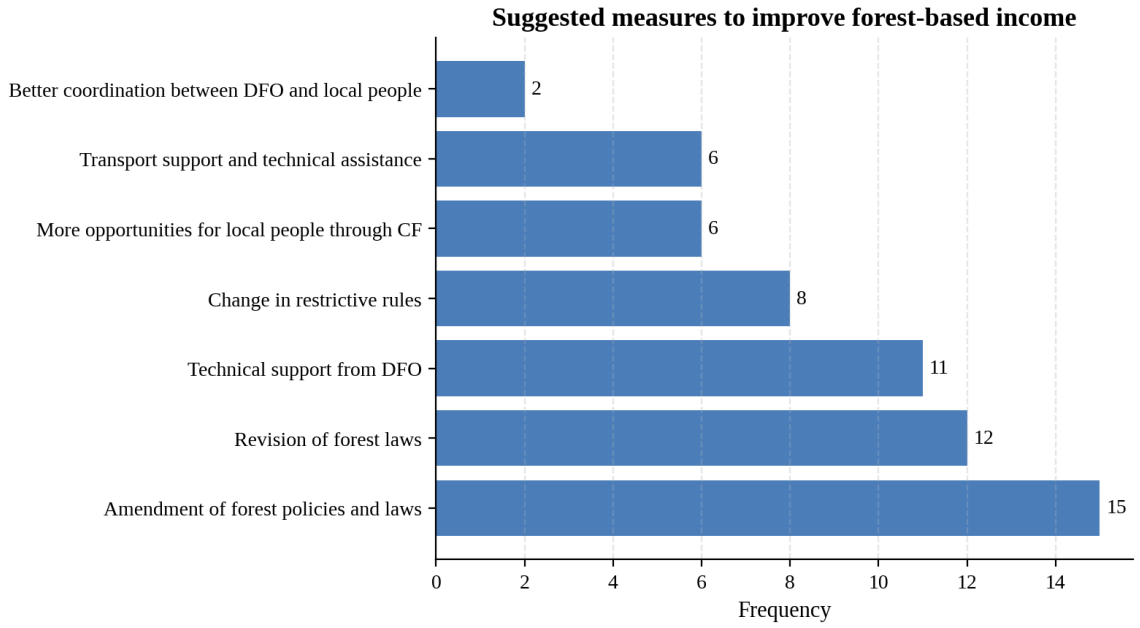


Figure 4.11 Suggested measures for improving income from private forest.

Table 4.5 Major problems reported by respondents (multiple response analysis).

Item	Frequency	Percent of cases
Forest regulations	55	91.7
Limited access	54	90.0
Low market price	53	88.3
Transport problems	51	85.0
Resource decline	51	85.0

4.1.6 Association between selected private forest variables and livelihood indicators

Chi-square analysis was used to look for the associations among selected variables. Private forest area did not show a significant association with income from private forest in the last one year (p=0.755), share of household income from private forest (p=0.090), or perceived importance of private forest to livelihood (p=0.258). Similarly, number of trees was not significantly associated with income from private forest in the last one year (p=0.838). These results tells that livelihood outcomes are not determined by private forest size alone; household strategy, species composition, market access, and selling conditions likely matter as well defines the livelihoods outcomes.

The association between CFT sold and net income was highly significant (Pearson chi-square = 214.553, df = 30, $p < 0.001$), with a clear upward progression from lower sales classes to higher income classes.

Table 4.6 Summary of chi-square results for selected livelihood relationships.

Relationship tested	Chi-square	df	p-value	Interpretation
Private forest area × % income from private forest	38.475	28	0.090	Not significant
Private forest area × annual income from private forest	28.933	35	0.755	Not significant
Private forest area × importance to livelihood	24.749	21	0.258	Not significant
Number of trees × annual income	22.419	30	0.838	Not significant

from private forest				
CFT sold × net income	214.553	30	<0.001	Highly significant
Change in forest income × private forest area	3.803	7	0.802	Not significant

4.1.7 Contribution of private forest to the local and provincial economy through timber trade and tax revenue

In fiscal year 2079/80, a total of 2,152,105 cft of timber was extracted from private forest, which generated Rs. 63,526,332 as VAT and Rs. 4,499,578 as province service fee. In 2080-81, timber extraction increased to 3,088,700 cft, accompanied by a rise in VAT to Rs. 87,660,080 and province service fee to Rs. 9,539,343. The highest recorded contribution was observed in 2081-82, when total timber extraction reached 3,490,749 cft, generating Rs. 101,352,084 in VAT and Rs. 14,376,565 in province service fee. In 2082-83, up to the month of Poush only, timber extraction was recorded at 1,395,997.19 cft, with Rs. 36,758,435 collected as VAT and Rs. 6,810,349.02 as province service fee.

When VAT and province service fee are considered together, the total recorded revenue contribution from private forest was Rs. 68,025,910 in 2079-80, Rs. 97,199,423 in 2080-81, and Rs. 115,728,649 in 2081-82. Even in the partial record of 2082-83 up to Poush, the total revenue contribution had already reached Rs. 43,568,784.02.

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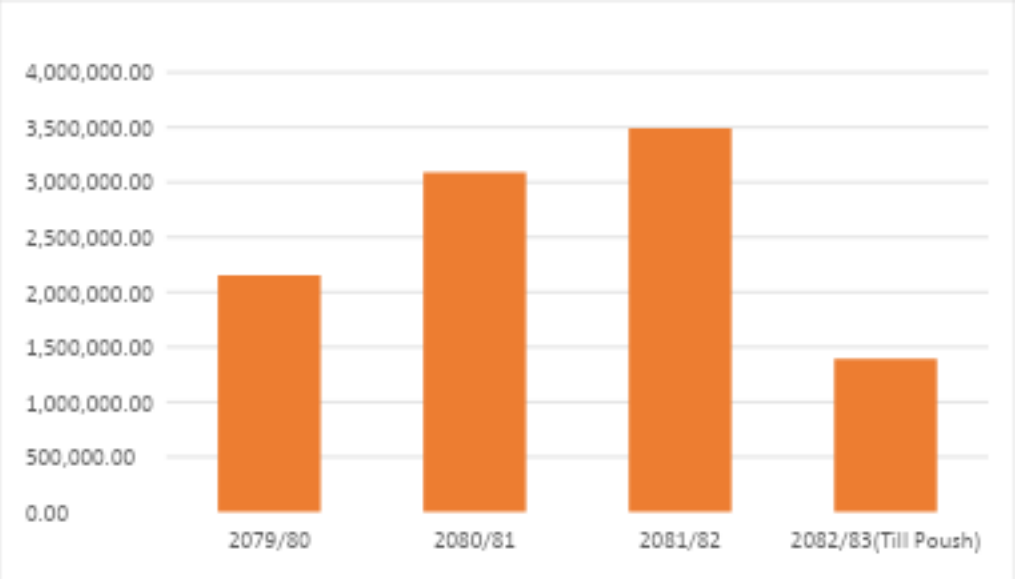

Figure 4.12 Timber extraction from private forest in the last four fiscal years.

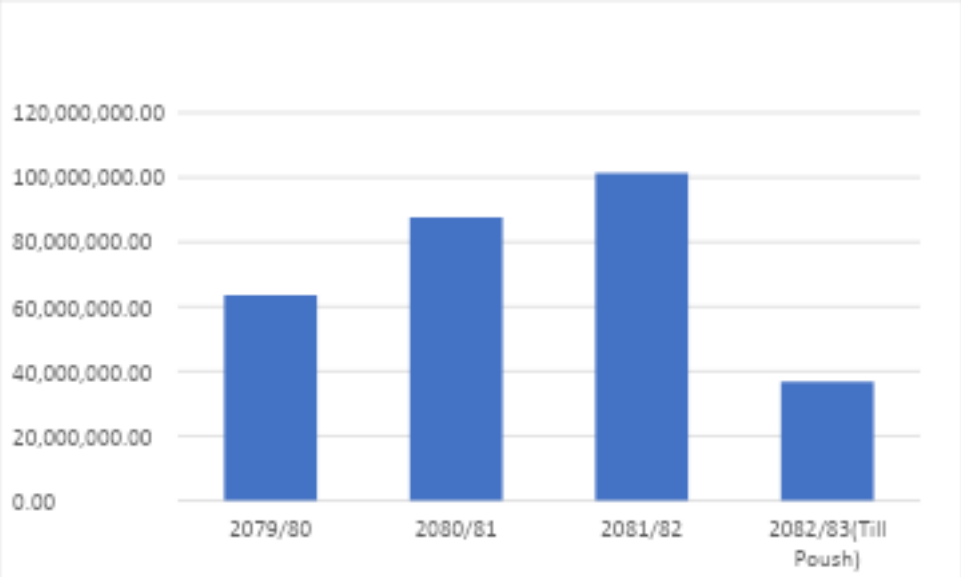

Figure 4.13 Value added tax generated from private forest in the last four fiscal years.

Figure 4. 14 Province service fee collected from private forest in the last four fiscal years.

4.2 Discussion

The results of this shows that private forest plays a important role in the livelihood of rural households in the Bhojpur district. But that role is neither uniform nor free from constraints. The socioeconomic profile of respondents has shown that the study largely reflects the opinion and perspectives of the households in their economically active years and engaged in agriculture, business, and other works related to forest. This pattern is important because private forest management in rural Nepal is usually attached with broader farming and livelihood rather than just one dependent entreprise. The agriculture-based occupations supports the view that privately managed tree resources are closely tied to everyday production and household subsistence, which is consistent with the livelihood perspective described by Chambers and Conway (1992) and Ellis (2000). The male dominance in this survey shows majority of the households head are still men in rural areas of Nepal.

The private forest resource base observed in this study was small to medium in scale. More than half of the respondents had 10 ropani or less land and most of the households came into middle tree-stock and timber-sale classes. This suggests private forestry in Bhojpur is distributed across many households which operates at modest scales. The findings are also important from a

livelihood point of view. It indicates that private forest contribution is broad and dispersed socially, even the scale of production is different from one household to another.

The findings of the financial contribution show private forest forms an important part of household income portfolios. Most of the household's sale the timber and other forest products of 5-10 lakhs in last one year. This result shows the contribution of private forest in the livelihood. Annual income of average Nepali people is less than 5 lakhs but here in this study area, people are earning it by just selling the forest products of their land in one year. The sources of income in hilly region of Nepal among the people is broad. The income from private forest contribute to 40% of the total income to majority of the respondents shows the importance of private forest in such rural areas.

Other than direct income from timber sale, the results also show a strong livelihood-support function of private forest. More than three quarters of respondents has rated private forest as important or very important to their livelihood, and all respondents has agreed that it helps them during their difficult times by providing a emergency cash. This result cleared that private forest can also act as reserve asset to livelihood of the people. In the sustainable livelihood terms, such role is linked with resilience. The households use private forest not only for daily needs but also as a coping mechanism during shocks and off-seasons (DFID, 1999). Other result shows that 90 percent of respondents felt a decrease in private forest-based income over the last 5 years raised a caution. It shows that rural households continue to value the private forest highly, but are concerned about declining the contribution from private forest-based income.

The main highlight and finding of this research is that it extends discussion of the private forest far than just household-level livelihood contribution and shows the wider economic relevance. The year-wise increase in extraction of timber, VAT, and provincial service fee from 2079/80 to 2081/82 shows that private forest contributes not only to household income but also to revenue generation from public. Due to these reasons, DFO Bhojpur is one of the most tax collector among other general offices. The incomplete record for 2082/83 up to Poush also has shown high timber trade and tax collection. This finding of this research supports the observation that private forests in Nepal have become a supplier of domestic timber and a growing component of the forest economy (Amatya & Lamsal, 2017). The results therefore suggest that private forests

should not be treated as a marginal household practice only; it is also part of a broader economic process involving timber markets, taxation, and state revenue.

Overall, the study shows that private forests in Bhojpur contributes to livelihood in two interrelated ways. First, it strengthens household financial assets through timber sale, savings on purchased materials, and emergency cash support during difficult periods. On the other hand, it contributes to social and livelihood security by closely linked with rural system of production, coping strategies for households, and perceptions of well-being. The future livelihood value of private forest in Bhojpur will depend not only on the presence of privately managed tree resources, but also on policy, technical assistance, and market systems.

CHAPTER 5: Conclusion and Recommendations

5.1. Conclusion

The study concludes that private forests are an important source of livelihood for rural household in bhojpur district. They help families earn money by selling timber, over the past years. These forests provide financial support during difficulties. Most of the household in the study area have small to medium sized forests. They play big role in family for supporting household income and increase feeling of livelihood security. Majority of informants claimed that private forests are importants for their daily life and acts as safety supports when families face problems

The results show that private forests do not benefit all household in the same way. Many families earned a moderate income from them, but only a few households gained higher benefits by selling commercial forests products. The study also found that the amount of timber sold had strong relation with total household income. But having a larger forests area does not show same strong effect. This means that the value of private forests for livelihood depends not only on how much forest household owns, but more on how they can use and sell forest products for income and support.

The study shows that people generally have positive view of private forests, because it helps their daily life economic and provides support during emergencies. But nowadays many people were worried that benefits from private forests have decreased. Problems like strict regulations, limited access, low market prices and transport difficulties make it harder to manage and get benefits.

Overall, Private forests in Bhojpur district play an important role in supporting household income, improving livelihood and generating public revenue. But the benefits were limited by problems in policies, market and management. Improving these areas can increase both household and public economic benefits from private forests.

5.2.Recommendations

Based on the findings, following are the recommendations should followed by Bhojpur district to improve the livelihood benefits and management of private forest are:

1. Timber harvesting and transportation riles and policies should be made people friendly.
2. Technical support from DFO and other government agencies should be enhance to get better production from private forests.
3. Management of market and value-added products from private forests should be expanded.
4. Policies should be reformed to reduce unnecessary restrictions that discourage private forest management and commercialization.

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Appendices

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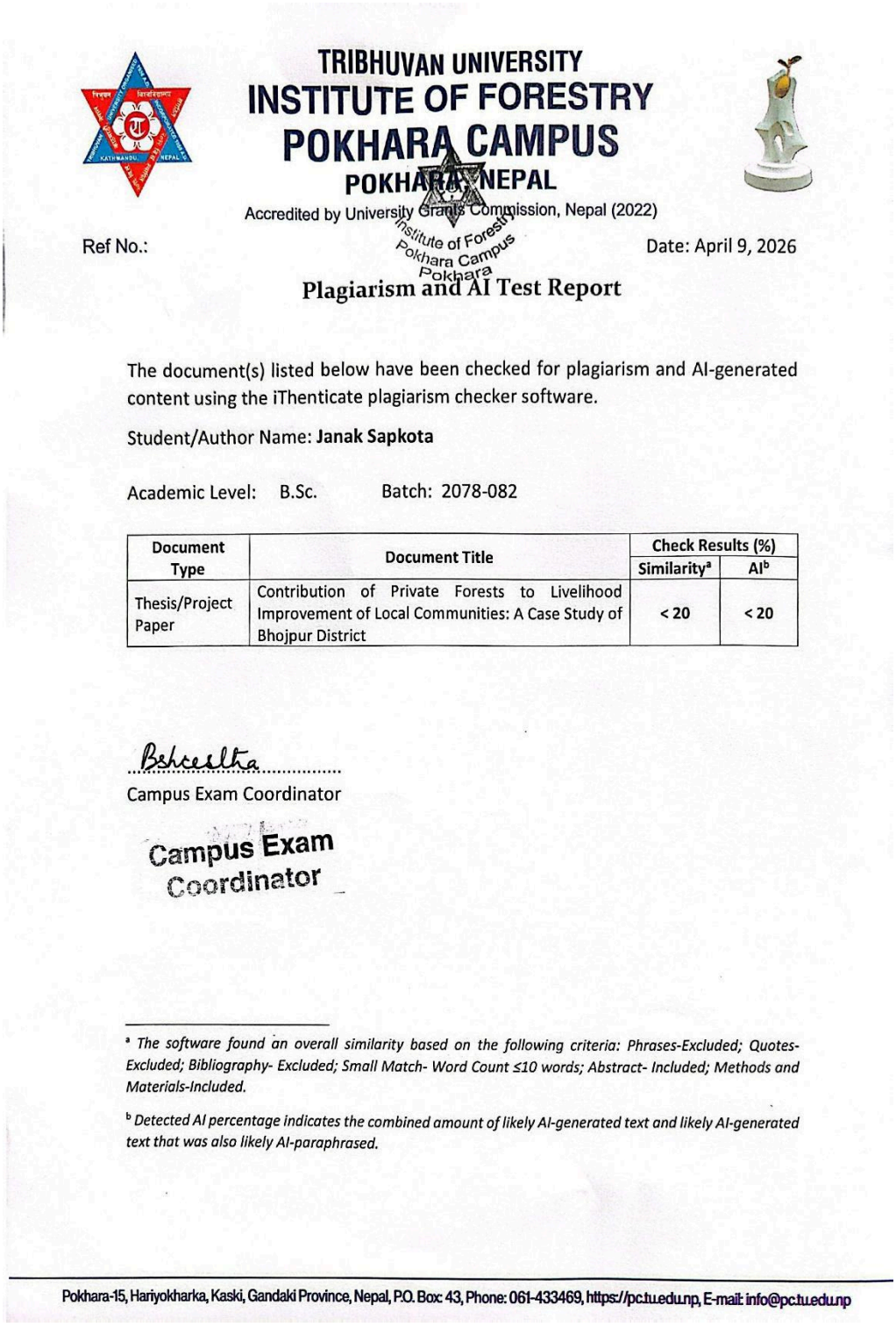

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Questionnaires

List of Data Collection Instruments

Structured and semi-structured set of Questions

Section 1: General Household Information

1. Name of respondent (optional): _____
2. Gender: ☐ Male ☐ Female ☐ Other
3. Age: ____ years
4. Education level:
   ☐ Illiterate ☐ Primary ☐ Secondary ☐ Higher secondary ☐ Bachelor & above
5. Household size: ____ members
6. Main ethnicity/caste: _____
7. Ward no. / Village: _____
8. Main occupation of household head:
   ☐ Agriculture ☐ Forest-based ☐ Business ☐ Service ☐ Labor ☐ Foreign employment ☐ Others (specify)

Section 2: Forest Access and Type

9. Do you have access to forests?
   ☐ Community Forest ☐ Private Forest ☐ Government forest ☐ More than one
10. Are you a member of a Community Forest User Group (CFUG)?
    ☐ Yes ☐ No
11. Do you own private forest land?
    ☐ Yes ☐ No
    If yes, area (approx.): _____ ropani/hectare?

Section 3: Forest Product Collection and Use

12. Which forest products does your household collect/use?
    ☐ Timber
    ☐ Fuelwood

☐ Fodder

☐ Leaf litter

☐ Medicinal plants

☐ Wild fruits/vegetables

☐ Other NTFPs (specify): _____

13. Purpose of forest product use (tick all applicable):

☐ Household consumption

☐ Sale

☐ Both consumption and sale.

Section 4: Quantity and Economic Value of Forest Products

(Annual estimate)

Forest Product	Quantity Collected	Used at Home (%)	Sold (%)	Annual Income (NRs.)
Timber				
Fuelwood				
Fodder				
Medicinal plants				
Other NTFPs				

Section 5: Household Income Sources

14. What are the main sources of household income?

Source	Approx. Annual Income (NRs.)
Agriculture	
Forest products	
Livestock	

Source	Approx. Annual Income (NRs.)
Wage labor	
Business	
Remittance	
Others	

15. What percentage of your total household income comes from forest products?
    ☐ <10% ☐ 10–25% ☐ 26–50% ☐ >50%

Section 6: Livelihood Improvement and Well-being

16. Forest products help your household in (tick all):
    ☐ Food security
    ☐ Cooking energy
    ☐ Education expenses
    ☐ Health expenses
    ☐ Housing/construction
    ☐ Emergency cash needs.

17. Compared to 5 years ago, forest-based income has:
    ☐ Increased ☐ Decreased ☐ Remained same

18. How important are forest products for your livelihood?
    ☐ Very important ☐ Important ☐ Moderately important ☐ Less important

---

Section 7: Dependency and Resilience

19. If forest access is restricted, how will your household be affected?
    ☐ Highly affected ☐ Moderately affected ☐ Slightly affected ☐ Not affected

20. During difficult times (crop failure, job loss), do forest products help?
    ☐ Yes ☐ No
    If yes, how? _____

Section 8: Challenges and Opportunities

21. What problems do you face in using/selling forest products?
    - ☐ Limited access
    - ☐ Low market price
    - ☐ Transport problems
    - ☐ Forest regulations
    - ☐ Resource decline
    - ☐ Lack of skills/value addition?
22. What improvements are needed to increase forest-based income?

B. Key Informant Interview (KII) Checklist

(Respondents: CFUG officials, DFO staff, Ward officials, Timber traders, Sawmill owners, Private forest owners)

Section 1: Background Information

1. Name and designation: _____
2. Organization/Institution: _____
3. Years of experience related to forestry/livelihoods: ____ years

---

Section 2: Forest Resource Status and Management

4. What are the major forest products available in this area?

5. How are community and private forests managed in Bhojpur?
6. Have you observed changes in forest resource availability in recent years? Why?

Section 3: Contribution to Livelihoods

7. How do Private forest contribute to household income and employment?
8. Which groups depend most on private forest (poor, women, private forest owners)?
9. What is the role of timber vs NTFPs in local livelihoods?

Section 4: Market and Economic Aspects

10. How is forest product marketing done (local, district, outside district)?
11. Are prices fair for local collectors/traders?
12. What are the barriers in timber/NTFP trade?

Section 5: Policies, Institutions, and Governance

13. How do forest policies affect livelihood opportunities?
14. Are existing policies supportive of private forest owners?
15. Any issues related to permits, taxation, or bureaucracy?

Section 6: Challenges and Sustainability

16. Major challenges in sustainable utilization of forest products?
17. Is there over-harvesting or resource decline?
18. How can private forest-based livelihoods be made more sustainable?

Section 7: Recommendations

19. What strategies would you recommend improving private forest-based livelihoods?

Any suggestions for policymakers or Private Forest users?

Photo Plates

Field Observation and Focal Group Discussion

With Local Leaders and Representatives

Discussion with Local Private Forest Owners

Forest Products Entrepreneurs Association

With DFO Bhojpur and Mayor

Timber extraction from privately owned forests generating local employment opportunities, including logging, transportation, and roadside processing activities, as illustrated by workers handling harvested wood along a rural forest route.

Household Survey

The End