CHAPTER I

INTRODUCTION

1.1 Background

Forests of Nepal have been a long-standing key natural resource supporting nation's economy in many ways. Forests resources have a significant contribution to ecosystem balance and livelihood of a large portion of the population in Nepal. It is considered as an important input of farm household production function as it supplies products to maintain daily livelihood activities of farmers. Farmers rely on forests for fodder for their livestock, fuelwood for cooking and heating, and leaflitter for manure. Therefore, forests is an important backbone of the rural development.

World Bank (1975) defined rural development as a strategy to enhance rural areas' economic and social conditions and share the benefits of development with the deprived population (World Bank, 2010). It is a complex process that involves the interaction between social, economic, political, and cultural factors (Acharya, 2008). Rural development aims to improve the welfare of the community with equitable benefit-sharing (Todaro & Smith, 2015). Rural development seeks to reduce poverty, improve rural livelihoods, and provide equal access to resources and services by all residents in the community (Wubayehu, 2020) The concept of rural development has changed over time and has different phases.

If we divide 1950-2000 decade-wise, there are six distinct phases of rural development. The first phase was for community development to small farm growth which continued with integrated rural development in the 1970s. Then was the time of state-led rural development to market liberalization. The 1980- 1990 was a phase of the process, participation, empowerment, and action approaches. The concept of sustainable livelihoods emerged in the 1990s and in 2000 rural development was mainstreamed as rural development strategies (Ellis & Biggs, 2001). From 2000-2020, the concept of rural development has mainly focused on Millennium Development Goals, Sustainable Development Goals, digital transformation, and post-pandemic and climate adaptation. Improving rural livelihood from the green economy using natural resources is a priority.

Natural resources are the source of economy for the rural population and play a significant role in rural development (Domon, 2011). Nepal ranks 25th position in the world and 11th position in Asia in terms of Biodiversity richness (Kharel, 2019) There is a need for responsible natural resource management to promote sustainable development and livelihood in the present and future. Furthermore, the integration of non-extractive forms of natural resource development, such as eco-tourism, and renewable energy, can provide alternative income sources and promote economic diversification (Melece et al., 2020). Similarly, forest provides a wide range of benefits to the rural poor.

Forests play an important role in rural development in every part of the world providing numerous goods and services (Robledo et al., 2012) Forest not only provides food, firewood, fodder, and medicine for the rural poor. In addition, they contribute to biodiversity contribution, ecosystem services, and carbon sequestration, Forest plays a significant role in uplifting the living standard of the rural people making them skilled workers or even small-scale entrepreneurs fostering sustainable rural development (Babir, 2012; Pokharel et al., 2006). Thus, long-term management of forest resources can uplift rural livelihood as well as resolve environmental problems (Tandir et al., 2016). Initiatives such as community-based Forest management are some effective strategies that have emerged to empower local people allowing them to sustainably manage forest resources and gain from it (Mueller et al., 2020).

Community participation is the most effective approach to protect manage and use forests that ensures a balanced contribution to environmental and economic outcomes globally (Hajjar et al., 2020). Indigenous traditional knowledge of local communities is important for effectively using forest resources inclined toward sustainable management goals. (Tung et al., 2012; Fadhilia et al., 2016) Ownership given to the community ensures forest development, hence environmental sustainability, and creates a strong societal bond (Mueller et al., 2021). Such participatory approaches enhance social cohesion because these activities are culturally fitting and ecologically viable. In addition, the involvement of the community in the process helps to integrate traditional ecological knowledge with the

most advanced conservation methods, therefore leading to more robust ecosystems and resilient communities (Fadhilia et al., 2016; Ruiz-Mallén & Corbera, 2013).

Forest has a multi-dimensional role in the rural economy (Slee et al., 2004). Community Forestry has been regarded as a feasible strategy for promoting sustainable rural development since earlier times (Chhetri & Jackson, 1995). Community forestry (CF) allows the user groups to protect, manage, and utilize the forest resources on their stewardship. The stakeholders can decide on the resource use and practice sustainable harvesting practices improving livelihood and promoting social inclusion (Charnley & Poe, 2007; Duguma et al., 2018). Thus, community forestry not only has significance in rural development but helps achieve broader environmental and social goals.

1.2 Statement of Problem

The community-based Forest Management (CBFM) approach is globally recognized as an innovative and successful approach to forest resource management and its governance (Acharya, 2003). There have been many positive outcomes including social, economic, and environmental benefits that help uplift the livelihood of rural people but there are several issues and challenges related to community-based forest management in Nepal. It continues to face some structural, organizational, and societal challenges (Kanel & Dahal, 2008). One main complaint is that there is inequitable benefit sharing among forest users (Pokharel, Paudel & Gurung, 2006; Kanel & Dahal, 2008).

Beyond the original aims of community forestry, there have been significant and sometimes unexpected consequences because CF has a strong influence on local democracy and inclusive self-governance. Nepal's successful experiments in local government, community/public radio, and community forestry, just to take some recent examples, prove that this country of ''manageable" size and population can make things work quicker than countries in the neighborhood.' Community forestry, through local decision-making, institution building, leadership, conflict resolution, common resource management, and forest-based enterprise, is, therefore, a fertile ground for rural people to develop their skills and attitudes in these and contribute to wider society outside the forestry sector. It is not surprising that many rural

municipalities officials have built up their reputations after first being involved in community forest user groups (CFUGs).

This has allowed them to gain the respect and recognition of their neighbors and to become more actively involved in local governance. Hence, social exclusion and inequitable benefit sharing are the major challenges that are to be solved in the community forestry program in the years to come. Elite dominancy in the decision-making process and management is still prevalent, making access to forest products disproportionate and excluding poor and marginalized households from the decision-making process (Malla et al., 2003). In Nepal, the community forestry program has given major attention to biodiversity conservation and benefits to the local communities, who conserve and manage the forestland at the local level.

It is encouraging to all member states to develop pertinent rules and legislation "to promote the wider application of the knowledge, innovations and management techniques of indigenous communities, with the approval and involvement of those communities, and with encouragement being given to the equitable distribution of the benefits". Oksanen & Mersmann (2003) state that in many developing countries, domestic forest products trade is important for economic development and the livelihoods of rural communities through generating community funds, even if it may appear to contribute relatively little to the gross national product.

However, on an institutional level, those who deal with forestry and those who deal with the trade of commercial forest products do not interact much. Not many forestry departments around the world are good at managing and negotiating forest trade issues in generating livelihood resources.

CFUGs democratically elect CFUG committees; manage their finances and give loans to villagers; harvest forest products and supply goods and services to communities. Furthermore, they settle conflicts over access to and control over resources, land boundaries, and land tenure disputes by forming networks and federations.

CFUGs have become strong nested organizations to safeguard users' rights; guard forests by patrolling and protecting forests on a rotational basis; conserve soil and manage watersheds. Similarly, CFUG supports their members for income-

generating activities, contributes to the construction and maintenance of physical infrastructure such as irrigation canals, drinking water schemes, etc.; and sensitizes community members to have more inclusive governance with proportionate representation of women, Dalits, and members from ethnic minorities at remote places (Pokharel, et al. 2006). However, most, especially in the Terai region, fail to achieve these outcomes, indicating challenges in delivering desired outcomes as per policy, law, and principle.

Forest protection and sustainable management may conflict with the above goals because of land, economic interest, etc. For example, agricultural land expansion, mining, excessive access to forest products, and infrastructure construction, including renewable energy production facilities, will cause the destruction or occupation of forests. Conversely, forest protection and sustainable forest management may hinder them. Therefore, how to balance the relationship between the achievement of forest-related SDGs and human needs is an important research topic in this research field.

The forest is a reliable source of livelihood for surrounding communities through the creation of financial capital (FAO, 2006). Though the forest itself is natural capital, it equally plays an immense role in creating social, financial, and physical capital as prerequisites for basic livelihood. However, this does not mean that the forest is everything and that the PFM approach is the answer to all forest management problems.

Forest and people's livelihoods are interrelated in terms of forest resource use, especially in rural areas of the least developing countries like Nepal. There has been a dependency of rural people on forests from ancient times for firewood, timber, grass, agricultural tools, and other domestic needs as well as medicinal herbs available from non-timber forest products (NTFPs). As per those products from community forests are being an integral part of rural livelihood. The livestock is a part of rural livelihood and is partially dependent on forest as it provides fodder and grazing to the livestock (Paudel, 2015).

Since the late 1970s, the Government of Nepal has focused on encouraging group-level organizations to manage natural resources, and thus some of these

resources previously controlled by the government are gradually being handed over to community users' groups (CFUGs). Farming, forest, and livestock are three highly integrated constituents of the hill farming system and cannot be separated from each other (Gilmour & Fisher, 1991). Over the past few decades, Community. CBFM has evolved as the key strategy of conservation as well as promoting local livelihood, especially in developing countries like Nepal.

All over, Nepal, there are about more than 23,000 CFUGs, benefiting over 1.7 million households, which is about 46 percent of the total population of Nepal involved in community forestry management program (DoFSC, 2022). Most of the rural population in Nepal live in and around the forest, subsistence agriculture is regarded as the backbone of rural people and livestock is considered an integral part of such agriculture. The rural population is mainly dependent on forest resources for the fulfilment of their basic needs including cooking, feeding, construction, etc. Likewise, agricultural tools, bedding materials, fodder/grass, firewood, and timber are obtained from the forest. Thus, the livelihood of rural people and forest resources are interlinked to each other.

In Nepal, community forestry policy was originally, introduced for environmental conservation, which may have reduced the forest resources necessary for the livelihood of disadvantaged or marginalized people. The rural people in Nepal make extensive utilization of the forest resources as a part of their livelihood scheme. The effectiveness of the management of community forests and its consequences on livelihood differ with time and space of Nepal. Past studies show that the community forest strategies became more effective in the high and middle hills and less in the Terai-Mahesh region.

Through the community forest program, it was observed that greenery improved; forest resources are conserved, and even increase the forest area but the livelihoods of the local people who are forest-dependent communities, particularly the poor and disadvantaged, have not improved as expected (Pokharel, 2006) due to low access to the forest than before and user committee fail to provide an alternative income source for those people. Thus, in community forest programs poorest are the ones who suffer the most, since they cannot afford to participate hardly speak, and rarely hear and benefit from the community forestry. Brown et al., (2002) also

indicate that the doubt the benefits to poor users and the development of the rural areas. This trend has been a great barrier to empowering the local poor and women. Given the unequal social structure in terms of class, caste, gender, and regional disparity, there is unequal access to decision-making, opportunities, and benefits. All these issues affect the improvement of the livelihood of poor rural people and create challenges for rural development.

Gran et al., (2005) focus on further discussion on access by smallholders and poor people for well-being in environmental service transactions because they are the most affected group in CFUG and are not focused on benefit sharing because of the equal benefit principle. Simply monetary income is normally treated as a financial asset and non-financial sector treatment is lacking concerning livelihood issues at the local level and national level too. Although the poorest within the community where most depend on wood fuels and Non-Timber Forest Products (NTFPs), these people are often the least likely to have equitable access to the resource. Fuel wood harvesting in locally managed resources is often curbed or banned to put the resource under more productive management.

Similarly, while forests have been generally well protected, it seems increasingly likely that most CFUGs are not utilizing their forest to their 'full potential in terms of income generation' (Kanel & Kandel, 2004) which has directly affected the development of their village surroundings. Several studies have indicated that elite members of CFUG typically have been capturing leadership positions on major decision-level positions and among other stakeholders, and their management systems are somewhat rigid and top-down.

Meantime, since they have weak monitoring systems, they make decisions without adequate information. Moreover, even if they have information available, they are slow to make the best use of the new information for making decisions. In the same vein, Pokharel et al. (2006) also state the 'weakness of institutional process for decision in highly heterogeneous surroundings'. Therefore, the income distribution among the development activities and sharing among other major stakeholders including lacking a monitoring system are to be addressed for the achievement of the local development.

Several studies in Nepal reports the provisions and allocation of benefits are not systematically envisioned. The behavioural perspective of the executive body has not been easy access to the decision process towards a fair distributing mechanism for disadvantaged people and women (Adhikari, 2004; Maharjan, 2003). The previous studies also have indicated that no robust system adopted yet. Also, decisions about resource management within a user community are often dominated by men, who favour usage that produces products of higher value, at the expense of meeting the fuel wood needs of women (Arnold et al., 2003). The impact of forestry has not been mainstreamed to benefit the marginalized people for local development. The generating benefits from community forestry have not been allocated systematically at the local level with a visionary plan.

The key issue of present community forestry is how it could be possible to include the whole users in the benefit flow mechanism. The CF program has already crossed the conservation phase and still is in second-generation issues such as utilization and intensive management phase (Brown et al., 2002), which has not been addressed properly yet. The forest User Groups are considered empowered to conserve, manage, and utilize the forest to fulfil their basic needs for livelihood promotion as well as rural area development from the Community Forest funds. The fund utilization from the forestry sector is not recognized by the government.

The institutional setup with jurisdictional power is differentiating to utilize the funds and co-operate with each other with the mainstreamed system of the country. After federalization, the CF is under the federal and provincial acts and rules; however, the local municipalities are running their business independently. The integration of the system is not being practiced at the local level. Very often there is no co-ordination between the mode of production, modes of social regulation, and regime of accumulation. Many plans have not fully addressed issues of social equity; especially among underprivileged communities. Moreover, these conflicts are seen in terms of the policy context, legislative context, institutional and organizational context, and social, attitudinal, and operational context of community forest management.

In conclusion, the impact of community forestry on the local people and rural development issue has been a crucial discourse for a few years, but still, relatively

little empirical data are available on how all benefits and systems of various environmental, social, and all kinds of assets from forests are shared. Several studies in community forestry have raised the issues of inequality and unfair distribution of the generated benefits among stakeholders such as municipalities, local user groups, and other disadvantaged people at the local level. However, still, relatively few in-depth studies on the impact of community forests on rural development have been carried out. Thus, the problem to be addressed in this study is the need to obtain a better insight into the process of impact of the community forests in rural development in Nepal.

1.3 Research Questionnaires

The study was conducted with the following research questions:

a. What are the socio-economic and environmental benefits being generated by community forests to the local people in different districts of Nepal?

b. How do benefits from community forests improve the livelihoods of forest users (local people) from the different districts of Nepal?

c. What are the challenges faced by community forest user groups for management and utilization, benefit sharing, and forest-related conflict?

d. Why do community forests fail to address the poor and marginalized families who are highly dependent on forest resources?

1.4 Objectives of the Study

The study was carried out for the fulfilment of the following objectives of the study is to find out the socio-economic benefits and challenges faced by the CFUGs in improving the livelihood, especially of poor rural families across different district.

a. To examine the socio-economic and environmental benefits generated by community forests to the local people across different districts.

b. find out the benefits of community forests that improve the livelihoods of CFUG across different districts.

c. To assess the challenges, faced by CFUGs for management and utilization, benefit sharing, and forest-related conflict.

1.5 Significance of the Study

The main goal of this study is to find out the socio-economic benefits and challenges faced by the CFUGs about the improvement of livelihood especially of poor rural families. Thus, the finding of the study seems fruitful in identifying the impact of community forests on the improvement of the livelihood of the rural people. The study helps stakeholders and policymakers to identify the factors affecting benefit sharing and allocation of the resources that have been assessed. It is also helpful to identify the challenges CFUGs face during the management of the forest. The study is also significant in giving some valuable recommendations for CFUGs and policymakers to address some challenges and issues related to community forests and implement the suggestion of the study to another community forest of different districts of Nepal.

The study also seems vital because it helps to identify the local participation in community forest programs and the involvement of poor families who are more dependent on the forest. From the study, the socioeconomic impact of the community forest program was also explored and its benefit to poor families was also identified. Improvement of livelihood of the poor family is the road for rural development so from the study distribution of benefits to the shareholders especially to the poor families was explored which is necessary for the improvement of community forest policy and its implementation science the community forest program was developed for protection and conservation of forest and improvement of livelihood of a poor rural family.

The CFs' contributions have also been a collaborating contributing sector for rural development; therefore, it is needed to assess the contribution of the CFs to analyze future trends and possibilities of cooperation and collaboration in rural development through institutional mainstreaming. This study's results may contribute and guide to rural municipalities and even policymakers to generate ideas and knowledge to frame the policy support for long-term development strategies. Moreover, after federalization in the country, the role of local-level governments is being independently organized; therefore, it is said that the urgent concern is to generate local funds for local development. The study concerns much to contribute to frame several ideas for sustainable financing and development resources for the rural

development. About more than 45% of land is covered by forest in the county and it may contribute much to sustaining the development infrastructure and environmental benefits too. This study could be a good reference for rural development.

1.6 Scope and Limitation of the Study

The study helps to examine the socio-economic impact of community forest to CFUGs which is helpful to identify the factors that improve the living standard and livelihood of rural people. The study helps to link the socio-economic impact on livelihood assets like physical, financial, social, human, and environmental assets and provides valuable recommendations to policymakers and CFUGs related to the challenges related to community forestry and policy reform. Besides these scopes, the following are some limitations of the study:

a. The study was concentrated within three districts namely Palpa, Parbat, and Rupandehi. Therefore, the study was conducted in a small area because community forest was found in all seventy-seven districts of Nepal. Thus, generalization of the finding for all the CF of Nepal seems challenging job.

b. The study was based on the cross-sectional data generated during field visits but many impacts like changes in socio-economic status, benefits, practices of management, benefit sharing, and so on are correctly analyzed through panel data which was lacking in the study.

c. There are different phases of forest management but the study only includes community forest management and focuses on community forest management groups and links with the livelihood of CFUGs.

d. The study also ignores the practice of community forest management, methods of selecting members, and decision-making processes related to forest management.

e. Statistical tools have limited scope because they measure effectively only numerical variables but for qualitative variables, they miss some features related to effects and benefits, equity aspect of community forests, and CFUGs.

1.7 Definitions of Terms

The following are the terms used in the study:

Users' Group: In the study users' group means a users' group formed under Section 31 for the management, conservation, management, and utilization of the forest according to The Forest Act 2019.

Biggest and smallest Community Forest: In the study, the community forest that has the biggest forest area is kept in the biggest CF whereas, the community forest that has the smallest forest area covered is kept in the smallest CF. Similarly, that community forest that has the biggest users' involvement is kept in the biggest CF whereas, that community forest that has the smallest users involved is kept in the smallest CF.

Community forest: In the study, community forest means the national forest transferred to the users' group under Section 18 of The Forest Act 2019. These forests are national forests but are conserved and protected by CFUGs and follow the direction, rights, and responsibilities according to the Forest Act.

Community forest user groups: in this study community forest user groups are the user groups (The Forest Act 2019) who manage the community forest (The Forest Act 2019). They are the local groups who conserve and protect the forest which was handed to them by the government according to The Forest Act 2019). They manage the forest and share benefits with its users.

Forest products: in the study forest products means the following products which are contained or found in or brought from the forest: (a) Timber (wood) products, (b) non-timber (wood) forest products, or (c) Boulder, soil, river and mineral substance as declare by The Forest Act 2019.

Silvicultural Operations: Silvicultural operation refers to the silvilcultural treatments applied to cultivate and grow a tree or a forest crop. Common silvicultural operations include plantation, weeding, cleaning, pruning, thinning and felling.

Plantation: Methods widely used for cultivating forest crops include seeding, plantation and natural regeneration. The process of planting a seedling or sapling is also the first stage of afforestation and reforestation, which is known as plantation.

Thinning: The removal of plants from a forest to reduce its density is known as thinning. Thinning helps create better light conditions for the growth of desired plants retained in the forests.

Pruning: Pruning refers to the removal of branches and twigs; whether live or dead from a plant helping to produce straight, knot free and healthy boles.

Felling: Felling refers to harvesting of trees after achieving targeted rotation age of forest crops.

Forest Area: in the study, forest area means any grass field, pasture land, naked hill whether or not covered with snow, road, pond, lake, stream, wetland, river, rivulets, revering land, barren or area covered by uncultivated land, which is surrounded by, or situated within, the forest, whether not marked with the forest boundary according to The Forest Act 2019.

Environmental services:

In the study environmental service refers to 1) Carbon service; (2) Protection of bio-diversity; (3) Watershed and water-cycle system, and (4) Such other products, services, and benefits as prescribed services obtainable from the ecological system of the forest area and benefits (The Forest Act 2019).

Benefit Sharing: in the study benefit sharing demotes the sharing of forest products (The Forest Act 2019) or monetary value comes from the selling of forest products among the CFUGs.

Rural development: It is the process of improving the quality of life and economic well-being of people living in rural areas. There are three main ways in which forestry- contributes to rural development; maintaining its ecological balances, increasing the supply of products for local consumption, and improving the benefits from enterprise uses of timber.

1.8 Organization of the Study

The whole study was divided into seven chapters.

Chapter I contains an introduction of the study which contains the background of the study consisting of community forests and its significance with MDGs and SDG 2030 and a short history of community forests; a statement of the

problem where benefits, conflicts and expected and real benefits of the community forest are written; objectives of the study where main objective and supplementary objectives are present; the significance of the study where the importance of the study to CFUGs and policy makers are written; scope and delimitations where scope of the study and some limitations related to the study are present; definition of terms where some concepts used in the study are define according to forest act and for study purpose and organization of the study was written.

Chapter II contains literature reviews which contain the conceptual and historical reviews where the meaning of community forest and its principles, history of forest management in Nepal, livelihood assets of rural people, community forest and livelihood of rural people are written; policy reviews where the history of forest policy from the nationalization of forest to forest act 2019 was reviews; empirical reviews where community forest related articles from Nepalese as well as foreign scholars are reviews and present and concluding remark and research gap are identify in the last part of literature review.

Chapter III contains research methodology which consists of research design where the nature of research and its design and methods were discussed; the universe and sample where the universe of the study, sampling process, and sample size were discussed and present; techniques and tools of data collection where how the data was collected and which tools are used for the data collection was discussed; techniques and tools of data analysis where methods of data analysis were discussed and in last part research ethics are written where the ethics of the research which research followed are present.

Chapter IV contains the results and discussion of the objective 1. This chapter presents the results on the socio-economic and environmental benefits generated by community forests to the local people, and discuss those results considering the implications on rural development.

Chapter V contains the results and discussion of the objective 2, which is to assess how the livelihoods of forest users are being enhanced through community forestry. Drawing on both quantitative data and qualitative insights, this chapter examines various dimensions of livelihood improvement and 3, discusses the findings

on challenges faced by CFUGs for management, utilization, benefit sharing and forest-related conflicts.

Chapter VI contains the results and discussion of the objective 3, which is discusses the findings on challenges faced by CFUGs for management, utilization, benefit sharing and forest-related conflicts.

Chater VII This chapter presents the policy recommendations and conclusions of the study. It presents by objective wise for sustainable socio-economic and environmental benefits for community forests to the local people, for livelihoods and for conflict resolutions. In addition, it also presents the contribution of the thesis to the science.

CHAPTER II

LITERATURE REVIEW

2.1 Theoretical Review on Rural Development and Livelihood

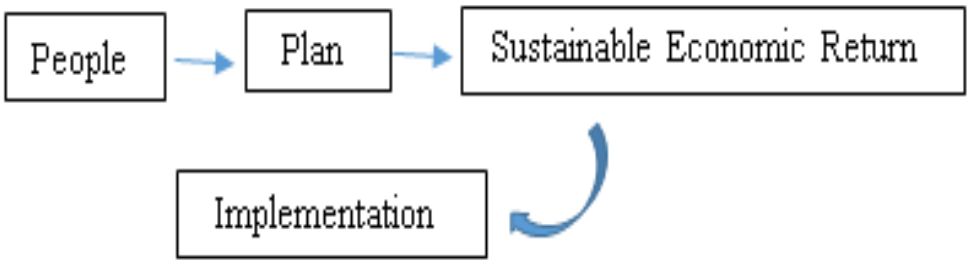
Different theoretical frameworks for analyzing the complex processes of community forestry and their impacts on rural people's livelihoods involve Basic Resource Theory. It focuses on how the availability, accessibility, and sustainable use of basic natural resources—such as forests—are the foundation of community well-being and rural development. Common Property Theory, particularly that of Elinor Ostrom, shows that resources like forests can be maintained at the community level with collective effort and locally crafted rules, thus discrediting the "tragedy of the commons" myth. Similarly, Socio-Ecological Systems (SES) Theory offers a consolidated framework within which one could study the interactions between forest ecosystems and communities, keeping feedback loops, resilience, and adaptive governance in mind regarding the management of community forests.

Supplementing these conceptual models are several pragmatic development strategies with robust applicability. The Participatory Approach emphasizes the importance of involving forest users in planning, decision-making, and benefit-sharing to ensure ownership and sustainability. The Livelihood Approach views community forestry from a vision of improving rural people's access to five key capital assets—natural, human, social, financial, and physical to alleviate poverty and resilience. The Capacity Approach, as first put forward by Amartya Sen, stresses the building of human capabilities, such as skills, agency, and freedom, that are required to achieve well-being and equitable forest governance.

The Selected Working Model for Rural Development (SWMRD) in this study incorporates several philosophical and theoretical currents. It draws from Sen's Social Choice Theory, which holds that extending people's freedom and choice is the core of development; the Gandhian Model of Rural Development, which holds the beliefs of self-reliance, justice, and empowerment of people at the local level; and the Economic Doctrine of Factors of Production, which links forest assets to capital development and local economic development.

Figure 2.1

Conceptual Framework



This integrated framework is illustrated in Figure 2.1, Conceptual Framework. CFUG members are bestowed the focal position in the model by formulating and managing the forest resources through the Community Forest Operational Plan. The plan acts as a mechanism for achieving socio-economic development (e.g., improved livelihoods, vocational training, and income generation), infrastructure development (e.g., irrigation canals, road trails, schools, and ponds), and greenery development (i.e., forest regeneration, conservation, and biodiversity enhancement). The government and local authorities are also responsible for obtaining the legal recognition and operational support for CFUGs, which enable them to mobilize resources, assert their rights, and enforce decisions. This cyclical and participatory model illustrates how community forestry not only maintains forests but also fosters holistic and inclusive rural development.

2.1.1 Basic Resource Theory

Basic Resource Theory studies the mechanism by which basic needs relating to essential goods, services, and assets impact personal well-being, community health, and financial stability in rural places. The theory identifies, distributes, and work out resources for sustainable management that human livelihood strategies may promote. This is a conceptual framework that explores how the availability, accessibility, and management of essential resources—such as goods, services, and assets—affect individual well-being, community health, and long-term economic stability, particularly in rural settings. It provides a lens through which to understand the foundations of rural livelihoods and the structural dynamics that shape development outcomes in under-resourced regions.

At its core, the theory emphasizes that the sustainable development of rural areas depends on the efficient and equitable utilization of basic resources, which can be grouped into four main categories:

i. Natural Resources: Land, water, forests, minerals, and biodiversity, which form the ecological base for rural livelihoods.

ii. Human Resources: The skills, knowledge, health, and labor capacity of the population.

iii. Capital Resources: Physical infrastructure, financial assets, and technologies necessary for productivity and investment.

iv. Institutional Framework: Governance systems, legal structures, and social institutions that regulate access to and control over resources.

Understanding the basic resource theory is essential to understanding the dynamics of rural development. The theory states that the availability and efficient use of basic resources: natural, human, and social capital are important factors in ensuring the sustainable development of a region (Davis & Cobb, 2010). The relationship between resource availability and poverty reduction in rural areas has been recognized. The rural population frequently goes through challenges in managing and accessing essential resources which leads to a continual cycle of poverty and underdevelopment. The deep-rooted poverty and inequality have been studied and it has shown that opportunities available for rural populations are shown by rural-urban migration, economic structuring, and labor market dynamics (Tickamyer & Duncan, 1990).

The resource costs of global poverty have also become a subject of concern—as the continued acceptance of widespread poverty entails considerable costs for the world as a whole. Poverty and natural resource degradation can be self-reinforcing: the rural poor are often concentrated in fragile environmental areas, and their livelihoods are intimately dependent on ecosystem services (Barbier, 2010). The different theoretical approaches to local development in rural areas have underlined the necessity to efficiently elicit and manage a region's basic resources. These frameworks have thus emphasized how policies and interventions should be directed at the systemic barriers to access and use of resources so that rural development can be truly more equitable and sustainable.

2.1.2 Common Property Theory

Common Property Theory explains how resources like forests, water, and pastures—shared by a community—can be effectively managed through collective action. Unlike private or state-owned resources, common property is jointly used and governed by a defined group of users who create rules, monitor use, and enforce penalties to ensure sustainable use. Elinor Ostrom's works on common property challenged the "tragedy of the commons" notion, showing that local communities can successfully manage shared resources without external control. The theory emphasizes local knowledge, trust, social norms, and institutional arrangements as key factors in preventing resource overuse and degradation.

To understand the common Property Theory, the knowledge of common pool resources is important. Common pool resources referred to as CPR are the natural resources that are provided as common resources free to use by common people (Ostrom, 2008). For instance, resources like forests, range lands, fisheries, water supplies, rivers, wasteland, etc., are common pool resources. In other words, CPR applies to those resources that are available and collectively owned, managed, and held by a group of communities on which no individual has exclusive property rights. For common property, no individuals are interested in paying incentives for use and limit use for future returns. As a result, the resource use is at or crosses the point of maximum sustainable yield.

CPR in most cases, faces the problem of the "Tragedy of Commons" which states that when people are free to use common resources, they tend to increase their limit of use without considering that the resources are limited (Hardin, 2013). It is an economic problem that occurs as a result of the overconsumption of resources, low or nearly zero investment, and depletion of CPR. As a result, there comes an issue of coordination and sustainability (Gordon, 2016; Hardin, 2013; Timilsina et al., 2017). To solve this problem, the imposition of rights and government regulation should be implemented and collective actions are beneficial.

Hardin Garett in 1968, unjustified the assumptions that resource users are selfish and common resources are open–access and described them as resources that are restricted to the group and governed by rules. Later, Ostrum developed the common property theory which explores how collectively owned and managed

resources can be effectively governed and sustained. The theory emphasizes the importance of self-organized governance systems, collective action, and shared decision-making in managing common pool resources. Ostrum's work highlights that under certain conditions, communities can successfully overcome the challenges of resource depletion and achieve sustainable management (Ostrum, 1990).

To avoid overuse and maintain sustainability, Elinor Ostrum, a Nobel-prize-winning economist, proposed eight principles for managing common-pool resources. These principles provide a framework for understanding how collective property rights can evolve to manage otherwise open-access resources and ensure long-term sustainability. They break down the ways to use the commons with the following principles:

1. Define clear group boundaries
2. Synchronize rules governing resource use to local needs and circumstances
3. Ensure those affected by the rules can participate in modifying the rules
4. Make sure the rule-making rights of community members are respected by outside authorities
5. Develop a system for monitoring members' behavior
6. Use sanctions for rule violators
7. Provide accessible, low-cost means for dispute resolution
8. Build responsibility for governing the resource in nested tiers

The first two principles are focused on the concept of collective property rights. Clearly defined access rights regulate who can access the resource, while enforced use rights specific to the resource's ecological and socio-economic context determine how sanctioned users can use it (Andrews et al. 2024). Third principle requires those designing and modifying rules governing the resource's use to be represented in the decision-making process, which enhances their buy-in and investment in the system.

The fourth principle, the community's rulemaking rights, is respected by outside authorities, ensuring community stewardship of the resources. Similarly, the fifth principle, monitoring, is crucial for ensuring compliance with the established

rules and detecting potential overuse or other issues. Those monitoring the resource's use and condition are accountable to the resource users themselves, creating a system of internal accountability.

Graduated sanctions, the sixth principle, provide a mechanism for punishing rule violations, with the severity of sanctions increasing with the severity and frequency of the offense. While seventh principle focuses on creating the environment for low-cost dispute resolution on the disputes related to resource use. The last i.e., the eighth principal prioritizes building responsibility for governing the resource in a nested form.

Community Forestry initiatives often rely on the principles outlined in common property theory, such as the establishment of local governance institutions, participatory decision-making processes, and the development of rules and regulations for sustainable resource use (Ribot, 2002).

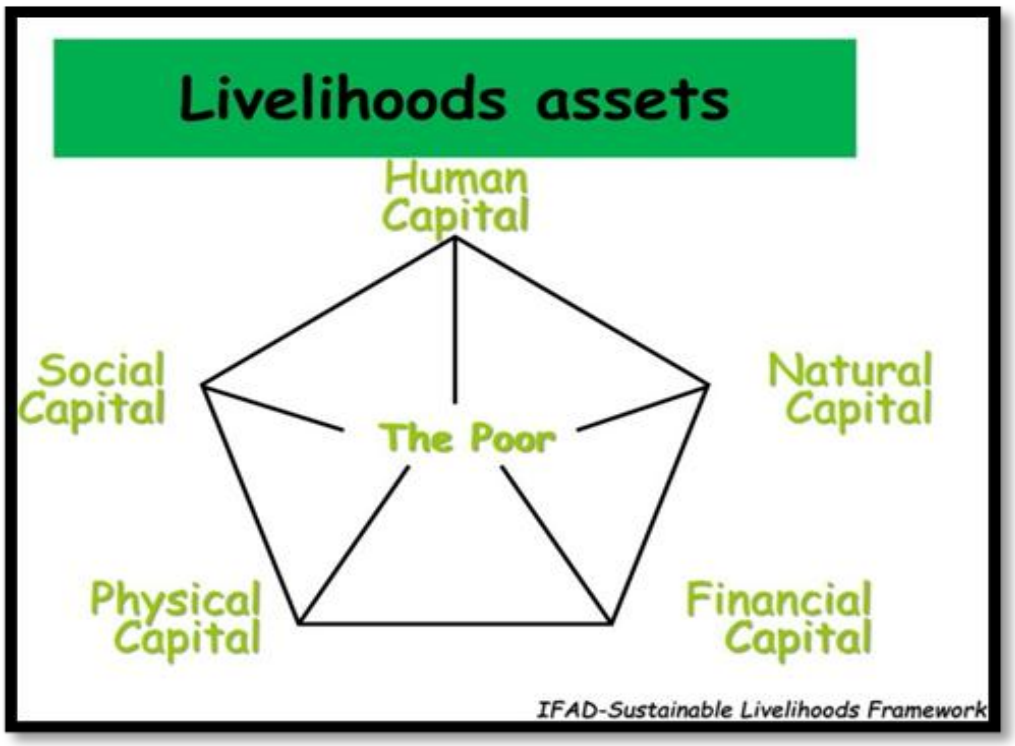
In the context of community forestry, Ostrum's work provides insights into the factors that contribute to successful resource management. For instance, her principles for managing resources include clearly defined boundaries, rules congruent with local conditions, collective decision-making, and mechanisms for conflict resolution that can inform the development of effective community forestry management strategies

2.1.3 Community Forestry and Livelihood

Forest resources are significant for ecosystem balance and people's livelihood of Nepal. Wiersum defines community forestry as forest or tree management activities undertaken either individually or cooperatively by local people either on their own or leased private lands or on communal land or government-owned land (Wiersum, 2004). In the Nepalese context, Community forests are the part of national forest managed by the community as a form of community user groups who have the authority to protect, manage, and utilize the forest resources. On the other hand, the community user group must make the operation plan including the description, activities to be done for the protection, management, and conservation of biodiversity, and regulations (Amatya & Shrestha, 2010). Community forests are the source of livelihood for a huge population residing in rural areas (Chaudhary et al., 2023).

Figure 2.2

Livelihood Assets



Livelihood is simply the way of living. The livelihood of people is defined as the adequate stocks and flows of food and cash to meet their basic needs (Brutland., 1987). It comprises the capabilities, assets (both material and social), and activities required for the means of living (Chambar & Conway,1992). For living individuals and households need capital assets important for gaining their living. Capital assets are of five types: natural capital, physical capital, financial capital, social capital, and human capital.

Human capital: This capital is important to improve household welfare with education and health (Nugroho et al., 2024). It includes the knowledge, skill, working ability, and health which is directly proportional to the income generation and productivity of an individual and household.

Natural Capital: This capital comprises natural resources like forest, water, land, and biodiversity. They impact rural livelihood in a significant way (Liu et al., 2018).

Financial Capital: It comprises economic resources including savings and credit that provide purchasing power. The availability of this capital influences the

shift in livelihood strategies with more income resulting in the identification of individuals or households away from agriculture (Hua et al., 2017).

Physical Capital: This capital is important as it has a varying effect on community income especially in tourism-dependent areas (Ma et al. 2018). This capital includes infrastructure like road network, electricity, health facilities, and other recreational facilities.

Social Capital: As a social being, social capital plays an important role in livelihood resilience and access to resources (Pour et al. 2018). It includes connections, relationships, and social support.

These assets are important as livelihood strategies are studied by the combination and quality of these assets. Having a sound understanding of livelihood assets can notably aid resilience, lessen poverty, and support sustainable livelihoods.

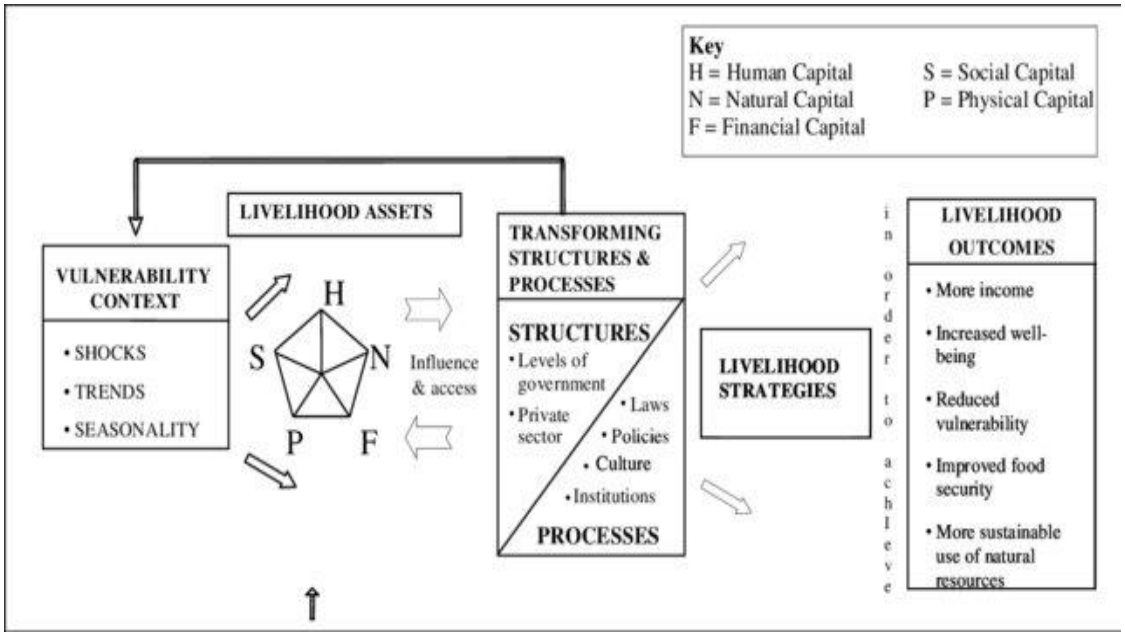
Livelihood principles provide different frameworks and ideas to improve individuals' living conditions promoting sustainability and social equity. Following are the core principles of livelihood:

a. **Sustainability:** This principle is necessary for harmony in resource use and conservation. It ensures livelihood strategies that do not compromise future opportunities.
b. **People-centered development:** It ensures development has to be people-centered, which prioritizes people participation, empowerment, and addressing the needs of people.
c. **Diversity and flexibility:** Promoting different livelihood options to enhance resilience against financial and environmental shocks.
d. **Equity and social justice:** Support for fair distribution of resources and opportunities particularly for vulnerable communities.
e. **Adaptability and resilience:** Fosters the capacity to adapt to changes in the environment, economy, or social systems to ensure continuous improvement in livelihood
f. **Integration of traditional knowledge with modern knowledge:** Combining modern and traditional ecological knowledge for better livelihood strategies.

The livelihood framework shows the conceptual and analytical structure of the livelihood framework. We can understand how resources, vulnerabilities, and strategies for improving livelihoods are related in the case of adopting strategies for enhancing livelihoods in the context of sustainable development and poverty reduction.

Figure 2.3

Sustainable Livelihood Framework by Moser 2001



Components of a Livelihood Framework

Vulnerability Context: This section refers to any kind of shocks, trends, and seasonality that impact people's livelihood strategies. For instance, vulnerability analysis highlights the external environmental and policy factors that affect rural communities (Omar et. al., 2012).

Livelihood Assets: This section categorizes resources into five capitals viz. natural capital, physical capital, human capital, social capital, and financial capital. Interaction between these assets shaped livelihood strategies and outcomes.

Transforming structure and process: It comprises structures, institutions, policies, and cultural practices on how resources are used.

Livelihood strategies: The activities people do to earn their living which includes farming, non-farming, or even migration for other livelihood options. These strategies depend upon the available resources and external factors.

Livelihood outcomes: It refers to the results of strategies in the form of increased income, reduced vulnerability, and improved well-being. These outcomes should be assessed for sustainability and equity.

This framework helps in designing poverty reduction programs that are directed to people and are flexible to the local context, providing the basis for policy alignment with livelihood needs that ensure intervention addresses local vulnerabilities. Similarly, it enhances understanding of how activities like tourism affect communities. In this way, it helps in effective and holistic planning.

Impact of community forestry on rural livelihood

Community forestry has emerged as an important strategy to manage forest resources in various parts of the world, particularly in rural areas where communities rely heavily on forest-based resources for their livelihoods (GEF, 2010) The shift of forest management stewardship from states to local communities has been seen as a promising strategy for keeping harmony between conservation and community development goals. However, the influence of community forestry on rural livelihood has been positive with enhanced livelihood and conserved ecosystem and biodiversity as well as negative regarding benefit sharing, social inclusions, and policy gaps.

CF benefits local communities with its potential to uplift community living standards with the facility to access forest resources and increased economic opportunities. It allows user groups to harvest, utilize, and sell forest-based products adding benefits to their agricultural and other income-generating activities (Charnley & Poe, 2007). Furthermore, the CF program is useful for the diversification of rural occupation shifting local people to small-scale forest-based enterprises, non-timber forest products, and eco-tourism practices.

However, the biophysical, institutional, and socioeconomic context in which the CF program has been implemented highly affects the success of CF in upgrading the rural living standard (Newton et al.2015). The extent, devolution of forest management authority to local level the availability and condition of forest resources, and the prevailing socioeconomic level of the community significantly influence the

livelihood outcomes of community forestry. For instance, the degree of devolution of forest management authority to local communities, the availability and condition of forest resources, and the existing socioeconomic status of the community can all play a significant role in determining the livelihood outcomes of community forestry.

Studies have shown that the overall influence of community forestry on livelihood improvement has shown varied results. Some studies indicate positive results that include improved access to forest resources, increased household incomes, and enhanced livelihood. On the other hand, others have emphasized the challenges of unequal benefit sharing, conflict related to resource use, social disparity, elite domination, and insufficient technical and financial support (Charnley & Poe, 2007; Edu et al. 2010; Newton et al 2015). Thus, it is crucial to have a clear understanding of the contextual factors that shape the performance of the CF program, to address the challenges and maximize the outcome of CF to improve rural livelihood.

Key factors related to improved livelihood outcomes have been identified in a systematic review of community forestry. They are strong local institutions, secure tenure rights, and equal benefit-sharing (Newton et al., 2015). Furthermore, it has also been known that enhanced community participation and social inclusion in the decision-making process also influence the success of CF in improving the livelihoods of rural people (Friedman et al., 2020). Therefore, increasing local community participation in planning to monitoring the process of community forest management results in equitable benefit-sharing and the needs of the communities are prioritized.

To conclude, a community forestry program is a tool with a high potential that can significantly improve rural development but its successful outcomes are connected to the contextual scenario in which the program is implemented.

2.1.4 Rural Development

There is no universally accepted definition of Rural development but many scholars believe that it is keenly related to development. Some scholars believe it is a strategy and others the process of development. Rural development emphasizes the holistic improvement of rural areas' socioeconomic, agricultural, and infrastructural conditions (Chauhan, 2010). Rural development is a continuous process that helps to fight the issues of rural livelihoods in the current sociocultural and geographic context and leads to sustainable development (Pasa, 2020; Shaik, 2017; Veerappadevaru et al. 2020).

The history of rural development dates back to the period of post-World War II, when countries particularly in Asia and Africa were free and planning development strategies. Rural development has raised as a key factor in influencing the lifestyle rural population in these regions positively. (Shaik, 2017). The focus of rural development has changed from a narrower to a broader concept over the decade. Previously, agricultural productivity was prioritized while currently a more comprehensive approach is focused which includes diversification of income-generating activities, empowerment of rural poor, and provision of basic services (Calatrava, 2015; Torre & Wallet, 2016).

Globally, rural development efforts have taken various forms, ranging from land reforms and agricultural modernization to the promotion of non-farm income-generating activities and the provision of rural infrastructure. In many Asian countries, including Nepal, rural development has been a central element of national development strategies, with a focus on improving food security, generating employment, and reducing rural-urban disparities (Shaik, 2017; Veerappadevaru et al., 2020; Pasa & Bishwokarma, 2020). Rural development has been defined variedly.

Chambers (1983) defines rural development as a strategy to enable the rural poor to enhance Robert Chambers' work, Rural Development: Putting the Last First, describes it as a strategy to empower rural poor individuals, promoting self-determination and addressing systemic biases, through participatory approaches. He emphasized participatory approaches to support development that allow learning from rural populations and avoid biases against rural poor (Warren, 2011). Similarly,

World Bank views rural development as a strategy to improve the socio-economic lifestyle of the rural poor extending the benefits to the rural poor (World Bank, 1975).

Rural development is defined as a process of improving the quality of life and economic well-being of people in relatively isolated and sparsely populated area (Chambers, 1994). Similarly, Lipton (1977) sees rural development as a process as a process of increasing agricultural productivity and diversification, accompanied by equitable access to and control over resources and markets and the provision of social and physical infrastructure. Rural development results in an increase in rural people's income, productivity, and standard of living, along with greater social justice and equity (Seers, 1972). It focuses on providing rural communities with means to organize themselves and participate in a market economy through the adoption of new technologies, practices, and attitudes (Rogers,1976).

Uphoff (2000) views rural development as empowering communities to take control of their development through participatory approaches that build social capital and promote collective action. Sen (2001) focuses rural development on enhancing people's capabilities and expanding their freedom to participate fully in their communities' social and political life, reflecting the enhancement of all dimensions of rural livelihood. Rural development concerns the strengthening of the livelihood in rural areas by improving and/or restructuring the rural economy and improving the rural identity (Elands & Wiersum, 2003). Chang (2009) argues that rural development should shift away from a narrow focus on economic growth, social inclusion, environmental sustainability, and democratic participation.

Forestry enhances rural development by improving production processes and providing ecological infrastructure (Elands & Wiersum, 2003) Forest income supports Indigenous families in least-developed countries, and community forestry mobilizes financial and social capital, providing livelihood safety nets (Chapagain & Banjade, 2009; Rabbi et al., 2010). Though the initial state community forestry scheme was implemented to solve the problem of deforestation and fulfill the needs of the local community, later it became one of the major means for forest conservation along with rural development (Bhandari et al., 2019). To understand how forestry has contributed to rural development, policies related to forest policies need to be understood. Various laws and policies have been devised in different phases to protect and conserve forests in Nepal.

Adhikari and Dhungana (2010) in their review paper have summarized forest management policies in five different phases. During the unification period between 1750 and 1846, policies were focused on state control and expansion of territory resulting in massive deforestation and socioeconomic disparities. It was followed by the Rana Period from 1846 to 1951, when policies continued forest privatization for revenue generation benefiting elites and causing hardships to indigenous communities. The transition phase from 1951 to the 1960s initiated the act of nationalizing private forests but lacked effective implementation.

Later the Panchayet Period from 1961 to the 1990s, state control over forest resources was centralized through the Private Forest Nationalization Act of 1957 for national development. However, there was minimal local participation and benefits inclined to elites and bureaucrats. Thus, in 1978, Panchayet Forest Rules were put forward introducing participatory forest management programs. After the Panchayet Period i.e., the 1990s to the present, policies focused on decentralization and community-based forest management systems (Adhikari & Dhungana, 2010).

The Forestry Sector Strategy 2016 (2072 BS.) has targeted to bring 50% of forests in the Terai and Siwalik, and 25% of forests in the mid-hills under sustainable forest management by 2025 (2081 BS.). In order to achieve the government's sustainable forest management targets, the participation, coordination and support of forest dependent local communities, forest user groups, stakeholders and conservation partners have been critical.

The Private Forest Nationalization Act, implemented in 1957, focused on centralizing forest management. It recognized the forest as public property and must be managed by the government. It aimed to reduce forest destruction and ensure adequate security, maintenance, and utilization of privately owned forests. This act led to tremendous controversy and ignited debates regarding its role in deforestation. Nationalization affected Indigenous Forest management systems depriving local people manage and benefit from the resources. As a result, the forest became an open-access resource.

People were to take permits to harvest trees on their land from the forest officers even for household use as the Forest Act, 1961 was promulgated (Ranjit, 2019). Forest Act (1993) addressed the previous challenges and introduced better

provisions by categorizing forests, emphasizing controlled and sustained use of forest resources, focused conservation and environmental balance, community participation and empowerment, compensation and land acquisition, revenue and financial management, and additional measures for efficient implementation. It clearly shows a paradigm shift in forest management, continual resource use, and local participation (Forest Act, 1993).

Forest Act (2019) has introduced detailed provisions for management, conservation, and sustainable forest resource use with its comprehensive phases. The policy introduced new forest categories: urban forest taking mind conserving green spaces in urban areas to mitigate urbanization impact. Similarly, religious forests preserve the religious link associated with that forest, and environmental service forests acknowledge the environmental role of forests in carbon sequestration, water regulation, etc. Regarding the financial part, this act has a carbon credit mechanism for revenue generation and made community forests reinvest 25% of their income in forest development and 50% in poverty alleviation programs which directly benefits rural development.

In addition, this act has put forward forest armed forces in high-risk areas, and modern technology, and empowered local governance to strengthen enforcement and monitoring of forests. It has adopted a prompt approach to addressing global environmental challenges. It has also promoted management through strong representation of marginalized groups in forest management. Similarly, it has recognized traditional ecological knowledge and practices as an essential part of forest management. Thus, Forest Act, 2019 shows significant evolution from the Forest Act, 1993 aligning Nepal's forestry policy with the federal governance system cum global environmental commitment (Forest Act, 2019).

Many scholars have placed their opinions on the role and impact of community forestry in rural livelihood and development in national and international contexts. Conroy et al., (2001), has explored the self-initiated community management in Orissa led by decades of deforestation. It has prioritized 44 forest-dependent communities with 33 self-initiated forest management. It has shown that forests are critical for non-timber forest products and grazing with poor households mostly relying on forests for their livelihood. This paper supports the idea that

community-driven models are important to support livelihood and enhance forest regeneration.

Kaskoyo (2017), in his paper: Community Forestry in Lampung Province, Indonesia explores a decentralized community forestry initiative called Hutan Kemasyarakatan (HKm) Program using descriptive research design. The researcher has evaluated the sustainable livelihood approach focusing on changes brought in five important livelihood assets. The article shows the notable changes in livelihood and enhancement of forest protection (Kaskoyo et al., 2017).

Feurer et al. (2018) have evaluated the role of community forestry as a tool for rural development. Using both qualitative and quantitative approaches, the paper has studied the impact of community-based forest management on livelihood upliftment, poverty alleviation, and ecological conservation. It has clearly shown that Indonesian community forestry has the potential to contribute to rural development by balancing ecological conservation with livelihood upliftment. There is a high dependency approximately 91% in forests to fulfill fuelwood demand and CF products contribute to 36% of total income supporting the deprived population. Nevertheless, to achieve the long-term sustainability of this program it is important to address challenges related to governance and social equity.

Similarly, Njurumana et al., (2020) in their study has examined the socio-economic and economic impact of CF in Sikka district, East Nusa Tenggara, Indonesia. It has evaluated how CF can contribute to forest management, poverty reduction, and improve community well-being by focusing on the role of tropical monsoon forests in community livelihood. CF has contributed to 49% of household fuel needs, 37.69 % of food demand, and 43.82% of animal fodder along with the support in the cultivation of non-timber forest products. Though this paper has shown CF has significant potential to improve livelihood and environmental sustainability, interventions like education, infrastructure, and biodiversity conservation are crucial for poverty reduction and long-term sustainability.

Oldekop et al. (2020) in their review paper “Forest-linked livelihoods in a Globalized World” have analyzed extensive data and research to study the dual role of forests in mitigating the global challenge of biodiversity loss and climate change as well as contributing to livelihood enhancement. Forest hugely contributes to people’s

livelihood as it provides direct economic benefits to 1.6 billion people globally. Forests are a safety net for the poorest population at the time of global crisis as supported by 25 % of the income of the indigenous population is derived from forests.

Globalization has enhanced market integration to sell forest-based products and the global carbon credit system has offered incentives for sustainable forest management. On the other hand, market dynamics may favor elites overshadowing the marginalized poor. Furthermore, it discusses Conservation and livelihood tensions. Conservation policies have supported forest protection but also restricted Indigenous people's use of local resources forgetting the fact that conservation policies led by Indigenous people are more inclusive cum effective. The study has demonstrated the interconnection between ecological sustainability and social welfare focusing on the need for inclusive and locally confirmed solutions to address global challenges (Oldekop et al. 2020).

Mawa et al. (2021) investigated the impact of CF on livelihood in Uganda using a sustainable livelihood approach and also evaluated the contribution of CF on livelihood capital to participating 40 households of Communal Land Associations. It showed that CF managed by members of CLA contributed significantly to the improved livelihood capital of the area. The CLA members reaped more benefits compared to non-members in terms of resource use, forest environmental income, poverty reduction, and involvement in leadership roles in social groups and building trust. The need for strategic intervention to maximize the benefits of CF to both members and non-members is prioritized to ensure inclusivity and ecological balance.

Ekanayake et al., (2022) conducted a study entitled “Community Forestry for Livelihood Improvement: evidence from the intermediate zone, Srilanka” with nine CF sites across four districts involving 450 households. It used a comparative before-after control impact approach to evaluate the contribution of CF across the fie livelihood capitals. CF program contributed to better access to water (35%) and electricity (15%), better housing materials, training, and microfinance activities that supported livelihood diversification.

Similarly, illegal practices were reduced, and support for agroforestry was possible due to legal access to state forests. Education and skills were upgraded in the studied population and local networks and collaborative governance were supported.

The Sri Lankan Community Forestry Program demonstrates notable enhancement in rural livelihoods especially in physical, financial, and social capital. Still, there is a necessity to address membership inequalities, diversify economic opportunities, and improve conservation efforts (Ekanayake et al., 2022). These all studies have demonstrated how CF is useful in uplifting rural livelihood through community involvement in the protection, management, and utilization of forest resources in the international context. CF has been an exemplary tool for livelihood improvement in Nepal too.

Dev et al. (2003a), in their study evaluated the effect of CF on rural livelihood in Nepal's middle hills employing a livelihood systems model to examine the challenges cum benefits of CF practices outcome, especially for marginalized people. It has shown improved natural capital and better protection of forests, improved product flow due to careful management. Similarly, it has established participatory institutions promoting social cohesion, enhanced financial capital through diversified income sources, and reduced vulnerability through CF-generated jobs like resin-tapping, guarding the forest, etc. However, the concern should be made to address the challenges like unequal benefit distribution and enhancing livelihood to maximize the potential of CF for sustainable rural development.

Malla and Branney, (2003) evaluated the socio-economic effect of CF in Myagdi and Parbat, who focused on benefits and shortcomings for poorer households in their study "Why aren't Poor People Benefiting More from Community Forestry". The study has highlighted inequalities based on resource distribution, participation, and governance. It has shown that prioritization of the necessity of poorer households, promotion of inclusive governance, and bridging the gap between elite and marginalized people in case of resource access and benefit sharing is important for recognizing the potential of CF as a poverty reduction tool.

Acharya and Oli, (2004) assessed the impact of CF on rural development and the economy. CF has helped in converting degraded forests into forests with poles and saplings. CF has contributed to capacity building and rural infrastructure development. Additionally, CFUG gained NRs. 3,200 worth of forest products annually for ten years and each household received 1,248kg to 2,359kg of forest product annually for 10 years. Marginalized communities and women were

empowered through the CF program. Furthermore, CF successfully controlled erosion, conserved water sources, and helped biodiversity conservation.

Chhetri et al. (2013) examined the participation of households in forest protection, resource utilization, and decision-making activities in five CFUGs in the Kaski district with a random sample of 176 respondents. The study showed that households with fewer landholdings and big family sizes and near forests were more likely to participate in forest protection. Women and households with larger livestock sizes participated more in resource extraction. Women and marginalized groups from lower castes showed lower levels of participation in decision-making roles which is related to level of education and lower social inclusion in forest user groups.

Bijaya et al. (2016) in their review paper have assessed the role of CF in livelihood improvement, forest conservation, and mitigation of climate change in Nepal. It has focused on challenges, achievements, and ways forward for sustainable and inclusive CF programs. The finding shows improvement in livelihood with the direct benefit of access to forest products, creation of economic opportunities, and improved environmental services. Similarly, the participation of women and marginalized groups, community empowerment, and collaboration of community members in decision-making has increased. Environmentally, CF has contributed to improving forest health and biodiversity and decreasing deforestation and forest degradation. However, challenges like elite dominance, social disparity, and inequitable benefit-sharing persist.

Bhattarai, (2016) have studied the evolution, execution, and outcome of community forestry in Nepal focusing on the role of CF in improving forest health, local governance, and rural livelihoods. To understand the context and particular designs of Nepal's community forestry program, key literatures are summarized. It has also highlighted the shift in community forest's role from protecting local forests and forest products for subsistence to the role of income generation and meeting national development goals along with poverty reduction. It has also highlighted systemic challenges like economic inequalities, sustainability issues, and policy gaps providing insights into policy improvements.

Luintel et al. (2017) explores how the Nepalese CF Program has impacted perceptions of equity in the benefit-sharing process across diverse social groups

including marginalized populations and geographical regions. The study has examined the distributional, procedural, and contextual equity in benefit-sharing processes across diverse social groups, marginalized populations, and geographical regions (Hills and Terai). The perception of equity in benefit sharing is positively influenced in Hills among marginalized groups. However, there are disparities in the Terai that need to be addressed to improve procedural equity for the long-term success of community forestry programs. Also, it provides useful insights to design the decentralized forestry program globally with inclusive and situation-specific governance practices.

Pokharel et al. (2007) provide comprehensive information on the evolution of CF, its impacts, and the lessons learned in Nepal. CF has been globally recognized for over 25 years for participatory forestry and for creating a balance between forest conservation, rural livelihood, and local democracy. The study found that policy amendment and revision mechanisms for community-based forest management should be based on real grassroots-level scenarios rather than a top-down approach. Likewise, by holding stewardship, community forest user groups can become viable local institutions for sustaining forests and developing rural livelihood.

Bhandari, et al. (2019) used both qualitative and quantitative methods to study the role of CF in reducing poverty in Bajhang, one of the deprived and remote districts. CF programs have positively influenced livelihood helping poverty reduction, and income generation, and contributed environmentally with forest regeneration and ecosystem services. Community participation in CF activities like forest management and silvicultural operation was high but the challenges of economic inequalities, policy gaps, and technical expertise exist. Thus, addressing the identified challenges is a primal concern to maximize the benefits of CF in one of the remotest and economically disadvantaged parts of Nepal.

Nepal's 15th periodic plan 2020-2024 (2076/77-2080/81 BS.), prepared with a 25-year vision of 'Prosperous Nepal, Happy Nepali', also recognizes the forestry sector as an economically productive sector with sustainable forest management as a primary pillar. Meanwhile, sustainable forest management has also been recognized as vital in achieving the Ministry of Forests and Environment's vision of 'Forestry for Prosperity'.

However, after 2015, the socio-economic scenarios of Nepal's rural areas have drastically changed. For example, the per capita income of Nepali people has been increased to USD 1381 in 2022 from USD 192 in 1990.4 An increasing number of rural households have access to the facilities, including banks, market centers, paved roads, and bus stops (CBS, 2021a; NPC, 2020). With improved access to transportation and the contribution of remittances, the traditional rural economy has been changed to a monetized and cash economy (Kanel et al., 2012).

Rather than producing and using local products, local people are highly dependent on market products (Gentle and Thwaites, 2016). Many households in mid-hills have switched fuelwood with biogas, LPG, and electricity to meet their energy needs (Baral et al., 2017, Poudel et al 2018, Puri et al., 2017), with only 51.88% household using firewood for cooking in 2021 (NSO, 2023). A total of 94.0% of the population of the country, and 88.87% in the mid-hills have access to electricity (MoF, 2022) while more than 26.6% of the total households in the country and 47.1 % in the mid-hills use LPG for cooking (CBS, 2021b). Just in a decade, the import of the LPG in the country has increased by three folds as an alternative cooking fuel to kerosene and firewood (Bhandari and Pandit, 2018).

Lamichhane et al., (2020) assess the ecological, economic, and social aspects of three CFs in Surkhet district, Nepal with a focus on their contribution to sustainable livelihood security. It has introduced the Sustainable Livelihood Security Index (SLSI) comprising ecological security, financial efficiency, and social equity to evaluate the overall sustainability of CFs. Ambika CF ranked top with the highest Ecological Security Index (87.2), the highest Shannon-Wiener Index (0.742), and the highest timber volume (244.66m3/ha).

Additionally, it had the greatest sapling density(5648plants/ha) the highest net annual income (USD 2325.52), the highest economic efficiency (92), the highest social equity index (92), and the overall highest sustainable livelihood security index (90.4). The SLSI framework consists of a detailed tool to examine and improve the performance of CFs that highlights the targeted need to improve weaker forests.

Baral et al., (2021) studied the socio-economic influence of human-wildlife conflict in mid-hills on Kaski and Tanahu districts. The study used historical records and survey data from community forests and assessed the impact of land use change,

wildlife behavior, and community forestry practices in exacerbating or mitigating HWC. Trends in livestock predation show 27% of surveyed livestock killed by leopards, jackals, and jungle cats between 2015 and 2019. Crop raid was primarily related to rhesus monkeys and field mice totaling 17% of household income. Leopard was apex predator and chickens constituted 80% of predation followed by goat and sheep. Rice and maize constituted the most damaged crops.

It also showed that between 1998- 2018, forest areas increased by 3% reclaiming abandoned farmlands. Income losses to local people averaged USD 142.61 from livestock predation annually and USD 102.86 from crop raids contributing to over 40% of their annual income. Women seemed more affected by this scenario. Only 9% of people knew about insurance schemes for crops and livestock but there was no proof of successful benefit claims.

The study also highlights the challenges of increased forest cover and its management, an operational gap of CF with a lack of provisions for wildlife management, and insufficient mitigation measures. CF can restore forests but also HWC increases with increased forest near human settlements. Thus, it is important to look out for effective mitigation strategies, equitable compensation, and community-focused wildlife management to maintain harmony of conservation goals and livelihood security.

Shahi et al., (2022) examined the connection between the community forests and livelihood strategies in Nepal. It focused on three CFUGs of the Kaski district for the study and explored how the change from agriculture-based livelihood to non-agriculture sectors has influenced the participation of local people in forest management and dependency on forest resources.

The findings showed an increase in non-forest-based livelihood strategies with the emergence of diversified sectors like business, service, and abroad jobs. The average time spent per household per CF meetings has considerably decreased with decreased dependency on the forest and less willingness to participate in forest management as reported by 59% of households. This has resulted in a labor shortage for forest management, economic shifts have reduced forest product use, and governance gaps with less social participation in decision-making. Therefore, the

integration of innovative approaches for households' engagement in forest management is vital to ensure CF remains a cornerstone for rural development.

2.2 Concluding Remarks and Research Gap

Community Forestry Program makes the people feel that the forest resources belong to them, and they look after it carefully. These has been many research and studies regarding the community forestry program to the community forest used groups, some study focuses on diversity of agriculture and its effect on livelihood, some focus on world life conflict with local people due to distribution of crops and livestock by wild animals. those community forest which has biggest forest area kept in biggest CF whereas, those community forest which has smallest forest area kept in smallest CF.

Some studies are also focus on livelihood and community forestry but fail to link with the rural development. Many studies focus on benefit of community forestry, but the importance of the CF is so high that there is a further need to know how far it is important for the programmed to be implemented in every district, especially in the mid-hill region of Nepal. These has not been found any study regarding the impact of community forestry in rural development of Nepal, especially in the mid hill of Nepal, therefore the present study will make a modest attempt to understand different aspects of Community Forestry development in rural development sector in Nepal. The literature review related to community forestry and livelihood of the CFUGs fails to focus on the overall improvement of the living standard of rural people who are mostly dependent on the forest resources for their agriculture sector.

In conclusion the objective of the study was to find out the socio-economic benefits and challenges face by the CFUGs reference to the improvement of livelihood especially of poor rural family focusing on socio-economic and environmental benefit generated by community forest to the local people, benefit from community forest that improves the livelihoods of CFUG and the reasons community forest fails to address the poor and marginalized family who are highly dependent on forest resources which was not explain fully by existing literature and did not link with rural development.

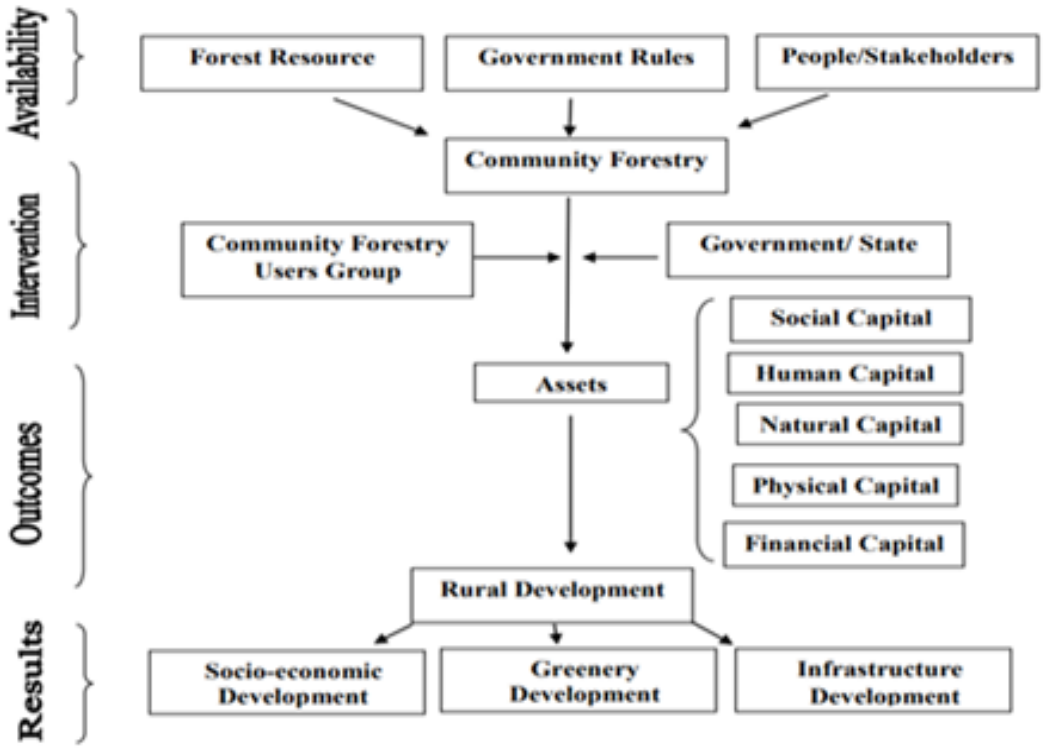
2.3 Conceptual Framework of the Study

Community forestry User group itself is an Institution/Organization for management; development issues prioritization, planning and program implementation through community forestry program; whereas available forest resources are managed for fulfillment of local need and environmental conservation. In the process, the users receive trainings and benefits toward the rural development in the area deprived of different development dimensions which is directly affect the living condition of adjoining people and make local area development.

The three independent variables the forest resources which generated monetary and non-monetary benefits; rules and regulations and the participation of the stakeholders encourages for the management of the community forests to generate the assets/ capital such as natural, physical, financial, human and social which tends to the dependent variables and ultimately goal is to contribute to the rural development. The socio-economic development, environmental greenery development and infrastructural development are dependent variables.

Figure 2.4

Conceptual Framework of the study



In most of the information are being generated through the income and financial sources (as independent variables) and the other benefits such as firewood, timber and other forest product. The Figure 3 shows that community forestry has three components that are forest resources, government rules, and people/stakeholders at first government developed the policies, laws, and guidelines related to community forestry then identified the stakeholders and handed over the national forest to community forestry user groups. Thus, community forestry was managed and utilized by the community forest user groups and the government observes the management, benefit-sharing practices, and conservation of the forest. The benefit must be shared on the principle of equity to the local stakeholders and it was also monitory by the local government.

The benefits from community forestry must focus on the livelihood assets of the stakeholder so that their livelihood assets can be increased sustainably. Thus, the independent variables of the study are the capital of livelihood assets namely, social, physical, financial, human, and natural capital. The sustainable increase in the livelihood assets of the community forestry user group promotes rural development because rural peoples are merely dependent on the forest areas surrounded by rural areas and rural people are the stakeholders of community forestry. Rural development is related to enlightenment regarding the 'quality of life' of rural people to be improved upon or enhanced in terms of better life chances, expansion of resources, or better control of environments.

Here, in the availability component; the independent variables are Forest resources and community forest whereas the dependent variable is Government rules and stakeholders. Here, in the intervention component; the independent variable is the state and the dependent variable is the Community Forest users' group and assets. Here, in the outcome and result component; the independent variable is rural development whereas socio-economic development, Greenery development, and infrastructure dependent are dependent variables.

2.4 Desk Review on the Forest Policies and its Application in Management

In response to the desk review on the forest policies and its implementation on CFs; considering it for the forest management regime, some key policies and legal instruments have been found in Nepal: Private Forest Nationalization Act, 1957;

National Forest Plan, 1976; Master Plan for the Forestry Sector, 1989; Forest Act, 1993; Forest Rules, 1995; Revised Forestry Sector Policy, 2000; Leasehold Forestry Policy, 2002; Herbs and Non-Timber Forest Product (NTFP) Development Policy, 2004; Forest Policy, 2015; and the Forestry Sector Strategy (2016–25). These policies have been supported by several strategies and action plans such as the Terai Arc Landscape Strategy, 2004–2014; Gender and Social Inclusion Strategy in the Forestry Sector, 2004–19; Sacred Himalayan Landscape Strategy, 2006–16; and the National Biodiversity Strategy (NBS 2002) and Action Plan, 2014.

As of 2020, Nepal has 22 protected areas (PAs) distributed across different altitudinal gradients, which have been designed mainly with a focus on wildlife habitat and corridors. Although the earlier policies did not explicitly address the rural development issue in forestry and its dependent communities to the impacts of rural development, the latest policies and strategies have specific provisions related to rural development through community forest management practices.

Then there's the model of community forestry which has been in existence in Nepal for four decades and more after the enactment of the National Forestry Plan in 1976. Currently, the number of community forests in Nepal exceeds 24,000, which managing a total area of about 23 million hectares involving almost 3 million households (DoFSC 2019). These community forests follow the Community Forest Development Guidelines (2014) which empowers the forest user groups to develop their own constitution and management plans, and directs them in implementing activities as per the plans (GoN 2014). This guideline also includes a mandatory provision on how the revenue that is generated ought to be used—at least 35% of a community forestry group's income should be invested in pro-poor activities and 40% toward the welfare of the forest community (GoN 2014).

So far, community forests have been successful in achieving their "dual goal" of ecosystem restoration and livelihood improvement; however, better efforts have to be made to ensure at least 50% participation of women and members of the marginalized communities in decision-making roles; this would tick the boxes of gender and social equality that is part of the UN's Sustainable Development Goals (SDGs).

Community-based Forest management practice implementing by CFUGs considered one of the successful models of practice toward the community-based forest governance; however, its success depends on several factors socioeconomic heterogeneity, institutional setting, leadership, property rights regimes, degree of decentralization, community characteristics, technology, and market influence (Cox et al. 2010; Pagdee et al. 2006). Moreover, as things stand currently, while Nepal has taken some important steps in securing gender and social equality, its National Adaptation Plan of Action (NAPA), the Local Adaptation Plan of Action (LAPA), and REDD+ (Reducing emissions from deforestation and forest degradation) initiative are not gender and socially inclusive (Gurung et al. 2011).

The United Nations Framework Convention on Climate Change (UNFCCC) first introduced gender to global climate change discussions in 2001, specifying gender equality as a guiding principle in the preparation of adaptation plans for the "urgent and immediate needs" of the least developed countries. It also highlights the importance of women participating in climate change negotiations in a meaningful way.

Of all the South Asian countries in the Women's Resilience Index a tool that assesses the extent to which a country has been able to integrate women into resilience-building efforts Nepal is the only country where gender has been "mainstreamed" into its climate change decision-making setup, which acknowledges women as a vulnerable group (Agarwal 2010). However, there is an absence of targets for women's involvement within the NAPA, and of the nine specified projects, none is gender-specific (Economic Intelligence Unit 2014; GoN 2010).

In our study, we provide more insights into how gender and social inclusion play a role in community-based forest management in Nepal; for this, we have relied on data from three study districts namely Parbat, Palpa and Rupandehi. We tried to point out how it is important that the community forest user's groups (CFUGs) have an equal representation of households from all ethnicities and different income categories. The premise of CFUGs asserts that communities or groups of forest users should collectively be engaged in the management of forests (Negi et al. 2018).

CHAPTER III

RESEARCH METHODOLOGY

3.1 Research Design

The study aimed to find out the socio-economic benefits of community forestry focusing on the improvement of the livelihood of the rural people and the problems and identifying the challenges faced by community forests. Thus, the study used descriptive as well as exploratory research design using both qualitative and quantitative methods. The study used a combination of descriptive and exploratory research designs incorporating both qualitative and quantitative methods.

Descriptive research design was used to explore the socio-economic benefits of community forestry and its role in enhancing the livelihood assets of rural people including physical, financial, social, human, and natural capital. This capital together contributes to uplifting the livelihood of the rural poor.

Using a descriptive approach, the study created the link between livelihood and rural development. In descriptive research design, both qualitative and quantitative methods are used. Open-ended questions were used to qualitatively explore the impact of community forests on different livelihood assets of the participating households. For the evaluation of the impact of community forests on the CFUGs, a quantitative method was used where close-ended questions were asked based on conclusions derived from research papers by different scholars (Shahi et al., 2022; Baral et al., 2021; Lamichhane et al., 2020; Dhruba et al., 2019).

On another hand, the exploratory research design was used to examine the direct benefits derived from the community forest by the community forest user groups. Here, the study used a qualitative method which included open-ended questions for key informants and Focal Group Discussion (FGDs). The benefits assessed included cash income, in-kind contribution, active participation, empowerment, agriculture production, and other advantages. Most of the data of the study are qualitative but the data namely, income, savings, and quantities of wood collected were measured in quantitative terms. contributions, active participation, empowerment, agricultural production, and other advantages.

Most of the data collected was from primary data sources using survey methods and focus group discussions. For the data triangulation, the study implied structured schedules, Key informant interviews, focus group discussions, and panel discussions were conducted for data collection. Data analysis was conducted using descriptive statistics from survey questions and thematic analysis was used to analyze data from panel discussions and key informant interviews.

3.1.1 Desk review and field visit

All the desk review related to research methodology were conducted in department of rural development, TU, Kiripur with close coordination with supervisor and co-supervisor; whereas some desk review related to secondary data and information were conducted in DFOs offices. all field data and information were collected from fields (studied areas) along with five-time field visit as 1st time on 10 to 25 Baisakh 2065; 2nd time on 6 to 28 Kartik 2067; 3rd time on 03 to 23 Ashoj 2078; 4th time on 07 to 22 Chaitra 2078 and 5th time on 11 to 25 Jestha 2079.

During the 1st Field visit, the researcher went to study areas (district), where some brief made with DFO staffs on my research. DFO deputed one forest officer Mr. Bikash Pant, where The researcher collected CFUGs data and information. After collection all data The researcher made screening as per my objectives. Tabulated all data and information for conform my study sites. During this field visit in the study areas, some discussion and interaction made with CFUGs members and local people on finding of the study as well compilation of their questionnaires. Some Focal Group Discussions made with CFUG's executive committee and DFO officials on finding of the study.

During the 2nd field visit, data and information collected, made tabulation and analysis of those data and information as per research goals. Then again, the researcher went to the study sites for data verification and questionnaires development. Along with finding discussion made with executive committees' members and concern forest officials, some variables used to collect information and questionnaires were distributed to the CFUGs' members and forest officials accordingly. During this field visit in the study areas, some discussion and interaction made with CFUGs members and local people on finding of the study as well

compilation of their questionnaires. Some Focal Group Discussions made with CFUG's executive committee and DFO officials on finding of the study.

During the 3rd field visit, again the researcher went to study sites/field for data and information re-collection, again made tabulation and analysis of those data and information as per sets research goals. Then again myself went to the study sites for data update with some verification and questionnaires development. Along with finding discussion made with executive committees' members and concern forest officials, some variables used to re-collect information and questionnaires were distributed to the CFUGs' members and forest officials accordingly. During this field visit in the study areas, discussion and interaction made with CFUGs members and local people with some questionnaires distributed. Parallel, some Focal Group Discussion made with CFUG's executive committee and DFO officials.

During the 4th field visit, again, the researcher went to study sites/field for data and information valediction through interaction and focal group discussion. To valediction a table prepared where analysis of those data and information as per sets research goals and objectives. The developed questionnaires were distributed and filled by stakeholders then went to Kathmandu for desk works. With consultation Professors (Supervisor and co-supervisor) the outcomes / findings of the study were prepared. Questionnaires were distributed to the CFUGs' members and forest officials according. During this field visit in the study areas, some discussion and interaction made with CFUGs members and local people on finding of the study as well compilation of their questionnaires. Some Focal Group Discussions made with CFUG's executive committee and DFO officials on finding of the study.

During the 5th field visit, again the researcher went to study sites/field for data and information rectification and questionnaires outcomes, again made discussion on the tabulated and analysed of those data and information as per sets research goals. Then again the researcher wentto the study sites to data update with some verification and questionnaires outcomes. Along with finding discussion made with executive committees' members and concern forest officials, some variables rectified to finalize the field data and information and back to Kathmandu to discuss with supervisor and co-supervisor. During this field visit in the study areas, qualitative and quantitative data were updated with consultation of CFUGs members and local people on finding of the study. Recent progress report of CFUGs and monitoring reports of DFOs were

reviewed where some updated information and lesson learnt of the reports were incorporated in dissertation.

3.2 Geographical Setting of Study Area

Three districts with different ecological zones and physiographic regions (Parbat, Palpa, and Rupandehi districts) were selected for the study. The geographical settings of the study area were situated in various ecological and physiographic regions, which are briefly explained below:

3.2.1 Parbat District

Parbat district is situated in Nepal's subtropical to subalpine climatic zone and higher mountain region of Nepal. 66.9 percent of its land is in the subtropical zone, 17.8 percent in the upper tropical zone, 14.0 percent in the temperate zone, and 1.4 in the subalpine zone. When examining the existing forest area and users' households in the district, the accessible forest area is 27650 ha with 44020 household's dependents on those forests. Data shows that available forest area is shared with households, with 0.63 ha forest per household in Parbat district. When analysis of existing community forest area land and involved users' households' number in the district available community forest area land is 14372.78 ha where there are 35719 households involved in those community forests. Data shows that available community forest land with involved households' number, that is 0.40 ha forest for each household in Parbat district.

The biggest CF in terms of land area covered is Khaharesalyan CFUG in Parbat district, which is situated in the Barrahchaur of the Bihadi rural municipality-2; whereas the smallest land area covered CF is Gannale CFUG which is in the Thapathana of Phalebash municipality-2. Similarly, the largest household involved in CF is Hampal CFUG in the Parbat district, which is in the Salize and Lekhpahnt of the JaljalaRupal municipality-6; whereas the smallest household involved CF is Chiplet CFUG which is located in the Khurkot of the Kushma municipality-2 of Parbat district. On analyzing the studied CFUGs, the largest was 7.11 Ha/HH, whereas the smallest region had 0.02 Ha/HH. Likewise, the biggest HH-covered CFUGs have 0.17 Ha/HH whereas the lowest HH-covered CFUGs have 1.83 Ha/HH.

3.2.2 Palpa District

Palpa district lies in the subtropical to temperate zone and middle mountain region of Nepal. 0.3 percent of its land area is in the lower tropical zone, 51.3 percent in the upper tropical zone, and 47.3 percent in the subtropical zone. The existing forest area is 82770 ha, with 60784 households dependent on those forests. Data shows that available forest land per household is 1.36 ha. The community forest area and participating households in those community forests number is 40934.37 ha and 49291 households respectively. Data shows that available community forest land with involved households' number, that is 0.83 ha forest for each household in Palpa district.

Khulkhule CFUG was the largest CFUGs in Palpa district, which is situated in the Dobhan of the Tinau rural municipality-3. In contrast, CF with the smallest land covered by is Aghillipipal CFUG located in the Telgha of Tansen municipality-10. Similarly, the largest number of households involved in CF is Kuber CFUG located in the Yamgha of the Bagnashkali Rupal municipality-6; while the smallest household involved in CF is Jhirubash CFUG which is in the Jhirubash of the Nisdi Rural municipality-3 of Palpa district. CFUGs in the largest area provide 7.10 Ha/HH, whereas CFUGs with the smallest household coverage provide 0.019 Ha/HH. Likewise, the CFUGs with the highest HH-coverage allow 0.168 Ha/HH, whereas the smallest HH-coverage provides CFUGs Ha/HH.

3.2.3 Rupandehi District

Rupandehi district lies in the lower tropical to subtropical climatic zone and Terai-Madhesh region of Nepal. Approximately 89.3 percent of its land area is in the lower tropical zone, 10.5 percent in the upper tropical zone, and 0.2 percent in the subtropical zone. The total forest area of 25510 ha and there are 163916 household's dependents on that forest. Data shows that the available average forest land is 0.16 per household. Within the district, the total area covered by community forest is 15840.61 ha with 65922 participating households in community forest management. Data shows each household is provided with 0.24 Ha of accessible forest land.

Charpala CFUG is the largest CF in terms of land area in the Rupandehi district. It is situated in the Belbash of the Butwal sub-metro municipality- 12. The smallest CFUG is Swablamban Manohara located in the Motipur of Butwal sub-metro

municipality- 19. Charpala CFUG also has the largest household involved in the Rupandehi district, whereas the smallest household involved in CF is Rachana located in the Padkauli of the Omsatiya Rural municipality-5 of Rupandehi district. The largest CFUGs provide 0.23 Ha/HH whereas the smallest CFUGs provide 0.022 Ha/HH. Similarly, CFUG with the highest household coverage provides 0.23 Ha/HH, whereas those with the smallest HH coverage provide 0.082 Ha/HH.

3.2.4 Forest Land Coverage of Study Area

The Table 3.1 presents data on forest availability and the extent of community forestry implementation in three districts: Parbat, Palpa, and Rupandehi. It compares the total forest area available in each district with the area managed under CF and calculates the percentage of forest area managed by community forest user groups.

Table 3.1

Forest cover and Community Forest (in hectares)

District	Forest available	Community forestry	Percent of CF out of total
Parbat	27,650	14,372.8	51.98
Palpa	82,770	40,934.4	49.46
Rupandehi	25,510	15,840.6	62.10
Total	135930	71,147.8	52.34

Source: *DFO, 2022*

The data shows that, in Parbat, out of the total 27,650 hectares of forest, as reported by DFO (2022) 14372.8 hectares (51.98%) are handed over to the community as community forest. Similarly, in Palpa, 40934.4 (49.46%) hectares are handed over to the community out of the total 82770 hectares of forest available according to DFO (2022). Likewise, in Rupandehi, DFO reports from 2022 show out of 25510 hectares of forest available, 15840.6 (62.34%) hectares are handed over to the community according to DFO (2022).

The table 3.2 reports a comparative overview of household involvement in community forestry across three districts—Parbat, Palpa, and Rupandehi by analyzing the total number of households, the number of households involved in CFUGs, and the average forest area per household.

Table 3.2

Total Household, CFUG's Household and Forest to Households Ratio

District	Household	CFU's household	Forest per HH	CF per CFU's HH
Parbat	44,020	35,719	1.59	2.49
Palpa	60,780	49,291	0.73	1.20
Rupandehi	163,916	65,922	6.43	4.16
Total	268,716	150,932	1.98	2.12

Source: *DFO, 2022*

Table 2 shows a significant difference in forest land allocation across districts. In the Parbat district, each household has access to 1.59 hectares while CFU's households manage 2.49 hectares. While, in Palpa district, each household has access to 0.73 hectares of forest cover. Here, CFU's household manages 1.20 hector. In the Rupandehi district, the allocation is considerably higher with 6.43 hectares per household despite CFUG households managing only 4.16 hectares. It shows that CFUG has access to more land per household in the hilly and mountainous region than in Terai.

This suggests a high level of participation in community forestry in all three districts, particularly in Parbat and Palpa, where CFUG membership covers approximately 81% and 81% of total households, respectively. In Rupandehi, despite a lower percentage (~40%), the absolute number of CFUG households is significantly higher.

These figures suggest that CFUG-member households in all districts generally have access to more forest area than the district-wide average, reflecting the benefits of organized forest user group membership in terms of resource access. The high participation rates in Parbat and Palpa imply a strong community forestry network, which may be due to social cohesion, historical forest dependence, or successful policy implementation. In contrast, Rupandehi's high forest-to-household ratio could point to opportunities for expanding CFUG participation, given that forest availability per household is substantial but CFUG membership is relatively lower.

3.2.4 Forest Quality of Study Area

The ecological, social, and economic advantages of forests are reflected in the functions and values that define its quality. The benefits are the forest's intrinsic characteristics as well as the effectiveness of the services it offers. With the increasing demand environmental needs for high-quality ecological products, the enhancement of forest quality has emerged as a new challenge. The factors of forest quality are the focus of international discussions on environmental and economic sustainable development. These factors are not only by natural environmental factors but also by the broader social development context. The Table 3 shows the forest quality index of selected CFUGs:

Table 3.3

Forest Quality Index

Name of CF	District	Vegetation type	Forest types	Forest Condition	Executive Member	Women in Executive Committee
Khaharesalyan	Parbat	Forest	1	Good	15	04
Gannale	Parbat	Forest	7	shiftless	7	07
Hampal	Parbat	Forest	3	Good	15	08
Chipleti	Parbat	Plantation	2	shiftless	5	02
Khulkhule	Palpa	Forest	1	Good	11	3
Aghillipipal	Palpa	Plantation	0	Degraded	11	4
Kuber	Palpa	Forest	3	Good	13	4
Jhirubash	Palpa	Forest	1	Not Good	7	5
Charpala	Rupandehi	Forest and Plantation	1	Good	15	06
Swablamban	Rupandehi	Plantation	0	Degraded	9	02
Rachana	Rupandehi	Plantation	0	Degraded	9	05

Source: *DFOs 2009-2022*

Table 3.3 shows that the largest community forests are of very good quality, and well stocked providing healthy, easily accessible forest goods to meet local needs. While, the smallest community forests although good in quality and health offer

somewhat fewer forest goods as per the requirement of locals. Most forests have improved health and quality after the forest is handed over as community forests and communities have reaped the benefits.

In Parbat district, Khaharesalyan CF and Hampal CF are well managed resulting in good forest conditions whereas Gannale CF and Chipleti CF are in poorer condition with weak governance. Similarly, in Palpa district, Khulkhule CF and Kuber CF maintain good forest conditions and governance whereas Aghillipipal CF and Jhirubash Cf are in degraded condition and poor management. Likewise, in Rupandehi district, Charpala CF stands out for its better management and forest health. In contrast, Swablamban CF and Rachana CF have declined conditions due to poor governance.

In summary, the community's forests have shown positive changes since the handover to the local community. Community forests like Khaharesalyan (Parbat), Jhumsa Khulkhule (Palpa), and Charpala have shown excellent improvement. In contrast, Hampal, Kuber, and Rachana CF are managing well although Chipleti and Jhirban showed no noticeable progress, indicating potential management issues. Despite these variations, the majority of CFs are in the path of improved condition increasing their value as sustainable natural assets. The smaller CFs are improving slowly and gradually. having CFs' forest quality index is improving; however, the smallest users having CFs have a very low improvement in the forest quality with places like Chipleti and Jhiruban showing minimal enhancements in forest quality.

3.2.5 Rationale of Site Selection

The study selected the community forests in three districts Parbat: Palpa, and Rupandehi districts as the study areas. These three districts were chosen as they represent diverse ecological zones and physiographical regions of Nepal focusing on factors like forest-dependent ethnic groups, size of households (ranging from largest and to smallest), and the area covered (from largest and smallest). The study area covers a wide geographical range from lowland terai to middle hills and high mountains. The operational characteristics of CF in high mountains and middle hills are similar; however, the operational attributes between the lower hills, inner terai, and terai regions vary. Therefore, based on the researcher’s best judgment, to ensure a representative understanding of community forestry management in Nepal, this

research focused on three geographically different regions along with land areas' of CFUGs and users' numbers of CFUGs to represent various scenarios.

There are diversity and dynamics of forest ecosystems in different ecological regions, and due to differences in dynamics, the impacts of community forests are also different, so the study selected community forests of different ecological (Mountain, Hilly, and Tarai) regions. Community forest is a form of participatory forest management that involves local communities in the conservation and utilization of forest resources and the socio-economic stature of communities of mountain, hilly, and terai regions are also different. Community forest has been widely adopted in Nepal, especially in the hilly region, as a way to restore degraded forests, enhance livelihoods, and empower local people.

However, the Terai region, which is the lowland plain area bordering India, has been facing severe deforestation and forest degradation due to various factors such as population pressure, land conversion, illegal logging, and infrastructure development. Therefore, studying community forests in the Terai region can provide insights into the challenges and opportunities of forest restoration in this area. Moreover, studying community forests in the mountain region can reveal the adaptation strategies and resilience of forest ecosystems and communities in the face of climate change and natural disasters. Since the researcher also worked as a forest officer for a long year in one of these districts, it provides access to valuable information and also helps with panel discussions with officers and forest user groups.

3.3 Universe, Sampling Procedure, and Sample Size

The universe of this study comprises CFUGs located in three districts of Nepal Palpa, Parbat, and Rupandehi—representing hill, mid-hill, and Terai regions, respectively. A purposive sampling method was employed to select the study districts based on their ecological diversity, intensity of community forestry practices, and socio-economic characteristics. Within each district, representative CFUGs were selected using stratified sampling to ensure inclusion of diverse user groups in terms of caste, gender, and economic status. Household-level data were collected from a total of 390 respondents across the three districts, using proportionate random sampling within the selected CFUGs to ensure statistical reliability and representation. The sample size was determined considering the population of forest

users, confidence level, and resource feasibility, thereby providing a robust dataset for comparative and thematic analysis.

All the community forest user groups of Parbat, Palpa, and Rupandehi districts were the universe of the study. There were 385 CFUGs in Parbat with 44,020 beneficiaries, 708 CFUGs in Palpa with 607,48 beneficiaries, and 107 CFUGs with 69,001 beneficiaries in Rupandehi district according to respective DOFs. Thus, the population of the study was finite so the probability sampling method was used for the sample selection. For the sample selection at first multi-stage sampling was used. CFUGs were reduced to 10% using a lottery-based simple random sampling method (4 CFUGs in Parbat, 4 CFUGs in Palpa, and 4 CFUGs in Rupandehi). After the initial selection of CFUGs in each district, the CFUGs were reduced to 4 CFUSs in Parbat, 5 CFUGs in Palpa, and 3 CFUGs in Rupandehi district using set indication.

A stratified sampling method was applied for the selection of samples for the questionnaire survey from selected CFUGs with strata of CFUGs of each district identified established and a simple random sampling method used for each stratum. 161 HHs were taken from the Parbat districts (20 HH in each cluster+20 EC HH involved in larger CF and 20% HH in smaller CFs),106 HHs were taken as a sample in Palpa and 151 HH were taken from Rupandehi district in the same manner.

Likewise, for focal group discussions (FGDs) 60 respondents were selected. In Rupandehi, 34 were chosen from CFUG members and the executive committee; 16 were from DFO officials and 10 were drawn from others. In Palpa, 24 were chosen from CFUG members and the executive committee; 16 numbers from DFO officials, and 20 from others. Similarly, 24 were chosen from CFUG members and the executive committee; 6 from DFO officials, and 20 from others in the Parbat district.

For the key informant interviews, three forest officers of the study district and 12 chairpersons of respected CFUGs were selected in each district. Similarly, for the panel discussion, 3 forest experts and 9 members of CFUGs were selected.

3.4 Nature and Sources of Data

In the study, the qualitative data includes information related to the benefits of forests, problems faced by the CFUGs, challenges of community forests, and livelihood assets such as human, social, and natural assets. Similarly, the information from the key informants, and focus group discussions related to the benefit of forests, social capital building, empowerment, conservation, and protection of forests are also qualitative. The data of income, economic and financial capital, and physical capital of livelihood assets of rural people is measured in quantitative terms.

In the study, both primary and secondary data collection sources were used. Primary sources were the main data source of the study and it was supported by secondary sources. In the study, primary data are collected by household Survey, focus group discussion, and panel discussion. Similarly, secondary data were collected from different reports of DFOs, CFUGs, and I/NGOs like CARE and DFID.

3.5 Variables and Operationalization

The study focuses on the socioeconomic benefits of community forestry and its impact on the livelihood of rural people along with the problems, and challenges of community forestry. The variables used in the study and data collection instruments are presented in Table 3.4.

Table 3.4

Variables and data collection methods

Dimension of inquiry	Variables	Methods
Socio-economic benefits	Income, forest resources, participation and empowerment, rights, conservations	Survey questionnaire, panel discussion
Environmental benefits	Source of drinking water, greenery development and bio-diversity as well as soil conservations.	Survey questionnaire, Focal group discussion and panel discussion
Livelihood assets	Economic assets, natural assets, social assets, human assets, physical assets	Survey questionnaire, focus group discussion

Problems and challenges	Conflict among the members of CFUGs, conflict between CFUGs and others, challenges in conservation or protection, benefit sharing principles, equity.	Survey questionnaire, Focus group discussion
Improvement of livelihood of rural people	Increase in livelihood assets, Benefit sharing, Participation and empowerment of poor people	Survey methods

3.6 Techniques and Tools of Data Collection

In the study, both data sources viz primary and secondary were used for the data collection. In primary data collection sources survey method (scheduled interviews), key informants' interviews focus group discussion, and panel discussion were used. The study also used forest quality reports published by Divisional Forest Offices (DFOs) and the Ministry of Forestry which are the secondary data sources. The details of tools used for primary data collection are present in the following points:

3.6.1 Schedule Interviews

For scheduled interviews, at first questionnaire was developed according to the study's objectives. The first section of the questionnaire contained demographic information of the participants. The second section consisted of questions regarding the socio-economic benefits of community forestry to the respondent's family. The third section had questions related to the livelihood assets of the respondent's family. Likewise, in the last section, the problems faced by the respondent's family due to community forestry were included.

The questionnaire is attached in Annex I. A pre-testing was done on the 15 respondents to ensure that it collected the data related to the purpose of the study after the development of the questionnaire. After pre-testing researcher visited the respondents and explained the purpose and use of data collection. The researcher requested the respondents to participate in the survey and after getting approval from the respondent, the respondent's data was collected.

3.6.2 Key Informant Interviews

Firstly, a checklist was developed for key informant interviews. The questions included were related to the benefits of CF to the rural peoples, problems of nationalization policy, involvement of local people in forest management, forest area conservation, and protection, benefit-sharing practices, and problems faced by the CFUGs. Furthermore, it included inquiries about conflicts in the groups and with other communities, changes in livelihood due to community forestry, the role of CF in agricultural modernization, contribution of community forestry to rural development.

After development of checklist, the researcher conducted interviews with 3 forest officers of the study area and 3 chairpersons of CFUGs from selected sample CFUGs. Before the interview, prior consent was taken from the respondents. After the permission from the key informant's research visit explain the purpose of visiting/ purpose of the study. After receiving permission to take information from selected key informants' an in-depth interview was conducted with them. The checklist of key informant interviews is attached in annex II.

3.6.3 Focus Group Discussion

For focus group discussion, the checklist was developed to facilitate the discussion. The checklist consisted of inquiries about the issues and challenges of CF, problems with CF, and the distribution of forest products. Also, it included questions on the participation of local people, issues related to coordination between the members of CFUGs district forest officials, benefit-sharing practices, and contribution to rural livelihood. The focal group / panel discussion and after completing the checklist, the supervisor's approval was taken for data collection.

The researcher visited the Parbat district and met the selected 4 CFUGs and selected 8 members each from 4 CFUGs and conducted a focus group discussion. After completing the first FGD researcher visited Palpa and met the selected in the same manner. Following the completion of the second FGD, the researcher visited Rupandehi met the selected CFUGs, and similarly followed the procedure. The final FGD was conducted with a group of 12 people, one each from each of the 12 sampled CFUGs. The first 3 FGDs were held at the interval of 3 weeks while the final FGD took six weeks.

3.6.4 Published Sources

To present comprehensive information on key aspects of community forestry—such as forest quality, forest area coverage, availability of land for forestry activities, levels of social inclusion, local participation and empowerment, and the sector-wise allocation and impact of community forestry funds data and insights were drawn from various official sources.

Specifically, reports published by the respective District Forest Offices provided localized and detailed information on forest conditions, land use, and community engagement. Additionally, to understand the broader policy-level and financial contributions of community forestry at the national scale, reports and publications from the Ministry of Forests and Environment were consulted. These documents collectively served as essential references for evaluating the environmental, social, and economic outcomes of community forestry initiatives across different regions.

3.7 Techniques and Tools of Data Analysis

In the study, descriptive statistics was used for data analysis. Using descriptive data analysis, the collected data were categorized into groups and presented in either tabular form or in a diagram. Simple as well as bi-variable frequency distribution tables were used for the presentation of data. Similarly, bar graphs and pie charts were used for data display. In the study mean, standard deviation, and coefficient of variance are used for summarizing the data related to economic, social, and environmental benefits of community forests which are measured in the Likert scale. All these analyses were done with the help of Excel 19.

Qualitative data obtained from Key Informant Interviews and FGDs were analyzed using the thematic analysis technique using NVivo software. At first, the recording was transcribed in English, and codes were given to the data after reading the transcribed document. By careful analysis, code categories were developed according to the similarities and objectives of the study. Themes were developed from the categories and described.

3.7.1 Analysis of the Scenario Studied Areas

When analyse the studied areas belonging to the climatic and physiographical perspective; different kinds of climatic and physiographical found as climatic zone of

the Parbat is located in upper hill with covering 17.5 percentage land in bellow 1000-meter, 66.9 percentage land in 1000 to 2000 meter and 15.4 percentage in above 2000 meter from msl. Whereas Palpa located in middle hill with covering 51.6 percentage land in bellow 1000-meter, and 47.4 percentage land in 1000 to 2000 meter from msl. Rupandehi located in Terai with covering 99.8 percentage land in bellow 1000-meter, and 0.2 percentage land in 1000 to 2000 meter from msl.

Physiological zone of the studied areas of Parbat is located in sub-tropical to sub-alpine zone including the Hampal CF situated in Jaljala Rural Municipality in hill and mountain; the Chipleti CF situated in Kushma Municipality in mid-hill; the Ganhale CF situated in Phalebash Municipality in mid-hill; and the Khaharesalyan CF situated in Bihadi Rural Municipality in mid-hill.

Similarly, physiological zone of the studied areas of Palpa is located in sub-tropical to mid-hill zone including the Aghillipipal CF situated in Tansen Municipality in sub-tropical; the Kuber CF situated in Bagnashkali Rural Municipality in mid-hill; the Jhiruban CF situated in Nisdi Rural Municipality in mid-hill; and the Jhumsa Khulkhule CF situated in Tinau Municipality in terai and mid-hill. Likewise, physiological zone of the studied areas of Rupandehi is located in terai zone including the Charpal CF situated in Butwal sub-metropolitan in terai; the Manohara Swablamban CF situated in Butwal sub-metropolitan in terai; and the Rachana CF situated in Omsatiya Rural Municipality in terai terai.

3.7.2 Analysis of Studied CFs Status

When analyse the studied community forest with its size and involvement belonging to its beneficiaries; Areas of the studied CFs of Parbat including the Hampal CF covering 324 ha and involved HH number is 989, where 4587 number were benefited; the Chipleti CF covering 0.75 ha and involved HH number is 14, where 80 number were benefited; the Ganhale CF covering 0.4 ha and involved HH number is 39, where 196 number were benefited; and the Khaharesalyan CF covering 362 ha and involved HH number is 580, where 2967 number were benefited.

Similarly, areas of the studied CFs of Palpa including the Jhumsa Khulkhule CF covering 590 ha and involved HH number is 83, where 384 number were benefited; the Aghillipipal CF covering 1.00 ha and involved HH number is 51, where 272 number were benefited; the Kuber CF covering 81.78 ha and involved HH

number is 486, where 2461 number were benefited; and the Jhiruban CF covering 22 ha and involved HH number is 12, where 67 number were benefited. Likewise, areas of the studied CFs found as the Charpal CF situated in Butwal sub-metropolitan in terai; the Manohara Swablamban CF situated in Butwal sub-metropolitan in terai; and the Rachana CF situated in Omsatiya Rural Municipality in terai terai

3.7.3 Analysis of the Complication Forest Policies

When analyse the chronology of Forestry Policies with era and event in Nepal we found that Community Forest management has been playing an important role in improving forest productivity, increasing forest products and ecosystem services, local livelihood, and local economy. The Government of Nepal belonging to the Ministry of Forests and Environment has been recognized community forest management as one of its priority programs in Nepal.

Government of Nepal has been formulated various policies along with the various era and event in Nepal including era of the 1970s: Sustainable Forest management envisioned under Nepal's first national Forestry Plan formulated in the year of 1976 (2033 BS); era of the 1980s: Master Plan for the Forestry Sector formulated in the year of 1988 (2045 BS) for 20 years, emphasizes sustainable forest management in various forest management regimes; era of the 1990s: The Forest Act in the year of 1993 (2049 BS) provisions the development of operational plans for implementation of forest management interventions; era of the 2000s: Forest Policy in the year of 2000 (2057 BS) emphasizes sustainable forest management in the block forests of the Terai and Siwaliks. Implementation of sustainable forest management initiated supported by policy decisions following the fifth national workshop on community forestry 2009 (2065 BS).

Similarly, era of the 2010s: Nepal's twelfth and thirteenth three-year plans 2011-2013 (2067/682069/70 BS) and 2014-2016 (2070/71-2072/73 BS) respectively, prioritizes sustainable management of all types of forests, adopting scientific and participatory approaches to increase forest productivity and ecosystem services. Sustainable forest management recognized as a key pillar to achieve 'forestry for prosperity', a long-term vision of the Ministry of Forests and Soil Conservation formulated in the year of 2013.

Prioritization and implementation of silviculture based sustainable forest management recommended in the District Forest Officers' fifth national workshop in the year of 2014, as well as in the first national workshop on collaborative forestry in the year of 2015. Forestry Sector Strategy in the year of 2016 targets to bring 50% of forests in the Terai and Siwalik, and 25% of forests in the mid-hills under sustainable forest management in the year of 2025. The first national silviculture workshop 2017 concluded to implement silviculture based sustainable forest management in all types of forests in Nepal.

The fourteenth three-year plan 2017-2019 prioritizes increase in forest productivity and forest products through participatory and sustainable forest management. Forest policy in the year of 2019 prioritizes increase of forest productivity and production of forest produce through sustainable forest management.

Likewise, era of the 2020s: The fifteenth five-year plan 2020-2024 prioritizes significant increase in the contribution of forestry sector to national prosperity through optimum utilization of forest resources, sustainable forest management and entrepreneurship. Silvicultural operation refers to the silvilcultural treatments applied to cultivate and grow a tree or a forest crop. Common silvicultural operations include plantation, weeding, cleaning, pruning, thinning and felling.

The Forestry Sector Strategy 2016 has targeted to bring 50% of forests in the Terai and Siwalik, and 25% of forests in the mid-hills under sustainable forest management by 2025. In order to achieve the government's sustainable forest management targets, the participation, coordination and support of forest dependent local communities, forest user groups, stakeholders and conservation partners have been critical.

Nepal's 15th periodic plan 2020-2024, prepared with a 25-year vision of 'Prosperous Nepal, Happy Nepali', also recognizes the forestry sector as an economically productive sector with sustainable forest management as a primary pillar. Meanwhile, sustainable forest management has also been recognized as vital in achieving the Ministry of Forests and Environment's vision of 'Forestry for Prosperity'. Successful implementation of sustainable forest management therefore calls for uniformity in understanding among stakeholders and forest technicians.

3.7.4 Analysis of the Recent National Resource Management Policies

When review on national resource management policies of Nepal, it seems forwarded the policy idea of participatory forestry in a response to the extensive deforestation during the 1970s. The policy and institutional frameworks, including the Master Plan for Forestry Sector 1988/89, Forest Act 1993, Forest Regulation 1995, and Department of Forests as per the Community Forestry programme and its local level activities developed after the 1990s were instrumental in institutionalizing participatory forestry discourse in the country (Aryal et al., 2021, Aryal et al., 2023, Laudari et al., 2020, Laudari et al., 2021a, Laudari et al., 2022).

During this period, multilateral agencies such as the World Bank and bilateral agencies, including the United Kingdom, Switzerland, Australia and Denmark governments provided significant support to intensify community forestry (Laudari et al., 2020). Forestry staff used to frequently visit the CF and conduct several capacity development and awareness programs. The governance structure in which CF was primarily developed has now been changed because of the adoption of the federal system.

The Constitution of Nepal (2015) has clearly defined and delegated a range of legislative powers to federal, provincial and local governments. According to constitution, at the apex, federal government with ministry and the department have been situated to provide policy guidance to the provincial and local government. At the middle layer, provincial government with provincial ministry related to the forestry, Forest Directorate, Division, and Sub-division Forest Offices has been restored to implement forest development activities, including those related to CF.

However, most sub-division forest offices, from where the CFUGs get the necessary legal and technical support for CF development, are facing understaffing problems. At the same time, the engagement of donors in the CF development programs in recent years is substantially reduced compared to its previous decades of years. Instead, the government's nominal budget is being mobilized for CF development. The allocated inadequate budget is not able to undertake CF management activities; due to these kinds of constraints and limitations, there are backlogs to renew Community Forest Operational Plans and has delayed implementing forest management practices (MoFE, 2018, MoFE, 2018). As the same

time, CFUGs are being inactive and passive as those compared to the 1990s (Poudyal et al., 2023).

3.7.5 Analysis of the Studied Community Forest condition

When analyzing the focal group discussion matter, the forest condition of the studied Community Forests in Parbat district, the Khaharesalyan CF was unmanaged and haphazard condition before handover but now it is being Managed and found very good in condition and giving excellent service; the Gannale CF was also unmanaged and degraded condition before handover but now it is being Managed and found very good in condition and giving excellent services. the Hampal CF was poor and unmanaged condition before handover but now it is being Managed and found good in condition and giving excellent services. the Chipleti CF was poor and unmanaged condition before handover but now it is no so good need more management and found poor in condition and giving poor services.

When analyzing the focal group discussion matter, the forest condition of the studied community Forests in Palpa district, the Jhumsa Khulkhule CF was unmanaged and haphazard condition before handover but now it is being Managed and found very good in condition and giving excellent service; the Aghillipipal CF was also unmanaged and degraded condition before handover but now it is being Managed and found very good in condition and giving excellent services. the Kuber CF was poor and unmanaged condition before handover but now it is being Managed and found good in condition and giving excellent services. the Jhiruban CF was poor and unmanaged condition before handover but now it is no so good need more management and found poor in condition and giving poor services.

When analyzing the focal group discussion matter, the forest condition of the studied community Forests in Rupandehi district, the Charpala CF was unmanaged and not so good in condition before handover but now it is being Managed and found very good in condition and giving excellent service; the Manohara Swablamban CF was bare land with degraded condition before handover but now it is being Managed and found also poor in condition and giving no any services, and the Rachana CF was poor and unmanaged condition before handover but now it is being Managed and found good in condition and giving satisfactory services.

3.7.6 Analysis of the Women and Deprive Involvement in Studied CFUGs

When analyzing the focal group discussion matter, Involvement of women and deprived community member in CFUGs Executive Committee found not sufficient as forest policies. In the Parbat district, 25 to 37 % women found in executive committee of CFUGs as 30.76 % in Khaharesalyan CF, 36.48 % in Gannale CF; 24.24 % in Hampal CF and 28.57 % in Chipleti CF. Similarly, 04 to 24 % Dalit found in executive committee of CFUG) as 23.7 % in Khaharesalyan CF, 15.78 % in Gannale CF; 3.03 % in Hampal CF and 14.28 % in Chipleti CF) and 1 to 34 % Janjati found in executive committee of CFUGs as 7.69 % in Khaharesalyan CF, 5.26 % in Gannale CF; 33.33% in Hampal CF and 0 % in Chipleti CF.

In the Palpa district, 20 to 46 % women found in executive committee of CFUGs as 20 % in Jhumsa Khulkhule CF, 30.76 % in Aghillipipal CF; 26.67 % in Kuber CF and 45.45 % in jhiruban CF. Similarly, 06 to 10 % Dalit found in executive committee of CFUGs as 6.67 % in Jhumas Khulkhule CF, 7.69 % in Aghillipipal CF; 6.67 % in Kuber CF and 45.45 % in Chipleti CF and 7.69 % in jhiruban CF, 1 to 34 % Janjati found in executive committee of CFUGs and 13 to 27 % Janjati found in executive committee of CFUGs as 13.33 % in Jhumsa Khulkhule CF, 23.07 % in Aghillipipal CF; 26.67 % in Kuber CF and 18.18 % in jhiruban CF).

In the Rupandehi district, 15 to 46 % women found in executive committee of CFUGs as 26.8 % in Charpala CF, 60 % in Manohara Swabalamban CF and 45.45 in Rachana CF; Similarly, 21.73 % Dalit found in executive committee of CFUGs in Charpala CF, 20 % in Manohara Swabalamban CF and 21.73 % in Rachana CF; Likewise, 9 to 22 % Janjati found in executive committee of CFUGs as 21.73 % in Charpala CF, 20 % in Manohara Swabalamban CF and 21.73 in Rachana CF;

3.7.7 Analysis of the Community Forest Fund in the Sectoral Contribution

When analyzing the local people interaction as well as focal group discussion matter, regarding the social development prospective, when analyzed the interaction with CFUGs member and local people, the trainings & campaigns activities conducted by CFUG given to the local people, they being aware on education, health, sanitation and environment as well as local level leadership has been developed, and finally, the local people have been empowered as social development initiatives.

When analyzing the local people interaction as well as focal group discussion matter, regarding the economic development prospective, when analyzed the interaction with CFUGs member and local people, the trainings & campaigns activities conducted by CFUG given to the local people, they being aware on enterprise development, occupational promotion and market linkage, now-a-days local people have more skill in income generation by IG trainings & exposures, vegetables, farming and animal keeping occupation enhanced in societies and own enterprises have been establishing and finally, local people have been creating market to sell their products as economic development initiatives.

When analyzing the local people interaction as well as focal group discussion matter, regarding the environment conservation and development prospective, when analyzed the interaction with CFUGs member and local government officials, the awareness trainings & campaigns activities conducted by CFUG given to the local people, they being aware on environment, now-a-days local people have more knowledge on environment and current climate change effect to society and finally, local CFUGs have been conducting awareness activities to their members, local people on plantation, forest protection and environment conservation as environment development initiatives.

When analyzing the local people interaction as well as focal group discussion matter, regarding the physical infrastructure development prospective, when analyzed the interaction with CFUGs member and local people, more physical infrastructure development structures have been developed in local areas from utilizing the community forest fund. Now-a-days local people have more access on road, drinking water, irrigation, health and social securities, finally, local CFUGs have been satisfying with CF and finally, local people receiving more access and facilities as infrastructure development initiatives.

3.7.8 Analysis of the CF Fund Utilization Pattern in Development Sector

When analyzing the local people interaction as well as focal group discussion matter, regarding the contribution made by community forest funds, some major impact found in various sectors. In the social development sector; Parbat has 1 to 8 percentage of the budget expended in the awareness campaign (7% in Kahharesalyan CF, 1 % in Gannale CF, 6 percentage in Hampal CF and 1 % in Chpleti CF) and 1 to 7

percentage in the leadership development (6% in Kahharesalyan CF, 1 % in Gannale CF, 5 percentage in Hampal CF and 1 % in Chpleti CF). Similarly. In the economic development sector of Parbat; upto 5 percentage of the budget expended in the enterprise (IGA) promotion (3% in Kahharesalyan CF, No any in Gannale CF, 2 percentage in Hampal CF and no any in Chpleti CF) and 1 to 5 percentage in the occupational safety (5% in Kahharesalyan CF, 1 % in Gannale CF, 4 percentage in Hampal CF and 1 % in Chpleti CF). Likewise, in the physical infrastructure development 2 to 18 percentage of the budget expended in the direct support in construction activities (18% in Kahharesalyan CF, 5 percentage in Gannale CF, 10 percentage in Hampal CF and 2 percentage in Chpleti CF); similarly, indirect support upto 7 percentage as matching in the construction activities (7% in Kahharesalyan CF, no any in Gannale CF, 5 percentage in Hampal CF and no any in Chpleti CF).

Palpa has 2 to 8 percentage of the budget expended in the awareness campaign (8% in Jhumsa Khulkhule CF, 3 % in Aghillipipal CF, 6 percentage in Kuber CF and 2 % in Jhiruban CF); similarly, in the leadership development 1 to 6 percentage (6% in Jhumsa Khulkhule CF, 2 % in Aghillipipal CF, 4 percentage in Kuber CF and 1 % in Jhiruban CF). Likewise, up to 5 percentage of the budget expended in the economic development including in enterprise promotion sector (5% in Jhumsa Khulkhule CF, 00 % in Aghillipipal CF, 3 percentage in Kuber CF and 2 % in Jhiruban CF).

Similarly, in the occupational safety 2 to 6 percentage (5% in Jhumsa Khulkhule CF, 3 % in Aghillipipal CF, 5 percentage in Kuber CF and 2 % in Jhiruban CF). Similarly in the physical infrastructure Up to 15 percentage of the budget expended including in the direct and indirect support as direct support 15% in Jhumsa Khulkhule CF, 5 % in Aghillipipal CF, 7 percentage in Kuber CF and 2 % in Jhiruban CF); as indirect (Matching) support 11% in Jhumsa Khulkhule CF, 2 % in Aghillipipal CF, 3 percentage in Kuber CF and no any in Jhiruban CF).

Rupandehi has up to 7 percentage of the budget expended in the awareness campaign (7% in Charpala CF, no any in both Swablamban Manohara CF and Rachana CF; similarly, in the leadership development up to 8 percentage (8% in Charpala CF, no any in both Swablamban Manohara CF and Rachana CF). Likewise, up to 7 percentage of the budget expended in the economic development sector as in the enterprise promotion 7% in Charpala CF, no any in both Swablamban Manohara CF and Rachana CF.

Similarly, in the occupational safety up to 6 percentage as 6% in Charpala CF, no any in both Swablamban Manohara CF and Rachana CF). Likewise, In the Rupandehi up to 15 percentage of the budget expended in the physical infrastructure construction activities with direct and indirect (Matching); as direct 15% in Charpala CF, no any in both Swablamban Manohara CF and Rachana CF; similarly, as indirect (Matching) 13% in Charpala CF, no any in both Swablamban Manohara CF and Rachana CF).

3.7.9 Analysis of the Cause of Decreasing Participation in CF

Community forestry in Nepal has set an example of people's participation in forest management. The direct dependency of local people on forest resources for livelihood activities has been one of the key adhesive factors for collective efforts in forest management. Changing livelihood strategies from agriculture-based livelihoods to migration (and remittances thereof) and the service sector, introduces a new dispensation which is yet to be sufficiently understood. Here try to explores the changing livelihood strategies of forest users and analyses their effects on participation in forest management.

The structured household survey, key informant interviews, and focal group discussions in eleven CFUGs of the studied areas to analyze the changing livelihood strategies in the last one-decade years, and to underscore their implications with participation for the CF management. After the situation measures and focal group discussed with the CFUGs member and local people, we found that an increasing switch to non-forest dependent livelihood strategies, characterized by the emergence of other as remittance, business, service sectors. While there is no change in the number of CF meetings attended, and the average time spent per meeting by user households, a decreasing dependence on forests, as well as the willingness to participate in CF management was recorded. These were associated with the change in livelihood strategies from agriculture to non-agriculture-based practices. This context justifies the need for a re-think on how to stabilize the rural sector to limit rural migration and the management of CF resources.

3.7.10 Analysis of the Environmental and Health Safety Condition of CFUGs

As per the biodiversity and ecosystem conservation are important factors that need to be considered in CFUGs operational and management plans for the

implementing CF management principles, but found not serious during preparing the forest management plan, rare, endangered and threatened species in the forest are identified and special conservation measures are implemented to conserve such species. Although, protection and restoration of wildlife habitats such as grasslands, wetlands, and water spring sources are factored in CF management, but not found any initiation while developing and implementing the CF management plan.

We have discussed on trees and forest patches that are crucial for biodiversity are retained in the forests; during collection and transportation of forest products, damage and disturbance to the geo-physical condition of the forest and its surroundings should be minimized. Silvicultural operations should be carried out with additional caution and care in fragile lands, erosion prone areas and slopes. Felling in slope areas over 19 degrees should be avoided. Likewise, harvesting in rainy seasons should be avoided to minimize soil loss and instability. Moreover, attention should be given to reducing sound and air and noise pollution during harvesting.

3.7.11 Analysis of the Existing Issues and Problems in CFUGs

When analyzing the local people interaction as well as focal group discussion matter, regarding the problems and issues prospective, some serious issues related to existing policies, we found that still now country doesn't have long term national land use policy, handing over government forest are for other purposes. Some legal institutional issue on the existing structuring of the forestry sector is not working well in sustainable/scientific forest management and creating participation issues in CFUGs as result less interest in forest management.

There is more socio-economic issue on underestimation of forestry sector contribution in national economy, heavy dependency of poor people on forest resources, low return on investment from the forest sector. Somewhere elite groups domination and lack of budget is being problems on active participation. Some issues on double/triple taxation system as well as contradictory state policies among central, provincial and local government creating more problems in management. Because of elite groups has been dominating in decision-making process through, neglected the interest of other deprive people; it might be failing to address the poor and marginalized families, although they are highly dependent on forest resources.

3.8 Ethical Consideration

Prior consent is crucial before conducting any research activities supported by different literature. Therefore, the study didn't involve any action or behavior that might harm the respondents physically or emotionally. The photos and personal details of the participants are hidden and the original names of the participants are changed following research ethics. All participants were informed about the objective and purpose of the research beforehand. They were encouraged to share the information as completely as possible but not by force. They were given a choice to pull out anytime if they felt uncomfortable and unwilling, as the topic we were discussing was a contextually sensitive one.

The researcher was calm towards the whole data collection process and did not influence the participant to acquire information. Participants themselves willingly shared valuable and hidden information after being clear about the purpose of the study. Researcher greeted, conversed, and talked about the dropout issues with the participant's family members whenever got chance. Respondents were also open-minded about the purpose and supported the researcher throughout the whole data collection/ interview process. All participants were treated equally and with respect. The information collected was strictly used for study purposes only.

3.9 Experience of Researcher while Conducting Research

Conducting field research in the hills (Bagnaskali municipality of Palpa and Jaljala municipality of Parbat) was a challenging task as the areas were only accessible by foot and houses were dispersed throughout the terrain. There were transportation and communication problems in rural areas. In these sites, most of the households were subsistence farmers and laborers. Most people were busy with agricultural work in the winter and rainy seasons.

This research work was conducted throughout the dry season and users actively participated in different events. The fieldwork lasted for nearly six months every year for three years, including travel and other support. However, due to the lengthy research period and changing context of the federal restructuring, the researcher had to revisit study sites several times in the last two years. During stays in the Palika, a series of discussions and reflections were conducted informally with different sections of the community in the evenings, during forest visits, and on other

occasions. Various participatory activities ensured a detailed understanding of the issues and sharing of the perspectives of all the members.

Household interviews were carried out that included some new questions to cover the remaining aspects of research such as the contribution of forest management to community development. Missing information on the social aspects of community forestry was gathered. Field observation of the forests was carried out to collect quantitative and qualitative data taking additional time. Data analysis is a very sensitive and important part of research. The data gathered from interviews were tabulated for compilation. Qualitative data were unstructured.

So, they were transcribed and coded before they could be analyzed. The variety of qualitative data collected from different sources (household surveys, informal conversational, interviews at the household level, focus group discussions, direct observations, etc.) were grouped and coded to answer the research questions and compiled into a database in Microsoft Word and Excel. After that, the data were analyzed, and the perspectives and viewpoints of respondents were compared based on the research questions and objectives.

CHAPTER IV

BENEFITS OF COMMUNITY FORESTS

Belonging to the objective 1: This chapter begins by presenting the descriptive statistics of the sample households involved in the study. These statistics provide a foundational understanding of the demographic, economic, and social characteristics of the participants, including variables such as household size, education level, landholding, income sources, and participation in community forest user groups (CFUGs). This section sets the context for analyzing how these households interact with and benefit from community forestry.

Following the descriptive overview, the chapter explores the socio-economic benefits derived from community forestry. These benefits include income generation from forest products (such as fuelwood, fodder, timber, and non-timber forest products), employment opportunities through forest management activities, and support for local development initiatives funded by community forest revenues. Additionally, the chapter discusses how community forestry contributes to social inclusion, empowerment, and capacity-building, particularly among marginalized groups such as women, indigenous people, and low-income households.

The chapter also highlights the environmental benefits of community forestry, such as improvements in forest cover, biodiversity conservation, soil erosion control, and water source protection. The participatory management approach adopted by CFUGs has led to enhanced forest regeneration, reduced deforestation, and better stewardship of natural resources. These environmental improvements, in turn, contribute to the resilience and sustainability of rural livelihoods that depend on ecosystem services.

Together, these sections provide a comprehensive understanding of how community forestry not only supports ecological conservation but also plays a vital role in enhancing the well-being and economic stability of rural households.

4.1 Demographic Information

In this section, detailed demographic information about the respondents is presented to provide a comprehensive socio-cultural profile of the sample population. The variables covered include sex, age group, ethnicity, literacy status, marital status,

main family occupation, and religion. These indicators help to understand the social composition and diversity of the respondents, which is essential for analyzing their roles, participation, and access to resources in community forestry. For example, the distribution of respondents by gender and age provides insight into generational and gender dynamics, while ethnicity and religion offer context on cultural backgrounds that may influence forest use practices.

Likewise, literacy status and main occupation give an overview of the respondents' educational and economic conditions, helping to interpret their engagement with forest-based activities and community institutions. This background information forms the basis for further analysis of how socio-economic characteristics relate to the benefits and challenges experienced in community forestry.

In the study area, the sex of the respondents was classified as male, female, and other. Table 4.1 shows the details of the gender of the respondents. Most of the respondents were male totaling 72.25% of the respondents and 116 respondents (27.75%) were female.

Table 4.1

Gender of Respondents

Sex of respondents	Respondents	Percent (%)
Male	302	72.25
Female	116	27.75
Total	418	100

Source: *Field Survey, 2022*

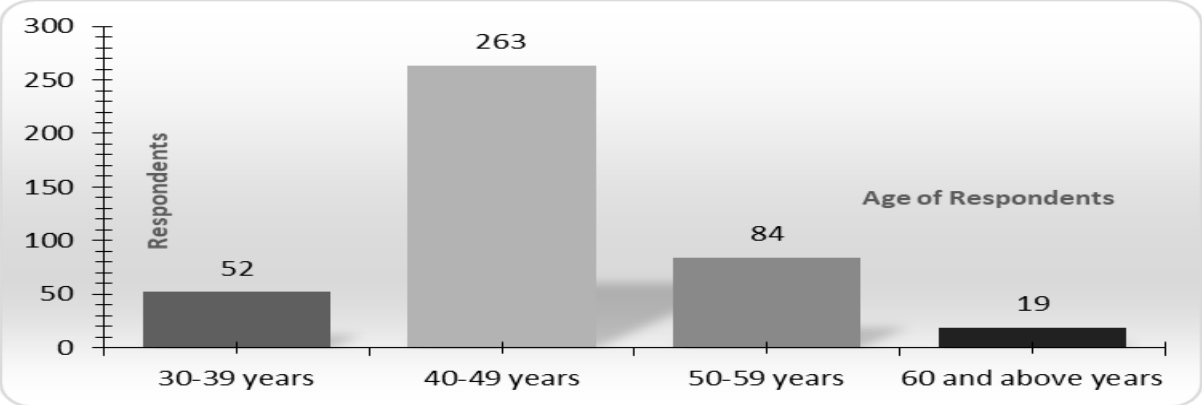
a. Age Group

The age group of the respondents was categorized into four different groups: 30–39 years, 40–49 years, 50–59 years, and 60 years and above (Figure 4). The age distribution prods insight into the life stage and experience level of the individuals engaged in community forestry. As illustrated in the following figure, the majority of respondents 62.92% belonged to the 40–49 years age group, making it the most represented category. This was followed by 20.10% of respondents in the 50–59 years age group, while 12.44% were between 30–39 years. The data also shows that a significant 87.56% of the respondents were aged 40 and above.

This age profile suggests that most participants are mature individuals with considerable life and livelihood experience. These individuals are likely to have been involved in community forestry activities for several years and can therefore provide informed and reflective insights on the changes brought about by community forest management. Their lived experiences make them well-positioned to assess the long-term socio-economic and environmental impacts of community forestry on their households and communities. Thus, the age structure of the sample strengthens the reliability of the findings related to the perceived benefits and challenges of community forestry.

Figure 4.1

Age of Respondents



b. Marital Status

The table 4.2 presents the marital status distribution of the 418 respondents included in the study. Most respondents, 402 individuals (96.17%), reported being married, indicating that most participants come from stable family units, which may influence household roles, responsibilities, and participation in community forestry activities.

Table 4.2

Marital Status of Respondents

Marital Status	Respondents	Percent (%)
Married	402	96.17
Separated	14	3.34
Divorced	2	0.48
Total	418	100

Source: *Field Survey, 2022*

A smaller proportion of respondents, 14 individuals (3.34%), were separated, while only 2 individuals (0.48%) reported being divorced. This indicates that only a very small percentage of the study population are living outside of a traditional marital structure.

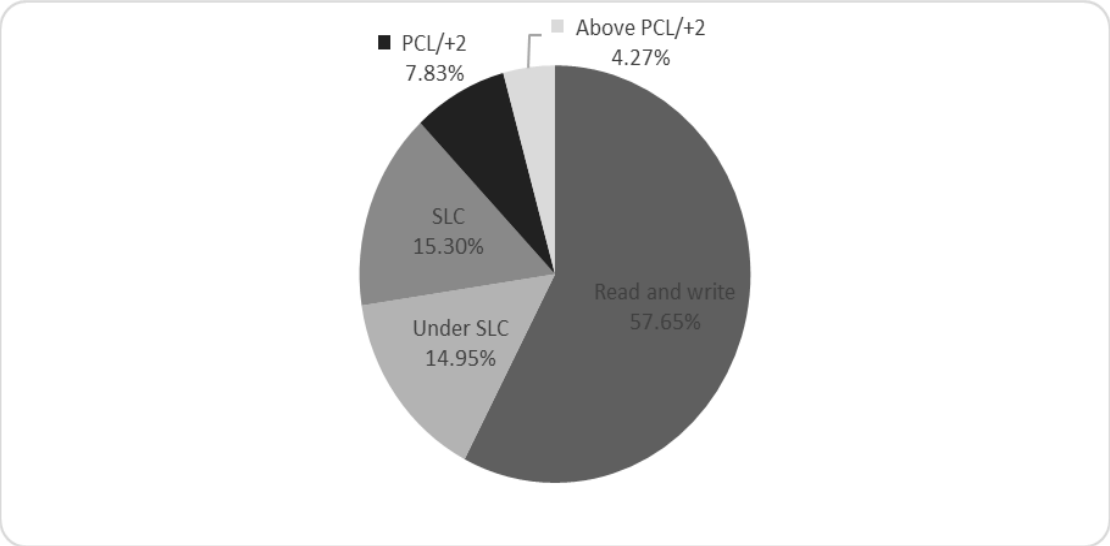
The dominance of married respondents suggests that family-based forest resource management could be a significant factor in community forestry practices, as married individuals often represent family decision-makers. This demographic pattern may also reflect cultural norms and social stability within the study area.

c. Literacy

The figure 4.2 presents the literacy status of the respondents, revealing that 67.22% of the participants were literate, while 32.78% were illiterate. Among the literate respondents, totaling 281 individuals, the majority 162 respondents (57.65%) reported having the basic ability to read and write, but without access to formal education. This indicates a significant portion of the population has functional literacy but lacks higher educational qualifications.

Figure 4.2

Literacy of the Respondents



Source: *Field Survey, 2022*

Among the more educated respondents, 42 individuals (14.95%) had completed their School Leaving Certificate (SLC), which is a crucial educational milestone in the region, though not equivalent to higher secondary education. A slightly higher proportion, 43 respondents (15.30%), had passed the SLC, meaning they achieved formal certification of completion. A smaller group, 22 respondents (7.83%), had completed PCL/+2 (Pre-Diploma or Higher Secondary Level), which typically marks the end of secondary school and the beginning of higher education. Finally, only 12 respondents (4.27%) had attained education beyond the PCL/+2 level, reflecting a relatively small number of individuals pursuing further studies such as university or vocational training.

This distribution suggests that while most respondents are literate, a significant portion of the population has limited access to formal education beyond basic literacy. The predominance of individuals with SLC-level education or lower highlights potential barriers to higher education and skills development in the region, which could affect the overall socio-economic mobility of these households. The relatively low proportion of respondents with education beyond PCL/+2 also suggests a need for educational interventions to improve access to higher levels of formal education, which could have long-term benefits for rural communities.

d. Family Types

The table *4.3* presents the distribution of family types among the 418 respondents, categorizing them into nuclear and joint family structures. Most respondents, 313 individuals (74.88%), belong to nuclear families, which are composed of parents and their immediate children. This reflects a common family structure in many rural and urban settings, where households are generally smaller and more self-contained.

Table 4.3

Family type of the respondents

Family types	Respondents	Percent (%)
Nuclear	313	74.88
Joint	105	25.12
Total	418	100

Source: *Field Survey, 2022*

In contrast, 105 respondents (25.12%) reported living in joint families, where extended family members, such as grandparents, uncles, aunts, and cousins, live together under one roof. This family type is more common in traditional or rural settings, where communal living is often encouraged for reasons related to social support, economic sharing, and care for elderly members.

The prominence of nuclear families in the study population may suggest a shift toward individualistic household units, possibly influenced by factors like migration, economic pressures, or changing social norms. The relatively smaller proportion of joint families indicates that, while some respondents maintain extended family structures, there is also a trend towards independence and separation of family roles in the community.

This distinction between nuclear and joint families is important because it may influence various aspects of community engagement, such as decision-making in community forestry activities. In nuclear families, decisions may be more centralized, with fewer individuals involved, while in joint families, decision-making processes could be more collective and involve multiple generations.

e. Family Head

A question was posed to the respondents regarding the head of their household, and the data collected was summarized in the following chart. The chart provides a clear representation of the gender distribution of family heads among the respondents. It shows that 398 respondents (95.22%) identified a male family head, while only 20 respondents (4.78%) reported having a female family head.

This stark contrast suggests a gendered pattern in family leadership, with males predominantly occupying the role of the family head in this sample population. This could reflect traditional social structures in the region, where patriarchal norms often designate men as the primary decision-makers and authority figures within households. It may also indicate cultural expectations and the prevailing norms regarding gender roles in rural areas, where economic, social, and family decisions are often controlled by men.

The small proportion of female-headed households (4.78%) highlights a notable gender disparity in family leadership. However, this also points to the need for further exploration into the factors that may contribute to the presence of female-headed households, such as widowhood, separation, or economic independence. Additionally, it raises important questions about the empowerment and involvement of women in community decision-making processes, particularly in contexts like community forestry, where leadership and resource management are crucial.

This data also emphasizes the need for gender-sensitive policies that recognize the role of women in household decision-making and the importance of promoting gender equality, especially in rural and traditional settings.

f. Main Occupation

The table 4.4 outlines the main occupation of the respondents, highlighting the primary economic activities that sustain their livelihoods. Among the 418 respondents, a significant majority, 387 individuals (92.58%), identified agriculture as their main occupation. This high percentage reflects the strong dependence on agriculture for livelihoods in the region, which is typical of rural areas where farming is the primary source of income and food security. The predominance of agriculture as the main occupation suggests that these households are likely involved in subsistence farming, growing crops for both personal consumption and local markets.

Table 4.4

Main Occupation of the Respondents

Family main occupation	Respondents	Percent (%)
Agriculture	387	92.58
Service/Job	23	5.50
Business	8	1.91
Total	418	100

Source: *Field Survey, 2022*

A smaller proportion of respondents, 23 individuals (5.50%), reported being engaged in service jobs. This could include a variety of employment opportunities, such as working in public or private sectors, education, healthcare, or local businesses. The presence of these service-sector workers indicates that a limited number of respondents have access to formal employment opportunities outside of agriculture, possibly reflecting the diversification of rural economies or access to nearby towns or cities.

Only 8 respondents (1.91%) indicated that their main occupation was business-related. This could include small-scale trading, retail businesses, or other entrepreneurial ventures. The relatively low number of business owners suggests that entrepreneurial activities are less common in this population, which may be due to limited access to capital, markets, or entrepreneurial support systems.

In summary, the table underscores the agriculture-based nature of the community's economy, with a dominant reliance on farming for income generation. The small presence of service jobs and businesses indicates the economic challenges faced by rural households in diversifying income sources. This data highlights the need for policies that promote economic diversification, encourage entrepreneurial development, and improve access to education and skills training to reduce dependency on agriculture alone.

g. Household in Executive Committee

The Table 4.5 presents the status of households in relation to their participation in the Executive Committee (EC) of community forestry. The data reveals the

distribution of respondents' households based on their involvement in the decision-making processes of the community forestry management system.

Table 4.5

Status of Households in Executive Committee

Executive Committee	Respondents	Percent (%)
HH in EC	78	18.66
HHs not in EC	340	81.73
Total	418	100

Source: *Field Survey, 2022*

According to the table, a minority of the households, 78 (18.66%), are represented in the Executive Committee (EC). This suggests that a smaller portion of the population is directly involved in the governance and management of community forestry activities, likely having a say in decisions related to forest resource use, distribution of benefits, and policy-making. These households may have a greater stake in the success of community forestry programs, and their inclusion in the EC likely reflects their higher level of engagement with the management and stewardship of forest resources.

In contrast, a significant majority of the households, 340 (81.73%), are not involved in the Executive Committee. This may indicate that while the community forestry system may be widespread, a large portion of households do not actively participate in the decision-making processes of the forest user group. This lack of involvement could be due to various factors, such as lack of awareness, barriers to participation, or structural limitations within the EC (Giri et al. 2022). It may also suggest a need for greater inclusivity and efforts to engage a larger proportion of the community in decision-making, as participation is crucial for sustainable forest management and ensuring the fair distribution of benefits. The table highlights a clear participation gap in the EC, which could have important implications for the effectiveness and equity of community forestry initiatives. Increased representation and participation from households not in the EC might lead to more inclusive decision-making, greater social cohesion, and more equitable distribution of the benefits from forest management.

4.1.2 Economic Benefits from Community Forests

The economic benefits of CF were assessed using a 5-point Likert scale, where 1=Strongly Disagree and 5=Strongly Agree. The survey focused on local perceptions regarding CF's role in: Creating local jobs; Promoting local industries; Sharing benefits in cash and kind; Facilitating timber harvesting and supply; Supporting economic diversification; Investing in the forest's future value. The results are reported in Figure 4.3.

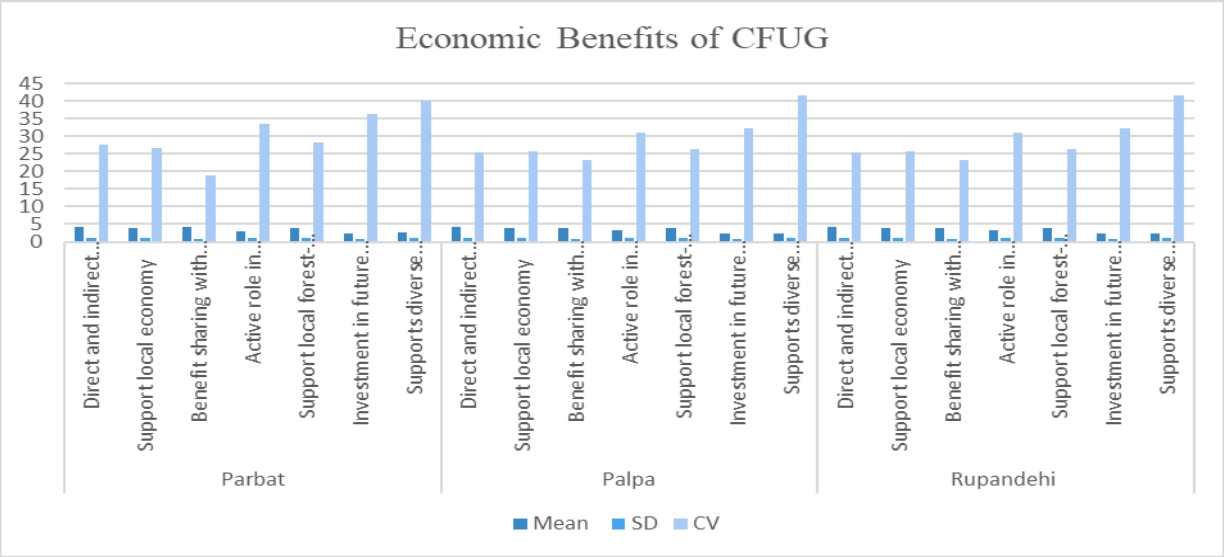
High mean scores were observed for statements like "CF provides employment" and "CF supports the local economy." Lower standard deviation (SD) and coefficient of variation (CV) in benefit-sharing responses indicate broad agreement among respondents. Higher CV in statements like "investment in future returns" and "diversified income" shows inconsistency in perceptions suggesting uneven implementation across CFUGs.

In Palpa, CFUGs have supported vegetable farming, livestock promotion, and income diversification. In Rupandehi, CF provides fuelwood, fodder, and timber at low cost, while also encouraging forest-based enterprises and water resource utilization for small businesses. In Parbat, CF was linked with job creation and support to local agro-forestry industries. The figure highlights the average perception based on the statements, consistency of those perceptions, relative importance, and variability of economic benefits provided by CFUGs in three different districts. Here economic benefits like provision of direct and indirect employment and support to local economy have higher mean values across all districts.

The benefits with lower SD and moderate CV values shows the benefits are widely recognized. The higher CV values in the chart shows the inconsistency in the responses between the respondents. Here, respondents seem to have consistency upon the statement of benefit sharing with local people and have differed view regarding support in diverse income and investment in future economic return. This information is important to understand contribution of CFUG to local economy and areas of improvement in the study areas.

Figure 4.3

Economic Benefits of CFUGs



Source: *Field Survey, 2022*

CF provides both direct employment (as watchers, harvesters, committee staff) and indirect jobs (through enterprises and agriculture), which are critical in rural areas where employment opportunities are limited (Hajjar et al. 2021). This helps reduce rural outmigration and ensures more stable incomes. By supplying raw materials like timber, fuelwood, and fodder at subsidized rates, CFUGs reduce costs for rural households and enable the growth of local forest-based and agro-based industries. This helps stimulate local markets and improves self-reliance.

Equitable benefit distribution (cash and kind) enhances social inclusion—especially of marginalized groups like women, Dalits, and Janajatis. It also strengthens community cohesion and encourages participation in forest governance (Giri et al. 2022). The low agreement on investment in future economic returns and income diversification highlights a strategic gap. Most CFUGs focus on short-term needs rather than long-term planning. This limits innovation and resilience to external shocks (e.g., climate change, market shifts). In areas like Rupandehi and Palpa, the findings reveal untapped opportunities for eco-tourism, NTFP-based enterprises, beekeeping, herbal product processing, etc. CFUGs can act as platforms for training and resource access to scale rural entrepreneurship.

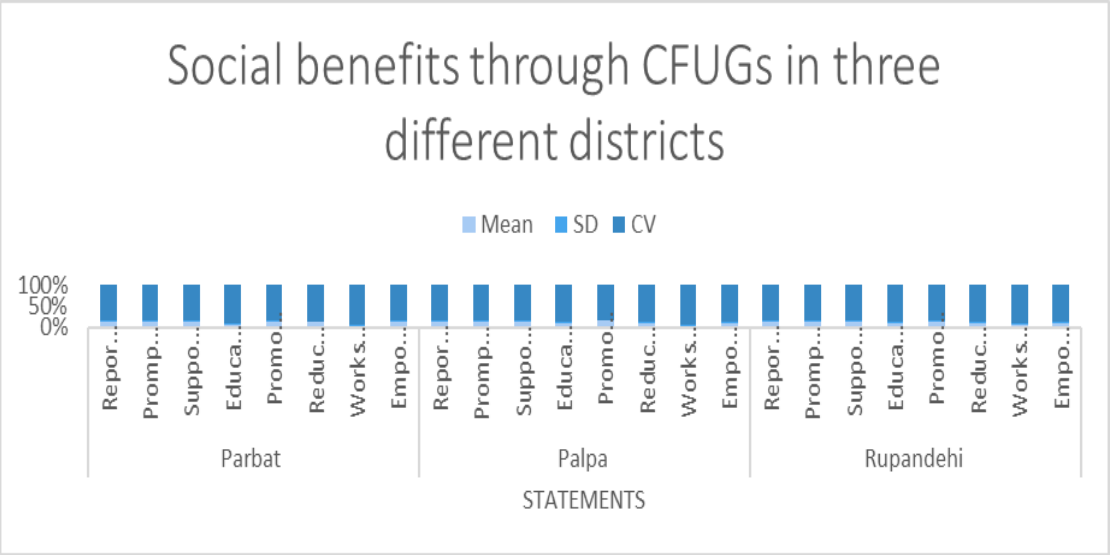
4.1.3 Social Benefit from CF

Community forestry also promotes social benefits. In the study, these includes delivering forest management reports to local people, encouraging active participation in forest management, supporting education, promoting recreational opportunities for local people, ensuring safety of forest workers and children, and women empowerment (Figure 12). A 5-point Likert scale was developed for data collection where responses ranged from 1 as strongly disagree to 5 as strongly agree. Following figure shows the social benefits of community forests in Parbat, Palpa, and Rupandehi districts.

The chart demonstrates the social benefits provided by the CFUGs in three different districts. Different statements are evaluated using the statistical measures of mean, standard deviation, and coefficient of variation. Mean indicates average response for each statement of social benefit indicating how CFUGs have contributed to the specific benefit. SD indicates the consistency or variability of the responses with smaller values indicating more consistency across the respondents. While, CV represents the relative variation in the responses given. Lower CV values mean more stability.

Figure 4.4

Social Benefits of CFUGs



Source: Field Survey, 2022

The chart shows that the mean values are consistently high demonstrating that CFUGs have been successful in providing the social benefits across the districts. Similarly, SD and CV values shown that the social benefits have been consistent across all the districts. Thus, it can be said that the CFUGs have benefited the local community supporting in various social sectors.

District Forest Offer in Parbat stated that community forestry played a vital role in changing social processes empowering poor, women, and Dalit members of the society. In many CFUGs, awareness was raised among disadvantaged and marginalized members about social issues like inequality, social injustice, and their exclusion from social and political processes (Interview with divisional forest officer, Rupandehi, 2022). Community forestry program also helps to increase the participation of marginalized groups and contribute to education, health, and drinking water facilities for local people (Interview with district forest officer, Palpa, 2022).

The results suggest that Community forestry in Nepal has gone beyond resource management to promote transformative social change in rural areas. It contributes 80 targets of sustainable development goals (Aryal et al. 2020). By aligning local practices with global goals, CF demonstrates significant potential to serve as an effective institutional platform for implementing SDGs. Community forestry has been instrumental in empowering women, Dalits, and marginalized groups, ensuring their representation in decision-making processes. This inclusion fosters a more equitable rural society, which is a foundation for democratic and sustainable development (Shortall, 2008).

CFUGs' involvement in school support, scholarship distribution, and awareness programs has contributed to better education outcomes and increased social consciousness in rural communities, particularly among disadvantaged populations. By promoting safe forest practices and recreational opportunities, CFUGs enhance community well-being. Their role in improving access to clean water, health services, and safe forest access directly supports broader rural development goals related to public health and quality of life (Aryal et al. 2020).

Regular engagement with local people, transparent communication, and reporting practices build trust and accountability. This strengthens grassroots governance systems and encourages active civic participation in development

planning and environmental stewardship (Piabuo et al. 2018). The awareness raised through CFUGs about social injustices, exclusion, and discrimination has contributed to a gradual shift in social dynamics, especially in rural areas traditionally dominated by elite interests. CF provides a platform for empowerment, dialogue, and community transformation (Hajjar et al. 2021).

4.1.4 Construction of Social Sites

The question about whether their community forestry fund is used for the construction of social work was asked to the respondents. Table 10 presents the responses from three districts Parbat, Palpa, and Rupandehi regarding the construction of social sites, such as community buildings, meeting halls, or public infrastructure, potentially under community forestry or development programs. In Parbat, all 161 respondents (100%) confirmed the construction of social sites. This indicates a strong community or organizational engagement in infrastructure development.

In Palpa, out of 106 respondents, 104 (98.11%) acknowledged the construction of social sites, while only 2 respondents (1.89%) reported no such development. This shows a high but not complete implementation rate in the district. In Rupandehi, among 151 respondents, 139 (92.05%) agreed that social sites were constructed, while 12 respondents (7.95%) denied such activities. This suggests some level of disparity or non-involvement in specific areas within the district.

Table 4.6

Construction of Social Sites

Construction of social sites	**Yes**		**No**		**Total**	
	Respondents	**Percent**	**Respondents**	**Percent**	**Respondents**	**Percent**
Parbat	161	100	-	-	161	100
Palpa	104	98.11	2	1.89	106	100
Rupandehi	139	92.05	12	12.58	151	100
Total	404	96.65	21	5.02	418	100

Source: *Field Survey, 2022*

A total of 418 respondents participated across the three districts, 404 respondents (96.65%) confirmed the construction of social sites, indicating a high overall success or coverage of such initiatives. Only 21 respondents (5.02%) reported

no construction, which may reflect either logistical limitations, lack of community interest, or other contextual barriers in certain locations. The widespread construction of social sites indicates a significant improvement in basic infrastructure. Such facilities—like community halls, meeting centers, and multi-purpose buildings—play a crucial role in hosting social, educational, and economic activities, especially in rural areas where alternatives may be limited (Aryal et al. 2020).

Social sites provide a platform for people to gather, discuss local issues, hold cultural events, and make collective decisions. This fosters community bonding, trust, and participatory governance, all of which are essential for rural resilience and self-reliance (Baynes et al. 2015). These structures can be used to deliver essential services such as training programs, health camps, awareness campaigns, and disaster preparedness initiatives. Their availability makes rural communities more accessible and better integrated into broader development efforts.

The data suggests a high level of local involvement, especially in districts like Parbat and Palpa, where almost all respondents confirmed construction. Community participation in planning and constructing such sites reflects grassroots empowerment, ownership, and accountability—cornerstones of sustainable rural development. Improved rural facilities may contribute to reducing push factors for migration by enhancing the quality of life in rural areas. When people feel that their villages are developing socially and structurally, they are more likely to stay and contribute to local progress.

Construction activities often generate local employment and use local materials, supporting the rural economy. In the long term, such sites can be used for skill development, vocational training, and microenterprise promotion. The variation among districts, especially Rupandehi where 7.95% of respondents reported no construction, indicates uneven development. This calls for targeted interventions to ensure equitable access to community infrastructure and development benefits across all rural areas.

4.1.5 Environmental Benefits from CF

The Nepalese government's decision to hand over the control of national forests to local communities was based on the expectation that these communities would benefit directly from the Community Forestry (CF) model. The primary goals

behind this transfer were to ensure conservation, protection, and sustainable management of forest resources. By empowering local communities to manage their own forest resources, the government aimed to address environmental degradation and promote sustainable practices that would benefit both the environment and local livelihoods. This research focuses on assessing the environmental benefits of CF, including the preservation of forested areas, the conservation of water resources, the protection of wetlands, and ensuring equitable resource distribution. A 5-point Likert scale was employed to collect data, with responses ranging from 1 (strongly disagree) to 5 (strongly agree), helping to gauge the perceptions of local communities on the effectiveness of CF in achieving these goals.

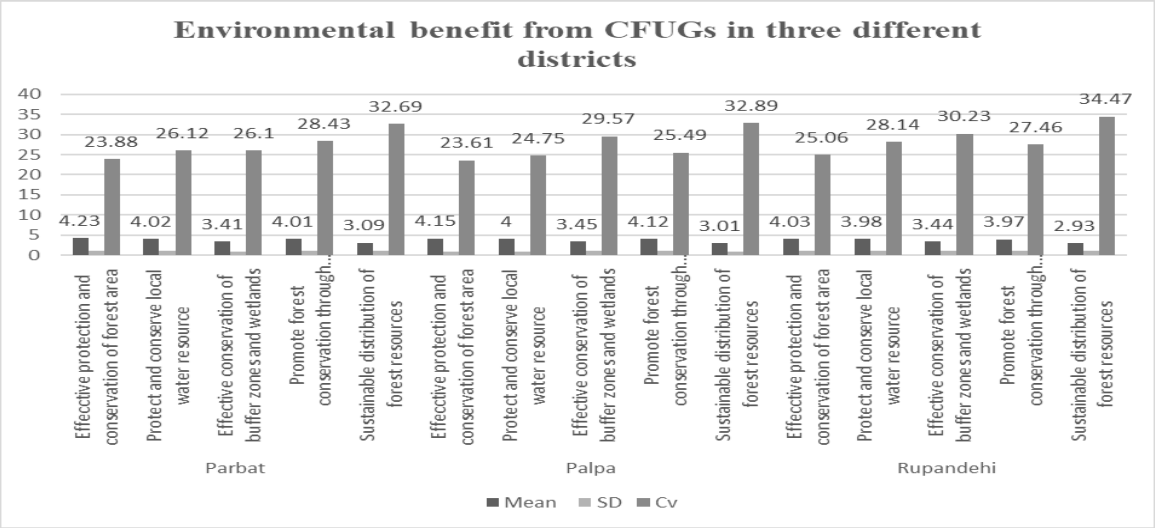
District-wise data analysis reveals interesting insights into how different areas have benefited from the CF initiative (Figure 4.6). Rupandehi stands out with higher mean values across all the statements related to environmental benefits. This suggests that Rupandehi is experiencing greater success in the outcomes of CF, which could be attributed to higher local participation and the implementation of better forest management practices. The findings emphasize the importance of community involvement in achieving environmental goals. When local communities are actively engaged in forest management, they are more likely to implement practices that ensure sustainable resource use and effective conservation. This reinforces the idea that local participation is not only beneficial but essential for achieving positive environmental outcomes.

In contrast, the districts of Palpa and Parbat show similar mean values for the perceived environmental benefits of CF. However, Parbat lags behind in certain key areas such as forest conservation and the distribution of forest resources. This indicates that while some benefits are being realized, there is still significant room for improvement. The relatively lower scores in Parbat suggest that more effective intervention programs are required to address gaps in these areas. It is possible that Parbat may be facing challenges such as poor local involvement, insufficient management training, or inequitable resource distribution, which are hindering the full realization of environmental benefits. Therefore, targeted interventions to improve forest conservation practices and resource distribution are critical for enhancing the effectiveness of CF in this district.

The analysis of standard deviation and coefficient of variation across all districts suggests that there is a consistency in the perceptions regarding the environmental benefits of CF. This is an important finding, as it points to the reliability of the data, making it a useful basis for policy recommendations. The consistency in responses across different districts indicates that the community's understanding of the environmental impacts of CF is similar, which strengthens the credibility of the findings. Moreover, this consistency suggests that there is a broad agreement on the positive environmental outcomes of CF, which can be leveraged in future policy development to support the scaling up of CF programs.

Figure 4.5

Environmental Benefits of CFUGs



Source: Field Survey and focal group discussion, 2022

To maximize the environmental benefits of CF, the research suggests several key strategies. Firstly, there should be a focus on underperforming districts like Parbat, where environmental benefits are not being fully realized. By increasing local participation, improving management practices, and addressing challenges such as resource inequities, these areas can significantly improve their environmental outcomes (Pandit & Bevilacqua, 2011). Secondly, cross-district collaboration should be encouraged, allowing districts with stronger CF practices, such as Rupandehi, to share knowledge and strategies with other districts. This collaboration can help improve overall environmental outcomes by ensuring that effective practices are adopted more widely across regions.

The findings from the research provide valuable insights into the success of Community Forestry in Nepal. While districts like Rupandehi have shown positive results, other areas like Parbat still need targeted interventions to fully benefit from CF. This may be since Rupandehi is located in flatland with high value Sal (*Shorea robusta)* forests, and earning from the forest management (Khanal & Adhikari, 2018). Ensuring local participation, improving management practices, and fostering cross-district collaboration will be key to achieving sustainable environmental benefits from CF across Nepal.

4.1.6 Contribution to Greenery Development

The question about whether CF helps in greenery development in the local area were asked. The table 4.7 presents data on whether community-based social sites (such as community buildings, public meeting halls, or multi-purpose centers) have been constructed under community forestry or local development initiatives.

Table 4.7

CFUGs Contribution to Greenery Development

Greenery	Yes		No		Total	
Development	Respondents	Percent	Respondents	Percent	Respondents	Percent
Parbat	143	88.82	18	11.18	161	100
Palpa	91	85.85	15	14.15	106	100
Rupandehi	132	87.42	19	12.58	151	100
Total	366	87.56	52	12.44	418	100

Source: *Field Survey, 2022*

The results show that Parbat has the highest rate (100%) of social site construction, indicating full implementation. Palpa also shows a very high construction rate at 98.11%, with only 2 respondents reporting no construction. Rupandehi has the lowest rate at 92.05%, with a more notable 7.95% reporting absence of such facilities. Overall, 404 out of 418 respondents (96.65%) confirmed the construction of social infrastructure in their communities.

The widespread construction of social sites improves the physical and social infrastructure in rural areas. These spaces can be used for several purposes such as: Community meetings and decision-making; Training sessions and capacity-building;

and hosting cultural, educational, and health-related programs. In addition, community buildings promote collective action and inclusivity by offering shared spaces for all groups women, youth, elderly, and marginalized communities (Scott & Probert, 2018). This strengthens social bonds and encourages democratic participation in rural governance.

Social sites serve as operational canters for CFUGs and other rural institutions. They provide venues for planning, conflict resolution, record-keeping, and financial management, all of which are essential for transparent and accountable local governance. The construction and use of social sites generate local employment during building phases and offer long-term benefits by enabling income-generating activities (e.g., cooperatives, training centres, farmer meetings, etc.). This contributes to poverty reduction and economic resilience.

The high rate of social site construction reflects active and functioning CFUGs, indicating successful community forest management (Aryal et al. 2020). Such success can inspire further investment in forest-based rural development and sustainable resource use. The data also reveal disparities—particularly in Rupandehi, where some communities (7.95%) lack social sites. This points to the need for equitable allocation of resources and targeted support to ensure that all areas benefit from rural development programs.

4.1.7 Support/Promote Use of Alternative Energy

The question whether community forestry support/ promotes the use of alternative materials for cooking and construction work to its users was asked. Table 4.8 presents data on the extent to which households across three districts Parbat, Palpa, and Rupandehi have received support in using alternative energy sources, such as biogas, solar energy, improved cookstoves, or other clean energy technologies. The data is derived from a field survey of 418 respondents.

Table 4.8

Support in use of Alternative energy

Alternative energy source	Yes		No		Total	
	Respondents	Percent	Respondents	Percent	Respondents	Percent
Parbat	47	29.19	114	70.81	161	100
Palpa	32	30.19	74	69.81	106	100
Rupandehi	33	21.85	118	78.15	151	100
Total	112	26.79	306	73.21	418	100

Source: *Field Survey, 2022*

Out of 418 respondents, only 112 (26.79%) reported receiving support for alternative energy. A significant 73.21% of respondents have not received any support, indicating a large gap in energy transition efforts. Palpa (30.19%) and Parbat (29.19%) show slightly higher levels of support for alternative energy use compared to Rupandehi (21.85%). However, in all three districts, more than two-thirds of households lack access to such support. Rupandehi has the lowest proportion of households receiving alternative energy support despite being a relatively accessible district in the Terai. This may suggest programmatic gaps, weak institutional support, or lower awareness and outreach in this area.

Clean and affordable energy is essential for improving health, reducing forest pressure, and supporting income-generating activities. Therefore, CFUGs encourage their users to use alternative energy like LPG, kerosene, biogas or electricity (Maes & Verbist, 2012). Without support for alternative energy, rural households remain dependent on firewood and biomass, which contributes to deforestation, indoor air pollution, and women's labor burden. Community forests in collaboration with donors have distributed the improved cooking stoves and biogas and alternative supply sources for forest products providing seedlings and helping in tree plantation (Pandey et al., 2016).

4.1.8 Discussion

The governance of community forestry over Nepal and India and focused on how policies prioritize conservation over local benefits which restrict people to have

sufficient timber to harvest Shyamsundar & Ghate, (2011). Another study shows that corruption and elite captures lead to unequitable timber distribution (Sapkota et al., 2020). Even in scientifically managed community forest, disparities in timber access exists among rural and urban population. This suggest more inclusive and equitable policies is needed to harmonize the local needs and commercial sell (Bhusal et al., 2020).

CFUGs protect watersheds which indirectly support small irrigation systems. Similar to our results, there existed district wise variation in the supply of water for irrigation based on seasonality and altitude (Gentle, 2000; Pokhrel, 2013). While conservation ponds made by Kalapana CFUG in Dang district benefited small scale irrigation specially benefiting deprived population with food security and income source. (Thapa et al., 2018). Effective conservation of forest can enhance the long-term sustainability of water sources linked with them affecting the irrigation system positively (Regmi, 2007).

95.1% of people in Lamahi Bottleneck Area had access to safe drinking water obtained through well and tube well supporting Terai has better access to drinking water (Thapa et al., 2018) While in the study conducted in mid-hills, community had mismatched perception of forest water relationship with 44% respondents supports the statement that forest increased water while 37% had opposite (Badu et al. 2019). Since, all three geographical regions lack sufficient drinking water, effective measures to restore water resources like rain water harvesting, recharge ponds, awareness of behavioral changes in efficient use of water needs to be made and implemented (Ojha et al., 2020).

CFUGs provide various trainings to its users in order to empower them and encourage their users to engage in income generation activities. Similar to our findings, the study of Chandra et al (2005) shows that the users receiving trainings (42.14) from CFUGs were less than those who didn't receive them (57.86). CFUGs provides a platform for local people to participate in various activities like forest management, social works, capacity building activities, decision- making and participate in collaborative activities and widen their knowledge (Baral et al., 2024; Dhungana et al., 2024; Shrestha et al., 2022; Subedi & Timilsina, 2016).

The CFUGs despite appearing to empower women and addressing interests of different groups including local farmers, landholders, marginalized groups within communities. But women and marginalized groups are still not able to reap the benefits in full potential (Baral et al., 2024; Sapkota et al., 2020; Sapkota et al., 2018). Due to lack of poor institutional arrangements CFUGs are struggling to cope with current challenges like climate change adaptation and often fail to engage local people equitable (Bhusal, 2013).

Nepal's community forestry has been exemplary community-based institutions contributing to forest resource protection and management, biodiversity conservation, poverty alleviation and overall nation's development generating revenues (Anup, 2017; Bhatt et al., 2021; Dhungana et al., 2024; Pokharel, 2009; Torres-Rojo et al., 2019). While the investment in CFUGs in rural development vary based on income size of CF, socio-political factors, numbers of households, distance to market, infrastructure status and other contextual factors. The rural development investments of CFUG income are also highly variable and are shaped by income size of CF, and the other socio-political factors such as the number of households, distance to market, infrastructure status, and contextual factors (Bhandari et al., 2019b).

With the implementation of community forestry programs, user groups have become more responsible in forest management and conservation with improved trust with district forest offices (Parajuli et al., 2022; Paudel & Weiss, 2011). Increased Forest products and improved environmental conditions have shifted attitudes towards forest conservation (Pandit & Bevilacqua, 2011). The trust among community user group and district forest offices varies as CFUGs are being more autonomous and handled more governance roles reducing the responsibilities of DFOs (Pandit & Bevilacqua, 2011; Raut et al., 2020).

Among various activities of a CFUGs in Nepal, income generation is the one which is responsible to increase the economy of the particular place (Pokharel, 2009). CFUGs contribute directly to household income through harvesting and supply of fuelwood, timber and non-timber forest products and indirectly by empowering community people with various trainings and supporting forest-based enterprises and forest certification (Bhatt et al., 2021; Giri & Darnhofer, 2010; Hajjar et al., 2024; Loveridge, et al., 2021). But economic benefits are not equally distributed with poorer households experiencing limited benefits due to management costs, restrictive policies

and elite dominance and weaker governance (Dahal, 2006; Nightingale, 2024; Pandit & Bevilacqua, 2011; Raut et al., 2020).

Community forestry provides numerous social benefits, including improved social equity, education, women's empowerment, wildlife conservation, recreational opportunities, and enhanced child safety in Nepal and beyond. Local participation has grown as communities engage in forest management and decision-making to ensure sustainable practices (Khadka, 2017; Ojha, 2022). Studies shows contribution of CFUGs in child and informal education by their financial support generated through forest revenues. This has not only contributed to education of underprivileged children but also improved infrastructures of schools (Baral, 2014; Devkota, 2011)

Additionally, CFUGs are playing forefront role in women empowerment. Involving women in forestry governance and decision-making roles, women have developed leadership and have become independent (Giri, 2009; S. Shrestha, 2017). CFUGs also have major role in biodiversity conservation protecting habitats, curbing illegal poaching, and developing human-wildlife coexistence (Ojha, 2022; Devkota, 2019). In addition, CFUGs have been promoting recreational activities through eco-tourism, establishing nature parks, and organizing cultural events that foster environmental awareness (Khadka, 2017; Soe, 2018).

Furthermore, CFUGs work towards child safety and protection by financing daycare centers, school security programs, and initiatives aimed at preventing child labor (Baral, 2014; Giri, 2009). The integration of these social benefits has positioned CFUGs as key community-driven institutions that address both environmental and socio-economic challenges in Nepal and beyond.

Community Forest contributes to social development by allocating the collected revenues in developing and maintaining local infrastructures like community centers, parks and public places. Pokharel et al., (2007) has shown that how CFUGs have responsibly contributed in development of infrastructure in absence of local elected body. This study shows among 692 CFUGs, 40% of the revenue is spent on physical infrastructure and other rural activities. CFUGs financially support activities like constructing hiking trails, culverts, eco-clubs at schools (Kanal & Kandel, 2004). Furthermore, CFUGs in collaboration with local government have promoted ecotourism by developing parks that conserves traditional and cultural

heritages of indigenous communities in Bhulke D hara community forest of Laligurans municipality (FECOFUN, 2023).

Integrative approaches like community forestry have contributed to green space planning. The patrolling by CFUGs members in regular basis has protected the forest and enhanced the greenery (Pokharel et al., 2007). Studies have shown community forestry and village forest committees have contributed to increase of green patches by converting degraded and barren land to forest through afforestation and reforestation (Hajjar et al., 2014; Razvi et al., 2012). Nepal's forest has increased from 26 to 45% after implementation of community managed plans and study shows from 1988-2016 forest cover has almost doubled (Fox et al., 2019) While there is contradiction about increase in forest cover after implementation of CF programs. Studies have highlighted how land cover over time has posed complexity in defining forest as shift of shrubland and grassland has influenced interpretation of forest recovery (Li et al., 2017; Ning et al., 2023).

In order to protect forest and reduce dependence on fuelwood, CFUGs encourage their users to use alternative energy like LPG, kerosene, biogas or electricity (Maes & Verbist, 2012). Community forests in collaboration with donors have distributed the improved cooking stoves and biogas and also alternative supply sources for forest products providing seedlings and helping in tree plantation (Pandey et al., 2016). But our study lags in this area. So, promoting alternative energy for cooking and brewing wines in some households can reduce the dependence of such households to forest-based fuels.

The study indicated that CFUGs have contributed enormous socio-economic and environmental benefits to the rural people of Nepal. These benefits have assisted in improving rural well-being, neighborhoods development, and environmental sustainability.

Contribution on Socio-Economic Benefits seem as Improved Access to Forest Products: CFUG members, especially those in Palpa and Parbat districts, have controlled access to fuelwood, fodder, timber, and NTFPs. These are vital for everyday needs, maintenance of livestock, and sporadic income. Members reported reduced dependency on outside markets for critical household items.

Employment Generation and Income: CFUGs ensure employment generation at the local level through activities related to forest management such as pruning,

thinning, patrolling, nursery management, and timber extraction. The income generated from the sale of timber, NTFPs, and membership charges is also used to finance community development activities or redistributed as community welfare money.

Community Development Investment: CFUG proceeds are typically invested in the establishment of rural infrastructure like trail systems, irrigation canals, water supply systems, and community centers. Certain CFUGs also channel funds into social activities like poor child scholarships, emergency health care, and support to destitute families.

Capacity Building and Empowerment: The study recorded that training and workshops of CFUGs (most often in collaboration with NGOs or the Division Forest Office) have enhanced organizational and technical capabilities of the members. Participation in committee roles has enhanced leadership as well as confidence, mainly among women and youths in some communities.

Environmental Benefits

Forest Regeneration: Field visit observations and community remarks show that erstwhile degraded forests across the three districts have also been documented with signs of regeneration. Measures by communities in managing fire, controlling illegal logging, and planting new trees have helped increase forest cover and biodiversity.

Soil Conservation and Watershed Conservation: Sloping hillside CFUG-managed forests specifically, in Parbat, stabilize erodible soils, protect springs, and reduce landslide hazards. CFUGs possess soil conservation measures like contour planting and gully plugging.

Carbon Sequestration and Climate Resilience: Despite the absence of formal carbon accounting procedures in the majority of CFUGs, certain respondents acknowledged the indirect climate benefit of forest expansion.

CFUGs have been actively involved in implementing various social security and development plans, such as providing forest goods for consumption and selling, obtaining wood for construction houses, providing teachers' salaries in local schools through mobilizing CF funds, supporting to build roads, and providing maternity allowances.

CHAPTER V

COMMUNITY FORESTS AND LIVELIHOODS

Belonging to the objective 2: This chapter presents the contribution of CF in enhancing the livelihoods of forest users. It includes a comprehensive analysis of various benefits derived from CF. The chapter highlights how CF supports household income generation, improves access to forest products, promotes employment opportunities, and enhances community infrastructure. Additionally, the chapter explores the role of CF in capacity building, empowerment of marginalized groups (such as women and indigenous communities), and in fostering local participation and governance. Special attention is given to the distribution of NTFPs, access to fuelwood, fodder, timber, and the provision of support services such as alternative energy promotion and skill development training. By examining both quantitative data and qualitative perceptions of forest users across different districts, this chapter aims to provide a clear understanding of how CF has become a cornerstone for sustainable rural livelihoods in Nepal.

5.1 Capital Formation

The interview with the district forest officer of Parbat, Palpa, and Rupandehi in 2022, revealed that community forestry helps to build the capital for rural people. The capital building process focuses on building or increasing the natural, social, human, financial, and physical capital of CFUGs. This improved of the livelihood of the local people. The forest products and management practices provided benefits related to the fulfillment of basic needs encouraging the active participation of community. Also, CFUGs provides necessary training focusing on improvement of livelihood of poor and marginalized families with investment in different sectors like education, health, infrastructure, and other needed sectors.

Community forests handed over to the community itself increase the user's natural capital. After implementation of the community forestry program positive changes has been observed in both forest condition and resource access time of the local people. Forest as well as wetland has been maintained by community and the easier availability of forest products has reduced the time spent for collecting forest products. Furthermore, CF program has enhanced social institution and people's

participation. This has enhanced the social capital of those who have been powerless, left in isolation, and excluded from mainstream social and political processes.

Training and regular discussion also has empowered poor families and marginalized people as recorded in FGD. As told by DFOs, from the inception of the Community Forestry Program several trainings, workshops, and exposure visits have been conducted for several organizations and individuals involved to community forestry. This has increased knowledge and skills related to forest, silviculture, community development, organizational management, and leadership development, all of which are human capital.

The group funds generated from the sale of forest products, levies, and outside grants is the financial capital created through community forestry which increases the financial capital of rural people. But these funds are not properly utilized for community development and are used in the vested interest of executive members as discussed in FGD, Palpa.

CFUG is a legal platform for meetings, discussion, planning, and implementation. There are various training/practices where speaking, discussion, advocacy & lobbying capacity is enhanced (FDGs, 2022). These meetings increase or improve the social capital of rural people. DFOs claim increase of women empowerment through the active participation of women in CFUGs. This is in line with the existing study; however, the number is not as per the allocation by Forest Regulations (Giri et al. 2022). Leadership is developed through the involvement in various agencies like civil (NGOs) and political institutions. Local people are aware of sanitation and hygiene; and are activists as well as trainers for forest and environment which increases the social, physical, financial, and natural capital of rural people.

Community Forestry has significantly improved local infrastructures including roads, schools, hospitals, drinking water, and Markets. Additionally, environmental awareness has increased with increased knowledge on health, sanitation, forest, and environment. Local communities are encouraged for greenery development and tree planting in the village with the trainings and skill developed for nursery management, plants production as well plantation activities. It has also helped in conservation of water source and pollution mitigation. These activities not only promote natural asset

but also increase the social and financial assets by increasing economic activities, especially for women, poor families, and marginalized people. This is why CFUGs contribute beyond forest management, and have wide spectrum of contributing to sustainable development goals (Aryal et al. 2020).

Forests can provide both direct and indirect livelihood benefits to the rural family. The direct benefits which include food, fuel wood, timber, fodder, construction materials, saleable products, medicines, bedding for animals and leaves for composting, fund collection by selling forest products. These are vital for change in the livelihood of the rural people mostly forest users (Pandit & Bevilacqua, 2011). Similarly, the indirect benefits are ecological services such as watershed protection, erosion control, enhanced soil fertility and windbreaks for farmland. The awareness program, trainings and entrepreneurship development also improve the livelihood of CFUGs (local people).

The livelihood of forest user groups often becomes more stable and reliable when forests are managed collectively, as practiced in community forestry in Nepal. A livelihood comprises the assets (human, social, financial, natural, and physical capital), the activities (such as income-generating activities), and the access to these (the rules, social norms, and relations that determine the different ability of people to own, control, claim, or make use of resources) that together determine the living gained by an individual or a household.

Table 5.1 represents the capital generated through CFUGs as per the interviews and FGDs. The capitals and themes are discussed along with.

Table 5.1

Capitals generated through CF (Based on FGDs and Interviews with DFOs)

Livelihood assets	**Themes**
Natural capital	• Increase the right for local people for forest conservation and protection, • Responsibility for the protection and conservation of forests • Enhance production and utilization of forest resources, • Sustainable use of forest
Physical Capital	• Invested in community development activities, • Invested in basic infrastructures like roads, irrigation, and so on, • Helps for the construction of schools and religious place
Human Capital	• Provide various training and workshops to CFUGs and local people, • Encourage and skill development of women, poor family, and marginalized people, • Encourage participation in the management of community forestry, • Encourage rural people to take leadership and effective management.
Financial Capital	• Earn cash and other Property by selling forest products, • Donation and grants, Direct and indirect employment to local people • Fund utilization on scholarship, irrigation, and infrastructure development.
Social Capital	• Participation of local people, • Social capital formulation through interaction, • Building and strengthening the new social capital.

5.1.1 Natural (Environmental) Capital

Community forests handed over to communities serve as natural capital providing rights to local people to utilize forest. This also makes community responsible for protection and conservation of forest through their active participation. Key benefits obtained from CFUGs include the production and protection of natural assets like land, water, wildlife, biodiversity, environmental resources, and Non-Timber Forest Products. These resources contribute to direct and indirect benefits. Direct benefits include income and local stewardship of resources while indirect benefits include natural processes like nutrient cycling, water cycle regulation and soil erosion control. The study also show that it has contributed to increase forest cover (Tripathi et al. 2020).

5.1.2 Physical Capital

One of the significant contributions of Community Forest User Groups (CFUGs) lies in the enhancement of physical capital—the basic infrastructure and assets that support the livelihoods and well-being of rural communities. The income generated through community forest management, such as the sale of forest products, membership fees, and fines, is often reinvested in local development projects (Aryal et al. 2020). This investment has had a direct and positive impact on the marginalized and under-resourced populations in rural areas.

According to information gathered from DFOs in Parbat, Palpa, and Rupandehi, CFUGs are actively responding to the basic and prioritized needs of local villagers. These needs include access to clean water, improved housing, transportation facilities, and alternative sources of energy—all of which are essential for improving living standards and reducing rural hardship (Bhandari et al. 2019).

CFUGs have made notable contributions to the construction and maintenance of village trails, which enhance connectivity between remote settlements and local markets, schools, and health centers. They have also facilitated the building of small bridges, which are crucial for mobility, especially during the monsoon season when rivers swell and cut off access. Furthermore, CFUG funds have supported the establishment and repair of community buildings, which serve as venues for local meetings, trainings, social gatherings, and disaster response efforts.

In addition to these, CFUGs have invested in the construction and renovation of schools and religious structures such as temples, which not only reflect the cultural values of the communities but also serve as centers for education and social cohesion. These infrastructure developments are particularly impactful for marginalized groups, who often have limited access to state-sponsored development projects.

By prioritizing the physical development of rural communities, CFUGs are playing a key role in building resilient local infrastructure. This, in turn, contributes to poverty reduction, promotes social inclusion, and creates enabling environments for further development activities. The participatory and bottom-up nature of CFUG decision-making ensures that the infrastructure developed is locally relevant, sustainable, and inclusive, making CF not just a forest management model but a comprehensive rural development strategy. CFUG funds have been invested in community development activities and basic infrastructures such as water, energy, transport, and housing, which have an impact on the livelihood of local marginalized population. As per DFOs of three districts, CFUGs are contributing to address prioritized basic needs of villagers. CFUGs have significant contributions to the construction of village trails, small bridges, community buildings, schools, and temples aiding physical assets of rural people.

5.1.3 Human capital

Community forestry in Nepal plays a vital role in enhancing human capital—the knowledge, skills, health, and capabilities that enable individuals to actively contribute to and benefit from development processes. According to interviews conducted with officials from the District Forest Offices (DFOs) in Parbat, Palpa, and Rupandehi, Community Forest User Groups (CFUGs) have become important platforms for capacity building and skill enhancement of rural populations.

CFUGs, often in collaboration with DFOs and various partner organizations—including NGOs, local governments, and institutions working in health, education, and vocational training organize a wide range of awareness programs and skill development trainings. These include training on forest management, biodiversity conservation, sustainable harvesting techniques, and accounting and record-keeping, as well as non-forest-based income-generating activities such as livestock rearing, vegetable farming, tailoring, and small-scale enterprises.

Such initiatives have significantly improved the technical and organizational skills of CFUG members, enabling them to better manage forest resources while also diversifying their livelihood options. Notably, these programs target marginalized groups, including women, poor households, and ethnic minorities, ensuring that they are not only beneficiaries but also active participants in the planning and execution of community forestry activities.

A particularly significant achievement of CFUGs has been in the area of women empowerment. By actively encouraging women to join user committees, take part in training, and assume leadership roles, CFUGs have contributed to strengthening women's voice and decision-making power in both household and community spheres. Many women have taken up leadership positions within CFUGs, gaining confidence, managerial experience, and social recognition—factors that were traditionally out of reach due to deep-rooted gender norms (Giri et al. 2022).

Moreover, these efforts have had multiplier effects: empowered women often advocate for children's education, family health, and equitable resource use, further enhancing the overall human capital of the community. CFUGs have thus not only improved forest management practices but also nurtured a culture of inclusion, self-reliance, and community-driven development. Capacity building of forest users has direct influence on reducing their poverty, as they gain skills and knowledge (Torres-Rojo et al. 2019).

5.1.4 Financial Capital

Community forestry provides direct and indirect employment to the rural people and encourages entrepreneurship development. Community forestry generates financial capital by selling different forest products, collecting donations, and grants from different agencies, governmental and non-governmental organizations. They also collect fees from its members for managerial work as decided in operational plan. The fund of CFUGs is not properly utilized and decisions on fund utilization are highly led by the elite groups as found in Rupandehi. The funds of CFUGs are also distributed to each HH which increases the financial capital of rural people. But the distribution model is unclear and EC of CFUGs distribute as per the agreement without knowing the view of local people in Palpa.

5.1.5 Social Capital

It refers to the networks, norms, trust, and institutions that enable people to work collectively for mutual benefit. In the context of rural Nepal, CF has emerged as a powerful tool in building and strengthening social capital by fostering cooperation, inclusiveness, and community empowerment (Rosen, 2020). The creation and enhancement of social benefits through community forestry depend largely on the active participation of households, their capacity to engage in local institutions, and an improved understanding of their rights and responsibilities related to forest governance and livelihood security. CFUGs, which are central to the implementation of CF programs, act as community-based institutions that operate through collective decision-making, transparency, and equitable participation (Hajjar et al. 2021).

CFUGs organize regular meetings, assemblies, and training sessions where community members especially the poor, women, Dalits, and other marginalized groups—are encouraged to voice their opinions and take part in key decisions. These platforms not only enhance local democratic practices but also build trust and cooperation among diverse social groups. Importantly, CFUGs play an educational role by raising awareness about social issues, such as caste-based discrimination, gender inequality, and exclusion, thereby promoting more just and inclusive rural societies.

5.2 Forest Products

There are many benefits from community forestry to the rural people. Community forest supplies basic forest products (timber, fuel wood, fodder, leaf litter); investment and support for development and maintenance of rural infrastructure (rural road, school, drinking water supply). It helped generate income from the sale of timber and non-timber forest products, and provisioning goods and services (drinking water, foods, and medicinal plants).

It also contributes to regulating goods and services (air quality regulation, climate regulation, water regulation, erosion regulation, water purification, pollination, and natural hazard regulation). Likewise, they are culturally important providing spiritual, recreational, and cultural benefits. Supporting services provided by CF include nutrient cycling vital for the sustenance of life on earth (Interviews with the DFOs of Palpa, Parbat, and Rupandehi, 2022; FDGs, 2022).

5.2.1 Firewood

The table 5.2 presents the responses of households in three districts—Parbat, Palpa, and Rupandehi about whether they have enough firewood for their household needs. The data reveals the percentage distribution of respondents who report having sufficient firewood and those who do not. In Parbat District, a total of 154 respondents (95.65%) reported having enough firewood to meet their household needs. This is a very high percentage, indicating that most households in Parbat can access or collect sufficient firewood for daily use, which may suggest adequate local forest resources or effective management of firewood collection.

Only 7 respondents (4.35%) indicated that they did not have enough firewood, which is a relatively small number. This could imply that for a few households in this district, there are challenges in obtaining sufficient firewood, possibly due to local scarcity, increased demand, or accessibility issues.

In Palpa, 97 respondents (91.51%) stated that they have enough firewood, while 9 respondents (8.49%) reported not having enough. The percentage of households without adequate firewood is higher in Palpa compared to Parbat, suggesting that firewood availability may be more limited in Palpa, possibly due to diminished forest resources, increased population, or competition for fuelwood in certain areas.

Table 5.2

Access to Firewood

Enough firewood for HHs	**Yes**		**No**		**Total**	
	Respondents	**Percent**	**Respondents**	**Percent**	**Respondents**	**Percent**
Parbat	154	95.65	7	4.35	161	100
Palpa	97	91.51	9	8.49	106	100
Rupandehi	137	90.73	14	9.27	151	100
Total	388	92.82	30	7.18	418	100

Source: *Field Survey, 2022*

37 respondents (90.73%) in Rupandehi confirmed that they have enough firewood, while 14 respondents (9.27%) reported a lack of sufficient firewood.

Though a significant majority still has adequate firewood, the percentage of households without enough firewood is higher than in Parbat and slightly more than in Palpa, indicating that Rupandehi may face greater challenges in securing firewood, possibly linked to urbanization, land use changes, or resource degradation.

Across the three districts, the total percentage of respondents who have enough firewood is 92.82%, with 388 respondents reporting sufficient firewood. This suggests that, generally, the availability of firewood is not a major issue for most households in these regions. However, 7.18% of the respondents (30 individuals) reported not having enough firewood, which points to pockets of vulnerability where firewood scarcity could be an issue. These households may be facing economic barriers (unable to afford alternatives), environmental factors (declining forest resources), or logistical challenges (distant fuelwood collection areas).

The relatively high availability of firewood in most areas indicates that local forest management systems might be effective, but the 7.18% of households lacking sufficient firewood may require attention (Baral et al. 2019). Addressing this issue could involve improving sustainable firewood collection practices, increasing the availability of alternative energy sources (e.g., biogas, solar cooking), or reforesting efforts to restore wood resources. Additionally, focusing on vulnerable households could be essential in poverty alleviation and environmental sustainability, ensuring equitable access to necessary resources like firewood (Koli, 2013).

5.2.2 Fodder

The table 5.3 presents data about whether households in Parbat, Palpa, and Rupandehi have sufficient fodder for their livestock. It shows the number of respondents who report having enough fodder and those who do not, along with their percentages. *In Parbat,* 159 respondents (98.76%) in Parbat reported that they have enough fodder for their livestock. This is a very high percentage, indicating that most households in Parbat have sufficient access to fodder resources, likely due to the availability of grazing land or sustainable fodder management practices in the region. Only *two* respondents (1.24%) indicated that they did not have enough fodder, which is a small percentage. This suggests that for most households, fodder scarcity is not a significant issue, although these few households may be facing challenges such as limited land or difficult access to sufficient fodder sources.

Table 5.3

Information on Fodder Sufficiency

Enough fodder	Yes		No		Total	
	Respondents	Percent	Respondents	Percent	Respondents	Percent
Parbat	159	98.76	2	1.24	161	100
Palpa	104	98.11	2	1.89	106	100
Rupandehi	148	98.01	3	1.99	151	100
Total	411	98.32	7	1.67	418	100

Source: *Field Survey, 2022*

In Palpa, 104 respondents (98.11%) reported having enough fodder, while 2 respondents (1.89%) reported insufficient fodder. Though the majority of households have adequate fodder, the small percentage of households without enough fodder suggests that some areas of Palpa may be facing fodder shortages, potentially linked to factors like overgrazing, land degradation, or limited access to grazing areas. In Rupandehi, 148 respondents (98.01%) stated that they have enough fodder, and 3 respondents (1.99%) reported not having enough. As with the other districts, most households report sufficient fodder availability, but the percentage of households without enough fodder is slightly higher than in Parbat and Palpa, which might indicate regional differences in resource availability or increased pressure on local grazing areas due to population growth or land use changes.

Across all three districts, the overall percentage of respondents who have enough fodder is 98.32%, with 411 respondents reporting sufficient fodder for their livestock. This high percentage indicates that fodder availability is generally not a major issue for most households in these regions and could be due to the reduced demand for fodder (KC et al. 2021). However, 1.67% of the respondents (7 individuals) reported not having enough fodder. Although this is a small proportion, it still points to potential fodder shortages or challenges faced by some households, possibly due to accessibility issues, land degradation, or competition for resources (Pokharel and Ghimire, 2024).

The high availability of fodder in these areas suggests that livestock management is generally well-supported, which is crucial for agricultural livelihoods in rural areas. Ensuring continued access to sufficient fodder helps sustain livestock health, which in turn supports agriculture and food security. The small percentage of households reporting insufficient fodder indicates that there could be localized vulnerabilities. It may be worth exploring solutions to improve fodder availability for the few households facing shortages, such as through community-based fodder cultivation programs, improving access to grazing land, or encouraging sustainable land management practices to avoid overgrazing and land degradation (Sow et al. 2024).

5.2.3 Timber

The table 5.5 presents the responses of households from three districts Parbat, Palpa, and Rupandehi regarding their access to timber for construction purposes, a critical natural resource for rural infrastructure and housing. In Parbat District, out of 161 respondents, 114 (70.81%) reported having adequate access to timber for construction. Among them 47 respondents (29.19%) faced difficulties in accessing timber. This indicates that while a majority have sufficient access, nearly one-third of household's experience constraints, which may be due to limited forest product permits, bureaucratic hurdles, or resource restrictions.

In Palpa District, only 67 out of 106 respondents (63.21%) had enough timber, the lowest proportion among the three districts. A significant 36.79% of respondents reported inadequate access suggesting higher pressure on forest resources, stricter harvesting regulations, or weaker user-group support systems. In Rupandehi District, 109 respondents (72.19%) had adequate access to timber, the highest among the districts. Among them 42 respondents (27.81%) still reported insufficient access, reflecting challenges that persist even in relatively better-performing districts.

Table 5.4

Access to Timber for Construction

Enough fodder	Yes		No		Total	
	Respondents	Percent	Respondents	Percent	Respondents	Percent
Parbat	114	70.81	47	29.19	161	100
Palpa	67	63.21	39	36.79	106	100
Rupandehi	109	72.19	42	27.81	151	100
Total	290	69.38	128	30.62	418	100

Source: *Field Survey, 2022*

Across all three districts, 69.38% of households reported having sufficient access to construction timber, while 30.62% reported inadequate access. This indicates that while most households are benefiting from timber access—presumably through community forest user groups—nearly one-third face barriers, which may include limited supply, policy restrictions, or inequitable distribution mechanisms. CFUGs have not been able to fulfill their demand for timber for house construction in all regions. In Terai, 72.19% of Users HH receive timber from their CF; in Middle-mountain 63.21% of Users HH receive timber from their CF, and in High-mountain 70.81% of Users HH receive timber from their CF.

The fact that nearly one-third of households cannot access sufficient timber suggests inequitable distribution or barriers within community forestry systems, such as elite capture or favoritismn (Karki & Poudyal 2021). Another reason could be that even community forest users have to pay royalty rate for the timber consumption, which may exclude poor members. This undermines the social equity goals of community forestry and rural development, especially for marginalized groups, who may lack the influence or resources to claim their fair share of forest benefits.

5.3 Irrigation Facilities

Table 5.5 shows that Parbat and Rupandehi have a high percentage of households without irrigation (around 69.57% and 68.21%, respectively). These areas may be constrained by difficult terrain (Parbat being a hilly district) or underdeveloped irrigation infrastructure. Palpa presents a balanced situation, with 50% of households having irrigation access. This suggests that irrigation programs

might be more effective or better managed here, and the district could serve as a model for others. Overall, only 35.89% of respondents across the three districts have access to irrigation, showing a significant dependency on rain-fed agriculture, which can lead to inconsistent yields and economic vulnerability.

Table 5.5

Access to Enough Irrigation Facility

Irrigation facilities	Yes		No		Total	
	Respondents	Percent	Respondents	Percent	Respondents	Percent
Parbat	49	30.43	112	69.57	161	100
Palpa	53	50	53	50	106	100
Rupandehi	48	31.79	103	68.21	151	100
Total	150	35.89	268	64.11	418	100

Source: *Field Survey, 2022*

5.4 Drinking Water

Forests help regulate the water flow, regenerate water sources, and protect the water sources. Thus, forest contributes to drinking water facilities in rural HHs. Respondents were asked if they have drinking water derived from the forest on all responded that they have a drinking water facility used for domestic purposes. A further question was asked to know if the water was enough for their livestock. The responses obtained are presented in the figure.

Figure 5.1

Access to Drinking Water

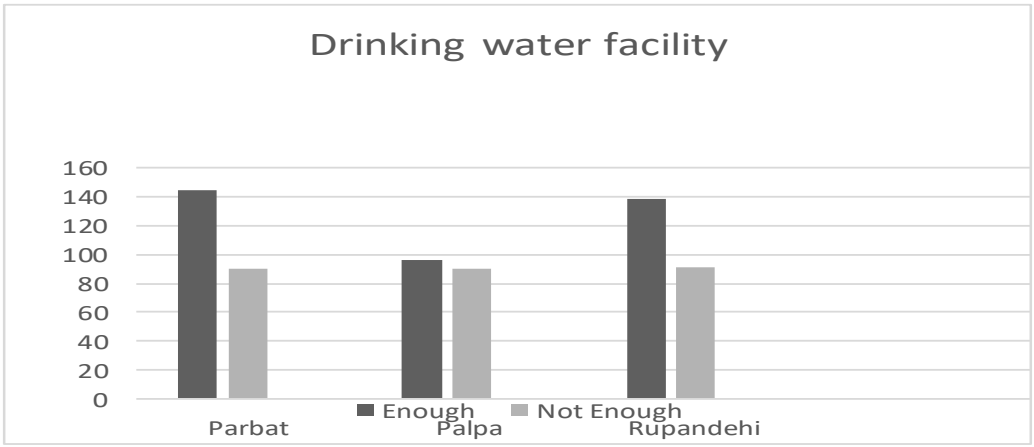


Figure 5.1 presents data on drinking water access for households and livestock. It shows that 379 (90.67%) respondents' families got enough water for livestock from the tap, and 39 respondents (11.47%) said that their families did not get enough water for livestock from the tap.

In Parbat district, 90.06 % of respondents said that their family got enough tap water facilities both for household and livestock from tap but 9.94% of the respondents said that they did not get enough water facilities for livestock. Likewise, in Palpa district, 90.57 % of respondents had access to enough water facilities for livestock from tap but 9.43% said that they did not get enough water facilities for livestock from tap. Similarly, in Rupandehi, 91.39 % of respondents' families got enough water for livestock from the tap but 8.61% of the respondents did not get enough water facilities for livestock from the tap.

There is still a scarcity/shortage of water supply facilities in CFUGs to fulfill their domestic demand in all regions. In terms of access to drinking water, Terai had more access totaling 80% of HHs with enough drinking water for HHs and livestock. The facility decreases going upwards with access to enough drinking water to 70% and 60% HHs in the middle and High mountains.

5.5 Skill and Capacity Development Training

Table 5.6 reports the information on training provided by CFUGs in the studied CFUGs. Across all three districts, less than half of the respondents reported receiving training related to loans from their CFUGs. Parbat and Rupandehi have a larger percentage of respondents who did not receive such training (54.04% and 57.52%, respectively). Palpa stands out slightly better, with nearly equal proportions of people receiving and not receiving training (49.06% vs 50.94%). This indicates that while CFUFs are contributing to community capacity-building, their training outreach remains limited and uneven.

Without adequate training, many community members may struggle to understand loan systems, limiting their ability to access micro-credit or government funding effectively. This restricts entrepreneurship, farm investment, and small business development (Bradley et al. 2021). The data suggests CFUFs may lack the capacity or resources to deliver financial training widely. Strengthening these institutions can enhance their role in rural development by acting as local financial

facilitators (Dhungana et al. 2024). Often, marginalized groups (such as women or ethnic minorities) are least likely to receive such training. Without intentional outreach, CFUG activities risk reinforcing existing inequalities rather than reducing them.

Table 5.6

Information on Training Provided by CFUFs

Get loan	Yes		No		Total	
	Respondents	Percent	Respondents	Percent	Respondents	Percent
Parbat	74	45.96	87	54.04	161	100
Palpa	52	49.06	54	50.94	106	100
Rupandehi	64	42.38	87	57.52	151	100
Total	190	45.45	228	54.55	418	100

Source: *Field Survey, 2022*

5.6 CFUGs as Social Institution

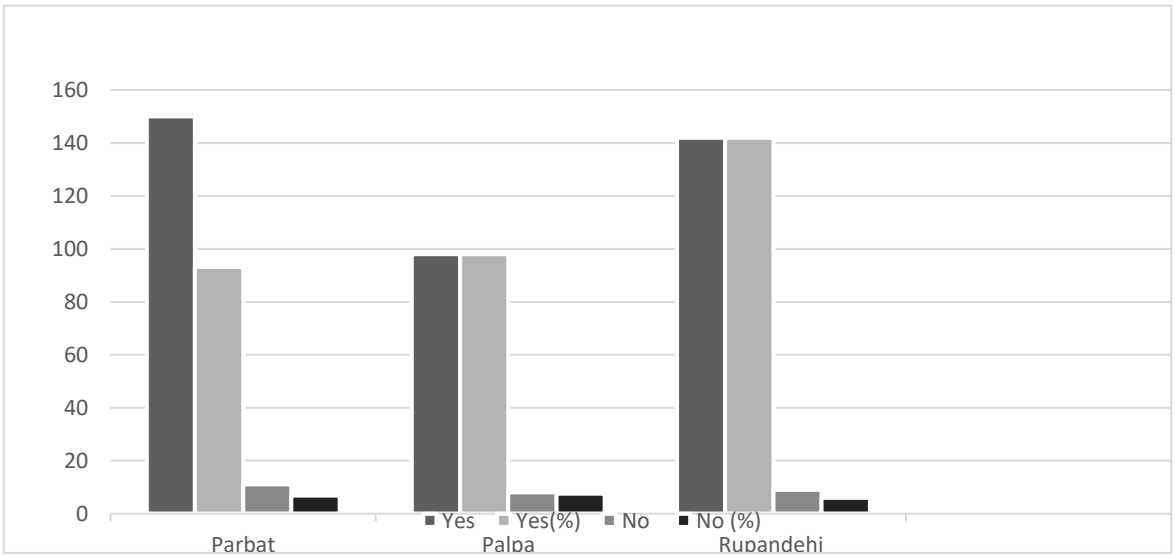
Out of 418 respondents, 390 (93.30%) believe that CFUGs have become key institutions at the village level, providing a platform where all community members regardless of caste, gender, or economic status can come together, discuss, and make collective decisions (Figure 5.2). Only 6.70% of respondents did not perceive CFUGs as fulfilling this role. In Parbat, 150 respondents (93.17%) supported the idea that CFUGs act as a prominent institution offering a forum for all, while 6.83% disagreed. In Palpa, 98 respondents (92.45%) affirmed the CFUGs' role as a community forum, with 7.55% not sharing the same view. In Rupandehi, the support was slightly higher, with 142 respondents (94.04%) recognizing CFUGs as prominent institutions, whereas only 5.96% did not.

These findings highlight a strong and widespread recognition of CFUGs as grassroots institutions that are not only involved in sustainable forest management but also play a critical role in local governance and participatory decision-making (Ojha & Hall, 2023). The high percentage of respondents acknowledging CFUGs as inclusive forums suggests that these institutions are enhancing democratic practices at the community level (Paudel et al. 2023). They provide spaces for dialogue,

consensus-building, and collective action, especially in remote or underserved areas as well as social mobilization.

Figure 5.2

CFUG as a Social Institution



Source: *Field Survey, 2022*

CFUGs are not merely forest-managing bodies they function as multi-purpose rural institutions. Their roles in coordinating local development efforts, resolving conflicts, and implementing small-scale infrastructure projects make them vital agents for broader rural development (Kimengsi & Bhusal, 2022). The positive perception of CFUGs as forums for "all people" indicates their potential to reduce social exclusion, particularly of women, Dalits, and ethnic minorities (Giri et al. 2022). Continued support and policy alignment can further institutionalize inclusive governance practices at the grassroots level.

5.7 Participation of Women and DAGs in CF Executive Committee

Participation of women, Dalits, and Janajati in the executive committee is also one of the contributions of the community forestry program in Nepal. Table 5.7 shows that only 5 CFUGs have 30% or more women involvement. Similarly, involvement of Dalits is very low and varies significantly within CFUGs within and among districts. This may be due to population proportion or lack of access to resources and rights in Dalit groups due to their marginality. Similar is the case when we see the involvement of Janajatis in CF executive committee. Community forestry may give chance and rights to the women, Dalits, and Janajati but data shows that they have low access to

the executive committee of CF. The following table shows the participation of these people in the community forestry user group of selected CFs:

Table 5.7

Participation of Women, Dalit and Janajati in CF Executive Committee in %

District	CFUG	Executives	Women	Dalit	Janajati
Parbat	Khaharesalyan	10	30.76	23.07	7.69
Parbat	Gannale	9	36.48	15.78	5.26
Parbat	Hampal	16	24.24	3.03	33.33
Parbat	Chipleti	7	28.57	14.28	00
Palpa	Khulkhule	11	20	6.67	13.33
Palpa	Aghillipipal	13	30.76	7.69	23.07
Palpa	Kuber	15	26.67	6.67	26.67
Palpa	Jhirubash	07	45.45	9.09	18.18
Rupandehi	Charpala	29	26.08	21.73	21.73
Rupandehi	Swablamban	13	15.38	23.07	30.76
Rupandehi	Rachana	9	45.45	18.18	9.09

Source: *DFO, 2022*

5.8 CFUGs Involvement in Nation's Development

Table 5.7 reports the Participation of Women, Dalit, and Janajati in Community Forest User Group (CFUG) Executive Committees, presented with an expanded interpretation, implications for social inclusion, and a 3-point conclusion. Women hold 20%–45% of seats across CFUG executive committees. The highest representation is in Jhirubash (Palpa) and Rachana (Rupandehi), both with 45.45%. The lowest representation is seen in Swablamban (Rupandehi) at just 15.38%, suggesting gender inclusion remains inconsistent.

Dalit participation varies significantly, from a low of 3.03% (Hampal, Parbat) to a high of 23.07% in Swablamban (Rupandehi) and Khaharesalyan (Parbat). While some committees demonstrate reasonable inclusion, others reflect underrepresentation of Dalits, indicating structural or social barriers. Janajati representation shows high variation, with zero presence in Chipleti (Parbat), but strong representation in Hampal (33.33%) and Swablamban (30.76%). This indicates potential exclusion in some committees despite national policies promoting ethnic inclusion.

Table 5.8

Involvement of CFUG in the development of the nation

Development of Nation	Yes		No		Total	
	Respondents	Percent	Respondents	Percent	Respondents	Percent
Parbat	135	83.85	26	16.15	161	100
Palpa	92	86.79	14	13.21	106	100
Rupandehi	129	85.43	22	14.75	151	100
Total	356	85.17	62	14.83	418	100

Source: *Field Survey, 2022*

The data reflects partial progress in ensuring representation of women, Dalits, and Janajatis in CFUG leadership. While several CFUGs have made efforts, others still fall short of the ideal balance, especially in Dalit and Janajati participation (Giri et al. 2022). Though national forest policies mandate inclusive representation, implementation varies by location. This highlights the need for stronger monitoring, awareness-building, and capacity development, especially in less inclusive CFUGs. Inclusion in CFUG leadership directly affects how benefits, responsibilities, and decisions are shared (Rosen, 2020). Underrepresentation of marginalized groups may result in inequitable resource distribution and weaken local forest governance.

5.9 Change of Image and Attitude of Foresters

The respondents were asked about their perception of community forests and the image of forester in society. It has been noted that their views on forests have shifted after the implementation of the CF program. In addition, the survey inquired about the impact of community forests and the attitude of foresters in society and their interaction with the forest department (DFO). Table 5.9 reports the Attitude of Foresters toward Society and District Forest Office, including interpretation, implications for forest governance, and a 3-point conclusion.

A total of 294 respondents (70.33%) across all three districts believe that there has been a positive change in the attitude of foresters both in terms of their interaction with the local community and their responsiveness through DFO. In Parbat, 70.19% observed a change in forester attitudes, while 29.81% did not. In Palpa, 68.87% acknowledged a shift in forester behavior; slightly more scepticism is seen here (31.33%). In Rupandehi, the highest positive perception with 71.52% noting an

attitude change and 28.48% reporting no change. This reflects a generally positive trend in public-forestry relations, indicating that forest officials are increasingly engaging with communities in a more cooperative and respectful manner.

Table 5.9

Attitude of Forester with society and DFO

Change of Attitude	Yes		No		Total	
	Respondents	Percent	Respondents	Percent	Respondents	Percent
Parbat	113	70.19	48	29.81	161	100
Palpa	73	68.87	33	31.33	106	100
Rupandehi	108	71.52	43	28.48	151	100
Total	294	70.33	124	29.66	418	100

Source: *Field Survey, 2022*

A positive shift in foresters' attitudes leads to stronger relationships with local people, which is essential for the success of community forest programs. Improved communication and trust help resolve conflicts, support equitable benefit-sharing, and ensure inclusive participation crucial foundations for sustainable rural development (Pagdee et al. 2006). When foresters are seen as cooperative and respectful, more community members especially women, Dalits, and Janajatis are encouraged to engage in forest management, agroforestry, and income-generating activities like NTFP collection, eco-tourism, or forest-based enterprises. This contributes directly to poverty reduction and rural employment (Akter et al. 2022). A supportive attitude from forestry personnel helps ensure that government programs, technical support, and training services reach the grassroots. As foresters act as facilitators rather than enforcers, communities can access resources such as loans, grants, and sustainable harvesting permits more effectively.

5.10 Discussion

Community forestry program has been taken as a boon which can protect forest alleviating the poverty of the place. Enhancing human/social or all capitals can only have a positive impact on poverty alleviation (Torres et al., 2019). Community forestry has potential to enhance rural development in variety of ways like income and employment generation for local people, improving productivity and

sustainability, promoting social cohesion through empowerment, strengthening local institutions and government structures (Agrawal & Gibson, 1999). CFUGs manages forest in better ways applying different silvicultural activities and the resulted benefits are utilized for various activities. These activities include forest management, livelihood improvement, and social and community development activities (Kanal & Kandel, 2004).

Firewood demand depends upon household fuelwood consumption (Kanel et al., 2012). There is still a scarcity/shortage of fuelwood in CFUGs compared to their demand in all regions. Even though all households do not use fuelwood, they intend to sell fuelwood in the market to earn profit. Similar results are presented by Cooke, (2016) where 93% of the consumer collect fuelwood and few households even sell the fuelwood at some point. Lamichhane (2009) states that "In Sindhupalchowk, CFs provided adequate fuelwood for the users but scarcity remains for those who use fuelwood to brew alcohol for income source. On the contrary, a study by Dev & Adhikari (2013) found that the supply of forest products like fuelwood has increased significantly for all users expect for marginally poor across four districts of mid- hills.

G.C. et al. (2016) highlight that community forestry initiatives have led to an increase in the availability of fodder trees, thereby benefiting local livestock owners who depend on forests for daily fodder needs. However, the study also notes that CFUGs often implement regulatory mechanisms, such as rotational harvesting schedules and seasonal restrictions, which, while promoting sustainability, may limit consistent access to fodder for users during critical periods. Building on this, Bhandari et al. (2019) emphasize that although community forests are an important source of fodder, its availability fluctuates significantly across seasons. This seasonal variation can lead to fodder shortages, especially in dry periods, putting stress on livestock-dependent households. The authors suggest that forest management plans should incorporate the cultivation and promotion of more productive and fast-growing fodder species, such as Ficus spp., Leucaena leucocephala, or Mulberry, to address the gap between supply and demand while enhancing forest-based livelihoods.

Timber supply and demand both are high in the Terai-Madhesh region. Although the demand is not fulfilled, some households who get timber for construction want to sell the timber for benefit. Timber demand increases with increased population, urbanization, and economic growth (Kanel et al., 2012). Despite

increase in forest cover and resources, still there is scarcity of timber according (Bisui & Shit, 2024; Thangavel, 2024). Communities use timber based on management efficiency and external interventions.

CFUGs have been contributed to the increased livelihood increasing natural, social, physical, financial and human capital (Dev et al., 2003). Local participation in forest management have resulted in improved forest condition, soil condition, managed habitats, conserved water resources and biodiversity resulting increase of natural capital (Jatana & Paulos, 2017; Shrestha et al., 2010). Besides, involvement of local people in decision making roles, trainings, workshops and enterprises have developed leadership as well as improved transparency, accountability (Ghimire, 2006; Raut et al., 2020). This has led to enhancement of social and financial capital.

CFUGs play an important role to develop rural infrastructure allocating funds (Dev et al., 2003; Thoms, 2008). Support of CFUGs in constructing roads, parks, public buildings, scholarships to deprived children have benefited people with physical assets (Bhandari et al., 2019b; Bhandari et al., 2019) This has changed the structure of villages enhancing livelihood of people and contributed to rural development. Despite all these positive aspects, CFUGs faces various problems and challenges which needs to be addressed to enhance its effectiveness.

5.11 Conclusion

The study reveals that community forestry has produced a mixed but overall positive effect in improving rural household livelihoods.

a. Livelihood Capitals Enhancement

Natural Capital: Access to forest products reduces the cost burden on households relying on forests, thereby enabling their survival. Access to sustainable forests also helps livestock-based livelihoods, especially in remote locations. Whereas, financial capital; Households benefit indirectly from local investments and occasionally directly through income-sharing schemes. Financial benefits to households were modest and often cycled back into common advantage.

Human Capital: Capacity-building activities pursued by CFUGs in forest product processing, book keeping, and group facilitation have enhanced local capability. Literate women and youth from member households have emerged as more important figures for leading CFUG activities. Whereas, social capital; Membership

and activities in the CFUG have improved community cohesion, cooperation, and solidarity. Women's groups, Dalit caucuses, and youth networks have emerged as sub-committees in certain CFUGs, strengthening inclusive governance. Physical Capital; Incomes of CFUG have been used to fund local infrastructure like drinking water schemes, micro-irrigation, and community centers. These, in turn, have encouraged agricultural activities and increased access to essential services.

b. Impacts of Differentiated Livelihood

Better Off and Poor Families: The study reveals that richer families benefit most from the sale of timber and NTFP, whereas poor families rely mainly on fuelwood and fodder. Poor families are also often too busy trying to survive to participate in CFUG decision-making processes. As per the marginal groups; dalits and the landless members do not gain much from CFUGs, primarily due to informal discrimination, limited rights to forest utilization (especially in timber harvest), and lack of representation on executive committees. Although quotas exist, meaningful participation is still an issue.

Urban Proximity Effect: CFUGs located near towns (i.e., in Rupandehi) are less dependent on the forest due to the utilization of LPG and the presence of markets. However, these CFUGs will have higher incomes and invest more in infrastructure improvement. As per the irrigation access deficiency; the fact that over 64% of rural residents in Palpa, Parbat, and Rupandehi lack access to irrigation reflects an extremely critical infrastructure deficiency that is hindering agricultural productivity. Rural farmers are highly vulnerable to unpredictable rainfalls without proper irrigation, limiting their capabilities to grow diversified or high-value crops. Such deficiency seriously obstructs the efforts towards achieving food security and rural economic resilience.

Importance of Irrigation Infrastructure: Investment in uplifting irrigation infrastructure is not only critical for enhancing crop yields but also in reducing poverty and developing climate-resilient agriculture systems. Well-targeted investment in small-scale irrigation through community-led activities and support from local governments could greatly enhance livelihoods and reduce seasonality of income. As per the community forestry as human capital builder; CF has transcended a natural resource management strategy it is a means of rural capacity building and

social empowerment now. CFUGs often provide leadership opportunities, training, and capacity-building sessions that specifically empower women, Dalits, and other marginalized groups. Such focus on awareness, education, and involvement boosts human capital, the key driver of long-term rural development.

Community Forestry as Social Transformation: CFUGs possess a revolutionary social role through their encouragement of inclusive governance, community trust, and collective problem-solving. The democratic platform at the local level instills accountability in common, reduces social cleavages, and encourages active citizenship. Lastly, community forestry facilitates social capital building—key to community resilience and participatory rural development. As per the satisfactory firewood availability; the finding that over 92% of the homes say they have sufficient firewood shows that community forestry is largely successful in satisfying basic energy needs. Local forest management practices appear to be finding balance between conservation and utilization, especially for general energy utilization such as cooking and heating.

Shortage of Firewood for Households: Despite overall adequacy, a significant but small percentage of households (7.18%) still lack adequate firewood, implying uneven distribution or access. Conscientious means such as subsidized LPG or biogas, along with greater equity in the provision of forest products, need to fill this gap while reducing pressure on forest ecosystems. As per the fodder availability; a Mixed Picture found, where most households seem to have enough fodder to feed their livestock, reflecting overall effective utilization of forest resources. However, spatial or seasonal shortages continue to be felt in some places requiring specific interventions such as forage cropping, rotational grazing strategies, or fodder banks to keep livestock-based livelihoods intact and productive.

Moderate Timber Accessibility: With roughly 69% of the households having proper access to timber, CFUGs are fairly effective in meeting construction and household timber needs. However, nearly one third of the households still lack it, which suggests resource governance, permit issues, or biased benefit sharing. As per the district-level timber disparities; the comparatively lower availability of timber in Palpa suggests the possibility of district-level problems such as stricter forest policy, lower forest inventory, or elite capture in CFUGs. Interventions with respect to

context-based problems such as transparent governance, sustainable harvest plans, and need-based allocation could help narrow the gap in access to such districts.

Livelihood-Cantered CF Operational Plans: CFUG operational plans need to incorporate clear livelihood-enhancement strategies aimed at poor and marginalized communities. This would not only make forest management activities conservation-focused but also poverty-reduction and rural development centered. As per the encourage forest-based enterprises; policies must enhance forest-based enterprise such as NTFP processing, resin tapping, wood furniture production, and ecotourism through enhancing access to technical education and market connections. This would enhance diversification of income and decrease raw forest product harvesting dependence. When analyse the equitable resource distribution mechanism; an approach through policy would have to guarantee fair distribution of forest products like firewood, timber, and fodder based on household dependency and need. This would serve to offer a remedy to socio-economic disparities and insure poorer forest users more.

Forest Income Investment Mandates: CFUGs should be required to reinvest part of their forest income towards community development focusing especially on employment generation and livelihood creation. This would institutionalize reinvestment of forest wealth into socio-economic empowerment. As per the facilitation of alternative energy use; policies should promote the use of alternative energy sources such as biogas, better cookstoves, and solar power in a bid to check forest degradation. This will relieve fuelwood pressure, enhance health benefits, and enhance energy security.

Inclusion of Livelihood Indicators: National monitoring frameworks should include indicators such as households' income improvement, creation of jobs, and curbing migration because of forest interventions. Monitoring these indicators will help to quantify the actual livelihood benefit of community forestry.

CFUG Livelihood Micro-Financing: Policies should allow CFUGs to function as micro-finance institutions offering low-interest loans for entrepreneurial activities as per the forest and household needs. This will enhance financial inclusion and facilitate forest-dependent households in developing their capital base. As per the capacity building and technical assistance; the CFUG members need regular training

in enterprise development, handling money, and latest technology for the utilization of forests. Provision of such technical assistance ensures effective implementation of income-generating activities from the forest.

Link CFUGs with Cooperative Models: Linking CFUGs to cooperatives and producer associations can improve collective marketing, resource pooling, and value chain linkages. This enables better price realization for products and improves their bargaining power. As per the incentivize green employment generation; the government initiatives should provide incentives to CFUGs creating green employment opportunities such as forest guards, nursery managers, eco-tourism guides, and NTFP processors. These occupations add to local livelihoods and facilitate conservation.

CHAPTER VI

PROBLEMS AND CHALLENGES OF COMMUNITY FORESTRY

Belonging to the objective 3: This chapter explores the problems and challenges faced by CFUGs in the management and utilization of community forests. The analysis is based on the perceptions and experiences of user group members, highlighting key issues such as conflicts over resource sharing, inequitable distribution, and difficulties in governance and decision-making. The findings present insights into internal disputes among members, particularly concerning the allocation and use of forest products. In addition, the section addresses broader management-related challenges, including limited technical capacity, weak enforcement of rules, and constraints in sustainable resource utilization.

Furthermore, this section examines how these challenges affect the linkage between community forestry, livelihoods, and rural development. While community forestry has been recognized as one of Nepal's most successful models of local participation and benefit-sharing, its implementation is not without obstacles. The program involves locally elected user committees responsible for forest management and resource-related decisions. However, several operational and social issues continue to hinder its full potential. The major problems and challenges identified through the study are outlined and discussed below, offering insights into areas that require policy attention and community-level intervention.

6.1 Conflicts

Conflict is a common phenomenon in natural resource management, particularly in community-based systems where diverse stakeholders with varying interests and needs interact. In many rural settings, including Nepal, conflicts often arise over access, control, and benefit-sharing of forest resources. These disputes can occur between individuals, within user groups, or between communities and government institutions. The causes typically include unclear property rights, unequal distribution of resources, lack of transparency, and socio-economic inequalities among user groups (Ojha et al., 2008).

CF in Nepal has been globally recognized for promoting participatory forest management. However, the program is not without its challenges. Studies show that conflicts in CFUGs often stem from perceived or real inequalities in the allocation of forest products, exclusion of marginalized groups, and elite capture of decision-making processes (Yadav et al., 2003). For example, women, Dalits, and poorer households frequently report less access to benefits and limited participation in governance, which fuels discontent and internal disputes.

Conflicts, if left unmanaged, can undermine the sustainability of forest resources and damage social cohesion. On the other hand, if addressed through inclusive dialogue, clear rules, and equitable benefit-sharing mechanisms, conflicts can lead to stronger institutions and better resource outcomes (Upreti, 2001). Effective conflict resolution requires transparent decision-making, capacity-building for local institutions, and facilitation of inclusive participation by all stakeholders.

Table 6.1 presents the prevalence of internal conflicts among members within CFUGs in the three study districts: Parbat, Palpa, and Rupandehi. The data highlights the proportion of respondents who reported the existence of conflict versus those who did not. Out of the total 418 respondents across all three districts, 282 respondents (67.46%) reported the presence of conflict among CFUG members, while 136 respondents (32.54%) stated that no such conflict exists. This indicates that more than two-thirds of CFUG participants have encountered some form of disagreement or tension within their group.

In Parbat, out of 161 respondents, 100 (62.11%) reported experiencing conflicts among CFUG members, while 61 (37.89%) indicated no conflict. In Palpa, 70 respondents (66.04%) acknowledged conflicts, whereas 36 respondents (33.96%) did not. Rupandehi district showed the highest rate of reported conflict, with 112 respondents (74.17%) affirming internal disputes and only 39 (25.83%) denying any conflict.

Table 6.1

Conflict among members in CFUGs

Conflict with members	Yes		No		Total	
	No.	Percent	No.	Percent	No.	Percent
Parbat	100	62.11	61	37.89	161	100
Palpa	70	66.04	36	33.96	106	100
Rupandehi	112	74.17	39	25.83	151	100
Total	282	67.46	136	32.54	418	100

Source: *Field Survey, 2022*

The data suggests that interpersonal or group-level conflicts are a common issue in CFUGs, potentially arising from inequitable resource distribution, decision-making disagreements, lack of transparency, or dominance by influential individuals within the groups (Blas et.al., 2011). The relatively high percentage of conflict in Rupandehi (74.17%) might reflect greater competition for forest resources, or possibly larger, more diverse user groups, which tend to have more complex internal dynamics.

The high incidence of conflict underscores the need to strengthen internal governance mechanisms within CFUGs, including clear rules, participatory decision-making, and grievance handling systems. Training on conflict resolution, leadership, and inclusive participation can help reduce tensions and promote cooperative management. Addressing the root causes of conflict, often related to resource access and benefit-sharing inequalities sre essential to ensure long-term sustainability and community support for the CF model. These findings can inform policy measures aimed at promoting transparent and equitable CFUG operations, especially in high-conflict districts like Rupandehi.

6.2 Conflict Over Resources Sharing

Resource sharing conflict is a significant issue in Nepal's CF program, which aims to promote equitable access and participatory forest management. Despite its success, disputes frequently arise among CFUG members regarding the quantity, timing, and distribution of forest products such as timber, fuelwood, and fodder. These

conflicts often stem from perceived inequalities, elite domination, and lack of transparency in decision-making (Yadav et al., 2003).

Marginalized groups particularly women, Dalits, and poorer households are often underrepresented in CFUG leadership, leading to unfair allocation of resources and growing dissatisfaction (Agarwal, 2001). Conflicts intensify when resource demands exceed supply, or when influential members receive preferential treatment in resource distribution. Moreover, the absence of clear guidelines and weak institutional mechanisms often exacerbate tensions. Effective resource-sharing mechanisms require inclusive participation, clear benefit-sharing rules, and conflict resolution strategies (Blas et al., 2011). When managed properly, conflict can encourage dialogue, institutional learning, and more equitable outcomes.

Table 6.2 presents the extent of conflict among CFUG members concerning resource sharing schedules across three districts: Parbat, Palpa, and Rupandehi. The table highlights how many respondents reported conflicts arising specifically from how and when forest resources are distributed among members. Across all three districts, a total of 314 respondents (75.12%) reported conflicts related to resource sharing schedules, while 104 (24.88%) did not. This suggests that three out of four CFUG members have experienced disputes over the timing or fairness of access to forest resources such as timber, fuelwood, fodder, or non-timber forest products.

In Parbat, out of 161 respondents, 132 (81.99%) reported conflicts related to resource sharing schedules, while only 29 (18.01%) did not experience such conflict. Similarly, in Palpa, 72 respondents (67.92%) noted conflicts in scheduling, whereas 34 (32.08%) reported no such issues. Of total, 110 respondents (72.85%) stated that resource sharing conflicts occurred, while 41 (27.15%) disagreed in Rupandehi district.

The majority of CFUG members face disagreements over resource access timing, possibly due to unfair allocation, unclear guidelines, or miscommunication. With over 81% of respondents reporting conflicts, Parbat appears to be the most affected district, possibly due to limited forest resources or weaker governance systems. These conflicts point to a lack of transparency and effective planning in resource distribution within many CFUGs. Poor families or marginalized groups may

feel excluded or unfairly treated during distribution periods, leading to rising tension and dissatisfaction.

Table 6.2

Conflict about the Resources Sharing Schedule

Conflict with members	Yes		No		Total	
	No.	Percent	No.	Percent	No.	Percent
Parbat	132	81.99	29	18.01	161	100
Palpa	72	67.92	34	32.08	106	100
Rupandehi	110	72.85	41	27.15	151	100
Total	314	75.12	104	24.88	418	100

Source: *Field Survey, 2022*

Table 6.2 highlights the extent of conflict among CFUG members concerning the quantity of forest resources distributed to users. Unlike scheduling conflicts (timing of distribution), this table focuses on how much resources each member or household receives, which is a critical factor in community satisfaction and equity. Out of the total 418 respondents across all three districts. 224 respondents (53.59%) indicated conflicts about the quantity of resources shared, while 194 respondents (46.41%) reported no conflict. This suggests that more than half of the respondents across the districts experienced dissatisfaction or disputes over how much forest resources (such as timber, fuelwood, fodder, etc.) were allocated to them.

In Parbat, out of 161 respondents, 89 (55.28%) reported facing conflicts over the quantity of resources shared, while 72 (44.72%) said they had no such conflict. In Palpa, 61 respondents (57.55%) noted conflicts in quantity allocation, whereas 45 (42.45%) did not report issues. Interestingly, Rupandehi only 74 respondents (49.01%) reported quantity-based conflicts, while 77 (50.99%) stated there were no such issues—making Rupandehi the only district where more than half of the respondents did not report quantity conflicts.

Table 6.3

Conflict about Resources Sharing Quantity

Resource sharing conflict	Yes		No		Total	
	No.	Percent	No.	Percent	No.	Percent
Parbat	89	55.28	72	44.72	161	100
Palpa	61	57.55	45	42.45	106	100
Rupandehi	74	49.01	77	50.99	151	100
Total	224	53.59	194	46.41	418	100

Source: *Field Survey, 2022*

Although the proportion is slightly lower than for scheduling conflicts, over half of the users still experience quantity-related disputes, pointing to concerns over fairness and transparency in allocation. Palpa Shows Highest Conflict Proportion: With 57.55% reporting such issues, Palpa shows the highest dissatisfaction regarding quantity, possibly due to limited resources or inequitable distribution practices. Rupandehi's relatively balanced responses indicate better management practices or greater satisfaction with the allocation process compared to the other two districts. These conflicts could stem from perceived favoritism, lack of standardized distribution rules, discrimination, or poor communication among CFUG members (Paudel & Weiss, 2013; Rai et al., 2010).

6.3 Challenges Faced by Community Forests

Thematic analysis of focus group discussions conducted across three districts Parbat, Palpa, and Rupandehi revealed a spectrum of region-specific challenges within community forest user groups (CFUGs). Community forestry, which entrusts local communities with the stewardship and protection of forests, has demonstrably contributed to improved livelihoods, biodiversity conservation, and sustainable resource use. However, key challenges persist across multiple thematic dimensions.

6.3.1 Institutional Challenges

Institutional governance and participation issues are deeply rooted in socio-political dynamics, with the Terai region exhibiting the highest incidence (60%) due to elite capture, political interference, and exclusion of marginalized communities. In contrast, high mountain regions (30%) face logistical and administrative constraints,

while the middle mountains (25%) show relatively stronger community engagement. Limited inclusivity and weak participatory frameworks hinder equitable decision-making and accountability (Nightingale, 2005). Effective community forestry requires inclusive governance models that prioritize representation of women, Dalits, and Indigenous groups (Ojha et al., 2008), ensuring fair participation and sustainable forest management.

6.3.2 Managerial Challenges

The Terai region experienced the highest managerial challenges (50%) in community forestry, especially in implementing silvicultural operations and operational plans. This is attributed to several factors including the lack of technical expertise, poor monitoring, and limited institutional support (Kanel & Dahal, 2008). Additionally, the larger size and higher commercial value of Terai forests attract greater external pressure and exploitation, which complicates effective management. Executive committee members in many CFUGs lack the capacity to implement the operational plan efficiently, leading to inconsistencies in forest protection and utilization.

In contrast, middle and high mountain regions (both at 20%) show comparatively better community participation and adherence to operational guidelines, which enhances managerial effectiveness. Moreover, smaller forest patches and stronger social cohesion in hill regions facilitate more effective collective action (Ojha et al., 2009). Addressing these disparities requires targeted training and institutional strengthening, especially in the lowland Terai forests.

6.3.3 Benefit Sharing Challenges

Equity in resource distribution, transparency in financial management, and fair benefit-sharing were reported as significantly more problematic in the Terai region (50%) compared to the middle and high mountain regions (20%). This discrepancy reflects systemic governance issues, including elite capture, where influential individuals dominate decision-making and control over forest resources, sidelining marginalized groups (Uprety, 2001).

In the Terai, high-value forest resources and relatively larger CFUGs create opportunities for corruption and exclusion, especially in timber sales and revenue sharing. Poor financial literacy and weak institutional oversight further contribute to

the lack of transparency in maintaining accounts and equitable distribution of benefits (Torres-Rojo et al., 2019). In contrast, the hill and mountain regions, with their smaller and more cohesive user groups, have better mechanisms for accountability and inclusive governance. These findings underscore the need for stronger regulatory frameworks and financial monitoring in Terai community forests.

6.3.4 Environmental and Health Challenges

Forest fires and land encroachment emerged as the most pressing environmental challenges in the Terai region, attributed to its flat terrain, dry climate, and dense human settlement. These conditions, coupled with agricultural expansion and weak enforcement, make the Terai highly vulnerable to illegal encroachment and frequent forest fires (Parajuli et al., 2023). In contrast, the middle and high mountain regions are more prone to wildlife conflicts, soil erosion, and landslides due to steep topography, fragile ecosystems, and increasing human-wildlife interactions caused by habitat fragmentation (Sharma et al., 2021).

Wildlife attacks on crops and livestock have increased, posing livelihood threats. Furthermore, health and safety risks—such as injuries sustained during harvesting or patrolling were commonly reported across all regions but often overlooked due to limited health services and lack of safety protocols. These findings highlight the urgent need for region-specific environmental management strategies and investment in health and safety infrastructure.

6.3.5 Limited Capacity

Limited capacity and resources remain critical challenges for effective community forest management in Nepal. Although forests have been legally handed over to local users, many executive committee members in areas like Parbat lack the technical knowledge and managerial skills needed for sustainable practices. Consequently, traditional forest management approaches persist, often ignoring ecological sustainability (Kimengsi and Bhusal, 2022). In Parbat and Rupandehi, elite dominance in decision-making exacerbates inequality, marginalizes disadvantaged groups, and fosters unsustainable resource use.

Similarly, in Palpa, the absence of structured capacity-building and limited access to technical or financial assistance hinders the community's ability to adopt modern silvicultural practices (Ojha et al., 2009). This situation is further complicated

by frequent conflicts over land demarcation, irrigation water access, and firewood collection, which disrupt community harmony and forest governance. Strengthening institutional capacity, ensuring inclusive leadership, and providing targeted training are essential for long-term forest sustainability and community well-being.

6.3.6 Conflicting Interests and Power Dynamics

Conflicting interests and power dynamics are common challenges in community forestry, as multiple stakeholders with varying priorities are involved. In regions like Parbat and Palpa, power struggles often arise among executive members, where differences in political affiliation, personal interests, and resource control lead to disputes (Bynes et al., 2016). This creates significant barriers to collaborative decision-making and resource allocation, as competing groups seek to secure benefits for their factions, undermining the collective goals of sustainable forest management (Paudel et al., 2022). Similarly, in Rupandehi, political affiliations within the executive bodies exacerbate tensions, leading to conflicts that disrupt governance and implementation of forest management plans. These internal disputes not only hinder effective forest governance but also threaten the equitable distribution of forest benefits, often marginalizing vulnerable groups and reinforcing unequal power structures. Addressing these issues requires improving conflict resolution mechanisms and fostering greater transparency in decision-making.

6.3.7 Weak Governance

Weak governance and institutional frameworks significantly hinder the effectiveness of community forestry in Nepal. One of the primary challenges lies in the overlapping roles and responsibilities between DFOs and CFUGs, which often leads to confusion, disputes, and friction. Such overlaps create institutional ambiguity and foster competition for authority, undermining coordination and trust between governmental bodies and local communities (Ojha et al., 2009). DFOs frequently report inadequate enforcement of forest regulations due to limited oversight capacity and unclear mandates, contributing to rule violations, corruption, and illegal resource extraction (Kanel & Dahal, 2008).

Additionally, many CFUGs lack the necessary skills to maintain transparent financial records or conduct regular audits, resulting in poor accountability and internal mistrust. The absence of institutional checks and balances further weakens

governance, allowing elite capture and exclusionary practices to thrive (Giri et al., 2022). This institutional weakness is exacerbated by insufficient capacity-building programs and lack of continuous monitoring. Without clear delineation of responsibilities, technical support, and effective oversight mechanisms, the community forestry model risks failing its core objective of sustainable and inclusive forest management. Strengthening legal frameworks and promoting transparent, collaborative governance are essential for long-term success.

6.3.8 Unsustainable Resource Extraction

Unsustainable resource extraction remains a critical challenge in community forestry across Nepal. Focus group discussions and scheduled interviews revealed that overharvesting of timber, firewood, and non-timber forest products is prevalent, particularly where there is inadequate awareness of sustainable forest management practices. Many CFUGs lack the technical knowledge and institutional capacity to implement regulated harvesting, monitor resource use, or enforce rules effectively. Economic pressures, such as poverty and dependence on forest resources for daily livelihoods, often compel local users to prioritize immediate needs over long-term sustainability (Chaudhary et al., 2023). In the absence of proper management plans and community-level enforcement mechanisms, overexploitation leads to forest degradation, reduced biodiversity, and deterioration of ecosystem services.

Moreover, unsustainable practices create internal tensions within CFUGs. Conflicts often arise when certain members, especially those with more influence or connections, exploit more resources than others, exacerbating inequality and mistrust. This undermines community cohesion and weakens collective action, which is vital for successful forest governance. Ultimately, without strong local governance, capacity-building, and economic alternatives, unsustainable resource extraction threatens both forest health and the long-term viability of the community forestry model.

6.3.9 External Pressure

External pressures and land-use changes pose serious challenges to the sustainability of community forestry in Nepal. FGDs revealed that urbanization, infrastructure development, agricultural expansion, and industrial activities frequently lead to the encroachment or conversion of community forest lands. Disputes among

CFUG members regarding road construction and infrastructure placement were common, as these developments often cut through forest areas, degrading ecosystems and fragmenting habitats. Such interventions not only reduce forest cover but also weaken community ownership and stewardship of the land (Ojha et al., 2009).

Furthermore, forest fires exacerbated by climate change and human activities have increasingly affected these regions. Wildfires not only destroy forest resources but also displace wildlife and pose health and safety risks to local communities. The environmental impact is compounded by inadequate fire management systems and limited preparedness at the CFUG level, threatening both biodiversity and rural livelihoods (Parajuli et al., 2023).

6.4 Discussion

Conflicts in community forestry are inherent due to the diversity of stakeholders with varying needs, expectations, and power dynamics. In Nepal's CFUGs, these conflicts manifest in various forms—ranging from disagreements among individual members to tensions between entire communities and government agencies. The root causes are often unclear property rights, lack of transparency, socio-economic inequality, and elite dominance in decision-making.

Weak governance, interference of political leaders, lack of financial independence are institutional issues faced by CFUGS (Dhungana et al., 2024; Gentle, 2000). Elite dominance, lack of transparency and accountability are managerial challenges. Unequal benefit sharing, less representation of pro-poor, internal conflict between members over resource allocation pose benefit sharing challenges for CFUGs (Lund et. al., 2014; Acharya et.al., 2009). Challenges born from climate change like fire hazard, flash floods erosion, deforestation and unplanned development activities are environmental challenges that CFUGs have to face (Tiwari,2023; Bijaya, 2020; Timsina-Parajuli et.al, 2013).

Study in Nawalparasi analyzed governance issues showing weak decision making and benefit sharing due to elite dominance and low representation of disadvantaged groups (Paudel, 2017). Study shows barriers in timber production and hinderance in revenue generation due to limited legal rights, policy restriction, inconsistent taxation policy and bureaucratic delay (Paudel & Weiss, 2013; Rai et al., 2010). Ghimire (2020) has argued that the community-based forest management

approach continues to face some organizational and policy challenges during its implementation, and this cannot be overlooked because social exclusion, inequitable benefit sharing, and elite dominance in decision-making are the major challenges that are to be resolved in the years to come.

Likewise, Khanal and Kandel (2004) highlight that one of the most persistent problems in community forestry is the lack of inclusive participation, particularly in leadership structures. Their study underscores the dominance of elites often wealthier, higher caste, or politically connected individuals in the executive committees of CFUGs, which restricts meaningful involvement of marginalized groups such as women, Dalits, and the ultra-poor. Building upon this, Gurung et al. (2011) identify elite capture, inequitable benefit-sharing, and the systematic exclusion of the ultra-poor from decision-making processes as some of the most pressing governance challenges within Nepal's community forestry system. These issues not only undermine the fundamental principles of participatory and equitable forest management but also risk increasing social tensions and weakening the legitimacy of CFUGs. Addressing these deep-rooted structural imbalances will be essential in the coming years to ensure that community forestry remains a truly inclusive and pro-poor development model.

Power imbalances and poor accountability further fuel conflicts, eroding trust and weakening community cohesion. Unsustainable harvesting practices and land-use changes threaten long-term forest health and CFUG effectiveness. These issues highlight the need for inclusive governance, technical training, transparent decision-making, and conflict resolution mechanisms. To ensure sustainability, stakeholders must collaboratively address governance weaknesses, support marginalized groups, and strengthen local institutions, making community forestry equitable and resilient across Nepal's diverse regions.

During the study, when FGDs conducted we observed that, there are stagnant progress in the CFUGs' activities, it is due to under resource in CFs and lack of economic relevance. In other hands invasion, fire and wildlife risk overwhelm in CFs, it is due to without capacity and planning of CFUGs. Therefore, it is important that merger process for smaller CFs with adjoining bigger CFs; revitalization process for medium CFs and scientific forest management system for bigger CFs.

CFUGs face several obstacles in their progress. One major challenge is the lack of clarity in taxation policies, often resulting in overlapping taxes imposed by the three tiers of government: federal, provincial and local. Additionally, there have been reports of injuries within CFUGs during forest management operations. These incidents are primarily due to the inadequate implementation of Occupational Health and Safety (OHS) measures and the insufficient integration of Gender Equality and Social Inclusion (GESI) principles by both DFOs and CFUGs.

In present after federalism, more CFUGs are being stagnant and inactive because of under resource and no any economic relevance available in CFUGs and massive migration rural-to-urban as well as foreign. Likewise, invasion, forest fire and wildlife risks being overcome in CFs, because of lack in modern tools and techniques with CFUGs and absence of youth and skilled leadership. Some major obstacles arising in the CFUGs, because of unclear and contradictory policies on taxation, because of double and triple tax by three tires government.

Occupational health injuries among CFUGs remain a concern, primarily due to the lack of adherence to occupational health and safety (OHS) standards in forest management activities such as harvesting, thinning, and fire management. In most cases, CFUG members, especially women and marginalized communities, engage in physical and hazardous activities without training, personal protective equipment, or institutional safeguards. OHS issue is prevailing in other sectors of Nepal such as among the sanitation workers (Khatri et al. 2025).

Furthermore, weak implementation of Gender Equality and Social Inclusion (GESI) principles is among the causes of existing gender gaps in decision-making. Women and marginalized groups have limited control over planning and resource allocation, such as decisions concerning safety, so their specific needs and vulnerabilities are not met (Giri et al. 2022). As such, the combined lack of OHS practices and inclusive governance increases the risk of injury and suppresses equitable participation in forest management.

6.5 Conclusion

High Conflict Frequency in CFUGs: More than two-thirds of CFUG respondents mentioned having had internal conflicts, mainly on access to forest resources, timing and amounts of allocation. Most such conflicts result from indeterminate rules, disagreement, and inadequate conflict resolution by the groups, which leads to dissolving harmony and cooperation.

Indeterminate Property Rights and Elite Capture: Ambiguity in forest user rights and control by local elites—most significantly in the Terai—has led to unequal access to decision-making authority and forest benefits. Weak institutional checks allow elites to monopolize, pushing the voices of common users aside and igniting tensions within CFUGs.

Exclusion of Marginalized Groups: Women, Dalits, and the poor are generally excluded systematically from meaningful participation in CFUG leadership and planning processes. As a result, they derive fewer benefits, less decision-making voice, and are more exposed to exploitation in forest management systems.

Inequalities in Scheduling vs. Quantity of Resources: Although over half the respondents (53.59%) had been in conflict over the amount of forest products received, an even higher proportion (75.12%) were dissatisfied with the timing of distribution. This shows that inequity is not only about quantity but also timing of access, and this can prove disastrous for the poor during times of peak need.

Regional Patterns of Conflict: Higher rates of conflict in Parbat and Rupandehi indicate variation in the quality of governance, resource pressure, and social dynamics among districts. These findings underscore the imperative for context-specific solutions rather than generic one-size-fits-all solutions in CFUG management.

Institutional Weaknesses Undermine Equity: Weaknesses such as weak member participation, domination by influential members, and lack of participatory decision-making dilute the democratic culture of CFUGs. Not only do the issues lead to governance deficits, but they also undermine levels of trust between members, especially the poor.

Managerial Weaknesses in Terai: Operational plans are poorly implemented in most CFUGs of the Terai region due to weak leadership, poor oversight, and institutional ambiguity. These result in unsustainable usage patterns, uneconomical regeneration of resources, and erosion of user trust.

Financial Mismanagement and Unequal Benefit-Sharing: Financial resources mobilized by CFUGs are frequently mismanaged with minimal transparency and accountability of the utilization of the funds. This creates mistrust among members,

leads to determent in active participation, and lowers the legitimacy of CFUG leadership.

Environmental Threats in the Terai, the forest fire and encroachment; forest fires, unauthorized logging, and encroachment are increasing hazards to forest sustainability, especially in high-density Terai with poor enforcement. The pressures compound into governance concerns and risk undermining decades of conservation achievements. wildlife conflicts and natural disasters in Hills and Mountains; the CFUGs in mountain and hill ecosystems face more frequent wildlife crop loss and natural disasters like landslides. These are threats to livelihood security and require region-specific forest management, such as insurance and risk readiness schemes.

Limited Technical Capacity: Most of the CFUGs are not adequately endowed with knowledge and skills in silviculture, sustainable harvesting, monitoring of biodiversity, and business planning. This technical disadvantage hinders them from embracing long-term forest management systems and limits income-generating activities. Power struggles and political interference; the political affiliation and personal enmities easily lead to disruption of CFUG governance, which delays the decision-making process and polarizes members. Such disruptions weaken institutional functioning and reduce the focus on equitable and sustainable utilization of the forest.

Overlapping Roles of CFUGs and DFOs: The overlapping of the roles of DFOs and CFUGs, especially under federalism, leads to poor coordination, policy duplication, and weak responsibility. The functions need to be demarcated so that governance is made efficient and more reliable. Unsustainable extraction for poverty; the users similarly overexploit forest goods for short-term application in economically peripheral regions, ignoring sustainable harvesting. Without substitute livelihoods or rules, this leads to forest loss and intra-group competition for diminishing resources.

External Pressures in the infrastructure and climate risks; Infrastructure expansion (roads, hydropower, settlements) and climate-related hazards such as prolonged drought or wildfires are putting increasing pressure on forest resources. These external pressures not only accelerate the process of environmental degradation but also weaken social solidarity within CFUGs through creating new conflicts over land and resources.

Clear Policy on Benefit Sharing: Establish detailed national policy guidelines on fair benefit sharing to consider household vulnerability, dependency on forests, and management contribution. This would formalize best practices and minimize favoritism and exclusion. Conflict resolution mechanism; instill a multi-layer conflict resolution mechanism in CFUGs supported by local governments and forest offices. This would help resolve disputes over access, benefit sharing, and leadership peacefully. Regular policy harmonization; there is a need for regular review and harmonization of federal, provincial, and local policies to provide uniformity in CFUG operations. This would prevent jurisdictional conflicts and role confusion.

Improve Governance in CFUGs: Ensure governance transparency through periodic elections, auditing of finances, and decision-making through participation. Better internal governance provides accountability as well as justice. Provide CFUGs institutional support in record keeping, conflict resolution, and participatory planning. Greater capacity fosters better management and stakeholder trust.

Monitoring and Evaluation Framework: Establish and implement a participatory monitoring and evaluation (M&E) framework at the community level to assess performance and compliance. This allows CFUGs to constantly improve through self-correcting mechanisms. Policy for multistakeholder engagement; promote inter-CFUG coordination, NGO coordination, and coordination with the private sector and local government for conflict reduction, business, and joint forest management. Cooperative methods reduce overlapping mandates and resource wastage.

Inclusive Representation Mandates: Enact representation of a rightful number of women, Dalits, Janajatis, and poor families in executive committees such that voices from diverse backgrounds are heard and respected during decision making. Support for legal literacy; organize periodical legal awareness programs to update CFUG members about their obligations and entitlements under prevailing forest law and CF policy. Empowered members would demand transparency and accountability. Transparency of taxation and revenue sharing; implement an open system of taxation and revenue sharing between CFUGs and governments at all levels to avoid double or triple taxation. Transparent policies would encourage CFUGs to enter legal trade and increase incomes.

Here need to further research to solve the existing challenges facing by CFUGs to run smoothly as:

Institutional Conflict Mapping: Research needs to be done to map and compare conflicts between CFUGs and local governments in post-federalization times. This would identify legal and administrative loopholes which need policy change. Likewise, Case Studies of Successful Conflict Resolution: Place on record case studies of successful conflict resolution in CFUGs to identify replicable models. These models can then be used to inform future policy interventions and training modules.

Governance Quality Index for CFUGs: Develop an integrated governance quality index to measure transparency, participation, accountability, and responsiveness of CFUGs. It will be used for self-assessment and external assessment. Likely, Influence of Elite Capture: Conduct in-depth research to analyze the impact of elite dominance in leadership on access to forest products, use of funds, and decision making. The study can guide interventions for democratization of governance. Power Relations and Inclusion: Examine the ways in which caste, class, and gender relations affect the involvement of different groups in CFUG governance and develop participation plans that are fair and context-specific.

Effectiveness of Institutional Networks: Study the roles played by networks and federations like FECOFUN in advancing community rights and resolving inter-CFUG disputes. It will show how support systems outside the CFUG contribute to CFUG resilience. As per the social capital and conflict dynamics; investigate the relationship between social capital (networks, norms, and trust) and conflict onset in CFUGs to create community-based conflict prevention strategies.

Utilization Efficiency Studies: Studies would measure how efficiently the CFUGs are making use of forest products and whether or not the bottlenecks like bureaucracy, shortage of skills, or markets do exist, and thus feed into efficiency-building reforms. Compare the relative effectiveness of different decentralized forest governance systems (e.g., ward-level vs. municipality level management) in community forestry. Institutional reorganization will be guided by the insights.

Forest-Related Legal Disputes Database: Design a database of forest-related legal disputes and complaints against CFUGs to identify patterns, root causes, and repeated issues. This information is essential for judicial and policy reforms.

Despite many successes, the research finds several existing and emerging challenges facing CFUGs in equitable and sustainable community forest management.

Elite Capture and Exclusion: Most CFUGs' leadership is dominated by relatively better-off male members from higher castes. Poor households, Dalits, and women are either not represented or represented only symbolically in decision-making platforms and therefore lack significant agency over benefit-sharing and planning. Limited Transparency and Accountability: Accounting practices and auditing within certain CFUGs are weak. This has led to the rise of distrust, specifically in large CFUGs with high revenue. Members have limited channels of questioning or appealing executive committee decisions formally.

Lack of Technical Capacity: The majority of CFUGs have insufficient expertise in sustainable forest harvesting, value-added processing, and monitoring of biodiversity. Forest Operational Plans tend to be out-of-date or mechanically generated without sufficient community consultation.

CHAPTER VII

CONCLUSIONS AND POLICY RECOMMENDATIONS

7.1 Summary

This thesis explores the socio-economic and environmental contributions of Community CFUGs in rural Nepal towards improved rural livelihood and sustainable rural development. The thesis also identifies the significant challenges to equitable management and benefit-sharing of forest products, especially to poor and marginalized groups, and challenges faced by these groups to achieve their objectives. The study is conducted in three districts Palpa, Parbat, and Rupandehi covering Terai, Mid-hills, and High Mountains, where community forestry has been widely implemented.

Community forestry in Nepal was a response to forest degradation and aimed to transfer forest stewardship from the state to local communities. Since the late 1970s, the strategy has been credited with regenerating forests, maintaining biodiversity, and supporting local economies. With over 23,000 CFUGs covering nearly half of the nation's population, community forestry is today one of Nepal's most successful decentralized natural resource management programs, and it can be also considered as one of the world’s largest environmental movements.

The study borrows from several theoretical frameworks, including Basic Resource Theory, Common Property Theory, and the Sustainable Livelihood Framework. These theories identify that rural development is dependent on the availability, access, and management of natural resources, and that community participation and equitable governance are crucial for sustainability through the active group mobilization. The livelihood framework identifies five significant capital assets—natural, human, social, physical, and financial—that are the components of rural well-being and sustainable rural livelihoods.

Community forestry provides a range of benefits: fuelwood, fodder, timber, and NTFPs are available for household subsistence and income. These are the important inputs of rural household production functions. CFUGs also fund community infrastructure such as roads, irrigation, and drinking water systems and provide training and employment in forest-based activities. Forest users learn and enhance their skills in different aspects of earning as well as social mobilization and

leadership. Environmental benefits include forest regeneration, biodiversity protection, and climate mitigation through carbon sequestration.

However, the study recognizes that the distribution of these benefits is often unequal. Poor households, Dalits, and women tend to be excluded from decision-making and have poorer access to forest products and livelihood opportunities. Elite capture of CFUG leadership and weak institutional governance are also persistent issues. There is also limited coordination between forest user groups and local governments, especially after Nepal's transition towards federalism, which has created uncertainty regarding jurisdiction, revenue, and planning.

Changes in rural livelihood also influence community forestry. With improved access to markets, roads, and remittance income, households are abandoning forest dependence as their livelihood strategy is changing. As they rely less on forest-based livelihoods, this has led to declining participation in CFUG activities and diluted collective forest management. Moreover, CFUGs have been slow to address second-generation issues such as forest-based enterprise development and value addition of forest products.

The thesis concludes that while community forestry has contributed significantly to conservation and rural development, its contribution to equitable livelihood improvement remains modest. More inclusive policies, better institutional capacity, and better coordination between CFUGs and local governments are required. The study recommends priority focus on equitable benefit-sharing, livelihood diversification, and inclusive governance to enhance the long-term sustainability of Nepal's community forestry program.

Overall, this study gives a comprehensive overview of the manner in which community forestry serves as an interface between environmental conservation and rural development in Nepal. It not only demonstrates that CFUGs are governing forest products sustainably but also making a significant contribution to improving livelihood, promoting social inclusion, and building local infrastructures. By bringing out both the potentials and challenges—some of which include limited financial training, elite capture, and inequitable benefit-sharing—the study derives policy lessons for policymakers, CFUGs, and development practitioners. It demands inclusive governance, capacity-development, and integrated planning to consolidate

forest governance and to enable community forestry to keep on making a contribution to equitable and sustainable rural development in diverse areas of Nepal.

7.2 Findings

The key findings of the study based on the three research objectives; the results are drawn from field data, focus group discussions, and literature analysis, and are organized under each objective to highlight the socio-economic and environmental benefits, livelihood improvements, and challenges faced by CFUGs in Nepal. Data shows that in the year of 2020 BS, the forest area in Nepal was about 45 percent, but it was found decreased to 40 percent after 15 years in 2035 BS, but after implementation of community forestry programme forest area being increasing. In order to maintain the balance of the environment in Nepal, it is necessary to have at least 43 percent forest cover. According to the Forest Resources Survey conducted in 2016, the total forest area in Nepal is 44.74 percent, with an average of 430 trees per hectare. Today, the Nepali proverb, "the green forest is the wealth of Nepal," holds true, as Nepal's community forests have become a successful example for the world.

The study indicated that CFUGs have contributed enormous socio-economic and environmental benefits to the rural people of Nepal. These benefits have assisted in improving rural well-being, neighborhood development, and environmental sustainability.

a. Socio-Economic Benefits

Improved Access to Forest Products: CFUG members, especially those in Palpa and Parbat districts, have controlled access to fuelwood, fodder, timber, and NTFPs. These are vital for everyday needs, maintenance of livestock, and sporadic income. Members reported reduced dependency on outside markets for critical household items.

Employment Generation and Income: CFUGs ensure employment generation at the local level through activities related to forest management such as pruning, thinning, patrolling, nursery management, and timber extraction. The income generated from the sale of timber, NTFPs, and membership charges is also used to finance community development activities or redistributed as community welfare money.

Community Development Investment: CFUG proceeds are typically invested in the establishment of rural infrastructure like trail systems, irrigation canals, water supply systems, and community centers. Certain CFUGs also channel funds into social activities like poor child scholarships, emergency health care, and support to destitute families.

Capacity Building and Empowerment: The study recorded that training and workshops of CFUGs (most often in collaboration with NGOs or the Division Forest Office) have enhanced organizational and technical capabilities of the members. Participation in committee roles has enhanced leadership as well as confidence, mainly among women and youths in some communities.

b. Environmental Benefits

Forest Regeneration: Field visit observations and community remarks show that erstwhile degraded forests across the three districts have also been documented with signs of regeneration. Measures by communities in managing fire, controlling illegal logging, and planting new trees have helped increase forest cover and biodiversity.

Soil Conservation and Watershed Conservation: Sloping hillside CFUG-managed forests specifically, in Parbat, stabilize erodible soils, protect springs, and reduce landslide hazards. CFUGs possess soil conservation measures like contour planting and gully plugging. Carbon Sequestration and Climate Resilience: Despite the absence of formal carbon accounting procedures in the majority of CFUGs, certain respondents acknowledged the indirect climate benefit of forest expansion.

The study reveals that community forestry has produced a mixed but overall positive effect in improving rural household livelihoods.

c. Livelihood Capitals Enhancement

Natural Capital: Access to forest products reduces the cost burden on households relying on forests, thereby enabling their survival. Access to sustainable forests also helps livestock-based livelihoods, especially in remote locations.

Financial Capital: Households benefit indirectly from local investments and occasionally directly through income-sharing schemes. Financial benefits to households were modest and often cycled back into common advantage.

Human Capital: Capacity-building activities pursued by CFUGs in forest product processing, book keeping, and group facilitation have enhanced local capability. Literate women and youth from member households have emerged as more important figures for leading CFUG activities.

Social Capital: Membership and activities in the CFUG have improved community cohesion, cooperation, and solidarity. Women's groups, Dalit caucuses, and youth networks have emerged as sub-committees in certain CFUGs, strengthening inclusive governance.

Physical Capital: Incomes of CFUG have been used to fund local infrastructure like drinking water schemes, micro-irrigation, and community centers. These, in turn, have encouraged agricultural activities and increased access to essential services.

d. Impacts of Differentiated Livelihood

Better Off and Poor Families: The study reveals that richer families benefit most from the sale of timber and NTFP, whereas poor families rely mainly on fuelwood and fodder. Poor families are also often too busy trying to survive to participate in CFUG decision-making processes.

Marginal Groups: Dalits and the landless members do not gain much from CFUGs, primarily due to informal discrimination, limited rights to forest utilization (especially in timber harvest), and lack of representation on executive committees. Although quotas exist, meaningful participation is still an issue.

Urban Proximity Effect: CFUGs located near towns (i.e., in Rupandehi) are less dependent on the forest due to the utilization of LPG and the presence of markets. However, these CFUGs will have higher incomes and invest more in infrastructure improvement.

Despite many successes, the research finds several existing and emerging challenges facing CFUGs in equitable and sustainable community forest management.

e. Governance and Institutional Challenges

Elite Capture and Exclusion: Most CFUGs' leadership is dominated by relatively better-off male members from higher castes. Poor households, Dalits, and women are either not represented or represented only symbolically in decision-

making platforms and therefore lack significant agency over benefit-sharing and planning.

Limited Transparency and Accountability: Accounting practices and auditing within certain CFUGs are weak. This has led to the rise of distrust, specifically in large CFUGs with high revenue. Members have limited channels of questioning or appealing executive committee decisions formally.

Lack of Technical Capacity: The majority of CFUGs have insufficient expertise in sustainable forest harvesting, value-added processing, and monitoring of biodiversity. Forest Operational Plans tend to be out-of-date or mechanically generated without sufficient community consultation.

f. Policy and Legal Confusion

Overlap with Local Governments: The transition to federalism has come with ambiguities in forest governance roles. Local governments have begun appropriating CFUG funds and decision-making, leading to overlap of jurisdictions and delayed approvals of forest management plans.

Unpredictable Taxation Policies: CFUGs of Rupandehi and Palpa were challenged by multiple levels of taxation imposed by federal, provincial, and local governments. This impedes forest product marketing and deters incentives for forest-based enterprise growth.

g. Economic and Market Challenges

Limited Forest-Based Enterprises: Virtually no CFUGs have initiated sustainable forest-based enterprises (e.g., herbal processing, furniture making). Bureaucratic problems, lack of funds, and market access restrictions were commonly cited as barriers.

NTFP Underutilization: CFUGs possess rich NTFP resources but lack adequate knowledge or networks to market and process the commodities profitably. As a result, the majority of NTFPs are not harvested or sold informally at low prices.

h. Conflict and Participation Problems:

Resource Access Conflicts: There were instances of grazing, fuelwood extraction, and timber distribution conflicts, especially in CFUGs with rising

population or little forest cover. High-value timber distribution is dominated by elite groups in some cases.

Low Participation of Youth and Migrant Households: Outmigration of youth has reduced the number of active members in CFUGs, affecting forest patrolling and upkeep. Some CFUGs experience a lack of labor during essential management activities.

Inclusion Shortfalls: Though there is increased gender inclusion in CFUGs, fruitful participation of Dalits, landless people, and disabled persons is not widespread. Their participation is typically dominated by more vocal or influential members.

7.3 Conclusions

It is concluded that community forestry has contributed hugely towards rural development by increasing all types capitals under the sustainable livelihood framework. It clearly indicates that CF program is able to achieve its goals to improve social and economic outcomes through forest management. The program has improved forest condition which has resulted increase in natural capital like firewood, fodder, timber for construction, irrigation, drinking water. Local people can access them at regular intervals although the potential demand is not fulfilled yet. Likewise, community forestry provides direct and indirect employment opportunities, boost local economic activities, supports community, develop enterprise and invest for long-term economic sustainability.

Besides economic benefit, CFUGs have greater role to play in social development. They have supported encouraged local participation, education and recreation, empowered local marginalized people and strengthened local institutions. Environmental benefits of CFUGs include forest resource management, forest conservation, ecosystem services, water resources management. This is crucial for ecological balance and long-term sustainability. The study highlights increase of natural, financial, social, physical and human capitals for rural population especially benefiting local people. But in comparison to other capitals, financial capital is low.

However, CFUGs faces various challenges viz: conflict of interest, unequal resource allocation, elite dominance, ambiguity between roles and responsibilities between CFUGs and other government and non-government institutions. Deep rooted

social structure, weak government intervention, and limited awareness among poor and marginalized population hinders CFUGs ability to fully address the needs of poor and marginalized people.

The merger of struggling small-sized (area & households) community forests is a potential, solution because many of smaller CFIUGs are not able to function properly due to lack of resources in CF. While the exemption eases the pressure on small community forests, it does little to address the backlog of operational plans awaiting approval; therefore, need to go merger process for the small CFUGs to adjoining bigger CFUGs.

After the federalism, some problems have been emerging in the CFUGs, provinces and local governments have been introducing some additional taxation on firewood and timber sales, over and above the Value Added Tax (VAT) imposed by the central government. Although, the Supreme Court has provided some relief on August 2, 2023, with an interim stay order ruling that no additional taxes or fees other than VAT should be charged to community forests, but provinces and local governments have the right to have their own forest acts or policies, they are not allowed to charge as well as collect any additional royalties or service charges from community forests or any other national forest. Still, there are some confusions regarding community forest management, although, it is clearly stated in the constitution of Nepal that the community forest and its resources fall under the jurisdiction of the local level. The responsibility of protecting, managing, and utilizing the resources of the community forest lies with the local consumers, and there is no need for a new policy or debate on this matter.

7.4 Contribution

This thesis makes several important contributions to science by generating new empirical knowledge and addressing existing research gaps in the field of community forestry and rural development. Community forestry groups have been actively involving in implementing various social security and development activities, such as providing forest produce for consumption and selling, obtaining wood for construction works, providing teachers' salaries in local schools through mobilizing CF funds, building roads, and providing maternity allowances. CFUGs have been

playing some crucial role in generating income and promoting economic development among members by planting cash crops, which has increased the group's income.

Empirical Evidence on Community Forestry's Livelihood Impact: the research provides rich empirical evidence of the role that community forestry plays in ensuring the socio-economic livelihood of Nepal's rural communities. By exploring different livelihood dimensions including income generation, access to resources, and social empowerment it fills an important gap in literature that focuses solely on environmental impacts.

Comparative District-Level Analysis: the study presents a comparative perspective from three mid-hill districts Parbat, Palpa, and Rupandehi on the basis of spatial variations in community forestry performance. This facilitates realization of strengths, weaknesses, and contextual issues at the local level and thus supports district-specific policy and program design.

Identification of Training and Financial Inclusion Gaps: one of the main contributions of this research is the identification of inadequate financial training and literacy in loans by CFUG members. It illustrates how a lack of financial support institutions inhibits economic empowerment among marginalized and poor individuals, pointing to tangible areas that can be addressed through institutional strengthening.

Identification of CFUGs as Agents of Rural Governance: the research empowers CFUGs not only as forest managers but also as decentralized government organs. It proves the participation of CFUGs in participatory planning, resolution of conflicts, delivery of local services, and development of social infrastructure, thus redefining their role in local development beyond forestry.

7.5 Policy Implications

Encourage to earn by using the forest integrated forest-livelihood programs. Community forests are expected to go beyond conservation to provide sustainable economic returns to the house. Such integrated programs can include forest-based enterprises, agroforestry, as well as the collection of NTFPs. The programs are to be adaptable to the local context and socially inclusive.

Special attention should be given to low-income and marginalized communities for fair sharing of forest benefits. Policies must be designed in a manner

that the mechanisms for benefit-sharing are tilted in favour of the poor, landless, and marginalized households. The operation plan and fund mobilization plan of CFUGs needs to earmark a considerable proportion to socially excluded groups. The use of equity audits and fair reporting can enhance the equitable aspect.

CFUGs are to be tasked to allocate a proportion of their revenue towards the welfare fund for the community (health, education, and water and sanitation). CFUGs should be given the legal mandate to use a portion of their finances for infrastructure towards basic services, in alignment with the rural development objectives of the country. This not only enhances the quality of life, but bolsters the standing of CFUGs among their members. Increases the community's engagement in the management of the forest.

Forests should be managed for multiple sustainable uses including eco-tourism, non-timber forest products, and conservation of biological diversity. Need to strengthen monitoring and evaluation frameworks for CF contributions to socio-economic development. Existing systems for evaluating CF performance should include socio-economic indicators such as income generation, education, and health access. Third-party evaluations and participatory monitoring will offer greater accountability. Indicators must be disaggregated by gender and caste.

Fine-tune valuation guidelines for all aspects of environmental services (carbon sequestration, biodiversity, etc.). CFUGs should be able to determine and possibly monetize ecosystem services. This is a good foundation for programs like PES (payment for ecosystem services) and REDD+. Having such national guidelines will standardize the assessment of benefit.

Require the contractors and CF enterprises to add local hiring as a local employment quota in CF related enterprises and conservation activities. CFUGs and partner organizations should focus hiring locally to the most needful groups which is women and youth. This helps ensure the financial resources circulate and improve the community. This can be achieved using community contracting policy instruments.

Encourage Forest-Based Enterprises: Policies must enhance forest-based enterprise such as NTFP processing, resin tapping, wood furniture production, and ecotourism through enhancing access to technical education and market connections.

This would enhance diversification of income and decrease raw forest product harvesting dependence.

Equitable Resource Distribution Mechanism: An approach through policy would have to guarantee fair distribution of forest products like firewood, timber, and fodder based on household dependency and need. This would serve to offer a remedy to socio-economic disparities and insure poorer forest users more.

Incentivize Green Employment Generation: Government initiatives should provide incentives to CFUGs creating green employment opportunities such as forest guards, nursery managers, eco-tourism guides, and NTFP processors. These occupations add to local livelihoods and facilitate conservation.

Clear Policy on Benefit Sharing: Establish detailed national policy guidelines on fair benefit sharing to consider household vulnerability, dependency on forests, and management contribution. This would formalize best practices and minimize favoritism and exclusion.

7.6 Further Research

Comparative analysis of socio-economic impacts of CF across eco-regions (Hills and Terai) that should be able to determine the impact of geography and socio-political factors on benefit realization. Need to analyze changes in carbon stocks and potential revenues from REDD+ and carbon markets. Research should look into feasibility, transaction costs, community preparedness, and recommend governance structures. Systematically monitor ecological processes to evaluate biodiversity trends in CFs. This will help evaluate the outcomes of conservation and assess emerging threats. Conducting baseline biodiversity inventories along with periodic assessments is vital. It will help with forest zoning and developing strategies for species conservation.

Analyze the access to and use of forest products to assess differentiated gender impacts. Studies should show the extent to which women, if at all, benefit from forest products. This aids in gender-responsive policy and program formulation. Capture the interplay of social dynamics using qualitative methods. Evaluate the contribution of CF to mitigation of disaster risk (floods, landslides) as well as contribution of CFs towards achieving the SDGs and climate adaptation goals of Nepal. Forests are essential to the stabilization of slopes and protection of the watershed. Likewise,

alleviation of poverty, promotion of equality and climate change, and life on land. Comprehensive and reporting frameworks need to be designed. This can attract foreign funding.

Value Chain Analysis: Analyze value chains of significant forest products like broom grass, medicinal plants, and Sal timber to analyze value addition opportunities as well as fair trade. This would educate CFUGs on how to improve incomes by upgrading their production systems. Effectiveness of Income Utilization: Study how CFUGs use and expend their forest income on livelihood development activities. It will unpack best practices and loopholes in budget transparency and equity. Social Inclusion in Livelihood Outcomes: Study whether women, Dalits, and other excluded groups are benefitting equally from CF-based livelihoods. The study can inform the refining of inclusion strategies and benefit-sharing policies.

Digital Tools in Forest Livelihood Monitoring: Explain how digital technologies (e.g., mobile apps, GIS) can be used for tracking CF contributions to livelihoods. Digital technologies have the potential to improve transparency, monitoring, and planning. Impact of Climate Change on Forest Livelihoods: Assess how changing climate patterns are influencing forest resource availability and livelihood security. This would inform adaptation measures in CFUG operational plans.

Annex I

Checklist of the Data/Information collection

A. For individual stakeholders

Dear participant,

I am Damodar Sharma, Ph. D. Student, conducting the dissertation entitled "Community Forestry and Rural Development in Nepal, A Study of CFUGs of Palpa, Parbat and Rupandehi Districts" for the partial fulfilment of Ph. D. program in Rural Development. The question is developed for the data collection for completion of dissertation and need your help for data collection. Your active participation for information related to community forestry is vital so I required you to fill this question. Your information is very crucial to meet the objective of the research conducted. I'd like to assure you that all the answers you provide in this survey will be kept confidential and only be used for the academic purpose. No identifying information will be provided to anyone and the survey data will be reported in a summary of the thesis without identifying any individual person or businesses.

However, I hope that you will participate in this survey for your valuable views which are very important to me. This survey will take approximately 20 minutes to complete. I will be very thankful for your support.

Damodar Sharma
Ph. D. Scholar

I read all above mention point and ready to participant in your dissemination work. I will appreciate your work and acknowledge for finding in the field of rural development.

……
Name of participant

b. Demographic Information of Respondent

Name of the respondent	……..
Gender of respondent	□ Male □ Female □ Other
Age of the respondent (in Year)	…….
Marital status of respondent	□ Unmarried □ Married □ Separated □ Divorced
Literary status of respondent	□ Illiterate □ Literate
If literate which level	□ Only able to read and write □ Under SLC/SEE □ SLC/SEE □ PCL/+2 □ Above PCL/+2
Family type	□ Nuclear □ Joint
Family head	□ Male headed □ Female headed
Any family members in executive committee in community forest user group	□ Yes □ No

Benefit from Community Forestry

Did your family get enough firewood for household purpose from community forestry?	□ Yes □ No
Did your family get enough fodder for their livestock throughout year?	□ Yes □ No
Did your family get enough timber for construction?	□ Yes □ No

Did your family get enough irrigation for your cultivable land?	□ Yes □ No
Did your family get enough drinking water for your family?	□ Yes □ No
Did your family get enough drinking water facilities for their livestock from water supply to them?	□ Yes □ No
Did your family get loan from CFUGs' fund in case of emergency or for starting business?	□ Yes □ No
Do you think that CFUGs as a prominent institution at village level has provided forum for all people?	□ Yes □ No
Do you think that CFUGs were involved in the management of forest resources to support the development of the nation?	□ Yes □ No
Did due to community forest the image of forester in society change?	□ Yes □ No
Did due to community forest the attitude of forester in society or with forest department (DFO)?	□ Yes □ No

Please tick ☑ your choice on the following statement where 5 refer to strongly agree, 4 refer to agree, 3 refer to neutral, 2 refer to disagree and 1 refer to agree.

s. no	**Statement**	**1**	**2**	**3**	**4**	**5**
Economic benefits						
1	Community forest provides direct or indirect employment to local people					
2	Community forestry helps to boost local economic activities					
3	Community forest support local priority by sharing their profit (cash or kind) to local people.					
4	Community forestry plays active role in forest sector trough harvesting and supping logs for the market.					
5	Community forestry support local industry which are based on forest or agriculture.					
6	Community forestry is investing in future economic return of the forest.					
7	Community forestry is supporting for diversify economic benefit of forest.					
Social benefit from CF						
1	CFUGs report detail account of your community forest.					
2	Community forestry makes faster local participation for forest management.					
3	Community forest support for informal education to local people.					
4	Community forest support for education to children of local people by providing aid.					
5	Community forestry support recreation to local people.					
6	Community forestry work to reduce threat of wildlife.					
7	CFUGs work for safety of children from wildlife.					
8	CFUGs also work for women empowerment					
Environmental benefits from CF						
1	CFUGs protect and conserved the forest area in effective					

	manner.					
2	CFUGs protect and conserved local water resources.					
3	CFUGs conserved the buffer zone and wetland in effective manner.					
4	Community forest promotes forest conservation through active local participation.					
5	CFUGs distribute forest resources in sustainable manner.					

Conflict related question

Do your family have conflict with other members about collection of forest resources like fire wood, plants and other/	□ Yes □ No
In your community forest if there is conflict about resources schedule by EC of CFUG	□ Yes □ No
In your community forest if there is conflict about resources sharing amount decided by EC of CFUGs	□ Yes □ No

What is the benefit your family received from community forestry program?

……
……
……
……..

What are the benefits that derived from community forest for rural development?

……
……
……

B. For Key Informants

Check list for KII

1. What was the condition of forest when it was controlled and protected by government?
2. What is the condition of forest after it was handed over to community?
3. What is the benefit that community get from community forestry program?
4. Did you find that conservation and protection of forest increase after forest is hand over to the community?
5. Do you think that after community forestry program the economic assets of local people increase from forest? if yes how?
6. Do you think that after community forestry program the social assets of local people increase from forest? if yes how?
7. Do you think that after community forestry program the physical assets of local people increase from forest? if yes how?
8. Do you think that after community forestry program the human assets of local people increase from forest? if yes how?
9. How community forestry is vital for improvement of rural livelihood? Especially for poor and marginalized family.
10. How community forestry contributes for source of drinking water protection, bio-diversity conservation and soil/erosion conservation?
11. How community forestry contributes for rural development?
12. What ate the issues and conflict of community forestry? How it occurs?

C. For Key Informants

Focal Group Discussion (FGDs)

Benefits from forest under community forestry program:

- Resources utilization
- Selection of management team
- Benefit sharing principle
- Conflict handing and resolution

Impact of community forestry to livelihood of rural people:

- Economic assets (income, employment, property, agriculture and industrial development)
- Social assets (social institution, children education, cooperation, participation, empowerment of poor and marginalized people)
- Environmental assets (conservation, protestation, irrigation, forest resources, etc.)
- Human assets (training, skill development, empowerment)

Issues of community forestry

- Resources related issues/ conflict
- Management related
- Corruption and misused
- Taxation
- Other issues

Contribution of community forestry for rural development

- Socio-economic contribution
- Environmental protection and conservation
- Livelihood assets and link with rural development

Annex II

Questionnaires

A. Questionnaire 1st set for CFUGs' Members

Survey Questionnaire for CFUG General Member

CFUG Members: Minimum sample 10% of total number of CFUGs. Aim is for 50% where bigger member in CF.

Name of researcher: _____ Date: _____

Name of Executive: _____

1. General discussion what you feel about your Community Forestry.
2. Awareness of CF process and policy:

(CF policy, rules regulation, operational plan & constitution etc. CFUG and committee)

- Selection process of members in your CFUG?
- Selection process of Executives in your CFUG?
- Role and responsibility of your designation in committee?
- Composition of your Executive committee?

7. CFUG assembly

- How you know the CFUG assembly?
- How you make decisions in of CFUG?
- What do you think about use of CFUG funds?
- Have other activities been suggested and not funded? If yes, why?

8. Indicators of scarcity observed in your CFUG of Forest products:

- Fuel wood. Timber. Fodder,
- Record keeping of product distribution from CFUGC committee.

9. Forest management and products distribution system

- What kind of forest management activities have been carried out since formation?
- How can forest be managed better for users' demands?
- How can product distribution system be improved?

10. Fund management

- What are your perceptions regarding the use of the CFUG fund?
- What are the main rural development activities initiated by CF fund?

11. Are there any problems exist

- During forest management?
- During forest product utilization?

B. Questionnaire 2nd set for CFUGs' Executive Committee Members (EC)

Survey Questionnaire for CFUG Executives committee Member

CFUG Committee l: Minimum sample 30% of total number of Executives. Aim is for 50% where smaller number of executives in CFUG Committee.

Name of researcher: _____ Date: _____

Name of Executive: _____ Designation: ____

1. General discussion what you feel about CF committee.
2. Awareness of CF process and policy:

(CF policy, rules regulation, operational plan & constitution etc. CFUG and committee)

- Selection process of members in your CFUG?
- Selection process of Executives in your CFUG?
- Role and responsibility of your designation in committee?
- Composition of your Executive committee?

7. CFUG assembly

- How you call the assembly?
- How you make decisions in of FUGC committee?
- What do you think about use of CFUG funds?
- Have other activities been suggested and not funded? If yes, why?

8. Indicators of scarcity observed in your CFUG of Forest products:

- Fuel wood. Timber. Fodder,
- Record keeping of product distribution from CFUGC committee.

9. Forest management and products distribution system

- What kind of forest management activities have been carried out since formation?
- How can forest be managed better for users' demands?
- How can product distribution system be improved?

10. Fund management

- What are your perceptions regarding the use of the CFUG fund?
- What are the main rural development activities initiated by CF fund?

11. Are there any problems exist

- During forest management?
- During forest product utilization?

C. Questionnaire 3rd set for Forest Officials

Survey Questionnaire for Forest Official in belonging CF

Forest Office: 2 in each in Office (Officer and Ranger/Forester)

Name of researcher: _____ Date: _____

Name of Respondent: _____ Designation: ____

Name of CFUG: ---------- Address: ----------

1. General discussion what you feel about the CF of your territory.

2. Awareness of the CF process and policy:

(CF policy, rules regulation, operational plan & constitution etc. CFUG and committee)

- Do you know the selection process of members in the CFUG?
- Do you know selection process of Executives in the CFUG?
- What are the role and responsibility of your office for the CFUG?

7. The CFUG assembly

- How you hear the assembly of the CFUG?
- How you know the decisions in the CFUG?
- What do you think about use of the CFUG funds for development activities?
- Have other activities can perform well through matching fund through your office budget?

8. Indicators of scarcity observed by your office in the CFUG Forest products:

- Fuel wood. Timber. Fodder,

9. Forest management and products distribution system in the CFUG

- What kind of forest management activities have been carried out since this CF formation?
- How can forest be managed better for users' demands by the CFUG?
- How can product distribution system be improved in the CFUG?

10. Fund management

- What are your perceptions regarding the use of the CFUG fund in the development?

- What are the main rural development activities initiated by CF fund in the CFUG?

11. Are there any problems exist
    - During forest management?
    - During forest product utilization?

D. Questionnaire 4th set for Local Government Officials (Ward/Palika)

Survey Questionnaire for Local level authority (Palikas Officials)

Local Government Committee: 3 in each Local Government (Ward chairman, Member & Official)

Name of researcher: _____ Date: _____

Name of Respondent: _____ Designation: ____

1. General discussion what you feel about CF of your ward.
2. Awareness of CF process and policy:

(CF policy, rules regulation, operational plan & constitution etc. CFUG and committee)

- Do you know the selection process of members in your CFUG?
- Do you know selection process of Executives in your CFUG?
- What are the role and responsibility of local government in CFUG?

7. CFUG assembly
    - How you hear the assembly of CFUG?
    - How you know the decisions in CFUG?
    - What do you think about use of CFUG funds for development activities?
    - Have other activities can perform well through matching fund through your Palika budget?
8. Indicators of scarcity observed in your palika (ward) from CFUG Forest products:
    - Fuel wood. Timber. Fodder,
9. Forest management and products distribution system
    - What kind of forest management activities have been carried out since formation?

- How can forest be managed better for users' demands?
- How can product distribution system be improved?

10. Fund management
    - What are your perceptions regarding the use of the CFUG fund in the development?
    - What are the main rural development activities initiated by CF fund collaborating with ward budget?
11. Are there any problems exist
    - During forest management?
    - During forest product utilization?

E. Questionnaire 5th set for Policy Maker Local /Province Government Officials)

Survey Questionnaire for higher level authority

Higher level authority Office: DoFSC-2, Province Ministry-2 and Province directorate-2

Name of researcher: _____ Date: _____

Name of Respondent: _____ Designation: ____

1. General discussion along with trends of formation, HH involvement and Utilization.

2. Awareness of the CF process and policy:

(CF policy, rules regulation, operational plan & constitution etc. CFUG and committee)

- How the selection process of members and executive committee in the CFUG?
- What are the role and responsibility of your office for the CFUG promotion?

7. The CFUG assembly

- Are CFUGs assembly conducting as per guideline provided by your office?
- Are CFUGs taking decisions well as operational plan of CFUG?
- What do you think about use of the CFUG funds for development activities?
- Have other activities can perform well through Province and Central level budget?

8. Indicators of scarcity observed by your in the CFUGs Forest products in respected sites

- Fuel wood. Timber. Fodder,

9. Forest management and products distribution system at CFUGs in the districts as well Nation

- What kind of forest management activities have been carried out since this CF formation?
- How can forest be managed better for users' demands by the CFUGs?
- How can product distribution system be improved in the CFUGs?

10. Fund management

- What are your perceptions regarding the use of the CFUGs fund in the development sector?
- What are the main rural development activities initiated by CFs' fund?

11. Problems and Challenges in CFUGs

- What are the problems and challenges faced in CFUGs?
- How can solve those problems and challenges?

Annex III

Data and Information of the studied Areas

1. Data and Information of the studied Provinces

Province	Total Land Area (ha)	Total Forest Area (ha)	% covered by Forests in Province	% covered by Forests in Country
Koshi	12,590,500	1,134,250	43.8 %	17.2%
Madhesh	2,966,100	263,630	27.3 %	4.0 %
Bagmati	2,030,000	1,090,880	53.7 %	16.5 %
Gandaki	2,150,400	817,290	38.0 %	12.4 %
Lumbini	2,228,800	974,380	43.7 %	14.7 %
Karnali	2,798,400	1,183,400	42.3 %	17.9 %
Sudur Paschim	1,953,900	1,146,110	58.7 %	17.3 %

(Source: Department of Forest Research and Survey, 2015)

Forest Area and Distribution in Nepal

- Forests, including other wooded lands, occupies a total of 6.61 million ha which is 44.74% of the total area of the country. Of this, forest covers 5.96 million ha and other wooded lands cover 0.65 million ha.
- Out of the total area of forest, 4.93 million ha (82.68%) lies outside protected areas and 1.03 million ha (17.32%) inside protected areas. Within protected areas, core areas and buffer zones contain 0.79 million ha and 0.24 million ha of forests, respectively.

Number of Trees and Growing Stock

- The total number of stems with diameter at breast height > = 10 cm estimated in the forest of Nepal is 2,563.27 million (429.93/ha).
- The estimated total stem volume with diameter at breast height >=10 cm is 982.33 million m3 (167.76 m3/ha) - *(Source: Department of Forest Research and Survey, 2015)*

Biomass and Carbon Stock

- The total above-ground air-dried biomass in the forests of Nepal is 1,159.65 million tones (194.51 t/ha)

• The total estimated carbon stock of Nepal's forests is 1,054.97 million tones (176.95 t/ha). Out of this, tree components (live, dead standing, dead wood and below ground biomass), forest soils, litter and debris constitute 61.53%, 37.80% and 0.67% respectively.

Community forests in Nepal, especially those managed sustainably, play a crucial role in carbon sequestration, storing significant amounts of carbon in biomass and soil, contributing to climate change mitigation. Overall, the carbon stock was highest in the community forest (176.8 t/ha) then in leasehold forest (155.18 t/ha) followed by the agricultural land (73.42 t/ha).

2. Data and Information of the studied Districts

a. Climatic zone and elevation of the studied Districts

District	Elevation Range			Remarks
	Bellow 1000 m	1000-2000 m	Above 2000 m	
Parbat	17.5 % Land	66.9 % Land	15.4 % Land	Hill
Palpa	51.6 % Land	47.4 % Land	-	Middle hill
Rupandehi	99.8 % Land	0.2 % Land	-	Terai

(Source: DFOs Parbat, Palpa and Rupandehi, 2020)

b. Physiological, Ecological and altitude of the studied CFs (Locations)

Parbat

Name of CF	Municipality	Altitude	Ecological zone	Physiography
Hampal	Jaljala	1000-3000 m	Temperate to sub-alpine	Hill to mountain
Chipleti	Kushma	1000-1200 m	Temperate	Mid-hill
Gannale	Phalebash	700-1100 m	Sub-tropical	Mid-hill
Khaharesalyan	Bihadi	700-1100 m	Sub-tropical	Mid-hill

(Source: DFO Parbat, 2020)

Palpa

Name of CF	Municipality	Altitude	Ecological zone	Physiographic region
Aghillipipal	Tansen	1000-1400 m	sub-tropical	Mid hill
Kuber	Bagnaskali	1000-1300 m	sub-tropical	Mid-hill
Jhiruban	Nisdi	800-1100 m	sub-tropical	Mid-hill
Khulkhule	Tinau	500-1000 m	sub-tropical	Terai-midhill

(Source: DFO Palpa, 2020)

Rupandehi

Name of CF	Municipality	Altitude	Ecological zone	Physiographic region
Charpala	Butwal	500-1500 m	Tropical-sub-tropical	Terai
M swablamban	Butwal	700-1000 m	Tropical	Terai
Rachana	Omsatiya	300-1200	Tropical	Terai

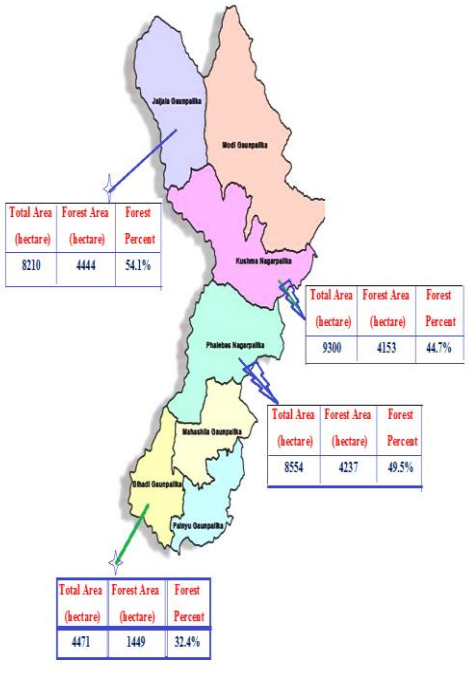
(Source: DFO Rupandehi, 2020)

c. Status and Location of the studied CFUGs

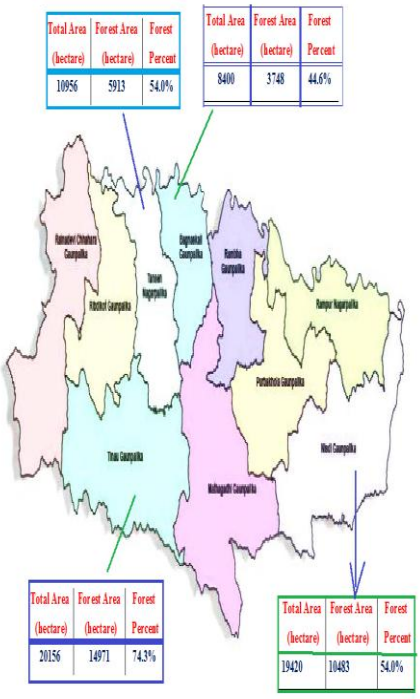
District	Status of CF	CFUG Name	Location	Palika Address
Parbat	Biggest Area	Khaharesalyan	Barra chaur	Bihadi Rural Municipality-2
	Smallest Area	Gannale	Thapathana	Phalebash Municipality-2
	Largest HH	Hampal	Salija/Lekhphat	Jaljala Rural Municipality-6
	Smallest HH	Chipleti	Khurkot	Kushma Municipality-2
Palpa	Biggest Area	Khulkhule	Dobhan	Tinau Rural Municipality-3
	Smallest Area	Aghillipipal	Telgha	Tansen Municipality-10
	Largest HH	Kuber	Yamgha	Bagnashkali R. Municipality-6
	Smallest HH	Jhirubash	Jhirubash	Nisdi Rural Municipality-3
Rupandehi	Biggest Area	Charpala	Butwal	Butwal Sub-metropolitan -12
	Smallest Area	Swablamban	Motipur	Butwal Sub-metropolitan -19
	Largest HH	Charpala	Butwal	Butwal Sub-metropolitan -12
	Smallest HH	Rachana	Padkhauli	Omsatiya Rural Municipality-5

(Source: DFOs Parbat, Palpa and Rupandehi, 2020)

Parbat



Palpa



Annex IV

Data and Information of the studied CFUGs

District	Name of CF	Forest area Ha	HH number in CFUG	Number of beneficiaries
Parbat	Khaharesalyan	362.00	580	2967
	Gannale	0.4	39	196
	Hampal	324	989	4587
	Chipleti	0.75	14	80
Palpa	Jhumsa Khulkhule	590.00	83	384
	Aghillipipal	01.00	51	272
	Kuber	81.78	486	2461
	Jhiruban	22.00	12	67
Rupandehi	Charpala	1621.50	7070	42000
	Swablamban Manohara	0.78	36	1984
	Charpala	1621.50	7070	42000
	Rachana	220	425	2398

Source: DFOs & CFUGCs 2020-2022

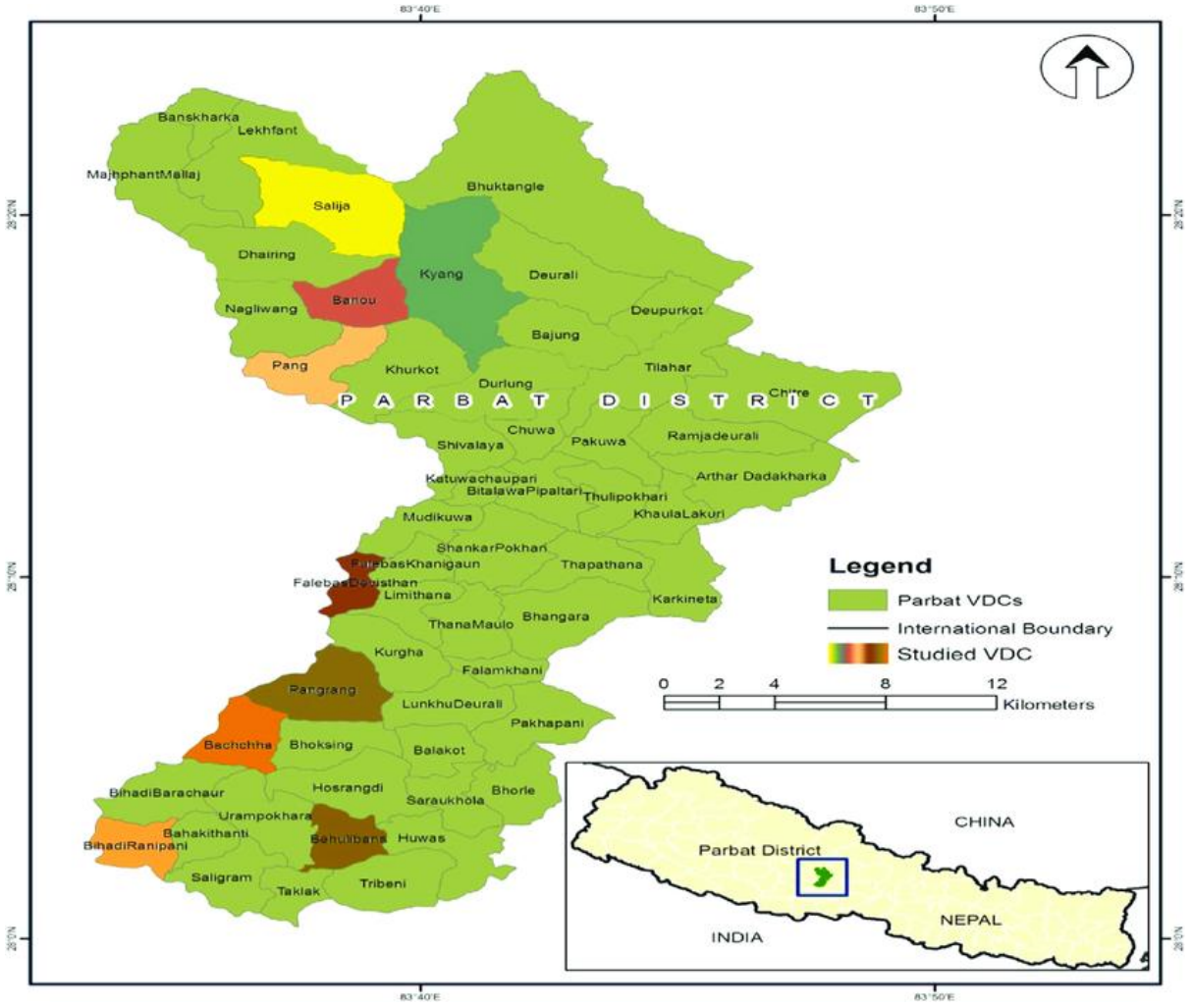
Parbat District

Parbat District is a hilly area of Nepal covering with an area of 494 km^2 (191 sq mi) and has a population (2001) of 157,826. Kusma as its district headquarters,

Geography and climate of the Parbat District

Parbat district has diversified geographical features. It extends from 28^0 00' 19" N to 28^0 23' 59" N latitude and 83^0 33' 40" E to 83^0 49' 30" E longitude

Climate Zone	Elevation Range	Percentage (%) of Area
Upper Tropical	300 to 1,000 meters (1,000 to 3,300 ft.)	17.8%
Subtropical	1,000 to 2,000 meters (3,300 to 6,600 ft.)	66.9%
Temperate	2,000 to 3,000 meters (6,400 to 9,800 ft.)	14.0%
Subalpine	3,000 to 4,000 meters (9,800 to 13,100 ft.)	1.4%



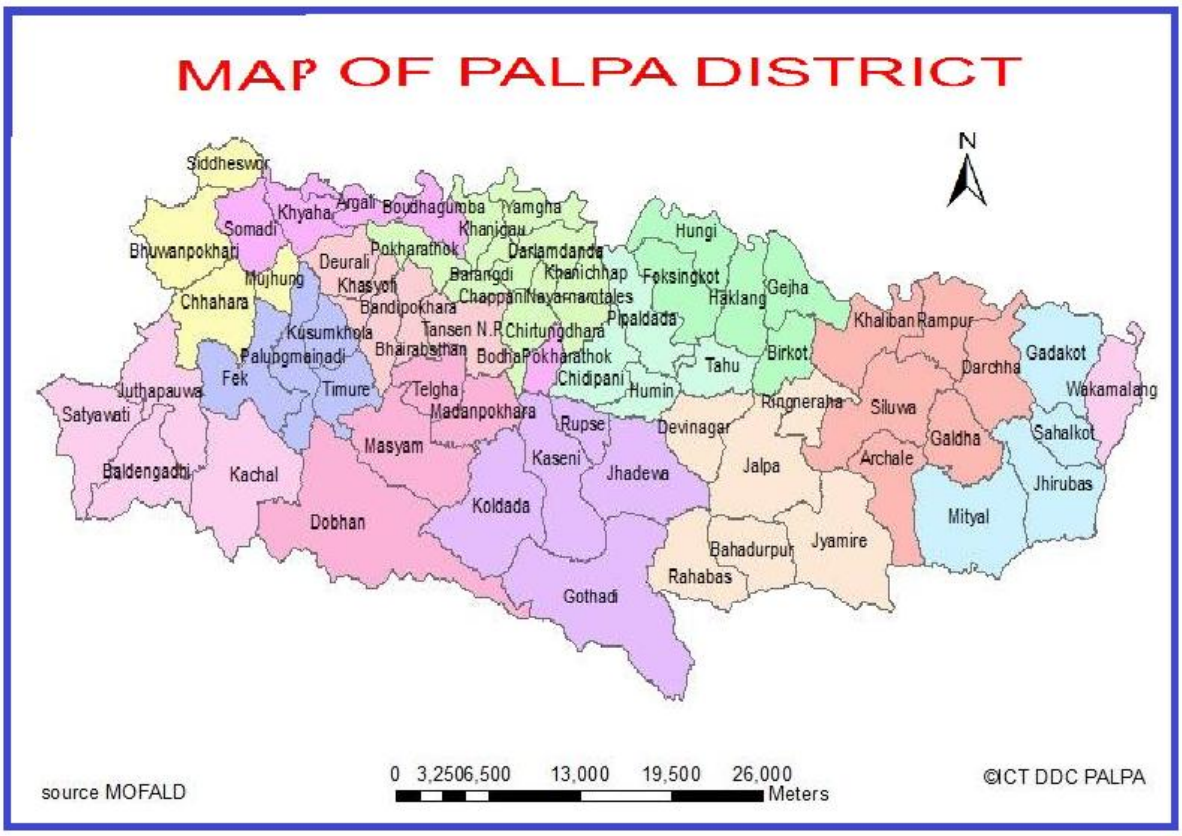
Palpa District

Palpa district, with Tansen as its headquarters, covers an area of 1,373 km2 (530 sq mi) and has a population (2021) of 245,027. Mahabharat Range near Tansen. The High Himalayas are barely visible in the snow and cloud in the district; Parbat District is a hilly area of Nepal covering with an area of 494 km2 (191 sq mi) and has a population (2001) of 157,826. Kusma as its district headquarters,

Geography and climate of the Parbat District

Parbat district has diversified geographical features. It extends from at 27º34" to 27º54" N and 83º15" to 84º22" E with an altitude ranging from 152 m to 1936 m above the sea level. It has unique physiography due to Churia and Mahabharat ranges.

Climate Zone[	Elevation Range	% of Area
Lower Tropical	below 300 meters (1,000 ft)	0.3%
Upper Tropical	300 to 1,000 meters (1,000 to 3,300 ft.)	51.3%
Subtropical	1,000 to 2,000 meters (3,300 to 6,600 ft.)	47.3%

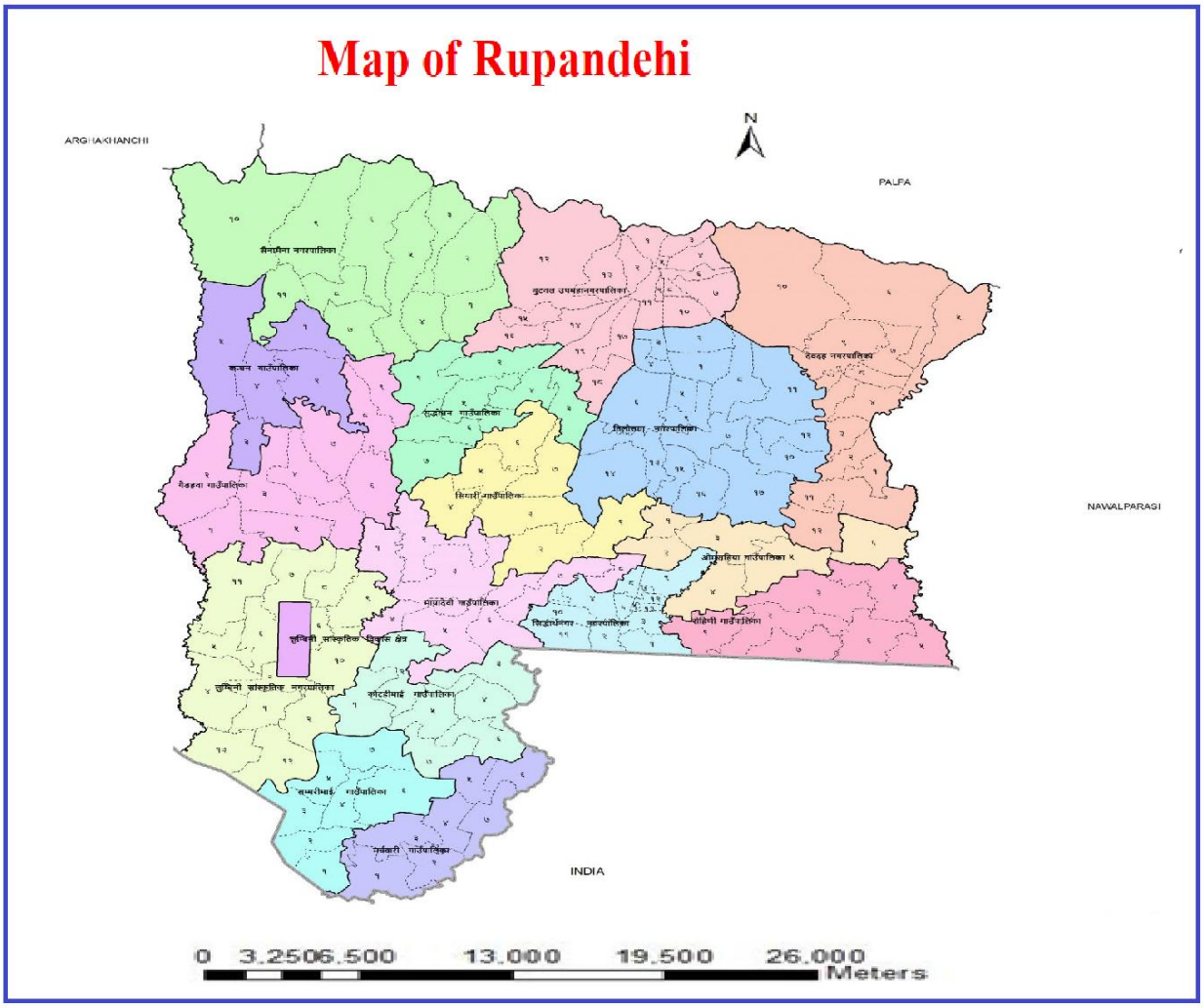


Rupandehi District

Rupandehi District covers an area of 1,360 km^2 (530 sq mi). The district headquarter is Bhairahawa.

Geography and climate of the Rupandehi District

Climate Zone	Elevation Range	Percentage (%) of Area
Lower Tropical	below 300 meters (1,000 ft)	89.3%
Upper Tropical	300 to 1,000 meters (1,000 to 3,300 ft.)	10.5%
Subtropical	1,000 to 2,000 meters (3,300 to 6,600 ft.)	0.2%



A. Information of Studied CFUGs.

Data and Information of the studied CFUGs

District	Name of CF	Forest area Ha	HH number in CFUG	Number of beneficiaries
Parbat	Khaharesalyan	362.00	580	2967
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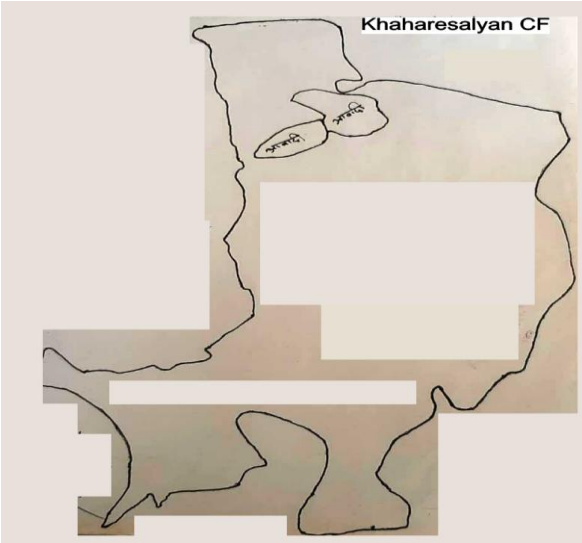
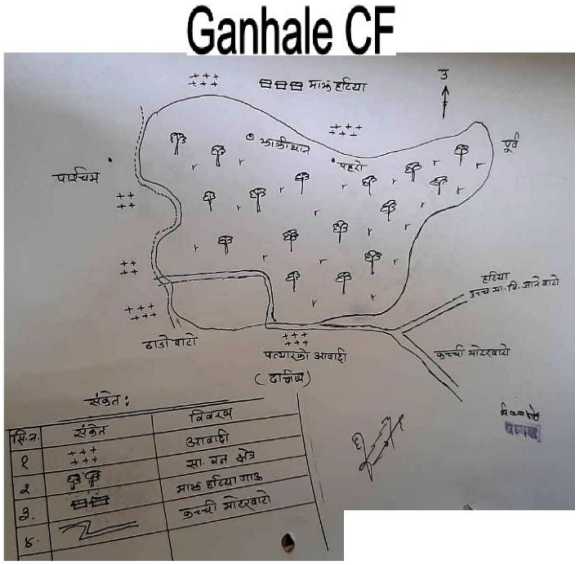
Palpa	Jhumsa Khulkhule	590.00	83	384
	Aghillipipal	01.00	51	272
	Kuber	81.78	486	2461
	Jhiruban	22.00	12	67
Rupandehi	Charpala	1621.50	7070	42000
	Swablamban Manohara	0.78	36	1984
	Charpala	1621.50	7070	42000
	Rachana	220	425	2398

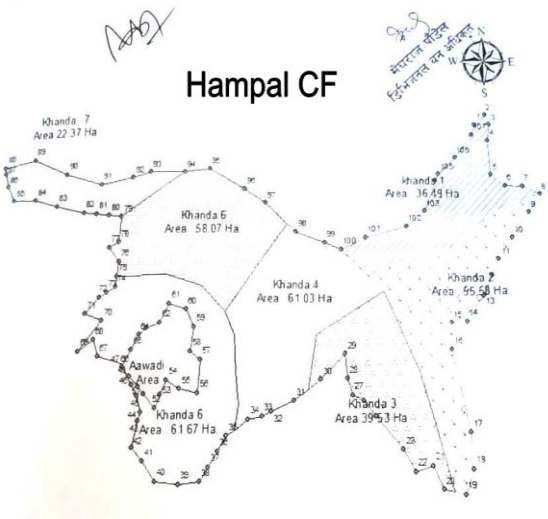
Source: DFOs & CFUGCs 2009-2020

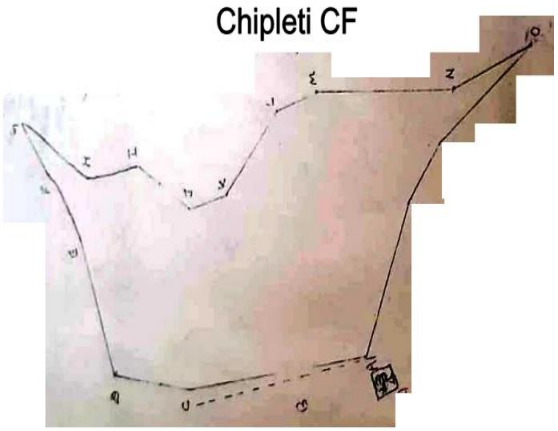
Study CFUGs maps of the Parbat District

Boundary map of studied CFs in the Parbat District









Study CFUGs maps of the Palpa District

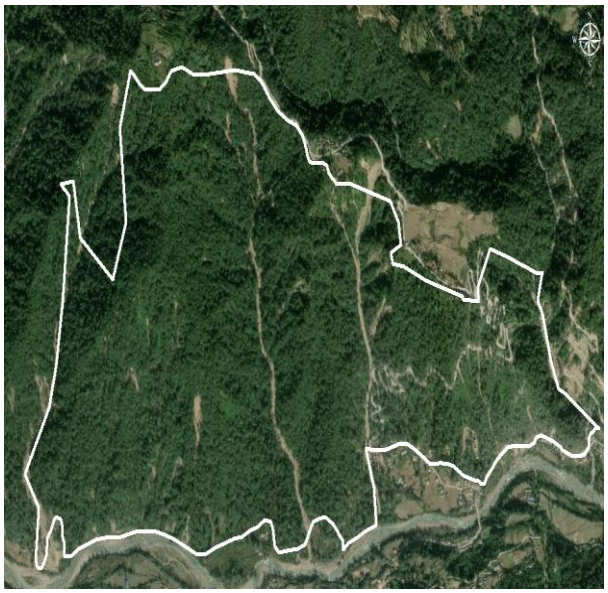
Boundary map of studied CFs in the Palpa District

Aghallipipal CF, Tansen-10

Kuber CF, Bagnashkali-6

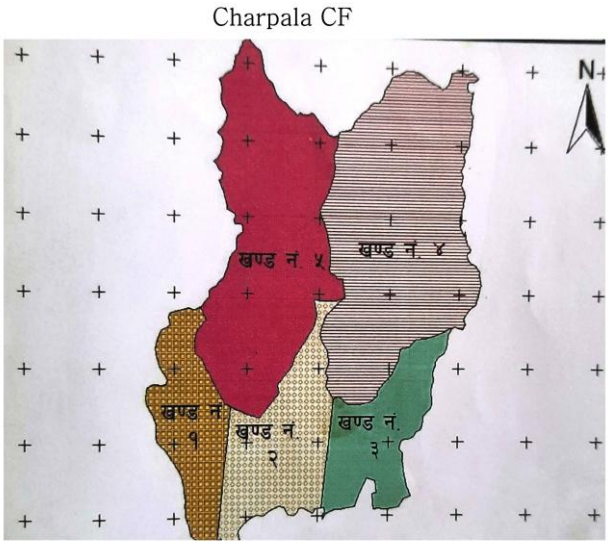
Jhiruban CF, Nisdi-3

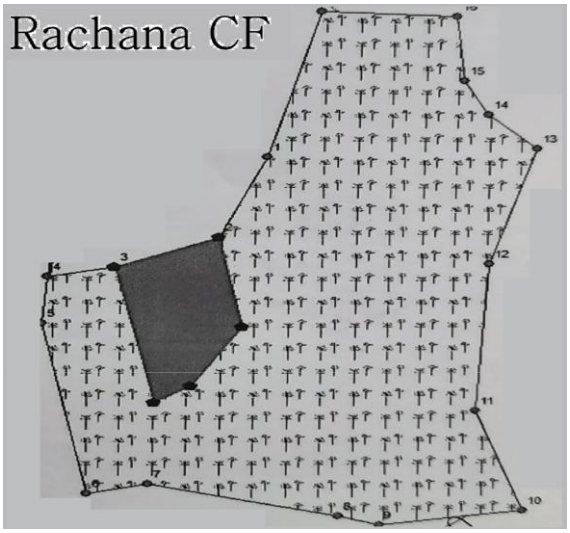
Jhumsa Khulkhule CF, Tinau-3

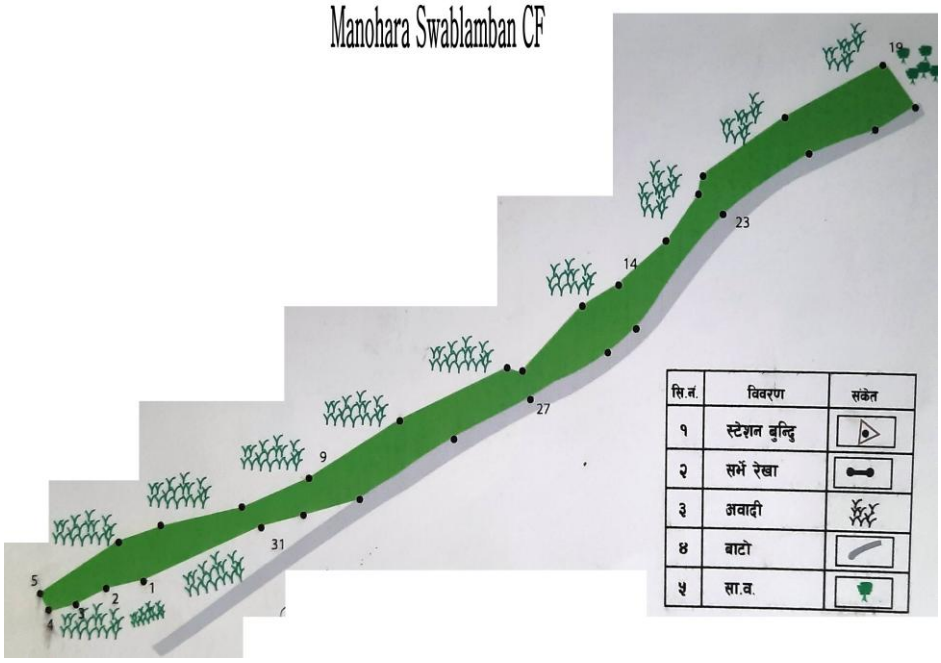


Study CFUGs maps of the Rupandehi District

Boundary map of studied CFs in the Rupandehi District







Annex V

Chronology of Forestry Policies with era and event in Nepal

Community forest management plays an important role in improving forest productivity, increasing forest products and ecosystem services, local livelihood, and local economy. The Government of Nepal, Ministry of Forests and Soil Conservation, Department of Forests and Soil Conservation has recognized community forest management as one of its priority programs in Nepal. Chronology of Forestry Policies with era and event in Nepal found as:

A. Era of the 1970s: Sustainable Forest management envisioned under Nepal's first national Forestry Plan formulated in 1976 (2033 BS).
B. Era of the 1980s: Master Plan for the Forestry Sector formulated in 1988 (2045 BS) for 20 years, emphasizes sustainable forest management in various forest management regimes.
C. Era of the 1990s: The Forest Act of 1993 (2049 BS) provisions the development of operational plans for implementation of forest management interventions.
D. Era of the 2000s: Forest Policy of 2000 (2057 BS) emphasizes sustainable forest management in the block forests of the Terai and Siwaliks. Implementation of sustainable forest management initiated supported by policy decisions following the fifth national workshop on community forestry 2009 (2065 BS).
E. Era of the 2010s: Nepal's twelfth and thirteenth three-year plans 2011-2013 (2067/68-2069/70 BS) and 2014-2016 (2070/71-2072/73 BS) respectively, prioritizes sustainable management of all types of forests, adopting scientific and participatory approaches to increase forest productivity and ecosystem services. Sustainable forest management recognized as a key pillar to achieve 'forestry for prosperity', a long-term vision of the Ministry of Forests and Soil Conservation formulated in 2013.Prioritization and implementation of silviculture based sustainable forest management recommended in the District Forest Officers' fifth national workshop in 2014 (2071 BS), as well as in the first national workshop on collaborative forestry in 2015 (2071 BS). Forestry Sector Strategy 2016 (2072 BS) targets to bring 50% of forests in the Terai and Siwalik, and 25% of forests in the mid-hills under sustainable forest management by 2025 (2081 BS). The first national silviculture workshop 2017

(2073 BS) concluded to implement silviculture based sustainable forest management in all types of forests in Nepal. The fourteenth three-year plan 2017-2019 (2073/74-2075/76 BS) prioritizes increase in forest productivity and forest products through participatory and sustainable forest management. Forest policy 2019 (2075 BS) prioritizes increase of forest productivity and production of forest produce through sustainable forest management.

F. Era of the 2020s: The fifteenth five-year plan 2020-2024 (2076/77-2080/81 BS) prioritizes significant increase in the contribution of forestry sector to national prosperity through optimum utilization of forest resources, sustainable forest management and entrepreneurship. Silvicultural operation refers to the silvilcultural treatments applied to cultivate and grow a tree or a forest crop. Common silvicultural operations include plantation, weeding, cleaning, pruning, thinning and felling.

The Forestry Sector Strategy 2016 (2072 BS.) has targeted to bring 50% of forests in the Terai and Siwalik, and 25% of forests in the mid-hills under sustainable forest management by 2025 (2081 BS.). In order to achieve the government's sustainable forest management targets, the participation, coordination and support of forest dependent local communities, forest user groups, stakeholders and conservation partners have been critical.

Nepal's 15th periodic plan 2020-2024 (2076/77-2080/81 BS.), prepared with a 25-year vision of 'Prosperous Nepal, Happy Nepali', also recognizes the forestry sector as an economically productive sector with sustainable forest management as a primary pillar. Meanwhile, sustainable forest management has also been recognized as vital in achieving the Ministry of Forests and Environment's vision of 'Forestry for Prosperity'.

Successful implementation of sustainable forest management therefore calls for uniformity in understanding among stakeholders and forest technicians. This study will help in transferring knowledge on diverse aspects of community forest management among stakeholders in the field, forest users, local resource persons and CFUGs.

Year		Event	Effect
(Autocratic era)	1925	Establishment of *Ban Jaanch Adda*	• First formal policy and administration
	1946 - 1950	1. Allocation of national forest to the Rana family members as 'Birta land'; 2. Clearance of the Terai Forest along the border with India for the purpose of settlement; and 3.Indigenous management system (group efforts) and traditional forest management (Talukdar) practice in the hills	1. Conversion of forest to agriculture land 2. Revenue generation 3.1 Protect in agricultural land 3.2 Fulfillment of basic needs for fuel wood, fodder and construction wood
(Post Rev. Era)	1957	Private Forest Nationalization Act	Indiscriminate cutting of forests Conversion of private forest into farm land in the Terai plains
(Panchayat era)	1961	Forest Act	• Categorization of forest • Forestry official empowered
	1967	Forest Conservation Act (Special Management Act)	• Judicial power to forestry officials • Law enforcement power reinforced
	1971	Forest Products Sales and Distribution Rules	• Simplify the forest products sale mechanism
	1973	National Parks and Wildlife Conservation Act	• Categorization of Protected Areas • Management of Protected Areas
	1974	National Parks and Wildlife Conservation Regulations	• Provision of Hunting Licenses • Management of Protected Areas
	1976	National Forestry Plan	• Recognition of people's participation in forest management • Concept of village 'Panchayat Forest'
	1977	*Amendment of Forest Act 1961*	Provision of 'Panchayat Forest' and 'Panchayat Protected Forest'

	1978	Panchayat Forest and Panchayat Protected Forest Regulation	• Handing over of national forest to village Panchayat (elected village body) • Formal recognition of rights of local people for forest management
	1982	Decentralization Act	• Authority to District and Village Panchayats • Promotion of User's Committee concept
	1982	Soil and Watershed Conservation Act	• Management of Protected Watersheds
	1982	King Mahendra Trust for Nature Conservation Act	• Management of Conservation Areas
	1984	Private Forestry Rules	• Promotion of Private Forests
	1987	Revision of PF and PPF Regulation 1978	Earning from 'Panchayat Forest' and 'Panchayat Protected Forest' channeled back to the concerned Panchayats
	1988	National Conservation Strategy	• Conservation strategy of the country
	1989	Master Plan for the Forestry Sector	• Initiation of program-approach in the forestry sector • Provision of user's committees for forest management • Detail planning and vision developed for each aspect of forestry development
(Democratic Era)	1993	Forest Act	• Extent of quasi-judicial authority of forestry officials reduced • CFUG empowered for forest management • Act oriented towards people-based management
	1993	Nepal Environment and Policy Action Plan	• Polices related to environmental sectors developed

	1995	*Forest Regulations*	• Legalization of the process of Community Forestry • Process of Community forestry outlined • Forestry staff's role changed from custodial to facilitation
	1995	*Agriculture Perspective Plan*	• Long term plan of agriculture sector developed
	1999	Revision of Forest Act, 1993	• Control mechanism for violation of Operational Plan by CFUGC member developed • Provision for spending the CFUG fund in various developmental activities
	2000	1.Revision of CF Directives, 1994 2. Revision of MPFS, 1988	1.Provision for compulsory inclusion of growing stock of CF and annual allowable cut in Operational Plan 2.Collaborative management of national forests on the basis of landscape planning approach
	2002	Revised Forest Policy	• Management of degraded and open forest areas in the Terai and Inner-Terai regions
	2002	Leasehold Forestry Policy	• Provision of basis for the handing over of national forests to the private sector in the form of leasehold forests
	2002	Nepal Biodiversity Strategy	• Strategies developed to conserve Nepal's Biodiversity
	2002	Leasehold Forest Policy	• Simplified the process of handing over Leasehold Forests • Criteria developed for handing over Leasehold Forests
	2003	National Wetland Policy	• Categorization of wetlands for better management

	2004	Herbs and NTFP Development Policy	• Provisions for conservation, management and utilization of NTFPs
(Post Democratic era)	2012	National Wetland Policy	• Community Wetlands Management and Utilization
	2015	Forest Policy	• Emphasis on forest and prosperity through forest product enhancement
	2019	Forest Act	• First forest act after federalization and handed over majority of management to the provincial government
	2019	National Forest Policy	• Policy envisaged for community prosperity through community forestry management and enhancement of sustainable forest management

Annex VI

Caparison of Development Indicator Ranks Description of the study districts

Development Indicator Rank

Indicators	Parbat		Palpa		Rupandehi	
	Rank	Data Value	Rank	Data Value	Rank	Data Value
Overall Composite Index	17	NA	7	NA	8	NA
Access to improved source of drinking water	29	84.5	22	86	1	97.4
Access to toilet facility	9	67.7	8	69.4	17	59.8
Proportion of households having electricity	45	25.5	12	53.6	8	61.8
Proportion of households using solid fuel for cooking	39	91.4	9	63.8	4	44.8
Proportion of households having radio facility	10	68.3	12	66.6	55	47.8
Telephone line per household population	52	1.17	22	3.72	5	18.18
Road density *(length/sq. km area)*	44	0.103	21	0.22	19	0.23
Proportion of urban population	52	0.05	34	7.6	11	18.1
Forest User Households	11	84.82	24	63.45	52	19.64

Source: CBS 2020-022

Annex VII

Forest condition description of the studied CFUGs

Name of CF	Forest Condition		
	Before Handover	**Recently**	**Impression outcomes**
Khaharesalyan	Unmanaged with Haphazard condition	Managed with Very good condition	Excellent
Gannale	Degraded and unmanaged	Satisfactory and being managed	Satisfactory
Hampal	Poor and unmanaged	Good and being managed, need support	Somewhat good
Chipleti	Poor and Haphazard condition	Not good and need state support	Poor and haphazard
Jhumsa Khulkhule	Unmanaged with Haphazard condition	Managed with Very good condition	Excellent
Aghillipipal	Degraded and unmanaged	Satisfactory and being managed	Satisfactory
Kuber	Poor and unmanaged	Good and being managed, need support	Somewhat good
Jhiruban	Poor and Haphazard condition	Not good and need state support	Poor and haphazard
Charpala	Unmanaged with Haphazard condition	Managed with Very good condition	Excellent
Swablamban Manohara	Degraded and unmanaged	Not good and need state support	Poor and haphazard
Charpala	Unmanaged with Haphazard condition	Managed with Very good condition	Excellent
Rachana	Poor and Haphazard condition	Satisfactory and being managed	Satisfactory

Source: Analysis of Focal group discussion, studied CFs 2015-2021

Annex VIII

Forest status (Quality) condition description of the studied CFUGs

Name of CF	Forest Quantity and its Quality		
	Before Handover	**Recently**	**Outcomes / Impression**
Khaharesalyan	Degraded and unhealthy, Difficult to collect fuelwood, fodder and timber	Very Good quality with healthy forest, easily getting Forest goods as required	Very well
Gannale	Degraded and unhealthy, Difficult to collect fuelwood, fodder and timber	Good quality with healthy forest, Getting Forest goods normally	Improving
Hampal	Degraded and unhealthy, Difficult to collect fuelwood, fodder and timber	Improving quality with normal forest, Nominal Forest goods as required	Good
Chipleti	Degraded and unhealthy, Difficult to collect fuelwood, fodder and timber	Not so good quality with degraded forest, Getting minimum Forest goods	No impression
Jhumsa Khulkhule	Degraded and unhealthy, Difficult to collect fuelwood, fodder and timber	Very Good quality with healthy forest, easily getting Forest goods as required	Very well
Aghillipipal	Degraded and unhealthy, Difficult to collect fuelwood, fodder and timber	Good quality with healthy forest, Getting Forest goods normally	Improving
Kuber	Degraded and unhealthy, Difficult to collect fuelwood, fodder and timber	Improving quality with normal forest, Nominal Forest goods as required	Good
Jhiruban	Degraded and unhealthy, Difficult to collect fuelwood, fodder and timber	Somewhat Good quality with degraded forest, Getting Forest goods as normal	No impression
Charpala	Degraded and unhealthy, Difficult to collect fuelwood, fodder and timber	Very Good quality with healthy forest, easily getting Forest goods as required	Very well

Swablamban Manohara	Degraded and unhealthy, Difficult to collect fuelwood, fodder and timber	No so good quality; No Forest goods	Improving
Rachana	Degraded and unhealthy, Difficult to collect fuelwood, fodder and timber	Improving forest quality; Getting nominal forest goods	Good

Source: Analysis of Focal group discussion, studied CFs 2015-2021

Annex IX

Description of CFUGs contribution in the development sector

From the study we have found in the improvements in livelihood as well forest condition through CF utilization as:

Sector	Indicator	Outcomes by CF activities
Social Dev	• Awareness • Leadership • Empowerment	✓ Local people aware on education, health and sanitation by trainings & campaigns. ✓ Leadership has developed in the local people by active participants in CFUGs' activities. ✓ Local people empowered in social development activities.
Economic Dev	• Entrepreneurship • Occupations • Market	✓ Local people have got good skill in income generation by IG trainings & exposures. ✓ Vegetables, farming and animal keeping occupation enhanced in societies. ✓ By own enterprise local people created market to sell their products.
Forest Dev	• Awareness • Trainers	✓ Local people aware on forest and environment by trainings & exposures. ✓ Trainers' skill on forest have enhanced for being trainers among the local people by TOT.
Infrastructure Dev	• Local Dev • Access	✓ Local level development going on in the society by CF fund utilization. ✓ Getting access in road/trails, drinking water, health, education and market by used CF funds.

Source: Analysis of the data and information of the studied CFs 2015-2021

Annex: X

Description of CFUGs Issues with appropriate solve mechanisms

From the study we have found some issues to be addressed as attributes:

Type of the issues	Description	Solving advices
Policy Issue	Country doesn't have long term national land use policy, handing over government forest are for other purposes.	State/GoN have to make specific policies for forest, environment and climate change sector.
Legal Institutional Issue	Existing structuring of the forestry sector is not working well in sustainable /scientific forest management.	State/GoN have to restructure existing legal institution of the forestry sector in scientific manner.
Participation Issues	Participation of poor, disadvantaged as well deprived groups in CF is very low	State/GoN have to make specific guidelines toward poor, disadvantaged and deprived groups
Socio economic issue	Underestimation of forestry sector contribution in national economy, Heavy dependency of poor people on forest resources, Low return on investment from the forest sector.	CFUGs have to make specific strategy along with sufficient budget in forestry sector.
Technical/HRM issue	Limited human resources, Poor and weak forest research activities, poor and weak database system on forest resources.	State/GoN have to provide technical staffs in CFs with specified scientific manner.
Environmental Issues	Principle of payment for Environmental Services (PES) is not considered (Biodiversity conservation, Carbon sequestration, Soil and watershed conservation etc.)	State/GoN need to intervention for PES application.
Management issue	Unsustainable harvesting and collection of NTFP resources, Conflict/disputes in the management of CFs, CF Operational Forest Management Plan has not been implemented.	State/GoN have to immediate action to implement Operational Forest Management Plan for scientific forest management implementation.
Utilization issues	Elite groups in the CFUGs dominate decision-making and often neglect the	State/GoN have to make specific guideline for deprive and illiterate

	interest of other deprive people.	people affiliating in CFUGs.
CFUGs' faced Issues	Elite groups domination, lack of efforts in smaller CFUGs, double taxation in bigger CFUGs and contradictory state policies.	State has to make specific guideline for deprive CFUGs, merger policy need develop to smaller CFs, one door/single tax mechanism have to develop and policies should be reliable/scientific.

Source: Analysis of the data and information of the studied CFs 2015-2022

Annex: XI

Field visit schedule and performed activities during studied periods

a. 1st Field visit

Date	Place	Conducted activities	Outcomes
2065/01/10 to 18	Rupandehi Headquarter Bhairhawa	Meeting with DFO staffs at DFO Office, Bhairhawa, data and information collected and screening accordingly sites	Community forest data and information gathered, biggest and smallest areas as well households involved CFUGs were screened.
2065/02/05 to 13	Palpa Headquarter Tansen	Meeting with DFO staffs at DFO Office, Tansen, data and information collected and screening accordingly sites	Community forest data and information gathered, biggest and smallest areas as well households involved CFUGs were screened.
2065/02/21 to 25	Parbat Headquarter Kushama	Meeting with DFO staffs at DFO Office, Kushma, data and information collected and screening accordingly sites	Community forest data and information gathered, biggest and smallest areas as well households involved CFUGs were screened.

I went to study areas (district), where some brief made with DFO staffs on my research. DFO deputed as officer (BIKASH PANT) where I collected CFUGs data and information. After collection all data I made screening as per my objectives. Tabulated all data and information for conform my study sites.

District / CFUGs	By the screening, the following CF selected	Area hectare	HH number	Name of CF selected for study
Rupandehi has 107 number of CFUGs	Largest forest cover area	2010.50	7070	Charpala
	Smallest forest cover area	01.45	35	M Swablamban
	Biggest size in HHs involved	2010.50	7070	Charpala
	Smallest size in HHs involved	01.47	18	Rachana
Palpa has	Largest forest cover area	343.40	107	Khulkhule

708 number of CFUGs	Smallest forest cover area	01.10	45	Aghillipipal
	Biggest size in HHs involved	137.73	621	Kuber
	Smallest size in HHs involved	25.54	12	Jhirubash
Parbat has 385 number of CFUGs	Largest forest cover area	362.00	506	Khaharesalyan
	Smallest forest cover area	0.4	39	Gannale
	Biggest size in HHs involved	324	998	Hampal
	Smallest size in HHs involved	0.75	14	Chipleti

During this 1st field visit in the study areas, some discussion and interaction made with CFUGs members and local people on finding of the study as well compilation of their questionnaires. Some Focal Group Discussions made with CFUG's executive committee and DFO officials on finding of the study.

b. 2nd field visit

After data and information collection, made tabulation and analysis of those data and information as per research goals. Then again i went to the study sites for data verification and questionnaires development. Along with finding discussion made with executive committees' members and concern forest officials, some variables used to collect information and questionnaires were distributed to the CFUGs' members and forest officials as:

Date	Place	Conducted activities	Outcomes
2067/07/06 to 13	Rupandehi	Meeting with DFO staffs at DFO Office, Bhairhawa, discussion made on CFUGs status and study draft report. Some queries clarified by DFO staffs.	Discussion made on preliminary study reports where some inputs found by DFO staffs on the report.
2067/07/15 to 20	Palpa	Meeting with DFO staffs at DFO Office, Tansen, discussion made on CFUGs status and study draft report. Some queries clarified by DFO staffs.	Discussion made on preliminary study reports where some inputs found by DFO staffs on the report.

2067/07/22 to 25	Parbat	Meeting with DFO staffs at DFO Office, Kushama, discussion made on CFUGs status and study draft report. Some queries clarified by DFO staffs.	Discussion made on preliminary study reports where some inputs found by DFO staffs on the report.

District	Date	Name of CF	Status of CF	FD
Rupandehi	2067/07/08	Charpala	Largest forest cover area	Discussion with EC
	2067/07/09	M Swablamban	Smallest forest cover area	Discussion with EC
	2067/07/10	Rachana	Smallest size in HHs involved	Discussion with EC
Palpa	2067/07/16	Khulkhule	Largest forest cover area	Discussion with EC
	2067/07/17	Aghillipipal	Smallest forest cover area	Discussion with EC
	2067/07/18	Kuber	Biggest size in HHs involved	Discussion with EC
	2067/07/19	Jhirubash	Smallest size in HHs involved	Discussion with EC
Parbat	2067/07/25	Khaharesalyan	Largest forest cover area	Discussion with EC
	2067/07/26	Gannale	Smallest forest cover area	Discussion with EC
	2067/07/27	Hampal	Biggest size in HHs involved	Discussion with EC
	2067/07/28	Chipleti	Smallest size in HHs involved	Discussion with EC

During this 2nd field visit in the study areas, some discussion and interaction made with CFUGs members and local people on finding of the study as well compilation of their questionnaires. Some Focal Group Discussions made with CFUG's executive committee and DFO officials on finding of the study.

c. 3rd field visit

After some years (delay) again I went to study sites/field for data and information re-collection, again made tabulation and analysis of those data and information as per sets research goals. Then again i went to the study sites for data update with some verification and questionnaires development. Along with finding discussion made with executive committees' members and concern forest officials, some variables used to re-collect information and questionnaires were distributed to the CFUGs' members and forest officials as:

Date	Place	Conducted activities	Outcomes
2078/06/19 to 23	Rupandehi Butwal Butwal Omsatiya	Meeting with DFO staffs at DFO Office, Bhairhawa, recent data and information collected and updated previous data and information with questionnaires in respective fields. 2078/06/19 Charpala CFUG 2078/06/21 M Swablamban CFUG 2078/06/23 Rachana CFUG	Updated the community forest data and information in the study. Distributed questionnaires and collected.
2078/06/11 to 16	Palpa Tansen Nisdi Bagnashkali Tinau	Meeting with DFO staffs at DFO Office, Tansen, recent data and information collected and updated previous data and information with questionnaires in respective fields. 2078/06/11 Aghillipipal CFUG 2078/06/13 Jhirubash CFUG 2078/06/15 Kuber CFUG 2078/06/16 Khulkhule CFUG	Updated the community forest data and information in the study. Distributed questionnaires and collected.
2078/06/03 to 10	Parbat	Meeting with DFO staffs at DFO Office, Kushama, recent data and information collected and	Updated the community forest data and information in the study. Distributed

	Bihadi Phalebash Jaljala Kushma	updated previous data and information with questionnaires in respective fields. 2078/06/3 Khaharesalyan CFUG 2078/06/5 Ganhale CFUG 2078/06/7 Hampal CFUG 2078/06/9 Chipleti CFUG	questionnaires and collected.

During this 3rd field visit in the study areas, discussion and interaction made with CFUGs members and local people with some questionnaires distributed. Parallel, some Focal Group Discussion made with CFUG's executive committee and DFO officials.

d. 4th field visit

After 9 months of the 3rd visit again, I went to study sites/field for data and information valediction through interaction and focal group discussion. To valediction a table prepared where analysis of those data and information as per sets research goals and objectives. The developed questionnaires were distributed and filled by stakeholders then went to Kathmandu for desk works. With consultation Professors (Supervisor and co-supervisor) the outcomes / findings of the study were prepared. Questionnaires were distributed to the CFUGs' members and forest officials according as:

Date	Place	Conducted activities	Outcomes
2078/12/07 to 10	Rupandehi	Meeting with DFO staffs at DFO Office, Bhairhawa, recent data and information collected and updated previous data and information in respect CFUGs.	Updated the community forest data and information in the study.
2078/12/12 to 15	Palpa	Meeting with DFO staffs at DFO Office, Tansen, recent data and information	Updated the community forest data and information in the study.

		collected and updated previous data and information.	
2078/12/17 to 22	Parbat	Meeting with DFO staffs at DFO Office, Kushama, recent data and information collected and updated previous data and information.	Updated the community forest data and information in the study.

During this 4th field visit in the study areas, some discussion and interaction made with CFUGs members and local people on finding of the study as well compilation of their questionnaires. Some Focal Group Discussions made with CFUG's executive committee and DFO officials on finding of the study.

e. 5th field visit

After one year again I went to study sites/field for data and information rectification and questionnaires outcomes, again made discussion on the tabulated and analysed of those data and information as per sets research goals. Then again i went to the study sites to data update with some verification and questionnaires outcomes. Along with finding discussion made with executive committees' members and concern forest officials, some variables rectified to finalize the field data and information and back to Kathmandu to discuss with supervisor and co-supervisor.

Date	Place	Conducted activities	Outcomes
2079/02/11 to 17	Rupandehi	Meeting with DFO staffs at DFO Office, Bhairhawa, discussion made on the draft results and finding of the study. Some inputs made during FG discussion.	Focal group discussion (FGD) made on the prepared draft results/finding of the study. Some inputs made during FG discussion, which were incorporated in the report.
2079/02/19 to	Palpa	Meeting with DFO staffs at	Focal group discussion (FGD)

23		DFO Office, Tansen, discussion made on the draft results and finding of the study. Some inputs made during FG discussion.	made on the prepared draft results/finding of the study. Some inputs made during FG discussion, which were incorporated in the report.
2079/02/25 to 28	Parbat	Meeting with DFO staffs at DFO Office, Kushama, discussion made on the draft results and finding of the study. Some inputs made during FG discussion.	Focal group discussion (FGD) made on the prepared draft results/finding of the study. Some inputs made during FG discussion, which were incorporated in the report.

Source: Interviews with the DFO office s of Palpa, Parbat and Rupandehi, 2021; FDGs, 2022.

During this 5th field visit in the study areas, qualitative and quantitative data were updated with consultation of CFUGs members and local people on finding of the study.

Recent progress report of CFUGs and monitoring reports of DFOs were reviewed where some updated information and lesson learnt of the reports were incorporated in dissertation.

Some photographs during research Studied

Field in Rupandehi with CFUG Members and DFO ⇩

Field in Palpa with CFUG Members and DFO ⇩

Field in Parbat with CFUG Members and DFO ⇩

Some photographs on CFUGs activities accordance with research

Community Forests provide numerous benefits that improve the livelihoods of Community Forest User Groups by offering institutional development as well goods as daily needs.

Institutional development & good governance In CFUGs

Forest Good In CFUGs

Some photographs on CFUGs activities accordance with research

Community Forest provide numerous benefits that improve the livelihoods of Community Forest User Groups by offering capacity building on plantation and conservation services.

Capacity & Leadership, Source of drinking water, Fresh air, Greenery & Soil/Land prevention are the key benefits of the CFUGs from Community Forest

वायो इन्जिनियरिङ्ग मार्फत भू-संरक्षण

ता.न.पा.-९, पाल्पा

बगनासकाली-३, पाल्पा

ता.न.पा.-५, पाल्पा

रिचार्ज पोखरी

Health & Education, Hygiene & Sanitation, Infrastructures and Capacity building for IGA are the major benefits of the CFUGs from Community Forest

Community Forest provide numerous benefits that improve the livelihoods of Community Forest User Groups by offering health, sanitation, education and ecosystem services.

Health care

Education

Eco-tourism

Irrigation

Recharge pond

Water Tank

Fencing

Building

Community Forest provide numerous benefits that improve the livelihoods of Community Forest User Groups by offering capacity building on silviculture operation.

Silviculture Operation carrying out in the CFs

Cleaning

Plantation

Tree felling & Cutting

Logging

Storage

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