

**CONTRIBUTION OF COMMUNITY FORESTRY
ON LOCAL LIVELIHOOD: A Case of Ambote
Singhadevi Community Forest, Irkhu VDC, Sindhupalchowk
District, Nepal**

A Thesis Submitted to
The Central Department of Rural Development
Tribhuvan University

In Partial Fulfilment of the Requirements for the Award of Degree of the
Master of Arts (M.A)
In
Rural Development

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April, 2017

DECLARATION

I hereby declare that the thesis entitled “**Contribution of Community Forestry on Local Livelihood: A Case Study of Ambote Singhadevi Community Forest, Sindhupalchowk District, Nepal**” submitted to the Central Department of Rural Development, Tribhuvan University, is entirely my original work prepared under the guidance and supervision of my supervisor. I have made due acknowledgements to all ideas and information borrowed from different sources in the course of preparing this thesis. The results of this thesis have not been presented or submitted anywhere else for the award of any degree or for any other purpose. I assure that no part of the content of this thesis has been published in any form before.

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RECOMMENDATION

This is to certify that **Mr. Arbin Rai** has completed this thesis work entitled **“Contribution of Community Forestry on Local Livelihood: A Case Study of Ambote Sindhadevi Community Forest, Sindhupalchowk District, Nepal”** as a partial fulfilment of the requirements of M.A in Rural Development under my supervision and guidance. To my knowledge, this research has not been submitted for any other degree, anywhere else.

I therefore, recommend the thesis for acceptance and approval.

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APPROVAL LETTER

This thesis entitled “**Contribution of Community Forestry on Local Livelihood: A Case Study of Ambote Singhadevi Community Forest, Sindhupalchowk District, Nepal**” submitted by “**Mr. Arbin Rai**” is examined and accepted as a partial fulfilment of the requirements of M.A. in Rural Development.

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ABSTRACT

Community forests have existed in their modern form in Nepal since 1987, when the government began a phased handover of state-owned forest to communities. The government hoped that this would be an incentive for communities to conserve and restore what were by that point heavily degraded forests. Under this theme, Ambote Singhadevi, Community Forest which cover an area of 50.128 hectares and located in Irkhu VDC, Ward no. 7 of Sindhupalchowk District was handed over to community in July 2004 AD. Since the handover of the forest, there has been significant change in greenery as well as on livelihood of the local people who were dependent upon forest and forest products for their daily needs.

The main objective of the study entitled “**Contribution of Community Forestry on Local Livelihood: A Case of Ambote Singhadevi Community Forest, Sindhupalchowk**” was to assess the status of socio-economic condition, adopted forest management strategies and its contribution on livelihood of forest dependent people. Livelihood assessment was determined using “Sustainable Livelihood Framework Guidance Sheet” prepared by DIFID.

Assessment of livelihood on forest dependent community was based on field observation, Key Informant Interview and Focus Group Discussion where judgmental scoring method was applied. Questionnaire for which was developed on the basis of Sustainable Livelihood Framework Guidance Sheet. The total average scores for five livelihood capitals namely human, physical, social, financial and natural capitals which were used to assess the livelihood were found to be 1.765, 1.617, 2.361, 2.042 and 2.702 respectively. The result illustrated that the forest under study had significantly contributed to enhance the condition of human, social and natural capitals. The contribution was noticeable in terms of physical capital but the condition of financial capital was found to be dissatisfactory.

Key Words: *Community Forest, Livelihood Capitals, Forest Management*

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ABBREBATION AND ACRONYMS

CF	Community Forest
CFD	Community Forestry Division
CFUGs	Community Forest User Groups
DADO	District Agriculture Development Office
DDC	District Development Committee
DFID	Department for International Development
DoF	Department of Forest
FAO	Food and Agriculture Organization
FECOFUN	Federation of Community Forest Users Nepal
FGD	Focus Group Discussion
GIS	Geographical Information System
GoN	Government of Nepal
HH	House Hold
ICIMOD	International Centre for Integrated Mountain Development
IGAs	Income Generation Activities
KII	Key Informant Interview
Kg/m ²	Kilogram per meter square
NTFPs	Non-Timber Forest Products
SLA	Sustainable Livelihood Approach
TU	Tribhuvan University
UG	User Group
VDC	Village Development Committee

CHAPTER 1: INTRODUCTION

1.1 Background

1.1.1 An Overview of Community Forestry in Nepal

Community forestry is a part of the national forest that is legally handed over to the user groups for the development, conservation and utilization for the collective interest. In other words, community forest is a participatory approach in which control over forest (management, decision making, implementation and benefit sharing) goes to local people and forest resource are managed under approved Forest Operational Plan (FOP) led by FUGs. The Community Forestry Program has significantly contributed towards improving the forest condition, utilizing democratic process in decision making, providing livelihood option and promoting local development activities (Acharya 2002; Kanel 2004).

In Nepal, the Forest Act 1993 defines Community Forestry as the part of National Forests, which has been handed over to the Forest Users' Group (FUGs) by the District Forest Officer (DFO) for development, protection, utilization and management including independent authorization of sale and distribution of forest product according to the Operational Plan. Community Forestry came into practice in the late 1970s when the development strategies of the 1950s and 1960s, which focused on industrial development, were being criticized for overlooking rural development and were not meeting the needs of the rural poor. However, forest depletion and deforestation rate could not be controlled as the state could not enforce rules regarding the management of forest (Kanel and Dahal, 2008). As a result of institutional failure, a newer concept of Participatory Approach of Forest Management was introduced in Nepal and local people got participation in forest management only during 1970s with a view to mitigate forest cover loss.

Even National Forestry Plan (NFP, 1976) try to integrate local in forest management but unable to provide any consideration to livelihood needs and unable to decentralize any authority to local people and could not sustain (Acharya, 2002). In 1982, only after the enforcement of Decentralization Act, local communities were empowered which shows a remarkable shift from state-centric to community based participatory approach (Bhattacharya and Basnyat, 2005).

After a long period of inadequate practice in conservation of precious natural resource, it was realized by the Government and politicians that it is impossible to protect and manage the forest resource without involving and support of local people (Mansuri and Rao, 2004) and hence to minimize this problem, community forest concept was established in Nepal which become world renowned management system for its successful model of community-based forest management (Pokharel and Suvedi, 2007). Community forestry is not a technology. It is a process of social change that requires the continuous participation of whole communities in planning and problem solution and requires peoples to shift from individualistic to co-operative state of mind (Eckhlom, 1978).

The Community Forestry Program in Nepal comprises a set of policy and institutional innovations that empower local communities to manage forest for livelihoods, along with enhancing conservation benefits (Ojha et al. 2009). The program was launched in the mid-1970s as part of an effort to limit the widely perceived crisis of Himalayan forest degradation, when the government of Nepal concluded that active involvement of local people in forest management was essential for forest conservation in the country (Ojha et al. 2009). Nepal's Community Forest Program innovations encompass a well-defined legal and regulatory framework, participatory institutions and benefits sharing mechanisms, community-based forestry enterprises and biodiversity conservation strategies (Ojha et al. 2009). The program is considered a global innovation in the field of participatory and program evolution usefully illustrates a path towards meeting the twin goal of conservation and poverty alleviation (Pokharel et al. 2007; Kanel and Dahal, 2008).

With the assistance from the World Bank, community forestry projects in Nepal began officially in the hills and in some Terai district in the late 1970s. It involves the governance and management of forest resource by communities themselves in collaboration with government and other stakeholders to formulate particularly in addressing local livelihood and abate environmental degradation through sustainable forest management (Gautam, et al., 2008).

Regarding the forest management, present Forest Act (1993) entitles the CFUGs "to develop, conserve, use, manage the forest, sell and distribute the products independently by fixing their prices according to operational". (Forest Act, 1993).The Forest Regulation of 1995 introduced a provision that in order to transport forest

products, a committee or person designated by the CFUG shall issue a permit and stamp the timber. According to research on global economies, the liberalisation and privatisation of national economies are having a dramatic impact on the management of natural resources. As governments have streamlined bureaucracies and launched decentralisation, transferring the responsibilities to the VDC, the municipalities and the community, this provided the community with the opportunity to manage local resource. With the advent of community based forest forestry, Community Based Forest User Groups (CBFUGs) become effective and powerful institutions for conservation and management of national forest due to which number of community forests have now reached more than 18,000 because of successful management history since handed over to local community (Upreti et al., 2012). Summary indicator of community forestry in Nepal has been presented in table 1.1.

Table 1.1: Summary Indicator of Community Forestry in Nepal

Indicator	Number	Share
Household directly benefited by Community forestry	2,461,549	41.25%
Total number of CFUGs	19,361	
Number of districts with community forestry operations	75	100% of all the districts
Total area under CFUG management	17,98,733 ha	39.6% of total forest area

Source: (DoF, 2015)

The number of FUGs is increasing and the hand-over of the forest to FUGs is increasing according to the provision made in the Master Plan for Forestry Sector (MPFS, 1989), Forest Act (1993), Forest Regulation (1995), Ninth Plan (1997-2002) and Tenth-Five Year Plan (2002-07) which provide the legal and operational framework of Nepal's community forestry (Pokharel and Nurse, 2004). These provisions are the user-oriented policy and strategies formulated for the development of community forest and have secured the rights of local users and further, they are supported by different agencies to achieve the required outcomes.

In addition to the above summary indicators of table-1, the status of community forestry in Nepal is also illustrated by the national profile as shown in table 1.2

Table 1.2: Community Forestry National Profile (3rd September, 2015)

Total area of community forest handed over	1,700,048
Average size of the community forest	93 hector
Total number of Community Forest User Groups	18,960
Total number of House hold involved	23,92,755
Percentage of total population benefited	123 households
Average size of Community Forest User Groups	22.9
Average size of executive committee	22.9
Average number of women in committee	5.6

Source: (CFD, 2015)

1.1.2 Community Forestry, its Management and Livelihood

A livelihood comprises the capabilities, assets (stores, resources, claims and access) and activities required for a means of living: a livelihood is sustainable which can cope with and recover from stress and shocks, maintain or enhance its capabilities and assets, and provide sustainable livelihood opportunities for the next generation; and which contributes net benefits to other livelihoods at the local and global levels and in the short and long term (Chamber and Conway 1992).

A livelihood comprises the capabilities, assets (including both material and social resource) and activities required for a means of living. A livelihood is sustainable when it can cope with and recover from stresses and shocks maintain or enhance its capabilities and assets, while not undermining the natural resource base (DFID, 2000). The objective of DFID's SL approach is to increase the agency's effectiveness in poverty reduction by seeking to mainstream a set of core principles and a holistic perspective in the programming of support activities to ensure that these correspond to issues or areas of direct relevance for improving poor people's livelihoods (Krantz, 2001).

Community forestry involves users of different social status in a united form and attempts to develop the capacity to manage community forest in a particular manner.

Community forestry cannot be successful unless it addresses the root issue (social, political and economical in equalities of an area) i.e. CF must be understood as a process of equitable distribution of resource ownership, management, access and supporting to livelihood (Yadav N.P, 2004). Forest condition, composition of user groups, decision making and access to resources and distribution of benefits directly affect the people's livelihood (ICIMOD, 2004). Besides rural infrastructure development, CF has supported the needy households in various cases such as literacy classes, social mobilization, income generation activities, saving, credit schemes (Dev et al., 2004).

Sustainable forest resource management in terms of environmental and economic issues is important for the sustainability of the community. The institution of the CFUGs has far reaching importance beyond forestry to rural communities and being a legally mandated institution with the potential to generate financial resources from forestry, the potentiality of the CFUGs to serve as a broader community development institution at the local level is significant (Allison et al., 2004). The initial objective of community forestry was both conserving forests and providing direct and indirect benefits for communities that would support rural development.

Handing over forests to communities for management has over time improved the forest condition and increased production of firewood, timber, fodder, forest litter and grass to assist in improving the subsistence livelihood (Kanel, 2004).

1.2 Rationale of the Study

In the context of Nepal, forest has always been a source of livelihood resources for the people living in the mountains and rural communities (Adhikari, 2011). Community forestry programme have been established for the sustainable use of forest products and support to create suitable option for livelihood opportunities. The formation of CF and CFUGs in villages creates social and institutional platform at local level which has been considered vital role in empowering collective decision making, increase awareness at local level (Dev et al. 2003).

The study is also useful in addressing the communities concern and issues that are existing and development of resilience policy which focus on expanding the scope of more livelihood options through scientific management of forest. Hence, management of forest and the livelihood of locals are interdependent to each other. Change in any

one of them affects the others. So the study regarding such issues is important for future reference to develop various strategies towards livelihood options and forest management.

1.3 Research Questions

The outlined research questions of the study are as follows:

- What is the status of socio-economic condition of CFUG members?
- What methods and strategies have been adopted for the management of CF?
- What is the impact of community forest on local livelihood of the people?

1.4 Objectives

1.4.1 General Objectives

The general objective of the study is to assess the contribution of community forestry on local livelihood of Community Forest User Group.

1.4.2 Specific Objectives

The specific objectives are:

1. To study the socio-economic condition of the studied CFUG
2. To assess the existing forest management practices
3. To analyse the contribution of community forest on livelihood of forest dependent people

1.5 Limitation of the Study

Although attempts were made to gather and interpret the information and data at best possible extent, the study has some limitations as mentioned below:

- Earlier data related to livelihood assessment of the forest under study were not available.
- The findings of this research were based on a case study and do not necessarily represents the regional or national scenario but the findings can be used as reference for similar types of study in near future.

CHAPTER 2: LITERATURE REVIEW

2.1 Theoretical Review

2.1.1 Meaning of Community Forestry

Community forestry refers part of national forest handover to ‘users’ group pursuant the forest for its development, conservation and utilizations for the collective interest. It is village level forestry activity, decided on collectively and implemented on communal land, where local populations participate in the planning, establishing, managing and harvesting of forest resource and receive a major portion of the socio-economic and ecological benefits from the forest.

FAO (1978) originally adopted the term “Community Forestry” as an umbrella term for “any situation which intimately involves local people in forestry activity”. It embraces a spectrum of situations ranging from woodlots in areas which are short of wood and other forest products from local needs, through the growing of trees at the farm level to provide cash crops and the processing of forest product at the household, artisan or small industry level to generate income, to the activities of forest dwelling communities”

Values and Principles of Community Forestry

The Forest Act 1993 provided a clear legal basis for community forestry, enabling the government to handover identified areas of state-owned forest to Community Forest User Groups (CFUGs). Active participation, equity, ownership, people-centred, responsive and participatory planning, accountable, partnership, sustainable approach are the important values of Community forestry.

Objectives of Community Forestry

The main objective establishing community forestry is to contribute in economic development, social inclusion and poverty alleviation, forest biodiversity and environmental conservation and response to climate change and ultimately improvement of rural livelihoods. However, community forestry genuinely successful in sustainable poverty reduction, women empowerment as well as other minorities people involved in community forest. The community forestry programme also promotes forest based enterprise, initiating poverty alleviation activities to pro-poor communities. Community forestry programme is people-centred approach which

emphasises the goal of poverty reduction, empowerment and promotes to increase security of livelihoods for the poor.

2.1.2 Meaning of Livelihood

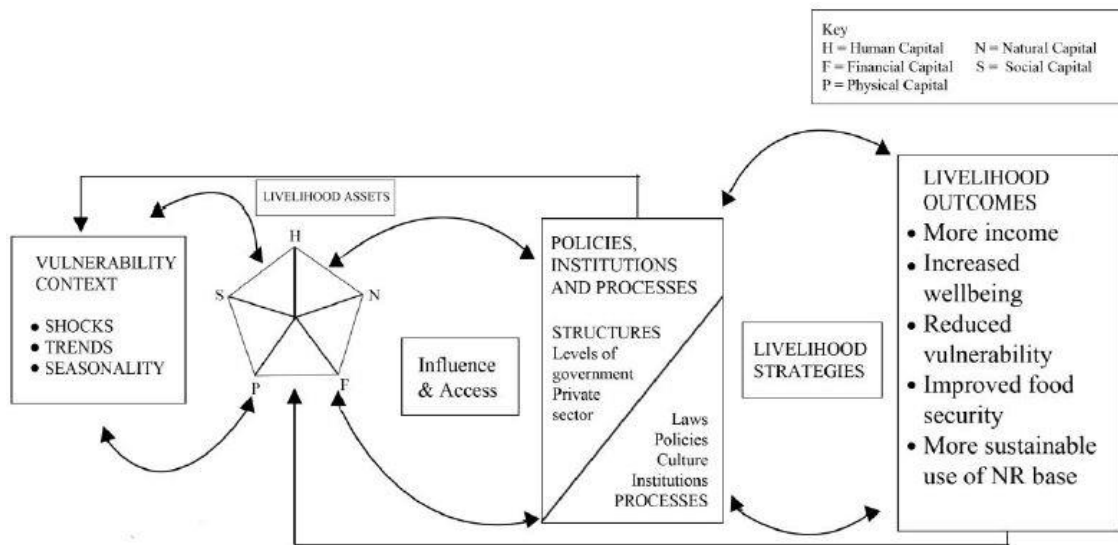
A livelihood is a means of making a living. It encompasses people's capabilities, assets, income and activities required to secure the necessities of life. A livelihood is sustainable when it enables people to cope with and recover from shocks and stresses (such as natural disasters and economic or social upheavals) and enhance their well-being and that of future generations without undermining the natural environment or resource base.

DFID's Sustainable Livelihood Framework

Sustainable Livelihoods is "A livelihood comprises the capabilities, assets and activities required for a means of living. A livelihood is sustainable when it can cope with and recover from stresses and shocks and maintain or enhance its capabilities and assets both now and in the future, while not undermining the natural resource base (DFID, 1999).

The Sustainable livelihood improvement framework was first developed by the institute of Development Studies (IDS) at Sussex University which was later modified by DFID's Sustainable livelihood advisory committee and further developed during 1999 (SAGUN program, 2008). The guiding assumption of the DFID approach is that people pursue a range of livelihood outcomes by which they hope to improve or increase their livelihood assets and to reduce their vulnerability (<http://www.poverty-wellbeing.net/media/sla/docs/2-1.htm>). The livelihoods framework is a tool to improve our understanding of livelihoods, particularly the livelihoods of the poor (<http://www.poverty-wellbeing.net/media/sla/docs/2-1.htm>).

Figure 1: Sustainable Livelihood Framework from DFID (1999)



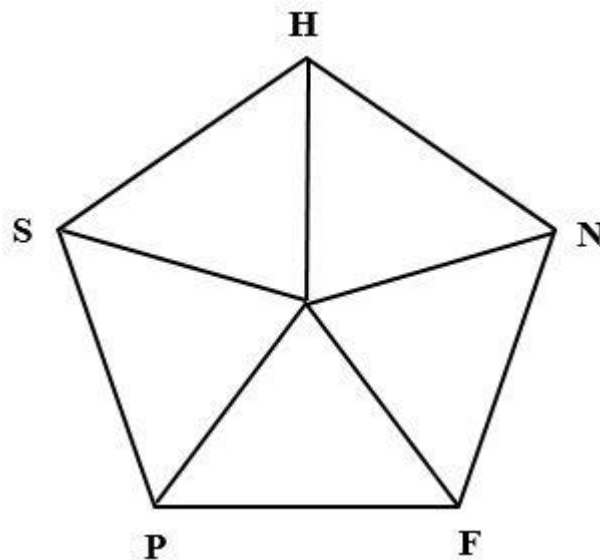
The sustainable livelihoods framework shown above presents the main factors that affect people livelihoods, and typical relationships between these. It can be used in both planning new development activities and assessing the contribution to livelihood sustainability made by existing activities. In particular, the framework: provides a checklist of important issues and sketches out the way these link to each other; draws attention to core influences and processes; and emphasizes the multiple interactions between the various factors which affect livelihoods (Chapagain, 2007).

Livelihood Capitals and Capitals of Pentagon

The assets or capitals are those that people draw upon to make a living (Guidance note on recovery, UNDP, 2001). The ability to pursue different livelihood strategies is dependent on the basic material and social, tangible and intangible assets that people have in their possession (Scoones, IDS working paper 72, 1998). Assets are of special interest for empirical research to ascertain, if those, who could escape from poverty, started off with a combination of capital, and if such a combination would be transferable to other livelihood settings (Kollmair and Gamper, 2002).

The five different types of capitals form the core of livelihood resources (<http://www.poverty-wellbeing.net/media/sla/docs/2-1.htm>) namely human, physical, social, financial and natural. These capitals constitute the actual building blocks for livelihoods (<http://www.poverty-wellbeing.net/media/sla/docs/2-1.htm>).

Figure 2: Livelihood Assets Pentagon



H= Human Capitals, N= Natural Capitals, F= Financial Capitals, P= Physical Capitals
and S= Social Capitals

The shape of the pentagon can be used to show schematically the variation in people access to assets (Chapagain, 2007). The idea is that the centre point of the pentagon, where the lines meet, represents zero access to assets while the outer perimeter represents maximum access to assets (Poudel, 2004). On this basis, different shaped pentagons can be drawn for different communities or social groups within communities (Chapagain, 2007).

Human capital: "Human capital represents the skills, knowledge, ability to labor and good health that together enable people to pursue different livelihood strategies and achieve their livelihood objectives" (DFID, 2000). At the household level, it varies according to household size, skill levels, leadership potential, health status, etc (Kollmair and Juli, 2002).

Social capitals: the social resources upon which people draw in seeking for their livelihood outcomes, such as networks and connectedness, that increase people's trust and ability to cooperate or membership in more formalized groups and their systems of rules, norms and sanctions (Kollmair and Juli, 2002). Social capital often represents a place of refuge in mitigating the effects of shocks or lacks in other capitals through informal networks (Kollmair and Juli, 2002).

Natural capitals: Natural capital is the term used for the natural resource stocks from which resource flows and services useful for livelihoods are derived (Kollmair and Juli, 2002).

Physical capitals: Physical capital comprises the basic infrastructure and producer goods needed to support livelihoods, such as affordable transport, secure shelter and buildings, adequate water supply and sanitation, clean, affordable energy and access to information (Kollmair and Juli, 2002).

Financial capitals: Financial capital denotes the financial resources that people use to achieve their livelihood objectives and it comprises the important availability of cash or equivalent, that enables people to adopt different livelihood strategies (Kollmair and Juli, 2002).

2.2 Empirical Study

2.2.1 Meaning, Origin and Objective of Sustainable Livelihood Approach

The notion of sustainable livelihood said to have arisen out at the 1992 Earth Summit held in Rio and its promotion of Agenda 21 (Agenda for the 21st Century). A stated aim in Agenda 21 is that every must have the “opportunity to earn a sustainable livelihood”. Once the concept of a sustainable livelihood had been adopted then it seems like small steps to go from there to SLA (Norton and Foster, 2001). But SLA did not become main stream until the late 1990s.

The Sustainable Livelihoods Approach can be seen as one of a number of analytical frameworks which deals with the dynamic dimensions of poverty and well-being through establishing a typology of assets which poor individuals, households and communities deploy to maintain well-being under changing conditions. It has conceptual roots in various traditions, including applied social science, agro-eco system/farming system analysis and especially participatory approaches to rural development (Norton and Fisher, 2001). The main distinguishing feature of the approach is the attempt to set the analysis of livelihoods within a comprehensive framework which encompasses policy and institutional process at various levels, as well as micro-level conditions and determinants of livelihood.

The key claims for the operational value of the Sustainable Livelihood Approach are that it can promote:

- Systematic analysis of poverty and its causes in a way that is holistic, realistic and manageable;

- A wider and better informed view of the opportunities for development activities and their likely impact;
- Placing people and the priorities they define firmly at the centre of analysis

One of the characteristics of working at the policy level in contexts such as the development of Poverty Reduction Strategy Papers is a need to engage with multiple partners, and to acknowledge that the donor agency should not be driving (and cannot control) the process (Ashley and Carney 1999 cited in Norton and Fisher, 2001)

According to Ashley & Carney (1999) cited in Norton and Fisher, 2001). DFID core SL principles should be:

Poverty-focused development activity should be:

- **People-centred:** sustainable poverty elimination will be achieved only if external support focuses on what matters to people, understands the differences between groups of people and works with them in a way that is congruent with their current livelihood strategies, social environment and ability to adapt.
- **Responsive and Participatory:** poor people themselves must be key actors in identifying and addressing livelihood priorities. Outsiders need processes that enable them to listen and respond to the poor.
- **Multi-level:** poverty elimination is an enormous challenge that will only be overcome by working at multiple levels, ensuring that micro-level activity informs the development of policy and an effective enabling environment, and that macro-level structures and processes support people to build on their strengths.
- **Conducted in partnership:** with both the public and the private sector.
- **Sustainable:** there are four key dimensions to sustainability – economic, institutional, social and environmental. All are important – a balance must be found between them.
- **Dynamic:** external support must recognize the dynamic nature of livelihood strategies, respond flexibly to changes in people’s situation, and develop longer-term commitments.

The Sustainable Livelihood Approach is one of a conceptual framework which take an asset/vulnerability approach to analysis of the livelihoods of poor people. It emphasizes understanding the vulnerability context and the organizational and institutional environment within which poor people draw upon assets of different types in order to

implement a livelihood strategy. It defines five types of assets: human capital, social capital, natural capital, physical capital and financial capital.

2.2.2 History of Community Forestry in Nepal

The way community forestry approach used to be defined and interpreted in Nepal up until late 70s, suggests that community forestry implies 'community-resource' relations, commonly known as 'indigenous system of forest management (Fisher, 1989), which was widespread in Nepal's hills. During 80s and beginning of 90s, nevertheless community forestry was further conceptualized and internalized, new policy framework was crafted (HMGN, 1988), legal instruments have been in place (HMGN, 1995), various processes, methods and tools have been developed, modified, re-modified and experience gained. During this period, community forestry was understood and recognized as government's priority program, for which the role of forest bureaucracy in the hills changed from policing to facilitating leading to the evolution of community-resource relations towards a triangular interface among community, resource and government bureaucracy.

In the 1970s the focus of much community forestry was on restoration of degraded areas; in practice community forestry was considered suitable only for such locations, with the few exceptions where customary rights were recognized (Right and Resources Initiative, 2008). Teeming from the international concern in the 1990s over rural livelihoods and poverty, community forestry from an international perspective eventually evolved to include rationales from improving conservation, increasing biodiversity, and reducing rural poverty (Fisher, et al. 2005). Beginning in the 1990s NGOs, bilateral agencies and the private sector also began to explore market-oriented approaches in community forestry, particularly regarding non-timber forest products (McDougall et al. 2007)

The role of local people and the value of their management systems have been appreciated for their sustainable use and protection of the forests that they depend on as common property. Eventually, while the role of the state is reduced to only that of a regulatory authority, the communities take total management control (Hobley, 1996).

Management of many Nepalese forests has been handed over to local communities who have been entrusted to supply forest products and to address local environmental problems (Chand et al., 2010). With the realization of people's involvement in the

forest management and the recommendations of the Ninth Forestry Conference held in Kathmandu in 1974, the government drafted a national forestry plan in 1976 which was the first-time plan recognizing the role of local communities and specifically emphasizing their participation in forest management (Gautam et al., 2004).

After the restoration of democracy in 1990, government reframed this act in 1993 for the sustainable management of forest resources under common property right (Paudel, 2007 cited). The new Forest Act of 1993 and Forest Regulation 1995 provide a clear regulation of the CF and the process of handing over forest to the local communities by forming user groups. This Act defines community forest as a part of national forest handed over to a CFUG (Community Forestry Users' Group) for its development, protection and utilization.

According to Gilmour and Fisher (1991) community forestry in terms of control and management for forest resources by the rural people who use them especially for domestic purposes and as an integral part of their farming system. Since community forestry constitutes both social and biophysical elements, they both are equally important.

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After democracy was restored in 1990, the government framed the Forest Act of 1993, which focused on sustainable management of forest resources under community-based property rights regimes (Kafle, 2008). The Forest Act vested more legal authority in Forest User Groups 7 (FUGs). The Master Plan for the Forestry Sector 1989, the Forest Act of 1993, Forest Regulations of 1995, the Operational Guidelines of 1995 and Tenth Five Year Plan (2002-2007) provide the current legal and operational framework of Nepal's Community Forestry (Pokharel & Nurse, 2004). These instruments have legitimized the concept of the Community Forest User Group (CFUG) as an

independent, autonomous and self-governing institution responsible to protect, manage and use any patch of national forest with a defined forest boundary and user group members (Kafle, 2008)

According to Yadav (2004), the term “Community development” is used in the literature in different ways but, in the context of Nepal, it is used to refer to any of the activities carried out by FUGs or any agencies that results as communal benefit in the community. In this context CF serves as forum to discuss development and other benefits:

- Material benefits flow to the community for communal benefit;
- The FUG fund/cash flow to the community for communal purpose; and
- Support for social welfare and relief.

Community development through CF is a new emerging concept in the rural areas of Nepal where forest users are involved in increasing communal facilities. The impact of FUG can go further than forestry management, as many of the more effective and established FUGs start to become involved in other activities such as schools, water supply and path maintenance (Dev et al., 2003). Income generated from CF is invested for FUG institutional development, forest development and community development.

2.2.3 Impact of Community Forestry on Local Livelihood

To understand the livelihood impacts of community forestry one need to understand the diverse patterns of social conditions, livelihood activities and forest use specific to each area. According to Dev et al., (2003), Key factors affecting the impact of community forestry on household livelihoods includes: (1) the location of specific users in relation to the forest; (2) the ethnic caste background of specific users; (3) the homogeneity or heterogeneity of the FUG.

Forest Management is defined as the application of the knowledge, which has been acquired in all branches of forestry and the allied sciences to the management of forests in the interest of man (Jerram, 1983) where silviculture is a branch. The highly prioritize area in forest management includes mainly of singling, thinning, pruning, weeding/cleaning and selective felling followed by fire control, grazing control, plantations, soil conservation work and leaf litter collection (Acharya, 2003).

According to the study done by Yadav *et al.* (2003) in 11 different community forest, formation of FUG had improved greater or lesser the condition of forest resources in three years' period, as open grazing, unregulated extraction and illicit felling have been brought under control.

The study done by Poudel (2004) in the community forest of Baglung and Kaski district reveals that the condition of the forest has improved after its handover to community reason for which may be improvement in soil coverage, increase in regeneration of variety of species and increase in crown coverage of forest. The finding of the Baseline Forest Resource Assessment of NUKCFP also indicates the improvement of overall condition of the forest after formation of FUGs, especially in relation to the number and growth of young stem, which, if present trend continues, will serve to regenerate the forest.

The study done by Adhikari (2011) in three community of Kavrepalanchok district viz Lakuri Rukh, Hile Jaljale and Shrada Devi Community forest of the mid hills of Nepal shows that the condition of local watershed has enhanced after handover of the forest to the community. The incidents of mudflow, erosion, landslide, flood hazard and downstream siltation has greatly reduced.

According to Yadav *et al.* (2003) forest management is perhaps the fundamental process in community forestry. It is multi- faceted, involving a number of sub-processes as:

- Forest boundary definition
- Forest protection, forest blocking and development planning
- Thinning, pruning and cleaning
- Selective felling
- Product harvesting
- Product distribution
- Collection of dry wood and bedding materials
- Intercropping for short-term income generation
- NTFP production and collection

Forest management practice of FUGs initially after formations are generally very simple: defining the forest boundary, protection and perhaps some re-planting. After achieving this and developing cohesion within the group, there can be a gradual

progress towards more confident active management and utilization of the forest (Yadav *et al.* 2003).

In Nepal, rural subsistence economy depends, to a significant extent, on primary products from agriculture and forest. Subsistence farming is based on a man/ cattle/ forest relationship (Mahat, 1987). In the initial stage, Community Forestry approach used to be defined and interpreted in Nepal as community-resource relations, commonly known as indigenous system of forest management (Fisher, 1989).

Of the total 95% of the rural energy need for heating and cooking were fulfilled by the forest in the form of fuel wood, along with about 20 to 25 percent of fodder for livestock and timber for domestic purpose (ADB/M and HMG/N, 1982, available in Maharjan, 1988). Handing over forests to communities for management has over time improved the forest condition (Ojha *et al.* 2009) with positive impact on biodiversity conservation (Jackson and Ingles, 1994, available in Acharya, 2003) and increased production of firewood, timber, fodder, forest litter and grass to assist in improving the subsistence livelihood (Kanel and Niraula, 2004; Acharya and Sharma, 2004).

Poudel (2006) stated in his study of CF of Dolpa and Baglung that beside financial capitals, community forest had positive response on all the remaining four livelihood capitals. In a study conducted in the Koshi hills, Ojha *et al.* (2009) found that the 46% of the poor UG member had moved to higher well being category as a result of their participation in CF program within five years of time. Case study of Sundar community forest suggests that community forestry program had positive impact on the livelihood of rural people of the UG. Community forestry had improved participation in decision-making and encourages people to be involved in different income generating activities according to GACF Nepal (2011).

Poudel (2004) explains women of Bamdibhir and Dhandkharka community forest user groups have enough time to look after their children and conduct various livelihood enhancing activities as CF saves their time to collect fuel wood and fodder. According to the study conducted by Poudel (2004), the five capital assets in the FUG vary with the increasing distance from the district and among the wealth class. He further adds rich family got more access to five capitals than poor family.

Even though poor member of the CFUG were not participants in the decision making process, they were the main beneficiaries because of low interest of rich members in extracting forest products shown by Baral (2008) in her study of two community forest

of Dolkha. In an average the total income of the CFUG members had reported to increased by 61% in five years period mentioned in the report from LFP (2009). Ghimire (2006) suggest NTFPs in CF not only support rural livelihood economically but also enhance their skill, awareness and creates many new opportunities for the members. However, despite the continuous and conscious effort toward the participation of all users, the active participation of poor and marginalized people in forest management activities is quite low. Further, the program is causing some household to have significant problems in meeting their needs (Springate - Baginski *et al.* 2003).

Community forestry has been a source of income and employment opportunities for rural communities. Recent experiences in Nepal suggest that community forests can yield more than subsistence needs and that forest user groups can generate income from a variety of sources. The income generation from community forests can and does play an important role in providing local employment and developing local markets (Malla *et al.* 2003). Employment provided by the forest sector is equivalent to 1.36 million full time jobs, although most of these were non-monitory jobs like fuel wood and fodder collection (Poudel, 2004).

Community forest is the major income generating source for the communities through selling of timber, fuel wood, and minor forest products as well as through penalties, subsidies and donation that contribute to FUGs fund which promotes the economic growth of community through well management of forest resources (Peluso *et al.* 1994 cited in Ghimire, 2006).

Poor household do not benefit from community forests as much as the others and are not very interested in community participation (Malla *et al.* 2003). Poor houses also have high opportunity cost of participation as the time spent on participation could be used as labor for cash income. Medium class households benefit the most in comparison to high and lower class households (Pokharel and Nurse, 2004). In spite of problems of elite domination at local level, has widely been accepted, there has been little systematic effort to reflect the situation and change the scenario (Adhockery *et al.* 2004). Malla and Fisher (1987) have different view, they believe that poor farmers are also taking part actively on the forest projects but middle class farmers are the immediate beneficiaries.

As per Gautam (1997) the FUG fund in Sindhupalchok district were utilized in developing infrastructure like bridge, school buildings, irrigation canals, drinking water

supply and temples. After the establishment of Lakuri Rukh CF in Kavrepalanchok district, community sawmill and implementation of forest management activities (thinning, pruning, felling and transportation), employment opportunity were generated within the village and local people were able to enhance their household income and their living standards (Adhikari, 2011). Adhikari (2011) reveals that the resources from community forests form as extremely important inputs to community livelihood – Shrada Devi Community forest of Kavrepalanchok district.

Community forestry has potential to contribute significantly to improve people's livelihoods as a means of poverty reduction (CFD, 2006 as cited by Kandel, 2006). CF is contributing to livelihood promotion in many ways. These include fulfilling the basic needs of local communities, investing money in supporting income generation activities of the poor people, providing access to the forestland (Kanel and Niraula, 2004).

Analysis of data of about 705 Forest User Groups in Dolakha, Ramechhap and Okhaldhunga (the NSCFP area) indicates that FUGs have spent 31% of their FUG fund for forestry development activities; participation of women in committee has increased from 19% in 1996 to 30% in 2003 in the project area. Similarly, representation of Dalits in FUG committees has increased from 2% in 1996 to 7% in 2003. In addition, women and Dalit representation in key positions has also increased (NSCFP, 2003). The data further indicates that FUGs have spent 39% of their FUG fund for community development activities, mainly on construction (21%), education (8%), and health (6%) (Pokharel and Nurse, 2004).

Dhakal et al. (2005) concluded that forage production and availability has decreased with the commencement of CF programs which challenged the assumption that improved forest condition necessarily lead to improvement in livelihoods of the farmers based on surveys of 259 households from 6 community forest user group (CFUGs), and a survey of 64 CFUGs in three mid-hill districts in Nepal.

Community forest is the major income generating source for the communities through selling of timber, fuel wood, and minor forest products as well as through penalties, subsidies and donation that contribute to FUGs fund which promotes the economic growth of community through good management of forest resources (Ghimire, 2006).

After the establishment of Lakuri Rukh CF in Kavrepalanchok district, community sawmill and implementation of forest management activities (thinning, pruning, felling and transportation), employment opportunity were generated within the village and local people could enhance their household income and their living standards (Adhikari, 2011). Adhikari (2011) reveals that the resources from community forests form as extremely important inputs to community livelihood – Shrada Devi Community forest of Kavrepalanchok district

Maharjan (2012) conducted a study based on the livelihood assessment through sustainable livelihood framework by DFID in Bhodkhore CF of Parbat district and found that community forest has helped to enhance the livelihood of users group.

Adhikari (2014) conducted a study based on the livelihood assessments through sustainable livelihood framework by DFID in Kamalamai CF of Dolakha district and found that CF had significantly contributed to the local livelihoods mainly through better flow of forest products and development of livelihoods assets in the grassroots level.

Community Forest has played a small but significant role in improving the livelihoods of rural people. Households have invested relatively small amounts of their labor time in community forestry activities to gain a range of benefits (MFSC, 2013).

2.2.4 Community Forestry Policies in Nepal

Decentralization Act 1982

To overcome the continued failure of the centralized approach and the *panchayat* (literally, “assembly of five”, referring to the peoples’ representatives at the local level) approach to decentralized rural development efforts, the government of Nepal passed the Decentralization Act in 1982. This act formalized the duties and responsibilities of village *panchayats* and ward committees. All development interventions were required to adopt the ‘user group’ concept when implementing project at the local level. The idea behind this approach was to ensure local resource, and strengthen local institutions for development in the long run.

Forest Act 1993 and Forest Regulation of 1995

These acts a breakthrough for community forestry in Nepal, provide a legal basis for the implementation of community forestry and build on the Master Plan for the Forestry Sector of 1988. As envisaged in the Decentralization Act of 1982, the Forest

Act of 1993 recognized forest user groups as legal entities and acknowledge five categories of national forest: community forest, leasehold forest, government-managed forest, religious forest and protected forest. Major goals of this act were to meet the basic needs of local people, attain economic and social development, promote the healthy environment, promote development and conservation of forest and forest products by managing national forest, and conservation of forest and forest products by managing national forest and help with the conservation and development of private forest. Despite some progressive policy provisions toward decentralization, however, the Forest Act 1993 has several gaps and inconsistency. For example, forest user groups are given only usufruct right; forest ownership is retained by the state. Similarly, there is a lack of clarity about the management based on the size of forests and about the role of different actors.

Master Plan for the Forestry Sector of 1989

Master Plan for the Forestry Sector (MPFS, 1989) can be regarded as a revolution of forestry sector's development prepared by the Ministry of Forest and Soil Conservation and approved by the government in 1989 provides a 25-year policy and planning framework. To meet the people's basic needs for forest products on a sustained basis;

- To conserve ecosystem and genetic resources
- To protect land against degradation and other effects of ecological imbalance; and
- To contribute to local and national economic growth.

All the five-year plan Eighth, Ninth and Tenth prepared by the National Planning Commission, followed the Master Plan to continue its main thrust of people's participation in forest management.

Tenth Five-Year Plan (2002-2006)

Main thrust of Tenth Five-Year Plan (2002-2006) intensive forest management and poverty reduction (Tenth Five-Year Plan, 2001). Which have aimed to bring poorest of poor people into the forestry sector and legislative reforms have been identified with emphasis on removing the anomalies of the current legislation, especially by forming a committee that represents only poor people within the community forestry user groups.

Forest Sector Policy 2000

The Ministry of Forest and Soil Conservation has formulated a revised forestry sector policy (MFCS, 2000). This policy is an updated version of the previous Master Plan.

Unlike other policies and acts, Forest Sector Policy of 2000 reverted to the conservation agenda and made it obligatory for the community forestry user groups to pay 40 percent of their earnings from timber sale to the government (Kanel, 2006). Many consider this a government decision with adverse implication for forest decentralization in Nepal, as it curtails the authority devolved to the local communities.

CHAPTER 3: METHODOLOGY

3.1 Introduction

Methodology is a process of completing the study. Methods as technique of data collection and methods of analysis have been consisted in methodology. It describes the essential and experienced view for all academic work of the study. It clarifies the concept and gives the way of the study. This is the comparative study which uses both qualitative and quantitative methods.

3.1.1 Operational Definitions

Community Forestry is a village-level forestry activity, decided on collectively and implemented on communal land, where local populations participate in the planning, establishing, managing and harvesting of forest crops and so receive a major proportion of the socio-economic and ecological and ecological benefits from the forest

Community Forest User Groups are legal, autonomous corporate bodies, governed by a general assembly consisting of all household in the boundaries of the applicant community and an executive committee chosen by consensus or election

Forest Management means the environmentally appropriate, socially beneficial and economically viable management of forests for present and future generations.

Livelihood is a means of making a living. It encompasses people's capabilities, assets, income and activities required to secure the necessities of life.

3.1.2 Universe

Universe of the research includes all the user group member who are associated with "*Ambote Singhadevi Community Forest*".

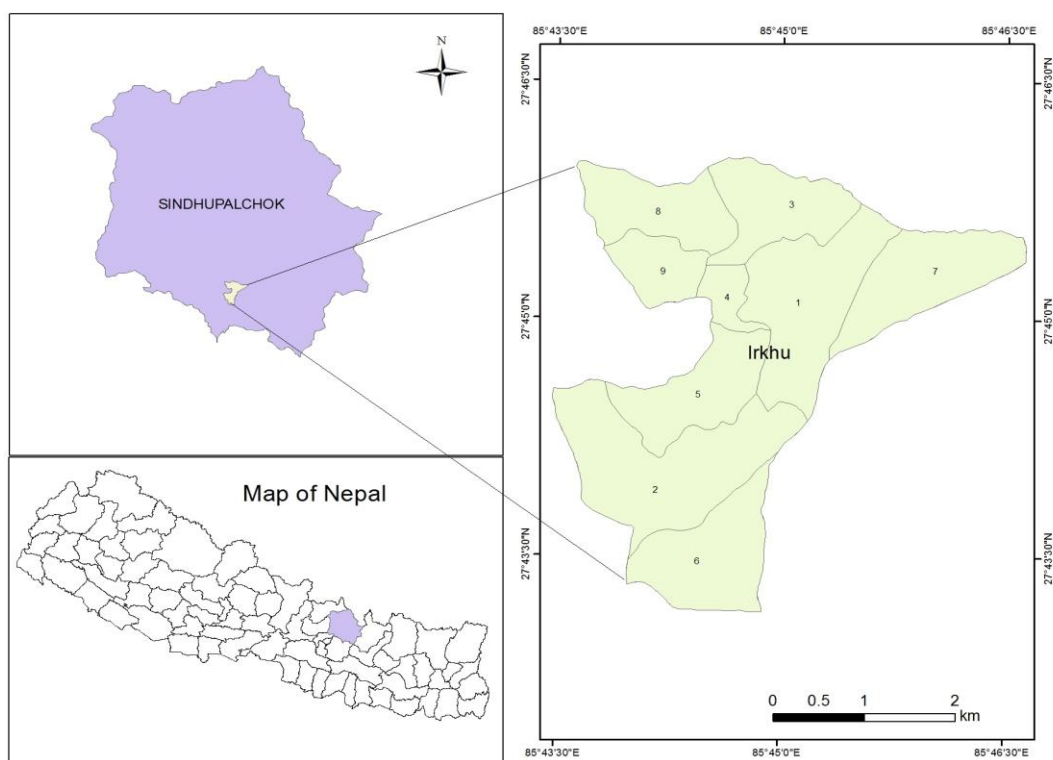
3.1.3 Unit of Study

The target group of the research is the user group member getting benefits from the respective community forest. It includes all the household from forest user group member.

3.1.4 Study Area

Sindhupalchowk District, a part of Bagmati Zone is one of the seventy-five districts of Nepal located in a central development region. The district with Chautara as its headquarter, covers an area of 2542 km² and has a population of 287,798 CBS (2011). Majority of caste/ethnic group in district comprise of Tamang 34.2%, Chhetri 18.2%, Brahmin 10.3%, Newar 11.1%, Magar 1.7% and Dalit 7.3% as per (CBS, 2011). Sindhupalchowk district has 79 VDC and 2 Municipality. It extends between the latitudes 27⁰27' and 28⁰13' North and longitudes 85⁰27' and 85⁰06' East (CBS 2011).

Figure 3: Location Map of Study VDC



Ambote Singhadevi Community Forest

Ambote Singhadevi CF lies in Irkhu VDC (ward no. 7) of Sindhupalchowk district covering a total area of 50.129 ha. Out of total 751 household (CBS 2011), altogether 190 households of ward no: 7 were benefited from this community forest.

For the sustainable management of the forest, entire forest has been divided into five section (block) based on timber production ability, regeneration status, topography, area and overall status of forest.

Criteria for Selection of Ambote Singhadevi Community Forest

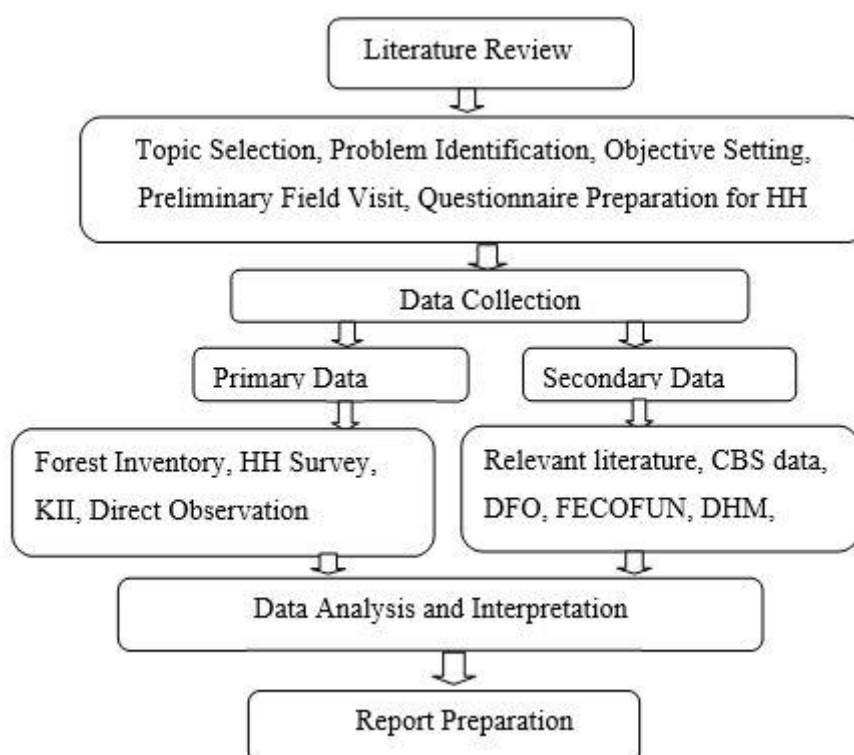
Ambote Singhadevi CF lies adjacent to the district headquarter with huge settlement area and high demand of forest products for the fulfilment of daily needs. The major reasons for the selection of this community forest for the study are as follows:

- This forest lies at rural community, near the settlement area and is easy accessible to the people.
- A major portion of the population depend on the forest resources for their livelihood.
- It is one of the well managed forests and integral part of rural people's life.

3.2. Study Design

The detailed study framework followed during the research is as follows in figure 4.

Figure 4: Detail Study Design



3.3 Nature and Source of Data Collection

The field work for the research was conducted in April, 2017. Both the primary and secondary data relevant to the study were collected using different community participation tool to fulfil the set of objectives of the research. The quantitative data are

presented in the form of different charts, graphs and figures while the qualitative data are in descriptive form. The data have been collected from field visit, observation libraries, journals, internet facilities etc.

3.3.1 Primary Data Collection

i. Sampling Procedure

To identify the households to be surveyed, simple random sampling method was applied and collect the information about the contribution of community forest on local livelihood. Out of total 190 households (FUGs), 25% of the households were randomly selected for the questionnaire survey. Hence total of 47 households were identified for detailed interview, with the help of committee and local enumerator.

ii. Household Survey

Household survey was conducted to collect the information on different variables like demography, education, caste, occupation and source of income based on open ended questionnaire. In addition to the demographic variables, the information about the status of five different livelihood capitals (Social, Human, Natural, Physical and Financial) in the study area were also collected to assess the impact of community forest on local livelihood of the forest dependent populations. Various indicators used for the assessment of livelihood capitals are presented as follows in table 3.1

Table 3.1: Indicators Used for the Assessment of Livelihood

Livelihood Capitals	Indicator used
Natural Capital	<ul style="list-style-type: none"> i. Amount of forest product collection after handover of CF ii. Incidences of drying up of water resource and iii. Improvement in greenery and landscape beauty
Physical Capital	<ul style="list-style-type: none"> i. Construction and access to physical capital ii. Effectiveness of construction and iii. Enhancement of knowledge regarding community development activities
Social Capital	<ul style="list-style-type: none"> i. Relation among user groups after handover of CF ii. Decision making capacity about resources management and use and

	iii. Major role played in decision making
Financial Capital	i. Increment in employment opportunities ii. Time and cost required for forest products collection and iii. Provisions of loan for IGAs
Human Capital	i. Condition of awarness regarding responsibilities among user groups ii. State of skills and knowledge on forest management and iii. Change in leadership capacity

Source: (DFID, 1999)

iii. Key Informants Interview and Focused Group Discussion

Informal interview with key informants were carried out about the history of the community forest and its background along with its governamce. Similarly, Focus Group Discussion (FGD) with 8 individuals from different groups under same community forest user group was conducted among the concerned stakeholders like Women group and teachers to collect the information in detail about the status of community forest including the current management practice adopted.

iv. Forest Management Activities

The present operational plan was reviewed for the study of the forest management activities presently practiced in the study area. In addition, KII and stakeholders were interviewed to generate information about the adopted forest management practices. Fied observation was done to add accuracy in the study.

3.3.2 Secondary Data

Secondary data were collected from different relevant published and unpublished journals. Data for forest cover and forest profile were collected from District Forest Office Sindhupalchowk, VDC profile from VDC Office, Community forest profile from FECOFUN district office. Likewise, searching required documents from web & internet and other related CFUG published books.

3.4 Data Analysis

Based on the DFID model, the questions for livelihood were developed assuming the only community forest affect the livelihood assets and scores were given to answers according to judgmental scoring method. The scores were as minus one (-1), zero (0)

and plus one (+1), representing bad, neutral (or as it is) and good situations of a particular capital. The mean score of each indicator (questions) were summed to get a value of a particular capital. The total scores of all capitals are shown in the spider web graph.

CHAPTER 4:

ANALYSIS AND INTERPRETATION OF SURVEY DATA

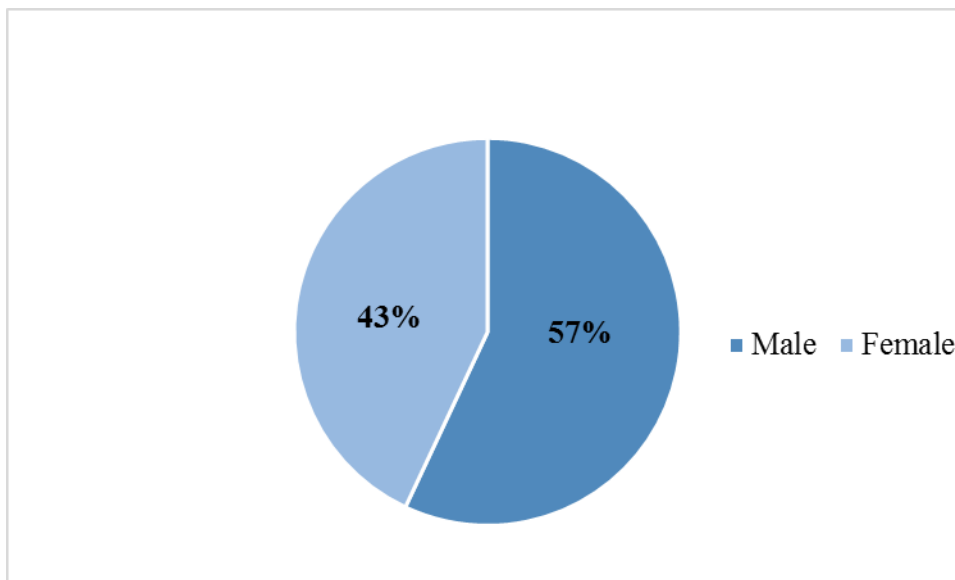
4.1 Socio-economic Status of Ambote Singhadevi CFUG's

The detailed assessment of socio-economic status of Ambote Singhadevi CFUG has been presented as follows:

4.1.1 Gender Composition of the Respondents

Among the total 47 household respondents, 56 percent were male and 44 percent were female which is graphically represented as follows in figure 5.

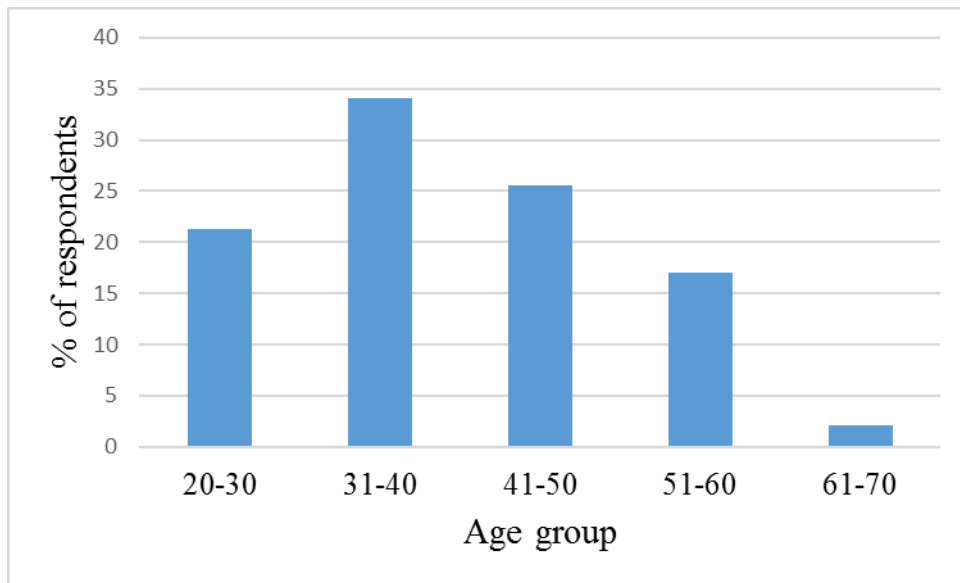
Figure 5: Gender Composition the Respondents



4.1.2 Age Structure of the Respondents

Among 47 respondents interviewed, 21.28 percent of them were of age group 20-30 years, 34.04 percent were of age group 31-40 years, 25.53 percent were of age group 41-50 years, 17.02 percent were of age group 51-60 years and only 2.13 percent of the respondents were of age group 61-70 years which has been graphically presented as follows in figure 6.

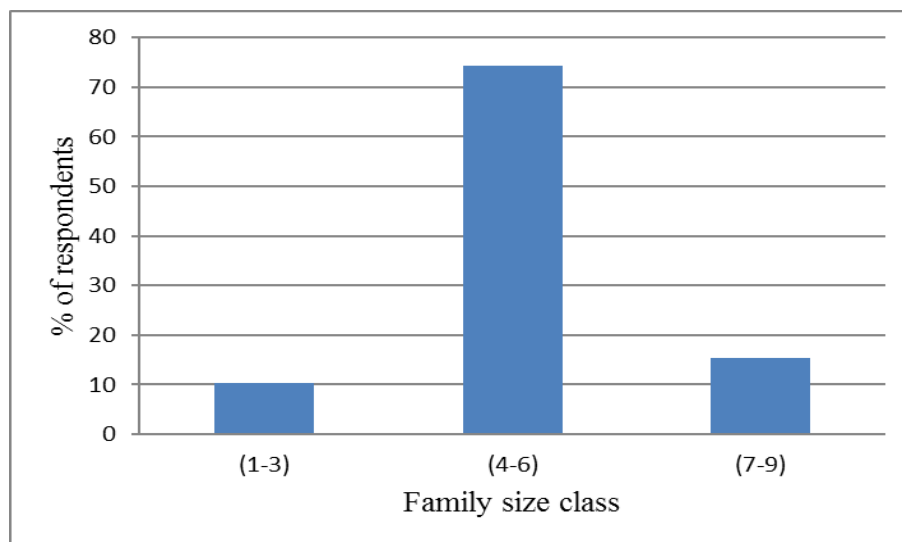
Figure 6: Age Structure of the Respondents



4.1.3 Family Size of the Respondents

Among the total 47 respondents, 10.26 percent of them had the family size (1-3), 74.36 percent had the family size (4-6) and 15.38 percent of the respondents had the family size (7-9). This has been graphically presented as follows in figure 7.

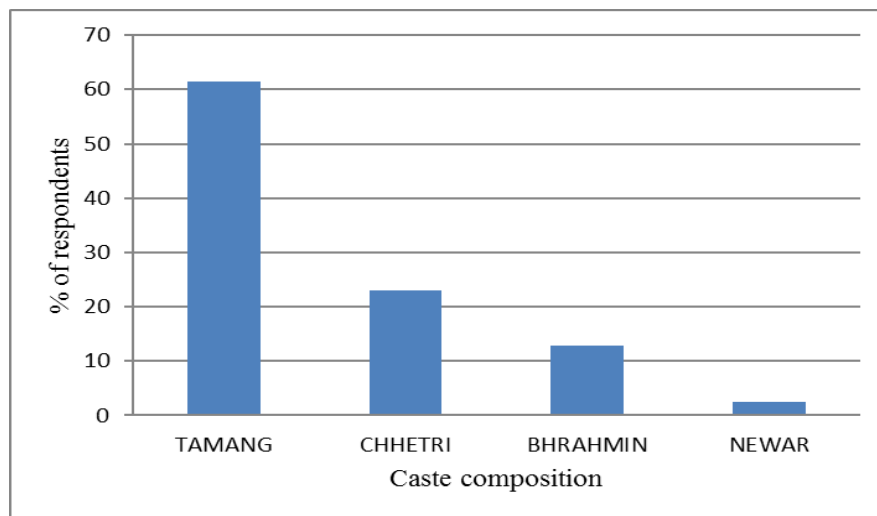
Figure 7: Family Size of the Respondents



4.1.4 Caste and Ethnic Composition of Respondents

Among the total 47 respondents, 61.54 percent were Tamang, 23.07 percent were Chhetri. 12.83 percent were Bhramin and 2.56 percent of the respondents were Newar community as shown in figure 8.

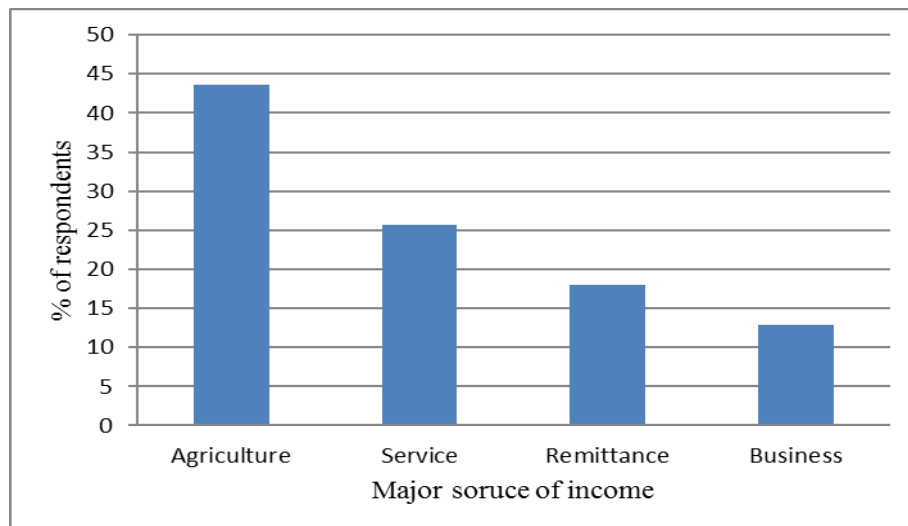
Figure 8: Caste and Ethnic Composition



4.1.5 Income Source of the Respondents

Agriculture was found as a major source of income among 38.48 percent of the respondents. 30.76 percent of them generate income in service sector, 17.94 percent of them generate income from remittance and 12.82 percent of them were involved in local business which have been graphically presented in figure 9.

Figure 9: Major Income Source of the Respondents

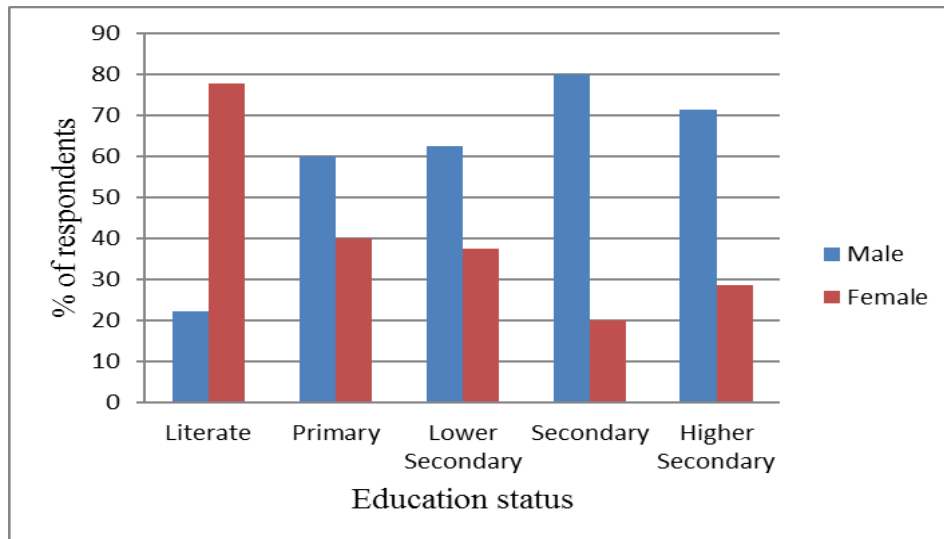


4.1.6 Education Level of the Respondents

Among the total male respondents, 22.22 percent were literate, 60 percent had primary level education, 62.5 percent had lower secondary level education, 80 percent had secondary level education and 71.42 percent had higher secondary level education. Similarly, among the female respondents, 77.78 percent were literate, 40 percent had primary level education, 37.5 percent had lower secondary level education, 20 percent

had secondary level education and 28.58percent had higher secondary level education which has been presented in the following figure 10.

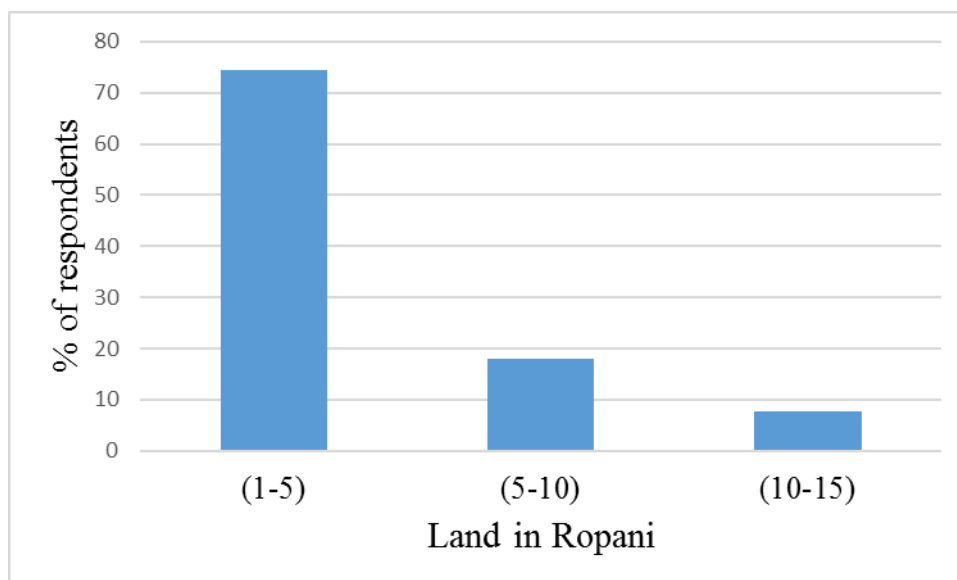
Figure 10: Education Status of the Respondents



4.1.7 Land Holding of the Respondents

Land holding of the respondents were assessed in terms of *ropani*. 74.35percent of the respondents had total lands of 1-5 ropanis, 17.95percent had 5-10 ropanis, 7.7percent of the respondents had the land of 10-15 ropanis which has been presented in figure 11.

Figure 11: Land Holding of the Respondents



4.1.8 Livestock Holding of the Respondents

Among 47 respondents, 10.25 percent kept only cow, 33.33percent of respondents kept oxen and goat, 5.13percent respondent small scale poultry, 38.46percent of respondent

kept cow & goat, 7.7percent of respondent kept buffalow & goat and 5.13percent of respondent kept none which is presented in table 4.1

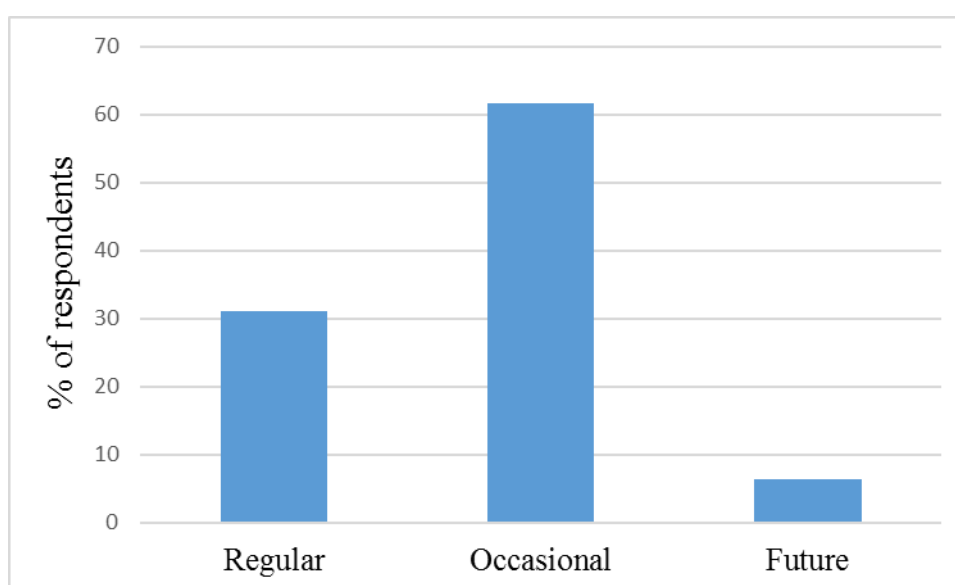
Table 4.1: Livestock Holding of Respondents

Livestock types	Frequency	Percentage (percent)
Cow	4	10.25
Chicken	2	5.13
Oxen & Goat	13	33.33
Cow & Goat	15	38.46
Buffalow & Goat	3	7.7
None	2	5.13

4.1.9 Categorisation of User Types

Of the total 47 respondents, a close endend question were set as to analyze the user types regular (2-3 times in a week) regular, occasional (2-3 times in a month) and future users (not used yet but will use if needed) where 31.19percent respondent were regular users, 61.70percent occasional user and 6.38percent of respondent are future users which has been presented in figure 12.

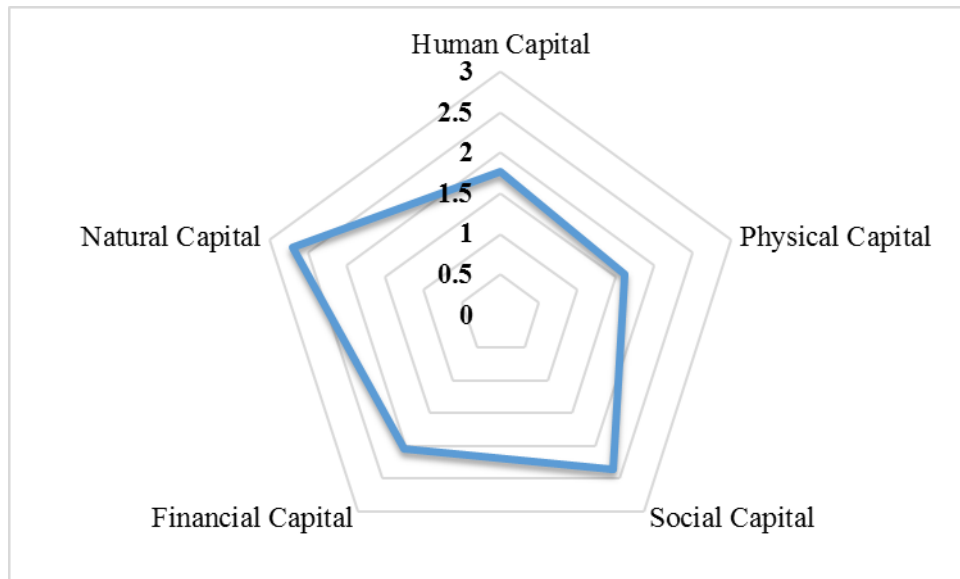
Figure 12: Categorisation of Users Types



4.2 Community Forest and Status of Livelihood Capitals

The status of livelihood capitals in the study site was assessed applying the judgmental scoring method in which the changes brought about in five different capitals after the handover of the forest to the community were studied. The changes in each capitals were studied on the basis of three indicators for each capitals. The average scores were then plotted in a spider web diagram which is as shown below in figure 13.

Figure 13: Community Forest and Status of Livelihood Capitals



The indicator used to assess human capitals were condition of awareness regarding responsibilities among user groups, state of skills and knowledge on forest management and changes in leadership capacity each of which got the average scores of 0.723, 0.446 and 0.595 respectively. The total score for the human capital was found to be 1.765.

Similarly, the physical capital was assessed based on indicators like construction and access to physical capitals, effectiveness of construction and enhancement of knowledge regarding community development activities. The average scores for each of the indicators were found to be 0.659, 0.425 and 0.787 respectively. The total score for physical capital was 1.872.

Like in assessing social capitals, relation among user groups after handover of CF, decision making capacity about the resources management and use, and major role played in decision making were the indicators used and the average score for each of

these indicators were 0.829, 0.617 and 0.914, respectively. The total score for social capital was 2.361.

Likewise, among the three indicators used to assess the status of financial capitals, increment in employment opportunities got and average score of 0.617, time and cost required for forest product collection is 0.595 and provisions of loan for IGAs is 0.829. Thus, the total score for financial capital was 2.042.

And, amount of forest product collected after handover of CF, incidences of drying up of water resources and improvement in greenery and landscape beauty were used as indicators to assess the status of natural capitals and each of these had the average scores of 0.914, 0.872 and 0.914 respectively. Thus, total score for natural capital was 2.702.

The total scores of the five different livelihood capitals assessed after applying the judgemental scoring method were presented in table 4.2

Table 4.2: Livelihood Capitals Assessment Scores

S.N	Livelihood Capitals	Scores
1	Human Capitals	1.765
2	Physical Capitals	1.872
3	Social Capitals	2.361
4	Financial Capitals	2.042
5	Natural Capitals	2.702

The result shown that the forest after the handover to the community had significantly contributed to enhance the condition of financial, social and natural capitals. The contribution was noticeable in terms of physical capital but the condition of human capital seems not satisfactory.

4.3 Current Status of Forest Management Activities

4.3.1 Income Generation Activities

From the very beginning, Ambote CFUG has been focusing on income generation activities to uplift the living standard of user group. CFUG has formed one Ambote income generation group and different income generation activities have been

performed from time to time. There are different independent sub-group within it like to perform each activity viz vegetable farming group, dairy production group etc. in the present context the number income generation activities that is being performed by Ambote Singhadevi CFUG is described below:

- **Amriso plantation (Broom)**

Ambote Singhadevi CFUG has been practicing broom making business for supporting poor household. Some area has been allocated for the Amriso plantation within the forest field. The final product from the Amriso plant (Broom) normally gets market in the district headquarter and within the users' household. CFUG sell the broom in a low rate comparing the rise of the price in the current market price viz 1 kg per 30-60 rupees.

- **Ginger and turmeric farming**

CFUG has selected one group for operating cultivation of ginger and turmeric farming in some portion of community forestry land. These selected household sole occupation lies in farming some portion of the community forest. People involved in such farming take their product in local market (bazar) and in district headquarter where they get desired price.

- **Cardamom plantation**

Recently Ambote Singhadevi CFUG has started farming Cardamom plants in some portion of community forestry land. Respondents claimed that vegetable farming is not possible due to presence of wild monkey which destroys their cultivated vegetables, fruits and crops. People are interested and planning to cultivate the lemon plant that cannot be destroyed and damaged by wild monkey.

- **Nigalo bas (bamboo)**

Some HH in Ambote Singhadevi CFUG were given training on making bamboo items. The training was once organized by the CFUG committee as part of livelihood options for the interested user group member. Bamboos are planted in some area inside community forestry for the raw product and even supplied raw bamboo to market.

Finacial support from DADO, selling of forest products and membership fees were the main source of income of the community. Further, community forest generate income from various sources which can be categorised into major four headings as entrance and renew membership fee, sale of forest products, interest of loan provided and donation from various organizations. Similarly the expenses of the CF was categorised

into three headings with reference to Operational Plan (OP) of CF as for conservation of forest and its development, improving livelihood of marginalized communities. The major IGAs activities were animal husbandry, goat farming, small scale poultry farming, seasonal crop plantation and off season vegetable cultivation.

4.3.2 Forest Management Activities

Basically, community forest management involves three main aspects: forest protection, production and distribution of products, all of which include the participation of users. As the FUG is the manager of community forest, members of the FUG decide the operations to be carried out in order to meet the objectives of the approved 'Operational Plan' (OP).

Forest management occurs over a cycle of decision and events designated as rotation. The main objectives of forest management should be to develop and implement an integrated programme of resource management, including watershed management & biodiversity conservation and livelihood improvement. Acharya (2003) explains that management of forest involves following three process.

1. Control of composition and structure of growing stock.
2. Harvesting and distribution of forest products and
3. administrative of forest property and personnel

The several forest management activities performed by Ambote Singhadevi CFUG are explained in below table 4.3.

Table 4.3: Present Forest Management Practice by Ambote Singhadevi CF

S N	Management Activities	Remarks
1	Plantation programme	One times within after established
2	Silvicultural operations	Once in a year (Nov-Dec) communities involve in weeding, thinning and pruning; as a management of growing stock was performed which contribute to forest management in addition to the availability of fodder and fuelwood to members.
3	Patrolling by guard	As per requirements
4	Fire line construction & clearance	As per the requirements during the dry season to minimize the incidence of forest fire

5	Timber and firewood harvesting	50-60 cubic feet for construction of new houses and 20-30 cubic feet to repairs of worn houses. But after the earthquake no any distribution of timber for construction of houses.
6	Community development activities	Invested in several sectors like construction of drinking water supply, education (schools) and Organize the skill development training programme as per requirements
7	Income Genetation Activities (rotational fund)	IGAs activities like <i>Amliso</i> , <i>Ginger</i> cultivation, small scale poultry farming, cattle farming and seasonable vegetable cultivation.
8	Awareness program	Impact and mitigation measures of climate change at local level, safety measure while handaling of pesticides etc.

Source: Field Survey (2017)

CHAPTER 5:

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Summary of Findings

5.1.1 Socio-economic Status

Socio-economic survey helps in understanding of local resource management systems, resource use and the relative importance of resources for rural people's livelihoods. Among the total 47 household respondents who were involved in questionnaire survey, 40.43 percent were female respondents whereas 59.57 percent were male. The literacy rate was found higher in case of male respondents among which 10.71 percent were literate, whereas 25 percent had primary education, 32.14 percent had secondary level education and 17.86 percent had collage level education. Similarly, among the female respondents 47.37 percent were literate and 21.05 percent, 15.79 percent and 10.53 percentage had primary, secondary and collage level education respectively. Literacy rate was found higher in case of male than in female. The family size ranged from 1-9 with an average size 4.5 which was similar as compared to national average according to population census 2011 A.D. People in the study area belonging to four different ethnic groups utilizing the forest resources among which the percentage of Tamang was highest 61.54 percent and that of Newar the lowest 2.56 percent.

Agriculture was a major occupation of the peoples as 38.48 percent of respondents were involved in agriculture. In the study area, local peoples owned their land and used it for agricultural production specially, cash crops. Service in various sectors was the second means of occupation 30.7 percent and remittance 17.94 percent was the third major source of income. Similarly, 12.82 percent of respondents were also found to be involved in some kind of local business sector for income generation. Majority of the household 74.35 percent holds less than 5 ropanis of land with high number of family member. More household of medium and poor economic condition certainly increase dependency on forest resource for their livelihood.

The respondents with high land holding have more livestock (Buffalow, Oxen, Cow & Goat) per household than those with less land holding. This may be due to availability of sufficient fodder and grass for livestock. But the peoples holding less land involved mostly in goat keeping and small scale poultry farm. This is because of soft loan

provided under Income Generation Activities to small land holding with less income source. Almost more than 90 percent of the respondents had livestock for feeding the fodder and bedding materials were easily available from the community forest. Stall feeding was found common for the livestock and fodder mainly obtained from nearby community forest. Some of the open grazing of the goats were also observed in the community forest during field visit.

During the assessment, user types of respondents were also categorised where regular user (visit forest 2-3times in a week) was 38.30 percent, occasional user (visit 2-3 times in a month) was found 55.32 percent and 6.38 percent of respondent were future users (not yet used but use if needed). Majority of the respondent holding less land found more dependent on forest for their daily needs. They visit forest to to collect fodder, litter for bedding to animals and firewood for daily needs. Thus, regular user and occasional user member is high that means dependency on forest resource is high.

5.1.2 Forest Resource Management, IGAs and Livelihood Impact

The forest under found to be divided into five blocks based on the concept of scientific forest management as all the area under forest cover do not similar extent of management activities which illustrated a good example of blocking as means of forest management. Silviculture, plantation, fire line construction with regular clean up at every two years interval, proper timber harvesting policy, provision of rotational fund for income generation activities, patrolling of forest as means of forest protection were strictly implemented in Ambote Singhadevi Community Forest which had improved, to a greater extent, the condition of forest resources in thirteen years period as open grazing, unregulated extraction of forest product and illegal felling of trees had been brought under control. Yadav et al. (2002) illustrated similar results in their study of eleven community forest in Nepal.

Since the inception of the Community Forestry Programme several trainings, awareness programme and exposure visit have increased knowledge and skills related to increase in employment opportunities and availability of loan for income generating activities (IGAs) in Bhodkhore CF of Parbat district including remarkable improvement in the condition of natural capital (Maharjan, 2012). Similarly, in case of Ambote Singhadevi CF as all three indicators; recognizing of basic entitlements/use right, sense of belongings and maintenance of social relation and leadership capacity over forest management were positively influenced.

There has been a marked increase in on farm trees, which partly attributable to the declining security of forest product flows prior to community forestry, this is not an option for the poorest with little private land. Timber was distributed among users for construction of new houses (50-60 cubic feet timber) and for repair/maintenance of the worn houses (20-30 cubic feet) every year but due to last year “Gorkha Earthquake” 2015 had drastically increased the demand of timber specially from poor with less land holding families for the construction of houses. Due to restriction in timber harvesting from District Forest Office, FUGs poorer household had suffered alot for reconstruction of their damaged houses.

From the very beginning, Ambote Singhadevi CFUG has been focusing on income generation activities to enhance the living standard of user group. CFUG has formed one Ambote income generation group and different income generation activities have been performed from time to time. There are different independent sub-group within it like to perform each activity viz vegetable farming group, dairy production group etc. in the present context the number of income generation activities increased.

The current practice of IGAs adopted by Ambote Singhadevi CF is plantation of Amriso (Broom), Ginger, Turmeric and Cardamom for supporting income for poor people. The study illustrated that the institutional development of Community Forestry through peoples' participation had widened its impacts on livelihoods. Ambote Singhadevi Community Forestry had been found contributing to the rural livelihoods mainly in two ways: (1) through the better flow of forest products through the improvements of forest resources and (2) through the development of livelihoods assets in the grassroots level. Better flow of forest products implies that; the production and supply of forest products have increased from Community Forests in a sustainable manner because of the good forest condition. For example: Fire-wood, grass, fodder, leaf-litter, timber etc., were the direct benefits through Community Forestry, whilst the developments of livelihoods assets through the institutional development of CFUGs were the indirect benefits and, resulted from the consequences of the institutional development the Community Based Forest Management system through CFUGs. These institutional benefits were trainings, education and awareness, training allowances, leadership development, social interaction and social cohesiveness.

5.2 Conclusions

Through this research it was concluded that Ambote Singhadevi community forest has been found diverse and positive effect on livelihood of the people. The most significant achievement was in reduction of forest degradation and improvement in greenery has increased. The members of the user group were involved in various income generating activities and many forest management and conservation activities helped them take their forest and livelihood side by side.

Ambote Singhadevi Community Forestry had significantly contributed to enhance the condition of all the five capitals. Almost all the five capitals (NC, SC, HC, SC and FC) were nearer to the reference point, that signifies towards good quality of livelihoods since the handover of the forest to the community as people were directly dependent upon the forest and forest product the livelihood. The average values for livelihood assets for almost all the five capitals except for physical capitals were found near reference point indicating a good contribution on livelihood. Poor condition of physical capital had direct implications to human capital as the condition of financial capitals was also not satisfactory in comparison to other three capitals. This condition of physical capital may also have some implication to the community development activities (improve village level infrastructure) and social welfare. Ambote Singhadevi Community Forestry had been found contributing to the local livelihoods mainly in two ways:

1. Through the better flow of forest products and
2. Through the development of livelihoods assets in the grassroots level

5.3 Recommendations

From the above conclusions, following recommendations are made:

- It is recommended to conduct further in depth research with more focused quantitative study specifically based on the livelihood assessment tools and techniques especially on methodological advancement.
- Management aspect should incorporate financial aspect by allocation of loan for income generation activities (IGAs) to enhance the economic status of user member.
- Marginalized group people should be prioritized and maintain equity on resource distribution timely based on capacity of poor group distribution

mobilization and utilization of debt for further income generation and enhance economic status.

- Programme in encouraging use of alternative energy like bio briquette, improve cooking stoves and biogas should be expand to maximum households, local peoples should orient about minimization of pressure on forest product and utilize them with alternatives sources.
- Majority of the respondents reported that they no access of sufficient timber to make new houses after the Earthquake 2015. Responded urged CF committee to facilitate and lobby to DFO for harvesting timber with incentive to FUG to construct their new buildings

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ANNEX 1: Household Survey

A. General Information:

1. Name of the CFUG.....
2. VDC/Municipality..... Ward no..... Tole.....

B. Socio-economic Information:

3. General Information of the respondent:

- a. Name:.....
- b. Age:
- c. Gender: Male [] Female []
- d. Caste/Ethnicity:
- e. Marital status: Married [] Unmarried []
- f. Education:
Illiterate [] Primary level [] Secondary level [] College level []

4. Household information of the respondent:

- a. No of household members Male [] Female []
- b. Education of household members (number)
Illiterate [] Primary level [] Secondary level [] College level []

5. Occupation of the members:

Types	Number of persons involved	
	Male	Female

6. Main source of income for HH:

- Agriculture () Business () Forest ()
Labor () Livestock () Service () Others ()

7. Sufficiency of the income:

- 1-4 months () 5-8months () 9-12 months () >12()

8. Land holding:

Land Type	Area (Ropani/Kathha/Dhur)	Production	Supports for (months)			
			1-4	5-8	9-12	>12
Khet						
Bari						
Kharbari						
Others						

9. Livestock status**If yes**

Cow/oxen	Bullock/Buffalo	Goat/sheep	Poultry	Others

Feeding system:

Grazing		Stall feeding		Mixed
Private land	CF	Private land	CF	

10. Types of forest user

S.N	Types of users	Duration	Response (Yes/No)
1	Regular forest users	1-3 times per week	
2	Occasional forest users	1-3 times per month	
3	Future forest users	Member but not used yet	

ANNEX 2: Questionnaire for Livelihood Assessment

S.N	QUESTIONS	ANSWERS	SCORES
1 Human Capitals			
1.1	Condition of awareness regarding responsibilities among user groups	a. Increased b. Decreased c. As it is	+1 -1 0
1.2	State of skills and knowledge on forest management	a. Increased b. Decreased c. As it is	+1 -1 0
1.3	Changes in the leadership capacity	a. Positive b. Negative c. Neutral	+1 -1 0
2 Physical Capitals			
2.1	Construction and access to physical capitals (roads, schools, temples)	a. Yes b. No c. Not consistent	+1 -1 0
2.2	Effectiveness of construction of physical capitals	a. Yes b. No c. Not consistent	+1 -1 0
2.3	Enhancement of knowledge regarding community development activities	a. Yes b. No c. No idea	+1 -1 0
3 Social Capitals			
3.1	Relation among UG members after hand over of the CF	a. Improved b. Worsened c. No change	+1 -1 0
3.2	Decision making capacity about resources management and use	a. Improved b. Worsened c. No change	+1 -1 0
3.3	Major role played in decision making	a. Majority b. Chairperson c. Committee	+1 -1 0
4 Financial Capitals			
4.1	Increment in employment opportunities	a. Yes b. No c. Neutral	+1 -1 0
4.2	Time and cost required for forest products collection	a. Decreased b. Increased c. As it is	+1 -1 0
4.3	Provision of loan for IGAs	a. Yes b. No c. Not interested	+1 -1 0
5 Natural Capitals			
5.1	Amount of forest products collection after handover of forest	a. Increased b. Decreased c. As it is	+1 -1 0
5.2	Incidence of drying up of water resources	a. No b. Yes c. As it is	+1 -1 0
5.3	Improvement in greenery and landscape beauty	a. Yes b. No c. As it is	+1 -1 0

ANNEX 3: Checklist for Key Informant Interview and Focused Group Discussion Guidelines

Name of the informant:

Occupation:

Address:

1. Have you done plantation programme? How many times have you done plantation in the forest?
2. Do you conduct thinning, pruning, weeding activities in your community forest? Can you please mention time period of such activities?
3. How do you take care of your forest from illegal felling and hunting activities? How frequently do you do so?
4. Do you have any provision of constructing fire lines? How frequently do you clean it to keep it working?
5. How distribution of fuel wood and timber is managed among the members? Is it according to the OP or different in practice?
6. Are there any rules in the OP about the community development activities or is it done according to the necessary of the community?
7. So your community forest has any rotational fund for income generation especially for poor FUG members? If yes in which sectors have you invested the fund?
8. Have your community forest had or is planning to organize any awareness programs that are effective for forest management and community development?
9. Is there any Natural disaster (landslide) occurrence in CF? When? What are the preventive measures taken to control such disaster?

ANNEX 4: Livelihood Assessment

S.N	Livelihood Capitals	Respondents																								
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
1	Human Capitals																									
1.1	Condition of awareness regarding responsibilities among user group	1	1	1	1	1	0	1	1	0	1	1	0	1	1	1	1	1	-1	1	1	1	1	1	0	1
1.2	State of skills among user groups	1	1	0	1	1	-1	1	0	1	0	1	-1	1	0	1	0	1	0	1	1	1	0	-1	0	1
1.3	Change in leadership capacity	1	1	1	1	0	1	1	0	1	0	1	0	1	1	0	1	0	1	1	0	1	1	0	1	0
2	Physical Capitals																									
2.1	Construction and access to physical capitals	1	-1	1	0	-1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2.2	Effectiveness of construction	1	-1	1	1	-1	1	1	1	0	-1	1	0	0	1	0	1	-1	-1	0	1	1	0	1	1	1
2.3	Enhancement of knowledge regarding community development activities	1	1	1	1	0	1	1	1	1	1	0	1	1	0	1	0	1	1	1	0	1	1	1	1	1
3	Social Capitals																									
3.1	Relation among user groups after handover of CF	1	1	-1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1
3.2	Decision making capacity about resources management and use	-1	1	-1	1	1	1	1	1	1	1	1	-1	1	1	1	1	-1	1	1	1	1	-1	1	1	1
3.3	Major role played in decision making	0	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
4	Financial Capitals																									
4.1	Increment in employment opportunities	1	1	1	1	0	1	1	0	1	1	1	0	1	1	1	1	1	1	1	0	1	1	1	0	0
4.2	Time and cost required for forest products collection	1	0	1	1	1	1	0	1	1	0	1	1	0	1	1	0	1	0	1	0	1	0	1	1	1
4.3	Provisions of loan for IGAs	1	1	1	1	0	0	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0
5	Natural Capitals																									
5.1	Condition of awareness regarding responsibilities among user groups	1	1	-1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1
5.2	State of skills and knowledge on forest management	1	1	-1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1
5.3	Changes in leadership capacity	1	1	0	1	1	1	1	1	-1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Annex 4: Contn.....

S. N	Livelihood Capitals	Respondents																				Average score	Total score		
		26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45			46	47
1	Human Capitals																								
1.1	Condition of awareness regarding responsibilities among user group	-1	1	1	1	1	1	1	1	0	1	1	1	0	1	1	-1	1	1	1	0	1	1	0.7234	1.7659
1.2	State of skills among user groups	-1	1	-1	0	1	-1	-1	1	1	0	0	1	0	1	1	0	1	1	1	1	1	1	0.4468	
1.3	Change in leadership capacity	1	1	0	0	1	1	1	0	0	1	0	0	1	0	1	-1	1	1	1	1	1	0	0.5957	
2	Physical Capitals																								
2.1	Construction and access to physical capitals	1	1	1	1	1	1	-1	0	-1	1	1	1	-1	0	-1	1	0	1	1	1	1	1	0.6595	1.8723
2.2	Effectiveness of construction	0	1	1	1	0	1	1	1	-1	1	1	0	-1	1	0	1	1	1	-1	0	-1	1	0.4255	
2.3	Enhancement of knowledge regarding community development activities	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	-1	1	1	1	-1	1	1	0.7872	
3	Social Capitals																								
3.1	Relation among user groups after handover of CF	1	1	1	-1	1	1	1	1	1	0	1	1	-1	1	1	1	1	1	1	1	1	1	0.8297	2.3617
3.2	Decision making capacity about resources management and use	-1	1	1	1	1	-1	-1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	0	0.6170	
3.3	Major role played in decision making	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	-1	0.9148	
4	Financial Capitals																								
4.1	Increment in employment opportunities	0	1	1	0	1	0	1	1	1	0	0	1	1	0	0	1	0	1	0	1	1	-1	0.6170	2.7021
4.2	Time and cost required for forest products collection	1	0	0	1	0	0	1	0	1	0	1	0	1	0	1	0	0	1	1	1	1	1	0.5957	
4.3	Provisions of loan for IGAs	1	1	1	1	1	1	1	0	1	1	1	1	0	1	1	1	1	1	1	0	1	1	0.8297	
5	Human Capitals																								
5.1	Condition of awareness regarding responsibilities among user groups	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	0.9148	2.7021
5.2	State of skills and knowledge on forest management	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	0	1	1	1	1	0.8723	
5.3	Changes in leadership capacity	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	0.9148	

(Note: +1, 0 and -1 represents the goods, neutral and bad condition respectively)

ANNEX 5: Photographs



Photograph 1: Researcher House Hold Survey of User Group Member.



Photograph 2: Researcher conducting household survey with female respondent



Photograph 4: Researcher Conducting HH Survey.



Photograph 5: Researcher conducting Focus Group Discussion in the field.



Photographs 6: *Amrisho* plantation in CF for slope stability and income generation



Photographs 7: Fire line construction inside the community forest.