Master's Thesis

Women's Roles in Community Forestry Program: A Case of Panchakanya Community Forest User Group of Nuwakot District, Nepal

by

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Declaration of Originality

I, Shrestha Sanjay (51215006) declare herewith, that the content of this thesis is my own work and has not been published or submitted to any other institutions. Any ideas, information or materials from others' works used in the study are fully acknowledged and have been properly cited. I hereby, submit this thesis to the high degree committee of Ritsumeikan Asia Pacific University in partial fulfillment of the requirements for the Degree of Master of Asia pacific Studies/ International Cooperation Policy.

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List of Acronyms

CBNRM   Community-Based Natural Resource Management

CF   Community Forest/ Community Forestry

CFEC   Community Forest Executive Committee

CFM   Community Forest Management

CFUG   Community Forest User Group

DFO   District Forest Office/ District Forest Officer

EC   European Commission

EFI   European Forest Institute

EU   European Union

FAO   Food and Agricultural Organization

FRA   Forest Resources Assessment

FUG	Forest User Group
GAD	Gender and Development
GEF	Global Environment Facility
GLAD	Gender, Law and Development
IFAD	International Fund for Agricultural Development
IFRC	International Federation of Red Cross and Red Crescent Societies
IGAs	Income Generating Activities
ITTO	International Tropical Timber Organization
LP	Liquefied Petroleum
MFSC	Ministry of Forest and Soil Conservation
MOAC	Ministry of Agriculture and cooperative
MOEF	Ministry of Environment and Forests
MOPE	Ministry of Population and Environment
NTFPs	Non-Timber Forest Products
NWFPs	Non-Wood Forest Products
OP	Operational Plan
PCM	Project Cycle Management
RECOFTC	Center for People and Forests
SD	Sustainable Development
SDGs	Sustainable Development Goals
SFM	Sustainable Forest Management
UN	United Nations
UNEP	United Nations Environment Program
UNCED	United Nations Conference on Environment and Development
UNESCAP	United Nations Economic and Social Commission for Asia and the Pacific

US	United States
WAD	Women and Development
WCED	World Commission on Environment and Development
WID	Women in Development

List of Nepali terms used in the Study

Ban	forest
Bancharo	axe
Bhari	measurement used on the basis of full basket
Chautara	a sitting place made around the tree
Dalits	members of lowest caste
Doko	a big basket used generally for carrying forest products
Ghar	home
Khet	field
Kodalo	spade
Nanglo	a thick rope used to carry the basket
Tapari	plates made from leaves

Abstract

It is often asserted that women's roles in forestry is very important for the sustainable use, manage and conserve the forests as well for the livelihood enhancement. However, many researches have stated that their roles and needs in forest management are unaddressed or ignored and are often secluded from decision making processes despite being the primary users of forests. Hence, this study takes the Panchakanya Community Forest User Group as a case study specifically to identify the roles of women in Community Forestry Program. Moreover, it aims to identify the factors influencing their roles in the program. Besides, it also includes other objectives like describing the women's dependence on Community Forest and identifying forest-related knowledge and skills of women.

This research is a descriptive study using mixed methods. Both primary and secondary data were collected. Primary data were collected through semi-structured questionnaire survey with respondents, focus discussion with respondents, direct observation and interviews with key respondents like Community Forest Executive Committee women members and District Forest Officer. On the other hand, secondary data were collected through the official documents of the FUG, reports and records of District Forest Office, documents from the Government of Nepal and various other materials related to the study.

The study revealed that women have very high dependence on Community forest as they derive various forest products that are essential for the livelihood security of them and their livestock. Besides, they are also dependent on Community Forest for the purpose of subsistence agriculture and grazing their livestock. The study also found that women possess indigenous knowledge and highly specialized skills related to forest like availability of forest

species, its properties and uses, sylvicultural activities cultivation, harvest of plants and crops, development of new materials through processing of forest products as well as awareness about various forest issues.

The study deduced that women roles in Community Forestry Program are limited. Their roles are mostly confined to the labor-intensive works while their roles in works that are associated with decision making processes are very low. Their representation in the Executive committee is still low than the provision made the Community Forestry Guidelines 2009. Their participation in the general assembly and the meetings were not significant in the earlier stages of the program, however, have increased in the recent years with the increase in awareness of their importance in the Community Forestry program. Nevertheless, their opinions and needs are ignored or not fully addressed by the men users. The study showed that various factors have been influencing women's roles in Community Forestry Program. It was found that the need of forest products is the major driving factor for encouraging their roles in the Community Forestry program while lack of time due to household chores is the main barrier hindering their roles in the program.

It is hoped that the findings of the study will provide a holistic view regarding the subject matter and provide the necessary information to concerned authorities regarding the future policy formulation that will help to improve the role of women in Community Forestry Program as well as other development programs.

Keywords: Nepal, women, roles, community forestry program

CHAPTER I

INTRODUCTION

1.1 Introduction

Forests are one of the most important natural resources which have played an immense role in shaping human history. Forests have been providing us with a wide range of environmental and fundamental needs needed for our survival together with various socio-economic and cultural benefits or services. According to Chao (2012), around 1.6 billion rural people directly depend on forests for one reason or the other and as per the World's Commission on Forests and Sustainable Development, 350 million of the world's poorest people almost completely depend on forest for their subsistence and livelihood (as cited in Chao, 2012). However, it is an absolute that every human being on the planet depends on forests directly or indirectly.

The significant role forests can play in achieving SDGs were emphasized in the XIV World Forestry Congress, held in Durban on September 2015, which was attended by more than 4000 participants from 138 countries (FAO, 2016). According to FAO (2016), the achievement of sustainably managed world's forest is central to two SDGs: *SDG 2 – "end hunger, achieve food security and improved nutrition and promote sustainable agriculture"; and SDG 15 – "protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss"*. Moreover, due to the varied functionality of forests, their roles in achieving other SDGs are also considered important. Besides, *SDG 5– "achieve gender*

equality and empower all women and girls" emphasizes on the essential role women play in all of the SDGs recognizing women's equality and empowerment not just being the objective but also the solution to many targets of SDGs (UN Women, 2016).

Forests evolved over millions of years ago, and passed through various cold and warm climates of glacial and interglacial periods, following by the last great ice age, which ended about 10,000 years ago, leaving nearly about 6 billion hectares of forest cover (45% of earth's land mass) (FAO, 2012). However, "human history is a story of deforestation and the several consequences that can result- at times contributing to the collapse of societies" (FAO, 2012).

FAO (2016) states that forest loss is caused by both human and natural factors, however, the former is more extensive than the latter. In the past 5,000 years, the global forest cover has been depleted by around 1.8 billion hectares with an average net loss of 360,000 hectares per year (nearly around the 50% of today's forest area). Historically, it is evident that most of this forest loss is due to rapid increase in population, increase in the demand of land for cropping and grazing, and unsustainable exploitation of forest resources and is still continuing to put unsustainable pressure on the earth's forests and other natural systems (FAO, 2016). It can be stated that more or less, the trajectory of global deforestation is being accompanied by the rate of global population growth, mostly deforestation pace being rapid prior to 1950 but has been slower a bit after that (FAO, 2012). See Figure 1.1.
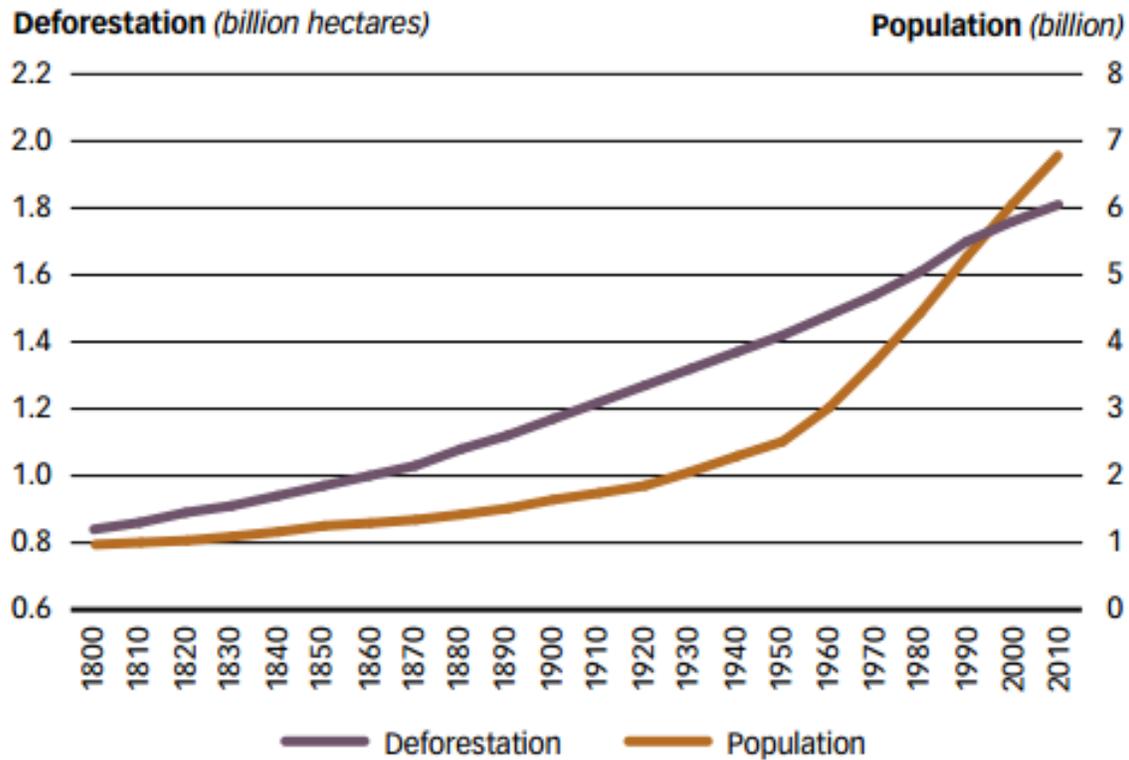
Figure 1.1: World population and cumulative deforestation, 1800 - 2010
Source: FAO (2012)

However, as per the FRA report mentioned in FAO (2012), the world lost about 130 million hectares (which is about 3.2 percent of the total forest area) between 2000 and 2010, but was able to restore about 78 million hectares with various forest plantation and management activities coming along the way. Nevertheless, still the net loss of forest area was 1.3 percent over the 10-year period, which accounts to the average net loss of 5.2 million hectares annually. FAO (2012) states that if the world's net forest area continues to decline by 5.2 million hectares per year, the world will lose all of its forest cover in just 775 years. Sample (2004) warns us saying that "if the forests and its resources are not sustainably managed, they will subsequently be depleted over time causing both economic and social harm".

Around the last quarter of the twentieth century, decentralization emerged as an innovative strategy in many developing countries of Asia, Africa and Latin America with the aim to achieve development goals, provide public services, and undertake environmental conservation. This led in shifting of power from the central state to local government, civil society and the private sector consequently reshaping the authority distribution and responsibilities of the key actors (Agrawal and Ostrom, 2001; UN, 2010). With the degradation of forests becoming a major issue and realm of many countries in the last few decades, sustainable use of forest resources and sustainable forest management have attracted the concerns of many forestry practitioners of various countries. Acknowledging the importance of local people's involvement for proper forest management, since 1985 an important shift occurred in forest sector as well, with at least 200 million hectares (ha) of global forest designated or legally transferred to communities (Sunderlin et al, 2008). As per UN (2010), the figure is estimated to rise from 378 million ha in 2001 to 740 million ha by 2015 representing approximately 45 percent of the world's forests.

Nepal is at the forefront of experimenting with the global theme of management shifts, devolving power to the local communities (Giri, 2009) and has become the epitome of progressive legislation and policies predominantly in the decentralization of forest management (Dahal & Chapagain, 2008). This decentralized forest management strategy in Nepal which is based on people's participation is popularly known as "Community Forest Management" or shortly as "Community Forestry".

1.2 Background of the study

UN (2010) states that *"In Nepal, community forestry is a village-level forestry activity implemented on community-controlled land, where local populations participate in the planning, establishing, managing and harvesting of forest crops, and receive a major proportion of the socio-economic and ecological benefits from the forest"*.

The forestry of Nepal has been divided into three phases– privatization (until 1957), nationalization (1957 to the late 1970s), and decentralization (from the late 1970s onward) (Hobley 1996 as cited in Ojha, 2009). Until 1950, most of the forests in the rural areas used to be controlled by the locally based feudal lords, also called as '*panchayats*'. As the state planned to move into the planned development era after World War II, the Private Forest Nationalization Act enforced in 1957, set all forests to be controlled by state-sponsored local functionaries (Blaikie, Cameron, and Seddon 2002). A number of laws were enacted that enforced national control over forests, which strengthened the forest bureaucracy and excluded local participation. Despite of this, country faced the rapid encroachment and deterioration of country's forest resources. Nepal faced a massive encroachment of forests and its resources during the late 1970s, as a result of which Nepal lost 570,000 ha (about 9%) of its natural forest between the years 1964 and 1985 (MOPE, 2001). Taking an account to this fact, Forest Department's limited capacity to handle the problem alone and recognizing the importance of people's participation, introduced the community forestry program in 1978 to seek local communities' cooperation in the sustainable use and management of country's forest resources.

The Program was initially implemented and formulated as an approach to mitigate the rapidly increasing environmental degradation and to ensure the fulfillment of demand for forest products of forest-dependent people. However, it took time to formulate the enabling people-centered policies until the most significant regulatory development in support of community forestry took place, i.e., enactment of the Forest Act in 1993 by the first elected parliament after the 1990 movement for democracy and followed by forest regulations in 1995 (Pokharel, Stadtmuller and Pfund, 2005). They guaranteed the rights of local independent and autonomous identity of local groups called Community Forest User Groups (FUGs) which is governed by group's constitution and forest Operational Plan prepared by the communities in support of service providers and approved officially by local District Forest Officers (Pokharel et al., 2007). Nepal became the first country in the world to approve such radical forest legislation, allowing local people to take full control of governmentally controlled forest under a community forestry program (Malla, 1997; Kumar, 2002 as cited in Ojha et al., 2009). CFUGs are not just the groups of people longing for forest management only for the sake of deriving direct benefits to household livelihoods but also have emerged as a local administration for community development, social inclusion, and democratic civic engagement (Ojha et al., 2009). The main features of Forest Act (1993) and Forest Regulation (1995) are shown in Box 1.

Box 1: CFUG rights as per the Forest Act (1993) and Forest Regulation (1995)

1. Right to self-governance

• Communities have rights to form a Community Forest User Group (CFUG) as per their willingness, capacity, and customary rights.

• Community forest boundaries will not be restricted to existing administrative or political boundaries.

• Government can dismantle the CFUG if the latter is found to engage in large scale deforestation but it is the duty of the government to reconstitute the CFUG.

• CFUGs can elect, select or change executive committee anytime.

• CFUGs can punish members who break their rules.

• CFUGs can amend or revise their constitution any time.

2. Right to forest management and utilization

• There is no limit to the forest area that can be handed over to communities.

• CFUGs can make optimal use of forest by growing cash crops along with forest crops.

• CFUGs can mortgage their standing forest products with financial institutions to obtain loans.

• CFUGs can utilize their funds for any purpose (but 25% of income from forest must be spent in forest development)

• CFUGs can freely fix prices and market their forest produce.

• CFUGs can establish enterprises and make profits.

• CFUGs can seek support from any organization.

• CFUGs can raise funds by various forestry and non-forestry means with all income going to group funds with no requirement for sharing financial revenues with government.

• CFUGs can invest in any areas, persons or development activities according to the decision of CFUG assembly.

Source: Pokharel et al. (2008); Forest Act 1993; Forest Regulation 1995 as cited in Ojha et al. (2009)

After the 25 years of its implementation, it is considered to have a significant economic value than just a mere conservation policy. Over three decades of its successful formulation through legislative developments and operational innovations, the program has evolved from a protection-oriented, conservation-focused agenda to a much more broad-based strategy for forest use, enterprise development, and livelihoods improvement (Ojha & Pokharel, 2005). Community forestry has grown up more advanced and sophisticated in terms of the range of actors involved, scale of resources mobilized, diversity of processes involving conflicts and collaboration, and policy and practical issues encountered (Ojha et al., 2009). It has now covered most of the middle hills of Nepal and parts of Terai region and the hilly region too. By July 2011, 17,685 CFUGs were formed throughout the country, with almost about 2.2 million households taking part in the Community Forestry Program, directly managing more than 1.6 million hectares of the country's forest area (MFSC, 2011).

It has appeared that the community forestry has induced a net positive impact on people's livelihoods and a wide range of other development activities in Nepal, leading in direct and indirect positive effects on rural livelihoods and welfare (Ojha et al., 2009). The proof of direct positive impacts to livelihoods as stated are wild edibles consumed by the poor, growth in the availability of forest product to people dependent on forests and more reliability of continuous supply of forest products (Dev et al., 2003 as cited on Ojha et al., 2009). Just after more than five years of implementation of community forestry in Nepal, the collection of forest products like grass, green leaves and leaf litters, bedding and thatching materials, fodder have shown growth while collection of illegal fuelwood and number of livestock have decreased, resultantly leading to generation of more trees as well as improvement in the health of forests (Dev et al., 2003). In addition to it, improvements in

livelihood have been immensely influenced through employment opportunities through income-generating activities and more diversified livelihood portfolios (Ojha et al., 2009).

The indirect contributions to household incomes made by community forestry are through fund-generating activities performed by CFUGs like selling the forest products inside CFUG as well as the surplus amount outside CFUG, which are then used for wide range of community development activities (Ojha et al.,2009). As per Gauli and Hauser (2009), about ninety percent of rural household income in Nepal is being contributed through various economic activities related to NTFPs. CFUGs are the leading bodies to manage NTFPs and national policy of the government clearly recognizes this commercial role played by them (Gauli and Hauser, 2009). Moreover, the Nepal government earned revenue of US$ 1.11 million through the sale of non-timber forest products which totals almost about 18% of the total revenue of the forestry sector in 2002 (Gauli and Hauser, 2009). Moreover, studies suggest that the community forestry program has had immensely benefitted natural resource conservation and livelihood status, and along with it, has had improved other areas of natural resources management such as watershed conservation and protected area management (Kandel & Niraula, 2004). Analysts says, the Community Forestry in Nepal

"…is a now much enlarged sector compared with that which was originally envisaged, involving decentralized bodies (including district administrations), professional associations, the private sector, and the non-government sector as well as the original actors of government, donors and communities. Whereas previously projects and their government partners tended to pre-dominate the sector, nowadays many functions are taken on by other civil society actors with this trend continuing to the present. …. Community forestry in Nepal

is now no longer limited by being a project or government supported program. It has become an extensive system" (Pokharel et al. 2008 as cited in Ojha et al., 2009).

At present, Community Forestry in Nepal is regarded as one of the most successful community oriented development programs and has gained a huge global acclaim for its well documented history of over 30 years. After three decades of its successful formulation through legislative developments and operational innovations, the program is not just a protection-oriented, conservation-focused agenda, but has been a much more broad-based strategy for forest mobilization, enterprise development, and livelihood improvement (Ojha & Pokharel, 2005).

1.3 Problem Situation

Nepal, despite a small mountainous landlocked country located between two neighboring giants, India and China, is very rich is natural resources. It is also the habitat of many wildlife and rich biodiversity due to its unique geographical topography along with its altitudinal and climatic variations. The landscape varies from 60m above the sea level to the highest point on earth 8848m, the summit of Mount Everest. This type of wide variation in altitude gives Nepal a wide range of forest types from the tropical to subtropical to alpine. Nepal is undoubtedly one of the God's best creations, nevertheless, still lag far behind in the league of development. Approximately 80% of the population of Nepal lives in rural areas (IFAD, 2013). The majority of them depend on agriculture and livestock farming for their livelihood, where forests play a pivotal role. In Nepal, men and women's roles are socially, culturally and biologically defined within certain tasks and boundaries (Giri, 2012). The work and responsibility outside home is often considered as the men's roles like earning bread for

the household, attending meetings or gatherings and so on, and men are often accorded with higher status and importance than the women. On the other hand, women's work domain is basically inside the home performing domestic chores and rearing and taking care of children, however, there are works outside home as well, of which they hold the responsibilities like farm activities, collection and utilization of forest products, and looking and grazing the livestocks (Chhetri, 2001). Even there is a common saying in Nepali '*aaimai ki khetma, ki banma ki gharma*' meaning women are either in field, forest or at home, which vividly portrays women's roles in Nepalese society (Giri, 2012). It is clear from the saying as well that women share an intimate relationship with the forests.

Women are the main collector of the forest resources for the daily necessities of their household use, own consumption and sale. They spend plenty of time in the forests and are very familiar with forest related issues (Kafle, 2008). They possess a rich storehouse of indigenous technical knowledge of forest management, which can foster solution for problems in natural resource management sectors, especially community forestry, watershed management, agriculture and animal husbandry (Adhikari, 2011). Dhimal (2012) states that an effective implementation of forest management program need to have an authentic participatory approach where involving women is crucial in a sense that women are the ones performing most of the household and forestry activities.

As per FAO (2014), mostly in the developing countries, men and women have different roles to play in forestry and agroforestry systems. However, in comparison with men, women are often disadvantaged in various fronts like access to and control over forest resources and available economic opportunities, due to social, economic, cultural and institutional reasons. The researches show that addressing women's roles and needs in forestry is the core to

sustainable conservation, forest management, and rural livelihoods enhancement (RECOFTC, n.d.). The recognition of their roles is very essential to address forest-related problems and formulate better forest management policies, however, their contributions are unaddressed (Giri), and they are often sidelined despite many efforts to mainstream their involvement in forest management (Cooney, 2011). Leone (2013) states that despite women being the major stakeholders in forest management, they are often neglected in decision making processes which is responsible for setting out the rules to access and collect forest products within the Community Forest. Mwangi, a scientist at the Center for International Forestry Research, also states that despite the increasingly recognized women's contributions to community level forest institutions, their roles are often ignored and they are not yet at the forefront in the forestry decision making processes (as stated in Cooney, 2011). Hence, this research will try to identify the roles of women in community forestry program taking a case of Panchakanya Community Forest in Nuwakot District of Nepal. Moreover, it seeks to describe the factors influencing roles that women play in community forestry program, in order to recommend the strategies to improve their roles substantially in the future.

1.5. Objectives of the Research

a) General Objective
- This paper attempts to answer the question "What are the roles of women in community forest program in Panchakanya Forest User Group of Nuwakot District, Nepal?"

b) Specific Objectives

- To describe the women's dependence on forest and its resources

- To identify the forest-related knowledge and skills of women

- To identify the roles of women in community forestry program

- To describe the factors influencing women's roles in community forestry program

- To provide recommendations to enhance women's roles in community forestry program

1.6. Significance of the Study

Community forestry of Nepal is looked upon as an example throughout the globe as a model of natural resource management. The program in Nepal has written many success stories in restoring forests and livelihood improvement While a number of researches have been carried out on the role of communities in community forestry program in Nepal, there are hardly any researches focusing on the role of women in community forestry program.

Thus, this study is relevant and timely in the case of Nepal to identify and analyze the role of women in community forestry program as researches in this field are still in its infancy. The study aims to fill up that gap identifying the roles of women in community forestry program and hopes to pave the way for further research. The study will serve as a basis for in-depth research to describe the significance of women in community forestry program. In addition, it adds to the growing knowledge of community forest management in emphasizing the incorporation of both the genders equally is a pre-requisite for the success of the program. Moreover, this study explores the motivating as hindering factors influencing women's roles in community forest management practices and hence, will be a practical guide for other

prospect full areas to consider developing participatory forest management in their areas. Furthermore, it aims to provide a significant input for the formulation of plans and policies for the policy makers to address and enhance women's roles for effective community forest management as a whole.

1.7 Scopes and Limitations of the Research

This study mainly focuses on identifying the roles of women in community forestry program in the Panchakanya Community Forest in Nuwakot District of Nepal. This community forest was selected as the number of women users of the forest was more than the number of men. Hence, considering the majority of users being women, the case selected was thought suitable to meet the objectives of the research. The survey was intended to be around 100 women; however, only 50 of them were available for the survey. Due to the small sample size and the study being performed on only one community forest, the generalization of this study about all the community forests is not possible. In addition, there are many community forests with lesser number of women users or there are solely only-men community forest user groups and women-only forest user groups, due to which this study cannot be fully applicable to other community forests. Besides, the reliability of the data also cannot be fully trusted as various cases were encountered when the respondents did not disclose openly or were scared of their information being revealed. Therefore, the study is solely based on the responses of the survey, focus discussions with women respondents, interviews with the key informants, direct observation and the close review of community forest's Constitution and Operational Plan.

1.8 Thesis Organization

This thesis is divided into six chapters. The chapters include Introduction; Literature Review; Methodology; Study Area, Findings and Discussions; Conclusion and Recommendations. This is followed by References and Appendices.

Chapter one describes the change in the state of global forests and the reasons causing it. It introduces decentralization strategy to undertake natural resource management which is gaining attention from various countries in the world. The background, problem situation as well as objectives of the study are illustrated in this chapter.

Chapter two describes the past literature related to the study and presents various terms, concepts and theories related to natural resource management, women, community forestry as well as reviews the natural resource management practices from other countries.

Chapter three deals with the research methods, tools and techniques used to collect and analyze the data. Chapter four describes the area and the Community Forest User Group where the study was carried out.

Chapter five presents the research findings and its discussions. Chapter six draws the conclusion and provides recommendations.

CHAPTER II

LITERATURE REVIEW

This chapter discusses various terminologies, concepts, theories related to the context of the research. Various literatures linked with the research are closely reviewed and has been presented in this chapter to have the better and in-depth understanding regarding the study. As this study is based on women and there is so much of discussions and debates going in the world about the differences in the gender and biasness on various walks of our lives based on gender, various studies done on women have been taken into account to reflect on why women have been facing various hurdles and difficulties in various sections of life and the world. Various researches have often stated that one of the sectors where women are often considered to be extremely forward, experienced and knowledgeable is the natural resource management sector. Therefore, this chapter also discusses various concepts and processes related to natural resource management and how women have been playing an important role in it. As community forestry program been chosen for this study, which is a strategy of an effective natural resource management which is quite relevant in Nepal, it deals with various past researches of Nepal as well as derives the experiences of community forest management practices from other countries to have a holistic view of the subject matter.

2.1. Sustainable Development

The term "sustainable development" has been the word widely used by the politicians in the past few decades despite the emergence of the concept being new and still lacking a uniform interpretation (Soubbotina, 2004). However, the idea of SD is not as new as we have

contemplated. It was way back in 1713 when the first book on forest sciences was edited by Carlowitz, the idea of SD was born. He argued that,

"timber would be as important as our daily bread "and that it should be "used with caution in a way, that there is a balance between timber growth and lumbering". This would allow forever a continuous, perpetual use. "For this reason, we should organise our economy in a way that we won't suffer scarcity [of timber], and where it is lumbered we should strive for young growth at its place" (Carlowitz, 1713 as cited in Keiner, 2005).

This notion by Carlowitz is the central idea of the concept of SD, redefined as a broad political vision by World Commission on Environment and Development in 1987, which was the first universally agreed definition of SD. The commission report called 'Our Common Future' (also known as Brundtland Commission report 1987), in its chapter 2 defines SD as,

"development that meets the needs of the present without compromising the ability of future generations to meet their own needs. It contains within it two key concepts:

- *the concept of 'needs', in particular the essential needs of the world's poor, to which overriding priority should be given; and*
- *the idea of limitations imposed by the state of technology and social organization on the environment's ability to meet present and future needs.*

Thus, the goals of economic and social development must be defined in terms of sustainability in all countries - developed or developing, market-orientated or centrally planned. Interpretations will vary, but must share certain general features and must flow from a consensus on the basic concept of sustainable development and on a broad strategic framework for achieving it" (WCED, 1987).

While the Brundlant Commission's definition of sustainable development appeals in a broad scale, its implementation is not as simple due to its vagueness. Therefore, since the introduction of the concept of SD in the Brundlant Report, its definition has been modified and re-formulated many times from different disciplines and with different viewpoints (Keiner, 2005). Soubbotina (2004) argues that the "intergenerational" equity is impossible to achieve in today's world. She states "sustainable" development probably could be called as "equitable and balanced" which means that for the continuation of development indefinitely, there should be a balance between the different groups of people within the same as well as coming generations in terms of three areas: economic, social and environmental. Similarly, United Nations Environment Programme (UNEP, 1992) argues that

"the Brundlant Commission's definition have been criticized as ambiguous and confusing because "development," "sustainable growth," and "sustainable use" have been used interchangeably even though they do not have the same meaning. "Sustainable growth" is regarded as contradictory in that nothing physical can grow indefinitely, while "sustainable use" is applicable only to renewable resources in terms of "using them at rates within the capacity for renewability." Based on these arguments, UNEP (1992) put forward the following relevant definitions:

- *Sustainable development means improving the quality of human life while living within the carrying capacity of supporting ecosystems.*
- *Sustainable economy is the product of sustainable development it maintains its natural resource base and it can continue to develop by adapting to changing circumstances and through improvements in knowledge organization, technical efficiency and wisdom.*

- *Sustainable living indicates the lifestyle of an individual who feels the obligation to care for nature and for every human individual and who acts accordingly"*

The Board on Sustainable Development of U.S. National Academy of Sciences in its study report, Our Common Journey: A Transition toward Sustainability on page 21 states, while sharing a common concern for the fate of the earth, proponents of sustainable development differ in their 4 key emphases (Kates et al., 1999). They are 1) what is to be sustained, (2) what is to be developed, (3) the relationship between these two and (4) the time horizon of the future. See Figure 2.1.
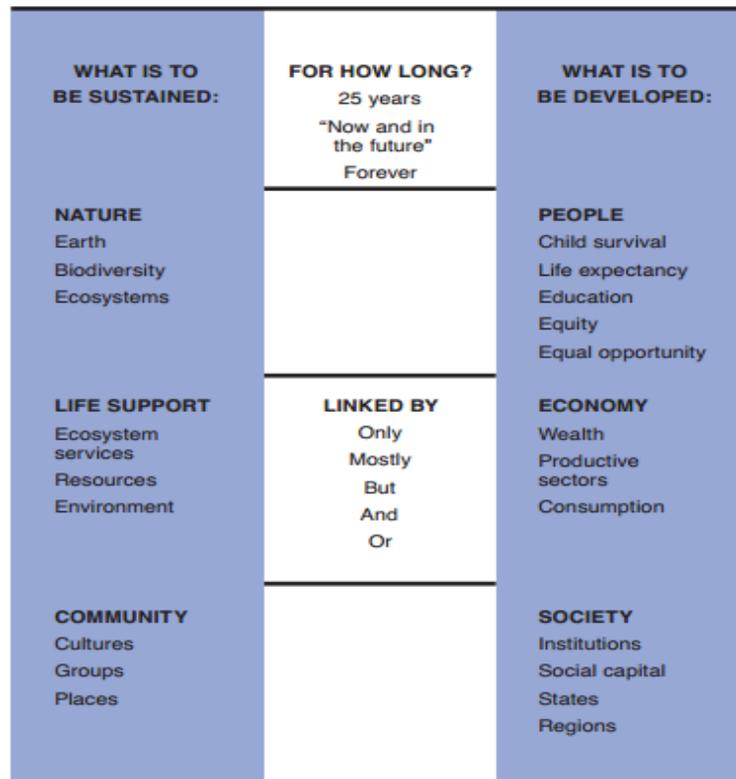
Figure 2.1: Sustainable development: common concerns, differing emphases
Source: Kates & Clark (1999)

Moreover, the 2002 World Summit on Sustainable Development made a further expansion on the standard definition, with the three components being the main pillars of

sustainable development: economic, social and environmental (Kates et al., 1999). Since then, it has been used widely used all over the world. Researchers doing study on sustainable development have suggested that,

"meeting the needs of the future depends on how well we balance social, economic, and environmental objectives--or needs--when making decisions today" (World Bank, 2001).
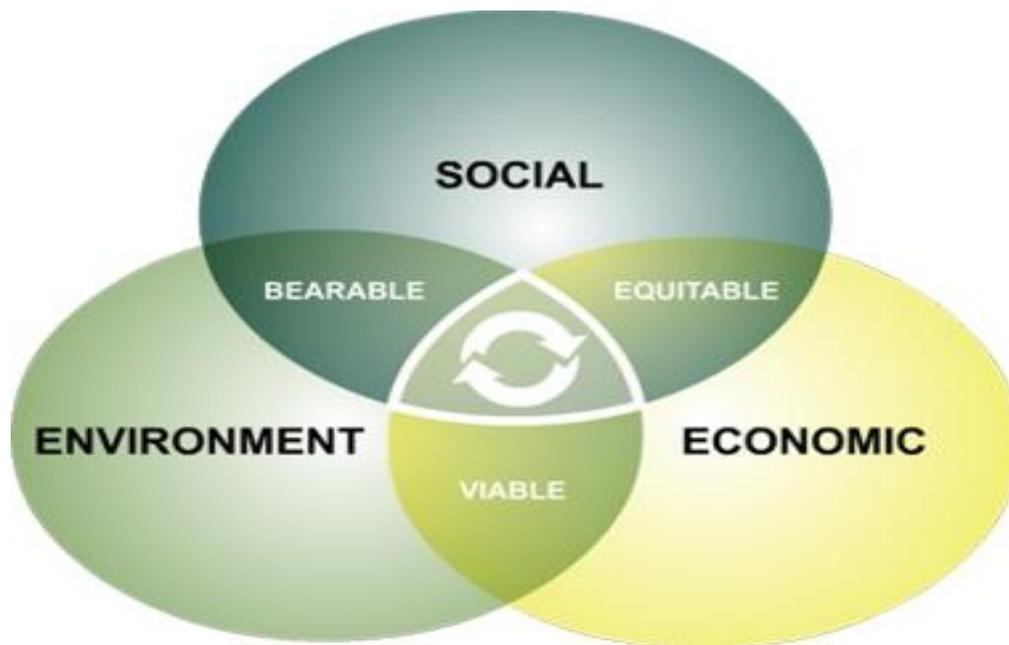
Figure 2.2: The three pillars of sustainable development

Source: Compiled by various sources reviewed

World Bank (2001) further states that,

"Sustainable development focuses on the growth to be both inclusive and environmentally sound in order to reduce poverty and build shared prosperity for today's population and to continue to meet the needs of the future generations as well. It is efficient with resources and carefully planned to deliver both immediate and long-term benefits for people, planet and prosperity".

2.2 Natural Resource Management

Natural resources are the most valuable gifts of nature on which the whole humanity entirely depends upon. The natural resources in the form of water and energy, land, as well as materials are the fundamental life support system of all living beings on earth. We humans are also a part of nature and our survival and existence is unimaginable without the use of natural resources. Nature provides us with all resources necessary for life: energy for heat, electricity and mobility; wood for furniture and paper products; cotton for clothing; construction materials for our roads and houses; food and pure water for a healthy diet. As per EC (2002), there are two major functions of natural resources. Firstly, it acts as a source function providing essential raw materials for the production of goods and services as well as environmental services. Lastly, it acts as a sink function receiving waste originating from production and consumption- the waste being assimilated or accumulated in nature.

It is an absolute that without the constant mobilization of natural resources, neither our economy nor our society could function and flourish (Giljum et al., 2009). Natural resources are generally divided into renewable and non-renewable (or exhaustible) resources. Despite almost all of the resources are renewable in the long run, resources that are not renewed on the same time scale as other processes are considered non-renewable (de Zeeuw, 2000). The most common classification of resources as cited in de Zeeuw (2000) are:

- non-renewable and non-recyclable resources, such as fossil fuels

- non-renewable but recyclable resources, such as minerals

- fast renewable resources, such as fish

- slowly renewable resources, such as forests

- environmental resources, such as air, water and soil

- flow resources, such as solar and wind energy

But the matter of fact is that these natural resources on the base of which our societies are built are in severe danger of overexploitation and collapse. With the rapid growth of world's population and the simultaneous increase of resource consumption in developed world and countries on the verge of rapid industrialization like China, India and Brazil, the world's natural resources have come under great pressure and the situation has just worsened with the ever-growing demand. The amount of natural resources extracted for the production of goods and services is increasing at a very high rate. At present, around 60 billion tons of natural resources are extracted and used, which is 50% more than only 30 years ago (Giljum et al., 2009). See Figure 2.3.
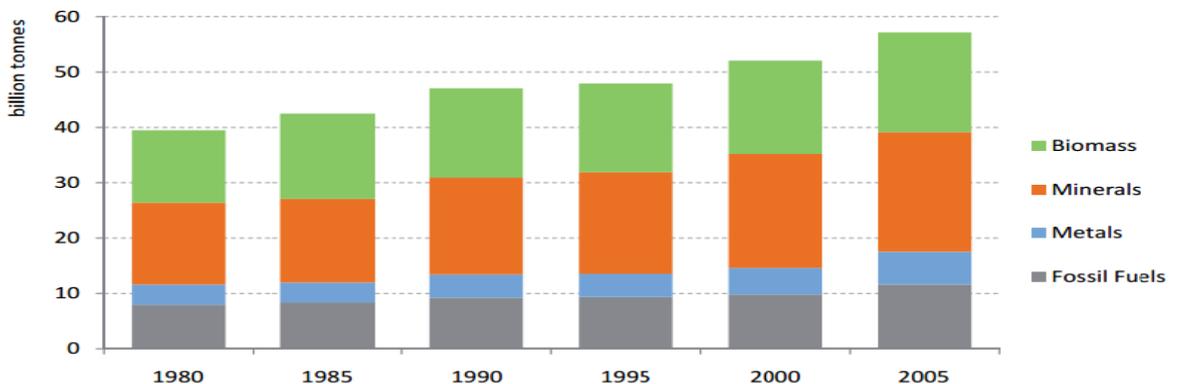
Figure 2.3: Global extraction of natural resources, 1980-2005
Source: Gijum (2009)

The figure 2.3 shows that the extraction of natural resources throughout the world is steadily increasing every year and also along within the main 4 categories: biomass, minerals,

metals and fossil fuels. In addition, the Figure 2.4 below shows the extraction of some selected resources between 1980- 2005.
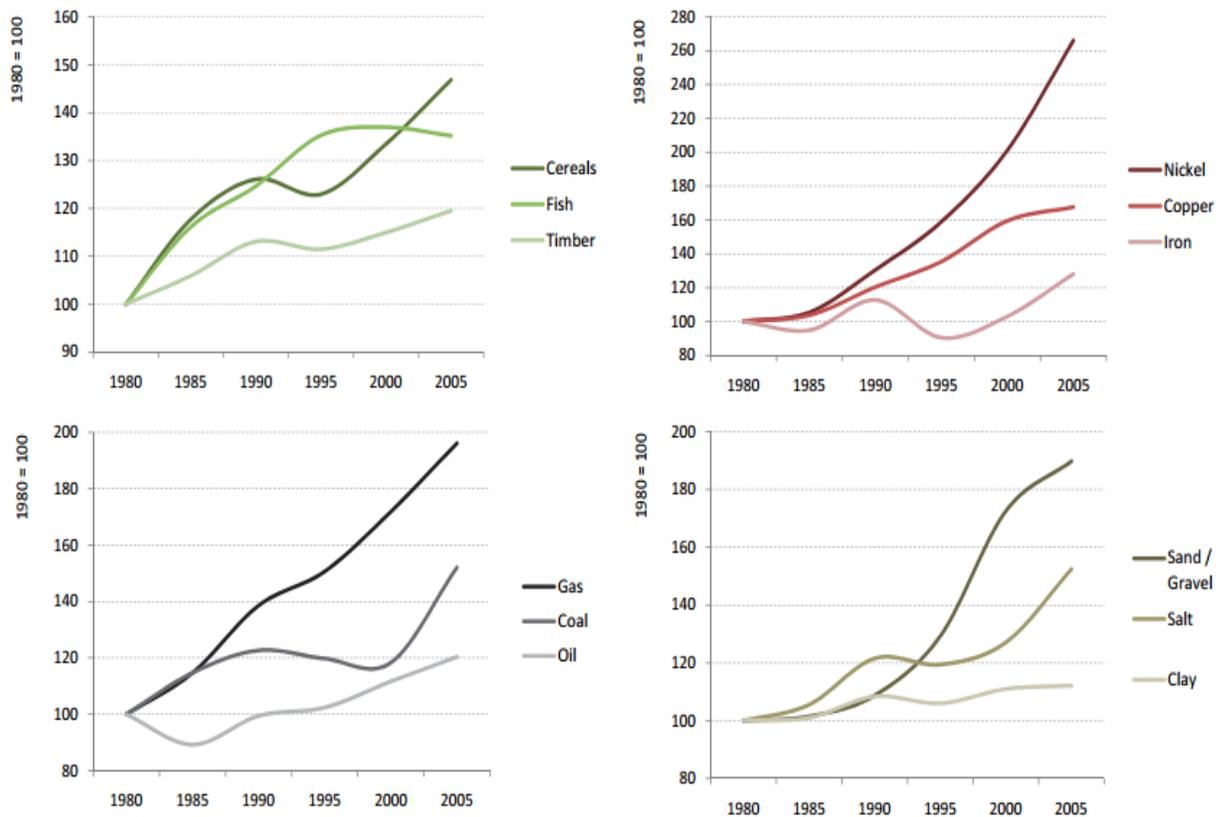
Figure 2.4: Trends in world-wide resource extraction of selected materials, 1980 to 2005
Source: Giljum (2009)

As cited in Giljum (2009), there is an uneven distribution of resource extraction in the world and the amount of resources extraction on a continent depends on various factors like the size of the continent, the availability of resources, the size of population and the level of affluence. In 2005, the largest resource extraction took part in Asia (48%), followed by North America with (19%), Latin America and Europe (13% each), Africa (9%) and Oceania (3%). There is also a variation in the amounts and types of natural resources per capita as well.

Though Oceania has the smallest share of extraction as a continent but has the maximum extraction of resources per capita (158 kg per day) in 2000. It is followed by North America (68 kg per day per capita), Latin America (41 kg per day per capita), Europe (36 kg per day per capita), Africa (15 kg per day per capita) and Asia being largest in resource extraction as a continent but lowest in resource extraction per capita (14 kg per day per capita). See Figure 2.5.
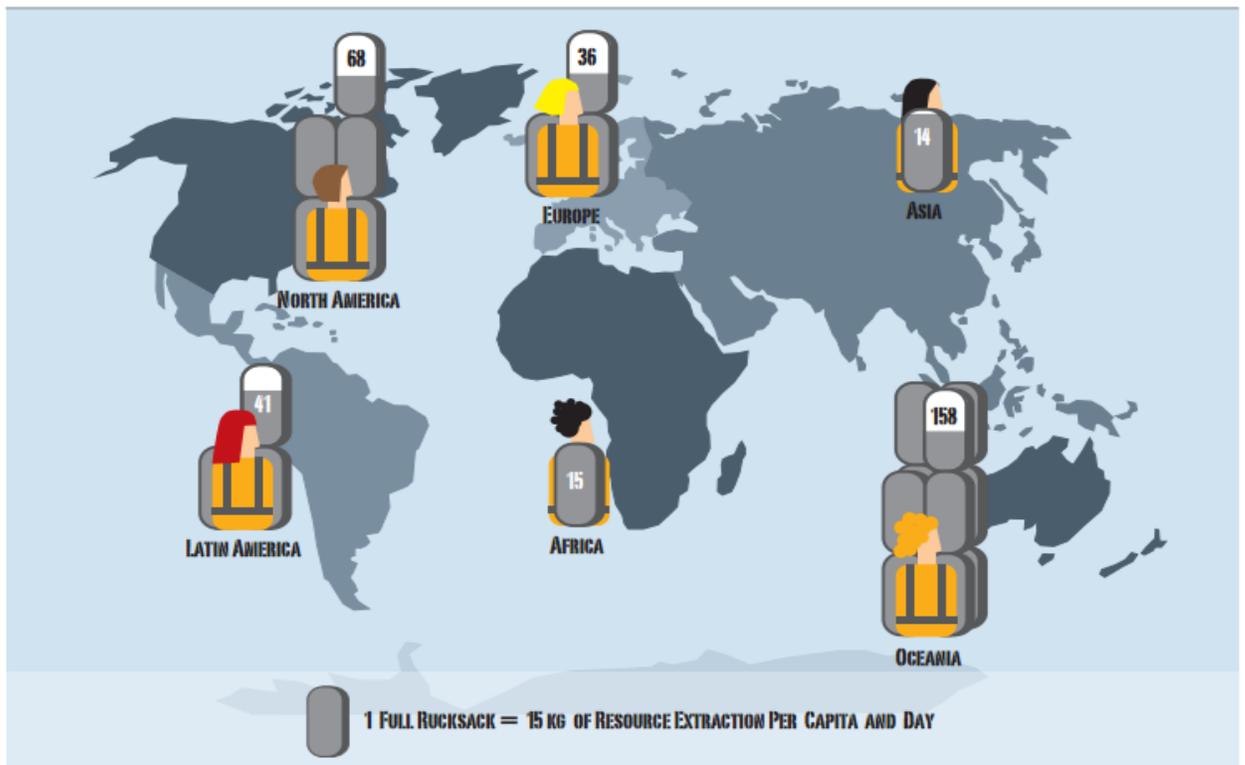
Figure 2.5: Extraction of resources per capita per day, 2000
Source: Giljum (2009)

The increased consumption of energy, water and raw materials, rising production of waste and emissions, extensive human encroachment of land and many other problems have threatened the human's survival and earth's sustainability (Giljum, 2009). E.C. (2002) states that,

"When looking at resource management, two effects are thus of interest:

1) Depletion of resources. This concern in the first instance non-renewable resources, where use by definition will reduce the total stock and it may be a result of over exploitation of renewable resources.

2) Degradation of resources. The waste or side-effects of consumption and production processes may degrade natural resources. As a result, a reduction in the level of physical and environmental services will result".

The rate of extraction and consumption of resources throughout the globe is and will continue to increase dramatically, unless measures are implemented to reduce the overall amounts of resource use. The growth will be more vivid in the developing countries as they aspire to have the similar kind of life-style as that of the developed world. The resources are being degraded and the quality of environmental services is on a worsening spree. Most of the non –renewable resources have already reached a peak of extraction and others are on the verge of extinction. The growing global demand of resources on this limited planet will increase the competition and it could lead to the possibilities of serious conflicts related to access of resources in the near future. It is therefore, actions should be taken to move towards more sustainable use and management of natural resources for achieving the goal of sustainable development (Giljum, 2009). (Zukang, 2011 as cited in FAO, 2012) emphasizes stating that,

"Sustainable development is not an option! It is the only path that allows all of humanity to share a decent life on this, one planet".

2.2.1 Women in Natural Resource Use and Management

It's already been a long time since it was recognized that women are the primary users and potential stewards of many natural resources that provide the means for basic survival (UNCED, 1992). UNCED (1992) further states,

"Women have a vital role in environmental management and development. Their full participation is therefore essential to achieve sustainable development".

Mehra (1993) explains that women, in developing countries, have a very deep interaction with the natural resources mainly for the purpose of economic activities and household chores. For instance, they depend on land and water to grow crops, on forests for fuel wood, fodder, medicines, leaf litters, and a host many other products which help to sustain the living and generate income. Due to this intimate interaction, women have a profound impact on natural resources and in return, also can be deeply affected by the alterations in it. There are evidences that the women's interaction and dependency on nature has fostered acquisition, nurture and dissemination of knowledge and information about natural and biological resources, as well as the use of sustainable practices and conservation techniques (Mehra, 1993).

In South Africa, more than 60% of women depend directly on natural resources for their family's subsistence, while in Mozambique, this number increases to 70% (Mutangadura, 2004 as cited in Herrick, 2010). In addition to the basic needs for survival, the use of natural resources often bears a large proportion of the livelihood needs for women in rural communities. For instance, in Sub-Saharan Africa, women derive 30-50% of non-farm income sources from natural resources, while in Southern Africa, the dependence on

natural resources for income increases even more to 80-90%. In South Asia, approximately 60% of rural household income comes from non-farm sources (Ellis, 1999 as cited in Herrick, 2010). If the natural resources keep on degrading, women's already very limited economic opportunities are jeopardized and poverty rates will rise (Herrick, 2010).

Women uses trees and its products for various purposes like fuel wood, fodder, bedding materials, fibers for clothing and mats, medicines for both household and economic needs. They have indigenous knowledge on varieties of wild fruits and plants that are important for the diet of poor rural people and also the medicinal properties of plants. For instance, women of certain tribal communities in India know medicinal uses for 300 forest species (Abramovitz and Nichols, 1992 as cited in Mehra, 1993). They spend substantial time in the forest and are familiar with the forest issues which can help foster solution for problems in forest management issues (Adhikari, 2001).

Women have a very good expertise in the capture and use of wildlife. Women mostly all over Africa are engaged in capturing insects, birds, fish, reptiles, birds, bats and rodents. In Botswana, women are active in collecting wild birds' eggs (including ostrich's) of which they consume the yolks and also use the eggs' shells as water containers after cleansing. In addition, in countries like Botswana, Zimbabwe and South Africa, they collect insects (especially caterpillars) and sell to buyers who will later sell them to urban markets. (Hunter, Hitchcock, and Wyckoff-Baird, 1990 as cited in Mehra, 1993).

In various parts of the world, women are the active participants in fishing activities. In Zimbabwe and Zambia, women are the ones generally doing fish processing and marketing (Hunter, Hitchcock, and Wyckoff-Baird, 1990 as cited in Mehra, 1993). In the Philippines,

as well, women are ones who are doing small scale local trade in fish and other marine products like oysters, clams, shellfish and mussels (UNESCAP, 1985 as cited in Mehra, 1993). Drewes (1982) found out that women's role in three small fishing villages in Tamil Nadu, India is significant and also played an important role in decision making about purchase of fishing nets, boats and other necessary equipment (as cited in Mehra, 1993).

Similarly, women also possess information about and are the active participants in protection and promotion of bio-diversity as well as environmental conservation and management. As per Abramovitz and Nicholas (1992), women in some African villages, have found out the solution to preserve animal and plant species from being extinct. They keep about 120 species of plants and animals alive by planting on the interstices among the men's cash crops, as they didn't have legal access to their own land.

The above-mentioned points and examples clearly show that women play a significant role in the use and management of natural resources. However, the rapid pace of resource depletion and environment degradation together with women's poverty and less accessibility to technical knowledge and productive resources which developing countries are facing act as a setback for women's role in resource management sector as well as others (Mehra, 1993).

2.3 Community –Based Natural Resource Management (CBNRM)

UN (1992) in its principle 10 states,

"Environmental issues are best handled with the participation of all concerned citizens, at the relevant level. At the national level, each individual shall have appropriate access to information concerning the environment that is held by public authorities, including

information on hazardous materials and activities in their communities, and the opportunity to participate in decision-making processes. States shall facilitate and encourage public awareness and participation by making information widely available. Effective access to judicial and administrative proceedings, including redress and remedy, shall be provided".

The fate or the condition of any natural resources is highly dependent on the harmony between the local people and local natural resources (United Nations, 2010). However, at present, the harmony between these two is weakening at the cost of population growth and over-exploitation of resources, which has questioned the lives of future generations. This very perception has led the concept of sustainable management of natural resources.

Given this sort of population-natural resources nexus, community- based resource management (CBNRM) is gaining humongous popularity as a welcome alternative to solving problems and difficulties arising from the overexploitation and conservation of natural resources as well as it has been emphasized as a viable strategy to meet the goals of sustainable development (Fellizar, 1994). Fellizar (1994) states,

"*CBNRM is an approach through which communities are given the opportunity and responsibility to manage in a sustained way, the community resources, define or identify decisions affecting their common well-being as determined by technical, socio-cultural, economic, political, and environmental factors. It is a tool that facilitates the development of multilevel resource management skills vital to the realization of the potentials of the community. Also, CBNRM stands for people- empowerment for achieving equity and sustainability in natural resource management".*

Fellizar (1994) suggests that it is mandatory to utterly comprehend the key concepts and elements of CBNRM. They are: community, resources, management, access and control over resources, proper resource use, viable organization, and availability of suitable technology for resource management and utilization.

Under CBNRM, communities benefit from the sustainable use of natural resources and CBNRM programs are based on foundation that the local people has greater interest in the sustainable use of natural resources around them than more centralized or distant government or private management institutions. The interest and participation depend on to what extent these people really feel, accept and are able to assume responsibility or accountability for protection and management of natural resources (Laban et al., 1995). Laban et al. (1995) states that people will undertake natural resource management activities only when:

- *They see clear tangible benefits (products, services or income).*

- *They have necessary competency (knowledge, technology).*

- *It is based on local indigenous knowledge.*

- *There is a guarantee of using products and services.*

- *There is unobstructed access, and property rights over resources.*

- *Individuals' interests are backed by strong local organizations. Increase people's claim is making capacities towards GOs and NGOs*

Only with have known the key concepts, elements and principles will not assure the effectiveness of the CBNRM. Fellizar (1994) points out some conditions that must be assured for CBNRM to be effective. They are:

1. *The strategy must be strongly tied on people's needs, which may be obtained from assessing the threats and opportunities in the community environment.*

2. *The strategy must accord with the capacity of the community to carry it out and if it doesn't exist, capacity may have to be developed.*

3. *The inputs- technical, financial and educational, to the community must be compatible with the needs, strategy, and the actual or potential capacity of the community to implement the project.*

4. *The strategy must be people-centered including the inputs- technical, financial and educational. It is necessary for the capacity- building in the community.*
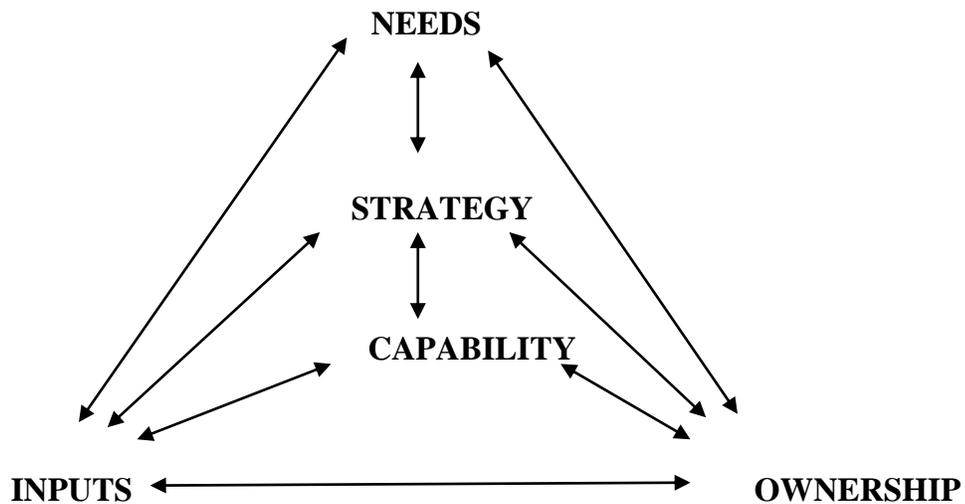
Figure 2.6: Conditions for an Effective CBNRM Strategy

Source: Francisco P. Fellizar, Jr., 1994

2.4 Forest Management

Dhungana (n.d.) describes forest management as,

"The way that forests and the trees within them are protected and used to provide forest products and other benefits".

He further states that setting up various objectives and work plan is a must for forest management. The work plan generally means what work to do, where, when and how. In addition, before starting to manage the forests, it is important to consider the capacity and working process of the ones who are to do the work and the ones benefitting from it. This could be a community, individual, family or organizations intending to work and getting benefitted from the forests.

FAO in its (Global Forest Assessment, 2005) defines forest management as,

"the process of planning and implementing practices for the stewardship and use of forests and other wooded land aimed at achieving specific environmental, economic, social and/or cultural objectives".

FAO (1993) states,

"Forest Management deals with the overall administrative, economic, legal, social, technical and scientific aspects related to natural and planted forests. It implies various degrees of deliberate human intervention, ranging from actions aimed, at safeguarding and maintaining the forest ecosystem and its functions, to favoring specific socially or economically valuable species or groups of species for the improved production of goods and services"

In the past, forest used to be managed mainly focusing on sylvicultural activities for the wood production, however, with the passage of time, the forestry as a profession has grown and the understanding of the term "forest management" has also broadened to cover wide environmental issues like biological diversity conservation, socio-economic matters and more generally, the concept of sustainability (FAO, 1998).

2.5 Sustainable Forest Management

The term 'Sustainable Forest Management' was used first in the Forest Principles and Chapter 11 of Agenda 21, which were the significant outputs of the United Nations Conference on Environment and Development in 1992. Since then, the importance of managing forests sustainably is well recognized and perceived by the international community. The Principle 2b of the Forest principles states as mentioned in Wilkie (2003),

"Forest resources and forest lands should be sustainably managed to meet the social, economic, ecological, cultural and spiritual needs of present and future generations. These needs are for forest products and services, such as wood and wood products, water, food, fodder, medicine, fuel, shelter, employment, recreation, habitats for wildlife, landscape diversity, carbon sinks and reservoirs, and for other forest products. Appropriate measures should be taken to protect forests against harmful effects of pollution, including air-borne pollution, fires, pests and diseases, in order to maintain their full multiple value".

With the evolvement of the concept of SFM, many definitions from many organizations have been forwarded; however, there is still no universally agreed definition of SFM. Nevertheless, the most widely intergovernmental agreed-on definition is represented in the

non-legally binding instrument on all types of forests of the United Nations Forum on Forests (UNFP), which defines SFM as,

"a dynamic and evolving concept that aims to maintain and enhance the economic, social and environmental value of all types of forests, for the benefit of present and future generations" (as cited in GEF, 2013).

However, FAO (2014) argues that this definition is impractical beyond a general level as there is a great variation in forest types, conditions and socioeconomic contexts throughout the world. It further states,

"SFM can be viewed as the sustainable use and conservation of forests with the aim of maintaining and enhancing multiple forest values through human interventions. People are at the center of SFM because it aims to contribute to society's diverse needs in perpetuity".

Another most widely used definition of SFM is of by the Council of Europe for its regulation on the action of the European Union (EU) in the domain of tropical forests. It defines SFM as,

"the stewardship and use of forests and forest lands in a way, and at a rate, that maintains their biodiversity, productivity, regeneration capacity, vitality and their potential to fulfill, now and in the future, relevant ecological, economic and social functions, at local, national, and global levels, and that does not cause damage to other ecosystems" (Ministerial Conference on the Protection of Forests in Europe, 1993 as cited in Leroy et al., 2014).

As per Smouts (2001), this definition ponders dynamic vision as it integrates the concerns of both present and future, recognizes various spatial scales for relevant forest functions and

depends on good forest stewardship to reconcile use and sustainability (as cited in Leroy et al., 2014).

The yet another well recognized definition is by The International Tropical Timber Organization (ITTO) which defines SFM as,

"the process of managing permanent forest land to achieve one or more clearly specified objectives of management with regard to the production of a continuous flow of desired forest products and services without undue reduction of its inherent values and future productivity and without undue undesirable effects on the physical and social environment" (ITTO, 1992 as cited in Leroy et al., 2014).

Smouts (2001) points out this definition appearing to be economically driven, with a rationale of sustainable yields and the sustainability of logging (as cited in Leroy et al., 2014).

The range of definitions stated above highlights different characteristics, however, they have the similar fundamental base point of managing forests in a way that the present needs are met and the future needs are not compromised. Since the UNCED in 1992, various different international processes and initiatives have developed criteria and indicators as a policy instrument to monitor, assess and report progress towards the SFM. While the C&I process differs in specific content or structure but conceptually they are all similar in objective and approach (EFI, 2013). The International Conference on the Contribution of Criteria and Indicators for SFM, held in Guatemala had the gathering of representatives from all processes, government officials, international intergovernmental and non-governmental organizations and experts in the field. They agreed on the following common seven elements of criteria for SFM:

1. Extent of forest resources

2. Biological diversity

3. Forest health and vitality

4. Productive functions of forest resources

5. Protective functions of forest resources

6. Socio-economic functions

7. Legal, policy and institutional framework (FAO, 2003)

In "scientific" forestry, the main purpose of the development of the concept of sustainability was to ensure sustainable timber production and meeting economic objectives, however in the recent times, the scope of SFM has widened to equally cover social, cultural and environment forest values as well as broadened its application to all kinds of natural, modified and planted forests (FAO, 2012).

FAO (2014) states that forest management is a continual process of improvement, and as a part of adaptive management, new information needs to be considered when revisiting the objectives and approaches of SFM. SFM is always responsive and adaptable to changing information and required needs. It further explains that forests will always be subject to natural or human perturbations and hence, SFM should be perceived as a dynamic process. The main key to SFM is to maintain the resilience of the forest to endure perturbations while ensuring its ability to cope or adapt to environmental change in the long run (FAO, 2014).

2.6 Community Forestry

FAO (1998) defines community forestry as

"any situation which intimately involves local people in a forestry activity. It embraces a spectrum of situations ranging from woodlots in areas which are short of wood and other forest products for local needs, through the growing of trees at the farm level to provide cash crops and the processing of forest products at the household, artisan or small industry level to generate income, to the activities of forest dwelling communities."

Similarly, Thomas et al. (2000) defines community forestry as

"a strategy for sustainable forest management through the participation of rural people, by making the objectives of rural people central in forest management and ensuring that rural people obtain reasonable benefits from forest management"

They further states that community forestry means that local people (both men and women)

"determine the objectives of forest management according to the needs of the community; delineate the forest area for community usage; design forest management plans; manage and protect the forest area; monitor forest use and management activities; resolve conflicts relating to the forest area and forest resources; use the forest area and distribute forest benefits in a sustainable and equitable way"

According to Arnold (1987), the original concept of community forestry comprised of three main components:

1. Fuel and other goods essential to meet basic needs at the rural setting

2. Food and environmental stability for continued food production

3. Income and employment in the rural community

Hence, community forestry is an umbrella term covering a wide range of activities linking rural people with forests, and the benefits to be derived from them. Hence, it is not a separate discipline, or even program, but one dimension of forestry, agriculture, rural energy and other components of rural development (Arnold, 1978).

2.6.1 Processes in Community Forest Development in Nepal

As per the Community Forestry Guidelines 2002, community forest development comprises of 5 phases (as cited in Kanel, 2006). The 5 steps are:

a) Identification of users and formation of user group

Kanel (2006) emphasizes that following steps and procedure should be adopted during the identification of users and user group formation process. They are

- Identification of proposed community forest and its boundaries;

- Knowledge about resources and use status of proposed community forests;

- Visit villages around forests and discussion on the proposed community forests among the households;

- Preparation of draft list of users;

- Categorization of users in different social strata; and

- Final decision on user group members or users.

Before the identification of the user groups, the first and the foremost thing to do is to prepare the sketch map of the proposed community forest, which will help identify the potential households. After the forest boundary is decided, it is important to comprehend the contemporary status of forest as it provides with the information to what sorts of forest products could be withdrawn and also the people's interests depend on what they derive from the forests. Then after, discussion among the households in the village will be held to collect the list of households who are willing to be the members of the user group. The first round of user group members is identified from it and if necessary, the list could be categorized into different strata. Moreover, the vulnerable groups like disadvantaged groups, poor or women could be identified for close support and consultation. The users also could be categorized in terms of primary, secondary and seasonal users depending on the distance from their households. Primary users are generally the ones who have high dependency on forests for their daily use as well as for income generation. Secondary users are the users who are not as dependent as primary users and generally go to forests once or twice a month to collect forest products. Seasonal users are the users who go to the forests only in the special occasions like ceremonies or for gathering non-wood forest products for medicinal purposes. After having collected the list of the members of users, the final list of users is made after discussion and necessary changes among the users in the general assembly.

b) Formation of CFUG constitution

The CFUG constitution is the procedural and legal document of the users which includes the objectives of the user group, working modalities, commitments of the user group and also a set of operational rules devised by and for the forest user group members. It also includes the actions or the punishment for those who don't obey or go against the rules. It

explains about the composition of the executive committee members and their requirements, as well as the involvement of women, poor and vulnerable groups in decision making and benefit sharing mechanism. Various discussions are held before the final constitution is issued as it is the main document that paves the way for the CFUG. The steps in the preparation of the CFUG constitution are shown in Figure 2.7.
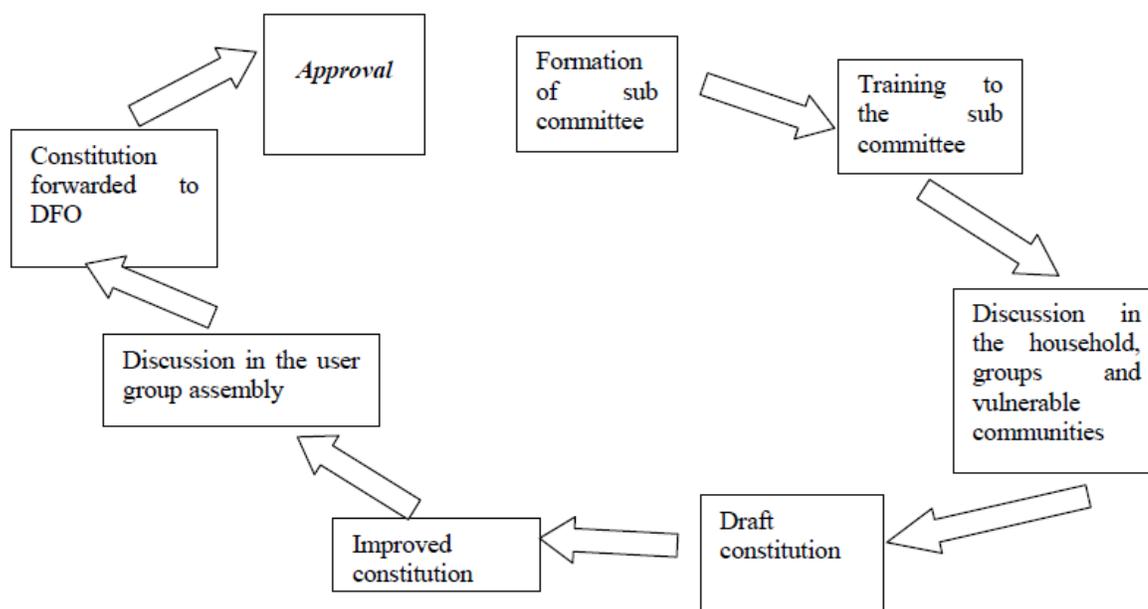
Figure 2.7: Steps in the preparation of CFUG constitution

Source: Kanel (2006)

c) Preparation of Operational Plan

The Operational Plan is the main document of users for the management of the forests and sharing of benefits. It includes all the necessary information for the management of forests like where to conduct silviculture, how much to harvest and how to share the benefits. In addition, the section 28 of the Forest Rules includes information on OP such as forest map, block division, forest management objectives, protection methods, silvicultural operations, potential income generation activities and so on. All the user members participate and follow

according to the OP, and the DFO has the authority to monitor the CFUG on the basis of OP implementation. The OP requires various technical forestry activities and processes as shown in Figure 2.8.
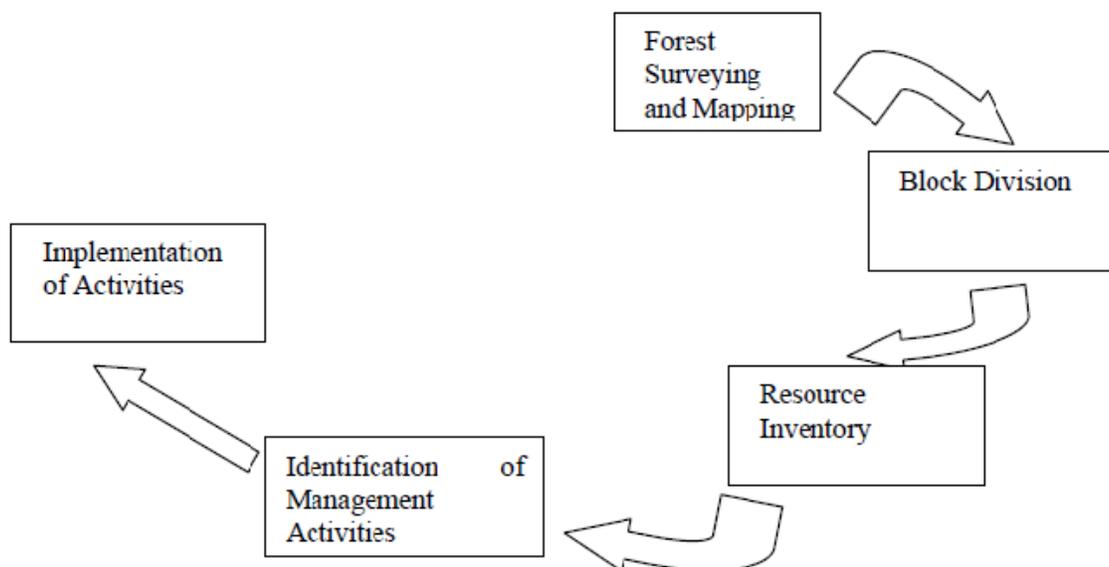
Figure 2.8: Technical activities and processes in preparation of Operational Plan

Source: Kanel (2006)

d) Implementation of Operational Plan

After the preparation of the OP, the next step is its implementation of all the activities proposed in the plan. Before the implementation of the plan, it is important to comprehend the legal aspects of community forestry and users should be well aware of the provisions made in the OP. It is the responsibility of the executive members to inform about the processes and outcomes of the plan to the users. The steps of the implementation of OP are shown in Figure 2.9.
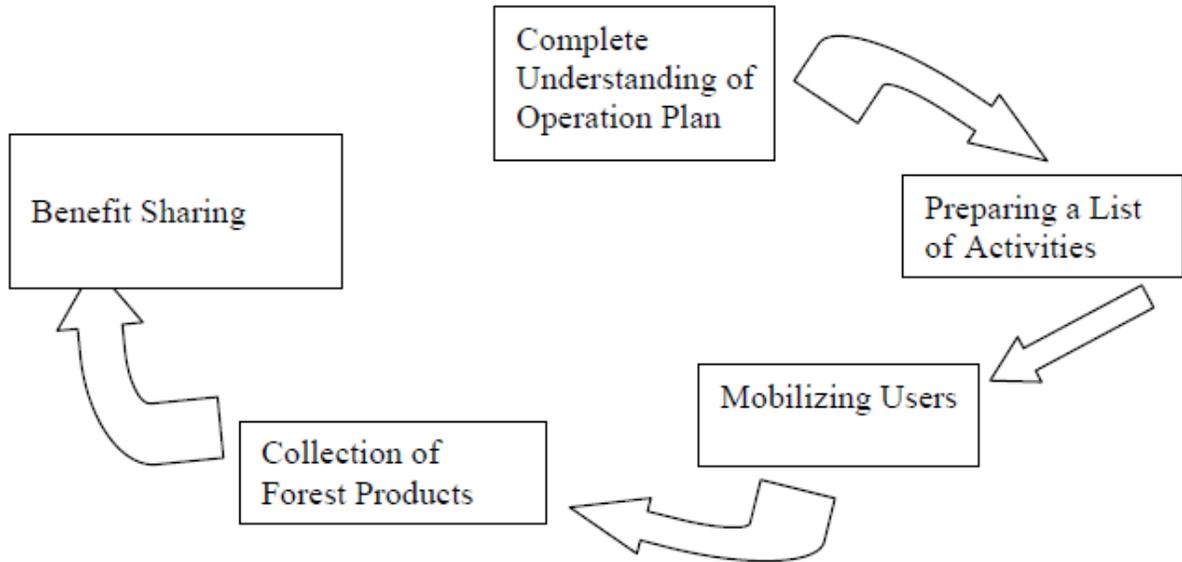
Figure 2.9: Steps in implementing the Operational Plan

Source: Kanel (2006)

e) Revising and updating Operational Plan

The revision and update of OP might necessarily be done according to the change in some provisions as well as the change in situations. The reasons could be the changes in the law to be followed by CFUGs, natural accidents like fire or natural calamities, changes in the alternatives of the forest products availability or changes in the knowledge of the CFUGs through experiences, trainings etc. The Figure 2.10 below shows the processes of OP revision and its amendment.
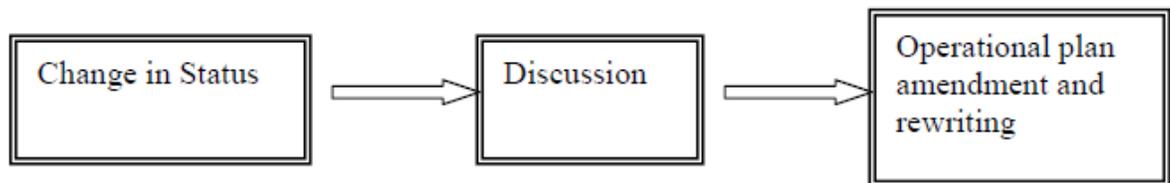
Figure 2.10: Steps in the revision and update of Operational Plan

Source: Kanel (2006)

2.7 Theoretical Framework

2.7.1 Sex, Gender & Their Roles

Sex is a biological categorization based primarily on potential of reproduction (Eckert et al., n.d.). In addition, sexes (male and female) also differ in terms of chromosomes, hormones, brain size, and secondary sexual characteristics. Biologically, the differences between male and female are that maleness equated with greater size, weight, and strength and, even the average male baby is heavier and longer than the average female baby at birth (Stephanie Garrett as cited in Adhikari (2011).

Sex is a biological concept, while gender is a social concept. Gender refers to the social and cultural differences a society assigns to people based on their (biological) sex (Eckert & McConnell-Ginet, 2003). Gender is not something we are born with, and not something we have, but something we do (West and Zimmerman, 1987 as cited in Eckert et al., n.d.). A famous feminist Simone de Behaviour cites, "one is not born a man but becomes one", "one is not born a woman but becomes one".

Pearson (n.d.) emphasizes that it is important to understand the distinctions between a role, a gender role and a sex role. He describes a role as "the *behavior expected of someone who holds a particular status*" and also mentions "the *expectations are defined for a particular person in a particular situation in a particular culture*". Similarly, he describes a gender role as "the *behavior expected of a male or a female in a particular culture, the attitudes and activities that a society expects of each sex*". It structures the various roles that an individual play throughout his/her whole life, impacting the daily aspects of life from choice of dress to the job (Johnson & Repta, n.d.). Pearson (n.d.) emphasizes that people

often calls or uses the term gender role to sex role, which is technically incorrect. He states a sex role as "the *behavior defined by biological constraints*". Cornwall (2000) states that *despite the pervasive use of the term 'gender', men and women are often separated based on sex as if that is the only way to define groups. Women are represented as the weaker party since their interest and claims are thought conflicting whereas men become powerful figures who need somehow to be countered.*

2.7.2 Feminist Theories

Many theories on women by feminists have been put forward time and again. The feminisms of 1960s and 1970s started the second wave feminism rooted on 18th and 19th century liberal political philosophy that developed the idea of individual rights, Marx's 19th century critique of capitalism and his concept of class consciousness, and 20th century anti-colonial politics and ideas of national development. These Gender Reform Feminisms put women as their main perspectives.

Liberal Feminism is one of those theories which claims gender differences are not based on biology and hence, men and women are not different. Therefore, women should be treated equally and should have the equal rights, educational and working opportunities as men. The major contribution of liberal feminism is revealing how much women have been discriminated in the modern society. Despite of its inability to overcome the intrinsic difference between women and women, it somewhat proved that women are not inferior to men regardless of their differences.

Another such theory is development feminism which emphasizes on universal human rights and equating women's status with control of economic resources. The theoretical

emphasis in universal human rights for women can be felt in education, maternity and child health care as well as the economic resources who contribute to family immensely. Nevertheless, development feminism has to confront traditional cultural values and practices which gives power to men than their wives and daughters, when gender politics calls for marital rights and sexual autonomy.

Marxist and Socialist Feminism is yet another theory which severely criticizes family as a source of women's oppression and exploitation. It argues that the main cause of women's oppression is their mere economic dependence on their husbands. The solution is to provide full time jobs for women with the state providing childcare and paid maternity leave, however, state seems to be more fulfilling their interests rather than the women's. Depending on the economic needs of the state, the role of women is either worker-mothers or just mothers as state can take away the privileges what state gave to women (Lorber, 2010).

2. 7.3 Women and Gender in Development Discourse and Programs

Over the years, development interventions and programs have been criticized for neglecting gender roles and the impacts on women around the world. In this regard, for the past couple of decades, a number of specific theories have been taken in relation to men's and women's involvement in and with development. These theories have set out to reflect on how development affects both the genders and why women do not experience development the similar way men do (Regan, 2006).

a) Women in Development (WID) Theory

This theory was originated in the early 1970s when it was believed that the women were not just excluded from the development but also were becoming more disadvantageous as a consequence. Women had the role to play in community and family in particular, as mothers, caretakers, educators and workers (Regan, 2006).

This theory supported the integration of women into development programs for the improvement of women's access to resources and participation in development interventions (Regan, 2006). It also ensured inclusion of women into the workforce and increased their productivity level in order to improve their lives (Collins, 2013). Despite sparking light on the women's involvement in the development issues, the approach had number of limitations and was also criticized. Vijayamohanan et al. (2009) states that the WID rather than finding out the reasons of why women are not being able to benefit from erstwhile development strategies, emphasized only on how women could be included in development initiatives. Regan (2006) explains that the WID had a very narrow insight of the inequalities between men and women and neglected the social, cultural, legal and economic factors leading to such inequalities in the society. He further states the theory focused exclusively on women and considered women being outside in the mainstream of development. As per Collins (2013), the WID fails to understand the dynamics of the private sphere but emphasize solely on public sphere, and is being tagged as being rather cumbersome on women.

b) Women and Development (WAD) Theory

The WAD theory arose to the latter half of the 1970s as an opposition to WID and argued that women had never been apart from the development process where the role

women played both inside and outside home was very essential for the society to survive and flourish. WAD denied the points emphasized by WID and rather claims that the integration of women into development initiatives was disadvantageous and would only worsen their chances of equality (Regan, 2006). As per Vijayamohanan et al. (2009), WAD identifies the men from the Third World are being affected by the structure of the inequalities and exploitation within the international system and discourages the focus on the problems independent of women since both the sexes are victims of the oppressive global structures which is based on class and capital. Thus, there is not much attention given to social relations of gender within classes. As stated in Regan (2006), this theory was criticized for assuming that women's position would improve if international structures become more equitable, thereby undertaking the role of patriarchy and not giving much attention in addressing relations between the sexes and their impact on development.

c) Gender and Development (GAD) Theory

The GAD theory was originated in 1980s as a representation of many feminist ideas. This theory pays attention at the effects of development in gender, supporting equal participation of both the sexes in development initiatives as well as focusing equality over benefit and control in everyday life events (Regan, 2006). GAD does not concern women exclusively but it rather identifies the unequal power relation between men and women (Vijayamohanan et al., 2009). It emphasizes on the social or gender relations (like division of labor etc.) between men and women in society and seeks to address the issues of power and control over resources. Moreover, it accentuates on the productive as well as the reproductive role of women and calls it a state responsibility to support social reproduction roles (like caring and nurturing of children) played by women (Regan, 2006). Moreover,

GAD re-examines all social, political and economic structures and development policies from the perspective of gender differentiation. Furthermore, it also emphasizes on the 'transformative change' from household to global level, in order to achieve gender equity and equity in general (Vijayamohanan et al., 2009).

d) Gender, Law and Development (GLAD) Theory

Many of the recent works have been focusing on GLAD, which is rights based approach trying to bring law and development together to emphasize equal rights and equal access to resources in law. In many countries and societies, history has always given power to men based in the economic, social and legal system. On the other hand, women are expected to be absent from public participation and women's role has been considered as a homemaker as opposed to decision maker and policy maker. GLAD encourages ensuring the changes to laws which are against discrimination of women's rights. The time is changing as women are receiving their rights but still not to the optimum level. Women in some countries have been allowed to inherit property as their male counterparts like husbands, brothers or sons; however, there are still many countries with customary and religious laws which usually discriminate women's rights (Regan, 2006).

2.7.4 Community Forestry in Theory

Various hypotheses underlie the concept and efforts to implement the community forestry into practice. A discrete "community" is the core of the community forestry. The use of forests can be performed in an ecologically sustainable way together with bio-diversity conservation. Local people are the ones who better comprehend their needs and are in better position to assess their own rights and responsibilities (Adhikari, 2011). The greater the

controls by the local people, the healthier forests become and the use of forests becomes more ecologically sustainable. The greater the controls by the local people, the more local community benefits associated with forests and forest management (Charnley and Poe, 2007). Moreover, a project that the local people themselves plan and implement is given a priority as local materials and human resources are utilized effectively by the local people's initiative and responsibility. Thus, this effective mobilization of local resources leads to local independence and sustainable development.

2.7.5 Program/Project Planning and Management

As per Blackman (2003), the process of planning and managing the projects, programs and organizations is termed as Project Cycle Management or PCM. It has been broadly used in business sectors as well as in the development interventions. PCM is based around a project cycle ensuring all the aspects of a project are taken into considerations. The project cycle consists of mainly 4 phases drawn in a cycle and each phase leads to the next. See Figure 2.11.
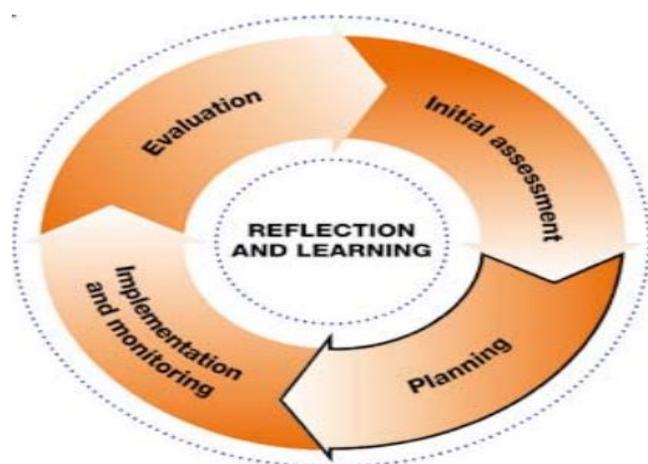
Figure 2.11: The Project/ Program Cycle

Source: IFRC (2010)

a) Initial Assessment

In this phase, the current situation is understood and figured out whether the intervention is required or not. For this, the key factors influencing the situation, problems and their causes, and also the needs, interests, capacities and constraints of different stakeholders are identified. If the intervention is required, the project is conceptualized and the basic processes are performed to get a project started. It may include initial analysis and proposal of the intervention to be carried out. The main purpose of this phase is to specify the goals that need to be accomplished by the project. The initial project phase is critical in a sense that it is very essential to reach an agreement for those who will deliver the products or process, for those who will consume it, and for those who have stake in the project. The initial phase is also crucial as it is predecessor to project planning and the activities conducted during this phase will be eventually integrated in the planning processes such as preparation of the planning documents, budget plan, and schedule setting and so on (IFRC, 2010).

b) Planning

It is often stated that "failing to plan is planning to fail". However, it does not mean that those who don't plan will eventually fail. Nevertheless, planning ahead of doing something will definitely bring about greater effectiveness and better results. As per IFRC (2010), planning phase includes in it the intervention's objectives, inputs and activities to accomplish them, indicators to measure the progress as well as the key assumptions that may affect the objectives. In the planning phase, the needs, interests, resources, mandates and capacities of the implementing organizations and stakeholders associated are taken into considerations. As per ANA (2012), project planning is initiated with the formation of the

local project planning committee or group which is responsible to effectively run the planning process while also ensuring everyone's participation. The committee or the group can organize meetings, conduct surveys, collect and analyze information and also interact with other agencies and organizations. The project plan is constructed at the end of this phase and is ready to implement.

c) Implementation and monitoring

In the implementation and monitoring phase, at first, the project plan is put into action in order to achieve the objectives. Implementation is generally specific to particular area of intervention like forest, water, sanitation, etc. As per Blackman (2003), in the implementation phase, it is important to update the stakeholder analysis in order to assure that there are no other new stakeholders as they can influence the success of the project. In addition, it is cited that, it is equally important to reassess the risks to the project as newer risks might have occurred during the project management process. Then the implemented activities are monitored in order to track progress, check compliance and make informed decisions. The monitoring systems should be formed during the planning phase in order to allow gathering information on the progress made during the implementation. Depending on the progress, decisions are made on whether the intervention needs change or adapt according to the new situation (IFRC, 2010).

d) Evaluation

After the implementation and monitoring phase, it leads to the evaluation phase which is usually performed at the end to assess the impacts of the intervention. Evaluation phase determines the relevance and achievement of objectives, developmental efficiency,

effectiveness, impact and sustainability. In this phase, credible and useful information should be provided as it enables the incorporation of lesson learned in decision making process, and also informs the new planning process to whether continue with the same intervention, implement a new intervention or terminate the intervention (IFRC, 2010).

2.7. 6 Concept of Participation and Related Typologies

Within the last couple of decades, the concept of participation has been widely used and emphasized in a broad spectrum of development interventions like resource conservation, agricultural extension, forestry development and health sector (Oakley, 1995). However, conceptualizing participation is not an easy task as it is a complex and dynamic concept. The term participation is generally defined depending on the field and the context in which it is studied. One of the commonly used definitions is of by the World Bank (2007).

World Bank (2007) defines participation, in a development context, as

"a process through which stakeholders, influence and share control over development initiatives and the decisions and resources which affect them".

The importance of people's participation in natural resource management to ensure environmentally sustainable development is well recognized. However, there are different stages in natural resource management projects depending upon the project. The involvement of people in those stages determines the level of participation in projects. The best way to understand the level of participation is by understanding the typologies forwarded by the scholars. Amongst many topologies, the two major and commonly used typologies discussed here are the Arnstein (1969)'s "A Ladder of Citizen Participation" and Pimbert and Pretty (1995)'s model of participation.

a) A Ladder of Citizen Participation

Arnstein (1969) describes the different levels of participation of people's involvement in various stages of projects taking the eight rungs of ladder as the eight levels of participation. He states that this categorization is important to unveil the unequal and manipulative elements in the name of participation in the project. The eight rungs corresponding to eight levels of participation are manipulation, therapy, informing, consultation, placation, partnership, delegated power and citizen control as shown in Figure 2.12.
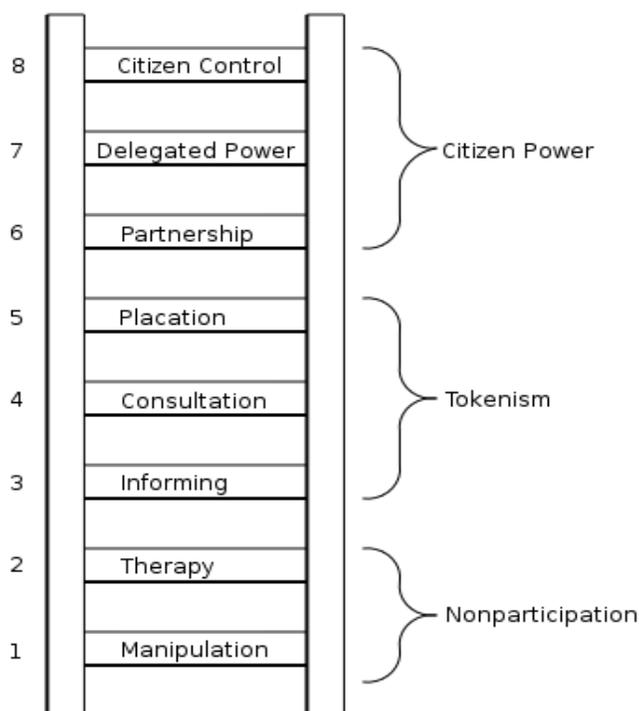
Figure 2.12: Eight rungs on a ladder of participation

Source: Arnstein (1969)

As per the categorization by Arnstein (1969), the descriptions about the eight levels of participation is divided under three categories: Non-participation, Tokenism and Citizen Power. They are explained below.

1. Non-Participation

The bottom two rungs of the ladder are the ones which show least citizen participation or non-participation. It includes manipulation and therapy. Manipulation is a complete deception like power holders are holding a meeting for the sake of fulfilling participation requirement but have no intention of sharing it. Therapy here refers to the rather misleading way powerful use to persuade the powerless to do what they want by disguising their real intentions. As Arnstein (1969) states it is dishonest as well as arrogant.

2. Tokenism

Starting from rung 3 to rung 5 falls under tokenism. These levels are more honest but still are inadequate forms of participation. It includes informing, consultation and placation. Informing here means the ones with the power have made the decisions and are just providing with the one-way flow of information about the decision. Consultation is the mere way of asking the views of the people; however, there is no guarantee of their opinions and ideas are considered. Placation is the level where citizens start to have a bit of influence but tokenism is still apparent. In this level, the ones with power are to have some kinds of sacrifice by providing money or power but not that of high value so that the power holders can keep up with the domination.

3. Citizen Power

The top 3 rungs of the ladder signify the real citizen participation where citizens actually get the real power. It includes Partnership, Delegated Power and Citizen Control. In Partnership, citizens and power holders share the power and perform or negotiate joint structures to resolve various priorities. Citizens participate in policy planning, decision making and other similar mechanisms. In Delegated Power, citizens are given substantial authority to make decisions and manage the plan. Finally, In Citizen Control, citizens are given the maximum authority over a plan or project.

b) Pimbert and Pretty's Typology of Participation

Pimbert and Pretty (1995)'s typology of participation includes seven level of participation namely Passive Participation, Participation in Information Giving, Participation by Consultation, Participation for Material Incentives, Functional Participation, Interactive Participation and Self- Mobilization. See Table 2.1. Moreover, they have warned to carefully use and interpret the term participation and suggested that it should be qualified by reference to the type of participation as most of the types don't support the goals of sustainable conservation. They further suggested ensuring the ones using the term participation should clarify their specific application and define better ways of shifting from passive participation towards the other end.

Table 2.1: A Typology of Participation

Typology	Characteristics of each type
Passive Participation	People participate only to be heard what has happened or going to happen as their responses is not heard.
Participation in Information Giving	People participate by answering the questions using survey questionnaire or other approaches, but they are neither shared nor checked for accuracy with them.
Participation by Consultation	People participate by being consulted and their views are listened by external agents but it does not influence decision making.
Participation for Material Incentives	People participate by providing the resources they have like labor in the return of food, money or other incentives.
Functional Participation	People participate forming the groups after the decisions are made by external agents in order to meet the project goals. The project can be self-dependent later.
Interactive Participation	People participate by taking control over decision making and work together to develop action plan, form new groups or strengthen the old ones.
Self- Mobilization	People participate by taking actions independent of external agents. Such actions may or may not challenge the inequitable distribution of wealth and power.

Source: Pimbert and Pretty (1995)

Both the typologies have their own significant characteristics. However, the main point that both the typologies agrees is that, citizens are actually participating in any sort of

development initiatives if they have been able to develop action plans, make decisions on their own and managing the plan or project.

2.8 Importance of Women's Participation in Community Forestry Program

Any development projects proceed better when women's roles and needs are fully incorporated into project design from the very beginning (IFAD, 2011). Dhimal (2012) emphasizes that the participation of women is extremely essential in any development programs as they cover more than half of the world's total population and men shouldn't undermine them. Agarwal (1997) claims that the segregation of women in the resource management process does not only have an effect on the efficient functioning and long term sustainability of these initiatives, but also for gender equity and women's empowerment.

Similarly, the participation of women is very crucial for the success of community forestry (Agrawal, 1997, 2001; Gentle, 2003; Kaphle, 2011; Leone, 2013). The study done by Agarwal (2009) illustrated that the forest condition becomes better with more number of female presence in the forest user groups due to their better quality of forest protection. It is further stated that the involvement of more women in the executive committee helps to improve women's general knowledge and information about forest user group's rules and activities, consequently contributing in the increment of women's membership and effectiveness in community forestry groups. In addition, the women holding some responsibilities within the group have the incentive to follow the rules and to bring their concerns into the group's discussions (Bardhan and Dayton-Johnson, 2007 cited by Leone, 2013). Moreover, women's participation on regulating illegal animal grazing seems to be

very effective (Agarwal et al., 2004 cited by Mwangi et al., 2011). Furthermore, the capacity of conflict management increases in groups consisting of women (Westermann, 2005 cited by Mwangi et al., 2011).

2.9 Experience of Forest Management Practices from other countries

At present, various countries all around the world are involved in community based forest programs. Amongst them, two of the pioneer countries (India and the Philippines) have been chosen to be discussed about their way of practicing forest management and the women's roles in it.

2.9.1 Joint Forest management in India

The Joint Forest Management (JFM) in India is one of the largest co-management programs in natural resource conservation in the world. It is an approach to enhance the country's carbon sinks where state forest department co-operate with the local forest communities for the protection and management of the forests, sharing the costs and benefits. The JFM committee is formed by communities themselves and is guided by locally prepared micro plans and byelaws in order to efficiently protect and manage the forests. One of the major aspects of JFM is that the community members have the right and power to forest protection and management. They can have the direct access and control on the mobilization and sale of most of the NTFPs and can have the share of economic benefits along with other intangible benefits from local ecosystem services such as pollination, recharge of water, wildlife habitat and so on (MOEF, 2011).

Since the colonial period, the traditional stakeholders and forest dependents including tribal people had been restricted from ownership and usufruct rights. However, due to the mass scale deforestation and the conflict between the traditional rights of forest users and 'command and control' management legacy, the Government of India in its new forest policy of 1988 laid the foundation over the decades of exclusionary regime, issuing broad guidelines to involve people in the management of the forests (Vemuri, 2008). Moreover, the 1990 resolution of the Ministry of Environment and Forests on JFM acted as a blueprint intending to guide participatory forest management in various parts of the country. Recent data indicate that, there are 1,18,213 JFM committees across 298 States managing 22.94 million ha of forests in the country by March, 2011 (MOEF, 2011).

a) Women Roles in Joint Forest Management in India

In India, women are the ones who are active in the collection of the forest products like fuel wood, fodder and non-timber forest products (NTFPs). Moreover, they are involved in wage labor in forest department works and also use forest products as raw materials for entrepreneurial activities. A study done in Uttar Pradesh of India showed that women obtained 33-45% of their income derived from the forests and common land whereas men only obtained 13% (IUCN, n.d.). It also showed that women spend quite a lot of their time in the forests, due to which they are very aware and knowledgeable about various forest products like trees, grasses and shrubs. The tribal women in India are found to have known the medicinal uses of more than 300 forest species (Martin, n.d.). Moreover, women are the ones profoundly affected by the degradation of forests due to the shortage of forest products (IUCN, 2011).

Besides, in some forest divisions in India, there are cases where women formed Forest Patrol Teams by themselves to patrol the forest on a regular basis for the protection of forests. One of such examples forwarded by IUCN (2011) is of the all-women Maheshpur Village Forest Management and Protection Committees in Jharkhand, where women just not only patrol the forests but also raid the houses to recover the stolen forest products like wood. The women members have acted very efficiently in catching the offenders and persuading them to stop the illegal act (IUCN, 2011). This shows how significant forest products are to women and how important their role is in forest protection and management.

According to the survey conducted in various communities in Himanchal Pradesh by Agrawal and Chhatre (2006) showed that the inclusion of women in organizational decision-making created better conditions for the conservation of forest resources. They further stated that, as women are the main collectors of forest resources, their role in the formulation of forest rules could help meet their needs and at the same time protect the resource base. However, due to the various hindrances limiting women's participation in community forest programs, only-women forest user groups are being formed mostly in hill and tribal areas, and are showing excellent results in forest management. In a study of all-women's community forest institutions in Gujarat, Agarwal (2009) found that despite these groups are given smaller and much degraded plots of forests, they were able to improve the forest condition as well as decrease the percentage of degraded forest area in their communities.

b) Challenges to women in forestry

Despite the significance role women play in forest management, there are still many challenges that need to be addressed in JFM in India. Maksimowski (2011) emphasizes that

one of the major issues in JFM and other participatory approaches to community forest management in India is a lack of women's participation. Women feel socially inhibited especially expressing their opinions in front of male dominated community. In addition, mostly in the rural areas of India, performing the domestic chores of the home is traditionally perceived as women's role. This tradition is still continuing, consequently leading in the exclusion of women's participation in public decision making forums.

Another key issue is that the preference of the forest products is highly gendered, as forest department considers timber to be the most important forest product, which is considered a male domain from where women are often excluded in local and national institutions managing these resources (Maksimowski, 2011). In contrast, NTFPs are given minimal importance despite their immense importance for personal and commercial purposes, in which women depend for the subsistence of their households. He further states that women's involvement in forest management is significant not only for meeting their livelihood needs but to attain the conservation goals and increase project efficiency.

Aside from constraints arising from gender and social norms, there are policy barriers limiting the women's role in JFM in India. While the Ministry of Environment and Forests of India stated "creating a massive people's movement with the involvement of women" as one of the main objectives of JFM, later in 1990, the circular by MOEF, referred to beneficiaries without mentioning women. In Madhya Pradesh State, an attitudinal assessment was conducted in 14 village forest committees, in which the agreement was done that women should contribute towards JFM significantly. However, there were no regulations on how the women should be involved in JFM. This ambiguity in JFM policy together with socio-cultural barriers is hindering the women's role in JFM in India (Maksimowski, 2011).

2.9.2 Community-Based Forest Management in the Philippines

Philippines is one of the pioneers in Asia in the implementation of the nationwide Community-Based Forest Management strategy. The CBFM in the Philippines emerged as the result of various factors. One of the major factors was the excessive forest and environmental degradation that the Philippines was facing (Rebugio et al., n.d.). Philippines saw the heavy disappearing of the total land area of forest cover from 92 % in 1575 to 24% in 2003. From 1950s to 1973, the exploitative practice led the annual deforestation rate as high as 172,000 hectares. Moreover, under the regime of Marcos from 1970-1980, the annual deforestation increased to as high as 300,000 hectares making the Philippines on the top lists of the countries with the worst deforestation rates in the Asia pacific region. Another factor was the inequitable access to forest resources as well as the benefits. Before CBFM, the forest management in the Philippines was highly centralized and only a privileged few benefitted more unlike the millions of people living uplands who depend on forest for their subsistence. During the Martial Period, around the one-third of the country's total land area totaling about 8-12 million hectares were controlled by 450-470 TLA holders placed by the central government. On the other hand, the forest residents as well as the indigenous communities were regarded as the destructors of forests and there had been times when they were evicted from their own ancestral lands for development of various projects. According to (Broad and Cavanagh, 1993 as cited in Rebugio et al., n.d.), various analysis has showed that due to the autonomy of the few privileged on the natural resources has led to the upland poverty. The various problems created by the inequity and the upland poverty led to various problems creating the insurgency in the rural areas (Pulhin, 1996 as cited in Rebugio et al., n.d.). Yet another factor is the loss of state credibility to manage the country's resources. The inability

of the DENR to address the issues of massive forest degradation as well as the upland poverty fueled the sense of distrust in the public regarding its credibility and moral authority to handle the nation's natural assets. Besides, the ever-growing corruption and political patronage being deeply rooted in the bureaucracy during the logging years also contributed to further destruct the forests and haunt the people's minds. After the restoration of democracy, losing the faith of people, DENR was pressured to introduce a new management paradigm to reacquire political legitimacy as a primary agency of the government for the protection, management and the mobilization of the country's natural resources. Acknowledging the importance of people's roles in forest management,   executive order No. 263 was issued and community forestry program was launched to democratize the access to the forest resources as well forest protection, which later came to be known as community-based forest management or CBFM. Later, CBFM was adopted as a national strategy in 1995 in order to achieve the dual goals of sustainable forestry and social justice. As per the order, people are allowed to acquire long term tenure rights to forest land and resource use permits from DENR under the provision that they use the environment friendly, ecologically sustainable and labor- intensive techniques. The communities form a people's organization (PO) under CBFM representing a particular project along with the other stakeholders. Various practices being performed by communities under CBFM are like agro-forestry, timber harvesting, and animal rearing and so on (Rebugio et al., n.d.).

The CBFM strategy in the Philippines has been considered as a new approach with the following policy objectives: 1) uplift the socio-economic condition of the communities; 2) promote social justice and equal access to the benefits from forest resources to all including the indigenous communities; 3) promote sustainable use forestlands and resources; and 4)

make the environment of the country better for healthy lives of people (Pulhin et al., 2007 as cited in Rebugio et al., n.d.). CBFM encompasses the areas like forestlands as well as protected areas with allowable zones. It integrates and includes all community oriented forestry activities of the Integrated Social Forestry Program, Community Forestry Program, Coastal Environment Program, and Recognition of Ancestral Domain (Acquino et al., 2014). Since the program was launched in 1995, 5,503 projects have already been established covering about 5.97 million hectares of area and comprising of 690,691 households (Pulhin & *et al.*, 2009 as cited in acquino et al., 2014).

a) Women's roles in Community-Based Forest Management in the Philippines (A case of Contong Bay Mangrove Forest Management Project in the island of Bohol, Philippines)

Mangroves are very ecologically valuable ecosystem and economically important resource that can be found along the coastlines in the Philippines. They support various fish species by providing spawning grounds and nurseries as well as acts as a habitat to many mammals, reptiles and birds. They also play an important role to protect the coastal environment helping to control and reduce flooding, erosion and the damages by the storm as well as maintain the water quality. On the other hand, mangroves have also contributed to traditional and commercial users by providing them with food, shelter and income. Various marine species flourished in mangrove areas are consumed by people and they also use mangroves so as to provide them with fuelwood, charcoal and construction purposes of their homes as well as making fences, poles and traps for fish and corals.

Despite the immense value and importance of the mangroves, the mangroves have been heavily depleted due to its extensive encroachment and use, not only in Cotong Bay but

throughout the Philippines. As per (World Bank, 1989 as cited in Mehra et al., 1993), about 70% of the 450,000 hectares found in the Philippines was destroyed in the early 20th century. The major source behind the destruction is cutting off the mangrove trees for the purpose of exporting the logs during the 1960s. Other factors include increase in the pressure of the increasing population, the open access to resource area and conversion of mangrove areas for the development of fishponds without regulations (Mehra et al., 1993). Thereafter, looking at the pace of destruction of mangrove forests, in 1990, ENR issued an order to make all mangrove areas available for communities except those in wilderness on the provision of managing it sustainably considering the fact that the indigenous people are the daily users of the resource. Also, the idea attached with it was to enhance the management practice by providing the local users a long-term tenure (Mehra et al., 1993).

Cotong Bay Mangrove Management Project was one of those projects attempted to protect mangroves and other resources along the bay as well to enhance the livelihood and income of the people whose lives depend on these resources. The two principles underlying this project were the community management and the security of the long-term tenure as an incentive for better management. Various works were done under the project through community associations like mangrove afforestation and rehabilitation, mariculture, illegal fishing prevention and so on (Mehra et al., 1993).

Women in the Contong Bay are the key contributors of the economic development of their household as they are equally involved as men in the utilization of coastal resources for the income and livelihood of their family. They have been involved in the activities like collection, processing and sale of oyster, marketing of fish, agriculture and cattle herding. Due to their immense dependence on those resources, they have deep concerns regarding the

depletion of resources. In the project planning by the project designers or staffs, women were sidelined and there were no particular efforts made for women's involvement in the project. Despite this, women came up forward by themselves and made themselves actively involved in the associations, even more active than men at times. Neither being acquired the membership in fishermen's association nor could they be provided with Mangrove Stewardship Certificate which allow the tenure security over mangrove areas, they went on participate in the meetings of association as proxies for their husbands, voluntarily undertook project's activities like planting and mangroves, reporting illegal fishing to the authorities and also attending maricultural trainings demonstrated by project staffs. The above-mentioned privileges were only limited to male heads of the household or single women and widows. This case shows that women have a deep connection with natural resources as they depend on them for their income and subsistence of the family if not the ecological concern. Therefore, they have serious concerns regarding the protection and management of the natural resources as portrayed by this case in the Cotong Bay Mangrove Forest Management in the island of Bohol, Philippines (Mehra et al., 1993).

b) Lessons Learned

The most important lesson that this case has taught is that neglecting women's roles in the project design, planning and implementation can result to the missing of significant opportunities that can run the project in a very effective and sustainable way. It is therefore of utmost importance to make a conscious effort to identify women's roles, responsibilities and needs at the beginning of conservation and development projects. Another lesson that was learned was that the opinions of all the stakeholders including women should be heard and should be taken into considerations at the planning of the project. Here in this case, had

the project designers would have comprehended that the women were not happy with the community's capability to handle the illegal fishing, the designers would have had been alerted way early than the problems would have overwhelmed. The other lesson was women should be provided with equal and direct access and control over the resources like men, in order to benefit fully as well as achieve project goals. Here in the case, women were required to have the membership with the community association as well as mangrove stewardship certificate to equally access the credit for improvement of their livelihood and income.

2.10 Conceptual Framework and Assumptions
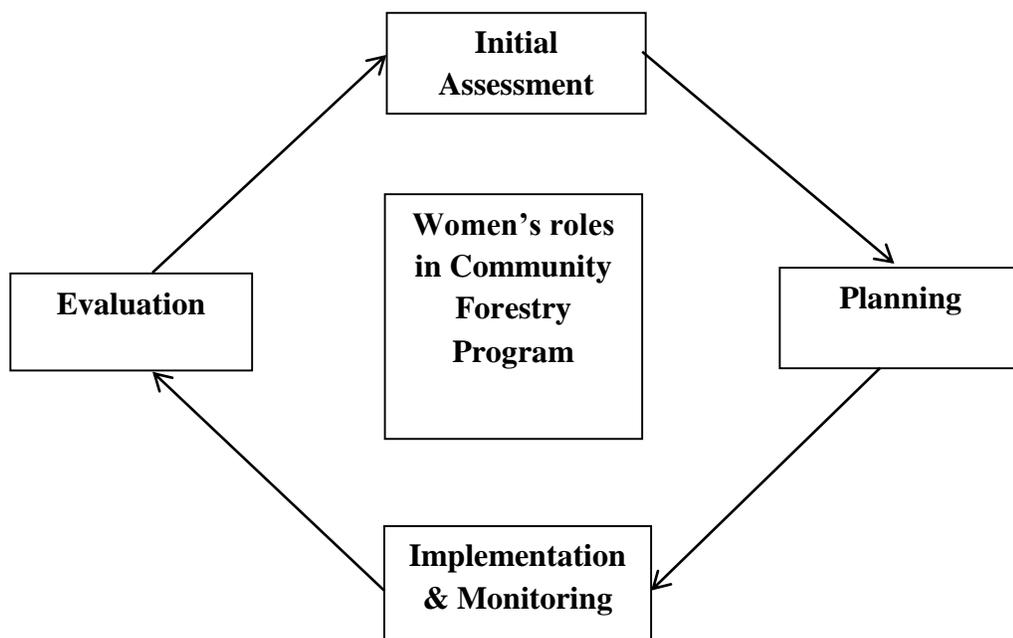
Figure 2.13: Conceptual Framework of the study

Source: Author

The conceptual framework of the study (Figure 2.13) is developed based on the project/ program cycle by IFRC. According to IFRC (2010), the project/ program consists of 4 phases

namely initial assessment, planning, implementation and monitoring and evaluation. See Figure 2.11. Here the study refers to the very project/ program cycle to show the roles of women in community forestry program. The study assumes that women have very important roles to play in various phases of the community forestry program like initial assessment, planning, implementation and monitoring and evaluation. Women roles are vital in the success and sustainability of the program and hence their roles need to be addressed and should be at the forefront in the decision-making processes as they are the primary users of forests.

2.11 Summary

This chapter summarized the important literature, terminologies, concepts and regarding the women's roles in natural resources management especially forests.

With the paradigm shift in forest management, decentralization emerged as a very effective way, giving local community the authority to manage the forests. Communities themselves form a group and manage, utilize as well as protect the forest. Various researches have shown that the community forest management projects and programs being conducted across the globe under decentralization system have had positive results in many countries. However, the success or the sustainability of these projects and programs cannot be ensured without acknowledging and encouraging the roles women play in forest management. Women being the primary users of forest should be indeed actively involved in forest management. However, there often have been many cases of women's roles being unaddressed and also being excluded from the management process.

The chapter discussed how the roles are defined on the basis of sex and gender and how gender is often misrepresented as sex. In addition, feminist theories and other theories were also presented on to how the roles of women have been portrayed in various development discourse and programs.

This chapter also highlighted the 4 phases of project/ program management in which each phase is very crucial for the effective management of the project or the program and one phase leads to the next namely Initial assessment, Planning, Implementation and monitoring and Evaluation. Moreover, from reviewing literature, it was comprehended that the identification of users and formation of user group, formation of CFUG constitution, preparation of Operational Plan, implementation of Operational Plan and revising and updating of operational Plan are the major steps in the management of community forestry in Nepal.

Furthermore, the concept of participation was also highlighted and with the references of the typologies, it was found out that there are various levels of participation in management projects. It was learnt that what is seen only can be decisive in terms of participation. In addition, it was also understood that how crucial is women's effective participation for the better functioning and sustainability of community forestry. Besides, experiences of two countries practicing community forest management were examined and learnt how women have played their roles as well as figured out challenges that need to overcome.

At the last part of the Chapter, the conceptual framework has been developed, based on the reviewed literatures in order to streamline the findings of the objectives. The next chapter will be presenting the methods used in order to perform the study.

CHAPTER III

METHODOLOGY

This chapter comprises of the research methods, tools and techniques used in this study in order to meet the objectives of the research. This research is a case study of a Community Forest in Nuwakot District of Nepal aiming to identify the roles of women in the Community Forestry Program, which has achieved a global acclaim for its documented history of over 3 decades.

3.1 Rationale of the selection of the study area

Panchakanya Community Forest of Bidur municipality, located in Nuwakot District of Nepal is purposely selected as a case study for this research. The author has the experience of having done the study on the same community forest, i.e., Panchakanya Community as an undergraduate research. It was found then that the community forest has more number of women users than the male users. This study being conducted over women roles in the community forestry program, the very community forest perfectly suited to what the author was keen to grasp as the respondents of the survey was supposed to be solely women. Besides, the site is familiar to the author as well as the author's uncle being the DFO of the district in which the very community forest belongs, provided with the opportunity to access to the various materials of the CF like its Constitution and Operational Plan, access to the respondents easily and have various discussions with the community forest executive committee members as well as various rangers in the District Forest Office. Moreover, the

residence area of the author being close the study area helped to perform the study at low cost.

3.2 Research Design

This research is a descriptive exploratory study using mixed method. Mixed method is "the collection or analysis of both quantities and qualitative data in a single study in which the data are collected concurrently or sequentially, are given a priority, and involve the integration of the data at one or more stages in the process of research" (Creswell, Plano Clark, Gutmann & Hanson 2003). A case study strategy was selected since it "explores a bounded system over time through detailed, in-depth data collection" (Creswell, 2012).

3.3 Sampling and Respondents

A purposive randomly sampling method was chosen for this research as it includes the respondents who exactly fit into the research from randomly chosen households. As this research tends to describe the role of women in community forestry, the sample size was targeted to be around 100 women members of the Panchakanya Forest User Group randomly selected from the list of the users of the group for the survey. With the help of DFO and the officials in the District Forest Office, prior notice was sent to randomly chosen 100 households of the women CFUG members to gather at a place so that it would be easier and efficient for the data collection process and discussions. However, only a total of 50 women members were accessible on the course of the process and with their full consent, they were willing to take the survey and provided with the necessary information needed. Other 50 women members were unable to participate to take the survey as some were busy in their

homes or in the fields and some didn't come saying that they couldn't read and write. Moreover, focus discussions with the respondents were held and other key respondents like CFEC women members, District Forest Officer (DFO) and officers of Disrict Forest Office were interviewed for further elaboration on the subject matter.

3.4 Data Collection

This study comprises of both primary as well as secondary data. The tools and techniques used to collect these data were:

a) Primary Data Collection

1. **Survey Questionnaire:** The self-administered questionnaire was designed and prepared for the survey with standardized questionnaires in order to get the vivid responses from the respondents and to meet the objectives of the research. Questionnaire consisting of both open and closed ended questions was prepared to carry out surveys among the respondents. Another type of data set was recorded on the basis of the degree of the agreements that the members of the FUG provided on the reality of the hypothetical statements created. Scales from 1 to 5 were created referring strongly agree to strongly disagree respectively. The responses on each statement were rated on a 5 point Likert Scale, providing the level of satisfaction to each statement from the respondents. The questionnaire was translated into Nepali language and was made easier to read for the better understanding of the respondents. Various literatures were reviewed and questionnaire was developed so as to answer the research questions. See Appendix 1. With the help of DFO, prior notice was sent

to the respondents and they were kind enough to gather at a place and fill up the survey, which saved the researcher a lot of time and energy.

2. **Focus Discussion:** Focus Group Discussions were held as it provides an opportunity to explore the subject or topic in depth. Right after the survey, the respondents who had time and willing to stay were asked to join for further discussions to understand the perceptions of the respondents of the survey in details. A focus discussion guide with unstructured questions was prepared to conduct discussions amongst the respondents. See Appendix 2. Around 32 respondents agreed to stay behind and co-operated with the discussions. Discussions in group encouraged them to openly express their views and opinions.

3. **Direct Observation:** It is another very reliable source of primary data collection process. The characteristics and behavior of the respondents were closely watched. Direct observation not only supplements other data collecting methods on how one data set informs another but also helps to develop more flexible and close relationships with community members.

4. **Key Informant Interviews:** Interview schedule was prepared to conduct unstructured interviews with CFEC women members to understand the subject matter in depth rather than just the mere collection of data from them. See Appendix 3. Two of the CFEC women members (one being the ex as well as the first CFEC women member and one being the present CFEC member) were accessible for the interview. Besides, separate interview schedule was prepared to hold interview with District Forest Officer as well. See Appendix 4. The interviews of key informants provided with various issues and information about the subject matter as well as recommendations to overcome the problems and issues.

b) Secondary Data Collection

Secondary data was derived from the official documents of the Panchankanya FUG like the Constitution and Operational Plan of the Community Forest, records and reports of District Forest Office, documents and reports from the Government of Nepal. Besides, various literatures, journals, websites, published and unpublished research reports were taken into reference in order to meet the research requirements and the objectives.

3.5 Data Analysis

The closed ended data obtained from the surveys was first entered, coded and categorized into a spreadsheet and then Microsoft Excel Software was used for basic descriptive statistics. Pie-charts, histograms, tables and charts were used to show the data. Information received from focus discussions, informal discussions, key informants and open ended questions was closely reviewed and are presented in written text to provide in-depth illustrations and information to explain the context.

CHAPTER IV

STUDY AREA

This Chapter deals with the profile of the area where the study had been carried out. It provides with the brief information about the district, municipality where the targeted community forest is situated, i.e. Nuwakot District and the very community forest, i.e. Panchakanya Community Forest.

4.1 Brief Introduction of Nuwakot District

Figure 4.1: Map of Nepal showing Nuwakot District

Source: OCHA (2015)

Nuwakot district is one of the seventy-five districts of Nepal located in Bagmati zone of the central development region of the country. The area of the district is spread up to 1121 sq.km. The geographical location of the district lies in between altitude 27° 45' to 28° 20' N and longitude 85° 0' to 85° 45' E, covering an area of 1,121 km². The land topography ranges from 470 meters to 5144 meters from the sea level. It is the only district in Nepal, which neither borders with other zones of the country nor the international territory. It borders with Sindhupalchowk District in the East, Kathmandu and Dhading Districts in the South, Rasuwa District in the North and Dhading District in the West. Due to its land topography of the district, climate variation can be found according to the geographical location of the places. The average maximum temperature can be found approximately up to 19.75° C during summer season, however, the average minimum temperature can be found up to 10.02°C in the winter season. The district receives the average annual rainfall up to 184.64 mm.

According to the population census, the number of households in the district numbers to 59215 with the total population of the district being 277,471 in 2011, out of which the male population 132,787 and female population 144684. The population density of the district is 248 per sq. km with the average household size being 4.69. The percentage of population of the district active in economic activities is 63. 59%. Amongst the economically active population, around 69% are engaged in agriculture whereas the rest are involved in non-agricultural fronts. Looking on the employment standards based on the regions within the district, 66.4% of male population, 77.9% of female population, 71.61% of population as a whole, are dependent on agriculture and forestry as a source of income generation (CBS, 2011).

The district has the people living with diverse religious backgrounds. The people following Hinduism is about 57.77%, Buddhism about 40%, Christianity about 1.6%, Islam about 0.13% and others about 0.5%. In addition, the ethnic background of the people in the district is also varied, however, mostly dominated by Magars, Tamangs, Brahmins, Chhetris and Newars ethnic groups. The total literacy rate of the district is 59.80% where the male literacy rate is 67.95% and the female literacy rate is 52.41% (CBS, 2011).

According to the Nepal Human Development Report 2014, the HDI of Nuwakot District is 0.466, slight higher than the overall HDI of Nepal which is 0.458 in 2011. In addition, the HPI of the district is 35.7, a bit higher than the HPI value for Nepal in 2011 (NPC, 2014).

The district possesses 35994.99 ha of forests land of which 24513.99 ha (68.1%) are community forests, 11,481 ha (31.89%) are government controlled forests, 6.0769 ha (0.0001%) are religious forests. Out of the total households in the district, 89.8% uses wood/ firewood, while 6.61% uses LP Gas, 1.85% uses biogas, 0.64% uses kerosene, 0.12% uses electricity and 0.98% uses others for the purpose of cooking (CBS, 2011). This vividly shows that how essential the forests are for the people living in the district as majority of people still depend on firewood for cooking, which is one of the most vital activities for human survival.

4.2 Brief Introduction of Bidur Municipality
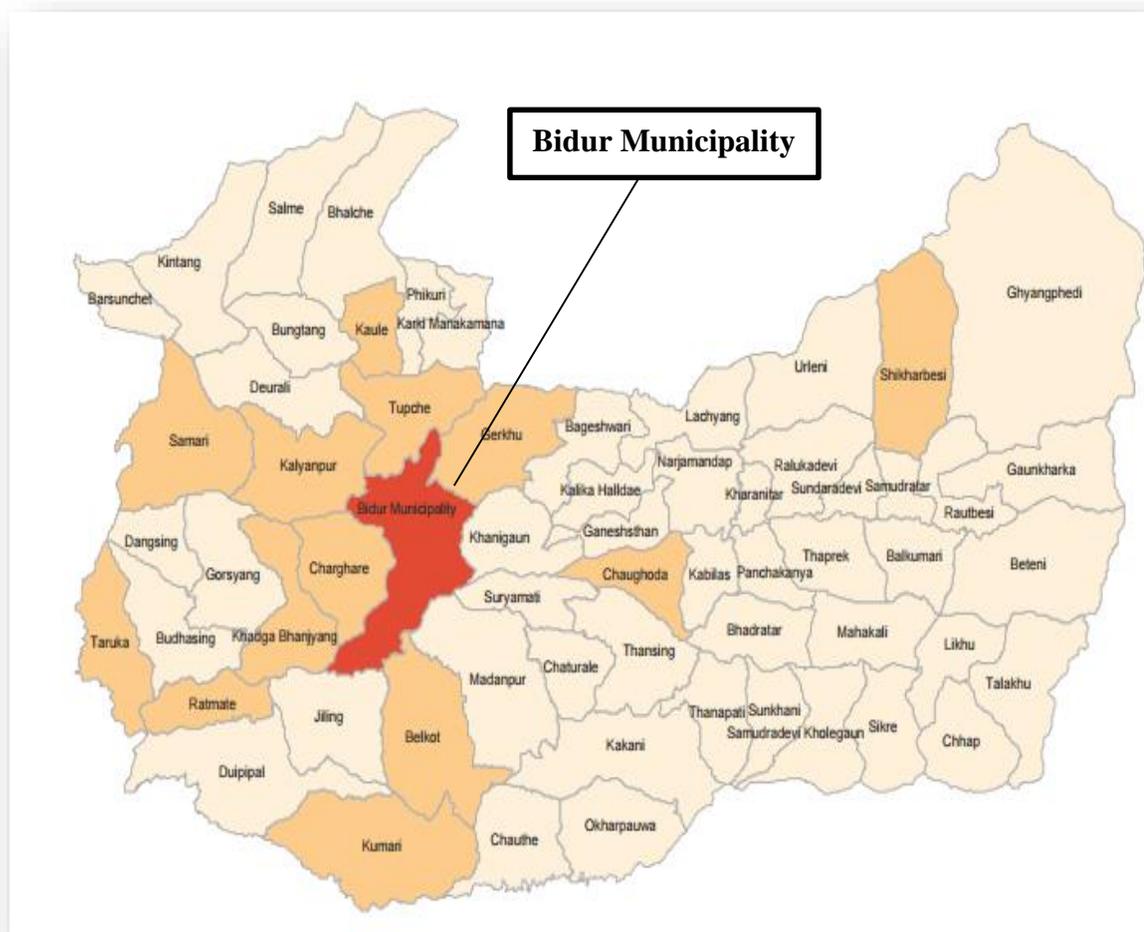
Figure 4.2: Map of Nuwakot District showing Bidur Municipality

Source: OCHA, 2015

Bidur is the district headquarters of the Nuwakot District which lies at 68 km north-west of the capital city of the country, Kathmandu. It was declared a municipality by existing government on 1987 AD by amalgamating the parts of 4 VDCs namely Bhairavi, Trushili, Bidur and Tupche and was divided into 11 wards. The area of the municipality is spread up

to 34.55 square kilometers. The most of its portion is covered by an open campestral and some portion also falls in the mountainous areas.

According to the 2011 population census, the total population of the municipality is 26,750 of which the total male population is 12,712 and the total female population is 14,038. There are total of 6270 households in the municipality with the average household size of 4.27. Moreover, the total literacy rate of the municipality is 75.54% where the male literacy rate is 85% and the female literacy rate is 67.16%. The municipality is mostly dominated by Chettris, Newars, Brahmins and Tamangs ethnic groups (CBS, 2011)

Out of the total households, 47.14% uses wood/ firewood, 42.74% uses LP Gas, 5.59% uses biogas, 2.51% uses kerosene and 2.02% uses other sources for the purpose of cooking (CBS, 2011). The percentage of households in Bidur Municipality using wood/ firewood for cooking purpose is way less looking at the usage in the entire district, however there are still about half of the households in the municipality depending on wood/ firewood for cooking purpose. This shows Bidur, despite being a municipality, there are still many people who depend on forests for their subsistence. Moreover, there are many other people and for other reasons depending on forests as well.

4.3 Brief Introduction of Panchakanya Community Forest

This study is solely based on the Panchankanya Community Forest, located in the Bidur Municipality Ward No.3 of Nuwakot District of Nepal. The area of the CF is 116 hectares and borders to Thuli Khola in the East, End of Dholpe Field in the West, Nuwakot *Deupakha Danda* including *Sano Baneli* in the North and till the right and left side of main road heading *Gangate Dhikure* in the South. The Panchakanya Community Forest was handed to the users

by the District Forest Office of Nuwakot District on 2000 AD. Soon after the CF being handed to the users, they made their first constitution on the same year. As per the constitution of FUG, there are 223 households with 1261 individuals involved in the user group of Panchankya Community Forest. See Box 2.

Box 2: General details about the selected Community Forest

Name of the CF: Panchakanya Community Forest

Name of the User Group: Panchakanya Forest User Group

Address: Bidur-3, Nuwakot

Forest Handover Year: 2000 A.D.

Forest Area: 116 hectares

Boundary of CF: East- *Thuli Khola*

West- End of *Dholpe* field

North- Nuwakot *Deupakha Danda* including *Sano Baneli*

South- Till the right and left side of main road heading *Gangate Dhikure*

Total number of households involved: 223

Total number of people involved: 1261

Total number of women users: 638

Total number of men users: 623

Source: Panchankya Forest User Group Constitution

The users of the CF can have their cattle graze in the allocated places of the CF as well as the collection of ground leaves for free throughout the year. There are many forest species found in the CF but the dominant species is the broad leaf.

CHAPTER V

FINDINGS AND DISCUSSIONS

This chapter presents the findings from the data collected from the respondents as well as various discussions are made based on the interviews from the key respondents and focus discussions with the respondents. The findings aim to answer the objectives and draw basic inferential conclusions.

5.1 Demographic and socio-economic characteristics of the respondents

To understand the role of women in community forestry, it becomes very important to know their demographic characteristics. Hence, various demographic and socio-economic characteristics of the respondents were studied like household size, marital status, occupation and household income.

a) Respondents according to the age group

To comprehend the most active age group in the forest user group, the age range of the respondents were taken. Out of 50 respondents, 6 (12%) are within the age range of 20-30 while 10 (20%) falls on the age group of 30-40. The highest number of respondents, 22 (44%) belongs to the 40-50 age group. The other age groups 50-60 and 60 and above have 8 (16%) and 4 (8%) of respondents respectively. See Table 5.1.

Table 5.1: Age Group of Respondents

Age	Number of Respondents	Percentage
20-30	6	12%
30-40	10	20%
40-50	22	44%
50-60	8	16%
60 and above	4	8%
Total number of respondents	**50**	**100%**

Source: Field Survey (2016)

b) Respondents according to Marital Status

Examining the present life status of the respondents helps to know about their responsibilities in their families. Out of all the respondents, 7 (14%) were still single however, the married ones were the highest with 41 (82%) being married. Moreover, unfortunately, 2(4%) of them were already widowed. See Table 5.2.

Table 5.2: Marital Status of Respondents

Marital Status	Number of Respondents	Percentage
Single	7	14%
Married	41	82%
Widowed	2	4%
Total Number of Respondents	**50**	**100%**

Source: Field Survey (2016)

c) Respondents and their Major Occupation

The responses given by the respondents regarding their major occupation have been divided into three categories. First, being the Agriculture which includes basically farming and cattle herding. Moreover, business here refers to some kind of business being run by the respondents themselves big or small, which includes shops, hotels, own workshops of bicycles, carpentry and blacksmith and so on. Another category is the job which includes working as a salary person in private or public sectors like government offices, schools, working as a wage labor and so on. Out of all responses, it was found that most of the respondents are engaged in agriculture as 36 (72%) responded it being the major occupation. Nepal is an agricultural country with majority of the population depends on it especially the rural people. Following it is the business with the 9 (18%) respondents. Lastly, with the lowest responses received, job was the major occupation of only 5 (1%) of the respondents. See Table 5.3 below.

Table 5.3: Major Occupation of Respondents

Major Occupation	Number of Respondents	Percentage
Agriculture	36	72%
Business	9	18%
Job	5	1%
Total Number of Respondents	**50**	**100%**

Source: Field Survey (2016)

d) Ownership of Livestock of Respondents

Livestock holding is one of the common things that we can find in most of the rural areas of Nepal. It is not just only the livelihood means of people but also often taken as an asset of the household. The livelihood of people highly depends on the livestock for the purpose of draught power, meat, milk, eggs, manure for agriculture, cow dung for various religious occasion as well as for additional income through sale. Nevertheless, these livestock need fodder like grass, leaves and so on, which are basically found in the forest. People need to go to forests for collecting these fodders for the subsistence of the livestock which in return support the agricultural needs as well as livelihood of the people. Besides, forests with grassland are often used for grazing the livestock. From the survey, it was found that majority of the respondents do possess livestock and have been using them for the various reasons stated above. Out of all respondents, most of the respondents with 86% possess chicken, 64% possess goat, 56% possess buffalo, 38% possess cow, least being ox with 26% while 8% didn't possess any type of livestock. See Table 5.4.

Table 5.4: Livestock Holdings by the Respondents

Types of Livestock	No. of Respondents	Percentage
Cow	19	38%
Ox	13	26%
Buffalo	28	56%
Goat	32	64%
Chicken	43	86%
None	4	8%

Source: Field Study (2016)

f) Annual Household income of Respondents in USD (USD 1 = NPR 106.67)

It is very important to figure out the household income earned by the respondents as it shows their dependency on forests. Amongst the respondents, the majority of the respondents which is 31 (62%) have their income ranging from USD 500-1000. None of the respondents have their income range below USD 500, however after that, the number of respondents starts to decrease as the income range increases. According to CIA (2016), around 25.2% of the population of Nepal is estimated to live under poverty line. Nepal is one of the poorest countries in the world of which most of the population live in the rural areas, and their major occupation being agriculture their livelihood depends highly on forests. Moving on, the number of respondents between the range of USD 1000-1500 is 10 (20%), USD 1500-2000 is 5 (10%), USD 2000-2500 is 3 (6%) and USD 2500 and above is 1 (2%). See Table 5.5.

Table 5.5: Annual Household Income of Respondents

Income Range (in USD)	Number of Respondents	Percentage
Below 500	0	0%
500- 1000	31	62%
1000-1500	10	20%
1500-2000	5	10%
2000-2500	3	6%
2500 and above	1	2%
Total number of respondents	**50**	**100%**

Source: Field Survey (2016)

g) Education Status of Respondents

Education is one of the basic and essential needs of a person in today's world. It plays an important role in distinguishing between right and wrong, comprehending one's rights and duties and determining one's capability to perform various tasks. It is often perceived that the ones with the higher education tend to have better understanding regarding their roles in various fronts including CF Program. Education can play an important role in making people aware about various information and knowledge of the CF Program as well as the roles they can play to make the program a success. However, from the study, it was found out that the majority of the respondents with the highest education were up to primary level of schooling with 64%. In addition, 12% of the respondents have completed their education until secondary school and only 4% have been through high school while the rest 20% do not have any formal education. See Table 5.6.

Table 5.6: Education Status of the Respondents

Level of Education	No. of Respondents	Percentage
No formal education	10	20%
Up to Primary School	32	64%
Up to Secondary School	6	12%
Up to High School	2	4%
Total No. of Respondents	**50**	**100%**

Source: Field Survey (2016)

5.2 Women's dependence on community forest and its resources

Forest is an indispensable life support system in many developing countries around the world including Nepal. Mostly the people in the rural areas of Nepal are highly dependent on forests as farming, livestock herding and vegetation influence the ecology of the area as well as the   livelihood of the people. However, there is difference between men and women on the way they depend on forest resources, its needs, use and the benefits derived (Agarwal 2010, Leone, 2013). This section tends to find out the dependence of women on the forest and its resources in the study area.

As stated earlier, forest and its resources play an inevitable part in the lives of people in rural areas of Nepal. When asked to the respondents on how important the community forest is for them in which 84% responded with extremely important and 16% responded with very important while nobody disagreed. See Figure 5.1.
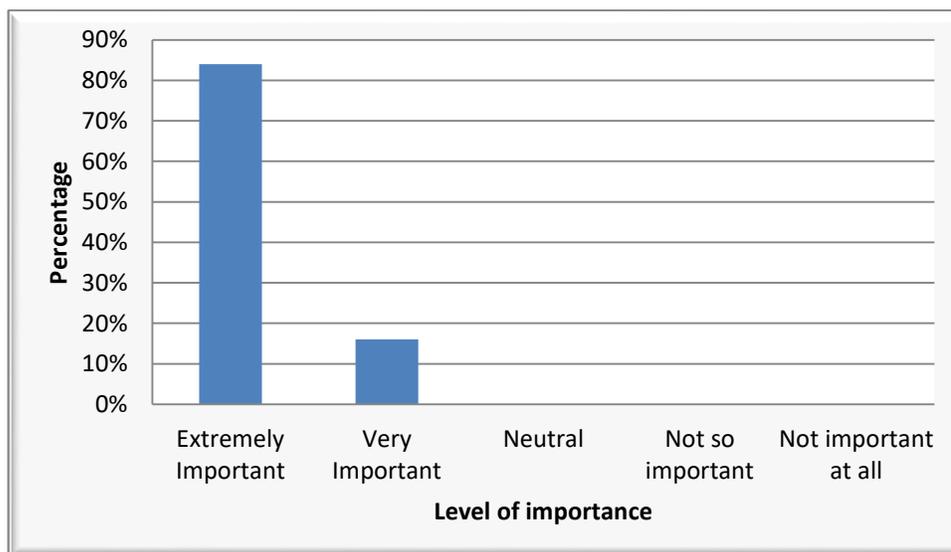
Figure 5.1: The level of importance of Community Forest to women

Source: Field Survey (2016)

From the Figure 5.1, it can be clearly stated that the level of importance of Community Forest to women is very high. This high importance of women to forests is also illustrated by (World Bank, FAO, IFAD, 2009 as cited in FAO, 2016) stating that especially the poor rural women in the world are the most dependent on forest for their subsistence. Their high dependency on forests urges them to protect the forest and its resources, as the shortage of the forest products can have immense negative impact on them as well as on the livelihood of their families. It is logical that the ones who are the most dependent ones be given the responsibility of its protection and management as well.

The respondents were then asked to choose among various activities for which they depend on the CF. Various alternative choices were given to them and were allowed to have multiple choices. See Table 5.7 below.

Table 5.7: Respondent's dependence on CF for various activities

Activities	No. of Respondents	Percentage
Collection of forest products	50	100%
Agriculture	36	72%
Livestock Grazing	31	62%
Hunting	-	-
Fishing	-	-

Source: Field Study (2016)

a) Collection of forest products

From the table 5.7, it is vivid that every respondent is dependent on CF mainly for the purpose of collection of forest products. As per FAO (2014), as rural women are the main collectors of forest products, collection of forest products requires lot of time and energy resulting in 'time poverty' for women and also restricting them to education, paid work and other productive works. Besides, various health issues to women is also a major concern due to carrying heavy loads of forest products. In the discussions, as well, the respondents stated that before the promulgation of Community Forestry Program, the forests were dwindling and the resources were degrading rapidly due to overexploitation of forest resources, illegal practices, lack of sense of responsibility and lack of consciousness regarding conservation, use, management and sustainability of forests. Due to this, they had to walk long distances and were having a very difficult time fulfilling the basic need of forest products. However, after the initiation of CF Program, the barren lands have turned into green forests and they have started to get access to those forest products more conveniently but through disciplinary practice. *We don't want and won't let the forests turn back into its previous status*, they added. Leone (2013) also states that women and their children are the ones to suffer the most due to the scarcity of forest products and due to the women's needs and interests in certain forest products particular in firewood, they have the incentive to ensure the forest products availability and eventually to protect forests.

Besides, the respondents were further discussed to provide the name of forest products that they derive from the Community Forest and what they use it for. See table 5.8 below.

Table 5.8: Name of Forest Resources that they derive from CF and its uses

Forest Resources	Purpose
Firewood	Cooking food for the household, cooking livestock feed (*kudo*), heating purposes
Timber	Construction of homes of people, shelter for livestock, making agricultural implements
Grass	Fodder for livestock
Leaves	Making plates (*tapari*) for household purpose, used in various religious and cultural works, fodder
Leaf litters	Bedding materials for livestock, compost manure for agriculture
Edible fruits and vegetables	Food for human, selling in the local market
Other NTFPs	Household use, medicinal use for both people and livestock, for sale in the local market

Source: Field Study (2016)

From the table 5.8, it can be understood that women in the study area have been depending on various forest products for various purposes. One of the most important forest resource in which women are depending on is firewood. According to Kanel et al. (2012), around 83% of the population in Nepal uses fuelwood as the source of energy for their households. From the study, as well, it was found that, though some of the respondents are using LP Gas or stoves, majority of the respondents have been using firewood for the purpose of cooking food for their families as well as cooking animal feed. Besides, it is also used for

the purpose of heating mostly in the winter and monsoon seasons. The firewood is distributed amongst the users of the group in an equal basis based on a nominal fee.

Another important forest product that the women derive from CF is timber. It is being used by the respondents for the purpose of construction of houses and huts, shelter for the livestock and also for making agricultural implements like ploughs, cutting and digging materials like *bancharo*, *kodalo* and so on. In the Panchakanya CF, mostly the trees like *sal* (*Shorea robusta*) and *chilaune* (*Schimi wallichi*) are being used for timber. The respondents stated that timber has a very high economic value and therefore the operation of harvesting process is only done by the CFEC and mostly the men users. The users can get up to maximum 80 cubic feet of timber for which they have to pay the nominal fee of Rs. 60 (USD 0.56) per cubic feet.

Yet another important forest product that the respondents depend on CF is grass. Though, grass is not used for household purpose, but is the most important thing for their livestock as it is the major food for them. Majority of the respondents possess livestock which are contributing them in agricultural activities via providing manure and ploughing, for household consumption as well as to earn additional income through sale. The collection of grass is free of cost throughout the year for the users within the CF.

The leaves are also essential forest products that the respondents derive from the forest. Respondents stated that green leaves still on the trees can be collected on a nominal price based on *bhari.* As per her, the price differs according to the species of the plants. The broad leaves of *sal* (*Shorea robusta*), *sisau* **(***Dalbergia sissoo), chilaune* (*Schimi wallichi*) *and* Neem are a bit expensive than the other species as they are value higher in Nepalese society.

The leaves of these plant species are used for making *tapari* and are also extensively used in various religious and cultural functions whereas the leaves of other plant species are used for fodder for livestock. However, dry and fallen leaf litters can be collected for free throughout the year which are being used for making the bedding materials for the livestock and are also decomposed to make compost manure which is very suitable for agriculture.

The Panchakanya CF also possesses variety of wild fruits and vegetables that are edible in nature. The users can get the edible fruits and vegetables in a minimal fee from the CF determined by the group. As per the respondents, the edible fruits and vegetables that they have been getting from the CF are like *amla (Emblica officinalis), jamun (Eugenia jambolana),* jack fruit *(Artocarpus integra),* chilli *(Capsicum annuum), tulsi (Ocimum sanctum),* mushroom, nuts, bamboo shoots and so on. The respondents have been using these edible fruits and vegetables for their own consumption as well as selling the surplus of it in the local market for the additional income.

Similarly, the CF has various other NTFPs in which the users are dependent upon. The NTFPs have valuable properties and are economically beneficial. As per the respondents, they have to pay the nominal fee for the purchase of the NTFPs determined by the group. Some of the various NTFPs found in the CF and its uses as stated by the respondents are given below:

Bans (*Dendrocalamus strictus)*: It is widely used in the construction of houses, fences of house and the agricultural land. Besides, it is also used in making the shelter for the livestock. Furthermore, women in the study area are using Bans for making various materials used for carrying forest products like *doko, nanglo,* and so on.

Amliso (*Thysanolaena maxima*): It is also extensively used by women in the Panchakanya CFUG for making brooms out of it. They have been making brooms for their personal use at homes as well as for sale in the local market.

Dhasingre *(Gaultheria fragrantissima)***:** The leaves of Dhasingre have been used by respondents in the study area to extract the oil which is very beneficial for gouts, body pain, sprains and so on. Mostly the respondents have been using it for personal use rather than the purpose of sale.

Tejpat *(Cinnamomum tamala)***:** It is mostly the leaves of the Tejpat that is widely used by the people. The respondents also stated that they have been using it for adding flavors in their food as well as it is also being used for various health problems like stomachache, vomiting and so on.

Chiraito *(Swertia chirayita)***:** It is a medicinal herb often used by the respondents to cure malaria, fever, constipation, stomachache and urinary problems.

It was found that women have been using various sorts of NTFPs for various purposes, however, as per the DFO, Panchakanya FUG has not been able to fully utilize the potential as well as the commercialization of the NTFPs found or can be cultivated within the CF. He added that, the group must increase the cultivation of NTFPs as well as also find out what other NTFPs can be cultivated within the CF. They have to create networks and come up with new ideas to open new markets for the sale of NTFPs, which can be economically very beneficial for the group.

Besides, it was asked to the respondents regarding the forest resources that are unavailable and how do they fulfill the need of those resources. It was found that government

has banned the collection and distribution of some of the NTFPs like yarshagumba *(Cordyseps sinesis)*, paanchaule *(Dactylohirza hatgirea),* okhar *(Juglas regia)* and so on. Till date, the government of Nepal has identified and listed 399 types of plants as NTFPs, among which, 72 species of plants are considered to have a higher economical value and 18 species have been banned for commercial exploitation (Adhikari, 2011). On the other hand, some of the respondents stated that the quantity of timber provided to the users are not enough mostly at the times when they are constructing new homes. The quantity of timber to be provided to the users is determined so they are not allowed to get more timber than the decided quantity. They also stated that they buy the extra timber from the local market in case of timber deficit but it costs more than that they used to get from the CF. Besides, some respondents also stated that some of the edible fruits and vegetables like mushroom, *amla (Emblica officinalis), jamun (Eugenia jambolana),* etc. and medicinal plants like *harro (Terminalia chebula), barro (Terminalia bellirica)* etc. are diminishing because of over exploitation and CFEC giving less importance to conserve such species rather than valuable timber species like *sal* (*Shorea robusta*) and *sisau* **(***Dalbergia sissoo).* Moreover, the respondents also stated that there are other various species of plants that are unavailable in the CF but are available in the CFs of Terai and Himalayan regions due to the land topography and climatic situations. They go to the market when they are in need of those unavailable products, they added.

b) Agriculture

From the table, it was found out that around 72% of the respondents depend on CF for the purpose of agriculture. According to (MOAC, 2009 as cited in FAO, 2010), in Nepal, around 72.8% of economically active women are engaged in agricultural work while only 60.2% of men are involved in it. As per the discussions with the respondents, they state that

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they derive various forest products like dry leaves, bedding materials, twigs and other products which they decompose in a small compost pit near their homes. After one or two months of decomposition, the forest products turn out to be organic manure which is very suitable for the production of wide range of vegetation. Majority of the respondents agreed that after the formation of community forest, due to the easy access to these products the organic manure has increased a lot because of which their agricultural production has flourished. Moreover, the respondents stated on being dependent on other forest products like bamboo, leaves etc. to make the fences to safeguard the agricultural fields. Besides, some respondents also stated that due to the initiation of CF Program, the number of trees and plants have increased rapidly because of which the level of water in the source has increased. Hence, it has led to the better irrigation which has ultimately improved the farming as well as the crop production. They also stated, they are mostly indulged in the production of subsistence crops and vegetables like paddy, millet, maize, mustard, tomato, cauliflower, cucumber and so on. On the other hand, men are mostly involved in production of cash crops like sugarcane, banana, coffee, citrus fruits and so on, they added.

c) Livestock Grazing

From the table, it was also found out that around 62% of the respondents depend on CF for the purpose of grazing their livestock. As per the discussion with the respondents, grazing the livestock is free throughout the year, however, there are restricted areas as well where grazing livestock is prohibited. There is the rule of the group that up to 3 cattle per household is allowed to be grazed a day to mitigate the overexploitation of pasture lands. Moreover, there is also a regulation of the group that grazing livestock in the permitted areas is allowed from 12: 00 pm to 5 pm in non- dry seasons and 12:00 pm to 3 pm in dry seasons.

Nevertheless, they still have to depend on CF for other alternative fodder for the livestock during the mornings and the evenings.

However, from the study, it was found that the hunting animals, birds and insects is prohibited within the CF. Protecting animals, birds and insects within the CF is one of the major objective of the Panchakanya FUG. Moreover, there are no ponds, streams passing through the forest area so there is no chance of fishing, the respondents stated.

The findings are found quite similar with that study of (Cavendish, 2000) that found out the women tend to focus on subsistence agriculture, collecting wild resources for household use particularly to those products contributing to household level food security as well as for additional income. Considering their high dependence on CF, it is very important to address their needs, incorporate them in the forest management as well as involve them in the decision-making processes, as it is often quoted by various studies that addressing women's needs and roles is the key to sustainable forest management as well as rural livelihood enhancement (RECOFTC, n.d.).

5.3 Women's forest-related knowledge and skills

It is often asserted that men and women often have different knowledge, skills and capacities, however, the differences in these aspects between them is often overlooked or ignored in various programs and management approaches in forestry and is one of the major causes of failure. Hence, it is very important to incorporate both men and women in decision making process regarding forest management so that the forestry sector benefits from the knowledge and skills of both men and women along with addressing their needs and priorities (FAO, 2016). This section tends to find out what kind of forest related knowledge and skills are particularly possessed by women regarding the in the study area.

Many researches have often emphasized that women are the primary users of forests and they often go to forest and spend lot of time fetching the basic required materials for their household, fodder for livestock as well as for various other purposes. Therefore, they possess a highly-specialized knowledge regarding forests and its resources in terms of its use, diversity of species, management and conservation. According to Mahat (n.d.), women in rural mountain areas of Nepal spend on an average of 4 to 6 hours per a single visit to forests for collecting fuelwood. When asked to the respondents on how often they go to community forest, the majority of the respondents being 65% responded that they go to the community forest 2 to 3 times a week, while 23% responded once a week, 5% responded once in 2 weeks, 4% responded once in a month and 3% responded that they go to community forest every day. See Figure 5.2.
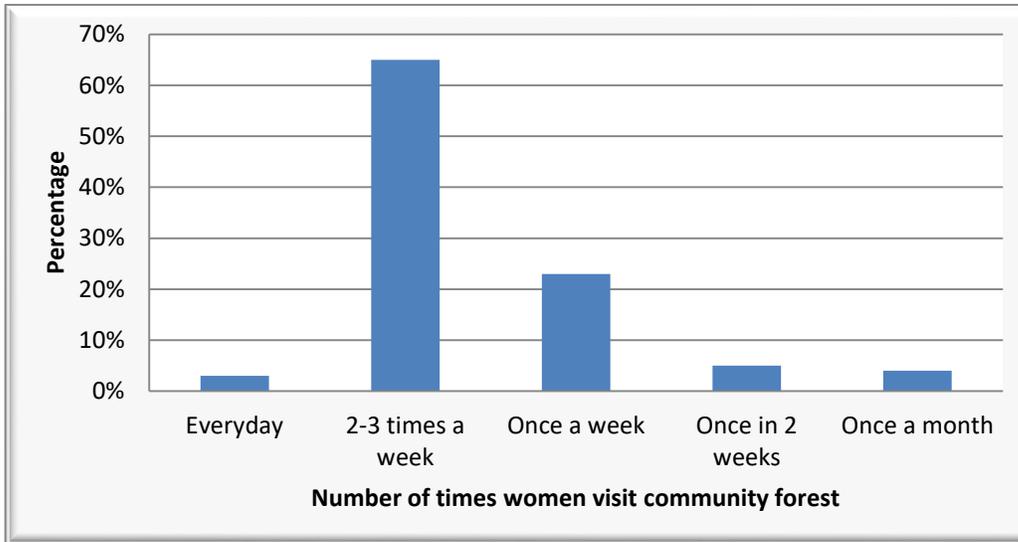
Figure 5.2: Number of times women visit community forest

Source: Field Survey (2016)

The figure shows that women generally go to CF quite often. According to the discussions, the majority of the respondents stated that they have to go to the community forest to fetch forest products necessary for their subsistence and also for their livestock. According to them, they generally get the forest products for the household consumption like firewood, NTFPs, fodder for livestock, once or twice a week for which they have to pay the nominal fees determined by the group; however, they tend to go the CF often to collect the fallen leaves and twigs and dried grass that can be collected for free, which people use for compost manure, heating purpose and also for the fodder for some animals. However, the respondents who responded once in 2 weeks or once a month are the ones who do not require forest products on a regular basis for the livelihood but need for various other purposes like fodder for livestock, special occasions like religious functions, festivals and other ceremonies and also at the times of load shedding. Moreover, as per them, they often go towards the CF for grazing their livestock, fetching water from water sources within the CF. Furthermore,

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they are also involved in various community forest management activities like thinning, pruning, singling, patrolling for which they have been spending a lot of time in the CF.

As stated earlier, many studies also have stated that being the main users of forest and having spent quite amount of time in the forest, women are very familiar with forest and its resources and possess indigenous knowledge and skills which can be of great importance in various forest management activities and solving various issues or problems. The respondents were asked what sorts of particular knowledge and skills do they possess regarding their community forest and its resources. Various alternative options were given to them to choose and multiple choices were allowed. See Table 5.9.

Table 5.9: Respondents' knowledge and skills regarding CF and its resources

Knowledge and skills	No. of Respondents	Percentage
Available species of trees and plants species	47	94%
Properties and uses of trees and plants	45	90%
Cultivation and harvest of plants and crops	42	84%
Silvicultural activities	43	86%
Hunting and fishing	_	_

Source: Field Study (2016)

a) Available species of trees and plants species

The study showed that majority of the respondents is quite aware about their CF and its resources. It found out that majority of the respondents are able to identify varieties of

trees and plants species as around 94% agreed to it. According to the discussions with the respondents, majority of them stated that they almost recognize every species of plants found within the CF and also are familiar with the geographical locations within the CF where various species of plants are dominant at. Moreover, it was also found that they are very much aware about the seasonal availability of various plants species found in the CF.

b) Properties and uses of trees and plants

Besides the identification of various species of plants and trees, the study also showed that as high as 90% of the respondents agreed to have possessed knowledge about useful properties and uses of various plants and trees. From the discussions with the respondents, it was found out that majority of the respondents are well aware about what kind of species of trees are good for the best quality firewood, what kind of grasses and leaves are suitable for the fodder, what kind of forest products are better for organic manure and so on. Besides, it was also learnt that they have an indigenous knowledge as well as vast repertoire of traditional way of healing different kinds of diseases. For instance, they have been using the leaves and barks of the *Sal* tree which is found in great quantity in the CF to cure the skin diseases, burns, fever and so on. Many of the respondents also stated that they have been using the shoots of the Neem tree to brush their teeth, which is very beneficial for dental problems like killing the harmful bacteria and reducing inflammation. Moreover, they have been using Aloe Vera juice for the problems like diarrhea, bloating and cramps. According to them, women have the responsibility to take care of the health of family members and knowing the medical properties of various plants help in making the life of the family healthy.

c) Silvicultural activities

According to the study, it was found that around 86% of the respondents agreed to have deeper knowledge and skills regarding various silvicultural practices performed within the CF. From the discussions with the respondents, it was found that it is mostly women who are found to be performing these practices like pruning, singling, thinning, and clearing of bushes, construction of firebreaks and so on. As stated by one of the respondents, "*we are taught from our very childhood by mothers and grandmothers that performing forest related labor works like silvicultural activities, cutting and collecting firewood, fodder and other forest products are their major responsibilities*". The discussions with respondents showed that they have quite an experience, knowledge about what sorts of trees, branches, leaves need to be cut off, how much distance should be made between the trees, what kinds of grass need to be grown or need to be cleared, how wide should be the firebreak according to the place and so on. Besides, they also have special technical skills in using sickles to cut plants, trees or grass as their way of cutting is less dangerous as well as the pace is fast too.

d) Cultivation and harvest of plants and crops

The study also showed that majority of the women are very knowledgeable and skillful regarding the cultivation and harvesting of plants and crops as around 84% of the respondents agreed to it. According to respondents, women are the ones mostly responsible for the cultivation of various crops and plants in home as well as in the CF. They are very aware about the distinct places where the particular type of crops can be cultivated. Cultivation indeed needs expertise as the results can alter due to the lack of knowledge about it. The alteration in the results of cultivation highly depends on the quality of the soil, moisture in

the soil and air, the geographical location, the temperature, irrigation supply and so on. Women in the study area seem to have better understanding regarding various conditions stated above. Furthermore, they stated that seed related activities are one of the major activities of their expertise as they are well aware of the quantity and the quality of seeds needed for the better results of cultivation. As stated in PRB (2001), there has been a case in Thailand in which community forestry project has failed when women, who cared for the seedlings, were not consulted before investing in seedling distribution to communities. However, recognizing the women's preferences and roles and including them in the next venture, the failure was reversed. Besides, cultivation and harvest of plants and crops, women also have knowledge and skills about plantation of trees. The present CFEC women member stated, *"Plantation of trees in the CF are mostly performed by women. They have quite an experience of planting trees as well as have various plantation techniques which help trees to grow healthier and stronger."*

However, as hunting of animals or birds is prohibited in the CF as well as there are no fishing opportunities within the CF, therefore its data has not been counted.

Nevertheless, from the discussions with the respondents, it was further found out that they also possess traditional and technical knowledge and skills to process the forest products and producing different kinds of materials. It was found that it is only women who are aware of the cultivation and processing of the *allo (Girardinia diversifolia).* They have been using the *allo (Girardinia diversifolia)* to thread, weave and knit to produce various products like clothes, bags, nets and other household items which they have been selling in the local markets making them to earn additional income for their family. Besides, they are the ones using branches and stem of the trees to make the fences for the security purpose of their

homes and fields. Moreover, women are the only ones capable to use the leaves of the trees to make the products like plates which are widely used during various functions and festivals in the rural Nepal. Furthermore, they also have special skills to make *doko* and baskets out of bamboos which are extensively used in rural areas to carry various forest products. They have been making these things for their personal use as well as for the sale which is helping them to enhance the financial condition of their families. The above-mentioned activities are extensively performed by women in the study area and have been playing an important role to earn additional income for the family and to sustain their livelihood.

On the other hand, generally women are the ones to know first about the various issues and threats within the forest as their daily work is intertwined with the forest. According to the present CFEC women member, "*there had been the cases in the past in the study area that women have figured out the illegal collection of forest products by the intruders and have had complained to the CFEC about the matter. Besides, some years ago, during dry seasons, some women figured out that the water sources are drying up resulting in the shortage of water. As women are the ones responsible to fetch water, it was a big problem not only for them but for the whole community. The women group decided to plant trees with deeper roots nearby the water sources to retain the water. They also planted shrubs, bamboos and various plants on the slopes and barren lands nearby it. The problem was more or less solved within the span of 1-2 years with the water quantity started to increase from the water sources. Moreover, in the past, extensive logging was performed in the CF in order to increase the CFUG fund. Some women started to figure out that the land was getting drier day by day and the soil was getting fragile. They contemplated the risk of soil erosion during the monsoon and warned the CFEC about the risks of soil erosion in various parts of CF*

where trees had been cut off immensely for the purpose of logging. Then after, the CFEC members went to monitor the area and found the things said by the women to be true and immediately mobilized people (mostly women) to plant trees on that very area. Women with their traditional plantation techniques, planted trees, plants and shrubs which helped to control soil erosion as well as promoted the conservation and development of forest and its resources.

The findings imply that women have an intensive forest-related highly specialized knowledge and indigenous skills. Therefore, comprehending the importance of their knowledge and skills and incorporating them in the decision-making processes can help to formulate better plans and polices for the community forestry program as well as for sustainable rural livelihood.

5.4 Women's roles in community forestry program

Community forest management is regarded as one of the world's most successful resource management projects. It has superseded the management paradigm once used to be controlled by the state or the government and has been proved fruitful in the efficient mobilization of forest resources in various parts of the world. Various researches often have emphasized that though the roles of men and women may differ across various cultures and locations but follow same broad gender divisions of labor (Bechtel, 2010; Mai et al., 2011 as cited in Sunderland et al., 2014**).** Hence, comprehending the differences how men and women interact with forests is very crucial not just for managing forests sustainably but also for sustainable rural livelihoods (FAO, 2016). Studies suggests that women's roles are integral to successful community forest management. However, there are often many speculations made that the management process is often gender bias and the women's roles are often unaddressed or ignored.

This section tends to identify the roles women are playing in the management of Panchakanya Community Forest in Nuwakot District of Nepal. To assess the women's roles in the management of CF, the various steps identified in the processes of community forest development in Nepal by Kanel (2006), Community Forestry Guidelines 2009 as well as the Constitution and the Operational Plan of the CF were taken into reference. The various processes in the CF management were shortlisted to fit in this case and were transformed into the statements for the respondents to answer easily. The statements represent the various stages of the project/program cycle of the CF, i.e., initial assessment, planning, implementation and monitoring and evaluation. Thereafter, the respondents were to respond

to the statements providing their degree of satisfaction on the roles they have been playing in the management of Panchakanya Community Forest.

5.4.1 Women's Roles in Initial Assessment Stage

The foundation of any program/ project lies on its initial stage. The initial assessment helps to comprehend the project/program's needs and requirements, the prospective stakeholders and also paves the way for the following stages. In the case of CF Program, the first and foremost thing is to determine the potential community forest and identify the potential households willing to be a part of the Forest User group. The respondents were asked to fill their level of satisfaction on their roles in the initial stage process.

As per the survey, very few of the respondents responded positive on contributing in the proposition of the potential community forest. Out of 50 respondents, only 2% strongly agreed and 8% agreed whereas 30% disagreed and 34% strongly disagreed with 26% being neutral. See Figure 5.3. As per the focus discussions conducted among the women, some respondents said that they didn't even know what community forest was all about in the beginning and some said they had heard about the formation of new community forest in their own community is underway from their husbands. As mentioned in her study by Chettri (2001), men in the Nepalese society have the social exposure and receive information earlier than women that is prevalent in the society and the country. Respondents also said that mostly the men of the community used to gather in the nearby *chautara* and discussed about formation of Community Forest and they used to hear from their husbands what is going on and started to learn more about Community Forestry Program. They also added, it was mostly men who decided the forest boundary as well as were active in the sketching of the forest

map with the co-operation of the officials of District Forest Office. However, they felt the program would be very fruitful after they started to know more about it, as it would provide them with the daily necessities on a timely basis for their subsistence as well as would help them uplift their living standard by providing opportunities for income generation.

It shows that despite an important program is about to being launched, women are unaware of it. Mostly men alone are discussing about the development of the program whereas majority of the women are learning about it through their husbands at home. Women being the primary users of forests and are not being thought necessary to be involved in the launching of the new program directly related to forests, is definitely an issue.
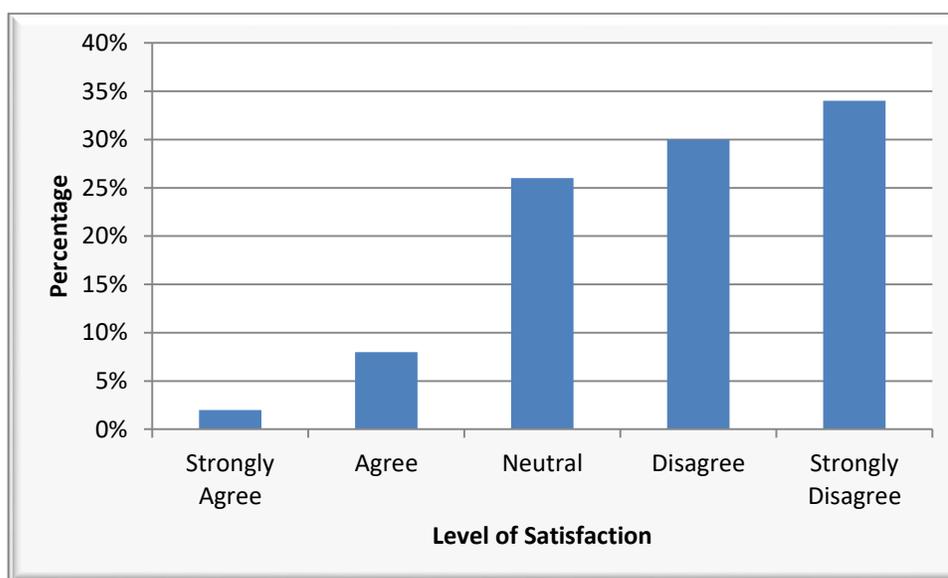
Figure 5.3: Women's roles in determination of potential CF
Source: Field Survey (2016)

After the forest boundary was fixed and mapping was done, it was the time to determine the number of households willing to use the CF and the potential members of the user group. According to the survey, 16% strongly agreed, 22% agreed that they contributed in the

preparation of the list of users while 47% were neutral. On the other hand, 8% disagreed and 7% strongly disagreed. See Figure 5.4.
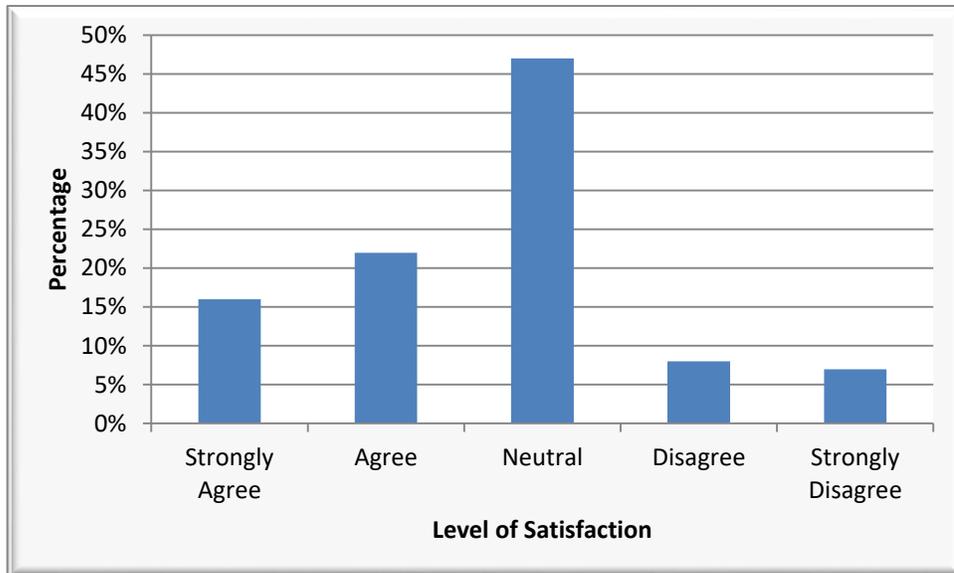
Figure 5.4: Women's roles in listing the names of prospective users of CF
Source: Field Survey (2016)

This shows that though women were not that much engaged in proposing the community forest in the area and sketching forest map but they have shown their involvement somehow in listing out the name of the prospective households and users of the group. It is understood that the involvement of women was high despite the results show less involvement of women in listing the users as only a few people were assigned the job in which women numbers were more than the men (as stated by the CFEC women member).

One of the former women members of the CFEC (Maya Gurung, age 42 years) who contributed in preparation of the list of users stated:

After the potential community forest was decided, the key people (men) who were active in bringing the community forestry program in the community asked the nearby households (both male and female) to summon in the chautara for the discussion about the benefits the program could bring for the people as well as the further development of the user group. They requested for 12-15 people who could read and write and could visit the villages and list down the name, socio-economic features of the households and people willing to be the member of the group. We also had to collect Rs. 10 per person willing to be a member of the group as a membership fee. As an incentive, sum of Rs. 60 per day was also to be given to the people willing to perform the deed. Men generally do not tend to this kind of work and therefore, requested women who could read and write to perform the work. So, a total of 10 women including me and 4 men were ready for the job. I personally wanted to do the job because I felt community forestry can be a good strategy to fulfill our basic demands required for our daily rituals and wanted to propose as many households and people to be the member of the user group as it seemed beneficial for the people. We finished the listing of the names of households and people willing to be the users in 5 days.

This portrays that many men are mostly busy doing the discussions and do not want to intentionally perform the job like visiting villages which require walking long distances and lots of energy. However, women are accepting what have been asked by men and are doing accordingly, shows men's superiority over women. On the other hand, women seemed to have done the job not just being pressurized by men but they heartedly wanted to propose the importance of community forestry and request to as many households and people to be the members of the group for the betterment of everybody. This shows that women tend to concern not just for oneself but for others as well.

5.4.2 Women's Roles in Planning Stage

Planning stage is undoubtedly the most important stage of the project/ program as it forms the basis for all management efforts associated with the project/ program. In the case of CF Program, planning stage includes the preparation of the Group's Constitution which binds people of the group legally, and the Operational Plan that ensures the working modalities of the group. But before that, as stated in Community Forestry Guidelines 2009, it is essential to hold the general assembly to finalize the list of users and form a CFEC which is responsible of holding discussions with the user members, organize the General Assembly and meetings, and prepare the Group's Constitution and Operational Plan and so on. If possible every user but if not at least 1 men or women from the prospective user households, should attend the general assembly. The CFEC members are nominated by the users themselves on the basis of consensus.

The same former women member of the CFEC further added,

After the prospective list of users was ready, the first general assembly was held where the participation of men was significant whereas only a few of women were present there. The list of the users was finalized as well as users were categorized into 2 types: A Group Users and B Group Users. A Group Users are basically the ones near to the CF and are highly dependent on the forest products for their subsistence as well as for earning income through selling them. B Group users are the ones living a bit far from the CF and come occasionally to CF to get the products when necessary. Most importantly, CFEC was formed by the consensus of the majority of the users. Around 15 men were elected as the CFEC members while there was no single women representative in the committee. There was no women's

representation in the CFEC for years. Slowly and gradually, some of us started to feel that there should be women's representation in the CFEC as well because it helps to address our problems and needs as forest products are really important for women for the purpose of daily consumption and also for sale. Moreover, women also have knowledge about various aspects related to forest which they can discuss in the committee for the better forest management. We started to participate and put out our things in the meetings. We also encouraged other women to come and participate in the meetings and general assemblies. Some women understood what we said and started to come to the meetings whereas still many women could not make it often as they needed to do household chores and go to work and while some are just scared to go against the norms of this male dominant society. There were times when our opinions were ignored, heard but not responded, taken for granted and so on. But we continued going to the meetings and expressed our views. After a long time, I and one of my friends were elected as the first CFEC women members.

The Forest Act 1993 made the provision of at least one-third of quota of CFEC should be of women and the latest 2009 community forestry guidelines emphasize that there should be at least 50% representation of women in the CFEC of which either of the position of chairman or secretary should be women. As per the study conducted by Agarwal (2010), groups with higher presence of women in CFEC showed the improvement in forest conditions as they tend to make stricter rules despite their hardship. In addition, the groups with higher presence of women in CFEC has had the greater number of women's participation in the meetings and assemblies (Agarwal, 2010). However, from the data record of the Panchakanya group, it was found out that there were no women representatives in the CFEC until 8 years from the formation of the group. Similarly, a study done in the mid-

western development region of Nepal by (Pandey 1997 as cited in Adhikari, 2001) also showed that the representation of women in CFEC was nil in 7 CFUGs and very low in other CFUGs except in the FUGs managed by women's group only. In the study area, however since 2008, women's inclusion in CFEC has been initiated and has shown some increment in the number in the recent years, the percentage is still lower than the provision made by the Forest Act and Community Forest Guidelines 2001 as well as recommended by the latest Community Forest Guidelines 2009. See Table 5.10. In addition, the women in the CFEC have neither been nominated nor have been recommended yet with the higher posts in CFEC besides being just the member of it.

Table 5.10: Inclusion of Women in CFEC

S.No.	Year (AD)	Total No. of people in CFEC	Total No. of women in CFEC	Percentage (%)
1	2008/2009	15	2	13.33
2	2010/2011	16	3	18.75
3	2012/2013	17	3	17.64
4	2014/2015	17	4	23.52
5	2016/2017	17	4	23.52

Source: Field Survey (2016)

This clearly shows that, the community forest policy forwarded by the government of Nepal for the provision of women has not been addressed or could be said ignored. This also portrays the strength of the policies formulated by Nepal's government. The policy being

made in the national level seems to fade away as it enters into the community level as people (men in this case) have taken it for granted and are doing whatever they are willing to. However, women understanding the importance of their inclusion in the forest management have pushed themselves to come forward breaking the stereotypes. Though their efforts have managed to include some of them in the CFEC over the years but still their inclusion cannot be considered significant.

After the CFEC members are elected, it is time to ratify the draft of the Group's Constitution and Operational Plan. As per the 2009 community forestry guidelines, there should be discussions amongst all the prospective users before drafting the Group's Constitution and Operational Plan, as different users can have different interests and issues. Moreover, meetings should be held separately with the vulnerable groups like women, *dalits* and poor regarding their problems and necessities that need to be included in the Group's Constitution.

When respondents were asked to provide their satisfaction on that they contributed in the preparation of Group's Constitution and Operational Plan, the respondents who strongly agreed was only 6% while only 9% agreed on it. On the other hand, 32% disagreed and 24% strongly disagreed while 29% were neutral. See Figure 5.5.
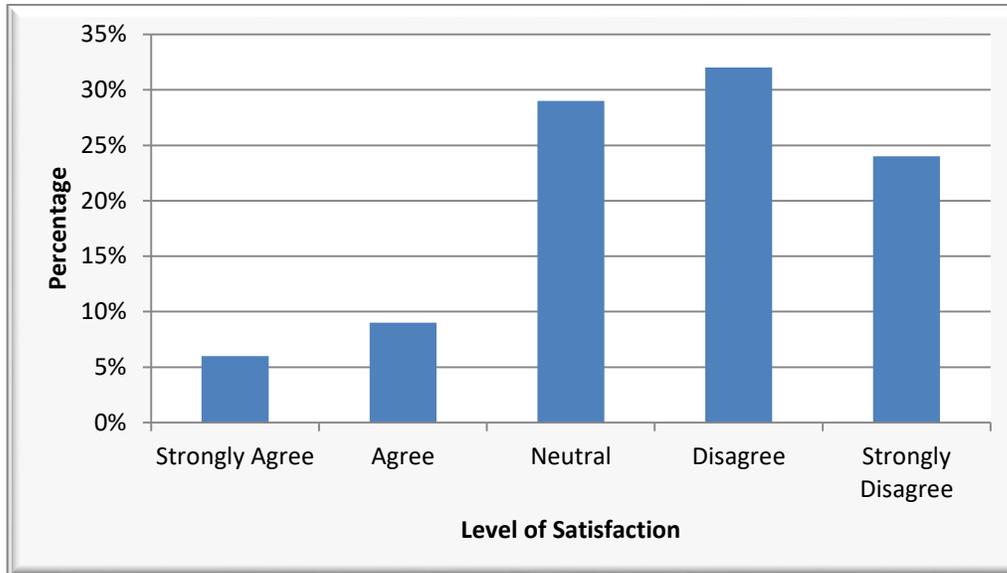
Figure 5.5: Women's roles in preparation of Group's Constitution and Operational Plan

Source: Field Survey (2016)

While having discussions with the respondents, majority of them stated that they were never called for meetings or have been talked to anything regarding the preparation of the Group's Constitution and Operational Plan. The respondents who answered that they were not called for meetings or have never been discussed were the ones mostly who are poor and belong to the lower caste. While some said that when the committee members were having discussions with their husbands, they happened to be at the same place and could hear what they were discussing. However, they didn't participate in the discussions as talking in between the talks of men is considered irrational, they added. On the other hand, who agreed to have discussions were the women who were generally from the elite families in the society.

This shows that while forming the most important documents related to the Community Forest in which women are the most dependent ones, are not even considered to have the

discussions with. In addition, it reflects the social taboo that is prevalent in the Nepalese society where women are thought irrational expressing their views while the so-called rational men are talking in between. Furthermore, though it's the right of every women rather than a privilege to participate in the discussions and express their opinions, only a few women have got that privilege and those also are the ones belonging to the elite families who are way less dependent on forest than those poor and lower caste women whose livelihood entirely depends on the forest products.

After the formation of the CFEC and various meetings held for the preparation of Group's Constitution and Operational Plan, with the close look at the user's survey, discussions amongst the various small groups and other affiliated users, the draft of the constitution and the operational plan should be prepared and the general assembly should be organized. In the general assembly, with the detailed discussions amongst the users, all the points written in the draft of constitution and the operational plan should be ratified on the basis of the consensus of the majority of the users.

The same former member of CFEC stated:

The elected committee members called for the 2nd general assembly after 3 months of the 1st general assembly to approve the Group's Constitution and the Operational Plan. Every user or at least one representative from a user household were asked to come in the assembly. I couldn't attend the 1st assembly but was present in the 2nd assembly. The number of women present there was not significant. The assembly was dominated by men. Various discussions were held on various points of Constitution and Operational Plan and were approved by the consensus of the majority of the users. However, none of the women raised their hands and

expressed anything including me. Talking in front of the masses that also dominated by men

was really scary and is not considered good in the eyes of people of the society.

The participation in the General Assembly is very important as it is major gateway to decision making. The major decisions on CF management are made there. Therefore, significant participation of people (both men and women) is essential to deduce the fair and unbiased decisions. When asked the respondents to have their satisfaction on their participation in the General Assembly at the time when the discussions on Group's Constitution and Operational Plan was held and approved, the respondents who strongly agreed were 9% and 14% agreed. On the other hand, 23% disagreed and 30% strongly disagreed while 24% were neutral. See Figure 5.6.
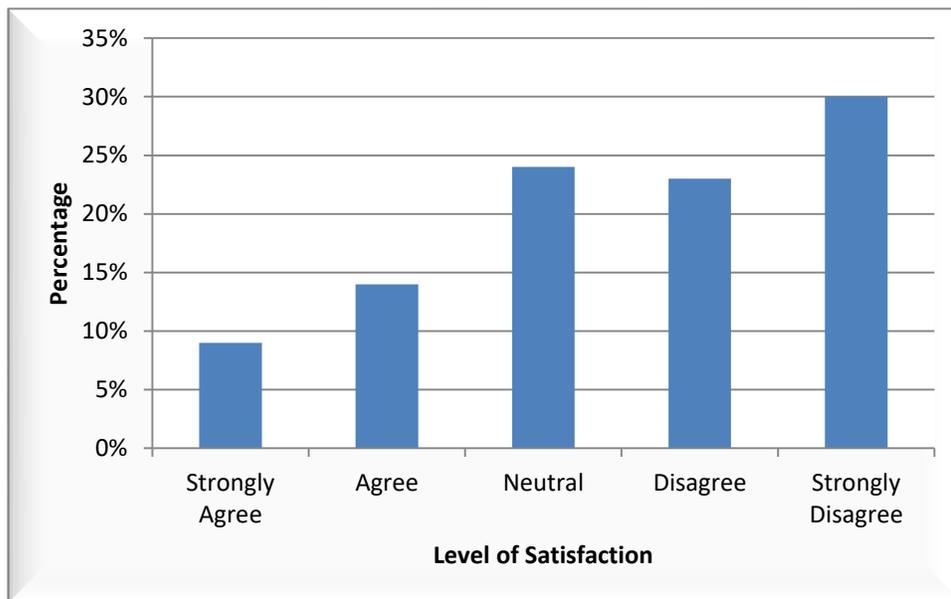
Figure 5.6: Women's participation in General Assembly at the time of Group's Constitution and Operational Plan was ratified

Source: Field Survey (2016)

The figure shows that the number of women's participating in the General Assembly was few at the time when the Group's most important documents were being ratified. The respondents stated that they had lots of household chores to perform like cooking, cleaning, washing, collecting firewood and fodder, looking after their children, grazing livestock and so on. They also stated that their husbands went for the assembly and if both of them go then there won't be anybody in the home and look after and do all the things. Usually, men are the ones who go to meetings and we look after the home, they added. While some said that they are poor and they need to go work every day for their living and hence were not able to attend the assembly. In Nepal, the working hours of women is generally higher than the men. The women work an average of 11 hours while men work an average of 8 hours in Nepal (Action Aid as cited in Shrestha et al., 2015). The most surprising part was that, the respondents who said that they participated in the general assembly didn't have a single word in the assembly. They just heard what men discussed and saw the decisions being made. Nevertheless, some respondents said that they have now realized that as forests are very important to them and their representation on decision making process about CF management activities can address their issues and better the forest management system. Around 4 and a half years ago, they formed the women's group where they discuss about their issues and various problems related to forest management. They also have nominated some representatives from the group and the things discussed in the group are being expressed in the CFUG meetings by the representatives. Moreover, the number of women attending regular meetings and general assembly has grown in the recent years, and also the ones expressing their opinions are also increasing.

This clearly shows that how the roles of people in the Nepalese rural society has been stratified on the basis of gender. Men are the ones who often attend the formal meetings while the women are busy doing their domestic chores, farm activities and extra work for the living. Women don't tend to go to social gatherings or can be said are chained by the social norms which don't let women to do so. In addition, the women users who responded they participated in the assembly are considering themselves participating in the assembly while they are just the attendees. The word 'participation' is often misunderstood and misused. As per Arnstein (1969), the real participation is when the people gets the real power and there is sharing of power between the people and the power holders to solve the issues. Besides, they have the substantial power to make manage the plan and make decisions. Furthermore, this case here falls in what Pimbert and Pretty (1995) calls it passive participation where people participate only to be heard what has happened or going to happen. However, in the recent times, women have started to become aware of their needs and problems and the importance of their roles in forest management. They have taken the initiative by themselves to overcome the boundaries that the society has drawn in front of them for years.

5.4.3 Women's Roles in Implementation and Monitoring Stage

After the Group's Constitution and Operational Plan is ratified by the users in the general assembly, then the committee members should hand over these documents to the District Forest Office. After the approval of the CF and the group by the DFO, then it is time to implement the Operational Plan. The Panchankya Community Forest was handed over to the group in 2000 A.D. Here, in this portion, various CFM activities in the implementation phase have been pointed out and the respondents were asked to respond their level of satisfaction on their roles in those activities. See Table 5.11.

Table 5.11: Respondents' views on their roles in various activities of Implementation and Monitoring Stage of CF Program

Statements	Agreement (%)				
	Strongly Agree	**Agree**	**Neutral**	**Disagree**	**Strongly Disagree**
I set calendar of operations	6%	8%	14%	35%	37%
I perform silvicultural operations	63%	19%	8%	7%	3%
I patrol the forest area	54%	15%	12%	13%	6%
I perform logging	3%	8%	24%	45%	20%
I plant trees and plants	71%	21%	5%	3%	0%
I collect forest products	75%	23%	2%	0%	0%
I distribute forest products	8%	10%	23%	26%	33%
I mobilize funds	4%	8%	12%	35%	41%
I perform IGAs	11%	13%	37%	30%	9%
I monitor CF activities	5%	11%	32%	21%	31%

Source: Field Survey (2016)

The roles of women in various activities of implementation and monitoring stage of CF Program have been explained in details below:

a) Making the list of CF activities

As per the Community Forestry Guidelines 2009, at first, the list of CF activities should be prepared on the basis of estimated income, expenditure and the available forest products as prescribed in the Constitution and the Operational Plan and the users should be mobilized accordingly. From the study, it is found that the roles of women in preparing the list of

activities and setting the time for their operation is low, as only 14% agreed to the statement while 72% disagreed and 14% were neutral. Many respondents responded that it's mostly men who decide what to do and when to do and they just follow what they have been asked to do. These kinds of things are often done by the CFEC and it is dominated by men, they added.

b) Silvicultural operations

The study shows that women play a significant role in performing silvicultural activities. The majority of the women with 82% agreed to it while just 10% disagreed to it and 8% were neutral. While the discussion, they said that they perform various silvicultural activities like:

- **Pruning:** It refers to cutting off the dead and unnecessary parts or branches of trees to improve the shape of trees along with the purpose of trees to grow stronger and better. The majority of respondents said that they have been actively involved in this activity.

- **Thinning:** It refers to the selective removal of the trees to improve the growth and shape of the remaining trees while providing room for the future trees to grow as well. The majority of the respondents here also expressed their agreement that they are often engaged in this activity.

- **Clearing of bushes:** It refers to the removal of the unnecessary and dense bushes to make the forest clean and healthy. The majority of the respondents also have been actively involved in this activity.

- **Firebreak Construction:** It refers to the construction of a narrow land removing all plants and trees to stop the progress of a wildfire or bushfire. The respondents said that that generally the firebreak is often constructed in the summer season as the chances of

fire being spread is high in summer. Many respondents agreed to the have involved in this activity as well.

c) Patrolling

Besides sylvicultural operations, the results show that respondents have been actively involved in patrolling the forest area as well. 69% of the respondents agreed that they patrol the forest area whereas 19% disagreed to it and 13% were neutral.

One of the women users said:

The forest patrol team has been organized. Majority of the members of the team are women while only a few are men. We have formed groups with 5-6 members in a single group and we patrol forest regularly on a rotational basis. In this way, we are being able to protect the CF from intruders and illegal offenders. In the past, there have been some cases when the team has captured intruders who were trying to take the firewood illegally.

Some of the users even admitted that although they are not in the forest patrol team, they have been volunteering to patrol the forests with the team when they have a free time. They added, *forests are very important to us and we do not want any sorts of crime to prevail in our CF*. This vividly portrays to what extent forest means to them and to what extent they can go to protect the forests.

d) Logging

From the study, it is found that the women are not significantly involved in logging. Only 11% of the respondents agreed to have engaged in logging while 65% disagreed to it and 24% were neutral. As per the respondents, logging requires a lot of power to perform

and men are very powerful than us in physical strength. Besides, they added, men tend to play a greater role in extracting timber and big logs for various economical purposes. This shows that men have more tendency to get interested and focus in commercial forestry. Cavendish (2000) also pointed out in his study that men tend to get engaged in logging, construction, cash crop based agriculture and harvest of high value products for sale.

e) Plantation

One of the basic and the most important activities in the CF is the plantation of trees and plants. The respondents have shown their high involvement in this activity. 92% agreed on the statement while only 3% disagreed and 5% were neutral. Many of them stated that they have been planting trees in the empty, barren and marginal lands which have helped to turn the forests from grey to green. The forest products have also increased a lot in terms of its quality as well as quantity. They also stated that with the improved forest condition, new species of flora and fauna also have been noticed. Furthermore, they also have been planting various crops, vegetables as well as medicinal herbs, they added.

f) Collection of forest products

The majority of people in the rural Nepal depend on forest products as their daily necessities for subsistence as well as the source of income. In the case of Panchakanya CF also, the collection of forest products is a major activity performed by the users. When asked the respondents to provide their level of agreement on their role in the collection of forest products, the majority of the respondents as high as 98% agreed to it while nobody disagreed to the statement and only 2% of them were neutral. As per the respondents, women are the ones responsible to collect various forest products like firewood, grass, leaf litters, edible

fruits and vegetables, broad leaves, bamboos and so on from the CF. They added, only when they are sick or out of their homes, their husbands go to CF to collect them. This shows that women have been playing an important role in the collection of forest products.

g) Distribution of forest products

The collected forest products then are needed to be distributed amongst the users. Despite the immense role women are playing in the collection of forest products, they don't seem to have the similar kind of role while distributing those products. Only 18% agreed that they distribute forest products while 59% disagreed to it and 23% were neutral. Some of the respondents said that they generally collect forest products whereas the CFEC members are the ones who decides the products to be collected, sets price for the products and distribute amongst the users. Moreover, the CFEC members were asked regarding the equality in the distribution of forest products. As per them, the forest products are shared equally on a household basis as provisioned in the Operational Plan. The nominal price as well as the quantity have been decided to various forest products and are distributed accordingly. Only in the case while the users have special functions or needs like *puja,* marriage or funeral, they are provided with the forest products as per their demand.

h) Fund utilization

Fund utilization is yet another important CFM activity. The Panchakanya FUG has been collecting fund by selling the forest products, donations from various people, NGOs and INGOs. As per Kanel and Niraula (2004), the annual income of the CFUGs in Nepal is estimated to be more than 10 million dollars. When asked to the respondents regarding their roles in the mobilization of FUG fund, only 12% of the respondents agreed while 76%

disagreed to it and 12% were neutral. It was found that the meetings and discussions regarding the fund utilization are often attended by men and hence, without any doubt, the decisions are made according to their priorities. One of the CFEC women member stated that *at first, the participation of women in the meetings is very low and the ones who show up in the meetings do not dare to speak up and the ones who speak up are often suppressed by the men's views. It's being the financial matter; men take a keen interest on it and are on their highest vigilance to address their priorities.* As per the community forestry guidelines 2009, 25% of the income of the FUG derived for the sources stated earlier should be utilized for the development works in the society and 35% of the income must be used for the programs and activities targeted to empowering the women, *dalits*, indigenous people falling in the lower class according to their economic status. However, the majority of the respondents didn't show their agreement on 35% of the FUG fund being used for the activities targeting them. As per the present CFEC Committee women member, that FUG fund has been utilized for empowering them but is not as much as it should have been. There are trainings and seminars held only once or twice a year. As per her, the FUG fund should be mobilized to conduct more trainings and seminars so that it can help in providing knowledge and information about various new things and also develop capacity building of the women and the poor. Moreover, she adds that the FUG fund should be mobilized more in the promotion of income generating activities so that women and the poor can generate some income which can help them improve their livelihood. Besides, she stated that men tend to use the fund in community development works and to fulfill their personal interests, which is supposed to be used in the mobilization of empowerment activities for women and poor. There is no transparency in the financial documents and are often handled by men. There have been cases where men have used the fund for other purposes but have faked the financial transactions to

be have used for the empowerment activities for women and poor. She also added that there has not been a single woman in the history of the FUG who has been nominated as a treasurer of the group or any other important posts.

i) Income generating activities (IGAs)

In the recent years, the Government of Nepal introduced poverty reduction as one of main goals of CF program. IGAs are one of the major contributions that the CF Program is bestowing towards the poor and women to uplift their economic standard. While asking the respondents on their roles in IGAs, only 24% of them agreed that they have been performing IGAs while 39% disagreed and 37% were neutral. It was found that the FUG fund is provided to the lower-class people and women so that they can do some activities that help them generate some income. The users have been classified into high, middle and lower classes and the FUG fund is only provided to the lower classes. One of the respondents stated that she has been put into middle class but she thinks she is poor and want to do IGAs but is being unable to do so. The majority of respondents really wanted to perform IGAs as it would supplement their family income, however, still a lot of them were not allowed. It was found out that various IGAs have been implemented in the study area like goat herding, chicken rearing, pig farming, tailoring, carpentering, and shop keeping and so on. However, from the responses, it was figured out that not all the fund that was supposed to be spent for IGAs have been spent. Besides, they were provided with very less amount of fund which is not really sufficient for them to run any sorts of IGAs because of which they have to further depend on loans. Loans are also provided to them with the nominal interest of 1% per annum but the loan per household is limited to Rs. 10,000 only.

j) Monitoring

Monitoring is one of the fundamental parts of CF Program. It allows to identify what sorts of changes in forest or in services have had happened after the introduction of the Program and also helps to discover what impacts the Program has had on the environment, lives of people and communities. In the Panchakanya FUG, the monitoring committee has been formed which is responsible to monitor the activities of CF. As per the community forestry guidelines 2009, the committee should have the representation of women, poor, *dalits* and indigenous people. From the respondents, it was found that very few of women representatives have been involved in the monitoring committee. Women being the primary users of forests and possessing deeper knowledge about the condition of forests and other aspects; their representation in monitoring should have been high. However, from the study it was found that the role of women in monitoring is still very low. Only 16% of the respondents agreed to have involved in monitoring CF activities while 52% disagreed and 32% were neutral. The women CFEC member stated that in the past years, there were no women in monitoring committee but in the recent years, women have started to come forward and also the women group have been putting pressure in the FUG for their representation. It is therefore, they have secured some seats in the committee; however, their number is still low.

Reviewing the women roles in the implementation and monitoring stage of CF Program as from the survey of the respondents, it was figured out that women have been actively indulged and playing important roles mostly in the labor-intensive work like collection of forest products, following by plantation of trees and plants, performing sylvicultural activities, patrolling the forest area and performing IGAs to some extent by poor ones. Only

the logging was found intensively done by men as it requires great energy and possesses a great commercial value. On the other hand, their roles in major activities which are directly linked with decision making process were found to be low like mobilization of FUG fund, following by setting calendar of operations, monitoring CF activities and distribution of forest products. The findings were found to be more or less similar with the study done by Kaphle (2011). This vividly shows that women are generally doers while the men are decision makers. Needless to say, the ones who does the most of the CF activities should have been given the power to decision making but the case is just the opposite.

5.4.4 Women's Roles in Evaluation Stage

As mentioned earlier, evaluation is one of the most essential stages of a project or a program which involves the collecting the information of the activities systematically, its features and outcomes to determine whether it is worth or not. It draws conclusions which help in the decision-making processes in the future as well as to formulate better plan and policies. In the same way, evaluation in CF Program is also an important part which involves the revising and updating of Operational Plan. Various things are to be taken into consideration while getting on the process of revision and update of the Operational Plan.

As per the community forestry guidelines 2009, the following things are to be considered while revision of Group's Operational Plan:

- Have discussions over the activities of the group in the past.
- Understand the opinions and notions of the users on various issues like forest management process, distribution of forest products and other benefits, conservation activities, livelihood improvement programs and so on.

- Measure the status of the forest and its ability to be harvested.

- Review the decisions and its implementation made by the group in the past.

- Measure carefully the FUG fund management system.

- Analyze whether the things included in the Constitution and the Operational Plan are done or not.

- Figure out the problems within the groups and try to solve them.

On the basis of the information received at the time of revision, it is now time to update the Group's Operational Plan. The community forestry guidelines 2009 suggests following things to be done while updating the Group's Operational Plan:

- Have discussions on the past, present or the change in the future status of the Community Forest.

- Write down every point the users want to update and discuss with the users of similar interests.

- Survey and analyze the forest resources on the basis of change in the needs and demands of the group as well as the change in the status of the Community Forest.

- Finalize the draft of the updated Operational Plan

- Keep the inscriptions of the decisions made by the group for updating the OP

After the draft of the update of Operational Plan is ready, General Assembly should be called where the various changes and decisions made should be ratified by the users on the basis of consensus. Then the updated Operational Plan should be given to the District Forest Office for the agreement. After the agreement, the group should follow the updated version of Operational Plan.

From the above points, it can be said that evaluation stage is one of the most essential stages in the Community Forestry Program. In Panchakanya Forest User Group, the validity of the Operational Plan is 7 years. The Operational Plan has been revised and updated for 2 times till now.

The present women CFEC member (Sita Kunwar, age 52 years) stated:

The Operational Plan has been revised and updated for 2 times so far, one being in 2007 A.D. and another in 2014 A.D. While the Operational Plan was updated for the first time, nothing was known to them what happened, what sorts of changes and amendments had happened. Mostly the men users with the joint collaboration of CFEC members were the ones involved in it. At that time, none of the women were in the CFEC and neither the women were asked anything regarding this matter. Only at the time of General Assembly, when the decision on new changes was announced, then only we learnt about the new Operational Plan. That moment as well, the number of women attending General Assembly was very few and neither of them raised their voice for their points to be made nor went against the decisions made by them. However, women started to become a bit more conscious that the decisions made in various stages can affect their needs and interests. With the formation of women's group as mentioned earlier as well, they started to discuss various things regarding various activities and their roles in them. For the 2nd update of Operational Plan, the women had discussions in the women's group to what need to be amended and put their demands via the representor of the women's group in the discussions. The number of women in meeting, discussions and general assembly were more than the previous times, however, were still dominated by men and their opinions. Only some of the demands forwarded by the women's group were addressed while most of them were still not addressed or ignored calling them

irrelevant and unimportant. Besides that, almost everything related to the evaluation process like reviewing the past performances, measuring CFUG Fund, figuring and analyzing problems as well as drafting updated Operational Plan were performed by men.

When asked to the respondents on their roles in revision and update of Operational Plan, only 18% of the respondents agreed on having involved in the revision and update of Operational Plan while 63% disagreed and 19% were neutral. See Figure 5.7.
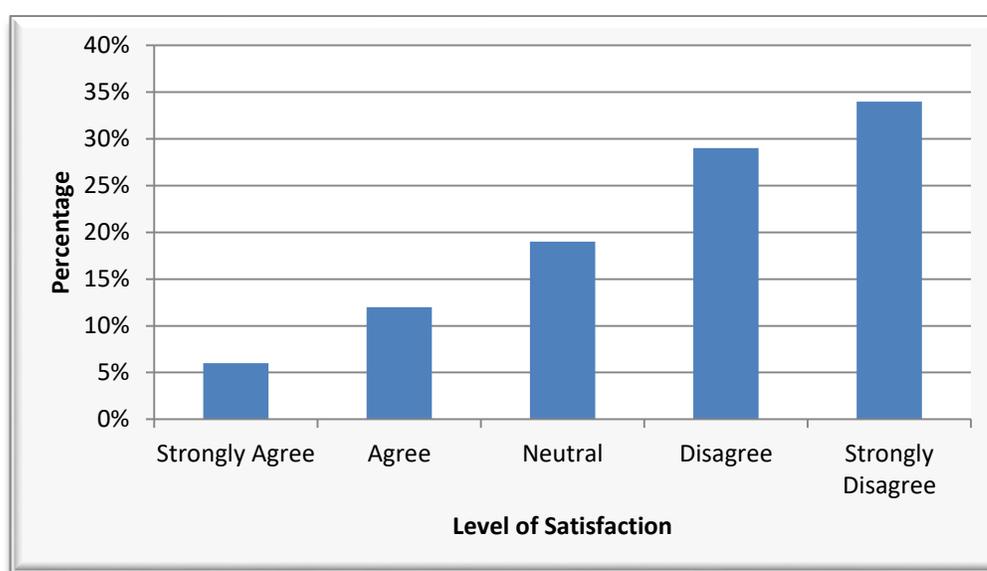
Figure 5.7: Women's roles in the revision and update of Operational Plan
Source: Field Survey (2016)

From the figure 5.7, it can be said that the role of women in the revision and update of Operational Plan is low. According to the discussions with the respondents, they said almost same things as stated by the present CFEC women member stated above. They stated they were neither informed nor consulted for the revision and update of the 1st Operational Plan. They were not aware about the processes or the things done during the evaluation process. however, they tried to put their needs and demands for change during the 2nd revision and

update of Operational Plan through women's group. Nevertheless, their voices were just partially heard.

This shows that women were not even considered to be asked at one of the most important times of the CF Program, i.e. at the 1st Operational Plan revision and updating process. Women being the primary users must have known various things until 7 years from the initiation of Community Forestry Program in the study area. However, none of them were involved in the evaluation process and was completely dominated by men. Nevertheless, realizing the importance of women being united for their voices to be heard, the women group formed by them somehow put their ideas and demands at the 2nd Operational Plan revision and updating process. However, only a few of their ideas were heard and many remained ignored. It portrays sheer men dominance over women in the evaluation stage of CF Program. Though women tried to put some efforts, the decision-making power was still with men.

The table 5.12 below summarizes the role of women in community forestry program in Panchakanya Forest User Group. On the basis of the responses from the survey, discussions with the respondents and interviews with the CFEC committee members, the roles of women have been categorized into extremely low, low, moderate, high and extremely high. The responses ranging from 10-20% is considered extremely low, 20-40% is considered low, 40-60% is considered moderate, 60-80% is considered high and the responses above 80% is considered extremely high. See Table 5.12.

Table 5.12: Summary of women's roles in community forestry program

Phases of CF Program	Processes and activities within the phases	Roles of women	Remarks
Initial Assessment	▪ Determination of potential CF ▪ Listing the name of users of prospective users of CF	▪ Extremely Low ▪ High (they were obliged to do the work)	Most of them were unaware about the launch of CF Program, fixation of CF but were involved for listing the prospective users. Remark: Moderate
Planning	▪ Formation of CFEC ▪ Preparation of Group's Constitution and Operational Plan ▪ Participation in General Assembly	▪ Nil at first, extremely low at the beginning, still low ▪ Extremely Low ▪ Extremely Low at the time of ratification of Group's	▪ Their inclusion in CFEC is increasing but still under the provision made by government. Discussions hardly held with them for the preparation of Group's Constitution and OP. Participation in the General assembly not

		Constitution and OP	significant, however improving recently with women becoming aware of their roles and forming women's group Remark: Extremely Low
Implementation and monitoring	▪ Setting calendar of operations	▪ Extremely Low	Their involvement is quite significant mostly in labor-intensive CF activities except logging while very low involvement in the activities directly linked with decision making processes. Remark: Moderate
	▪ Performing sylvicultural activities	▪ Extremely High	
	▪ Forest Patrolling	▪ High	
	▪ Logging	▪ Extremely Low	
	▪ Plantation	▪ Extremely High	
	▪ Collection of forest products	▪ Extremely High	
	▪ Distribution of forest products	▪ Extremely Low	
	▪ Fund mobilization	▪ Extremely Low	
	▪ IGAs	▪ Low	
	▪ Monitoring	▪ Extremely Low	

Evaluation	▪ Revision and update of Operational Plan	▪ Nil at first revision and update of OP, Low at the time of 2nd revision and update of OP	They were unaware of the 1st update of OP but during the 2nd update, they put their demands and opinions through representation of women's group. However, most of them are often ignored. Remark: Low

5.5 Factors influencing women's roles in community forestry program

As we have figured out earlier, there is no doubt that the women's roles in CF Program are inevitable. Despite the study showed that women do not have substantial role in the crucial activities that are directly linked with decision making processes, they have been playing a significant role in various CFM activities as well as in various stages of CF program, without of which the program would not have been effective. Hence in this section, various factors that have been influencing women's roles in CF Program have been identified. The factors were categorized into 2 factors: positive factors and limiting factors.

5.5.1 Positive Factors

The positive factors are the factors that are encouraging women to enhance their roles in CF Program. The respondents were given alternative options to choose from various positive factors and were allowed to have multiple choices. The following table shows the various positive factors and provides the responses from the respondents. See Table 5.13.

Table 5.13: Respondent's views on various positive factors influencing their roles in CF Program

S.No.	Positive Factors	No. of Respondents	Percentage (%)
1	Need of forest products	50	100%
2	Encouragement of people	9	18%
3	Intimacy with the forest	44	88%
4	Economic benefit	19	38%
5	Others	3	6%

Source: Field Study (2016)

To further illustrate and comprehend on the positive factors that are motivating to enhance the women's roles in CF Program, discussions with the respondents were hold on the basis of the survey. The positive factors have been explained in details below.

a) Need of forest products

Forest products are one of the most important daily needs in rural Nepal. Without the forest products, the lives of rural people are beyond imaginable. The study revealed that in Panchakanya FUG also, all of the respondents are being involved in CF Program in one way or the other is to fulfill their requirements of forest products, making it the most important factor amongst the respondents. As per the responses of the respondents, the most vulnerable threat to them is the loss of supply of forest products. The majority of the respondents being completely dependent on agriculture and animal rearing, the regular access of forest products is of great importance as it provides them with their livelihood security. However, very few of the respondents generally from the elite families do not require the forest products as often as other majorities for the daily rituals, nevertheless, are very dependent on various occasions like religious functions, marriage, funerals and so on. Furthermore, they also added that due to shortage as well as increase in the price of LP gas (which generally elite people uses for cooking and heating purposes) every now and then have led them to depend on the forest products. It deduces that almost every user is dependent on forest products on way or the other regardless of their class.

b) Intimacy with the Forest

Women in rural Nepal share an intimate and strong relationship with the forest. They are the ones responsible to collect forest products like fuelwood, fodder and various other

raw materials for which considerable amount of their time is spent in the forest carrying out these tasks. Researches have shown that, though both the men and women rely on forest products and services, they have different knowledge, use and dependence in forest products. Women tend to use forest products as safety nets for subsistence as well as to derive some extra income out of it which could help to boost the economic condition of the household. In the case of Panchakanya Forest User Group also, the majority of the respondents as high as 88% agreed to fact that they share a great bonding with the forest and making it the another most important factor that motivate their roles in community forestry program. Some of the statements of the respondents are listed below which shows what forest means to them and the intimacy they share with the forest:

- *Ban bhayena bhane mero ghar ma chulo baldaina* (If there is no forest, there is no fire in my home)

- *Ban bhayena bhane hamro gaibastu rahadaina* (*If there is no forest, my livestock will be no more)*

- *Ban hamro dosro ghar ho* (Forest is like my second home)

- *Mero din ban bata suru bhai ban mai sakincha* (My day starts as well as end in the forest)

- *Ban nabhaye ma pani rahanna jasto lagcha* (If there won't be forest, I think I also won't be anymore)

- *Ban ko herchaha ra suraxa garnu nai hamro herchaha ra suraxa garnu ho* (Taking care of and protecting forest is taking care of and protecting ourselves)

c) Economic Benefit

Community Forestry Program in Nepal is considered as an innovative strategy not only to address the problem of forest degradation and over-exploitation of forest resources but also to uplift the living standard of the forest dependent people by providing people with the opportunity to derive various benefits including economic benefits. In this case as well, 38% of the respondents showed their agreement on economic benefit being one of the motivations for their roles in the program, making it also a considerable factor. Mostly the ones with the poor economic background have expressed that besides other factors, being able to earn some income from the program is also one of the factors of their engagement in the community forestry program. As per the discussions with the respondents, the FUG is supporting particularly the poor ones by providing with the loans with very low interest so that it would help them to run income generating activities. The respondents are being engaged in various IGAs like livestock rearing, broom making, wooden basket making and so on. Besides, the ones with fewer or no lands have been provided with some slots within the community forests where they can plant crops or rear livestock helping them to earn some income.

d) Encouragement of People

It is undoubtedly very important for our families, friends and society to encourage enhancing the roles of women in community forestry program as they are an integral part of the program as well as their involvement determines the effectiveness and success of the program. As per the study, it was found that only 18% of the respondents chose that encouragement from their families and other people is the one of the positive factors influencing women's roles in community forestry program. As per the discussions with the

respondents, it was found that they have been more encouraged by women CFEC members during meetings and personal interactions, forest technicians during trainings and seminars and also by the success stories in the nearby villages rather than their own husbands and other male users of the group. Chettri (2001) emphasized that support and motivation from their husbands and local males is vital to boost the confidence and the status of women which is very important in various development programs, forestry in particular. Kaphle (2011) also pointed out that women getting support in their work by their male counterparts and the family and providing them with the opportunity to indulge in community development activities promotes gender equity and reduces gender disparity.

Besides, only 6% of the respondents added some extra factors besides the options given. The other factors included by the respondents were like leadership development and name and fame. This shows that there are some who are willing to have a social exposure, willing to develop the leadership quality and have their name in the society. It can be perceived that women also want to come forward to express themselves more openly and explore their potentials.

5.5.2 Limiting Factors

The limiting factors are the factors acting as a barrier and hindering women's roles in the CF Program. Here as well, the respondents were provided with alternative options to choose and were also allowed to have multiple choices. The following table shows the various limiting factors and the responses by the respondents. See Table 5.14.

Table 5.14: Respondents' views on various limiting factors influencing their roles in CF Program

S.No	Limiting Factors	No. of Respondents	Percentage
1	Lack of time due to household chores	45	90%
2	Illiteracy	27	54%
3	Male dominant society	36	72%
4	Lack of knowledge/ information about CFP	20	40%
5	Others	4	8%

Source: Field Survey (2016)

For the deeper understanding of the various factors limiting women's roles in CF Program, the discussions were held with respondents as well as the key informants. The limiting factors are explained in details below.

a) Lack of time due to household chores

Many studies have often stated that women in rural Nepal have long working hours than the men. As per the respondents, women are the ones to wake up early and go to bed late. They wake up way early in the morning while their husbands are still at bed. They are responsible to provide fodder to the livestock, clean the home and prepare meals for the family. Besides, they need to rear their children, collect the forest products as well as help in the agricultural activities. This is a common scenario in the rural areas of Nepal. As per DFO, the rural Nepal is highly gendered. Performing these tasks have been a ritual and custom for women in rural societies of Nepal from the past. Until and unless, the husbands or other family members won't share this workload with women, it will be very difficult for women

to indulge in other social activities. From the study, as well, it was found that about 90% of the respondents consider that due to the lack of time resulted by the household activities is the major factor hindering their roles in CF Program. The finding is supportive with the study done by Chettri (2001) which found out that heavier workload of rural women being the major constraint to involve in development activities.

b) Male Dominant Society

Nepal, mostly the rural areas, is highly dominated by patriarchal system that boasts on empowering men and subordinating women. The patriarchal system gives the power to men and believes whatever men do or judge is right whereas women are expected to be obedient and submissive in nature. It is still very common in Nepalese society to rejoice at the birth of a son and lament at the birth of a daughter. The planning and management of the household to the responsibility of the social affairs are taken by men leaving women limited to housekeeping. Women being literate or not, they need to remain in control of men whereas for men, it is just important to be men regardless being whatsoever. The identity of women is always linked with their husbands. Various laws have been enforced and organizations have been raising voices regarding women empowerment, however, the dominance of men over women in every sphere from household to society doesn't seem to subside in a notable manner. As per the women CFEC member, FUG meetings and discussions are generally dominated by men. Information regarding the meetings is generally for the heads of the member household (that is men). The wives are often unknown about the meetings as their husbands do not even feel necessary to share the information with their wives. Besides, the women who attend the meetings somehow are just unnoticed and are just the mere attendees. One of the respondents stated that when she insisted to go to meetings, her husband refused

her and said that only he going to the meetings is enough and asked her to do the household stuffs instead. Here in this study as well, 72% of the respondents responded that dominance of men is one of the major limiting factors of their roles in CF program.

c) Illiteracy

Education is one of the basic needs in today's society. In Nepalese society, people are often labelled according to their educational level. The ones with higher education are given higher respect than the ones with lower education. In rural areas of Nepal, women are perceived as a burden and they are considered the ones going to others' homes after marriage. Having had this narrow concept, many parents wanting their daughters to marry in an early age do not let them attend the school or make them drop school in the middle of their studies and rather train them to do household chores. Therefore, the illiteracy rate of women is very high in rural areas of Nepal as compared to that of men. Looking at the educational status of the respondents also, it can be said that they had not had better education. As per the respondents, being illiterate or having little education, they lack self-esteem and don't have enough confidence to come forward to indulge in various interventions like CF program. They are scared of their opinions won't be taken as granted and fear being teased by the backbiting culture of villagers. Around 54% of the respondents agreed on the fact that illiteracy being one of the limiting factors influencing their roles in CF Program.

d) Lack of knowledge/ information about CF Program

To comprehend one's roles in any interventions, it is very important to have proper knowledge and information regarding it. In CF Program, as well, it is essential to know and understand the importance of the program, various rules, terms and conditions, activities

within the CF that is written in the Group's Constitution and Operational Plan. Besides, the participation in the general assemblies, meetings and discussions is equally important to know what and how going on; and major decisions are also made on those times. However, from the study, it can be perceived that many respondents lack proper knowledge and information about CF Program. Around 40% of the respondents agreed that lack of knowledge and information about the CF program is one of the limiting factors hindering their roles in the program. This factor is directly connected with the previous factors. Being busy doing household chores are restricting them to go the meetings and assemblies because of which they aren't aware of things happening within the CF, males being dominant they hardly can get to go the meetings and express themselves, being illiterate or less educated they are unable to read and understand written in the Group's Constitution and OP.

Besides, only 8% of the respondents included some extra factors besides the provided options to select. The other factors as stated by the respondents were like poor economic family status due to which they have to work often for their livelihood restricting from actively engaging in community forest activities, and lack of self-esteem and confidence due to which they don't have guts to freely express their ideas, face the men as well as the society.

This shows that there are various factors which are responsible to influence women's roles in the Community Forestry program. The findings were found to be quite similar with that of Kaphle (2011) which showed that need of forest products being the main motivating factor and more workload for women being the main hindering factor for women's participation in CF program. It is perceived that these factors can also be directly linked to community forestry programs in other rural parts of Nepal as the rural settings of Nepal and the demographic features is more or less similar.

5.6 Chapter Summary

This chapter analyzed the data obtained from the field study as well as discussed and interpreted the distribution of responses from various respondents.

Women are dependent on CF for the fulfillment of the need of forests products like fuelwood, timber, leaves and leaf litters, edible fruits and vegetables and NTFPs for the consumption of household and livestock as well as for additional income. Moreover, they are also dependent on CF for the purpose of agriculture as well as grazing their livestock.

They are very aware about various species of plants and trees found within the CF but also have deeper knowledge about their properties and uses as well as the vast repertoire of traditional way of healing different kinds of diseases. In addition, they also have highly specialized knowledge and skills on silvicultural activities like thinning, pruning, singling, bush clearing, firebreak construction and were found to be extensively performed by women. Moreover, they were also found to have a great expertise regarding seed selection, cultivation techniques as well as harvest of plants and crops. Besides, they also have the indigenous knowledge and skills to process various forest products to produce different kind of materials contributing them for household use as well as to earn some additional income out of it. Furthermore, they are generally the ones to figure out various issues and problems with the CF as their daily works are intertwined with forest and spend quite a lot of time in CF.

The roles of women in community forestry program is limited. Their roles are basically to visit villages and listing out the names of the prospective users of the CF in the initial stage, not significant role in preparation of Group's Constitution and Operational Plan during planning stage, labor intensive works like collection of forest products, planting trees and

plants, performing silvicultural activities, patrolling the forest area and performing IGAs to some extent during implementation stage, not significant role in the revision and update of 1st Operational Plan. However, women becoming aware in the recent times have led to the formation of women's group, through which their voices are being represented in meetings and general assemblies as well as in the 2nd update of Operational Plan but their opinions and needs are either ignored or partially addressed. Their representation in the CFEC, however has increased than before, is still low.

There are various positive factors motivating women's roles in CF Program like need of forest products, intimacy with the forest, economic benefit, encouragement of family and friends, leadership development, name and fame etc. On the other hand, it was also found that there are various limiting factors hindering women's roles in CF Program like lack of time due to household chores, male dominant society, illiteracy, lack of knowledge/ information about CF program, poor economic family status, lack of self-esteem and confidence etc.

CHAPTER 6

CONCLUSION AND RECOMMENDATIONS

6.1 Conclusion

Forest is one of the indispensable natural resources on which every human being all over the world depends on directly or indirectly. However, with the rapidly increasing population growth, their need and greed as well as other natural factors like pest, drought, natural calamities and so on have led to the heavy deforestation and degradation of forest like never before in the past few centuries. Realizing the importance of the involvement of local people for sustainable use and management of forests, decentralization emerged as an innovative strategy in various countries around the globe transferring the authority from the central state to the local government, civil society and the private sectors. Nepal being one of the few countries at front to have experimented with this paradigm shift and after the successful documented history of more than 3 decades, is considered as a pioneer in the progressive legislation and policies in the decentralization of forest management. This decentralized strategy of forest management in Nepal is termed as Community Forestry Program.

Various studies have often emphasized on women's roles and needs in forestry is the key to sustainable use, manage and conserve the forest as well as sustainable livelihoods. However, there are often speculations that the women's roles are often overlooked and unaddressed and are not involved significantly in the decision-making processes in forest management despite being the primary users of forests. This study is driven by the fact that

only limited research has been done on exploring the gender differences in the community based natural resource management programs especially forest management and hence attempts to identify the roles women play in the Community Forestry Program taking a case of Panchakanya Community Forest User Group in Nuwakot District of Nepal. Besides, it has the following specific objectives:

1. To describe the women's dependence on community forest and its resources

2. To identify forest-related knowledge and skills of women

3. To identify the roles of women in community forestry program

4. To describe the factors influencing women's roles in community forestry program

5. To provide recommendations to enhance women's roles in community forestry program

This is a descriptive study which utilized primary data collection techniques like survey, focus discussions, direct observation as well as key informant interviews. Besides, secondary data were also retrieved and analyzed. The sample size was targeted to be around 100 women members of the FUG, however, only 50 respondents were available on the course. Moreover, the study was focused on only one community forest and no comparisons were made with other community forests. Therefore, the generalization of the conclusion to the broader perspective of the context throughout Nepal is difficult. Nevertheless, the study will provide with the basis paving the way for further research regarding the roles of women and its significance in community forest management. The following conclusions are drawn based on the results and findings.

a) Women's dependence on community forest and its resources

The findings showed that the CF is playing an immense role in the lives of women as they are heavily dependent on CF for various needs and priorities. The major dependence of women in CF is for the fulfillment of the need of forests products focusing mainly to the immediate household livelihood security of the household and their livestock as well as for additional income through the sale of surplus forest products and development of new products by processing forest products. Besides, they are also greatly dependent on CF for the purpose of subsistence agriculture rather than commercial forestry as well as grazing their livestock.

b) Forest-related knowledge and skills of women

The findings showed that women possess immense forest-related knowledge and skills. Besides, some particular knowledge and skills like performing silvicultural activities, seed related activities, processing of forest products to produce new materials are the mostly the field of expertise of women. It is perceived that their knowledge and skills can be a great asset to sustainable use and management of forests as well as the livelihood enhancement of their households as well as the community.

c) Women's roles in community forestry program

The study showed that the people's roles within the community forestry program is gender biased as roles of women in CF program are limited and is pre-determined. The roles women have been playing in various stages of community forestry is basically through the

works that requires intense labor and energy unlike men, whose works are to attend meetings, set out the rules and regulations, making and updating work plans and getting involved in commercial forestry. The roles of women in various activities and processes in every stage that are directly associated with decision making is very low whereas men are the ones to make major decisions as per their priorities. The role of women in the planning stage of the program is found to be the lowest amongst all the stages of the program. They have very low representation in the CFEC, way below than provisioned by the latest Community Forestry Guidelines 2009. Their participation in general assembly and meetings was way lower in the earlier stages of the program, however in the recent years, women starting to realize the importance of their needs and roles, their participation has increased to some extent. Nevertheless, the men's dominance still prevails suppressing most of their demands and needs.

d) Factors influencing women's roles in CF Program

The study showed that there are various fundamental, socio-economic and cultural factors that influence women's roles in CF program. It was found out that the need of forest products is the main driving factor encouraging their roles in the program. Their roles are also driven by their intimacy they share with the forest, economic benefit particularly to the poor ones and encouragement from the people. The sources of encouragement are generally CFEC women members and forest technicians rather than their male counterparts and other male users. On the other hand, lack of time due to household chores was found out to be the main barrier discouraging their roles in CF Program. Besides, the prevalence of men's dominance in the society, illiteracy as well as the lack of clear knowledge and information

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about the CF program are some of the major limiting factors hindering their roles in the CF program.

6.2 Recommendations

Based on the results and findings, the following recommendations are made to enhance women's roles in CF Program:

Household Level

- Men should be supportive and lend their helping hand so that it will minimize the workload of women and at the same time, encourages them to effectively participate in various development interventions like community forestry.

- Women should come forward themselves to break the socio-cultural boundaries drawn in front of them by the conservative society. As in the case of Cotong Bay Mangrove Forest Management Project in the Philippines, despite no efforts were made to involve women in the project, women came up forward by themselves to fight against the odds and made their presence felt.

CFUG Level

- Considering the high dependence of women on CF, their needs and priorities should be one of the top priorities of the CF program. As fulfilling the basic household needs being the main priority for women's dependence on CF, ignoring the needs and priorities of women may lead to the food and livelihood insecurity of the household as well as the livestock.

- Women's knowledge and skills should be fully utilized to foster better community forestry as well as improvement of livelihood of people. The merge of knowledge and skills of both men and women can bring way a lot benefits to the forestry sector.

- Women's roles should not be confined to only labor intensive works. Women, being the primary users of CF, should have an equal right as men to be involved in major activities and should be fully incorporated in decision- making processes of every stages of CF Program. Their opinions and ideas should be clearly heard. If women are reluctant to express themselves, they should be motivated and provided with support.

- The representation of women should be increased in the CFEC as well as should be provided with the important positions as recommended by the Community Forestry Guidelines 2009. This will encourage more attendance as well as active participation of women in general assemblies and other meetings.

National Level

- The plans, policies and guidelines by the government should be strictly imposed and also the government needs to ensure whether it's been implemented in a right way or not.

- Awareness programs, educational trainings and seminars should be conducted on a regular basis by DFO, NGOs/INGOs and other related governmental and non-governmental agencies to both men and women in order to provide information and ideas as well as to create greater awareness regarding various issues related to development programs like Community Forestry.

- Education should be made one of the top priorities of the national plans and policies of Nepal. The literacy rate of women is still lower than that compared to men. Government should come up with supportive plans and strategies like providing incentives, conducting awareness programs, cutting down the education cost and so on to improve the level of women's education in the country.

Further Research

- The study should be replicated in other community forest user groups of other districts in Nepal.
- A more detailed and broader research on the analysis of gender role in community forestry program should be carried out in order to comprehend the real scenario context and to derive a more generalized finding.

REFERENCES

Adhikari, J. R. (2001). Community based natural resource management in Nepal with reference to community forestry: A gender perspective. *A Journal of the Environment*, *6*(7), 9-22.

Adhikari, U. (2011). *Women in forest management: A case study of Dharapani Women Community Forest Bharatpokhari VDC, Kaski, Nepal* (Doctoral dissertation, Pokhara University, Faculty of Humanities and Social Sciences). Retrieved on September 13, 2015 from http://www.forestrynepal.org/publications/thesis/5324

Agarwal, B. (1997). Environmental action, gender equity and women's participation. *Development and change*, *28*(1), 1-44.

Agarwal, B. (2009). Gender and forest conservation: The impact of women's participation in community forest governance. *Ecological Economics 68* (11), 2785-2799.

Agarwal, B. (2010). *The impact of women in Nepal's community forestry management.* Retrieved online on November 25, 2015 from http://lib.icimod.org/record/26872/files/c_attachment_704_5939.pdf

Agrawal, A., & Ostrom, E. (2001). Collective action, property rights, and decentralization in resource use in India and Nepal. *Politics & Society*, *29*(4), 485-514.

Acquino, A.P. & Daquio C.R.O. (2014). *CBFM: A National Strategy for Sustainable Forest Management.* Retrieved online on May 15, 2016 from http://ap.fftc.agnet.org/ap_db.php?id=280&print=1

Arnstein, S. R. (1969). A ladder of citizen participation. *Journal of the American Institute of planners*, *35*(4), 216-224.

Blackman, R. (2003). *Project cycle management*. Teddington, U.K.:Tearfund.

Blaikie, P., Cameron, J., & Seddon, D. (2002). Understanding 20 years of change in West-Central Nepal: Continuity and change in lives and ideas. *World Development*, *30*(7), 1255-1270

Cavendish, W. (2000). Empirical regularities in the poverty-environment relationship of rural households: Evidence from Zimbabwe. *World development*, *28*(11), 1979-2003.

Chao, S. (2012). *Forest Peoples: Numbers across the world.* Retrieved on July 6, 2015 from http://www.forestpeoples.org/sites/fpp/files/publication/2012/05/forest-peoples-numbers-across-world-final_0.pdf

Charnley, S., & Poe, M. R. (2007). Community forestry in theory and practice: Where are we now? *Annual Review of Anthropology*, *36*(1), 301-306.

Chhetri, G. (2001). A social and cultural perspective of women and community forestry in Nepal. *Contributions to Nepalese Studies*, *28*(1), 53-72.

CIA (2016). *The world factbook*. Retrieved from https://www.cia.gov/library/publications/the-world-factbook/fields/2046.html

Collins (2013). *The WID, WAD and GAD approach on gender development.* Retrieved on August 15, 2015 from https://cn2collins.wordpress.com/2013/03/19/the-wid-wad-gad-approach-on-gender-development/

Cooney, D. (2011). *Collaborative partnership on forests.* Retrieved online on September 5, 2015 from http://www.iufro.org/download/file/6806/5018/international-women_s-day-cpf110301_pdf/

Cornwall, A. (2000). *Making a difference?: Gender and participatory development*. IDS Discussion paper, Institute of Development Studies: University of Sussex. Retrieved on September 15, 2015 from http://www.genderandenvironment.org/dmdocuments/303.pdf

Creswell, J. W., Plano Clark, V. L., Gutmann, M. L., & Hanson, W. E. (2003). *Advanced mixed methods research designs*. In A.Tashakkori & C.Teddlie (Eds.), Handbook of mixed methods in social and behavioral research (pp. 209–240). Thousand Oaks, CA: Sage

Creswell, J. W. (2012). *Qualitative inquiry and research design: Choosing among five approaches.* Sage Publications

Dahal, G. R., & Chapagain, A. (2008). Community forestry in Nepal: decentralized forest governance. In *Lessons from forest decentralization: money, justice and the quest for good governance in Asia-Pacific* (pp. 67-81). Earthscan, London, UK.

Dev, O. P., Yadav, N. P., Springate-Baginski, O. & Soussan, J. (2003). Impacts of community forestry on livelihoods in the middle hills of Nepal. *Forest and Livelihood*, *3* (1), 64-77.

Dhimal, S. (2012). *The significance of women's participation in community forest sustainable management: A case study of Shikharpur community forest, Hokse VDC-3. Kavre District, Nepal.* (Master's Thesis, University of Agder, Faculty of Economics and Social Sciences, 2012). Retrieved on September 13, 2015 from http://brage.bibsys.no/xmlui/handle/11250/135261

Dhungana, H.P. (n.d.) The farmers' handbook: Forest, soil and other topics. Retreived on November 20, 2015 from http://www.permaculturenews.org/resources_files/farmers_handbook/volume_5/2_forestry.pdf

Eckert, P., & McConnell-Ginet, S. (2003). *Language and gender*. Cambridge University Press.

European Union (2002). *Analysis of selected concepts on resource management: A study to support the development of a thematic community strategy on the sustainable use of resources.* Retrieved on October 3, 2015 from http://ec.europa.eu/environment/natres/pdf/cowlstudy.pdf

FAO (1998). *Forest resources assessment program*. Working Paper 1, Rome, Italy.

FAO (2010). *Integration of gender in agriculture. An analysis of situation*. Retrieved on October, 13, 2016 from ftp://ftp.fao.org/TC/CPF/Country%20NMTPF/Nepal/thematic%20studies/Gender%20Final%20Report%20_TC_.pdf

FAO (2012). *State of the world's forests 2012*. Retrieved from http://www.fao.org/3/a-i3924e.pdf

FAO (2014). *Women in forestry: Challenges and opportunities*. Retrieved on October 30 from http://www.fao.org/3/a-i3924e.pdf

FAO (2016). *State of the world's forests 2016. Forests and agriculture: Land-use challenges and opportunities*. Rome

Fellizar, F. (1994). Achieving sustainable development through community –based resource management. *Regional Development Dialogue*, *15*(1), 201-217.

Gauli, K., & Hauser, M. (2009). Pro-poor commercial management of non-timber forest products in Nepal's community forest user groups: Factors for success. *Mountain Research and Development*, *29*(4), 298-307.

Gentle, P. (2003). *Women's participation in community forestry and decision making process in forestry partnership project*. In Care ko Pratibimba, CARE Nepal, Kathmandu.

Giljum, S., Hinterberger, F., Bruckner, M., Burger, E., Frühmann, J., Lutter, S., ... & Warhurst, M. (2009). Overconsumption? Our use of the world's natural resources.

Giri, K. (2009). *Women as forest managers: The effect of men's outmigration*. (Doctoral dissertation, University of Natural Resources and Applied Life Sciences (BOKU), Vienna, Austria). Retrieved on July 8, 2015 from http://www.wiso.boku.ac.at/fileadmin/_/H73/H733/Nepal/2009_Giri_Diss.pdf

Hobley, M. (1996). *Participatory forestry: the process of change in India and Nepal.* . Rural Development Forestry Study Guide. ODI

IFAD (2012). *Gender equality and women's empowerment.* Retrieved on September 17, 2015 from http://www.ifad.org/gender/policy/gender_e.pdf

IFAD (2013). *Enabling poor rural people to overcome poverty in Nepal.* Retrieved on September, 13, 2015 from http://www.ifad.org/operations/projects/regions/pi/factsheets/nepal.pdf

International Federation of Red Cross and Red Crescent Societies. (2010). *Project/ programme planning: Guidance manual.* Retrieved on October 2, 2015 from http://www.ifrc.org/Global/Publications/monitoring/PPP-Guidance-Manual-English.pdf

IUCN. (2011). *Attending to Gender.* The IUCN Forest Conservation Newsletter , Issue 43.

Kandel, K. R., & Niraula, D. R. (2004). Can rural livelihood be improved in Nepal through community forestry. *Banko Jankari*, *14*(1), 19-26.

Kanel, K. R. (2006). *Current status of community forestry in Nepal.* Paper submitted to Regional Community Forestry Training Center for Asia and the Pacific (RECOFTC), Bangkok.

Kaphle, S. (2011). Women's participation in community forest management: *A case study of Ratopahiro community forest user group of Pokhara, Kaski District, Nepal* (Master's Thesis, Department of Sociology/ Anthropology, Tribhuvan University, Nepal). Retrieved online on September 16, 2015 from http://www.forestrynepal.org/publications/thesis/5447

Kates, R. W. & Clark, W. C. (1999). *Our common journey: a transition toward sustainability*. Retrieved July 1 from http://rwkates.org/pdfs/b1999.01.pdf

Kanel, K., Shrestha, K., Tuladhar, A., & Regmi, M. (2012). A study on the demand and supply of wood products in different regions of Nepal. *Kathmandu: REDD—Forestry Climate Change Cell Babarmahal*.

Keiner, M. (2005). *History, definition (s) and models of sustainable development*. Eidgenössische Technische Hochschule (Zürich) Institut für Raum-und Landschaftsentwicklung.

Laban, P., Van den Breemer, J. P. M., Drijver, C. A., & Venema, L. B. (1995). *Accountability in integrated village land management.* Paper submitted to Symposium on environment management in Africa. Wageningen: International Agriculture Centre.

Lambert, V. A., & Lambert, C. E. (2012). Qualitative descriptive research: an acceptable design. *Pacific Rim International Journal of Nursing Research*, *16*(4), 255-256.

Leone, M. (2013). *Women as decision makers in community forest management: Evidence from Nepal.* Retrieved on November 16, 2015 from http://dial2013.dauphine.fr/fileadmin/mediatheque/dial2013/documents/Papers/48_Italie_Leone.pdf

Leroy et. al. (2014). *Sustainable management of tropical forests*. Retrieved online on December, 23, 2015 from http://www.afd.fr/jahia/webdav/site/afd/shared/PUBLICATIONS/RECHERCHE/Scientifiques/A-savoir/18-VA-A-Savoir.pdf

Lorber, J. (2010). *Gender inequality: Feminist theories and politics*. New York, Oxford: Oxford University Press.

Maksimowski, S. A. (2011). Joint forest management in India: implications and opportunities for women's participation in community resource management. *Studies by Undergraduate Researchers at Guelph*, *4*(2), 23-37.

Mahapatra, R. (2000). Community forest management: the Nepalese experience. *Down to Earth*, *8*(9), 1-10.

Mahat, I (n.d.). *Gender roles in household energy management: Issues and implications.* Retrieved online on September 1, 2016 from http://lib.icimod.org/record/13505/files/1468.pdf

Mehra, R. (1993). *Gender in Community Development and Resource Management: An Overview*. International Center for Research on Women.

Mehra, R., Alcott, M., & Baling, N. S. (1993). *Women's participation in the Cogtong Bay Mangrove Management Project: A case study*. International Center for Research on Women.

MFSC. (2004). *Gender and Social Equity Vision*. MFSC, Kathmandu

MFSC. (2009). *Community Forestry Guidelines.* MFSC, Kathmandu

MOEF. (2011). *Joint forest management: A handbook.* Retrieved on March 15, 2016 from http://rtmoef.nic.in/Docs/JFM_Booklet.pdf

MOPE. (2001). *Nepal's State of the Environment (Agriculture and Forests).* Ministry of Population and Environment/ ESS, Kathmandu

Mwangi, E., Meinzen-Dick, R., & Sun, Y. (2011). Gender and sustainable forest management in East Africa and Latin America. *Ecology and society*, *16*(1), 17.

National Planning Commission. (2014). *Nepal human development report 2014.*UNDP

Oakley, P. (1995). *People's participation in development projects* (Vol. 7). Intrac.

OCHA. (2015). *Nepal- Nuwakot operational presence map.* Retrieved on December 28, 2015 from https://www.humanitarianresponse.info/en/system/files/documents/files/npl_eq_operational_presence_nuwakot_140715_1.pdf

Ojha, H., & Pokharel, B. (2005). Democratic innovations in community forestry—What can politicians learn. *Participation*, *7*(7), 22-25.

Ojha, H. R., Persha, L., & Chhatre, A. (2009). *Community forestry in Nepal: A policy innovation for local livelihoods*. Retrieved on August 27, 2015 from http://www.forestrynepal.org/publications/food-security/4352

Pearson (n.d.). *Gender: The meanings of masculinity and femininity.* Retrieved on December 25, 2015 from http://www.pearsonhighered.com/samplechapter/0205521452.pdf

Pimbert, M., & Pretty, J. N. (1995). Parks, people and professionals. *Geneva: United Nations ResearchInstitute for Social Development*.

Pokharel, B. K., Stadtmueller, T., & Pfund, J. L. (2005). *From degradation to restoration: An assessment of the enabling conditions for community forestry in Nepal.* Retrieved on December 2, 2013 from http://www.globalrestorationnetwork.org/uploads/files/LiteratureAttachments/161_f

rom-degradation-to-restoration---an-assessment-of-the-enabling-conditions-for-community-forestry-in-nepal.pdf

Pokharel, B. K., Branney, P., Nurse, M., & Malla, Y. B. (2007). Community forestry: Conserving forests, sustaining livelihoods and strengthening democracy. *Journal of Forest and Livelihood*, *6*(2), 8-19.

PRB. 2001. *Women, men, and environmental change: the gender dimensions of environmental policies and programs*. Population Reference Bureau, Washington DC.

RECOFTC (n. d.). Mainstreaming gender into forest policies. Retrieved on September 12, 2015 from http://www.recoftc.org/site/uploads/content/pdf/FAO_%20Fact%20Sheet_Gender%20Mainstreaming%20project_345.pdf

Regan, C (ed.) (2006) *Development in an Unequal World*, Dublin, 80:20.

Sample, V. A. (2004). Sustainability in forestry: Origins, evolution and prospects. *Pinchot Institute for Conservation, Washington DC*.

Shrestha, R. P., Maharjan, K. L., & Rajbhandari, T. (2015). A Comparative study of the socioeconomic status of women in the Jyapu Community of the Lalitpur and Bhaktapur districts of Nepal. *Journal of Contemporary India Studies: Space and Society*, *5*, 51-63.

Soubbotina, T. P (2004). *Beyond economic growth. An introduction to sustainable development.* World Bank Publications.

Sunderland, T., Achdiawan, R., Angelsen, A., Babigumira, R., Ickowitz, A., Paumgarten, F., ... & Shively, G. (2014). Challenging perceptions about men, women, and forest product use: a global comparative study. *World Development*, *64*, S56-S66.

Sunderlin, W. D., Angelsen, A., & Wunder, S. (2008). *Forests and poverty alleviation*. Retrieved on July 8, 2015 from http://www.cifor.org/publications/pdf_files/research/livelihood/Forests-poverty.pdf

United Nations (1992). *Rio declaration on environment and development 1992.* Retrieved on September 16, 2015 from http://www.jus.uio.no/lm/environmental.development.rio.declaration.1992/portrait.a4.pdf

United Nations. (2010). *Discussion paper on the community forestry programme in Nepal: An example of excellence in community-based forest management*. Retrieved on July 7, 2015 from http://www.un.org/esa/forests/pdf/session_documents/unff9/2011_9_Add3_AV.pdf

UN Women. (2016). *Women and the sustainable development goals (SDGs).* Retrieved from http://www.unwomen.org/en/news/in-focus/women-and-the-sdgs

Vijayamohanan, P. N., Asalatha, B. P., & Ponnuswamy, B. (2009). *Women in development– Dissecting the discourse.* Retrieved on September 28 from https://mpra.ub.uni-muenchen.de/13119/1/Women_in_Development_The_Discourse_and_the_Policy.pdf

Wilkie, M. L. (2003). *Sustainable forest management and the ecosystem approach: two concepts, one goal*. Forest Resources Development Service, Forest Resources Division, Forestry Department, FAO.

World Bank. (2001). *Recommended revisions to OP 4.36: Proposals for discussion*. The World Bank: Washington, D.C.

de Zeeuw, A. (2000). Resource Management: Do we need public policy? Retrieved online on October 20, 2015 from http://edz.bib.uni-mannheim.de/daten/edz-bn/gdu/00/zeeuw.pdf

APPENDICES

Appendix 1: Individual Survey Questionnaire

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Namaste. My name is Shrestha Sanjay, a gradute student in Ritsumeikan Asia Pacific University, Beppu- shi, Oita, Japan. I am currently doing research on the CF that you are the member of and the purpose of this survey is to collect information to meet the objective of my research. All the provided information will be kept highly confidential and will be used solely for the purpose of my research. So, feel free to express yourself and your voluntary participation is highly appreciated.

Name of CF: PANCHAKANYA CF   **Date:** _____

I. Demographic and socio-economic characteristics of the respondents

1. Are you a CFUG member? ○ Yes   ○ No
   If No, who is the person? specify_____
2. Age of the respondent: ____
3. Marital status: ○ Single   ○ Married   ○ Widowed   ○ Other
4. Occupation: _____
5. Educational Level: ____
6. Total household income per year: _____
7. Do you possess any livestock? ○ Yes   ○ No

   If Yes, please mark (√) on the circle below where applicable

   ○ Cow

   ○ Ox

   ○ Buffalo

   ○ Goat

   ○ Chicken

II. Women's dependence on community forest

8. How important is the community forest for you?

○ Extremely important

○ Very important

○ Neutral

○ Not so important

○ Not important at all

9. For what kind of activities do you depend on CF and its resources? Please mark (√) on the circle below where applicable.

○ Collection of Forest Products   ○ Agriculture

○ Livestock Grazing   ○ Hunting

○ Fishing   ○ Others Specify _____

10. Please list down the forest resources you derive from the community forest and its purpose?

Forest Resources	**Purpose**
_____	_____
_____	_____
_____	_____
_____	_____

11. Where do you get these forest resources from when you can't get from CF?

_____

12. It is easier to get forest products from CF than before CF?

○ Yes   ○ No

If No, specify

_____

13. Are there any forest resources that you are not able to get from CF?

○ Yes   ○ No

If Yes,

- **Please cite name of forest resources and the reasons for their unavailability.**

Forest Resources   **Reason**

_____   _____

_____   _____

_____   _____

_____   ___ _____

- **From where do you get these unavailable forest resources when you need it?**

_____

III. Women's knowledge and skills on forest and its resources

14. How often do you go to community forest?

○ Everyday

○ 2-3 times a week

○ Once in a week

○ Once in 2 weeks

○ Once a month

15. What kind of forest-related knowledge and skills do you possess? Please mark (√) on the circle below where applicable.

○ Available species of trees and plants	○ Properties of trees and plants
○ Cultivation and harvest of plants and crops	○ Silvicultural activities
○ Hunting and fishing	○ Others, Specify _____

III. Women's roles in Community Forestry Program

18. Please indicate your agreement or disagreement with the following statements.

(Symbol: 1= strongly agree, 2= agree, 3= neutral, 4= disagree, 5= strongly disagree)

Statements	Agreement				
	1	2	3	4	5
I contributed in determination of potential CF					
I contributed in listing the names of prospective users of CF					
I discussed for the preparation of Constitution &Operational Plan					
I participate in the General Assembly					
I set calendar of operations					
I perform silvicultural operations					
I patrol the forest area					
I perform logging					
I plant trees and plants					
I collect forest products					
I distribute forest products					
I mobilize funds					
I perform IGAs					
I monitor CF activities					
I revise and update Operational Plan					

IV. Factors influencing women's roles in Community Forestry Program

19. What are the motivating factors that influence your roles in Community Forestry Program? Please mark (√) on the circle below where applicable.

   ○ Need of forest products   ○ Intimacy with the forest

   ○ Encouragement of family & People   ○ Economic Benefit

   ○ Others, Specify _____

20. What are the hindering factors that influence your roles in Community Forestry Program? Please mark (√) on the circle below where applicable.

   ○ Lack of time due to household chores   ○Lack of knowledge/ information about CF

   ○ Male dominant society   ○Illiteracy

   ○ Others, Specify _____

21. Please free write any concerns or issues regarding your role in Community Forestry Program.

_____

_____

_____

22. What are your suggestions for improving your roles in the community forestry program?

_____

_____

_____

_____

Thank you for your co-operation!!!

Appendix 2: Focus Discussion Guide for the Respondents

1. Do you consider the community forestry program has been beneficial for you?

_____

2. Could you please describe the variation of your benefits/ status of forests before and after CF?

_____

3. For what kind of activities are you dependent on CF and its resources? Please explain.

_____

4. What kinds of forest products are not available/ less available or diminishing in your community forest? How do you resolve the scarcity of those forest products?

_____

5. How often do you often go to community forest? For what reasons, do you visit community forest?

_____

6. Could you please explain what kind of forest related skills and knowledge do you possess unlike men?

_____

7. Could you please explain your roles regarding the initial assessment, planning, implementation and monitoring and evaluation stages of the CF Program?

_____

8. What are the positive factors motivating your roles in CF Program? Please explain.

_____

9. What are the negative factors hindering your roles in CF Program? Please explain.

_____

Thank you very much for your co-operation!!!

Appendix 3: Questionnaire for personal interviews with CFEC Women Members

1. How are CFEC members nominated? When were you selected as CFEC members?

_____

2. Is the number of women significant in the CFEC?

_____

3. Could you please explain how the CF Program came into practice in the community?

_____

4. Could you please explain the development and the management process of the Panchakanya Forest and the women's roles in it?

_____

5. Are women significantly participating in meetings and general assemblies of the group?

_____

6. Are women playing the significant role in the decision-making processes in various stages of CF Program?

_____

7. What sorts of things have you been doing to encourage women's roles in the CF program?

_____

8. Any suggestions or advice to improve the roles of women in CF Program?

_____

Thank you very much for your co-operation!!!

Appendix 4: Questionnaire for Personal Interviews with DFO

1. Do you consider the roles of women are important in the community forestry program?

_____

2. Why do you think women's roles are important in community forestry program?

_____

3. What kind of roles women play in the community forestry program?

_____

4. Please give your opinions on the roles of women in comparison to men's roles in the community forestry program?

_____

5. Do you think the roles of women are being addressed and acknowledged in various stages of community forestry program?

_____

6. What are the challenges and issues regarding women's roles in community forestry program?

_____

7. What are your suggestions for improving women's roles in the community forestry program?

_____

Thank you for your co-operation!!!